

Appendix C
Analytical Laboratory Reports

Round 1 Sampling Event

January 19, 2011 – January 21, 2011

February 1, 2011 and February 21, 2011



02/01/11

Technical Report for

Geotrans, Inc.

Garfield County

Accutest Job Number: D20524

Sampling Date: 01/19/11

Report to:

Geotrans, Inc.
363 Centennial Parkway, Suite 210
Louisville, CO 80027
brendan.shine@geotransinc.com; david.bohmann@geotransinc.com
ATTN: Brendan Shine

Total number of pages in report: **85**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'John Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

Geotrans, Inc.

Job No: D20524

Garfield County

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D20524-1	01/19/11	15:24 KT	01/20/11	AQ	Ground Water	CURRIE WELL_011911
D20524-1F	01/19/11	15:24 KT	01/20/11	AQ	Groundwater Filtered	CURRIE WELL_011911
D20524-2	01/19/11	00:00 KT	01/20/11	AQ	Trip Blank Water	TB01_1911

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Geotrans, Inc.

Job No D20524

Site: Garfield County

Report Dat 2/1/2011 3:26:33 PM

On 01/20/2011, two (2) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 1.5°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D20524 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: V3V470

- All samples were analyzed within the recommended method holding time.
- Samples D20489-1MS and D20489-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The blank spike (BS) recovery of Vinyl Acetate is outside control limits. Since the bias for Vinyl Acetate is high and the sample is non-detect for this analyte, no further action is required.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of Vinyl Acetate are outside control limits. Since the bias for Vinyl Acetate is high and the sample is non-detect for this analyte, no further action is required.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of 2-Chloroethyl Vinyl Ether are outside control limits. Recovery of 2-Chloroethyl Vinyl Ether is affected by sample preservation.

Volatiles by GC By Method SW846 8015B

Matrix AQ

Batch ID: GGA555

- The sample was analyzed within the recommended method holding time.
- Samples D20530-1MS and D20530-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Metals By Method EPA 200.7

Matrix AQ

Batch ID: MP3853

- The sample was digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20508-1MS and D20508-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP3631

- The sample was prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20519-1MS and D20519-1MSD were used as the QC samples for the anion analysis.
- Sample D20524-1 for Nitrate-N and Nitrite-N: The reporting limit (RL) was raised due to matrix interference.

Wet Chemistry By Method HACH 8146

Matrix AQ	Batch ID: GN7953

- The sample was analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20524-1FDUP and D20524-1FMS were used as the QC samples for the Ferrous Iron analysis.
- Ferrous Iron: Sample required diluting for matrix spike due to sulfide interference.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ	Batch ID: R6032

- The data for SM18 3500FED M meets quality control requirements.
- Ferric Iron: Calculated as: (Iron) - (Ferrous Iron)

Wet Chemistry By Method SM20 2320B

Matrix AQ	Batch ID: GN7960

- The sample was analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20529-1DUP, D20529-1MS, and D20529-1MSD were used as the QC samples for the Total Alkalinity, as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ	Batch ID: GN8008

- The sample was analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Sample D20552-1DUP was used as the QC sample for the Total Dissolved Solids analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ	Batch ID: GN7977

- The sample was analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20461-1MS and D20524-1DUP were used as the QC samples for the Hydrogen Sulfide analysis.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ	Batch ID: GP3629

- The sample was prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20461-1DUP, D20461-1MS, and D20461-1MSD were used as the QC samples for the Ammonia-N analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	CURRIE WELL_011911	Date Sampled:	01/19/11
Lab Sample ID:	D20524-1	Date Received:	01/20/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08612.D	1	01/21/11	DC	n/a	n/a	V3V470
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	1.8	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CURRIE WELL_011911**Lab Sample ID:** D20524-1**Date Sampled:** 01/19/11**Matrix:** AQ - Ground Water**Date Received:** 01/20/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	93%		63-130%
2037-26-5	Toluene-D8	95%		68-130%
460-00-4	4-Bromofluorobenzene	87%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
107-21-1	1,2-Ethanediol	4.32	5.9	ug/l	JN
124-38-9	Carbon dioxide	4.44	190	ug/l	JN
7446-09-5	Sulfur dioxide	5.48	13	ug/l	JN
	Total TIC, Volatile		18.9	ug/l	J

ND = Not detected MDL - Method Detection Limit

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B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID: CURRIE WELL_011911**Lab Sample ID:** D20524-1**Date Sampled:** 01/19/11**Matrix:** AQ - Ground Water**Date Received:** 01/20/11**Method:** SW846 8015B**Percent Solids:** n/a**Project:** Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0235.D	1	01/21/11	BR	n/a	n/a	GGA555
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	106%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CURRIE WELL_011911**Lab Sample ID:** D20524-1**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 01/19/11**Date Received:** 01/20/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	454	5.0	mg/l	1	01/21/11	CJ	SM20 2320B
Chloride	397	25	mg/l	50	01/20/11 15:09	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	01/21/11	CJ	SM20 4500 S2 H
Nitrogen, Ammonia	1.5	0.10	mg/l	1	01/21/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	01/20/11 12:27	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.61	0.61	mg/l	10	01/20/11 14:54	JML	EPA 300/SW846 9056
Solids, Total Dissolved	2060	10	mg/l	1	01/25/11	CJ	SM20 2540C
Sulfate	681	25	mg/l	50	01/20/11 15:09	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: CURRIE WELL_011911
Lab Sample ID: D20524-1F
Matrix: AQ - Groundwater Filtered
Project: Garfield County

Date Sampled: 01/19/11
Date Received: 01/20/11
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	56.0	10	ug/l	1	01/20/11	01/21/11 JM	EPA 200.7 ²	EPA 200.7 ³
Calcium	52400	400	ug/l	1	01/20/11	01/20/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Iron	< 70	70	ug/l	1	01/20/11	01/21/11 JM	EPA 200.7 ²	EPA 200.7 ³
Magnesium	2710	200	ug/l	1	01/20/11	01/20/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Manganese	26.0	5.0	ug/l	1	01/20/11	01/20/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Potassium	1640	1000	ug/l	1	01/20/11	01/21/11 JM	EPA 200.7 ²	EPA 200.7 ³
Sodium	672000	400	ug/l	1	01/20/11	01/21/11 JM	EPA 200.7 ²	EPA 200.7 ³
Strontium	1690	5.0	ug/l	1	01/20/11	01/21/11 JM	EPA 200.7 ²	EPA 200.7 ³

(1) Instrument QC Batch: MA1264

(2) Instrument QC Batch: MA1266

(3) Prep QC Batch: MP3853

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CURRIE WELL_011911	Date Sampled:	01/19/11
Lab Sample ID:	D20524-1F	Date Received:	01/20/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.17	0.17	mg/l	1	01/21/11 12:31	JM	SM18 3500FED M
Iron, Ferrous	< 0.10	0.10	mg/l	1	01/20/11 10:15	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)

RL = Reporting Limit

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Report of Analysis

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Client Sample ID:	TB01_1911	Date Sampled:	01/19/11
Lab Sample ID:	D20524-2	Date Received:	01/20/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08611.D	1	01/21/11	DC	n/a	n/a	V3V470
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB01_1911	Date Sampled:	01/19/11
Lab Sample ID:	D20524-2	Date Received:	01/20/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	95%		63-130%
2037-26-5	Toluene-D8	96%		68-130%
460-00-4	4-Bromofluorobenzene	87%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
107-21-1	1,2-Ethanediol	4.31	5.1	ug/l	JN
124-38-9	Carbon dioxide	4.44	39	ug/l	JN
	Total TIC, Volatile		5.1	ug/l	J

ND = Not detected MDL - Method Detection Limit
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J = Indicates an estimated value
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 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	TB01_1911	Date Sampled:	01/19/11
Lab Sample ID:	D20524-2	Date Received:	01/20/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0236.D	1	01/21/11	BR	n/a	n/a	GGA555
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	107%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

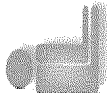
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job # D20524	

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Codes															
Company Name GeoTrans Inc		Project Name Garfield County		Billing Information (if different from Report to) Company Name Geo Trans, Inc		Alkalinity, TDS, AMN		Dissolved Metals (see note)		CHL, NO3, NO2, SO4		XFE3 (FE, FE2, FE3)		Total Coliform		V8015GRO, V8260HSL+		Hydrogen Sulfide		B8015DRO		B8270PAH		V8260HSL		TOC		LAB USE ONLY	
Street Address 363 Centennial Parkway Suite 210		Street																											
City Louisville, CO		City CO		City		City		City		City		City		City		City		City		City		City		City		City		City	
Project Contact Brendan Shine or David Bohmann		Project #		Street Address 363 Centennial Parkway ; Suite 210		City Louisville, CO 80027		Attention: David Bohmann		Client Purchase Order #		Project Manager David Bohmann		Sample ID / Point of Collection Currie Well - 011411		MEOH/DI Vial #		Date 1/19/11		Time 1524		Sampled by KT		Matrix GW		# of bottles 14		Number of preserved bottles	
Phone # 303-665-4390		Client Purchase Order #		City Louisville, CO 80027		Attention: David Bohmann		Sample ID / Point of Collection Currie Well - 011411		MEOH/DI Vial #		Date 1/19/11		Time 1524		Sampled by KT		Matrix GW		# of bottles 16		Number of preserved bottles		Number of preserved bottles		Number of preserved bottles		Number of preserved bottles	
Sampler(s) Name(s) Karl Thompson		Project Manager David Bohmann		City Louisville, CO 80027		Attention: David Bohmann		Sample ID / Point of Collection Currie Well - 011411		MEOH/DI Vial #		Date 1/19/11		Time 1524		Sampled by KT		Matrix GW		# of bottles 16		Number of preserved bottles		Number of preserved bottles		Number of preserved bottles		Number of preserved bottles	
Turnaround Time (Business days)		Approved By (Accutest PM) / Date:		Data Deliverable Information		Comments / Special Instructions		Metals (200.7) : Ba, Ca, Mg, Mn, K, Na, Sr, Fe: Note: Sample has been field filtered		EMAIL ONLY: bshine@geotransinc.com and dbohmann@geotransinc.com		*Changed Trip BLK to T801 = 1911 per Billy @ Geotrans		Relinquished by: Paul R		Date Time: 1/19/11 1600		Received By: [Signature]		Date Time: 1/19/11 1600		Relinquished by: 2		Date Time: 2		Received By: 2		Date Time: 2	
Emergency & Rush T/A data available VIA Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "BN" = Results/QC Narrative (+ = chromatograms)		State Forms Required Send Forms to State Report by Fax Report by PDF EDD Format		Metals (200.7) : Ba, Ca, Mg, Mn, K, Na, Sr, Fe: Note: Sample has been field filtered		EMAIL ONLY: bshine@geotransinc.com and dbohmann@geotransinc.com		*Changed Trip BLK to T801 = 1911 per Billy @ Geotrans		Relinquished by: 3		Date Time: 3		Received By: 3		Date Time: 3		Relinquished by: 4		Date Time: 4		Received By: 4		Date Time: 4		Received By: 4	
Sample Custody must be documented below each time samples change possession, including courier delivery.		Custody Seal #		Intact Not Intact		Preserved where applicable		On Ice		Cooler Temp. 1.5		Relinquished by: 5		Date Time: 5		Received By: 5		Date Time: 5		Relinquished by: 5		Date Time: 5		Received By: 5		Date Time: 5		Received By: 5	

D20524: Chain of Custody

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**Industrial
LABORATORIES**

Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 1/20/2011

Date Reported: 1/24/2011

PO Number: D20524X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110120012-01A	D20524X-2, 1/19/11, * Total Coliforms MPN 3:24pm	SM 9221 B	<2 Fecal; Total	MPN/100mL		RB
						1/20/2011

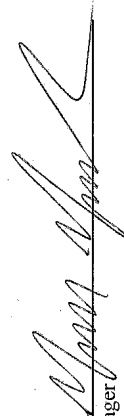
* = Scope Analysis

= Subcontracted Analysis

MDL = Method Detection Limit

ND = Not Detected at the Method Detection Limit

Page: 1 of 1



Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industriallabs.net

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D20524: Chain of Custody

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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 2

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V470-MB1	3V08604.D	1	01/21/11	DC	n/a	n/a	V3V470

The QC reported here applies to the following samples:

Method: SW846 8260B

D20524-1, D20524-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V470-MB1	3V08604.D	1	01/21/11	DC	n/a	n/a	V3V470

The QC reported here applies to the following samples:

Method: SW846 8260B

D20524-1, D20524-2

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	91% 63-130%
2037-26-5	Toluene-D8	95% 68-130%
460-00-4	4-Bromofluorobenzene	88% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.43	34	ug/l	JN
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Page 1 of 2

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V470-BS1	3V08605.D	1	01/21/11	DC	n/a	n/a	V3V470

The QC reported here applies to the following samples:

Method: SW846 8260B

D20524-1, D20524-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	44.2	88	49-130
71-43-2	Benzene	50	52.9	106	70-130
75-27-4	Bromodichloromethane	50	50.1	100	70-130
75-25-2	Bromoform	50	48.3	97	48-138
108-90-7	Chlorobenzene	50	54.7	109	70-130
75-00-3	Chloroethane	50	46.4	93	61-130
67-66-3	Chloroform	50	53.0	106	70-130
110-75-8	2-Chloroethyl vinyl ether	50	43.0	86	22-185
75-15-0	Carbon disulfide	50	53.0	106	55-130
56-23-5	Carbon tetrachloride	50	54.6	109	70-130
75-34-3	1,1-Dichloroethane	50	53.2	106	70-130
75-35-4	1,1-Dichloroethylene	50	56.2	112	70-130
107-06-2	1,2-Dichloroethane	50	45.5	91	70-130
78-87-5	1,2-Dichloropropane	50	50.7	101	70-130
124-48-1	Dibromochloromethane	50	45.7	91	64-132
156-59-2	cis-1,2-Dichloroethylene	50	54.4	109	70-130
10061-01-5	cis-1,3-Dichloropropene	50	50.7	101	67-130
541-73-1	m-Dichlorobenzene	50	52.5	105	52-148
95-50-1	o-Dichlorobenzene	50	52.9	106	53-146
106-46-7	p-Dichlorobenzene	50	52.7	105	57-136
156-60-5	trans-1,2-Dichloroethylene	50	55.0	110	70-130
10061-02-6	trans-1,3-Dichloropropene	50	46.4	93	66-130
100-41-4	Ethylbenzene	50	55.4	111	70-130
591-78-6	2-Hexanone	50	46.0	92	38-130
108-10-1	4-Methyl-2-pentanone	50	48.1	96	68-130
74-83-9	Methyl bromide	50	53.5	107	35-151
74-87-3	Methyl chloride	50	40.0	80	46-138
75-09-2	Methylene chloride	50	50.2	100	70-130
78-93-3	Methyl ethyl ketone	50	47.6	95	37-130
100-42-5	Styrene	50	52.1	104	38-130
71-55-6	1,1,1-Trichloroethane	50	49.9	100	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	50.6	101	70-130
79-00-5	1,1,2-Trichloroethane	50	50.0	100	69-130
127-18-4	Tetrachloroethylene	50	56.0	112	66-134
108-88-3	Toluene	50	53.3	107	70-140
79-01-6	Trichloroethylene	50	53.6	107	70-130

Blank Spike Summary

Page 2 of 2

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V470-BS1	3V08605.D	1	01/21/11	DC	n/a	n/a	V3V470

The QC reported here applies to the following samples:

Method: SW846 8260B

D20524-1, D20524-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl chloride	50	38.9	78	58-135
108-05-4	Vinyl Acetate	50	84.2	168* ^a	50-130
1330-20-7	Xylene (total)	100	100	100	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	89%	63-130%
2037-26-5	Toluene-D8	94%	68-130%
460-00-4	4-Bromofluorobenzene	88%	61-130%

(a) Compound ND in associated samples.

Blank Spike Summary

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V470-BS1	3V08606.D	1	01/21/11	DC	n/a	n/a	V3V470

The QC reported here applies to the following samples:

Method: SW846 8260B

D20524-1, D20524-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	88%	63-130%
2037-26-5	Toluene-D8	95%	68-130%
460-00-4	4-Bromofluorobenzene	87%	61-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20489-1MS	3V08608.D	1	01/21/11	DC	n/a	n/a	V3V470
D20489-1MSD	3V08609.D	1	01/21/11	DC	n/a	n/a	V3V470
D20489-1	3V08607.D	1	01/21/11	DC	n/a	n/a	V3V470

The QC reported here applies to the following samples:

Method: SW846 8260B

D20524-1, D20524-2

CAS No.	Compound	D20489-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		50	42.6	85	44.7	89	5	21-130/30
71-43-2	Benzene	ND		50	51.7	103	52.0	104	1	59-132/30
75-27-4	Bromodichloromethane	ND		50	49.4	99	50.7	101	3	58-130/30
75-25-2	Bromoform	ND		50	48.4	97	51.6	103	6	45-140/30
108-90-7	Chlorobenzene	ND		50	54.0	108	54.5	109	1	70-130/30
75-00-3	Chloroethane	ND		50	46.9	94	47.6	95	1	61-130/30
67-66-3	Chloroform	ND		50	52.4	105	53.7	107	2	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	ND	0* a	ND	0* a	nc	20-168/30
75-15-0	Carbon disulfide	ND		50	50.9	102	51.7	103	2	41-132/30
56-23-5	Carbon tetrachloride	ND		50	52.7	105	54.0	108	2	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	52.4	105	54.1	108	3	70-130/30
75-35-4	1,1-Dichloroethylene	ND		50	54.1	108	54.4	109	1	69-137/30
107-06-2	1,2-Dichloroethane	ND		50	47.0	94	47.8	96	2	62-130/30
78-87-5	1,2-Dichloropropane	ND		50	49.9	100	51.0	102	2	63-131/30
124-48-1	Dibromochloromethane	ND		50	45.6	91	47.6	95	4	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND		50	53.6	107	54.6	109	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	49.8	100	50.9	102	2	51-134/30
541-73-1	m-Dichlorobenzene	ND		50	52.2	104	51.7	103	1	38-148/30
95-50-1	o-Dichlorobenzene	ND		50	52.2	104	52.3	105	0	40-148/30
106-46-7	p-Dichlorobenzene	ND		50	51.3	103	52.1	104	2	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND		50	54.0	108	54.5	109	1	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	47.4	95	48.5	97	2	50-130/30
100-41-4	Ethylbenzene	ND		50	54.4	109	55.1	110	1	68-130/30
591-78-6	2-Hexanone	ND		50	48.8	98	49.2	98	1	29-130/30
108-10-1	4-Methyl-2-pentanone	ND		50	48.8	98	50.2	100	3	62-130/30
74-83-9	Methyl bromide	ND		50	54.0	108	56.1	112	4	20-171/30
74-87-3	Methyl chloride	ND		50	40.8	82	41.7	83	2	25-148/30
75-09-2	Methylene chloride	ND		50	49.4	99	51.4	103	4	58-139/30
78-93-3	Methyl ethyl ketone	ND		50	49.1	98	50.0	100	2	37-130/30
100-42-5	Styrene	ND		50	52.1	104	52.3	105	0	27-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	49.0	98	49.4	99	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	51.6	103	53.7	107	4	61-140/30
79-00-5	1,1,2-Trichloroethane	ND		50	51.3	103	52.0	104	1	52-135/30
127-18-4	Tetrachloroethylene	ND		50	53.8	108	54.0	108	0	61-134/30
108-88-3	Toluene	ND		50	52.1	104	52.2	104	0	56-142/30
79-01-6	Trichloroethylene	ND		50	52.0	104	52.1	104	0	61-132/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20489-1MS	3V08608.D	1	01/21/11	DC	n/a	n/a	V3V470
D20489-1MSD	3V08609.D	1	01/21/11	DC	n/a	n/a	V3V470
D20489-1	3V08607.D	1	01/21/11	DC	n/a	n/a	V3V470

The QC reported here applies to the following samples:

Method: SW846 8260B

D20524-1, D20524-2

CAS No.	Compound	D20489-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl chloride	ND	50	39.6	79	39.9	80	1	54-148/30
108-05-4	Vinyl Acetate	ND	50	83.1	166* b	88.8	178* b	7	40-139/30
1330-20-7	Xylene (total)	ND	100	99.7	100	99.5	100	0	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D20489-1	Limits
17060-07-0	1,2-Dichloroethane-D4	89%	93%	88%	63-130%
2037-26-5	Toluene-D8	94%	93%	94%	68-130%
460-00-4	4-Bromofluorobenzene	91%	90%	87%	61-130%

(a) Recovery of 2-chloroethyl vinyl ether is affected by sample preservation.

(b) Compound ND in associated samples.

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012111.S\
 Data File : 3V08612.D
 Acq On : 21 Jan 2011 5:44 pm
 Operator : DONC
 Sample : D20524-1
 Misc : MS1757,V3V470,,,,,1
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 24 13:18:59 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260
 QLast Update : Mon Jan 17 09:47:23 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.892	168	473817	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	726261	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.316	117	641685	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	350338	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.287	102	55921	46.53	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	93.06%
55) Toluene-d8	14.078	98	881606	47.56	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.12%
59) 4-Bromofluorobenzene	16.269	95	300025	43.27	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	86.54%

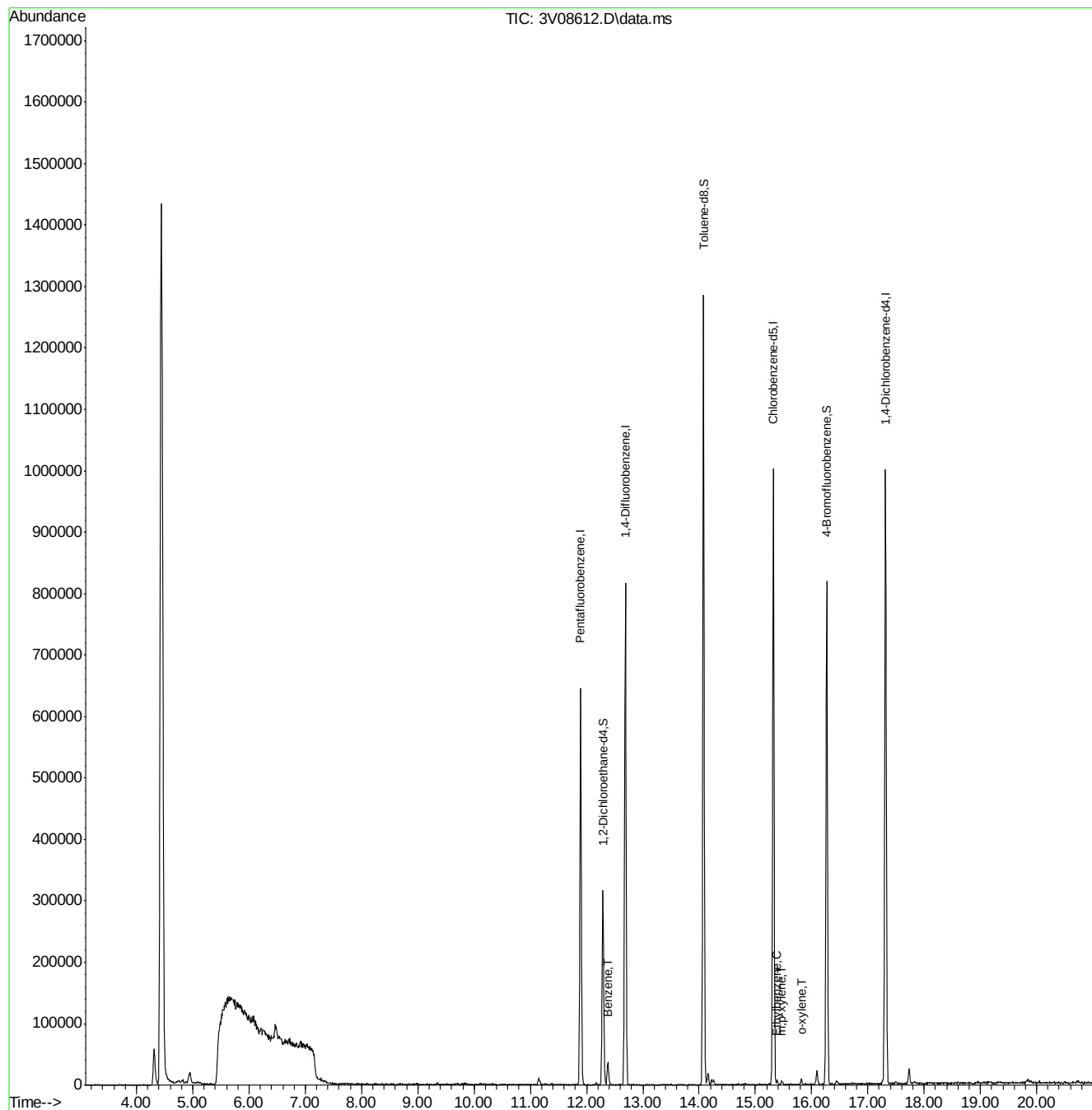
Target Compounds						Qvalue
45) Benzene	12.383	78	36215	1.80	ug/l	100
58) Ethylbenzene	15.393	91	5426	0.24	ug/l	96
61) m,p-xylene	15.467	106	2509	0.24	ug/l	95
62) o-xylene	15.817	106	2887	0.28	ug/l	85

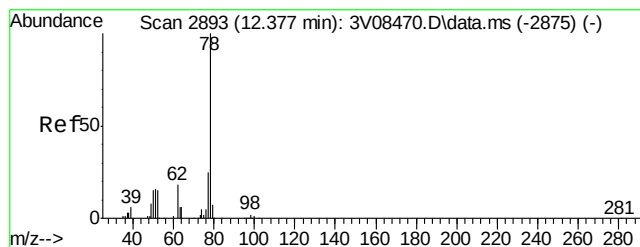
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08612.D
Acq On : 21 Jan 2011 5:44 pm
Operator : DONC
Sample : D20524-1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 13 Sample Multiplier: 1

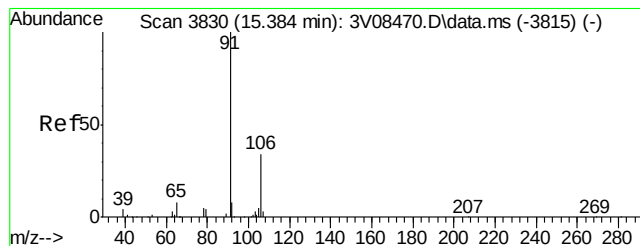
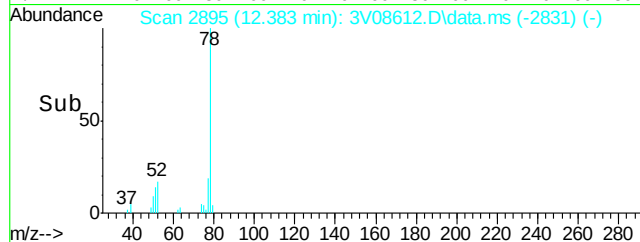
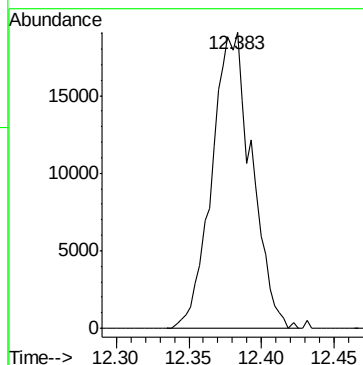
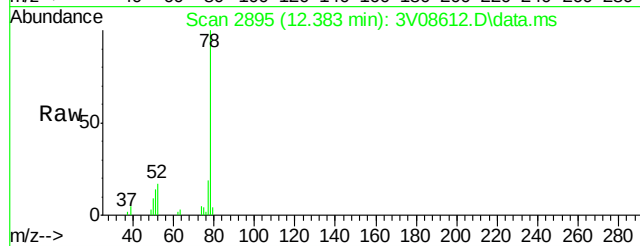
Quant Time: Jan 24 13:18:59 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





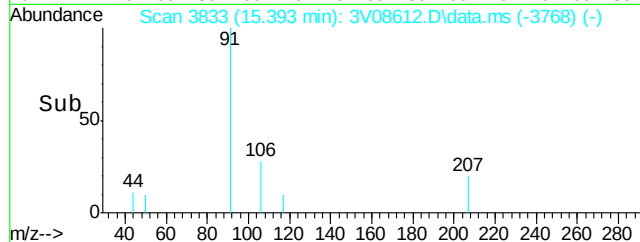
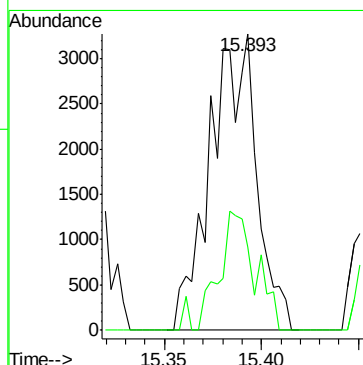
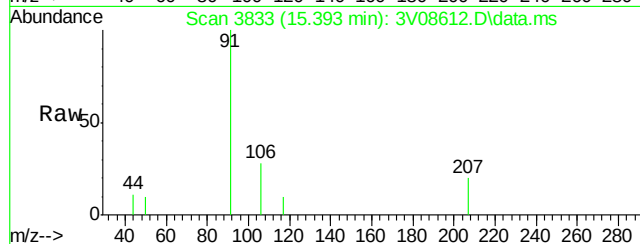
#45
Benzene
Concen: 1.80 ug/l
RT: 12.383 min Scan# 2895
Delta R.T. 0.006 min
Lab File: 3V08612.D
Acq: 21 Jan 2011 5:44 pm

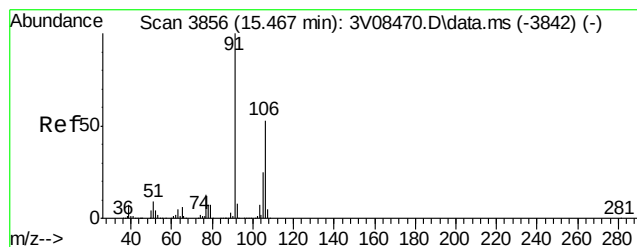
Tgt Ion: 78 Resp: 36215



#58
Ethylbenzene
Concen: 0.24 ug/l
RT: 15.393 min Scan# 3833
Delta R.T. 0.010 min
Lab File: 3V08612.D
Acq: 21 Jan 2011 5:44 pm

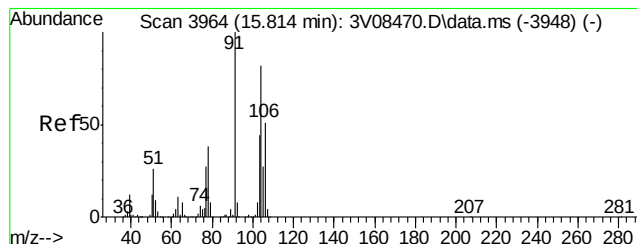
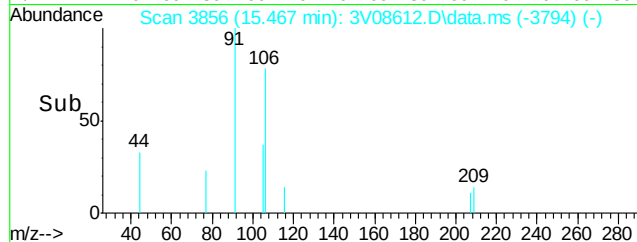
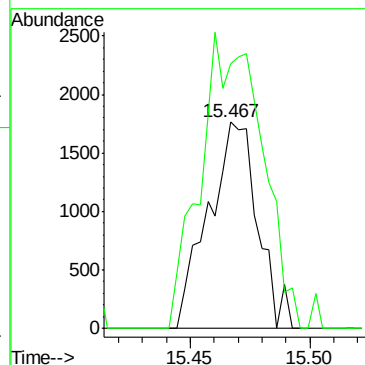
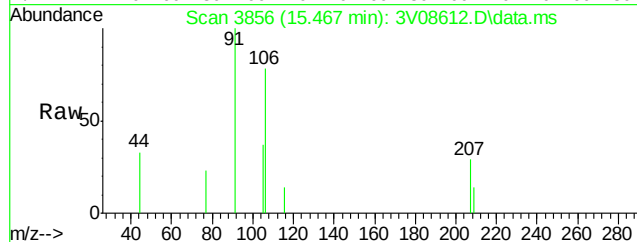
Tgt Ion: 91 Resp: 5426
Ion Ratio Lower Upper
91 100
106 31.3 13.3 53.3





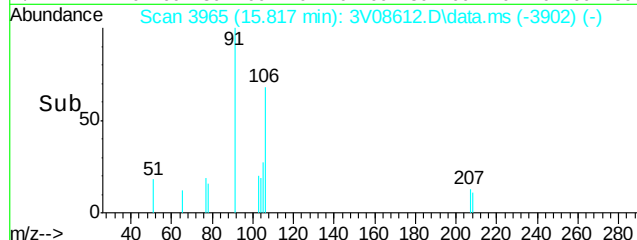
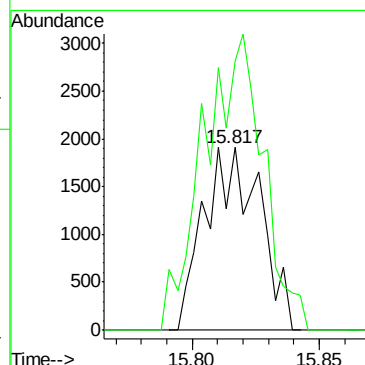
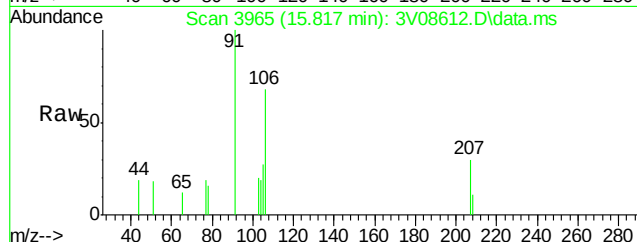
#61
m,p-xylene
Concen: 0.24 ug/l
RT: 15.467 min Scan# 3856
Delta R.T. -0.000 min
Lab File: 3V08612.D
Acq: 21 Jan 2011 5:44 pm

Tgt Ion:	106	Resp:	2509
Ion Ratio	Lower	Upper	
106	100		
91	179.5	167.5	207.5



#62
o-xylene
Concen: 0.28 ug/l
RT: 15.817 min Scan# 3965
Delta R.T. 0.003 min
Lab File: 3V08612.D
Acq: 21 Jan 2011 5:44 pm

Tgt Ion:	106	Resp:	2887
Ion Ratio	Lower	Upper	
106	100		
91	174.7	158.2	237.2



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
 Data File : 3V08612.D
 Acq On : 21 Jan 2011 5:44 pm
 Operator : DONC
 Sample : D20524-1
 Misc : MS1757,V3V470,,,,,1
 ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0

Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V08612.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.316	365	381	400	rBV	58473	143981	3.19%	0.910%
2	4.442	400	420	445	rBV	1433391	4517955	100.00%	28.564%
3	5.484	718	745	748	rBV2	102284	312162	6.91%	1.974%
4	11.892	2728	2742	2756	rBV2	646034	1212214	26.83%	7.664%
5	12.287	2850	2865	2883	rBV2	317169	623233	13.79%	3.940%
6	12.377	2883	2893	2906	rVB3	37490	71764	1.59%	0.454%
7	12.688	2974	2990	3005	rBV	817573	1499477	33.19%	9.480%
8	14.078	3409	3423	3438	rBV2	1286380	2311055	51.15%	14.611%
9	15.316	3793	3809	3825	rBV	1003001	1756596	38.88%	11.106%
10	16.266	4091	4105	4120	rBV	819963	1472677	32.60%	9.311%
11	17.312	4414	4431	4445	rVB2	998365	1895912	41.96%	11.987%

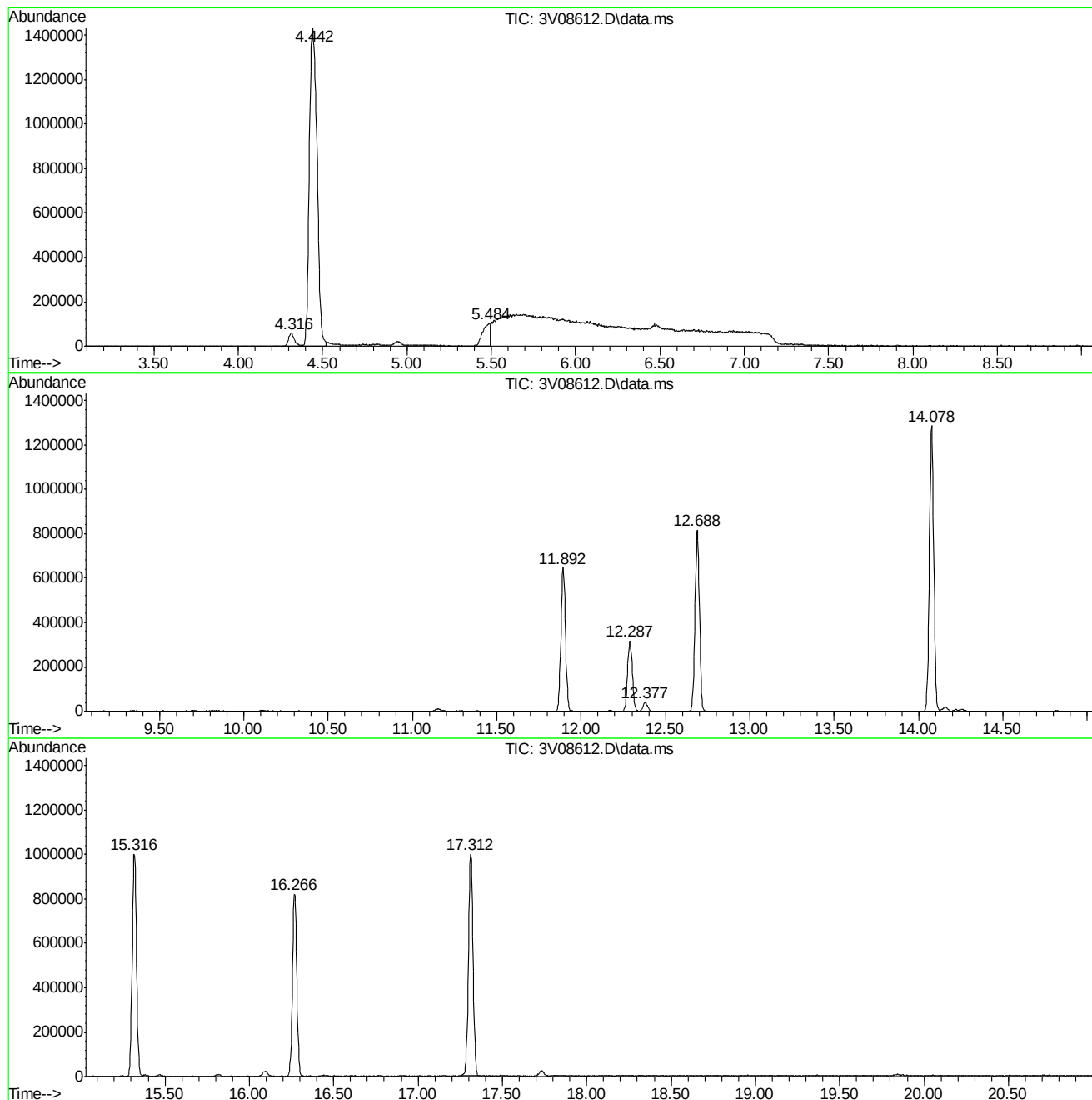
Sum of corrected areas: 15817026

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08612.D
Acq On : 21 Jan 2011 5:44 pm
Operator : DONC
Sample : D20524-1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08612.D
Acq On : 21 Jan 2011 5:44 pm
Operator : DONC
Sample : D20524-1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 13 Sample Multiplier: 1

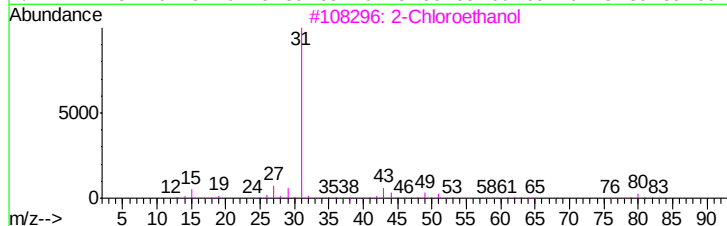
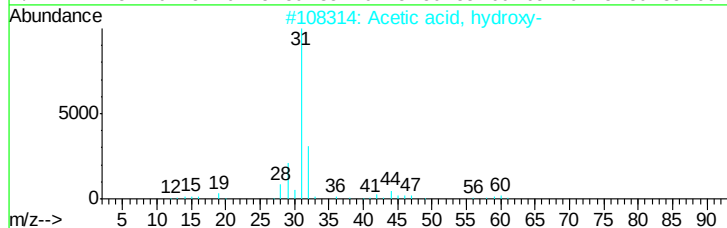
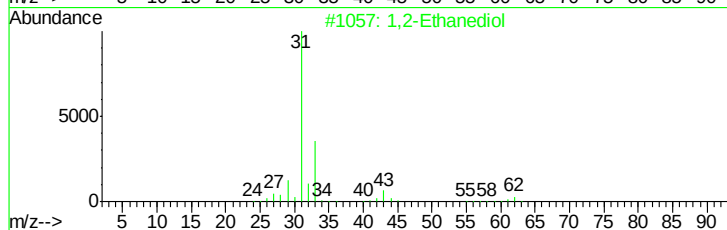
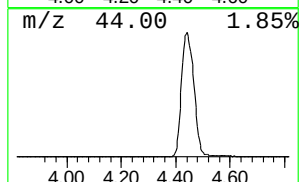
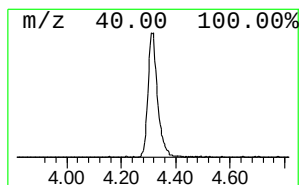
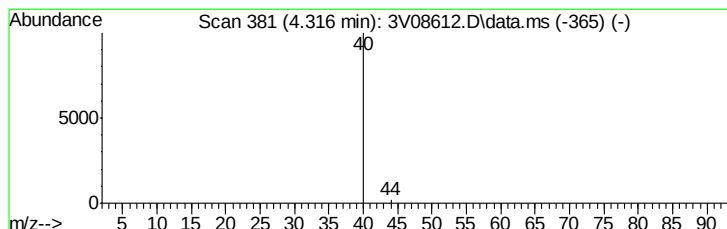
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 1,2-Ethanediol Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.316	5.94 ug/l	143981	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			1,2-Ethanediol	62	C2H6O2	000107-21-1	1
2			Acetic acid, hydroxy-	76	C2H4O3	000079-14-1	1
3			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
4			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
5			1-Butanamine, 3-methyl-	87	C5H13N	000107-85-7	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08612.D
Acq On : 21 Jan 2011 5:44 pm
Operator : DONC
Sample : D20524-1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 13 Sample Multiplier: 1

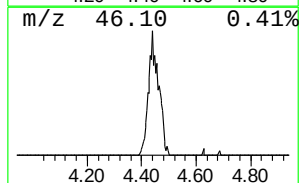
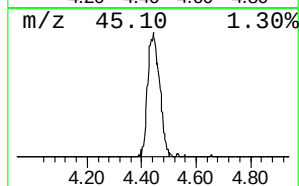
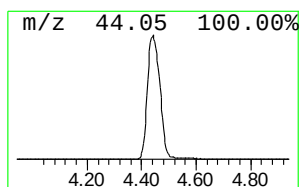
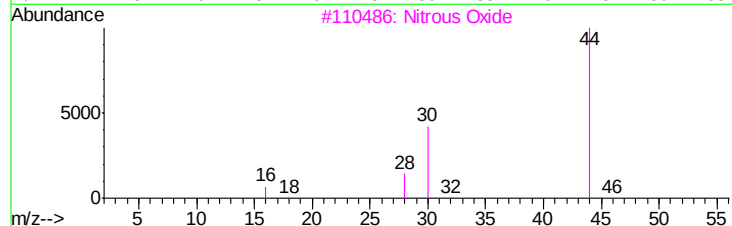
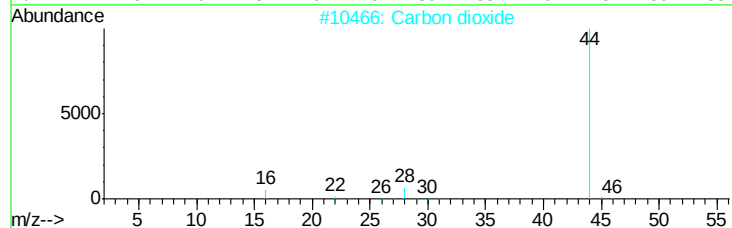
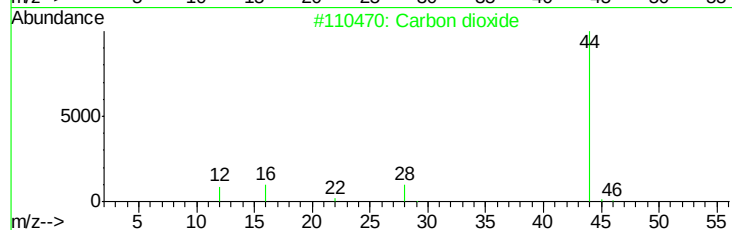
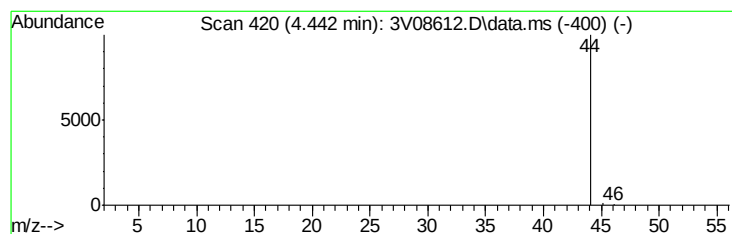
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.442	186.35 ug/l	4517960	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
 Data File : 3V08612.D
 Acq On : 21 Jan 2011 5:44 pm
 Operator : DONC
 Sample : D20524-1
 Misc : MS1757,V3V470,,,,,1
 ALS Vial : 13 Sample Multiplier: 1

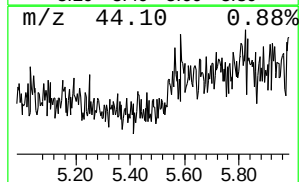
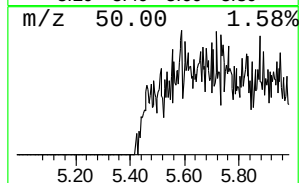
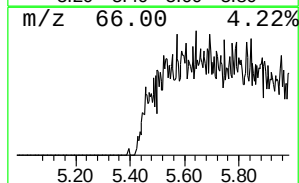
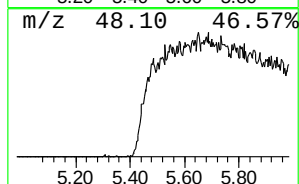
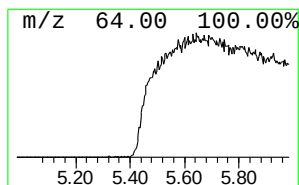
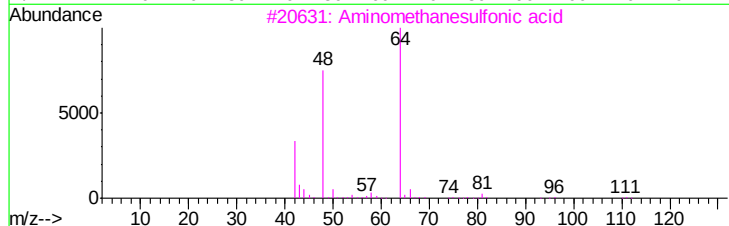
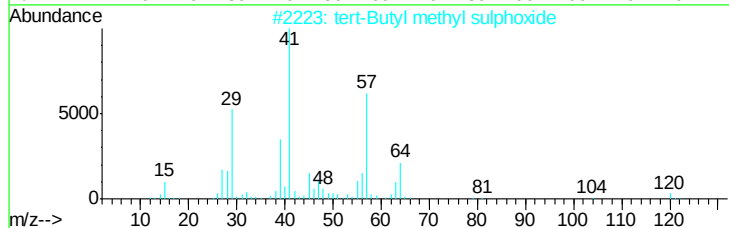
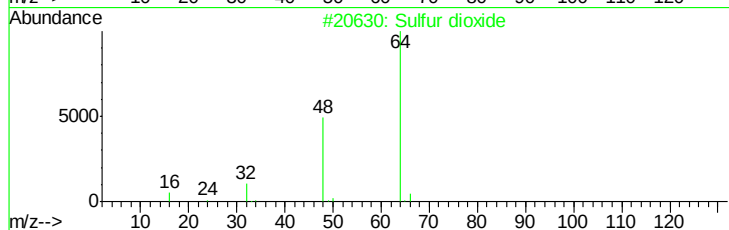
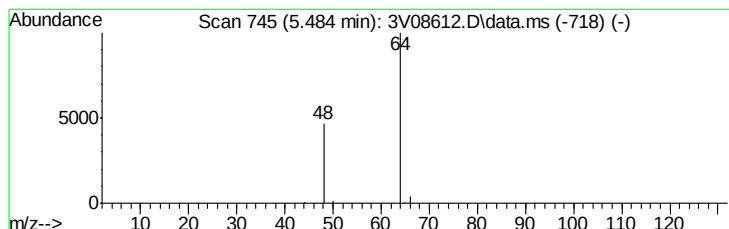
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 3 Sulfur dioxide Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.484	12.88 ug/l	312162	Pentafluorobenzene	11.892

Hit# of	5	Tentative ID	MW	MolForm	CAS#	Qual
1		Sulfur dioxide	64	O2S	007446-09-5	74
2		tert-Butyl methyl sulphoxide	120	C5H12OS	014094-11-2	1
3		Aminomethanesulfonic acid	111	CH5NO3S	013881-91-9	2
4		Sulfur dioxide	64	O2S	007446-09-5	3
5		Cysteic acid	169	C3H7NO5S	1000131-23-1	2



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08612.D
Acq On : 21 Jan 2011 5:44 pm
Operator : DONC
Sample : D20524-1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---			
					#	RT	Resp	Conc
1,2-Ethanediol	4.316	5.9	ug/l	143981	1	11.892	1212210	50.0
Carbon dioxide	4.442	186.4	ug/l	4517960	1	11.892	1212210	50.0
Sulfur dioxide	5.484	12.9	ug/l	312162	1	11.892	1212210	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012111.S\
 Data File : 3V08611.D
 Acq On : 21 Jan 2011 5:13 pm
 Operator : DONC
 Sample : D20524-2
 Misc : MS1757,V3V470,,,,,1
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 24 13:17:53 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260
 QLast Update : Mon Jan 17 09:47:23 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.895	168	477617	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	729314	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.319	117	647247	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	360799	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.290	102	57528	47.48	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	94.96%
55) Toluene-d8	14.077	98	892965	47.76	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.52%
59) 4-Bromofluorobenzene	16.265	95	304704	43.57	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	87.14%

Target Compounds	Qvalue

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

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
 Data File : 3V08611.D
 Acq On : 21 Jan 2011 5:13 pm
 Operator : DONC
 Sample : D20524-2
 Misc : MS1757,V3V470,,,,,1
 ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0
 Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V08611.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.313	368	381	393	rBV	57378	125390	5.37%	1.042%
2	4.435	403	419	452	rBV	383071	944504	40.46%	7.846%
3	11.892	2729	2743	2761	rBV2	638984	1223090	52.39%	10.160%
4	12.290	2852	2867	2883	rBV2	321199	625388	26.79%	5.195%
5	12.688	2977	2991	3006	rVB	832148	1510806	64.72%	12.550%
6	14.077	3410	3424	3443	rBV2	1278262	2334528	100.00%	19.393%
7	15.319	3793	3811	3829	rBV	1019351	1773302	75.96%	14.731%
8	16.269	4092	4107	4122	rBV	853121	1503791	64.42%	12.492%
9	17.315	4418	4433	4448	rVB2	1023318	1956034	83.79%	16.249%
10	17.732	4555	4563	4576	rVB	24611	41295	1.77%	0.343%

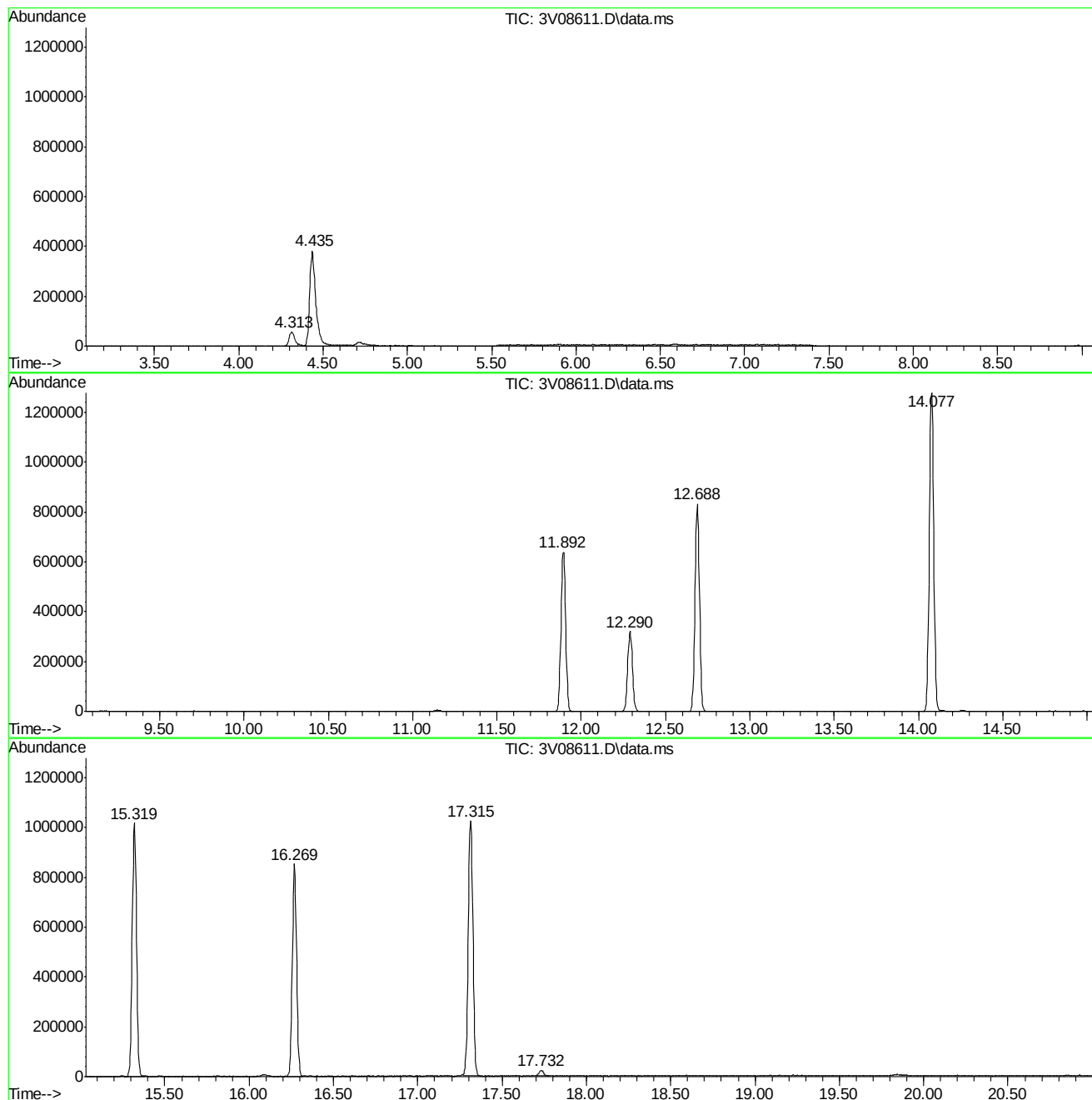
Sum of corrected areas: 12038128

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08611.D
Acq On : 21 Jan 2011 5:13 pm
Operator : DONC
Sample : D20524-2
Misc : MS1757,V3V470,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08611.D
Acq On : 21 Jan 2011 5:13 pm
Operator : DONC
Sample : D20524-2
Misc : MS1757,V3V470,,,,,1
ALS Vial : 12 Sample Multiplier: 1

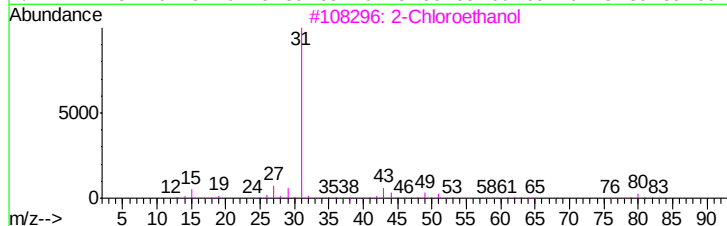
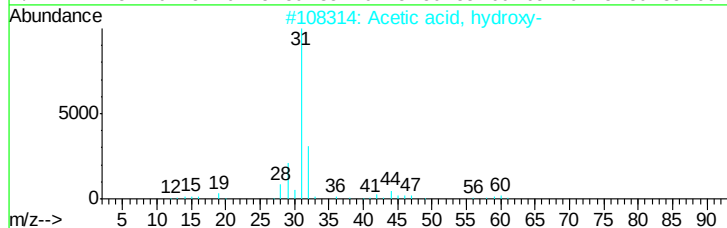
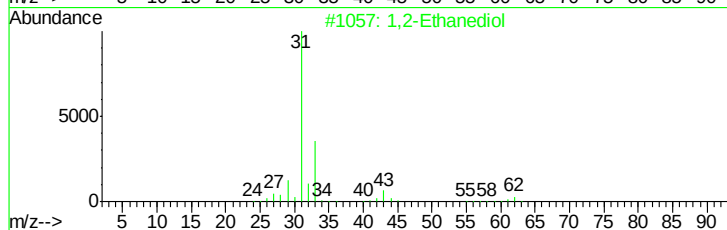
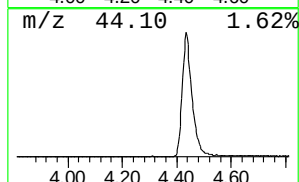
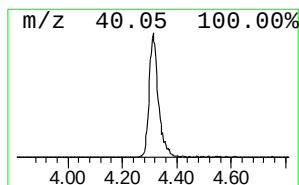
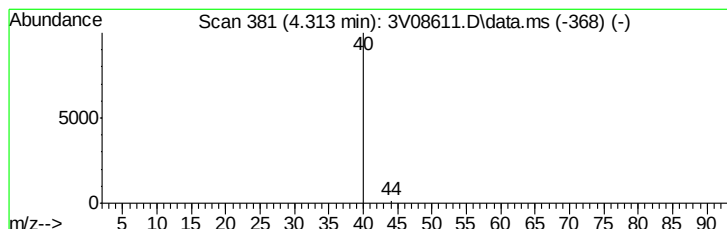
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 1,2-Ethanedio1 Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.313	5.13 ug/l	125390	Pentafluorobenzene	11.895

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			1,2-Ethanedio1	62	C2H6O2	000107-21-1	1
2			Acetic acid, hydroxy-	76	C2H4O3	000079-14-1	1
3			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
4			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
5			1-Butanamine, 3-methyl-	87	C5H13N	000107-85-7	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08611.D
Acq On : 21 Jan 2011 5:13 pm
Operator : DONC
Sample : D20524-2
Misc : MS1757,V3V470,,,,,1
ALS Vial : 12 Sample Multiplier: 1

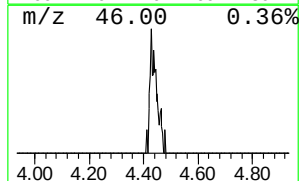
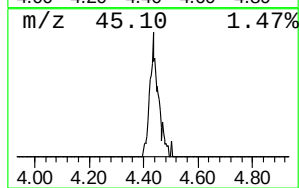
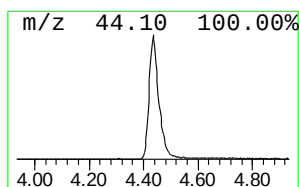
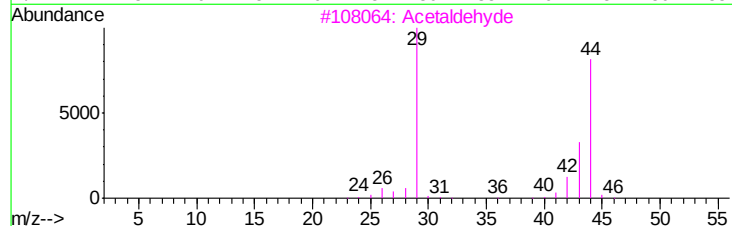
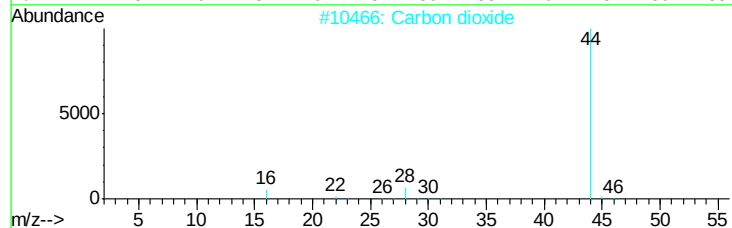
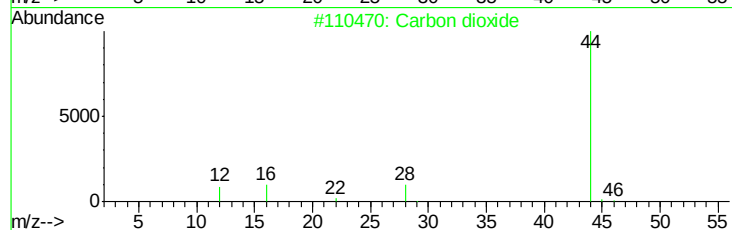
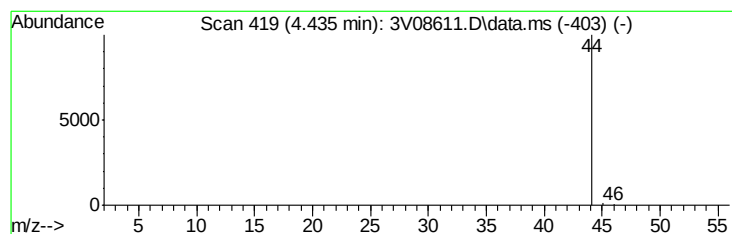
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.435	38.61 ug/l	944504	Pentafluorobenzene	11.895

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Acetaldehyde	44	C2H4O	000075-07-0	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08611.D
Acq On : 21 Jan 2011 5:13 pm
Operator : DONC
Sample : D20524-2
Misc : MS1757,V3V470,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
1,2-Ethanediol	4.313	5.1	ug/l	125390	1	11.895	1223090	50.0
Carbon dioxide	4.435	38.6	ug/l	944504	1	11.895	1223090	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08604.D
Acq On : 21 Jan 2011 1:37 pm
Operator : DONC
Sample : MB1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 24 13:10:03 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.890	168	635432	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.685	114	925191	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.320	117	806521	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	454904	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.287	102	73573	45.64	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	91.28%
55) Toluene-d8	14.075	98	1111476	47.70	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.40%
59) 4-Bromofluorobenzene	16.266	95	382597	43.90	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	87.80%

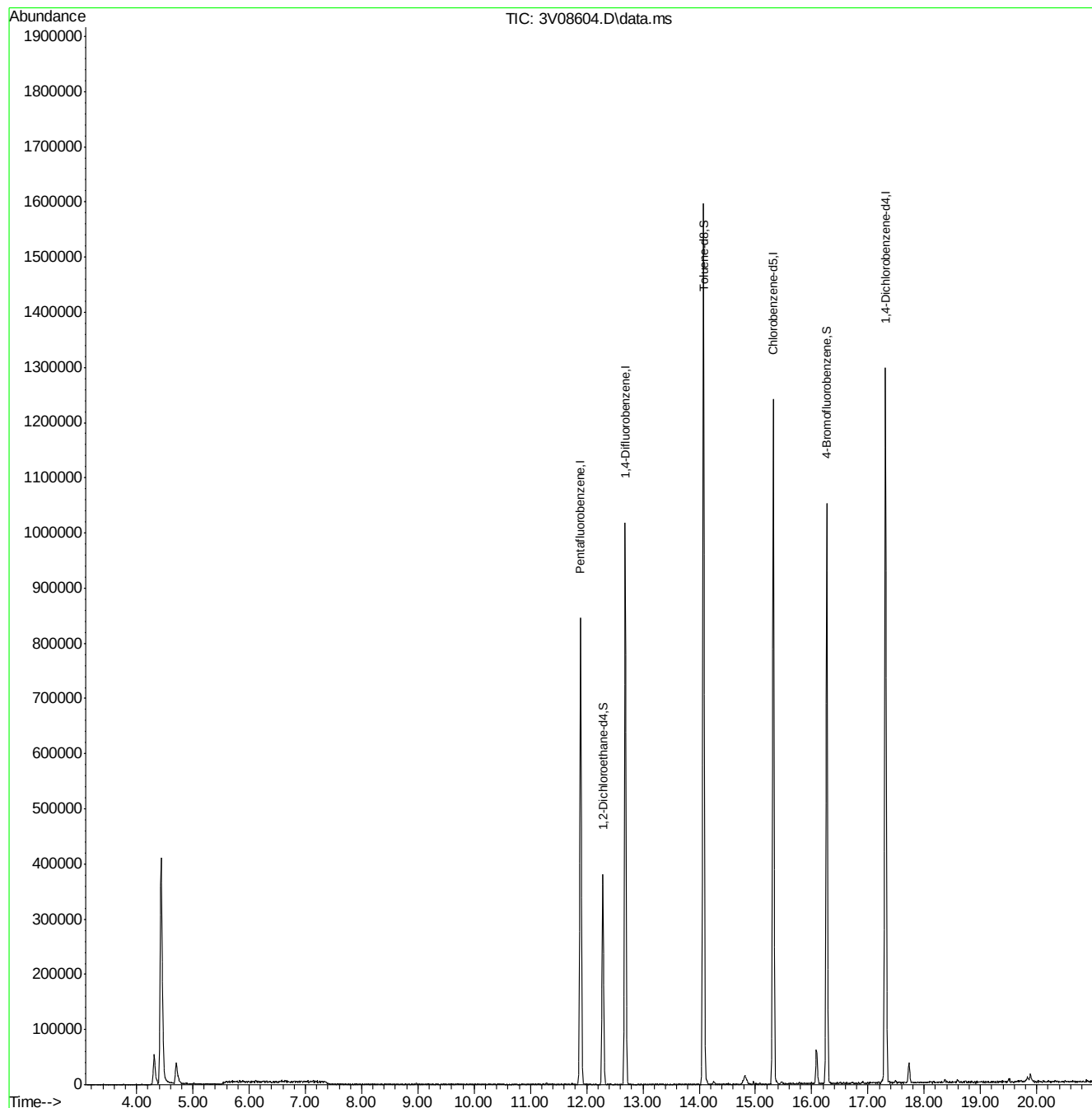
Target Compounds	Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08604.D
Acq On : 21 Jan 2011 1:37 pm
Operator : DONC
Sample : MB1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 24 13:10:03 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08604.D
Acq On : 21 Jan 2011 1:37 pm
Operator : DONC
Sample : MB1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08604.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.310	365	380	401	rBV	55179	132599	4.61%	0.881%
2	4.432	403	418	440	rBV	410235	1067043	37.10%	7.087%
3	4.705	490	503	513	rBV3	37863	87136	3.03%	0.579%
4	11.890	2726	2742	2761	rBV	846363	1591288	55.32%	10.568%
5	12.287	2850	2866	2884	rBV2	380874	747661	25.99%	4.965%
6	12.685	2975	2990	3006	rBV2	1018044	1891461	65.76%	12.562%
7	14.075	3409	3423	3439	rBV2	1597186	2876351	100.00%	19.103%
8	15.320	3795	3811	3825	rBV	1240732	2179064	75.76%	14.472%
9	16.083	4038	4049	4064	rBV2	61470	117235	4.08%	0.779%
10	16.266	4092	4106	4120	rBV2	1052061	1860181	64.67%	12.354%
11	17.312	4418	4432	4447	rVB	1294523	2439189	84.80%	16.199%
12	17.730	4552	4562	4574	rVB3	36357	68062	2.37%	0.452%

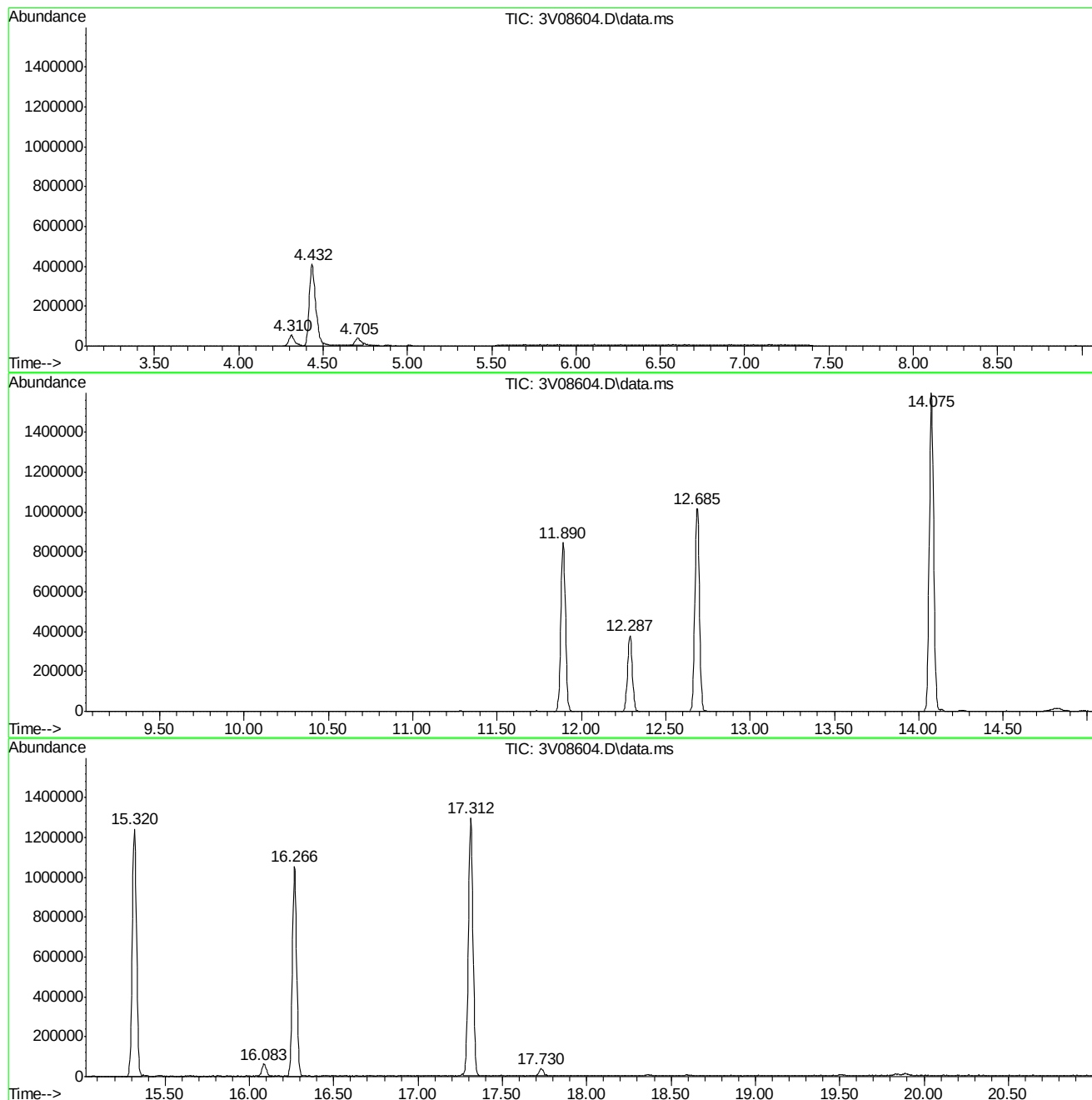
Sum of corrected areas: 15057270

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08604.D
Acq On : 21 Jan 2011 1:37 pm
Operator : DONC
Sample : MB1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08604.D
Acq On : 21 Jan 2011 1:37 pm
Operator : DONC
Sample : MB1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 5 Sample Multiplier: 1

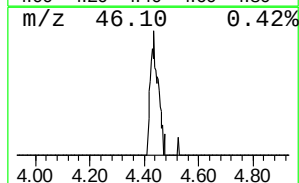
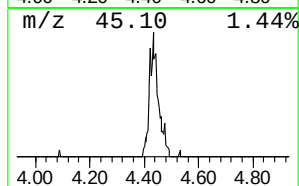
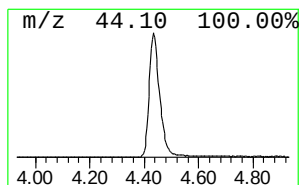
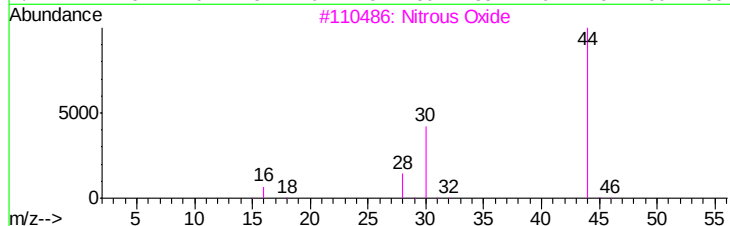
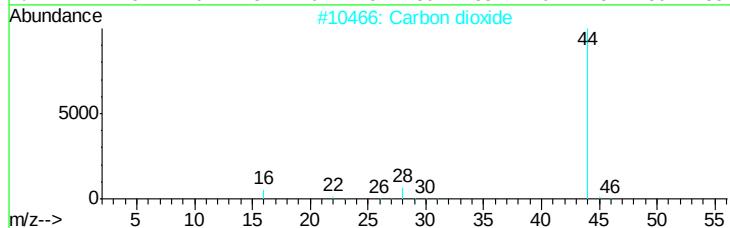
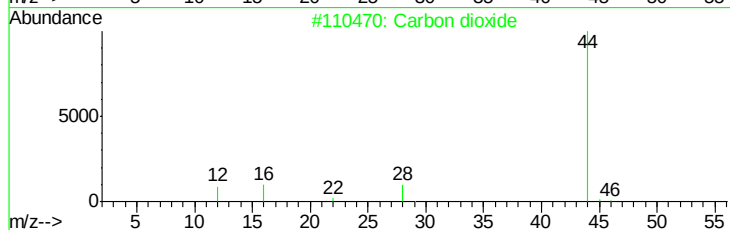
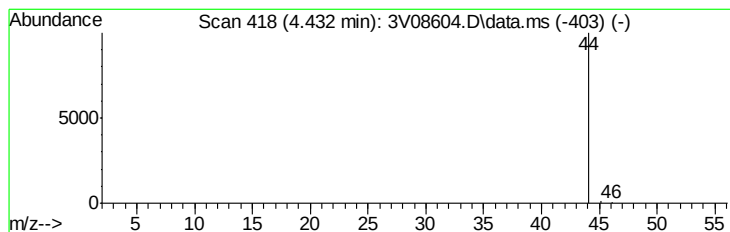
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.432	33.53 ug/l	1067040	Pentafluorobenzene	11.890

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012111.S\
Data File : 3V08604.D
Acq On : 21 Jan 2011 1:37 pm
Operator : DONC
Sample : MB1
Misc : MS1757,V3V470,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---
					# RT Resp Conc
Carbon dioxide	4.432	33.5	ug/l	1067040	1 11.890 1591290 50.0

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA555-MB	GA0230.D	1	01/21/11	BR	n/a	n/a	GGA555

The QC reported here applies to the following samples:

Method: SW846 8015B

D20524-1, D20524-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	110% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA555-BS	GA0231.D	1	01/21/11	BR	n/a	n/a	GGA555

The QC reported here applies to the following samples: Method: SW846 8015B

D20524-1, D20524-2

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.88	85	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	119%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D20524
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20530-1MS	GA0233.D	1	01/21/11	BR	n/a	n/a	GGA555
D20530-1MSD	GA0234.D	1	01/21/11	BR	n/a	n/a	GGA555
D20530-1	GA0232.D	1	01/21/11	BR	n/a	n/a	GGA555

The QC reported here applies to the following samples: Method: SW846 8015B

D20524-1, D20524-2

CAS No.	Compound	D20530-1 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.03	92	1.94	88	5	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D20530-1	Limits
120-82-1	1,2,4-Trichlorobenzene	114%	114%	111%	60-140%

7.3.1
7

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012011\GA0235.D\FID1A.CH Vial: 21
Signal #2 : Z:\012011\GA0235.D\FID2B.CH
Acq On : 21 Jan 2011 4:23 am Operator: BrianR
Sample : D20524-1 Inst : BTEX2
Misc : GC1616,GGA555,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 21 10:31:23 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jan 19 14:39:52 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

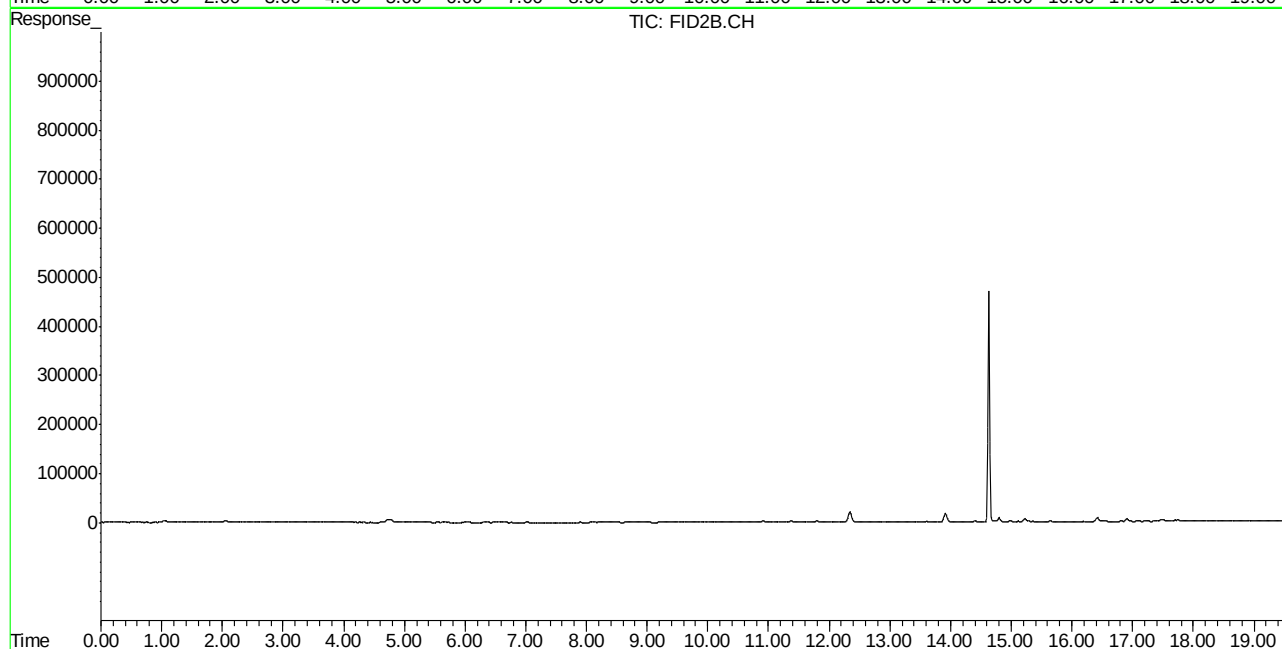
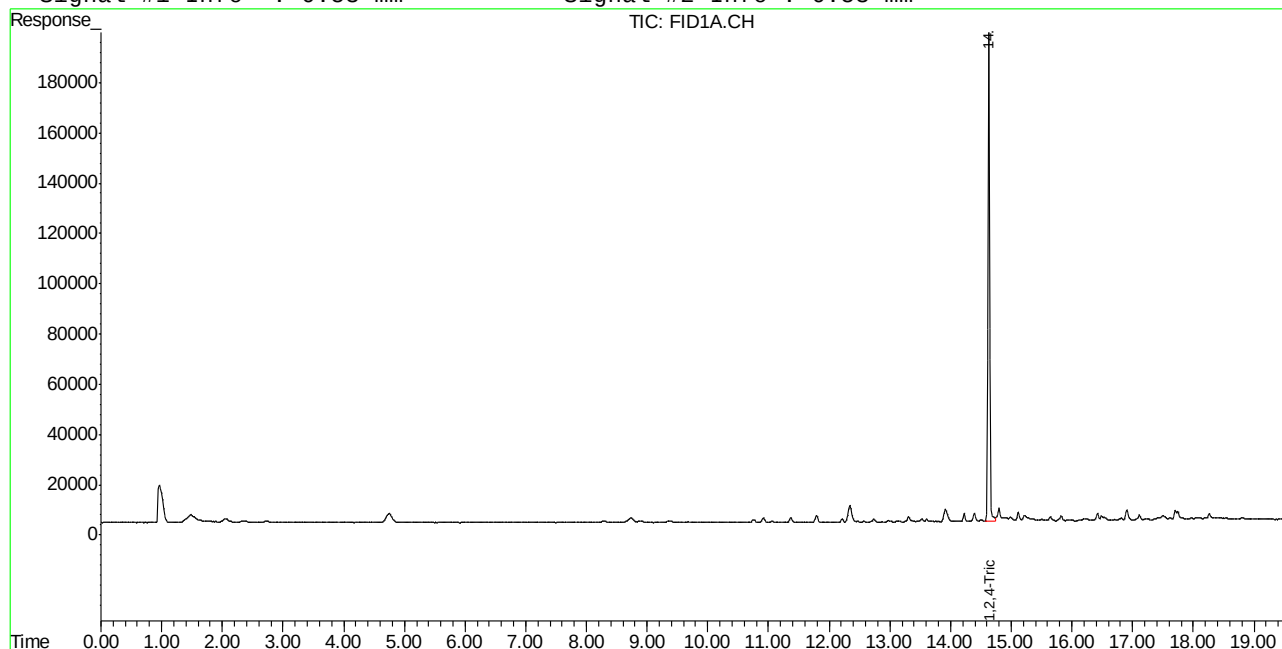
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.63	3898536	106.411 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

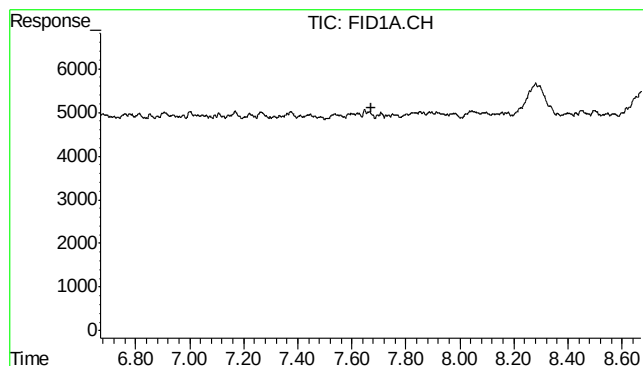
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012011\GA0235.D\FID1A.CH Vial: 21
Signal #2 : Z:\012011\GA0235.D\FID2B.CH
Acq On : 21 Jan 2011 4:23 am Operator: BrianR
Sample : D20524-1 Inst : BTEX2
Misc : GC1616,GGA555,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 21 8:35 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jan 19 14:39:52 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

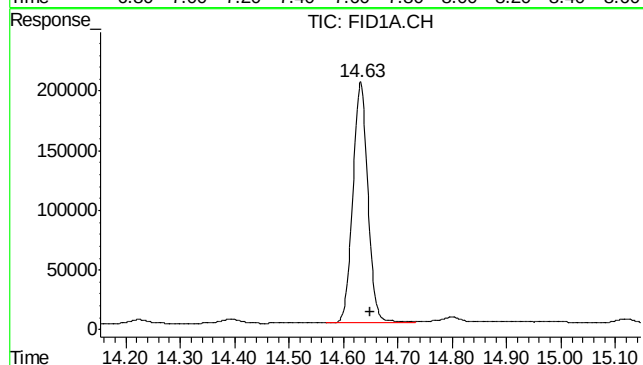
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





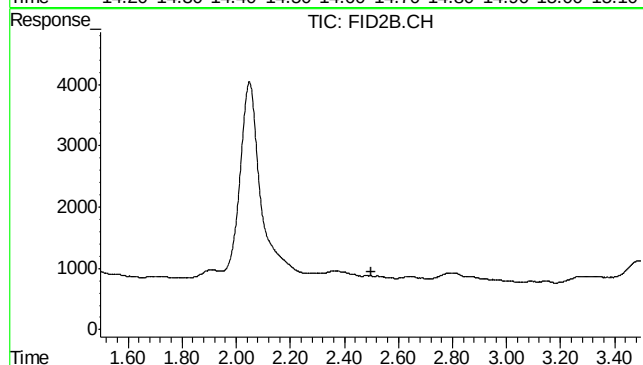
#1 TVH-Gasoline

R.T.: 0.000 min
Exp R.T.: 7.670 min
Response: 0
Conc: N.D.



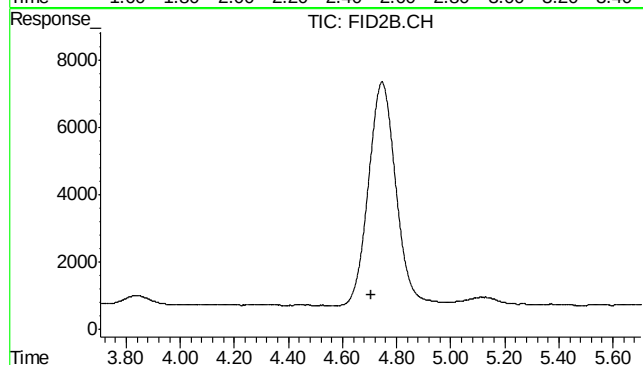
#2 1,2,4-Trichlorobenzene

R.T.: 14.632 min
Delta R.T.: -0.018 min
Response: 3898536
Conc: 106.41 %



#4 Methyl-t-butyl-ether

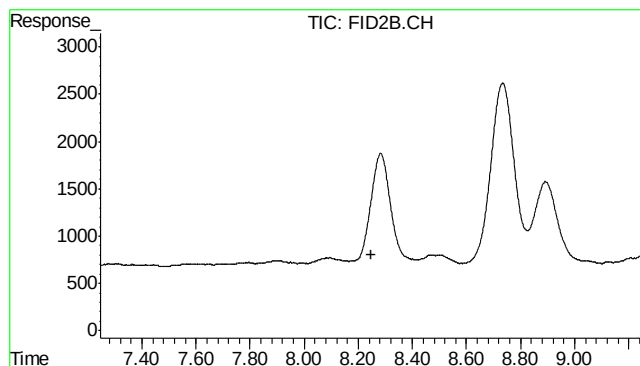
R.T.: 0.000 min
Exp R.T.: 2.498 min
Response: 0
Conc: N.D.



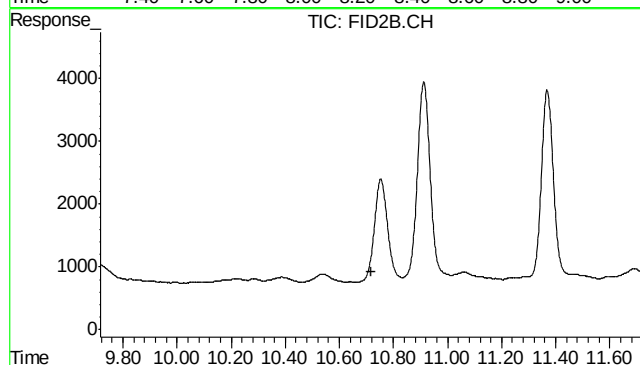
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.704 min
Response: 0
Conc: N.D.

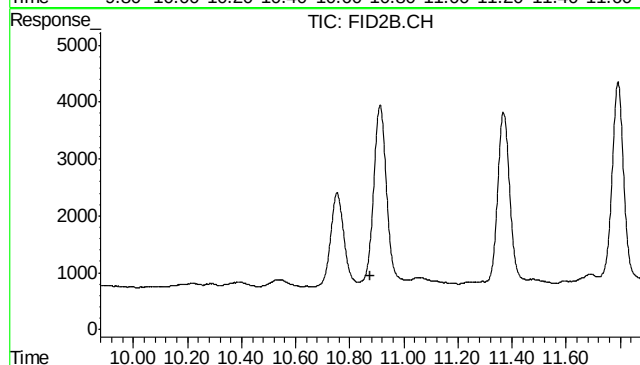
8.1.1
8



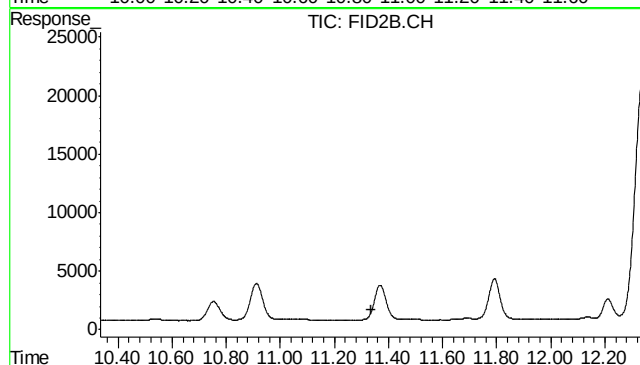
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.246 min
 Response: 0
 Conc: N.D.



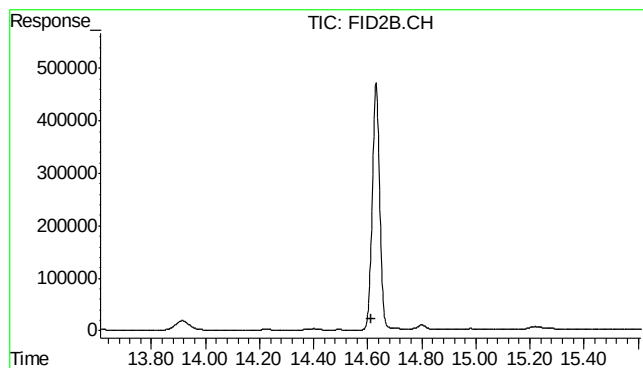
#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.716 min
 Response: 0
 Conc: N.D.



#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.877 min
 Response: 0
 Conc: N.D.

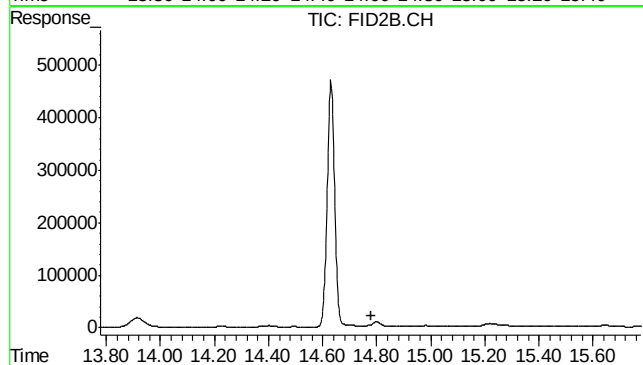


#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.335 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.611 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.778 min
Response: 0
Conc: N.D.

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012011\GA0236.D\FID1A.CH Vial: 22
Signal #2 : Z:\012011\GA0236.D\FID2B.CH
Acq On : 21 Jan 2011 4:58 am Operator: BrianR
Sample : D20524-2 Inst : BTEX2
Misc : GC1616,GGA555,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 21 10:31:26 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jan 19 14:39:52 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

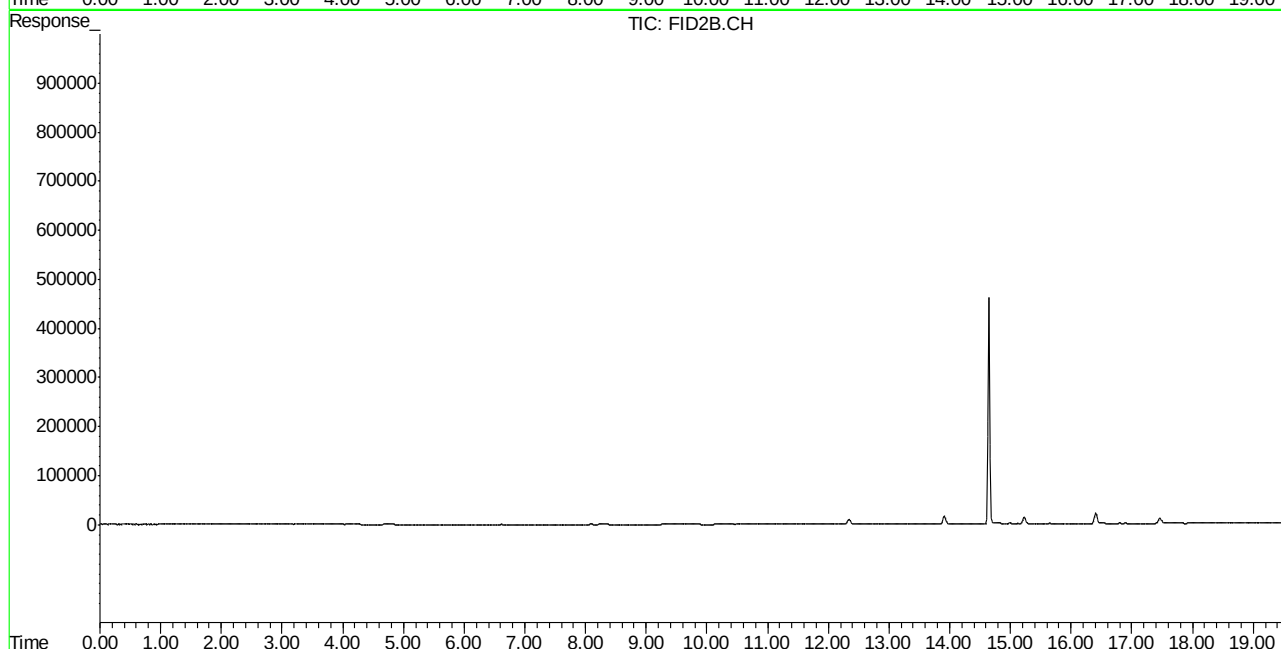
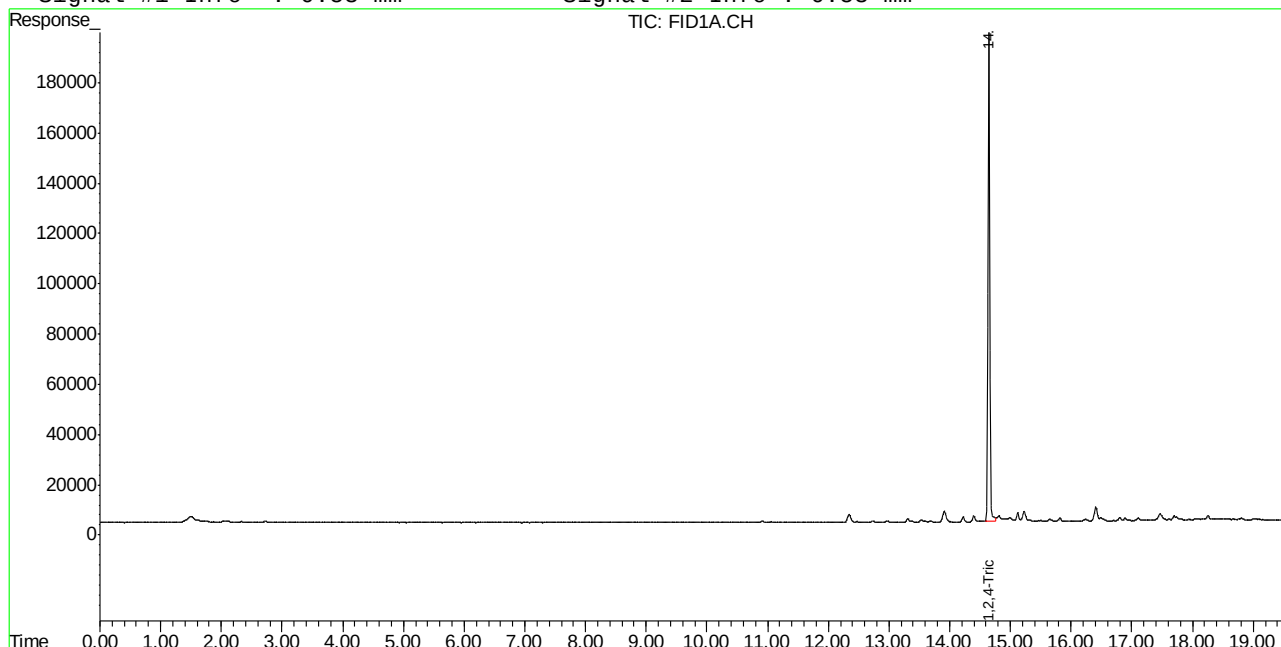
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.65	3934501	107.393 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

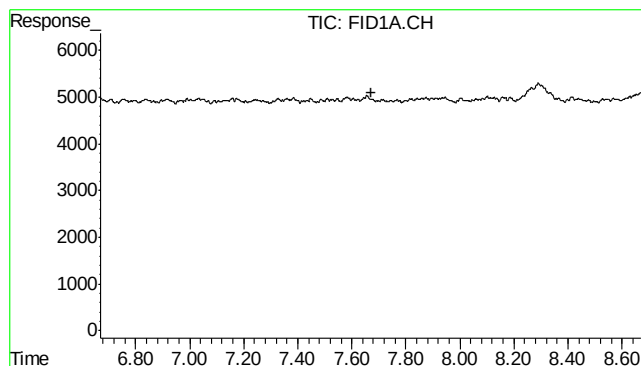
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012011\GA0236.D\FID1A.CH Vial: 22
 Signal #2 : Z:\012011\GA0236.D\FID2B.CH
 Acq On : 21 Jan 2011 4:58 am Operator: BrianR
 Sample : D20524-2 Inst : BTEX2
 Misc : GC1616,GGA555,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 21 8:35 2011 Quant Results File: TA582GA534.RES

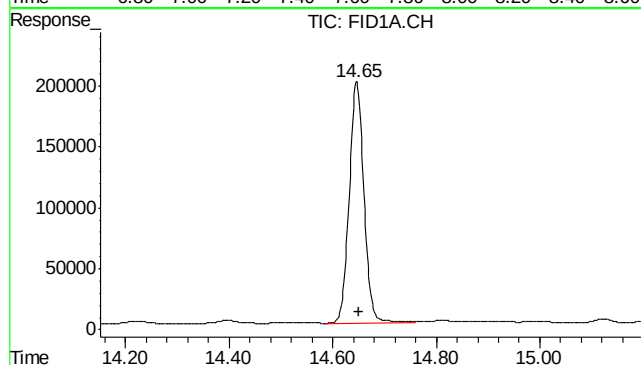
Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed Jan 19 14:39:52 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

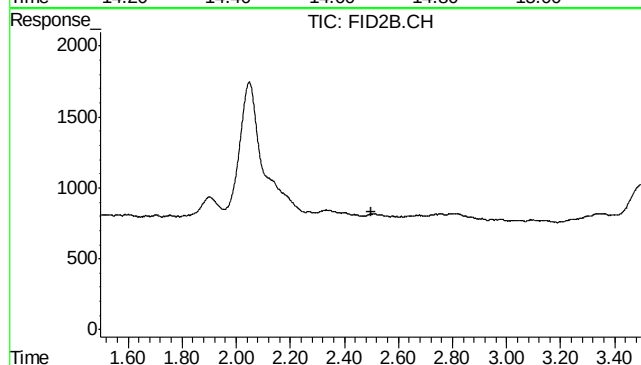




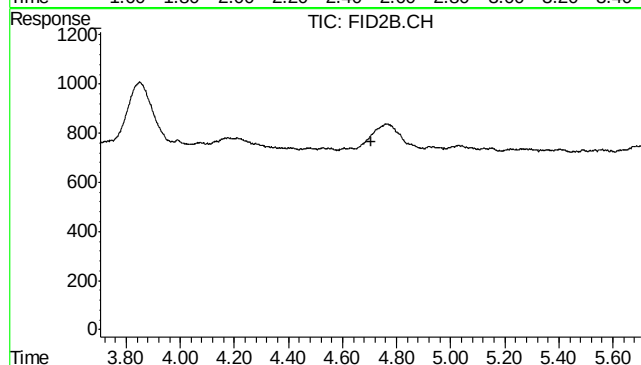
#1 TVH-Gasoline
 R.T.: 0.000 min
 Exp R.T.: 7.670 min
 Response: 0
 Conc: N.D.



#2 1,2,4-Trichlorobenzene
 R.T.: 14.647 min
 Delta R.T.: -0.003 min
 Response: 3934501
 Conc: 107.39 %

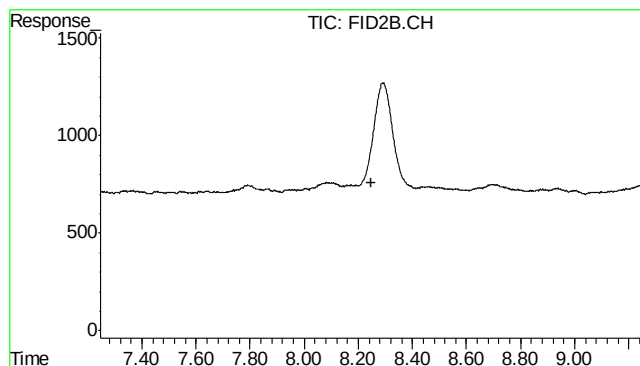


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.498 min
 Response: 0
 Conc: N.D.

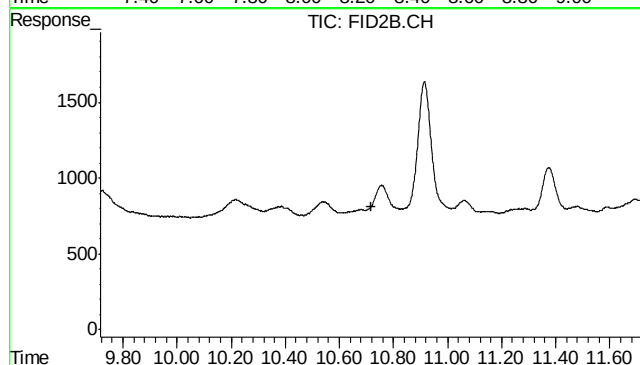


#5 Benzene
 R.T.: 0.000 min
 Exp R.T.: 4.704 min
 Response: 0
 Conc: N.D.

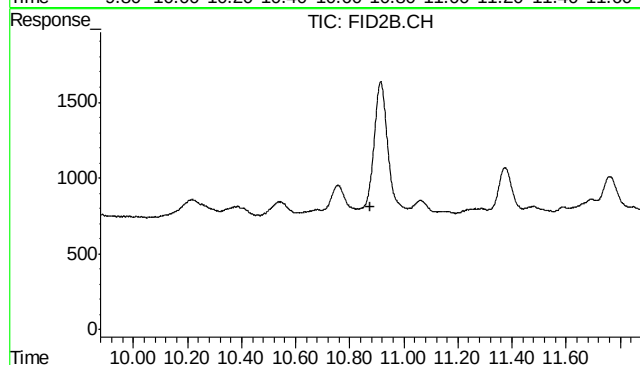
8.1.2
8



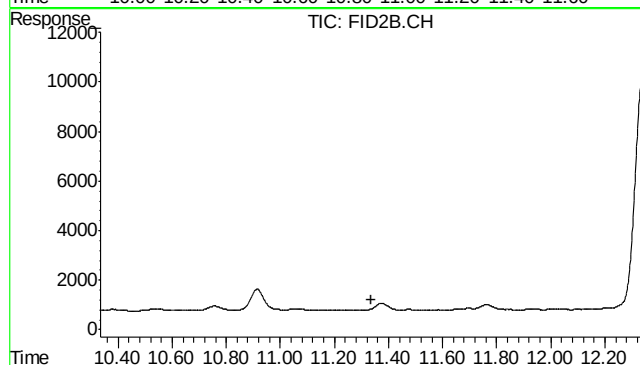
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.246 min
 Response: 0
 Conc: N.D.



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.716 min
 Response: 0
 Conc: N.D.

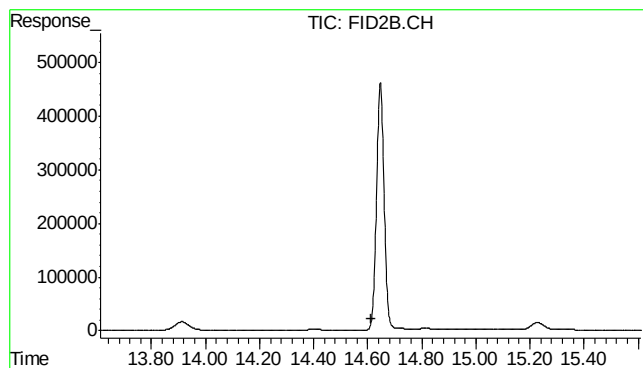


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.877 min
 Response: 0
 Conc: N.D.



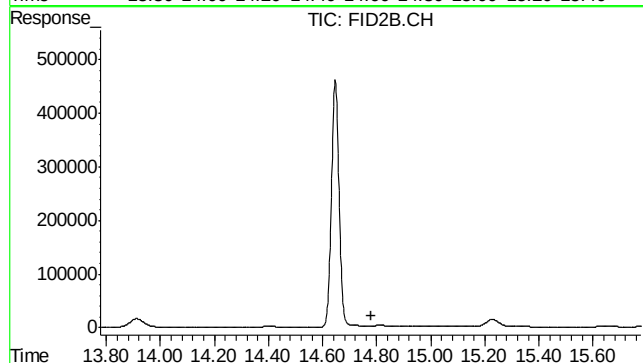
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.335 min
 Response: 0
 Conc: N.D.

8.1.2
 8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.611 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.778 min
 Response: 0
 Conc: N.D.

8.1.2
8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012011\GA0230.D\FID1A.CH Vial: 16
Signal #2 : Z:\012011\GA0230.D\FID2B.CH
Acq On : 21 Jan 2011 1:26 am Operator: BrianR
Sample : MB, W Inst : BTEX2
Misc : GC1616,GGA555,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 21 10:31:08 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jan 19 14:39:52 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.64	4045764	110.430 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

(f)=RT Delta > 1/2 Window

GA0230.D TA582GA534.M

Fri Jan 21 10:44:15 2011

(m)=manual int.

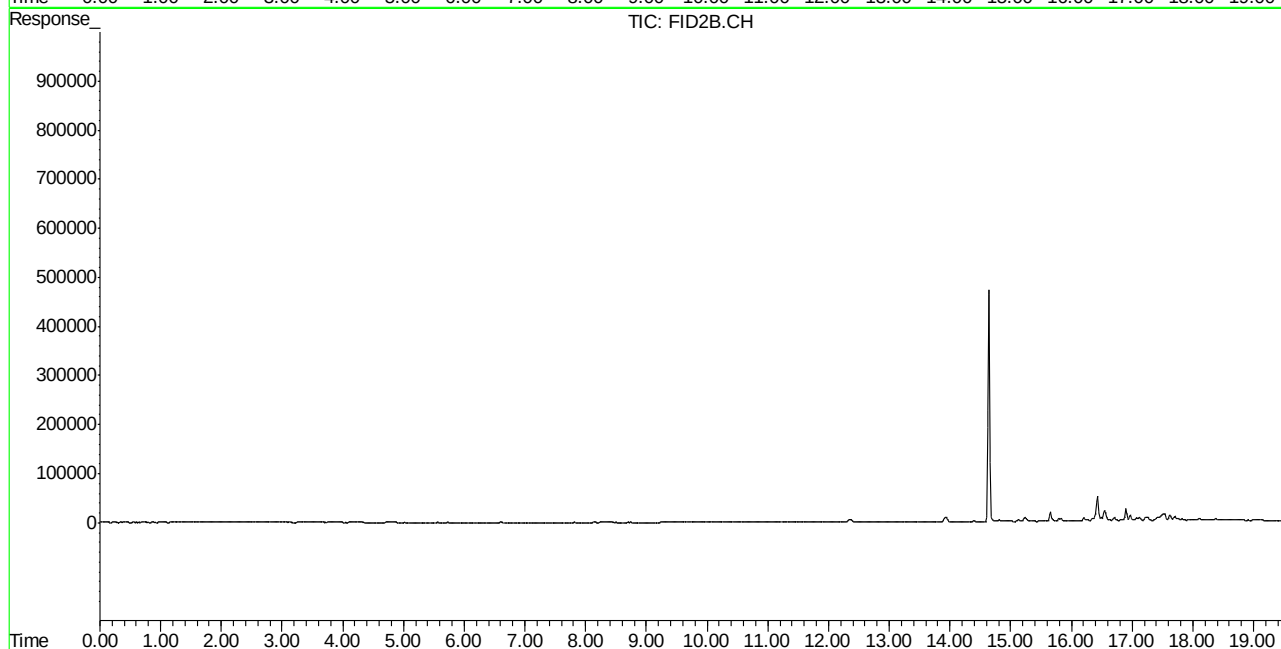
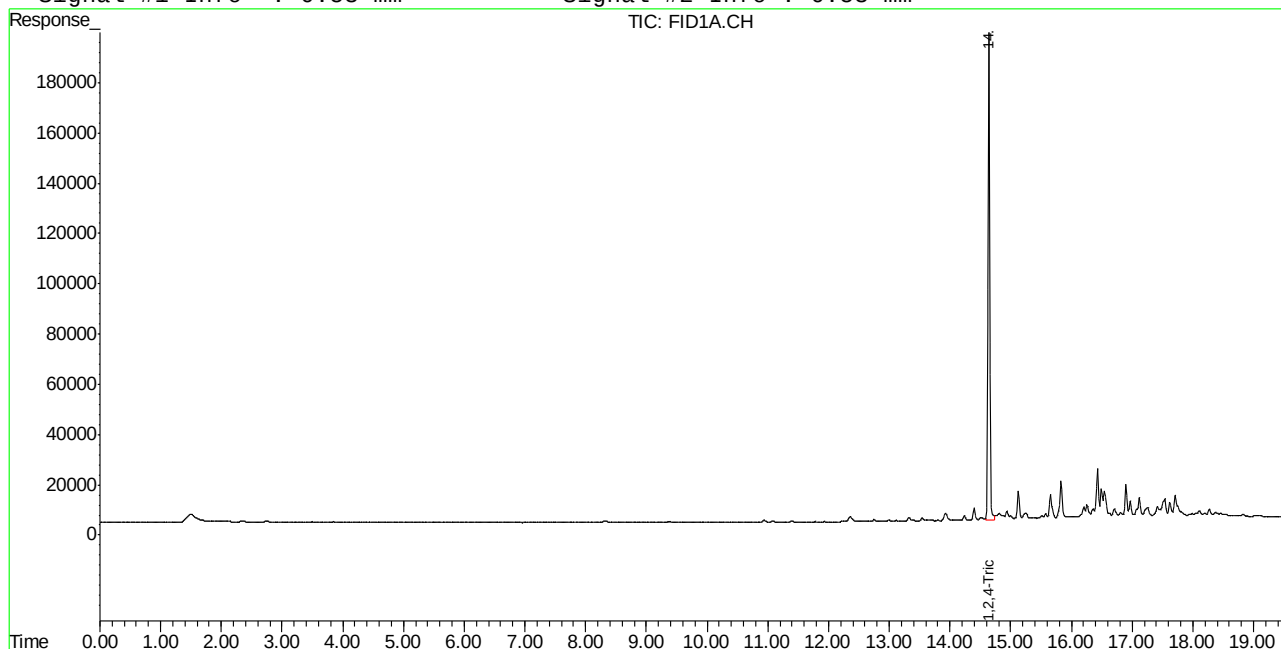
GC

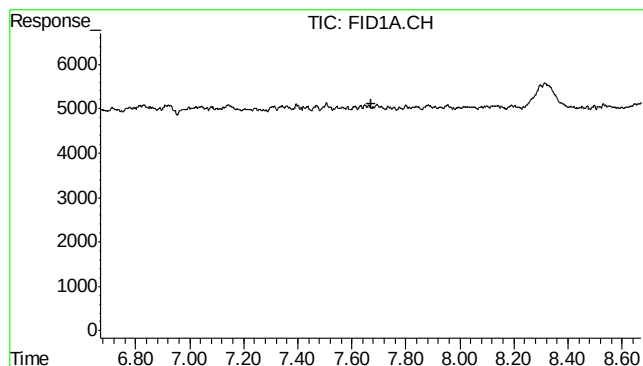
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012011\GA0230.D\FID1A.CH Vial: 16
Signal #2 : Z:\012011\GA0230.D\FID2B.CH
Acq On : 21 Jan 2011 1:26 am Operator: BrianR
Sample : MB, W Inst : BTEX2
Misc : GC1616,GGA555,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 21 8:32 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jan 19 14:39:52 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

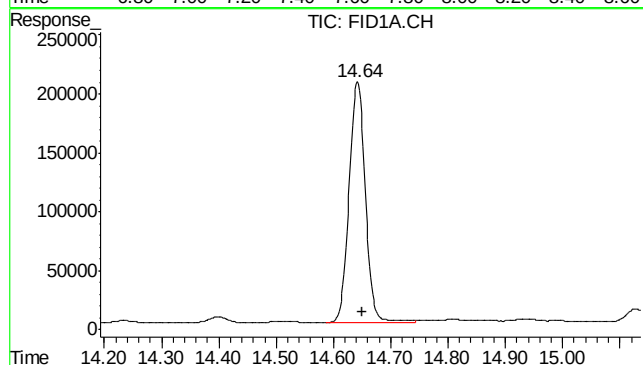
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





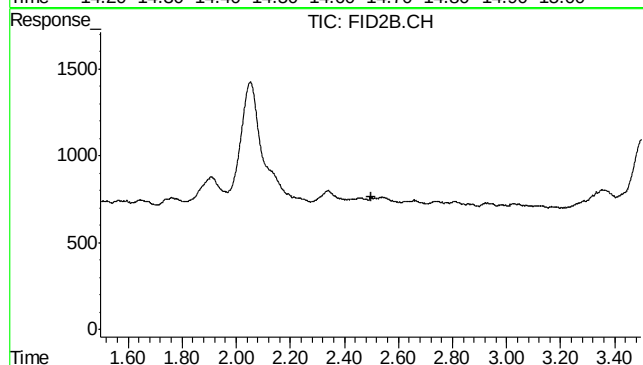
#1 TVH-Gasoline

R.T.: 0.000 min
Exp R.T.: 7.670 min
Response: 0
Conc: N.D.



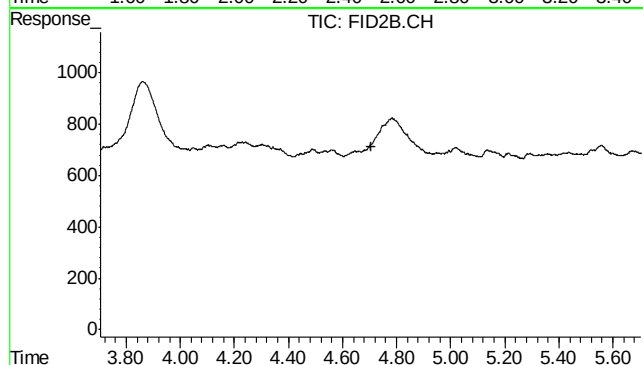
#2 1,2,4-Trichlorobenzene

R.T.: 14.642 min
Delta R.T.: -0.008 min
Response: 4045764
Conc: 110.43 %



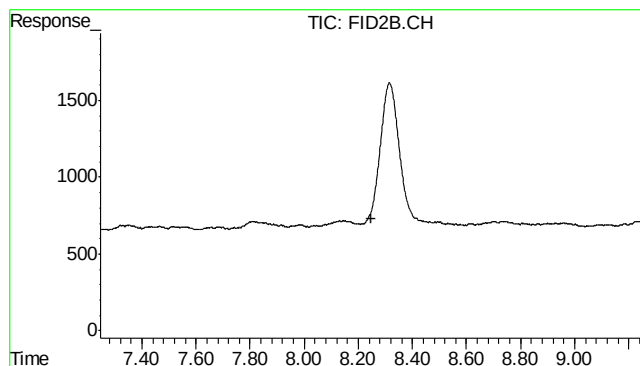
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.498 min
Response: 0
Conc: N.D.



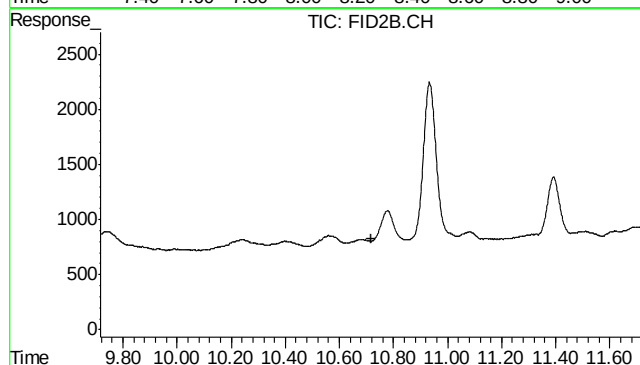
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.704 min
Response: 0
Conc: N.D.



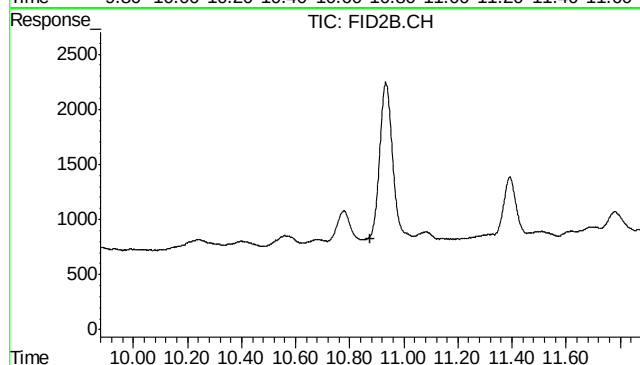
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.246 min
Response: 0
Conc: N.D.



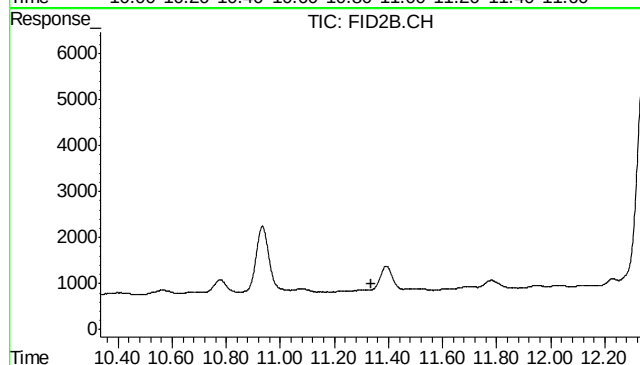
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.716 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

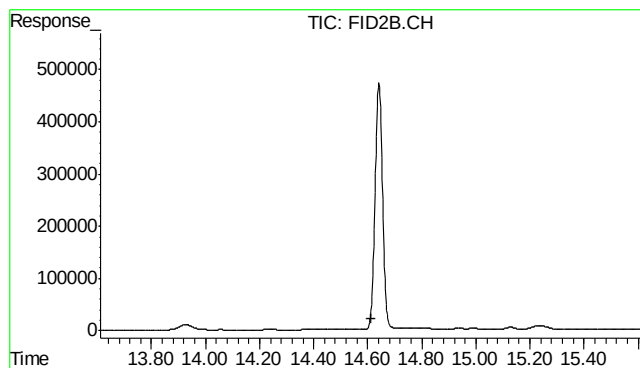
R.T.: 0.000 min
Exp R.T. : 10.877 min
Response: 0
Conc: N.D.



#9 o-Xylene

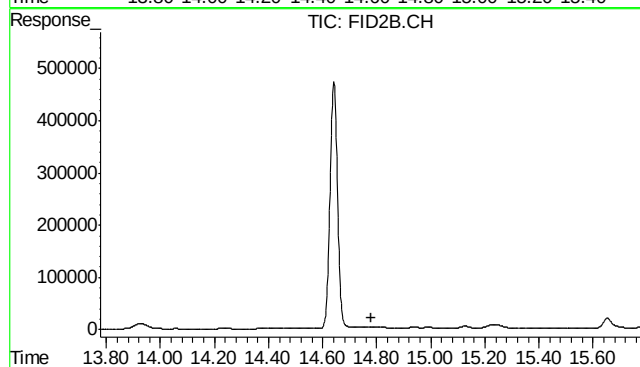
R.T.: 0.000 min
Exp R.T. : 11.335 min
Response: 0
Conc: N.D.

8.2.1
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.611 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.778 min
Response: 0
Conc: N.D.

82.1
8

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3853
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/20/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	7	10		
Antimony	30	1.7	1.4		
Arsenic	25	2.8	3.6		
Barium	10	.14	.46	-0.10	<10
Beryllium	10	1.4	.57		
Boron	50	3.5	1.4		
Cadmium	10	.22	.46		
Calcium	400	17	51	5.1	<400
Chromium	10	.27	.18		
Cobalt	5.0	.48	.4		
Copper	5.0	1.6	.76		
Iron	70	7.7	8	-2.8	<70
Lead	50	1.3	1.2		
Lithium	2.0	.76	1.6		
Magnesium	200	5.8	13	-3.0	<200
Manganese	5.0	.21	.3	0.0	<5.0
Molybdenum	10	.41	.64		
Nickel	30	.38	.3		
Phosphorus	100	15	15		
Potassium	1000	380	140	28.3	<1000
Selenium	50	2.8	1.5		
Silicon	50	12	13		
Silver	30	.98	.3		
Sodium	400	230	55	-13	<400
Strontium	5.0	.091	.22	0.0	<5.0
Thallium	10	3.1	2.3		
Tin	50	14	9.9		
Titanium	10	.098	.15		
Uranium	50	2.2	2.5		
Vanadium	10	.27	.25		
Zinc	30	.76	3.5		

Associated samples MP3853: D20524-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3853
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3853
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/20/11

Metal	D20508-1 Original MS		SpikeLot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	125	2110	2000	99.5	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium	167000	191000	25000	96.0	70-130
Chromium	anr				
Cobalt					
Copper	anr				
Iron	18.1	5050	5000	100.6	70-130
Lead	anr				
Lithium					
Magnesium	14800	42300	25000	110.0	70-130
Manganese	0.0	476	500	95.1	70-130
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	8610	37100	25000	114.3	70-130
Selenium					
Silicon					
Silver					
Sodium	115000	144000	25000	116.0	70-130
Strontium	1040	1560	500	104.0	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP3853: D20524-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3853
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3853
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/20/11

Metal	D20508-1 Original	MSD	Spikelet MPICALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	125	2060	2000	97.0	2.4	20
Beryllium						
Boron						
Cadmium	anr					
Calcium	167000	194000	25000	108.0	1.6	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	18.1	4970	5000	99.0	1.6	20
Lead	anr					
Lithium						
Magnesium	14800	42100	25000	109.2	0.5	20
Manganese	0.0	472	500	94.3	0.8	20
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	8610	36700	25000	112.7	1.1	20
Selenium						
Silicon						
Silver						
Sodium	115000	146000	25000	124.0	0.0	20
Strontium	1040	1580	500	108.0	1.3	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP3853: D20524-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3853
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20524
 Account: GEOTCOL - Geotrans, Inc.
 Project: Garfield County

QC Batch ID: MP3853
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 01/20/11

Metal	BSP Result	Spike lot MPICALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	1940	2000	97.0	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium	27400	25000	109.6	85-115
Chromium	anr			
Cobalt				
Copper	anr			
Iron	4970	5000	99.4	85-115
Lead	anr			
Lithium				
Magnesium	26700	25000	106.8	85-115
Manganese	485	500	97.0	85-115
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	27500	25000	110.0	85-115
Selenium				
Silicon				
Silver				
Sodium	27300	25000	109.2	85-115
Strontium	515	500	103.0	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP3853: D20524-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3853
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO ₃	GN7960	5.0	3.1	mg/l	100	102	102.1	90-110%
Chloride	GP3631/GN7967	0.50	0.20	mg/l	20	19.9	99.5	90-110%
Hydrogen Sulfide	GN7977	0.50	<0.50	mg/l	2.74	2.6	94.9	60-120%
Iron, Ferrous	GN7953	0.10	0.0	mg/l	1.0	0.98	98.0	85-115%
Nitrogen, Ammonia	GP3629/GN7966	0.10	<0.10	mg/l	20	21.3	106.7	90-110%
Nitrogen, Nitrate	GP3631/GN7967	0.045	0.0	mg/l	4.52	4.43	98.1	90-110%
Nitrogen, Nitrite	GP3631/GN7967	0.061	0.0	mg/l	6.09	6.14	100.8	90-110%
Solids, Total Dissolved	GN8008	10	0.0	mg/l	400	410	102.5	90-110%
Sulfate	GP3631/GN7967	0.50	0.0	mg/l	30	30.0	100.0	90-110%

Associated Samples:

Batch GN7953: D20524-1F

Batch GN7960: D20524-1

Batch GN7977: D20524-1

Batch GN8008: D20524-1

Batch GP3629: D20524-1

Batch GP3631: D20524-1

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN7960	D20529-1	mg/l	61.9	62.6	1.1	0-20%
Hydrogen Sulfide	GN7977	D20524-1	mg/l	<0.50	<0.50	6.2	0-20%
Iron, Ferrous	GN7953	D20524-1F	mg/l	0.0	0.0	0.0	0-20%
Nitrogen, Ammonia	GP3629/GN7966	D20461-1	mg/l	3.4	3.4	0.0	0-20%
Solids, Total Dissolved	GN8008	D20552-1	mg/l	1740	1730	0.6	0-25%

Associated Samples:

Batch GN7953: D20524-1F

Batch GN7960: D20524-1

Batch GN7977: D20524-1

Batch GN8008: D20524-1

Batch GP3629: D20524-1

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN7960	D20529-1	mg/l	61.9	100	158	96.1	80-120%
Chloride	GP3631/GN7967	D20519-1	mg/l	7.4	20	26.0	83.5	80-120%
Chloride	GP3631/GN7967	D20519-1	mg/l	9.3	20	26.0	83.5	80-120%
Hydrogen Sulfide	GN7977	D20461-1	mg/l	1.1	2.74	2.0	65.7	60-120%
Iron, Ferrous	GN7953	D20524-1F	mg/l	0.0	1.0	0.91	91.0 (a)	75-125%
Nitrogen, Ammonia	GP3629/GN7966	D20461-1	mg/l	3.4	10	12.5	90.9	80-120%
Nitrogen, Nitrate	GP3631/GN7967	D20519-1	mg/l	4.7	5.65	9.8	90.3	80-120%
Nitrogen, Nitrite	GP3631/GN7967	D20519-1	mg/l	0.11	0.609	0.65	88.7	80-120%

Associated Samples:

Batch GN7953: D20524-1F

Batch GN7960: D20524-1

Batch GN7977: D20524-1

Batch GP3629: D20524-1

Batch GP3631: D20524-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Sample required diluting for matrix spike due to sulfide interference.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20524
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN7960	D20529-1	mg/l	61.9	100	161	1.6	20%
Chloride	GP3631/GN7967	D20519-1	mg/l	7.4	20	26.2	0.8	20%
Chloride	GP3631/GN7967	D20519-1	mg/l	9.3	20	26.2	0.8	20%
Nitrogen, Ammonia	GP3629/GN7966	D20461-1	mg/l	3.4	10	12.4	0.8	20%
Nitrogen, Nitrate	GP3631/GN7967	D20519-1	mg/l	4.7	5.65	9.7	1.0	20%
Nitrogen, Nitrite	GP3631/GN7967	D20519-1	mg/l	0.11	0.609	0.64	1.6	20%

Associated Samples:

Batch GN7960: D20524-1

Batch GP3629: D20524-1

Batch GP3631: D20524-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.4
10



02/02/11

Technical Report for

Geotrans, Inc.

Garfield County

Accutest Job Number: D20552

Sampling Date: 01/20/11

Report to:

Geotrans, Inc.
363 Centennial Parkway, Suite 210
Louisville, CO 80027
brendan.shine@geotransinc.com; david.bohmann@geotransinc.com
ATTN: Brendan Shine

Total number of pages in report: **134**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'J. Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

Geotrans, Inc.

Job No: D20552

Garfield County

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D20552-1	01/20/11	09:02 KT	01/21/11	AQ	Ground Water	MW-2A_012011
D20552-1F	01/20/11	09:02 KT	01/21/11	AQ	Groundwater Filtered	MW-2A_012011
D20552-2	01/20/11	09:52 KT	01/21/11	AQ	Ground Water	MW-99-A_012011
D20552-2F	01/20/11	09:52 KT	01/21/11	AQ	Groundwater Filtered	MW-99-A_012011
D20552-3	01/20/11	13:11 KT	01/21/11	AQ	Ground Water	MW-3A_012011
D20552-3F	01/20/11	13:11 KT	01/21/11	AQ	Groundwater Filtered	MW-3A_012011
D20552-4	01/20/11	00:00 KT	01/21/11	AQ	Trip Blank Water	TRIP BLANK 02_012011

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Geotrans, Inc.**Job No** D20552**Site:** Garfield County**Report Date** 2/2/2011 8:58:19 AM

On 01/21/2011, 3 sample(s), 1 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.5 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D20552 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ**Batch ID:** V3V473

- All samples were analyzed within the recommended method holding time.
- Sample(s) D20552-1MS, D20552-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of Vinyl Acetate are outside control limits. Compound ND in associated samples.
- The matrix spike (MS) and matrix spike duplicate (MSD) recovery(s) of Vinyl Acetate, 2-Chloroethyl vinyl ether are outside control limits. Vinyl Acetate probable cause due to matrix interference. Recovery of 2-chloroethyl vinyl ether is affected by sample preservation.

Volatiles by GC By Method SW846 8015B

Matrix AQ**Batch ID:** GGA557

- All samples were analyzed within the recommended method holding time.
- Sample(s) D20552-3MS, D20552-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method EPA 200.7

Matrix AQ**Batch ID:** MP3878

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D20552-1FMS, D20552-1FMSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ**Batch ID:** GP3641

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D20546-1MS, D20546-1MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D20552-1, D20552-2, and D20552-3 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.

Wet Chemistry By Method HACH 8146

Matrix AQ

Batch ID: GN7987

- All method blanks for this batch meet method specific criteria.
- Sample(s) D20552-1FDUP, D20552-3FMS were used as the QC samples for the Iron, Ferrous analysis.
- The following samples were run outside of holding time for method HACH 8146: D20552-1F, D20552-2F, D20552-3F
- The matrix spike (MS) recovery(s) of Iron, Ferrous are outside control limits. Spike recovery indicates possible matrix interference, even with the sample diluted.
- D20552-3F for Iron, Ferrous: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ

Batch ID: R6057

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D20552-1F
- D20552-1F for Iron, Ferric: Calculated as: (Iron) - (Iron, Ferrous)

Matrix AQ

Batch ID: R6059

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D20552-3F
- D20552-3F for Iron, Ferric: Calculated as: (Iron) - (Iron, Ferrous)

Matrix AQ

Batch ID: R6060

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D20552-2F
- D20552-2F for Iron, Ferric: Calculated as: (Iron) - (Iron, Ferrous)

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN8039

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D20552-1DUP, D20552-1MS, D20552-1MSD were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN8008

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D20552-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ

Batch ID: GN8009

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D20552-1DUP, D20552-2MS were used as the QC samples for the Hydrogen Sulfide analysis.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ

Batch ID: GP3663

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D20552-1DUP, D20552-1MS, D20552-1MSD were used as the QC samples for the Nitrogen, Ammonia analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: MW-2A_012011

Lab Sample ID: D20552-1

Date Sampled: 01/20/11

Matrix: AQ - Ground Water

Date Received: 01/21/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08636.D	1	01/24/11	DC	n/a	n/a	V3V473
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	11.5	10	4.0	ug/l	J
71-43-2	Benzene	0.30	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	3.3	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2A_012011

Lab Sample ID: D20552-1

Date Sampled: 01/20/11

Matrix: AQ - Ground Water

Date Received: 01/21/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	85%		63-130%
2037-26-5	Toluene-D8	94%		68-130%
460-00-4	4-Bromofluorobenzene	89%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.44	41	ug/l	JN
	Total TIC, Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	MW-2A_012011	Date Sampled:	01/20/11
Lab Sample ID:	D20552-1	Date Received:	01/21/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0264.D	1	01/22/11	BR	n/a	n/a	GGA557
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	103%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2A_012011	Date Sampled: 01/20/11
Lab Sample ID: D20552-1	Date Received: 01/21/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Garfield County	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	76.7	5.0	mg/l	1	01/27/11	JK	SM20 2320B
Chloride	858	25	mg/l	50	01/21/11 16:44	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	01/25/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	0.62	0.10	mg/l	1	01/26/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	01/21/11 14:06	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 3.1	3.1	mg/l	50	01/21/11 16:44	JML	EPA 300/SW846 9056
Solids, Total Dissolved	1740	10	mg/l	1	01/25/11	CJ	SM20 2540C
Sulfate	154	5.0	mg/l	10	01/21/11 17:42	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-2A_012011**Lab Sample ID:** D20552-1F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 01/20/11**Date Received:** 01/21/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	276	10	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Calcium	33500	400	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Iron	< 70	70	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	< 200	200	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 5.0	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Potassium	2230	1000	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Sodium	583000	400	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Strontium	843	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1272

(2) Prep QC Batch: MP3878

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-2A_012011	Date Sampled:	01/20/11
Lab Sample ID:	D20552-1F	Date Received:	01/21/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.17	0.17	mg/l	1	01/25/11 17:56	JM	SM18 3500FED M
Iron, Ferrous	< 0.10	0.10	mg/l	1	01/22/11 08:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	MW-99-A_012011	Date Sampled:	01/20/11
Lab Sample ID:	D20552-2	Date Received:	01/21/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08639.D	1	01/24/11	DC	n/a	n/a	V3V473
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	4.3	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	3.4	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-99-A_012011
Lab Sample ID: D20552-2
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: Garfield County

Date Sampled: 01/20/11
Date Received: 01/21/11
Percent Solids: n/a

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	89%		63-130%
2037-26-5	Toluene-D8	94%		68-130%
460-00-4	4-Bromofluorobenzene	87%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.44	55	ug/l	JN
420-56-4	Silane, fluorotrimethyl-	6.47	6	ug/l	JN
2346-00-1	Thiazole, 4,5-dihydro-2-methyl-	10.73	5.8	ug/l	JN
74779-61-6	3,8-Dioxa-2,9-disiladecane, 2,2,9,9-tetr	19.83	5.3	ug/l	JN
	Total TIC, Volatile		17.1	ug/l	J

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID: MW-99-A_012011
Lab Sample ID: D20552-2
Matrix: AQ - Ground Water
Method: SW846 8015B
Project: Garfield County

Date Sampled: 01/20/11
Date Received: 01/21/11
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0263.D	1	01/21/11	BR	n/a	n/a	GGA557
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	102%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-99-A_012011
Lab Sample ID: D20552-2
Matrix: AQ - Ground Water
Project: Garfield County

Date Sampled: 01/20/11
Date Received: 01/21/11
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	76.1	5.0	mg/l	1	01/27/11	JK	SM20 2320B
Chloride	857	25	mg/l	50	01/21/11 16:59	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	01/25/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	0.67	0.10	mg/l	1	01/26/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	01/21/11 14:20	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 3.1	3.1	mg/l	50	01/21/11 16:59	JML	EPA 300/SW846 9056
Solids, Total Dissolved	1700	10	mg/l	1	01/25/11	CJ	SM20 2540C
Sulfate	154	5.0	mg/l	10	01/21/11 17:56	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-99-A_012011**Lab Sample ID:** D20552-2F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 01/20/11**Date Received:** 01/21/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	272	10	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Calcium	32500	400	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Iron	< 70	70	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	< 200	200	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 5.0	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Potassium	2150	1000	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Sodium	566000	400	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²
Strontium	818	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1272

(2) Prep QC Batch: MP3878

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-99-A_012011	Date Sampled:	01/20/11
Lab Sample ID:	D20552-2F	Date Received:	01/21/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.17	0.17	mg/l	1	01/25/11 18:24	JM	SM18 3500FED M
Iron, Ferrous	< 0.10	0.10	mg/l	1	01/22/11 08:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

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Client Sample ID:	MW-3A_012011	Date Sampled:	01/20/11
Lab Sample ID:	D20552-3	Date Received:	01/21/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08640.D	1	01/24/11	DC	n/a	n/a	V3V473
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	45.2	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	2.8	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	2.2	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	6.5	10	2.5	ug/l	J
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3A_012011**Lab Sample ID:** D20552-3**Date Sampled:** 01/20/11**Matrix:** AQ - Ground Water**Date Received:** 01/21/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	85%		63-130%
2037-26-5	Toluene-D8	94%		68-130%
460-00-4	4-Bromofluorobenzene	87%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
74-99-7	1-Propyne	4.31	5.3	ug/l	JN
124-38-9	Carbon dioxide	4.44	58	ug/l	JN
	Total TIC, Volatile		5.3	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	MW-3A_012011	Date Sampled:	01/20/11
Lab Sample ID:	D20552-3	Date Received:	01/21/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0260.D	1	01/21/11	BR	n/a	n/a	GGA557
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	114%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3A_012011**Lab Sample ID:** D20552-3**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 01/20/11**Date Received:** 01/21/11**Percent Solids:** n/a**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	2150	5.0	mg/l	1	01/27/11	JK	SM20 2320B
Chloride	2620	50	mg/l	100	01/21/11 17:13	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	01/25/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	2.9	0.10	mg/l	1	01/26/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.090	0.090	mg/l	2	01/21/11 14:35	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 6.1	6.1	mg/l	100	01/21/11 17:13	JML	EPA 300/SW846 9056
Solids, Total Dissolved	7500	10	mg/l	1	01/25/11	CJ	SM20 2540C
Sulfate	29.1	5.0	mg/l	10	01/21/11 18:11	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-3A_012011**Lab Sample ID:** D20552-3F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 01/20/11**Date Received:** 01/21/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	5600	10	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Calcium	620000	400	ug/l	1	01/24/11	01/26/11 JM	EPA 200.7 ²	EPA 200.7 ³
Iron	79.5	70	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	< 200	200	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Manganese	< 5.0	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Potassium	55700	1000	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Sodium	1830000	4000	ug/l	10	01/24/11	01/26/11 JM	EPA 200.7 ²	EPA 200.7 ³
Strontium	14700	50	ug/l	10	01/24/11	01/26/11 JM	EPA 200.7 ²	EPA 200.7 ³

(1) Instrument QC Batch: MA1272

(2) Instrument QC Batch: MA1274

(3) Prep QC Batch: MP3878

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-3A_012011	Date Sampled:	01/20/11
Lab Sample ID:	D20552-3F	Date Received:	01/21/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 2.6	2.6	mg/l	1	01/25/11 18:34	JM	SM18 3500FED M
Iron, Ferrous ^b	< 2.5	2.5	mg/l	25	01/22/11 08:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: TRIP BLANK 02_012011
Lab Sample ID: D20552-4
Matrix: AQ - Trip Blank Water
Method: SW846 8260B
Project: Garfield County

Date Sampled: 01/20/11
Date Received: 01/21/11
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08641.D	1	01/24/11	DC	n/a	n/a	V3V473
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIP BLANK 02_012011**Lab Sample ID:** D20552-4**Date Sampled:** 01/20/11**Matrix:** AQ - Trip Blank Water**Date Received:** 01/21/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	90%		63-130%
2037-26-5	Toluene-D8	93%		68-130%
460-00-4	4-Bromofluorobenzene	87%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
107-21-1	1,2-Ethanediol	4.32	5.8	ug/l	JN
124-38-9	Carbon dioxide	4.44	38	ug/l	JN
18294-04-7	Ethanedioic acid, bis(trimethylsilyl) es	14.82	5.9	ug/l	JN
	Total TIC, Volatile		11.7	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	TRIP BLANK 02_012011			Date Sampled:	01/20/11		
Lab Sample ID:	D20552-4			Date Received:	01/21/11		
Matrix:	AQ - Trip Blank Water			Percent Solids:	n/a		
Method:	SW846 8015B						
Project:	Garfield County						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0265.D	1	01/22/11	BR	n/a	n/a	GGA557
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	105%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

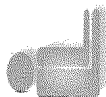
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.accutest.com

9606 6080 3040 +
Bottle Order Control #
Accutest Job # D20552

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Codes																							
Company Name GeoTrans Inc		Project Name Garfield County																																			
Street Address 363 Centennial Parkway Suite 210		Street																																			
City Louisville, CO		City																																			
Project Contact Brendan Shine or David Bohmann		Project #																																			
Phone # 303-665-4390		Client Purchase Order #																																			
Sampler(s) Name(s) Karl Thompson		Project Manager David Bohmann																																			
		Attention: David Bohmann																																			
Field ID / Point of Collection		MEOHDI Vial #		Collection		Sampled by		Matrix		# of bottles		Number of preserved bottles		Alkalinity, TDS, AMN		Dissolved Metals (see note)		CHL, NO3, NO2, SO4		XFE3 (FE, FE2, FE3)		Total Coliform		V8015GRO, V8260HSL+		Hydrogen Sulfide		B8015DRO		B8270PAH		V8260HSL		TOC		LAB USE ONLY	
MW-2A-012011				1/20/11 0902		KT		GW		14		X		X		X		X		X		X		X		X		X		X		X		X		01	
MW-99A-012011				1/20/11 0956		KT		GW		14		X		X		X		X		X		X		X		X		X		X		X		X		02	
TR-2-012011				1/20/11 1311		KT		GW		14		X		X		X		X		X		X		X		X		X		X		X		X		03	
						KT		GW		16		X		X		X		X		X		X		X		X		X		X		X		X		04	
						KT		GW		16		X		X		X		X		X		X		X		X		X		X		X		X		05	
						KT		GW		16		X		X		X		X		X		X		X		X		X		X		X		X		06	
						KT		GW		16		X		X		X		X		X		X		X		X		X		X		X		X		07	
						KT		SO		2																										08	
						KT		SO		2																										09	
TR-02-012011				1/20/11		KT				3		X																								10	
Turnaround Time (Business days)		Approved By (Accutest PM): / Date:		Date Deliverable Information		Comments / Special Instructions																															
☐ Std. 15 Business Days ☒ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day Emergency ☐ 2 Day Emergency ☐ 1 Day Emergency ☐				☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☐ COMMBN ☒ COMMBN+ ☐		☐ State Forms Required ☐ Send Forms to State ☐ Report by Fax ☒ Report by PDF ☒ EDD Format		Metals (200.7): Ba, Ca, Mg, Mn, K, Na, Sr, Fe: Note: Sample has been field filtered EMAIL ONLY: bshine@geotransinc.com and dbohmann@geotransinc.com																													
Emergency & Rush T/A data available VIA Lablink				Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial BN = Results/QC/Narrative (+ = chromatograms)																																	
Relinquished by Sampler		Date Time		Received By		Relinquished By		Date Time		Received By																											
1		1/20/11 1515		Jacob Bohmann		1/22/11 0945																															
Relinquished by Sampler		Date Time		Received By		Relinquished By		Date Time		Received By																											
3				3		4																															
Relinquished by		Date Time		Received By		Custody Seal #		Preserved where applicable		Cooler Temp.																											
5				5		B		20		2.5																											

D20552: Chain of Custody

Page 1 of 3



**industrial
LABORATORIES**

Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 1/21/2011

Date Reported: 1/24/2011

PO Number: D20552X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110121009-01A	D20552X-1, 1/20/11, 9:02am	* Total Coliforms MPN SM 9221 B	<2 Fecal; <2 Total	MPN/100mL		RB 1/21/2011
110121009-02A	D20552X-2, 1/20/11, 9:50am	* Total Coliforms MPN SM 9221 B	<2 Fecal; <2 Total	MPN/100mL		RB 1/21/2011
110121009-03A	D20552X-3, 1/20/11, 1:11pm	* Total Coliforms MPN SM 9221 B	<2 Fecal; <2 Total	MPN/100mL		RB 1/21/2011

* = Scope Analysis

= Subcontracted Analysis

MDL = Method Detection Limit

ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industrialabs.net

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D20552: Chain of Custody

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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 2

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V473-MB1	3V08625A.D 1		01/24/11	DC	n/a	n/a	V3V473

The QC reported here applies to the following samples:

Method: SW846 8260B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V473-MB1	3V08625A.D1		01/24/11	DC	n/a	n/a	V3V473

The QC reported here applies to the following samples:

Method: SW846 8260B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	87% 63-130%
2037-26-5	Toluene-D8	92% 68-130%
460-00-4	4-Bromofluorobenzene	86% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.43	21	ug/l	JN
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Page 1 of 2

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V473-BS1	3V08626A.D1		01/24/11	DC	n/a	n/a	V3V473

The QC reported here applies to the following samples:

Method: SW846 8260B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	51.0	102	49-130
71-43-2	Benzene	50	48.8	98	70-130
75-27-4	Bromodichloromethane	50	49.8	100	70-130
75-25-2	Bromoform	50	49.8	100	48-138
108-90-7	Chlorobenzene	50	50.1	100	70-130
75-00-3	Chloroethane	50	43.5	87	61-130
67-66-3	Chloroform	50	51.3	103	70-130
110-75-8	2-Chloroethyl vinyl ether	50	45.8	92	22-185
75-15-0	Carbon disulfide	50	48.0	96	55-130
56-23-5	Carbon tetrachloride	50	48.4	97	70-130
75-34-3	1,1-Dichloroethane	50	49.8	100	70-130
75-35-4	1,1-Dichloroethylene	50	48.9	98	70-130
107-06-2	1,2-Dichloroethane	50	47.6	95	70-130
78-87-5	1,2-Dichloropropane	50	49.2	98	70-130
124-48-1	Dibromochloromethane	50	46.4	93	64-132
156-59-2	cis-1,2-Dichloroethylene	50	51.7	103	70-130
10061-01-5	cis-1,3-Dichloropropene	50	49.8	100	67-130
541-73-1	m-Dichlorobenzene	50	47.3	95	52-148
95-50-1	o-Dichlorobenzene	50	48.5	97	53-146
106-46-7	p-Dichlorobenzene	50	47.4	95	57-136
156-60-5	trans-1,2-Dichloroethylene	50	49.7	99	70-130
10061-02-6	trans-1,3-Dichloropropene	50	47.9	96	66-130
100-41-4	Ethylbenzene	50	49.1	98	70-130
591-78-6	2-Hexanone	50	47.6	95	38-130
108-10-1	4-Methyl-2-pentanone	50	47.2	94	68-130
74-83-9	Methyl bromide	50	38.3	77	35-151
74-87-3	Methyl chloride	50	36.2	72	46-138
75-09-2	Methylene chloride	50	49.6	99	70-130
78-93-3	Methyl ethyl ketone	50	47.0	94	37-130
100-42-5	Styrene	50	47.7	95	38-130
71-55-6	1,1,1-Trichloroethane	50	45.4	91	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	50.4	101	70-130
79-00-5	1,1,2-Trichloroethane	50	51.5	103	69-130
127-18-4	Tetrachloroethylene	50	48.5	97	66-134
108-88-3	Toluene	50	47.4	95	70-140
79-01-6	Trichloroethylene	50	47.6	95	70-130

Blank Spike Summary

Page 2 of 2

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V473-BS1	3V08626A.D1		01/24/11	DC	n/a	n/a	V3V473

The QC reported here applies to the following samples:

Method: SW846 8260B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl chloride	50	34.2	68	58-135
108-05-4	Vinyl Acetate	50	84.0	168* ^a	50-130
1330-20-7	Xylene (total)	100	89.6	90	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	63-130%
2037-26-5	Toluene-D8	93%	68-130%
460-00-4	4-Bromofluorobenzene	90%	61-130%

(a) Compound ND in associated samples.

Blank Spike Summary

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V473-BS1	3V08627.D	1	01/24/11	DC	n/a	n/a	V3V473

The QC reported here applies to the following samples:

Method: SW846 8260B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	63-130%
2037-26-5	Toluene-D8	93%	68-130%
460-00-4	4-Bromofluorobenzene	88%	61-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20552-1MS	3V08637.D	1	01/24/11	DC	n/a	n/a	V3V473
D20552-1MSD	3V08638.D	1	01/24/11	DC	n/a	n/a	V3V473
D20552-1	3V08636.D	1	01/24/11	DC	n/a	n/a	V3V473

The QC reported here applies to the following samples:

Method: SW846 8260B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	D20552-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	11.5		50	59.4	96	57.8	93	3	21-130/30
71-43-2	Benzene	0.30	J	50	53.7	107	53.4	106	1	59-132/30
75-27-4	Bromodichloromethane	ND		50	50.6	101	51.4	103	2	58-130/30
75-25-2	Bromoform	ND		50	50.3	101	51.5	103	2	45-140/30
108-90-7	Chlorobenzene	ND		50	54.9	110	55.5	111	1	70-130/30
75-00-3	Chloroethane	ND		50	41.5	83	41.3	83	0	61-130/30
67-66-3	Chloroform	3.3		50	56.7	107	57.1	108	1	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	ND	0* a	ND	0* a	nc	20-168/30
75-15-0	Carbon disulfide	ND		50	54.5	109	54.9	110	1	41-132/30
56-23-5	Carbon tetrachloride	ND		50	56.9	114	57.4	115	1	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	54.1	108	54.6	109	1	70-130/30
75-35-4	1,1-Dichloroethylene	ND		50	57.4	115	57.1	114	1	69-137/30
107-06-2	1,2-Dichloroethane	ND		50	46.1	92	46.3	93	0	62-130/30
78-87-5	1,2-Dichloropropane	ND		50	52.7	105	51.2	102	3	63-131/30
124-48-1	Dibromochloromethane	ND		50	46.9	94	47.4	95	1	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND		50	55.5	111	55.4	111	0	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	51.5	103	51.7	103	0	51-134/30
541-73-1	m-Dichlorobenzene	ND		50	52.6	105	52.8	106	0	38-148/30
95-50-1	o-Dichlorobenzene	ND		50	51.9	104	52.4	105	1	40-148/30
106-46-7	p-Dichlorobenzene	ND		50	52.8	106	51.9	104	2	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND		50	55.9	112	56.0	112	0	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	48.1	96	47.9	96	0	50-130/30
100-41-4	Ethylbenzene	ND		50	56.1	112	55.9	112	0	68-130/30
591-78-6	2-Hexanone	ND		50	50.9	102	50.9	102	0	29-130/30
108-10-1	4-Methyl-2-pentanone	ND		50	53.9	108	52.6	105	2	62-130/30
74-83-9	Methyl bromide	ND		50	38.3	77	38.9	78	2	20-171/30
74-87-3	Methyl chloride	ND		50	37.9	76	37.4	75	1	25-148/30
75-09-2	Methylene chloride	ND		50	52.1	104	52.4	105	1	58-139/30
78-93-3	Methyl ethyl ketone	ND		50	50.1	100	49.2	98	2	37-130/30
100-42-5	Styrene	ND		50	52.7	105	52.5	105	0	27-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	52.7	105	52.7	105	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	52.9	106	52.7	105	0	61-140/30
79-00-5	1,1,2-Trichloroethane	ND		50	52.0	104	51.9	104	0	52-135/30
127-18-4	Tetrachloroethylene	ND		50	56.8	114	57.7	115	2	61-134/30
108-88-3	Toluene	ND		50	53.7	107	54.7	109	2	56-142/30
79-01-6	Trichloroethylene	ND		50	55.3	111	54.0	108	2	61-132/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20552-1MS	3V08637.D	1	01/24/11	DC	n/a	n/a	V3V473
D20552-1MSD	3V08638.D	1	01/24/11	DC	n/a	n/a	V3V473
D20552-1	3V08636.D	1	01/24/11	DC	n/a	n/a	V3V473

The QC reported here applies to the following samples:

Method: SW846 8260B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	D20552-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl chloride	ND	50	35.6	71	34.6	69	3	54-148/30
108-05-4	Vinyl Acetate	ND	50	90.9	182* b	90.4	181* b	1	40-139/30
1330-20-7	Xylene (total)	ND	100	101	101	101	101	0	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D20552-1	Limits
17060-07-0	1,2-Dichloroethane-D4	88%	88%	85%	63-130%
2037-26-5	Toluene-D8	92%	93%	94%	68-130%
460-00-4	4-Bromofluorobenzene	89%	88%	89%	61-130%

(a) Recovery of 2-chloroethyl vinyl ether is affected by sample preservation.

(b) Compound ND in associated samples.

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08636.D
 Acq On : 24 Jan 2011 4:10 pm
 Operator : DONC
 Sample : D20552-1
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 25 11:44:39 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260
 QLast Update : Mon Jan 17 09:47:23 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.893	168	722751	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	1046127	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.320	117	919655	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	521332	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.287	102	77723	42.39	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	84.78%
55) Toluene-d8	14.074	98	1245168	46.87	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	93.74%
59) 4-Bromofluorobenzene	16.266	95	442310	44.51	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	89.02%

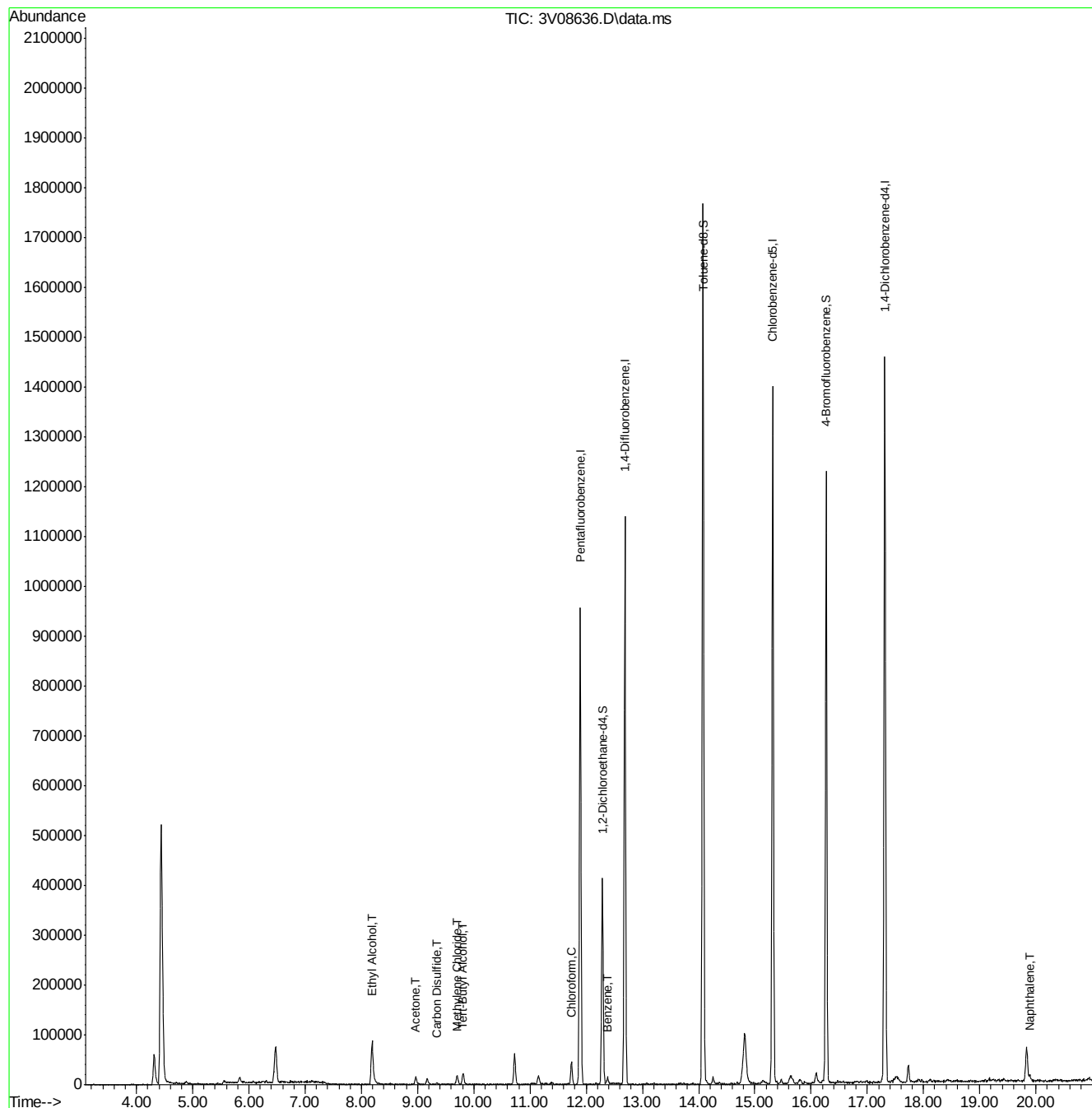
Target Compounds						Qvalue
9) Ethyl Alcohol	8.190	45	129383	1527.24	ug/l	100
14) Acetone	8.963	58	7906	11.50	ug/l #	87
15) Carbon Disulfide	9.345	76	4843	0.24	ug/l #	90
16) Methylene Chloride	9.698	84	11702	1.45	ug/l	97
17) Tert-Butyl Alcohol	9.807	59	29508	43.71	ug/l #	96
27) Chloroform	11.738	83	37462	3.28	ug/l	99
45) Benzene	12.380	78	8709	0.30	ug/l	100
72) Naphthalene	19.892	128	16349	0.55	ug/l	100

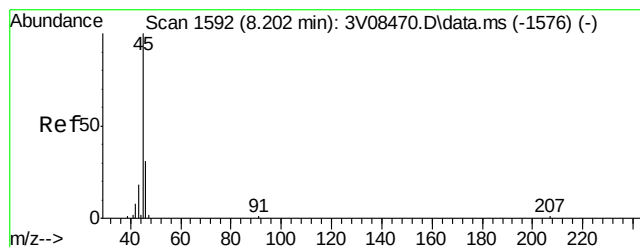
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
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Acq On : 24 Jan 2011 4:10 pm
Operator : DONC
Sample : D20552-1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 14 Sample Multiplier: 1

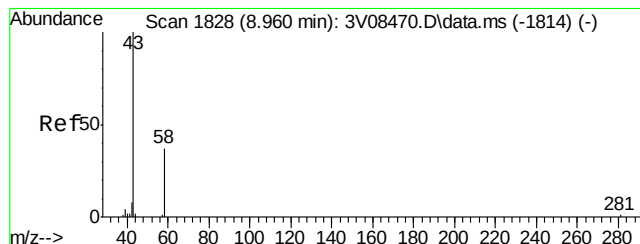
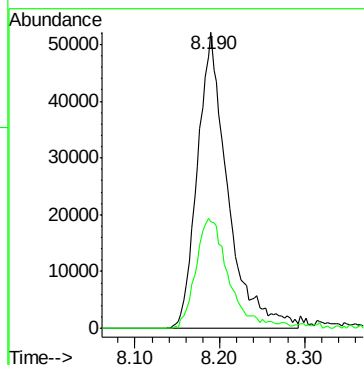
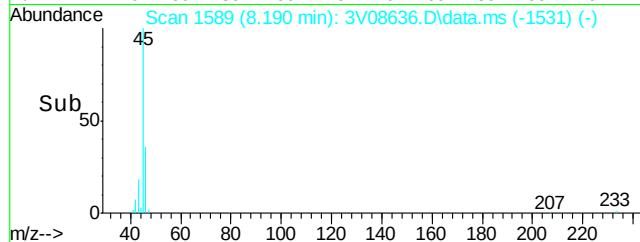
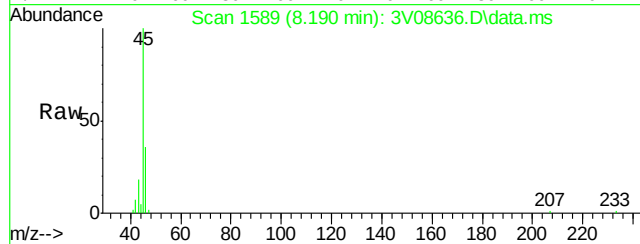
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Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





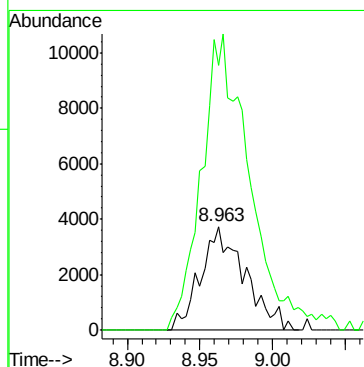
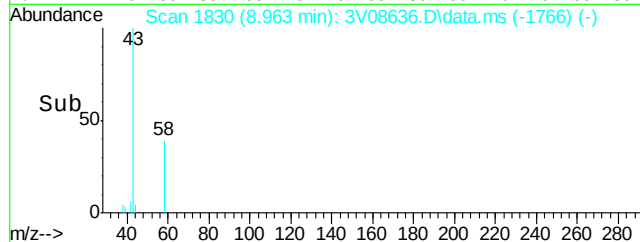
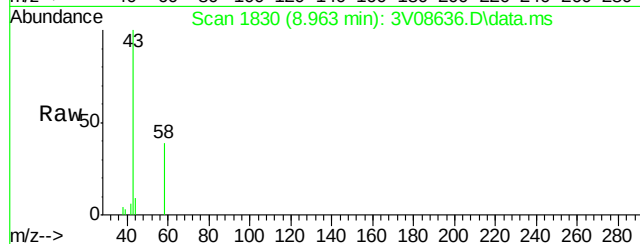
#9
Ethyl Alcohol
Concen: 1527.24 ug/l
RT: 8.190 min Scan# 1589
Delta R.T. -0.012 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

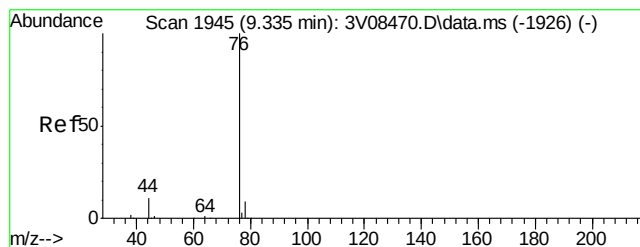
Tgt Ion: 45 Resp: 129383
Ion Ratio Lower Upper
45 100
46 40.3 32.2 48.4



#14
Acetone
Concen: 11.50 ug/l
RT: 8.963 min Scan# 1830
Delta R.T. 0.004 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

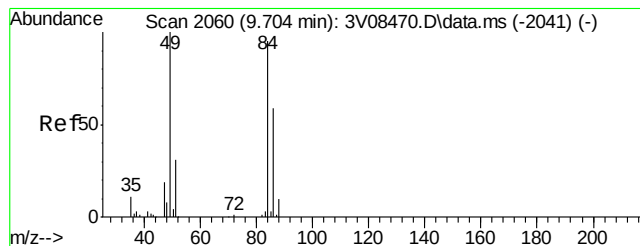
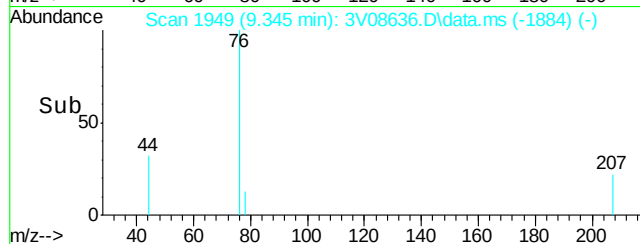
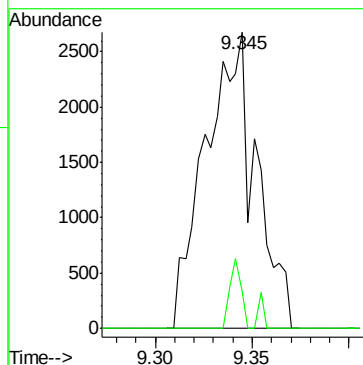
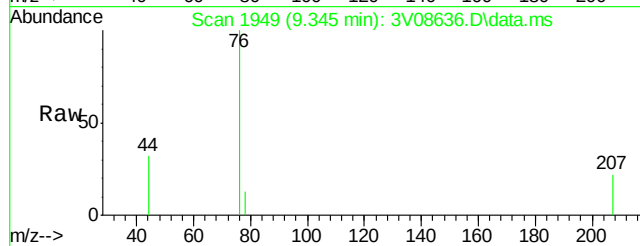
Tgt Ion: 58 Resp: 7906
Ion Ratio Lower Upper
58 100
43 312.5 267.1 307.1#





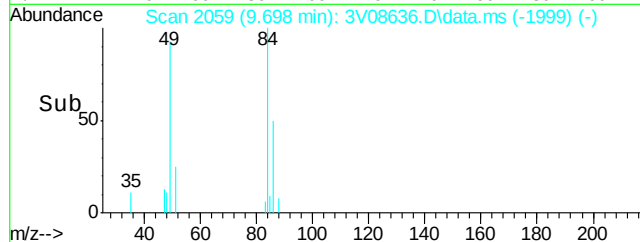
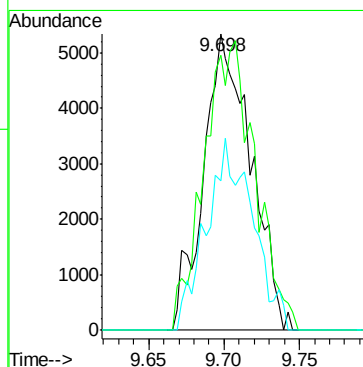
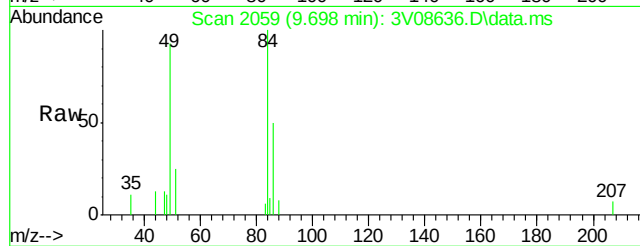
#15
Carbon Disulfide
Concen: 0.24 ug/l
RT: 9.345 min Scan# 1949
Delta R.T. 0.010 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

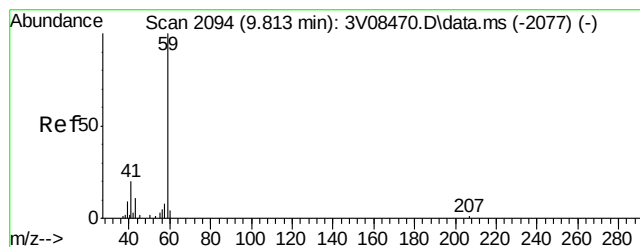
Tgt Ion	Ratio	Lower	Upper
76	100		
78	5.3	7.3	10.9#



#16
Methylene Chloride
Concen: 1.45 ug/l
RT: 9.698 min Scan# 2059
Delta R.T. -0.006 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

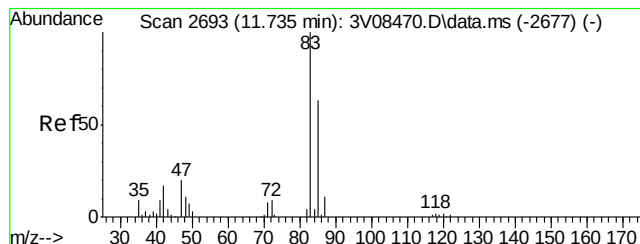
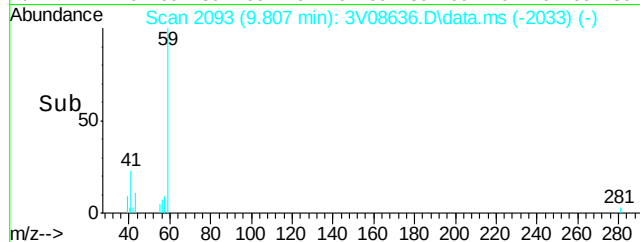
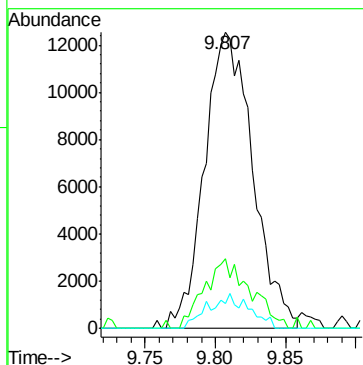
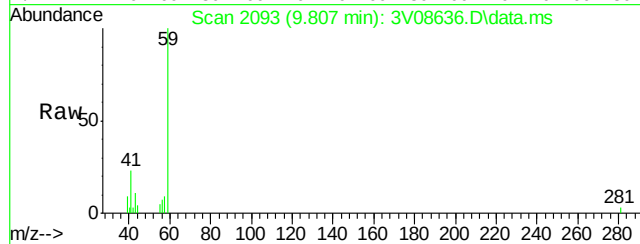
Tgt Ion	Ratio	Lower	Upper
84	100		
49	104.9	89.3	129.3
86	62.5	44.0	84.0





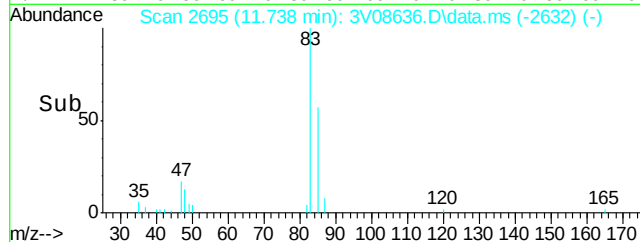
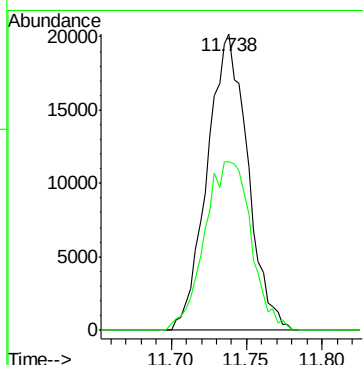
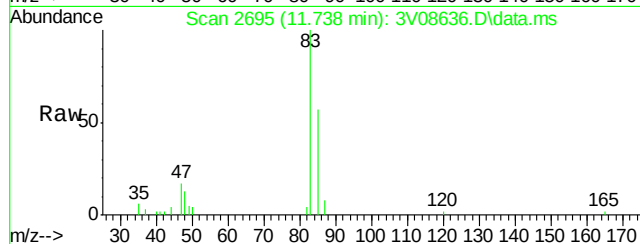
#17
Tert-Butyl Alcohol
Concen: 43.71 ug/l
RT: 9.807 min Scan# 2093
Delta R.T. -0.006 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

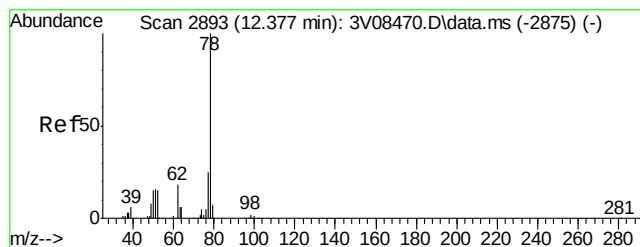
Tgt Ion	Ratio	Lower	Upper
59	100		
41	22.4	18.6	28.0
57	6.7	8.2	12.4



#27
Chloroform
Concen: 3.28 ug/l
RT: 11.738 min Scan# 2695
Delta R.T. 0.003 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

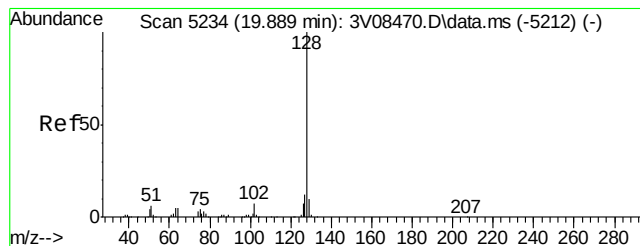
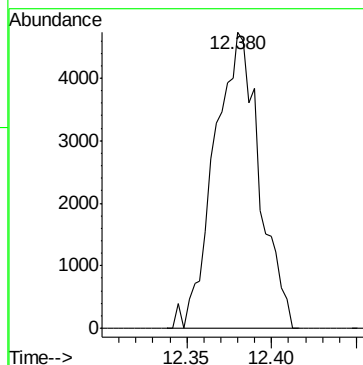
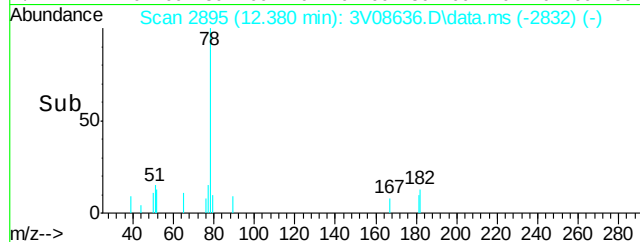
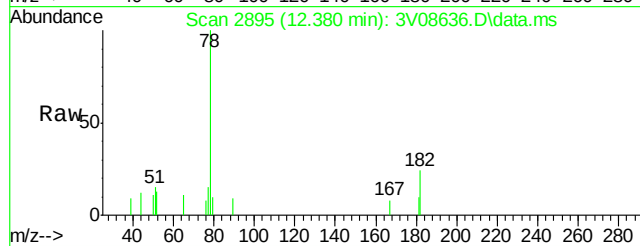
Tgt Ion	Ratio	Lower	Upper
83	100		
85	65.5	45.1	85.1





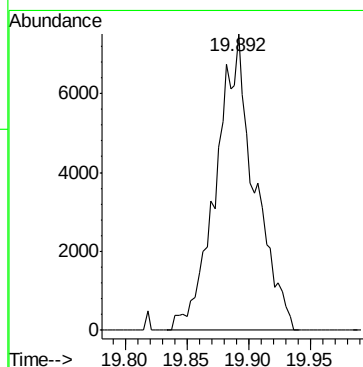
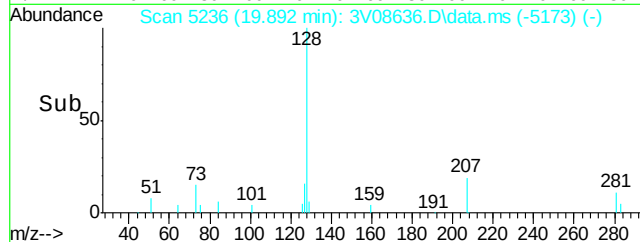
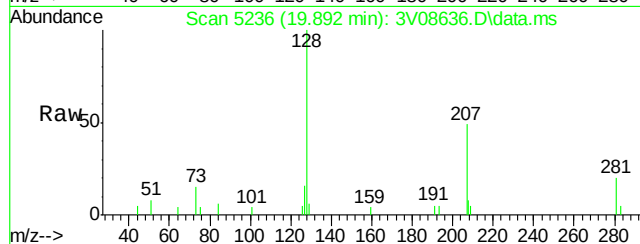
#45
Benzene
Concen: 0.30 ug/l
RT: 12.380 min Scan# 2895
Delta R.T. 0.003 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

Tgt Ion: 78 Resp: 8709



#72
Naphthalene
Concen: 0.55 ug/l
RT: 19.892 min Scan# 5236
Delta R.T. 0.003 min
Lab File: 3V08636.D
Acq: 24 Jan 2011 4:10 pm

Tgt Ion: 128 Resp: 16349



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08636.D
 Acq On : 24 Jan 2011 4:10 pm
 Operator : DONC
 Sample : D20552-1
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0

Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V08636.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.313	364	381	396	rBV	60412	146927	4.57%	0.810%
2	4.435	404	419	444	rBV	519834	1472694	45.77%	8.117%
3	6.470	1038	1053	1054	rBV5	70486	108261	3.36%	0.597%
4	8.190	1574	1589	1604	rBV2	88960	218172	6.78%	1.203%
5	9.804	2083	2092	2104	rBV4	21008	46621	1.45%	0.257%
6	10.725	2367	2379	2394	rVB2	61539	128572	4.00%	0.709%
7	11.148	2501	2511	2523	rBV	16093	34677	1.08%	0.191%
8	11.738	2683	2695	2709	rVB2	45108	86268	2.68%	0.475%
9	11.893	2726	2743	2762	rBV	956940	1797844	55.87%	9.910%
10	12.287	2852	2866	2883	rVB3	413113	820176	25.49%	4.521%
11	12.688	2977	2991	3011	rVB2	1138919	2127278	66.11%	11.725%
12	14.074	3408	3423	3438	rBV2	1767453	3217816	100.00%	17.736%
13	14.813	3626	3653	3655	rBV2	100558	215824	6.71%	1.190%
14	15.320	3795	3811	3824	rBV2	1398746	2483605	77.18%	13.689%
15	16.093	4039	4052	4062	rBV5	20044	44479	1.38%	0.245%
16	16.266	4092	4106	4122	rVB2	1225448	2158872	67.09%	11.899%
17	17.312	4412	4432	4447	rBV2	1455265	2788729	86.67%	15.371%
18	17.733	4549	4563	4575	rBV2	34860	71406	2.22%	0.394%
19	19.831	5202	5217	5232	rBV2	67900	174377	5.42%	0.961%

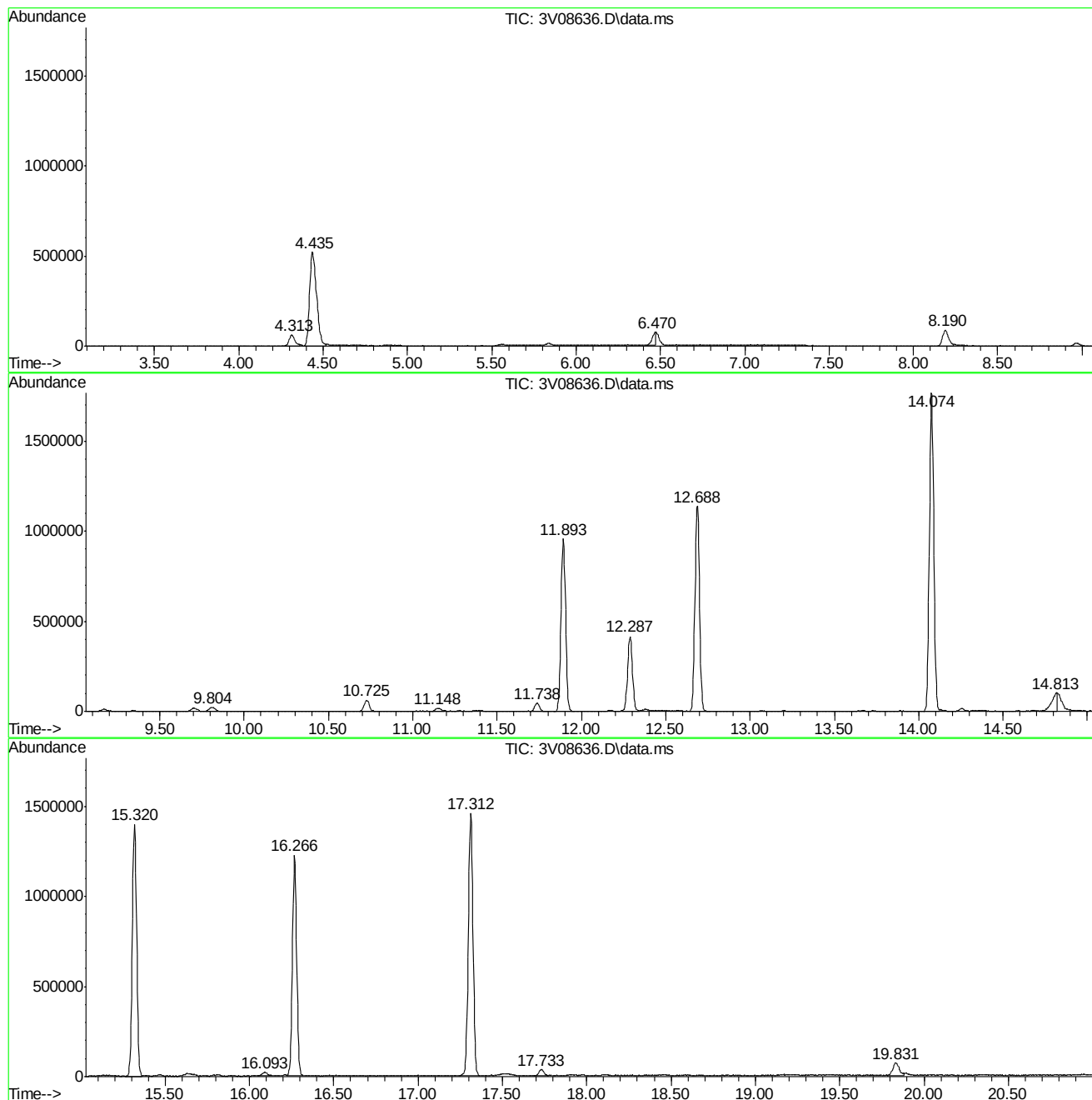
Sum of corrected areas: 18142598

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08636.D
Acq On : 24 Jan 2011 4:10 pm
Operator : DONC
Sample : D20552-1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08636.D
 Acq On : 24 Jan 2011 4:10 pm
 Operator : DONC
 Sample : D20552-1
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 14 Sample Multiplier: 1

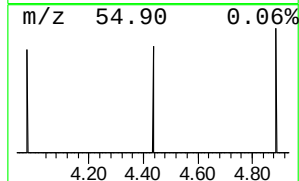
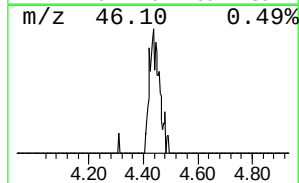
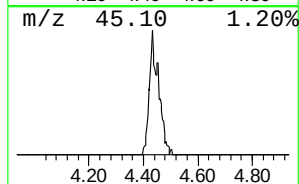
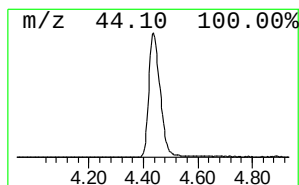
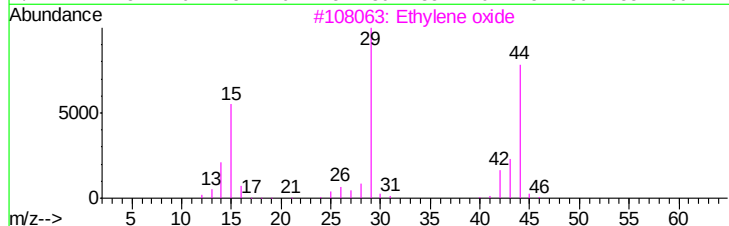
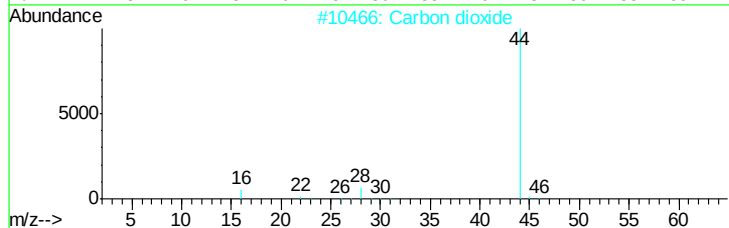
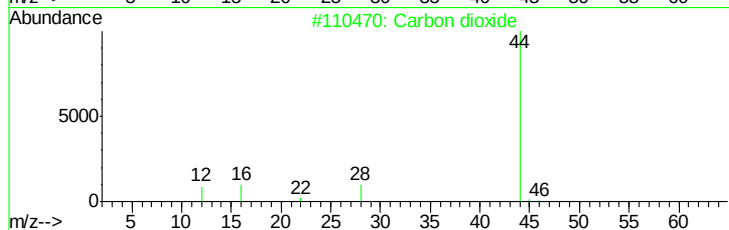
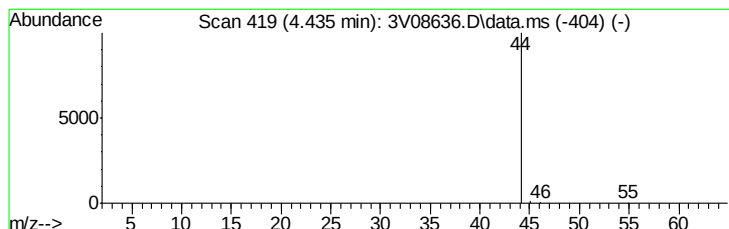
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.435	40.96 ug/l	1472690	Pentafluorobenzene	11.893

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide	44	CO2	000124-38-9	4
2	Carbon dioxide	44	CO2	000124-38-9	4
3	Ethylene oxide	44	C2H4O	000075-21-8	3
4	Nitrous Oxide	44	N2O	010024-97-2	3
5	Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08636.D
Acq On : 24 Jan 2011 4:10 pm
Operator : DONC
Sample : D20552-1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Carbon dioxide	4.435	41.0	ug/l	1472690	1	11.893	1797840	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jan 25 12:42:12 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.892	168	698607	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	1031226	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.319	117	893706	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	491466	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.290	102	78612	44.36	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	88.72%
55) Toluene-d8	14.074	98	1217671	47.16	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	94.32%
59) 4-Bromofluorobenzene	16.269	95	420186	43.51	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	87.02%

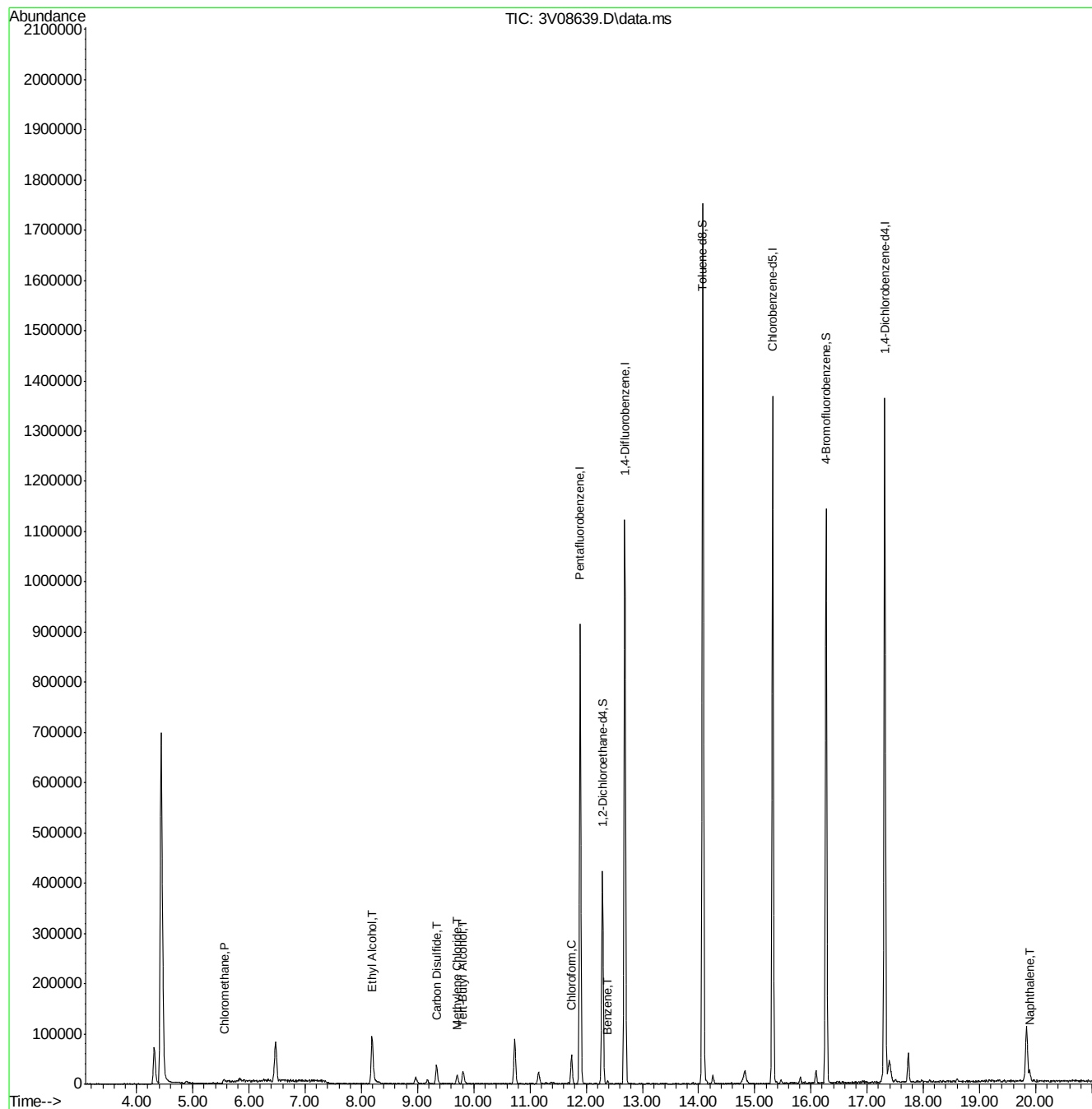
Target Compounds						Qvalue
4) Chloromethane	5.561	50	6910	0.55	ug/l	94
9) Ethyl Alcohol	8.189	45	148411	1810.15	ug/l	99
15) Carbon Disulfide	9.335	76	66860	3.37	ug/l	99
16) Methylene Chloride	9.700	84	11187	1.44	ug/l	92
17) Tert-Butyl Alcohol	9.803	59	35361	54.19	ug/l	98
27) Chloroform	11.735	83	47303	4.29	ug/l	96
45) Benzene	12.377	78	6394	0.22	ug/l	100
72) Naphthalene	19.898	128	23573	0.84	ug/l	100

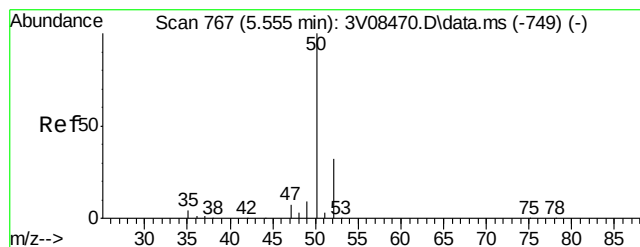
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

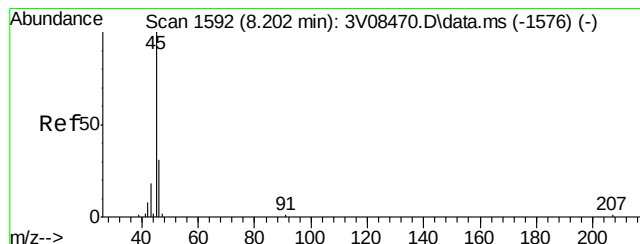
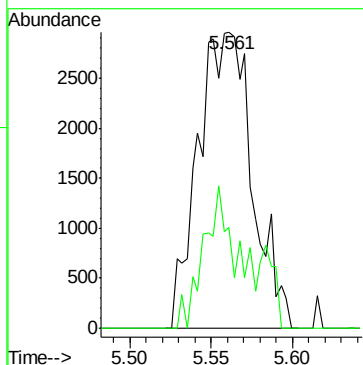
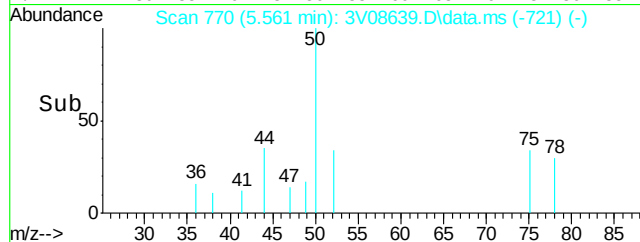
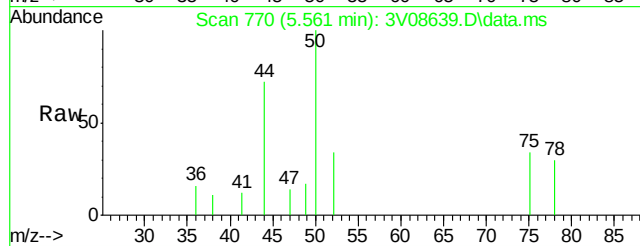
Quant Time: Jan 25 12:42:12 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





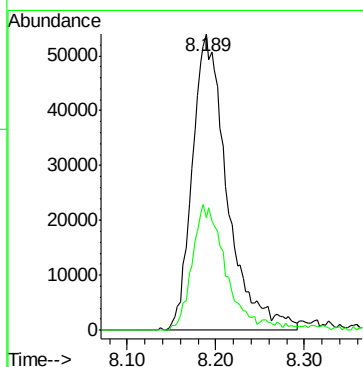
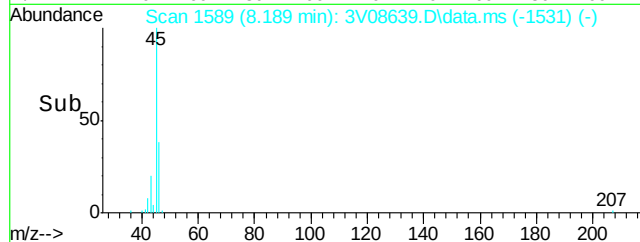
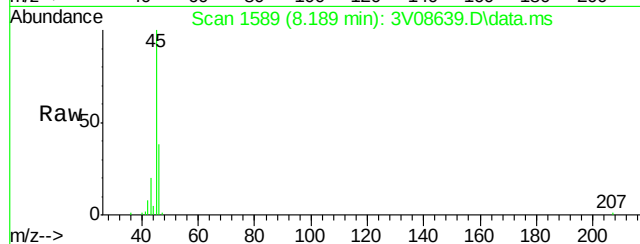
#4
Chloromethane
Concen: 0.55 ug/l
RT: 5.561 min Scan# 770
Delta R.T. 0.006 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

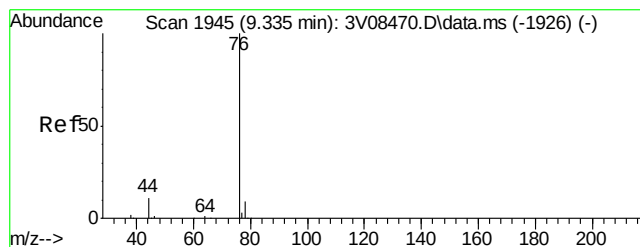
Tgt Ion	Ratio	Lower	Upper
50	100		
52	29.2	12.6	52.6



#9
Ethyl Alcohol
Concen: 1810.15 ug/l
RT: 8.189 min Scan# 1589
Delta R.T. -0.013 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

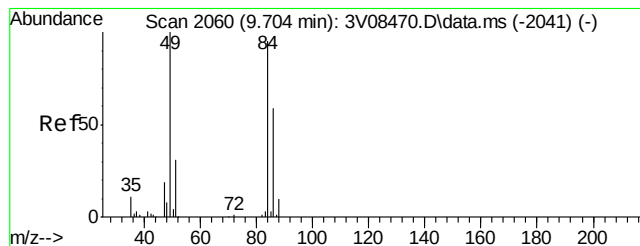
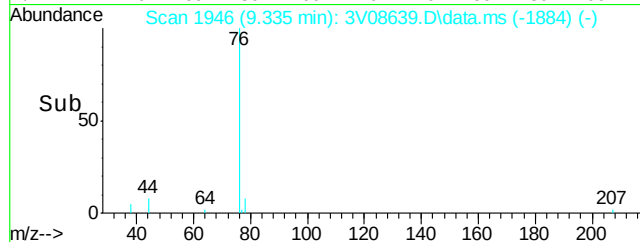
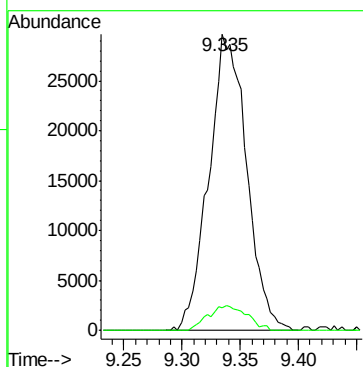
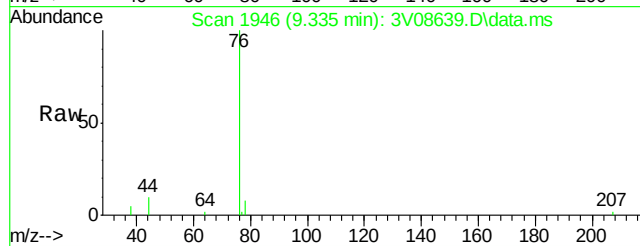
Tgt Ion	Ratio	Lower	Upper
45	100		
46	39.4	32.2	48.4





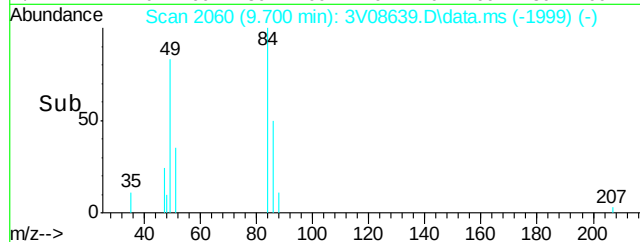
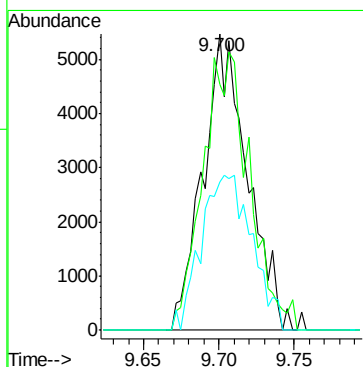
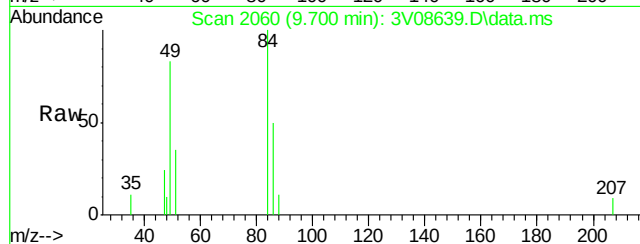
#15
Carbon Disulfide
Concen: 3.37 ug/l
RT: 9.335 min Scan# 1946
Delta R.T. -0.000 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

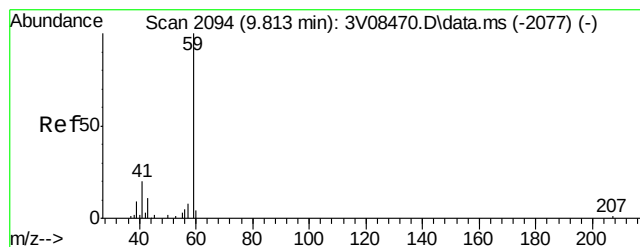
Tgt Ion: 76 Resp: 66860
Ion Ratio Lower Upper
76 100
78 8.7 7.3 10.9



#16
Methylene Chloride
Concen: 1.44 ug/l
RT: 9.700 min Scan# 2060
Delta R.T. -0.004 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

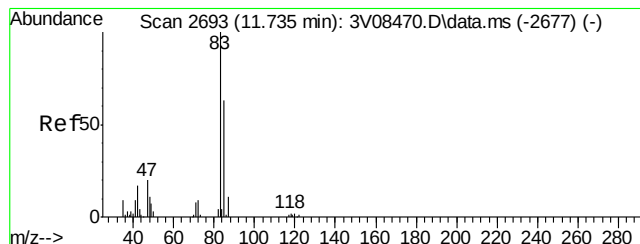
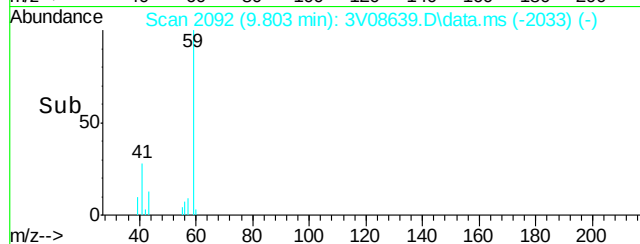
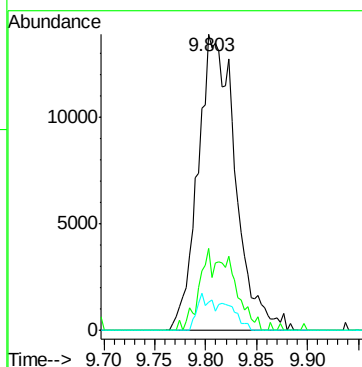
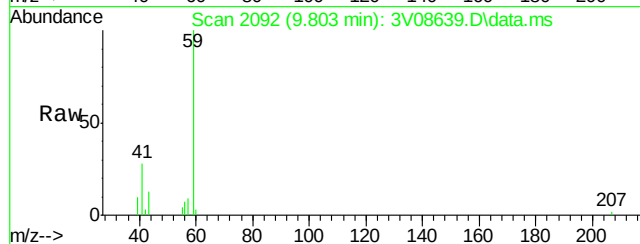
Tgt Ion: 84 Resp: 11187
Ion Ratio Lower Upper
84 100
49 98.4 89.3 129.3
86 60.2 44.0 84.0





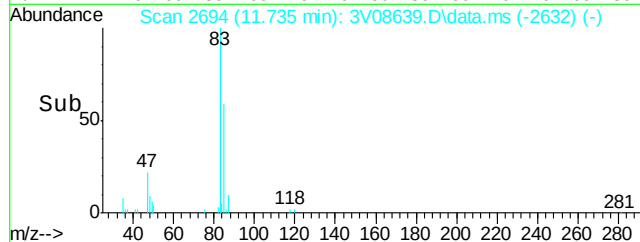
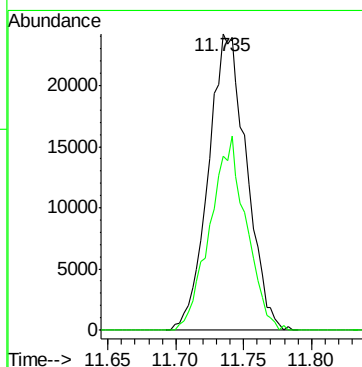
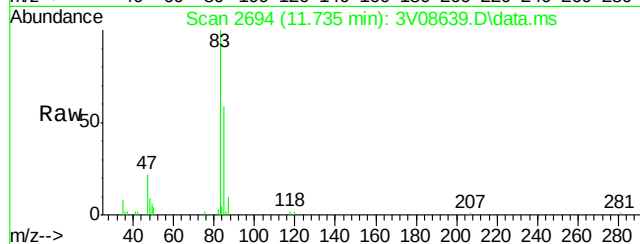
#17
Tert-Butyl Alcohol
Concen: 54.19 ug/l
RT: 9.803 min Scan# 2092
Delta R.T. -0.010 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

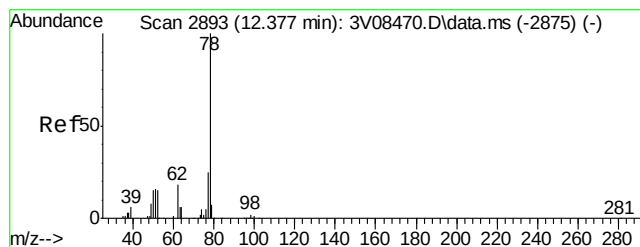
Tgt Ion:	59	Resp:	35361
Ion Ratio	Lower	Upper	
59	100		
41	24.6	18.6	28.0
57	9.6	8.2	12.4



#27
Chloroform
Concen: 4.29 ug/l
RT: 11.735 min Scan# 2694
Delta R.T. -0.000 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

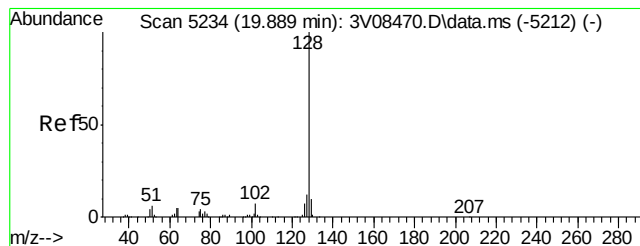
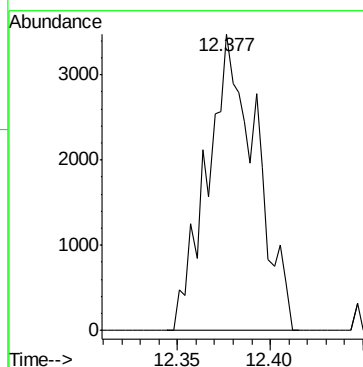
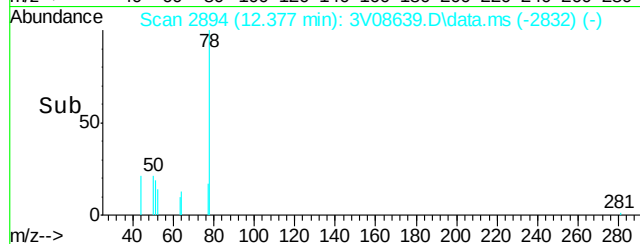
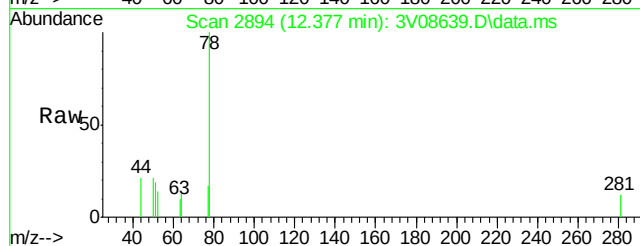
Tgt Ion:	83	Resp:	47303
Ion Ratio	Lower	Upper	
83	100		
85	61.8	45.1	85.1





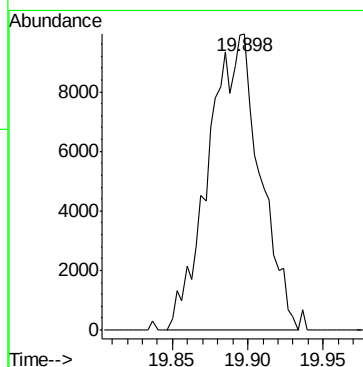
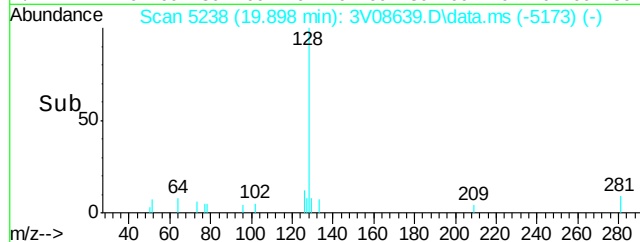
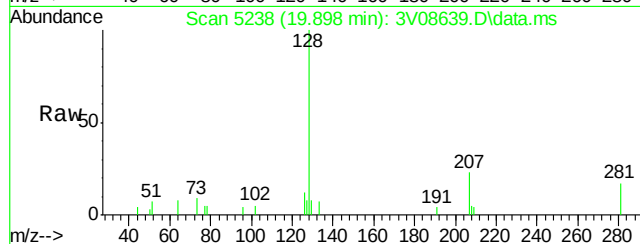
#45
Benzene
Concen: 0.22 ug/l
RT: 12.377 min Scan# 2894
Delta R.T. -0.000 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

Tgt Ion: 78 Resp: 6394



#72
Naphthalene
Concen: 0.84 ug/l
RT: 19.898 min Scan# 5238
Delta R.T. 0.009 min
Lab File: 3V08639.D
Acq: 24 Jan 2011 5:42 pm

Tgt Ion: 128 Resp: 23573



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08639.D
 Acq On : 24 Jan 2011 5:42 pm
 Operator : DONC
 Sample : D20552-2
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 17 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0

Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V08639.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.313	366	381	397	rBV	72838	174960	5.51%	0.951%
2	4.435	403	419	452	rBV	698848	1923440	60.59%	10.451%
3	6.472	1037	1054	1070	rVB	77452	212267	6.69%	1.153%
4	8.189	1574	1589	1607	rBV3	95558	257840	8.12%	1.401%
5	9.335	1935	1946	1963	rVB	37379	84094	2.65%	0.457%
6	10.727	2363	2380	2396	rBV2	90346	202520	6.38%	1.100%
7	11.154	2498	2513	2525	rBV2	24210	54571	1.72%	0.297%
8	11.741	2682	2696	2711	rVB2	58947	115722	3.65%	0.629%
9	11.892	2728	2743	2759	rBV	915034	1757392	55.36%	9.549%
10	12.287	2853	2866	2882	rVB	421932	814954	25.67%	4.428%
11	12.688	2975	2991	3008	rBV2	1122811	2100132	66.15%	11.411%
12	14.074	3409	3423	3441	rBV2	1753078	3174754	100.00%	17.250%
13	15.319	3795	3811	3825	rBV2	1369266	2414355	76.05%	13.118%
14	16.086	4041	4050	4059	rBV2	25653	44338	1.40%	0.241%
15	16.269	4092	4107	4123	rBV2	1143930	2064171	65.02%	11.216%
16	17.312	4412	4432	4445	rBV	1359956	2609822	82.21%	14.180%
17	17.729	4550	4562	4574	rBV2	60165	124180	3.91%	0.675%
18	19.834	5203	5218	5230	rBV	110062	274940	8.66%	1.494%

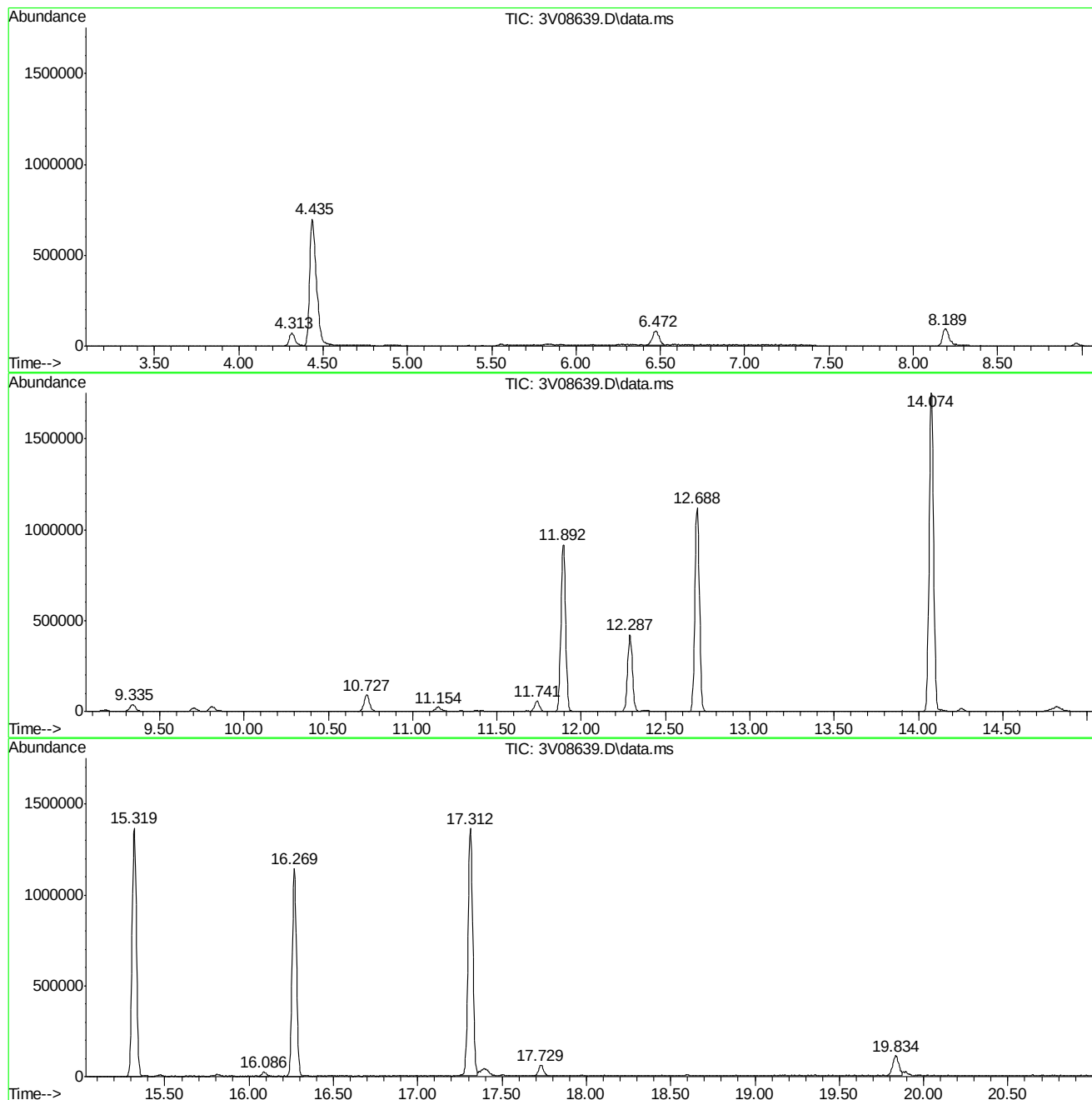
Sum of corrected areas: 18404452

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

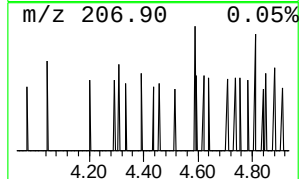
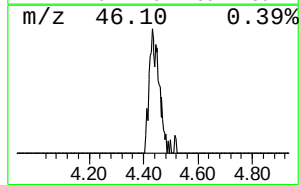
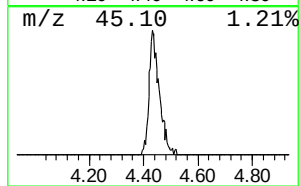
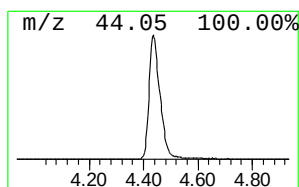
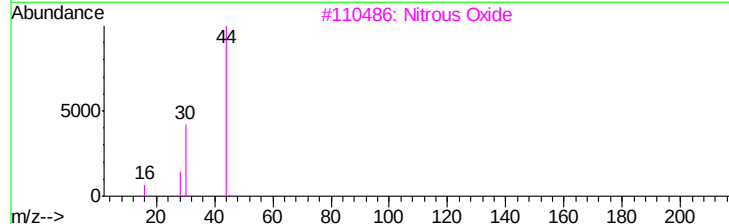
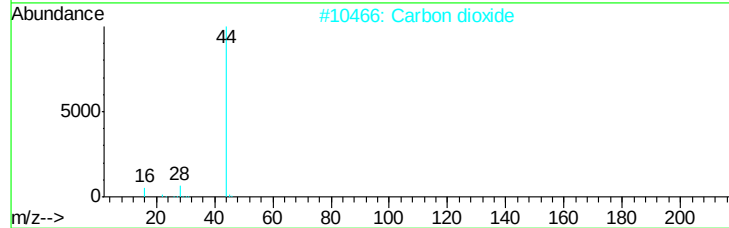
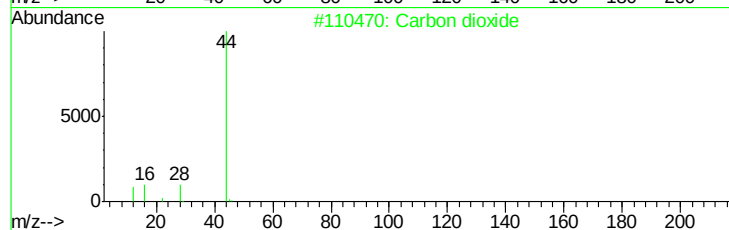
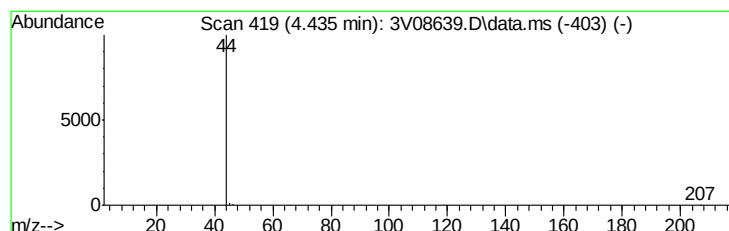
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.435	54.72 ug/l	1923440	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

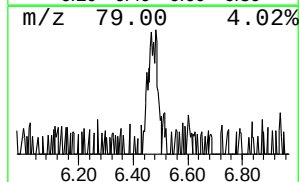
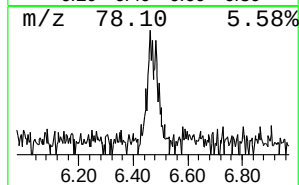
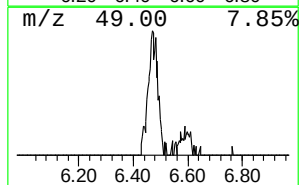
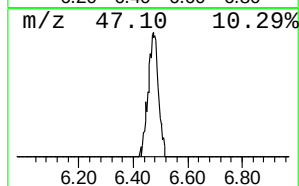
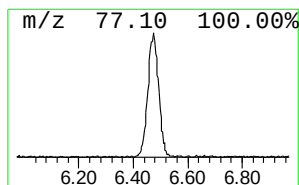
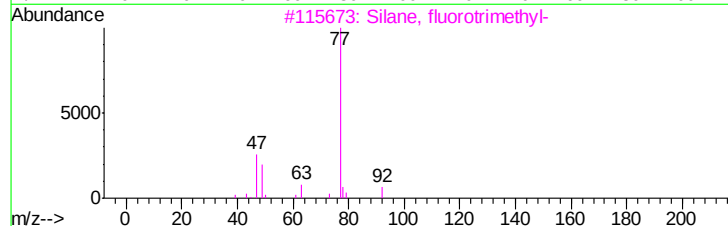
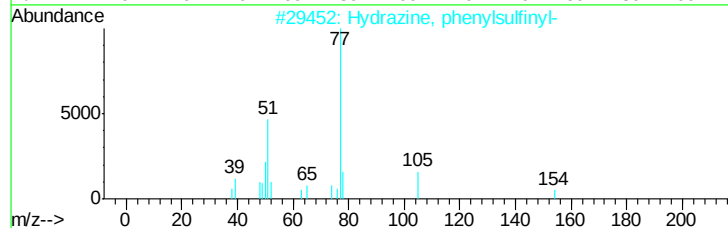
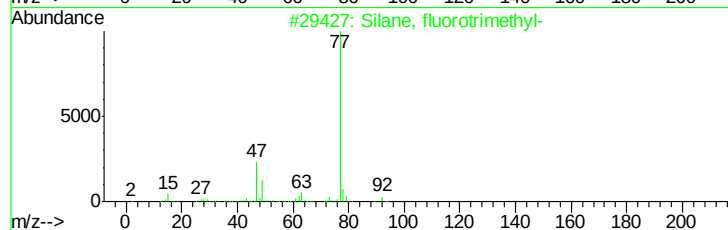
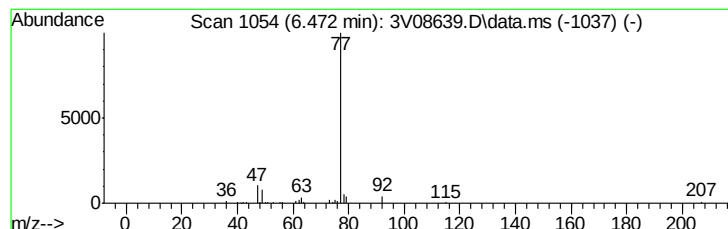
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 2 Silane, fluorotrimethyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.472	6.04 ug/l	212267	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Silane, fluorotrimethyl-	92	C3H9FSi	000420-56-4	39
2			Hydrazine, phenylsulfinyl-	154	C6H6N2OS	017420-03-0	2
3			Silane, fluorotrimethyl-	92	C3H9FSi	000420-56-4	5
4			Silane, fluorotrimethyl-	92	C3H9FSi	000420-56-4	7
5			Propane, 3-chloro-1,1,1-trifluoro-	132	C3H4ClF3	000460-35-5	2



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

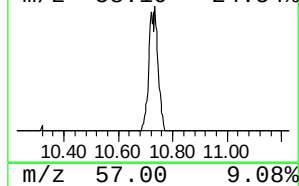
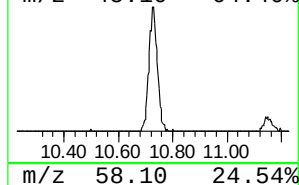
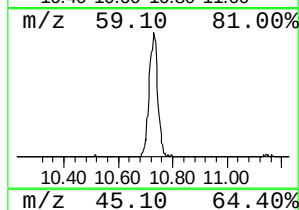
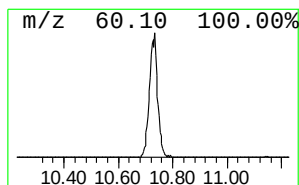
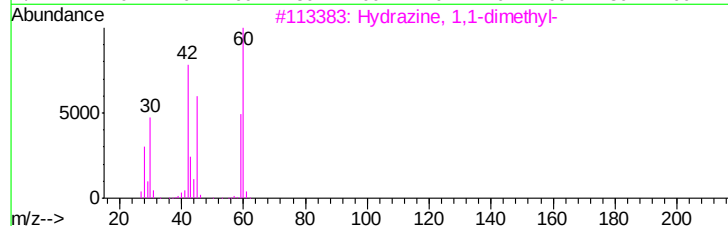
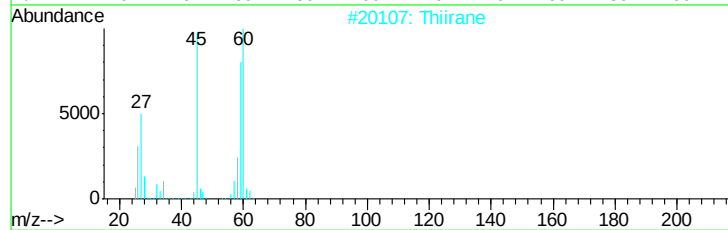
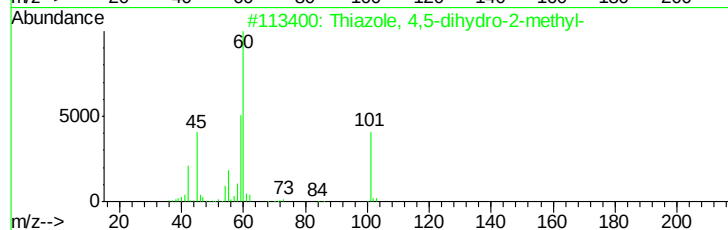
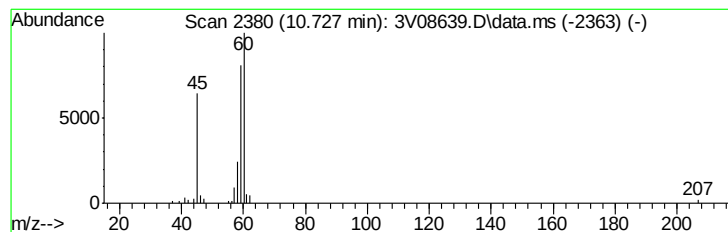
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 3 Thiazole, 4,5-dihydro-2-met... Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.727	5.76 ug/l	202520	Pentafluorobenzene	11.892

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Thiazole, 4,5-dihydro-2-methyl-	101	C4H7NS	002346-00-1	38
2	Thiirane	60	C2H4S	000420-12-2	43
3	Hydrazine, 1,1-dimethyl-	60	C2H8N2	000057-14-7	40
4	Hydrazine, 1,1-dimethyl-	60	C2H8N2	000057-14-7	9
5	1,3,5-Trithiane, 2,4,6-trimethyl-	180	C6H12S3	002765-04-0	9



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

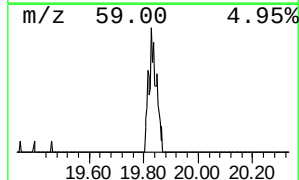
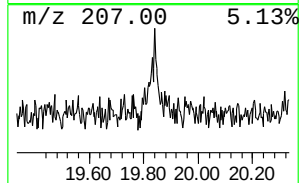
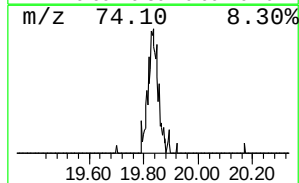
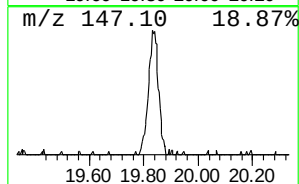
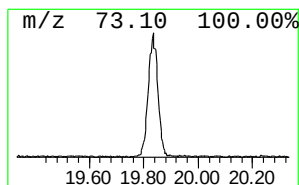
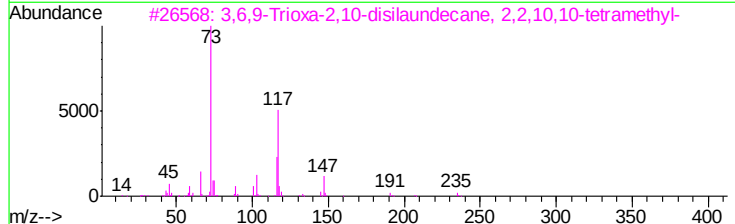
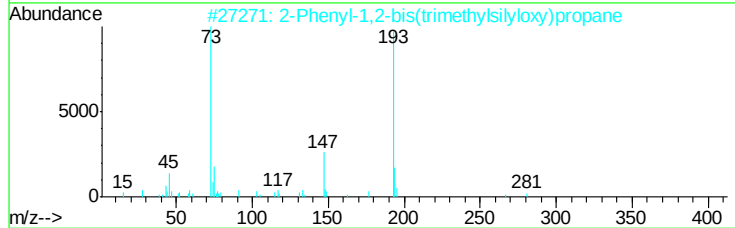
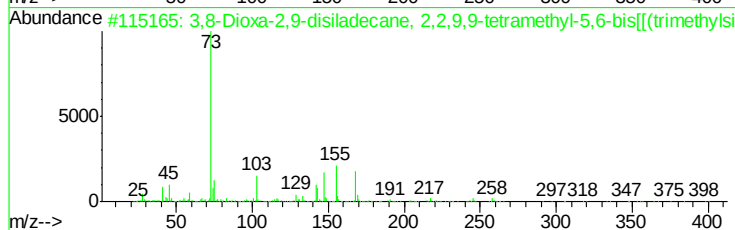
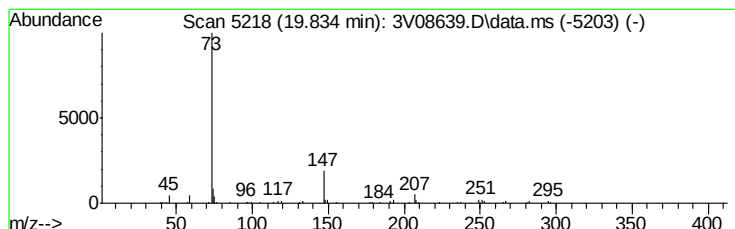
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 4 3,8-Dioxa-2,9-disiladecane,... Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.834	5.27 ug/l	274940	1,4-Dichlorobenzene-d4	17.312

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			3,8-Dioxa-2,9-disiladecane, 2,2,...	438	C18H46O4Si4	074779-61-6	28
2			2-Phenyl-1,2-bis(trimethylsilylo...	296	C15H28O2Si2	1000079-08-0	28
3			3,6,9-Trioxa-2,10-disilaundecane...	250	C10H26O3Si2	016654-74-3	9
4			Malonic acid, bis(2-trimethylsil...	304	C13H28O4Si2	090744-45-9	12
5			Acetic acid, [o-(trimethylsiloxy...	296	C14H24O3Si2	027750-52-3	9



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08639.D
Acq On : 24 Jan 2011 5:42 pm
Operator : DONC
Sample : D20552-2
Misc : MS1764,V3V473,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Carbon dioxide	4.435	54.7	ug/l	1923440	1	11.892	1757390	50.0
Silane, fluorot...	6.472	6.0	ug/l	212267	1	11.892	1757390	50.0
Thiazole, 4,5-d...	10.727	5.8	ug/l	202520	1	11.892	1757390	50.0
3,8-Dioxa-2,9-d...	19.834	5.3	ug/l	274940	4	17.312	2609820	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08640.D
Acq On : 24 Jan 2011 6:13 pm
Operator : DONC
Sample : D20552-3
Misc : MS1764,V3V473,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jan 25 12:42:32 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.895	168	653704	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.687	114	958613	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.319	117	829111	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.311	152	460845	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.286	102	70776	42.68	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	85.36%	
55) Toluene-d8	14.077	98	1121842	46.84	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.68%	
59) 4-Bromofluorobenzene	16.268	95	388213	43.33	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	86.66%	

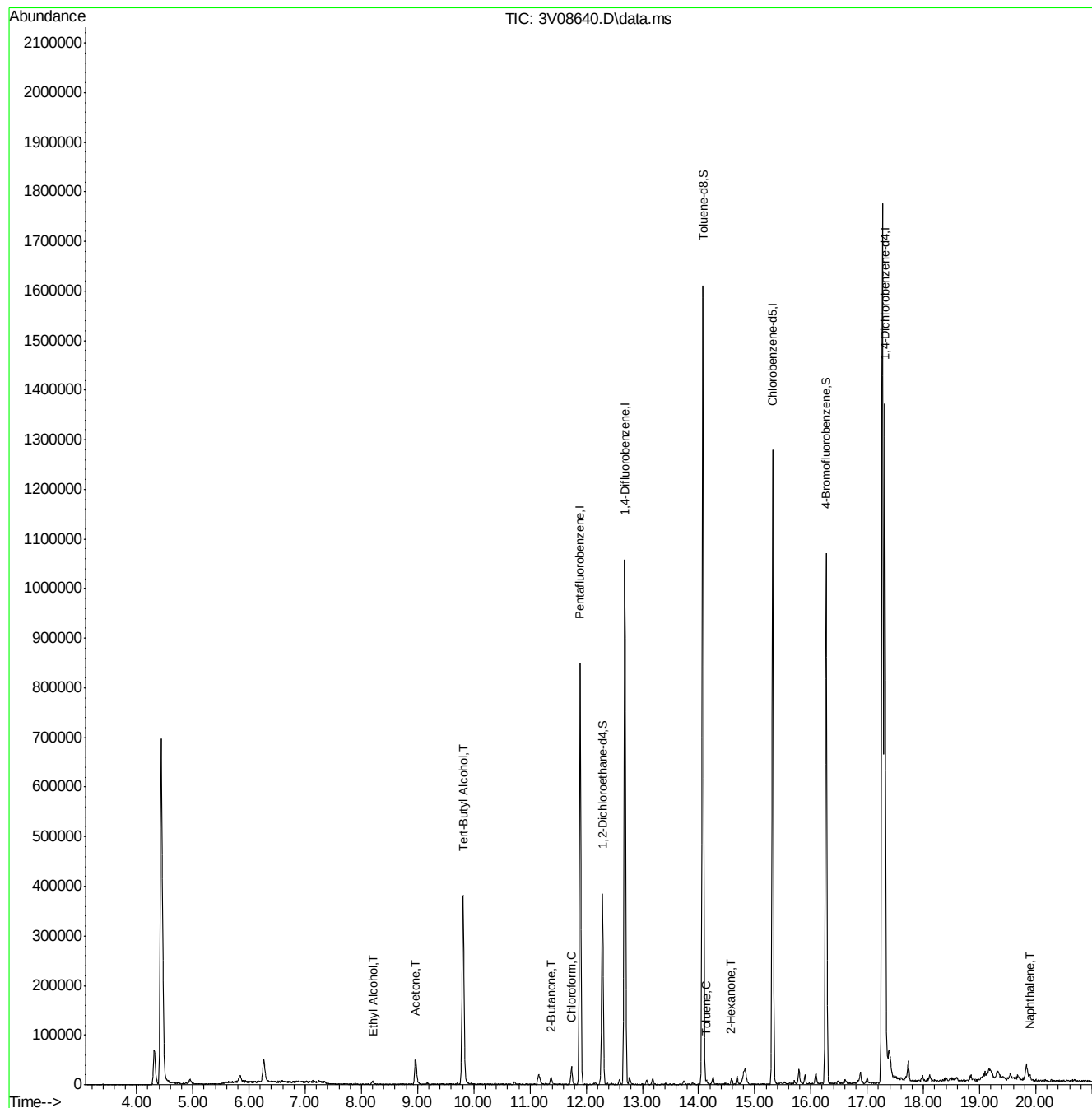
Target Compounds						Qvalue
9) Ethyl Alcohol	8.205	45	8344	120.03	ug/l	95
14) Acetone	8.972	58	28107	45.22	ug/l	91
17) Tert-Butyl Alcohol	9.806	59	509160	833.94	ug/l	97
24) 2-Butanone	11.381	72	5723	6.50	ug/l	84
27) Chloroform	11.734	83	28673	2.78	ug/l	97
50) 2-Hexanone	14.590	43	7937	2.20	ug/l	83
56) Toluene	14.135	92	3695	0.22	ug/l	99
72) Naphthalene	19.891	128	15143	0.58	ug/l	100

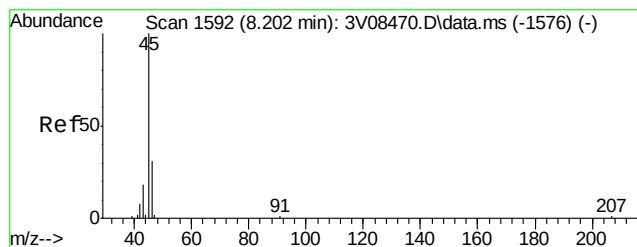
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08640.D
Acq On : 24 Jan 2011 6:13 pm
Operator : DONC
Sample : D20552-3
Misc : MS1764,V3V473,,,,,1
ALS Vial : 18 Sample Multiplier: 1

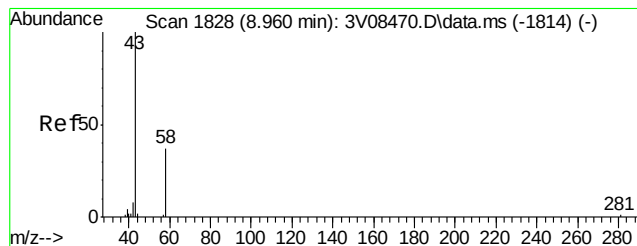
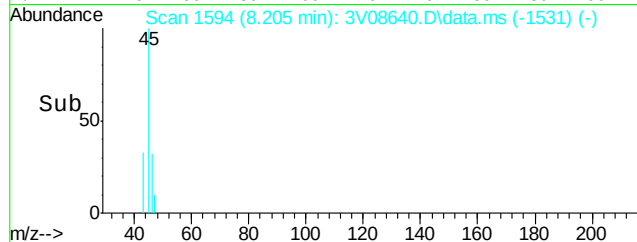
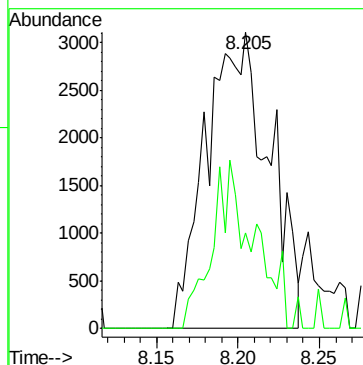
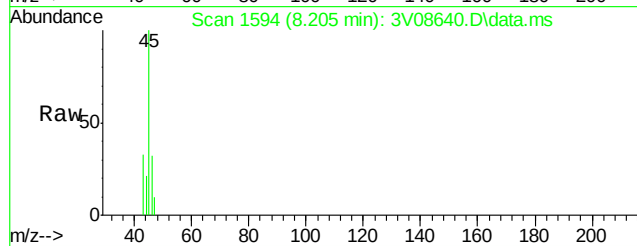
Quant Time: Jan 25 12:42:32 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





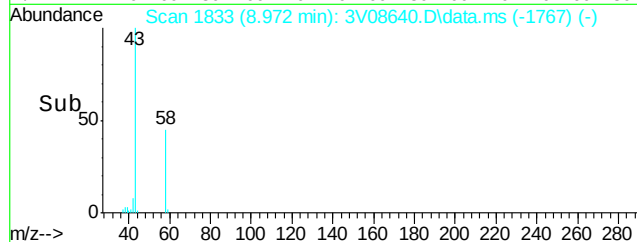
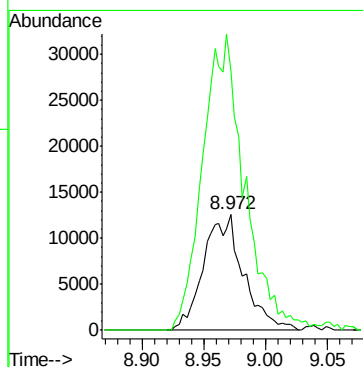
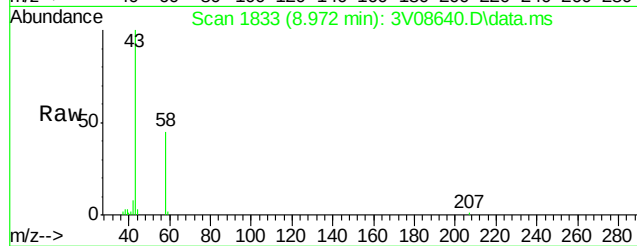
#9
Ethyl Alcohol
Concen: 120.03 ug/l
RT: 8.205 min Scan# 1594
Delta R.T. 0.003 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

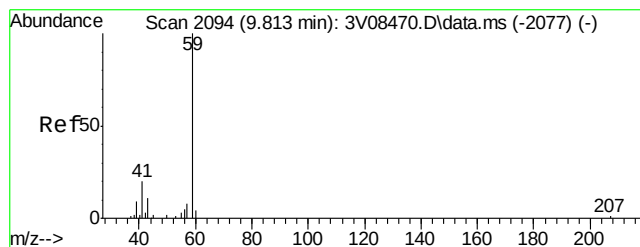
Tgt Ion	Ratio	Lower	Upper
45	100		
46	37.1	32.2	48.4



#14
Acetone
Concen: 45.22 ug/l
RT: 8.972 min Scan# 1833
Delta R.T. 0.013 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

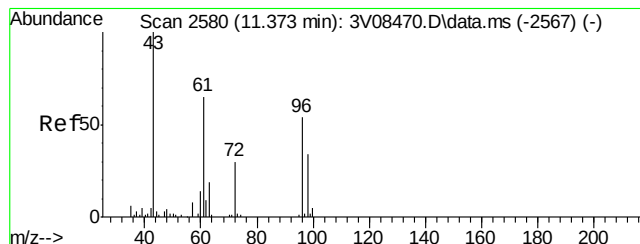
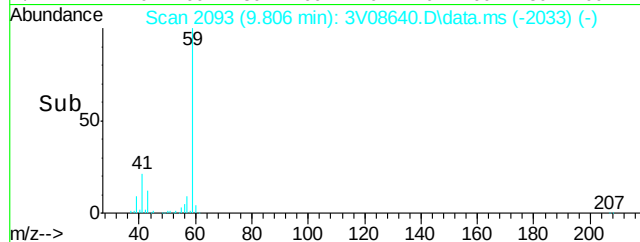
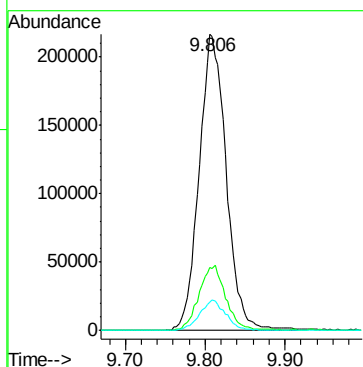
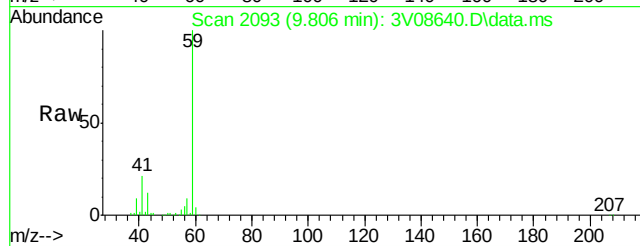
Tgt Ion	Ratio	Lower	Upper
58	100		
43	270.5	267.1	307.1





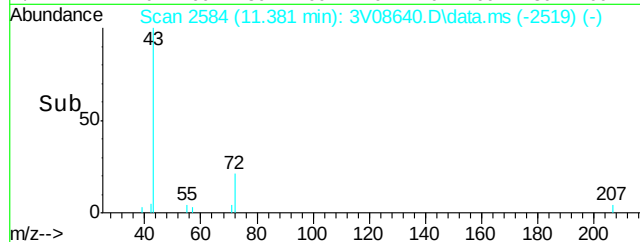
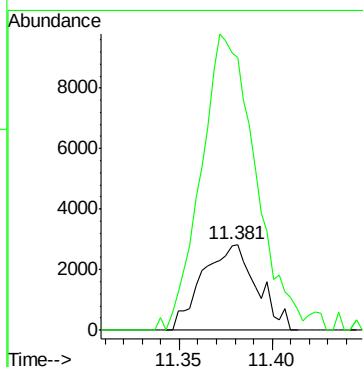
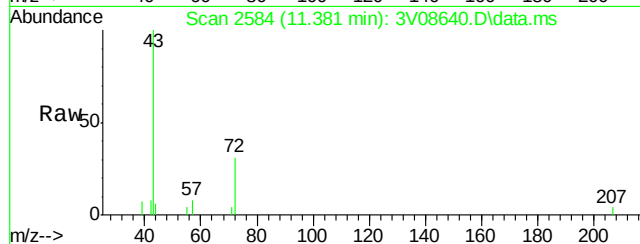
#17
Tert-Butyl Alcohol
Concen: 833.94 ug/l
RT: 9.806 min Scan# 2093
Delta R.T. -0.007 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

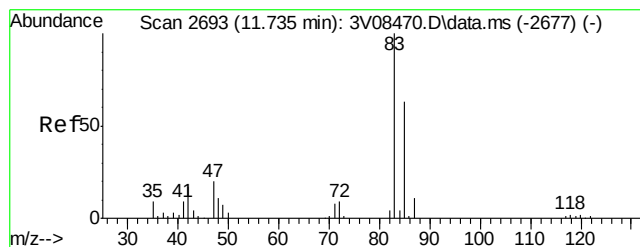
Tgt Ion:	59	Resp:	509160
Ion Ratio	Lower	Upper	
59	100		
41	21.4	18.6	28.0
57	9.7	8.2	12.4



#24
2-Butanone
Concen: 6.50 ug/l
RT: 11.381 min Scan# 2584
Delta R.T. 0.009 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

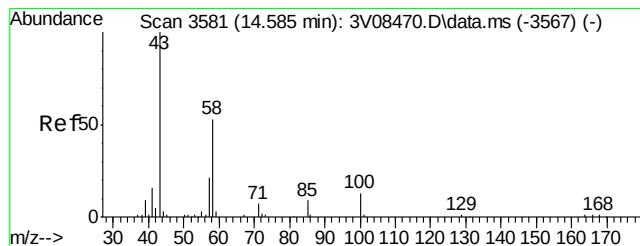
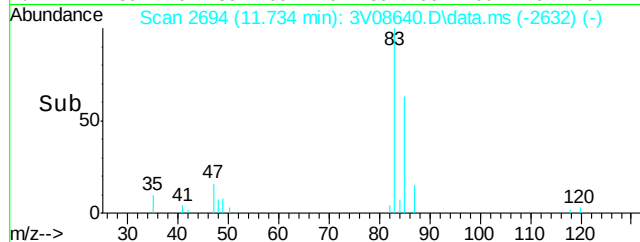
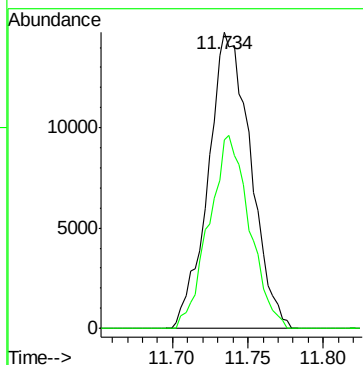
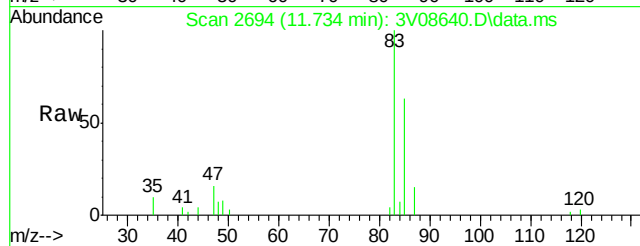
Tgt Ion:	72	Resp:	5723
Ion Ratio	Lower	Upper	
72	100		
43	347.4	252.0	378.0





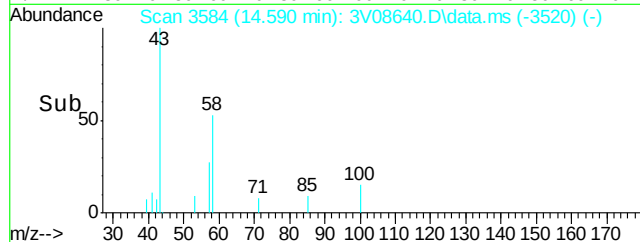
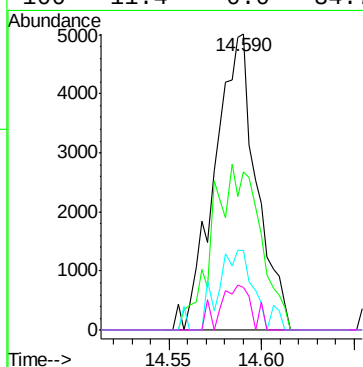
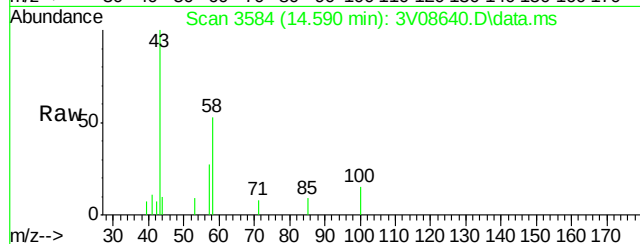
#27
Chloroform
Concen: 2.78 ug/l
RT: 11.734 min Scan# 2694
Delta R.T. -0.001 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

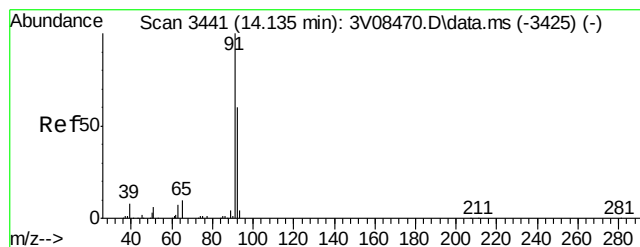
Tgt Ion: 83 Resp: 28673
Ion Ratio Lower Upper
83 100
85 62.4 45.1 85.1



#50
2-Hexanone
Concen: 2.20 ug/l
RT: 14.590 min Scan# 3584
Delta R.T. 0.006 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

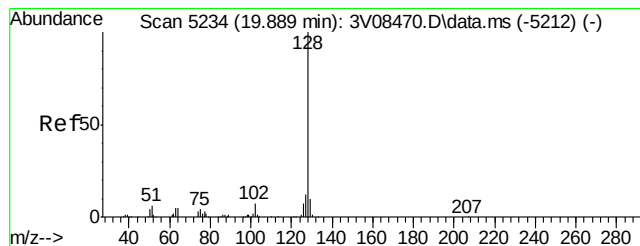
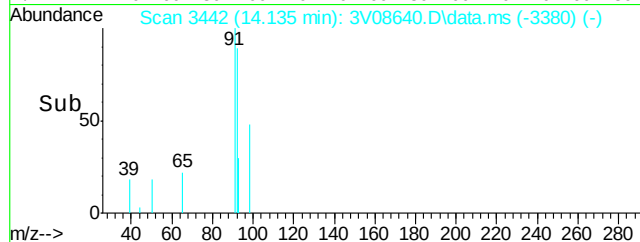
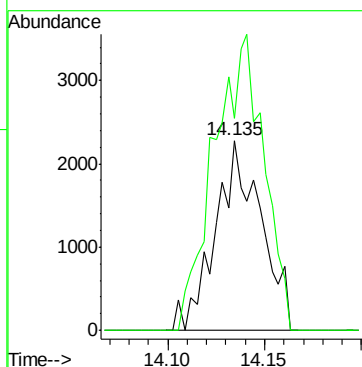
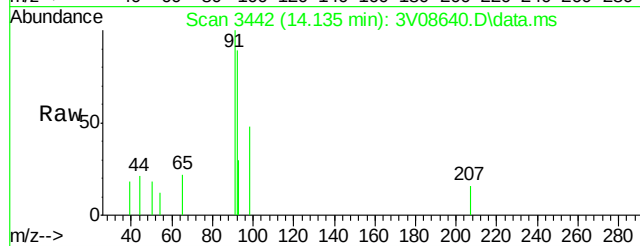
Tgt Ion: 43 Resp: 7937
Ion Ratio Lower Upper
43 100
58 40.4 37.5 77.5
57 21.6 0.0 39.9
100 11.4 0.0 34.7





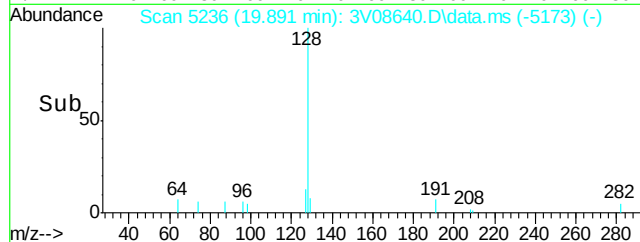
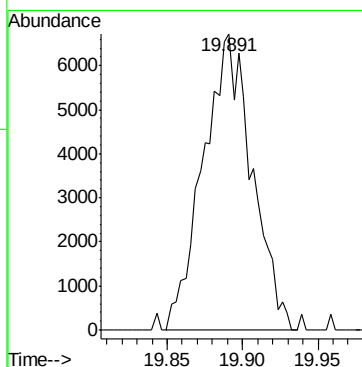
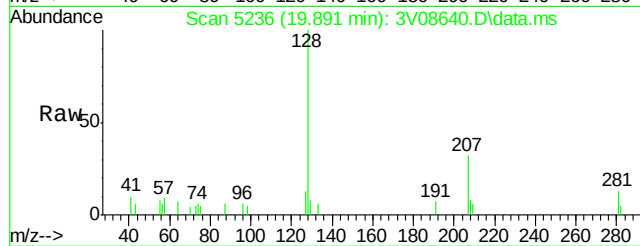
#56
Toluene
Concen: 0.22 ug/l
RT: 14.135 min Scan# 3442
Delta R.T. -0.001 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

Tgt Ion: 92 Resp: 3695
Ion Ratio Lower Upper
92 100
91 170.9 151.6 191.6



#72
Naphthalene
Concen: 0.58 ug/l
RT: 19.891 min Scan# 5236
Delta R.T. 0.002 min
Lab File: 3V08640.D
Acq: 24 Jan 2011 6:13 pm

Tgt Ion: 128 Resp: 15143



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08640.D
Acq On : 24 Jan 2011 6:13 pm
Operator : DONC
Sample : D20552-3
Misc : MS1764,V3V473,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08640.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.312	367	381	400	rBV	70792	174959	5.71%	0.858%
2	4.438	403	420	444	rBV	696237	1919968	62.68%	9.420%
3	6.267	977	990	1003	rBV2	43627	107551	3.51%	0.528%
4	8.959	1818	1829	1831	rBV	49747	62577	2.04%	0.307%
5	9.809	2076	2094	2113	rBV2	381118	897116	29.29%	4.402%
6	11.150	2510	2512	2528	rVB6	18365	34724	1.13%	0.170%
7	11.738	2683	2695	2709	rBV2	36853	68178	2.23%	0.335%
8	11.892	2728	2743	2761	rBV2	849757	1643931	53.67%	8.066%
9	12.290	2847	2867	2884	rVB3	385552	771596	25.19%	3.786%
10	12.687	2976	2991	3007	rBV	1058110	1962175	64.06%	9.627%
11	14.077	3409	3424	3439	rBV2	1611206	2925094	95.49%	14.351%
12	15.319	3797	3811	3826	rBV2	1278561	2243363	73.24%	11.007%
13	15.787	3946	3957	3965	rBV3	29437	49481	1.62%	0.243%
14	15.893	3981	3990	3999	rVB7	19726	33231	1.08%	0.163%
15	16.086	4042	4050	4062	rVB5	20232	37260	1.22%	0.183%
16	16.268	4090	4107	4123	rBV	1068900	1892732	61.79%	9.286%
17	16.878	4286	4297	4306	rVB6	21141	39540	1.29%	0.194%
18	17.270	4405	4419	4425	rBV	1770872	3063153	100.00%	15.029%
19	17.311	4426	4432	4445	rVB2	1323368	2334535	76.21%	11.454%
20	17.728	4554	4562	4573	rVB4	40387	78707	2.57%	0.386%
21	19.833	5212	5218	5227	rVB2	25691	42053	1.37%	0.206%

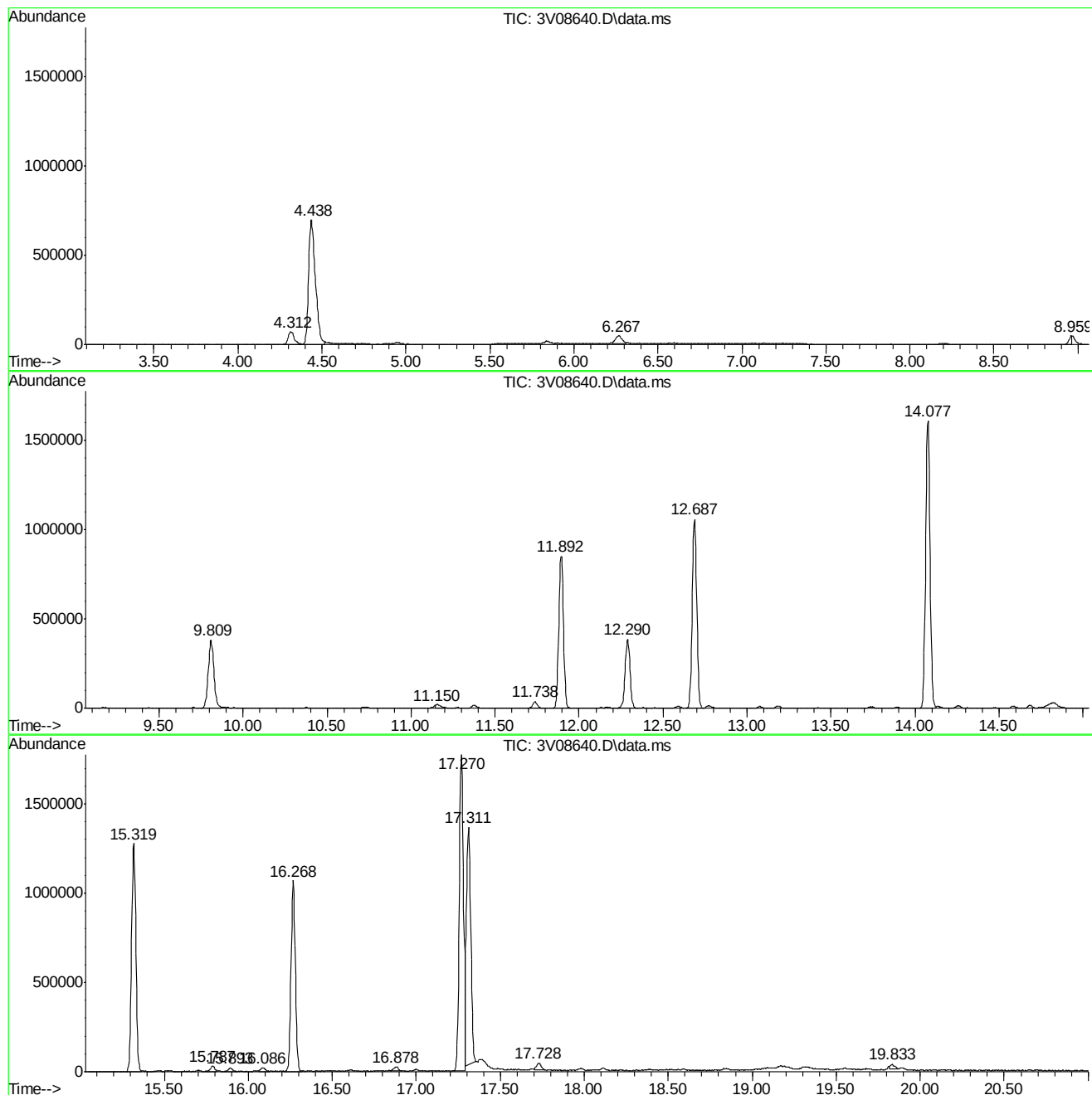
Sum of corrected areas: 20381924

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08640.D
Acq On : 24 Jan 2011 6:13 pm
Operator : DONC
Sample : D20552-3
Misc : MS1764,V3V473,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08640.D
 Acq On : 24 Jan 2011 6:13 pm
 Operator : DONC
 Sample : D20552-3
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 18 Sample Multiplier: 1

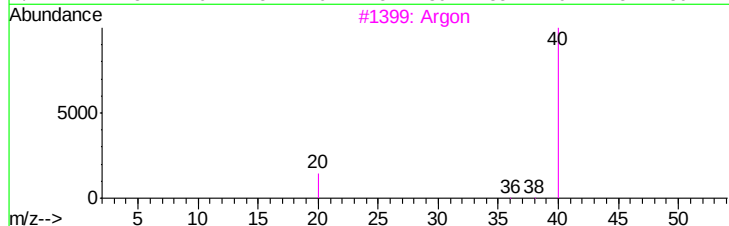
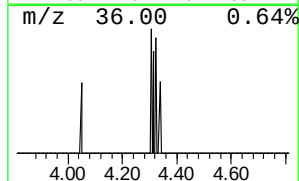
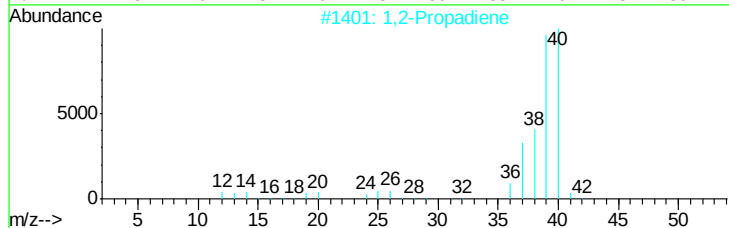
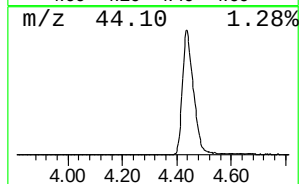
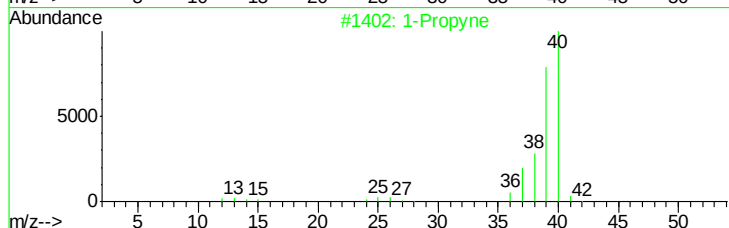
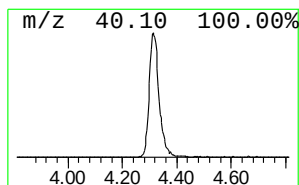
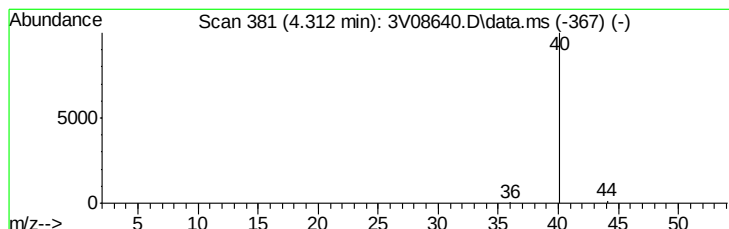
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 1-Propyne Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.312	5.32 ug/l	174959	Pentafluorobenzene	11.895

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propyne	40	C3H4	000074-99-7	2
2	1,2-Propadiene	40	C3H4	000463-49-0	2
3	Argon	40	Ar	007440-37-1	2
4	Boron, carbonyltrihydro-, (T-4)-	42	CH3BO	013205-44-2	1
5	Ethane, nitro-	75	C2H5NO2	000079-24-3	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08640.D
 Acq On : 24 Jan 2011 6:13 pm
 Operator : DONC
 Sample : D20552-3
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 18 Sample Multiplier: 1

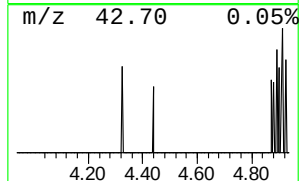
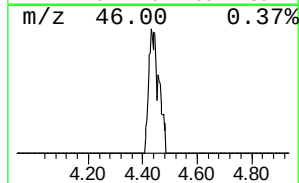
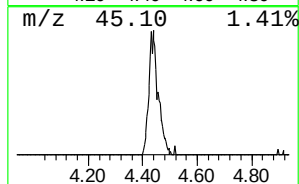
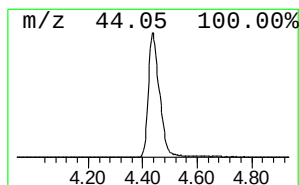
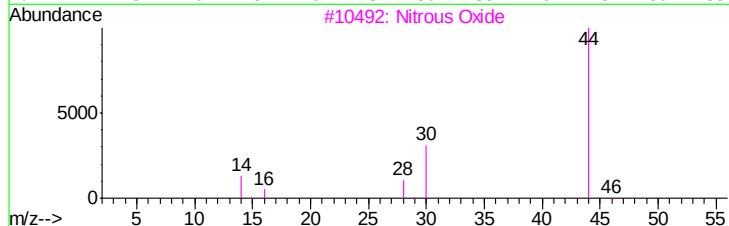
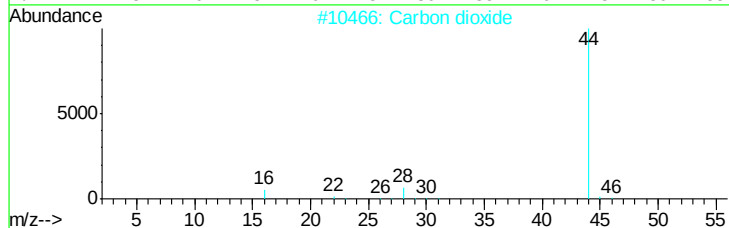
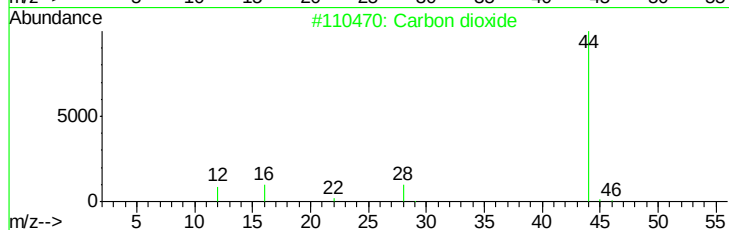
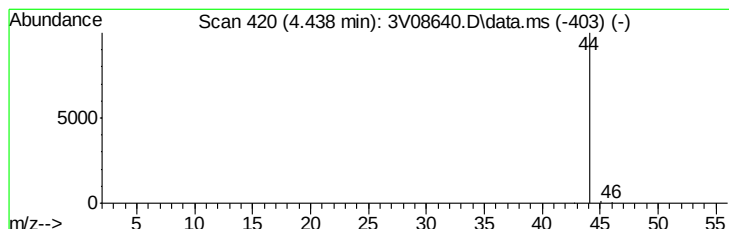
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.438	58.40 ug/l	1919970	Pentafluorobenzene	11.895

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide			44	CO2	000124-38-9	4
2	Carbon dioxide			44	CO2	000124-38-9	4
3	Nitrous Oxide			44	N2O	010024-97-2	3
4	Nitrous Oxide			44	N2O	010024-97-2	3
5	Nitrous Oxide			44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08640.D
Acq On : 24 Jan 2011 6:13 pm
Operator : DONC
Sample : D20552-3
Misc : MS1764,V3V473,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
1-Propyne	4.312	5.3	ug/l	174959	1	11.895	1643930	50.0
Carbon dioxide	4.438	58.4	ug/l	1919970	1	11.895	1643930	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08641.D
 Acq On : 24 Jan 2011 6:44 pm
 Operator : DONC
 Sample : D20552-4
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 25 11:48:05 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260
 QLast Update : Mon Jan 17 09:47:23 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.895	168	644598	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	953186	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.316	117	836458	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	456783	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.293	102	73351	44.86	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	89.72%
55) Toluene-d8	14.074	98	1128850	46.71	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	93.42%
59) 4-Bromofluorobenzene	16.269	95	394784	43.68	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	87.36%

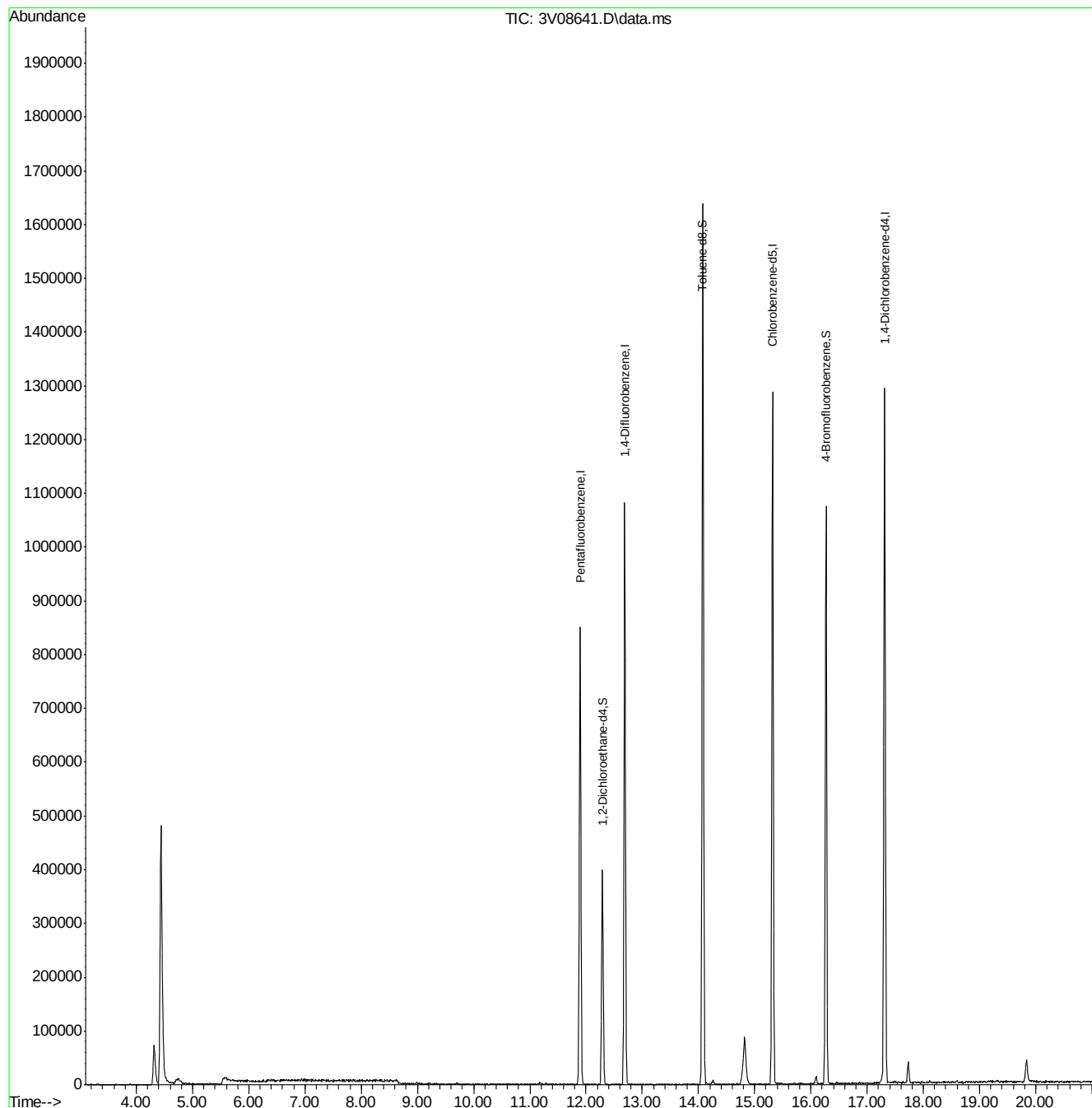
Target Compounds	Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08641.D
Acq On : 24 Jan 2011 6:44 pm
Operator : DONC
Sample : D20552-4
Misc : MS1764,V3V473,,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 25 11:48:05 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08641.D
 Acq On : 24 Jan 2011 6:44 pm
 Operator : DONC
 Sample : D20552-4
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 19 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0

Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V08641.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.316	365	381	402	rBV	74104	186690	6.35%	1.182%
2	4.438	404	419	450	rBV	479831	1221708	41.56%	7.738%
3	11.895	2728	2743	2760	rBV	849895	1620836	55.14%	10.266%
4	12.290	2850	2866	2884	rBV4	399462	786049	26.74%	4.978%
5	12.688	2974	2990	3004	rBV	1083171	1960962	66.71%	12.420%
6	14.074	3407	3422	3439	rBV2	1638678	2939549	100.00%	18.618%
7	14.818	3635	3654	3675	rVB2	83266	269460	9.17%	1.707%
8	15.319	3793	3810	3828	rBV2	1288881	2276444	77.44%	14.418%
9	16.269	4090	4106	4121	rBV	1074582	1937285	65.90%	12.270%
10	17.312	4412	4431	4446	rVB2	1290887	2458594	83.64%	15.572%
11	17.729	4551	4561	4573	rVB2	39748	76766	2.61%	0.486%
12	19.831	5203	5216	5217	rBV2	39137	54555	1.86%	0.346%

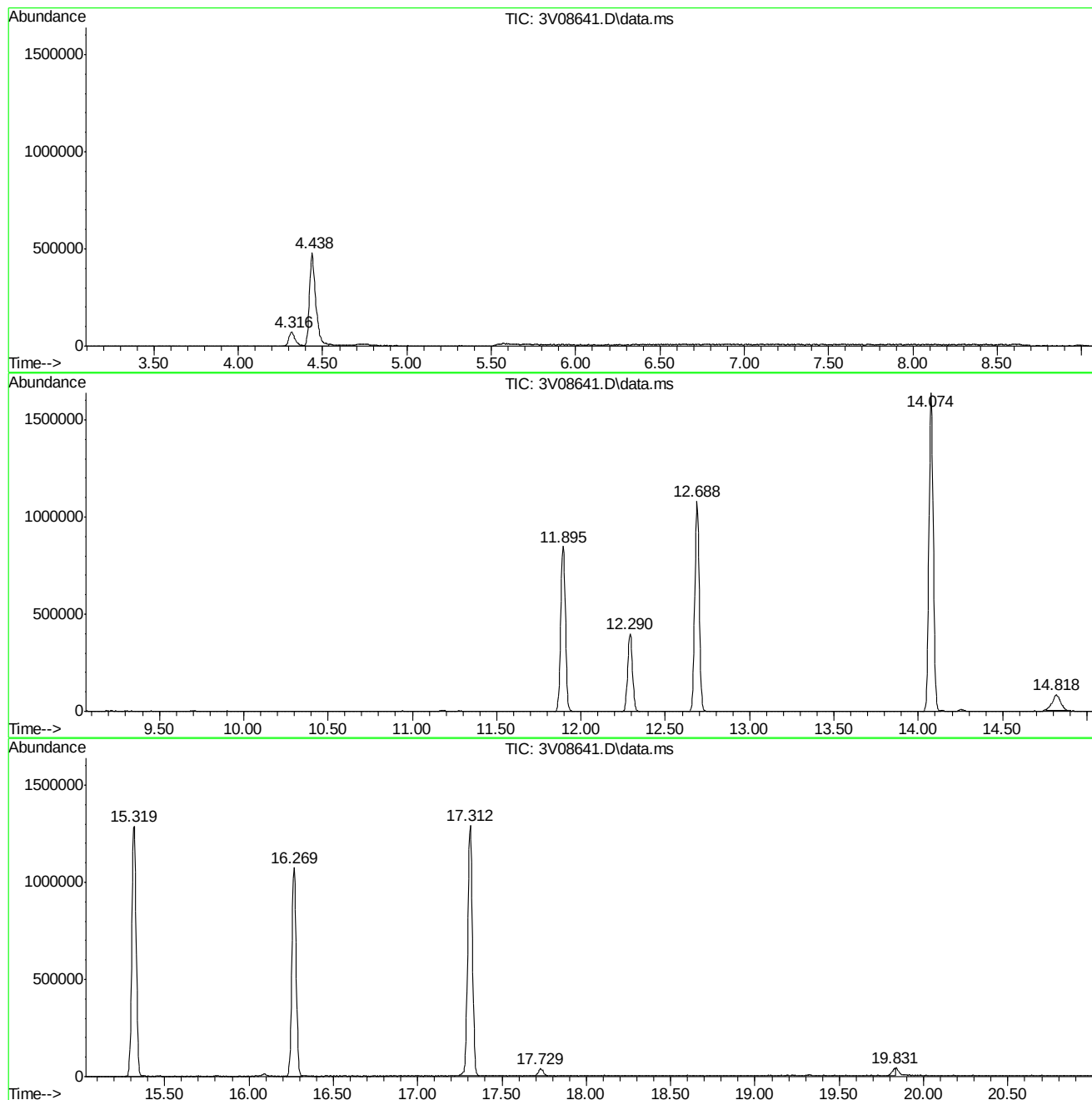
Sum of corrected areas: 15788898

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08641.D
Acq On : 24 Jan 2011 6:44 pm
Operator : DONC
Sample : D20552-4
Misc : MS1764,V3V473,,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08641.D
Acq On : 24 Jan 2011 6:44 pm
Operator : DONC
Sample : D20552-4
Misc : MS1764,V3V473,,,,,1
ALS Vial : 19 Sample Multiplier: 1

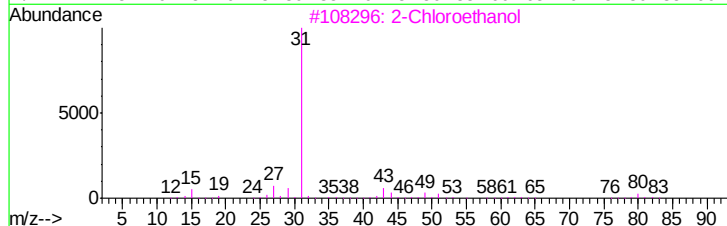
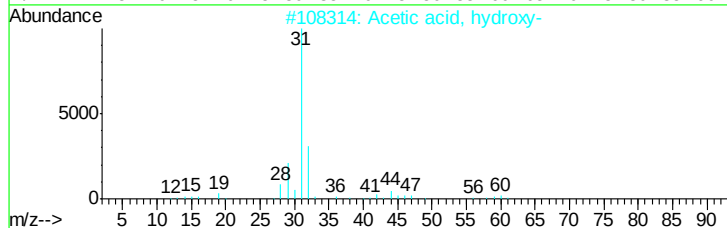
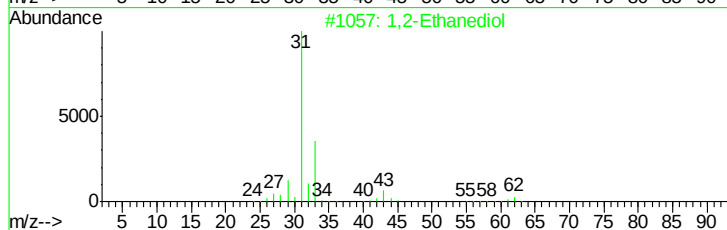
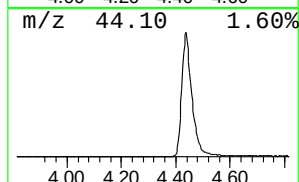
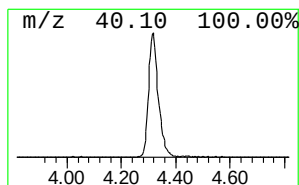
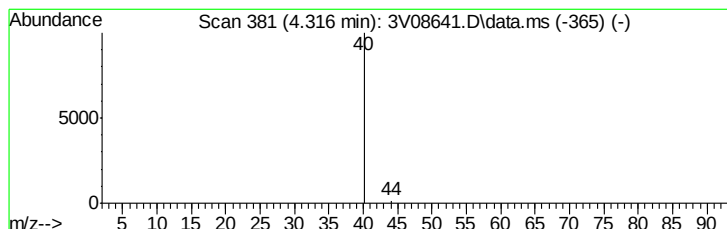
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 1,2-Ethanediol Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.316	5.76 ug/l	186690	Pentafluorobenzene	11.895

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			1,2-Ethanediol	62	C2H6O2	000107-21-1	1
2			Acetic acid, hydroxy-	76	C2H4O3	000079-14-1	1
3			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
4			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
5			1-Butanamine, 3-methyl-	87	C5H13N	000107-85-7	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
 Data File : 3V08641.D
 Acq On : 24 Jan 2011 6:44 pm
 Operator : DONC
 Sample : D20552-4
 Misc : MS1764,V3V473,,,,,1
 ALS Vial : 19 Sample Multiplier: 1

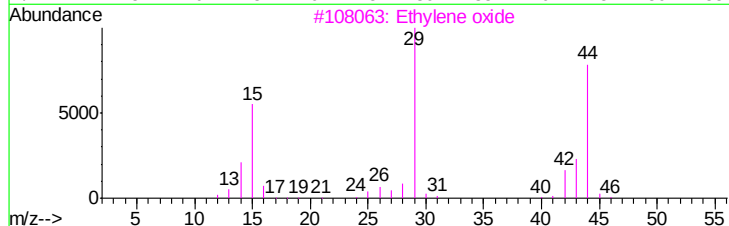
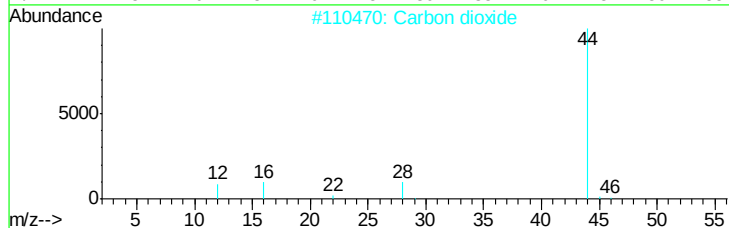
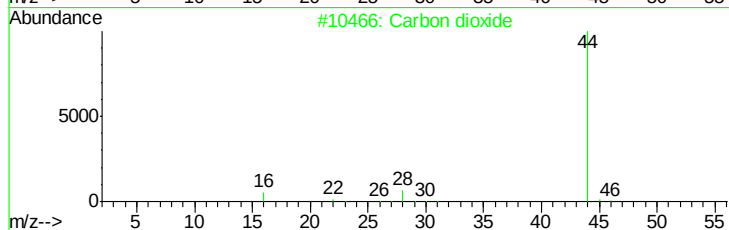
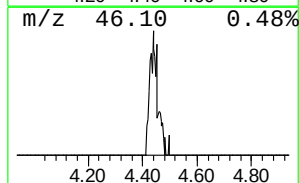
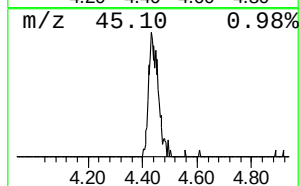
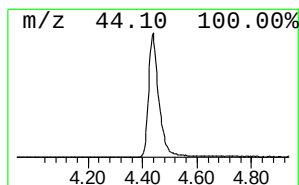
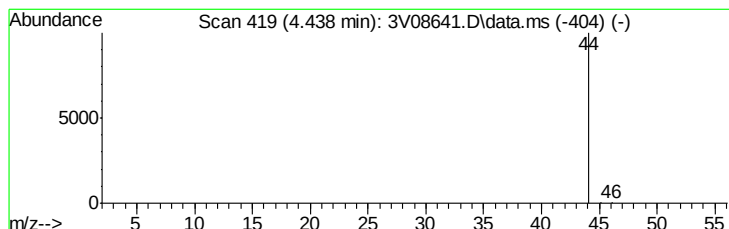
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.438	37.69 ug/l	1221710	Pentafluorobenzene	11.895

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Ethylene oxide	44	C2H4O	000075-21-8	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08641.D
Acq On : 24 Jan 2011 6:44 pm
Operator : DONC
Sample : D20552-4
Misc : MS1764,V3V473,,,,,1
ALS Vial : 19 Sample Multiplier: 1

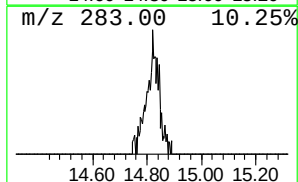
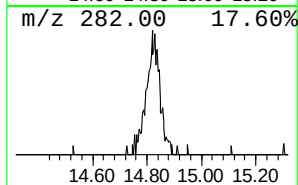
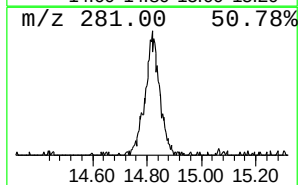
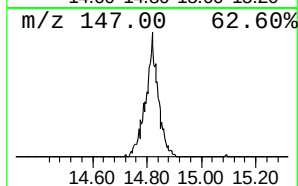
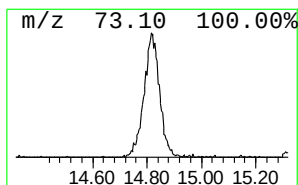
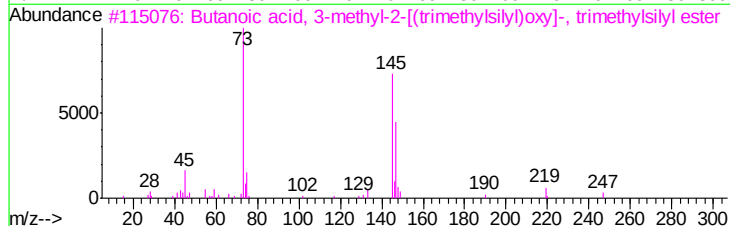
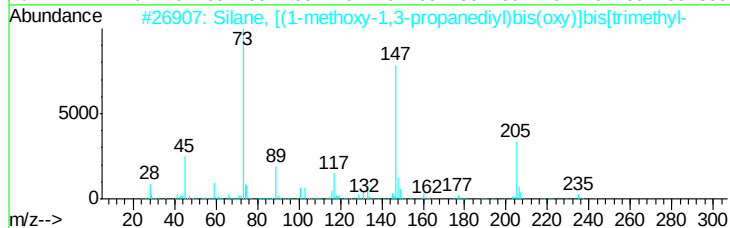
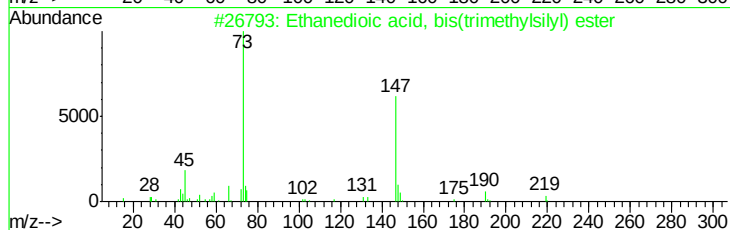
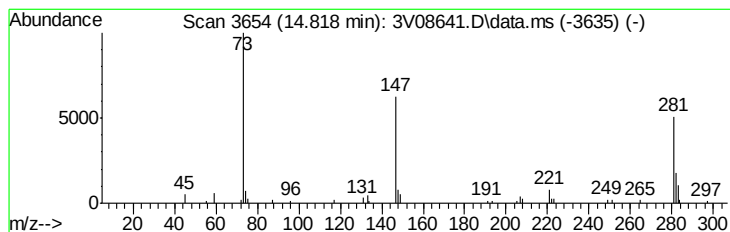
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 3 Ethanedioic acid, bis(trimethy... Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.818	5.92 ug/l	269460	Chlorobenzene-d5	15.316

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Ethanedioic acid, bis(trimethyls...	234	C8H18O4Si2	018294-04-7	25
2			Silane, [(1-methoxy-1,3-propaned...	250	C10H26O3Si2	062185-57-3	12
3			Butanoic acid, 3-methyl-2-[(trim...	262	C11H26O3Si2	055124-92-0	17
4			Benzenepropanoic acid, .alpha.-[...	310	C15H26O3Si2	027750-45-4	17
5			2-Methyl-1,4-bis(trimethylsiloxy...	248	C11H28O2Si2	105747-05-5	10



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08641.D
Acq On : 24 Jan 2011 6:44 pm
Operator : DONC
Sample : D20552-4
Misc : MS1764,V3V473,,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---			
					#	RT	Resp	Conc
1,2-Ethanedioic acid	4.316	5.8	ug/l	186690	1	11.895	1620840	50.0
Carbon dioxide	4.438	37.7	ug/l	1221710	1	11.895	1620840	50.0
Ethanedioic acid	14.818	5.9	ug/l	269460	3	15.316	2276440	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08625A.D
Acq On : 24 Jan 2011 10:30 am
Operator : DONC
Sample : MB1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 25 10:22:56 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.888	168	594287	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.684	114	875120	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.315	117	782271	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.308	152	445588	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.283	102	65792	43.64	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	87.28%	
55) Toluene-d8	14.073	98	1044404	46.21	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	92.42%	
59) 4-Bromofluorobenzene	16.265	95	362774	42.92	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	85.84%	

Target Compounds

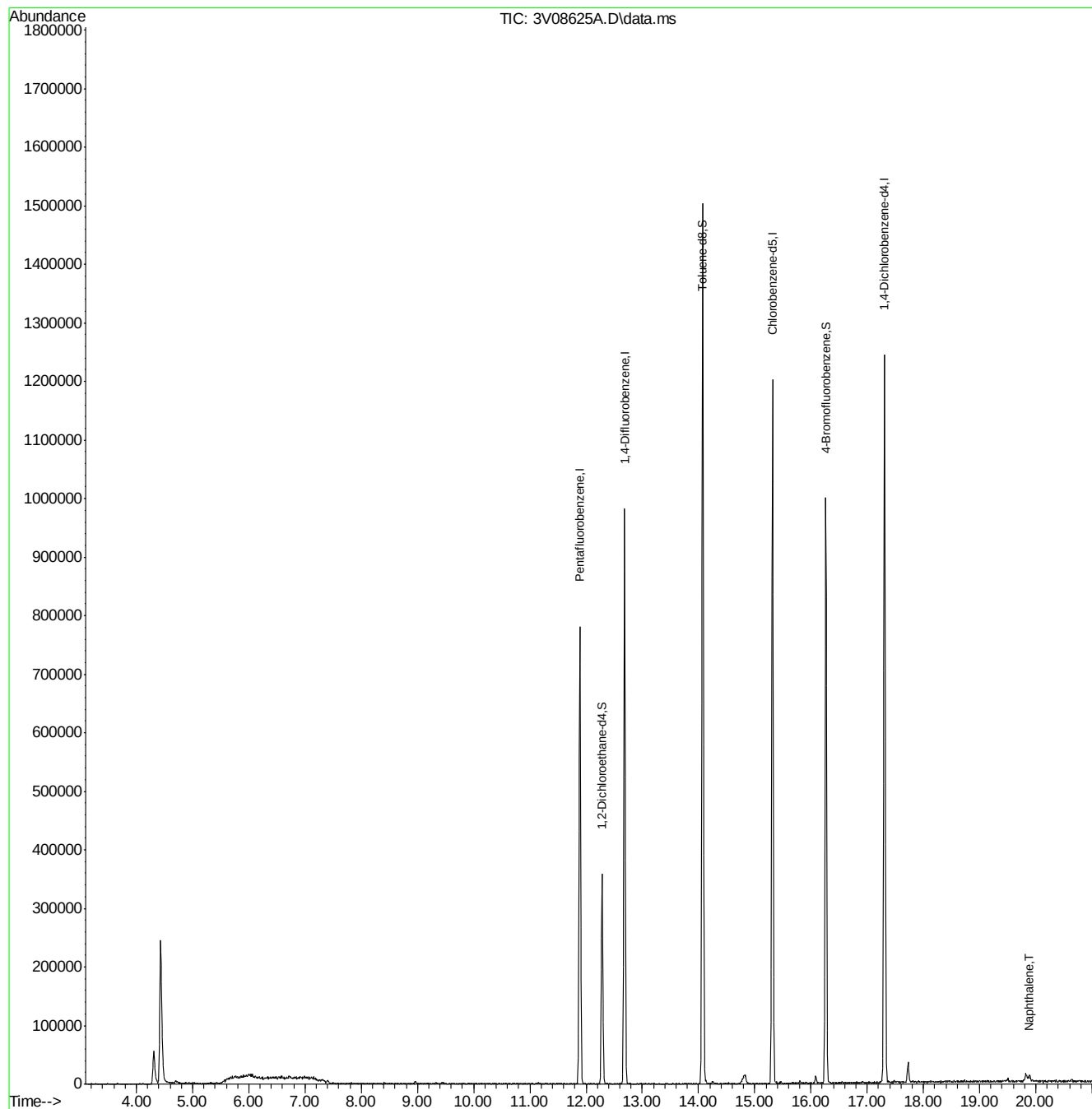
					Qvalue
72) Naphthalene	19.885	128	13616	0.54 ug/l	100

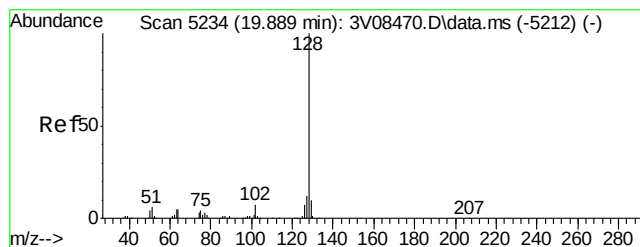
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08625A.D
Acq On : 24 Jan 2011 10:30 am
Operator : DONC
Sample : MB1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 3 Sample Multiplier: 1

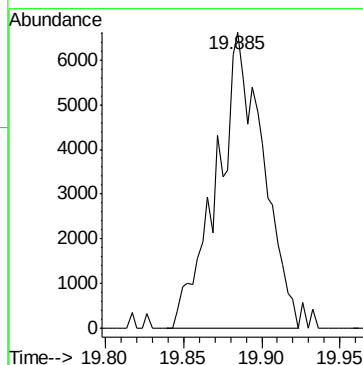
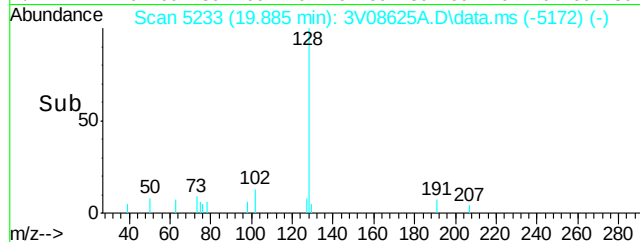
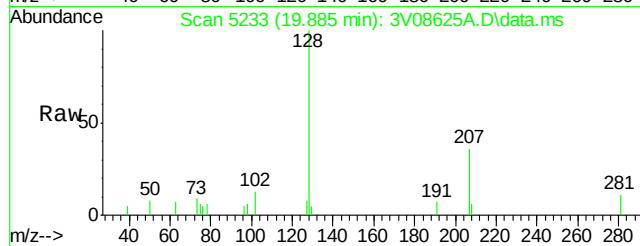
Quant Time: Jan 25 10:22:56 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





#72
Naphthalene
Concen: 0.54 ug/l
RT: 19.885 min Scan# 5233
Delta R.T. -0.004 min
Lab File: 3V08625A.D
Acq: 24 Jan 2011 10:30 am

Tgt Ion:128 Resp: 13616



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08625A.D
Acq On : 24 Jan 2011 10:30 am
Operator : DONC
Sample : MB1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08625A.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.309	365	379	380	rBV	55895	74951	2.76%	0.549%
2	4.431	401	417	445	rBV	244885	618466	22.77%	4.527%
3	11.888	2727	2741	2758	rBV	781429	1485257	54.68%	10.871%
4	12.283	2850	2864	2883	rBB2	358538	707723	26.06%	5.180%
5	12.684	2973	2989	3004	rBV	982397	1798676	66.22%	13.165%
6	14.073	3406	3422	3437	rBV	1504183	2716179	100.00%	19.881%
7	15.315	3792	3809	3830	rBV	1202269	2119697	78.04%	15.515%
8	16.265	4091	4105	4121	rBV	999950	1781328	65.58%	13.038%
9	17.308	4411	4430	4448	rVB3	1243665	2360188	86.89%	17.275%

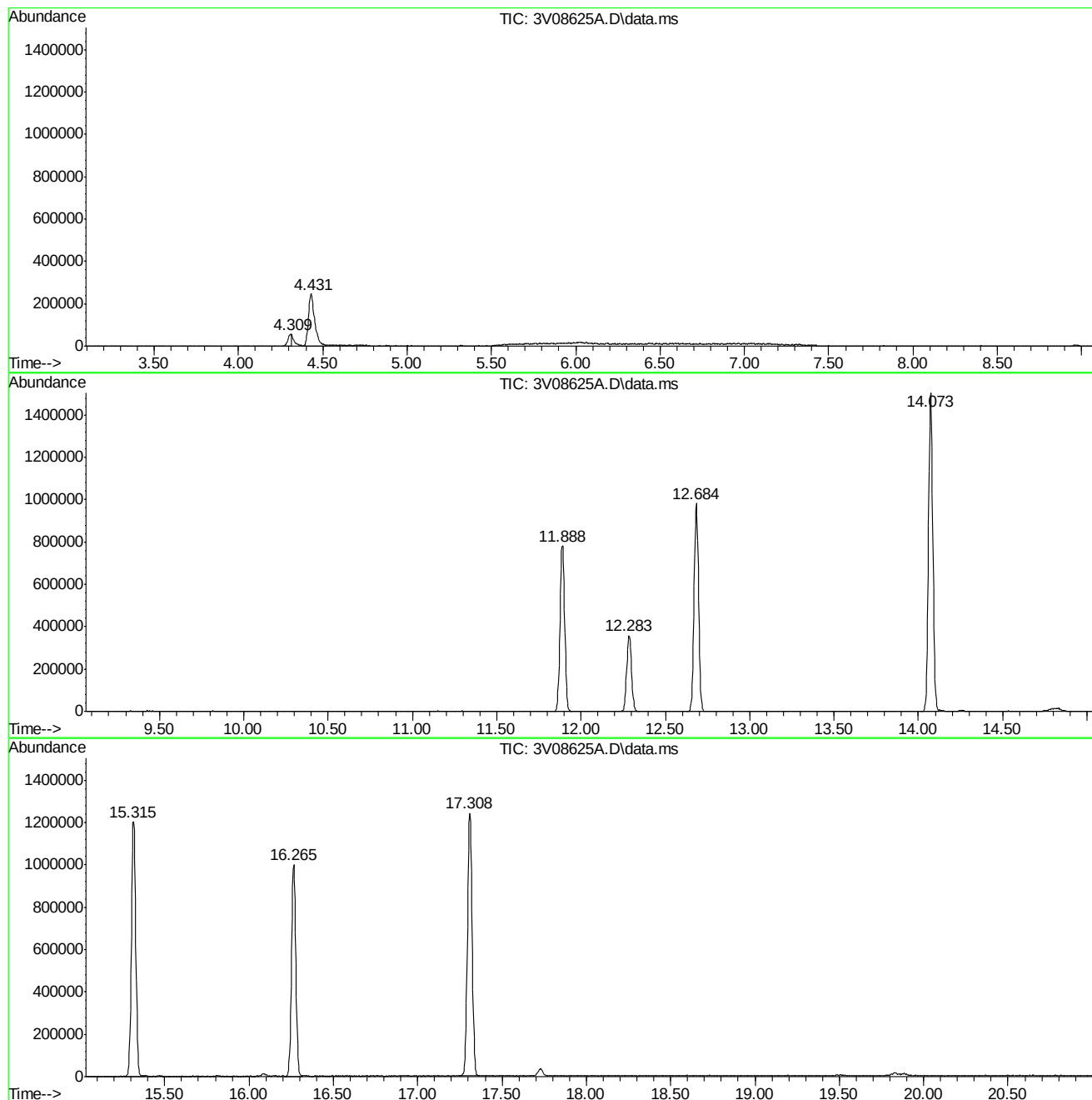
Sum of corrected areas: 13662465

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08625A.D
Acq On : 24 Jan 2011 10:30 am
Operator : DONC
Sample : MB1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08625A.D
Acq On : 24 Jan 2011 10:30 am
Operator : DONC
Sample : MB1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 3 Sample Multiplier: 1

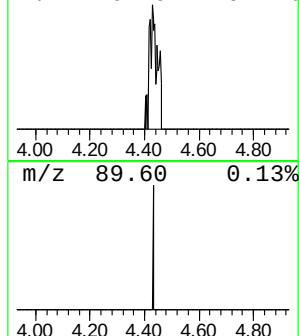
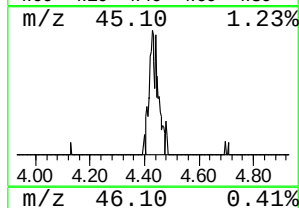
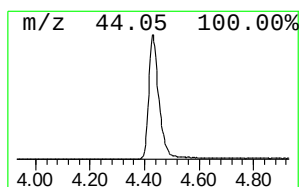
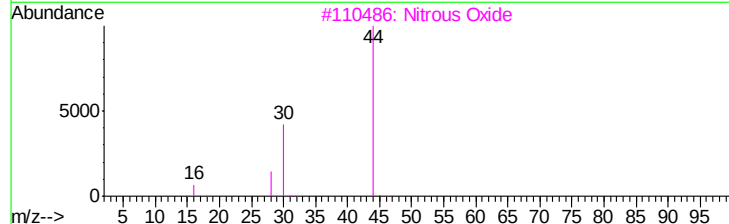
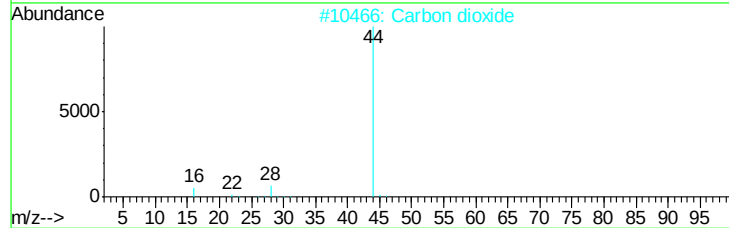
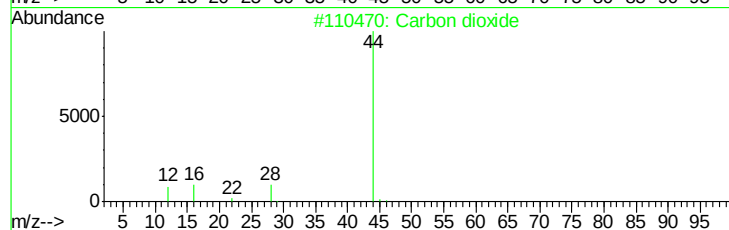
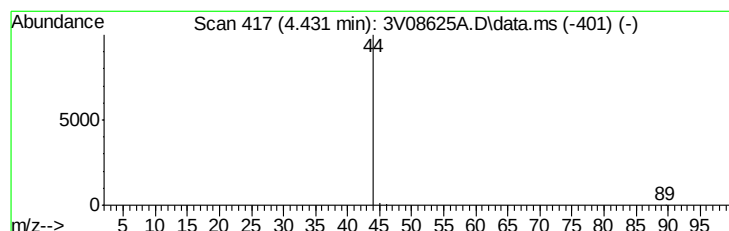
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.431	20.82 ug/l	618466	Pentafluorobenzene	11.888

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012411.S\
Data File : 3V08625A.D
Acq On : 24 Jan 2011 10:30 am
Operator : DONC
Sample : MB1
Misc : MS1764,V3V473,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---
					# RT Resp Conc
Carbon dioxide	4.431	20.8	ug/l	618466	1 11.888 1485260 50.0

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA557-MB	GA0258.D	1	01/21/11	BR	n/a	n/a	GGA557

The QC reported here applies to the following samples:

Method: SW846 8015B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	106% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA557-BS	GA0259.D	1	01/21/11	BR	n/a	n/a	GGA557

The QC reported here applies to the following samples: Method: SW846 8015B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.70	77	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	121%	60-140%

7.2.1
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D20552
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20552-3MS	GA0261.D	1	01/21/11	BR	n/a	n/a	GGA557
D20552-3MSD	GA0262.D	1	01/21/11	BR	n/a	n/a	GGA557
D20552-3	GA0260.D	1	01/21/11	BR	n/a	n/a	GGA557

The QC reported here applies to the following samples: Method: SW846 8015B

D20552-1, D20552-2, D20552-3, D20552-4

CAS No.	Compound	D20552-3 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	1.74	79	1.74	79	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D20552-3	Limits
120-82-1	1,2,4-Trichlorobenzene	118%	119%	114%	60-140%

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0264.D\FID1A.CH Vial: 27
Signal #2 : Z:\012111\GA0264.D\FID2B.CH
Acq On : 22 Jan 2011 12:31 am Operator: BrianR
Sample : D20552-1 Inst : BTEX2
Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 22 16:52:14 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Jan 22 16:51:10 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

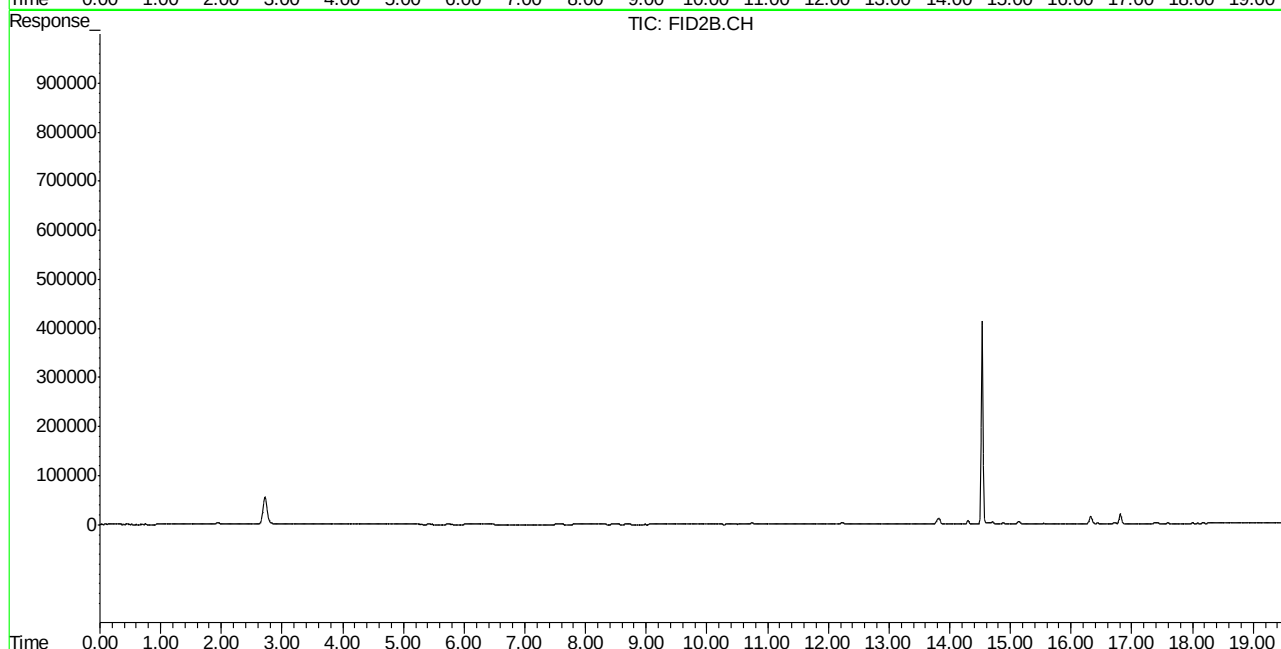
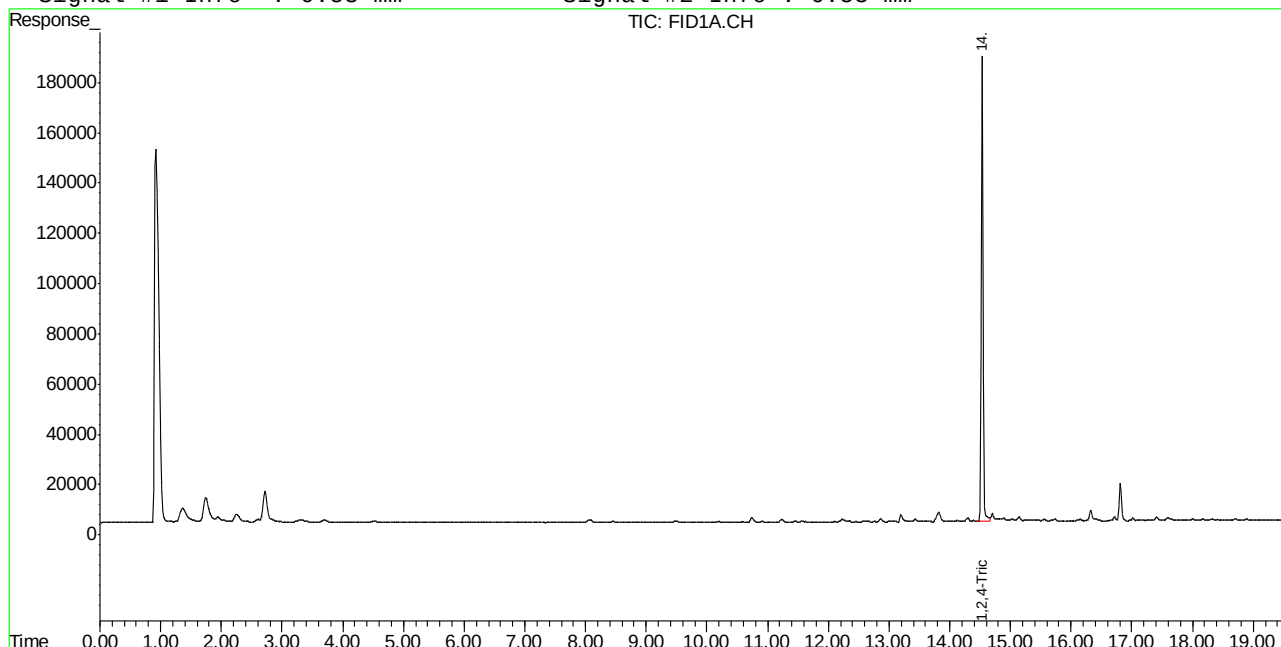
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.54	3761303	102.666 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

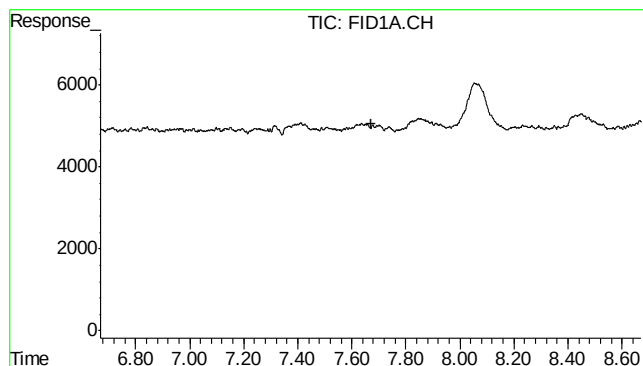
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0264.D\FID1A.CH Vial: 27
 Signal #2 : Z:\012111\GA0264.D\FID2B.CH
 Acq On : 22 Jan 2011 12:31 am Operator: BrianR
 Sample : D20552-1 Inst : BTEX2
 Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 22 14:50 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat Jan 22 16:51:10 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

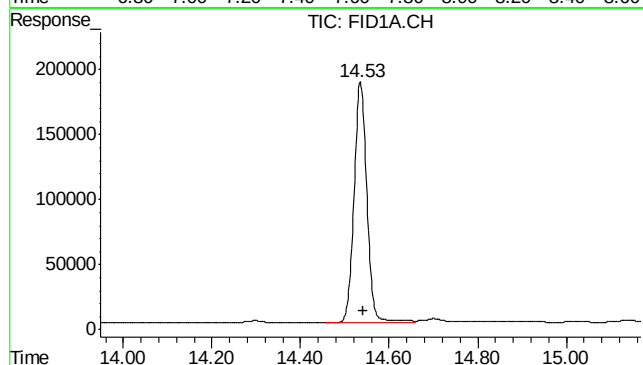
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





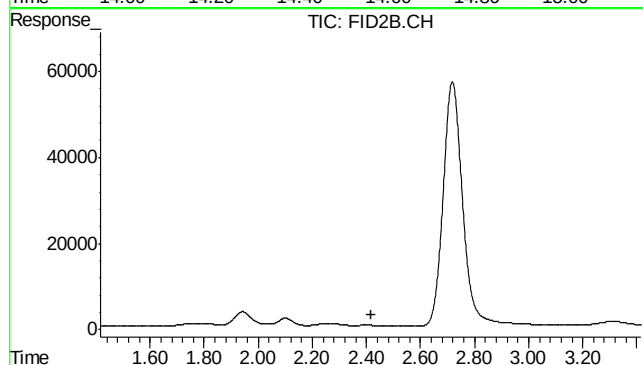
#1 TVH-Gasoline

R.T.: 0.000 min
Exp R.T.: 7.670 min
Response: 0
Conc: N.D.



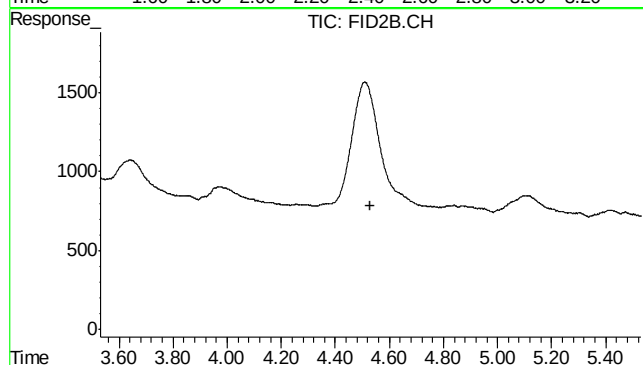
#2 1,2,4-Trichlorobenzene

R.T.: 14.536 min
Delta R.T.: -0.006 min
Response: 3761303
Conc: 102.67 %



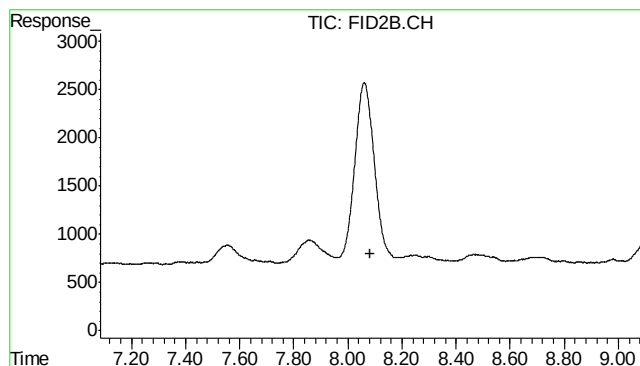
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.416 min
Response: 0
Conc: N.D.

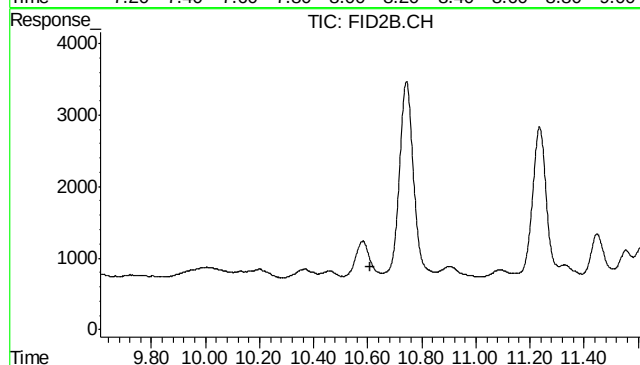


#5 Benzene

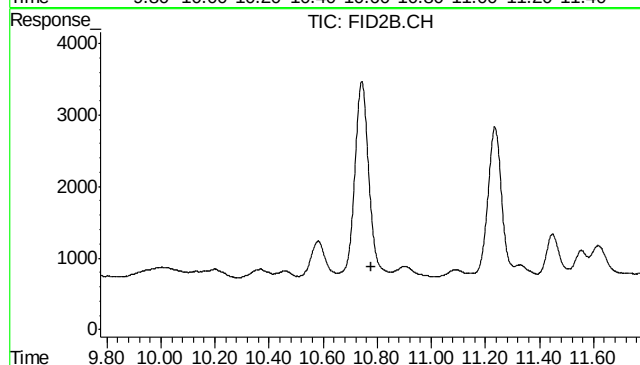
R.T.: 0.000 min
Exp R.T.: 4.531 min
Response: 0
Conc: N.D.



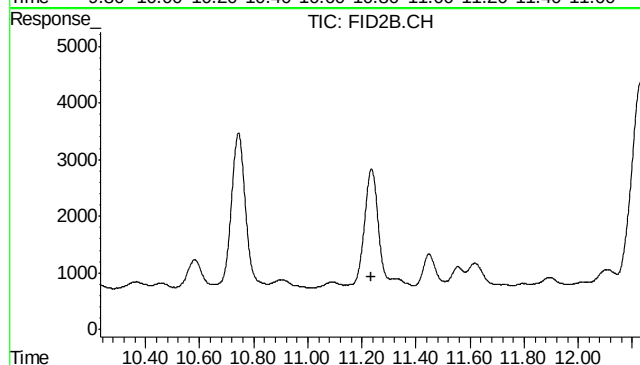
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.084 min
 Response: 0
 Conc: N.D.



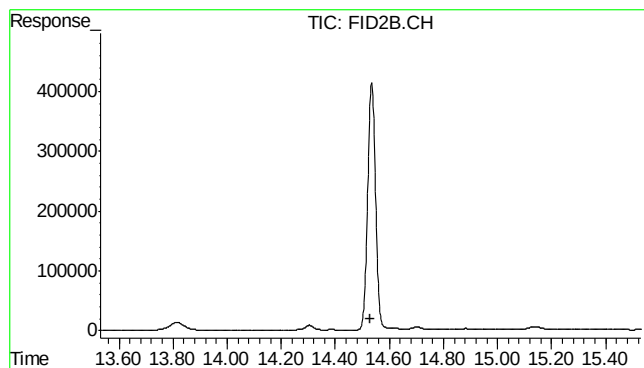
#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.611 min
 Response: 0
 Conc: N.D.



#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.776 min
 Response: 0
 Conc: N.D.

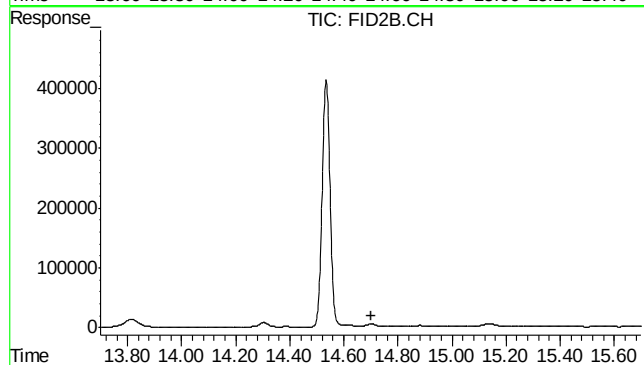


#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.233 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.531 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.699 min
 Response: 0
 Conc: N.D.

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0263.D\FID1A.CH Vial: 26
Signal #2 : Z:\012111\GA0263.D\FID2B.CH
Acq On : 21 Jan 2011 11:56 pm Operator: BrianR
Sample : D20552-2 Inst : BTEX2
Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 22 16:52:11 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Jan 22 16:51:10 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

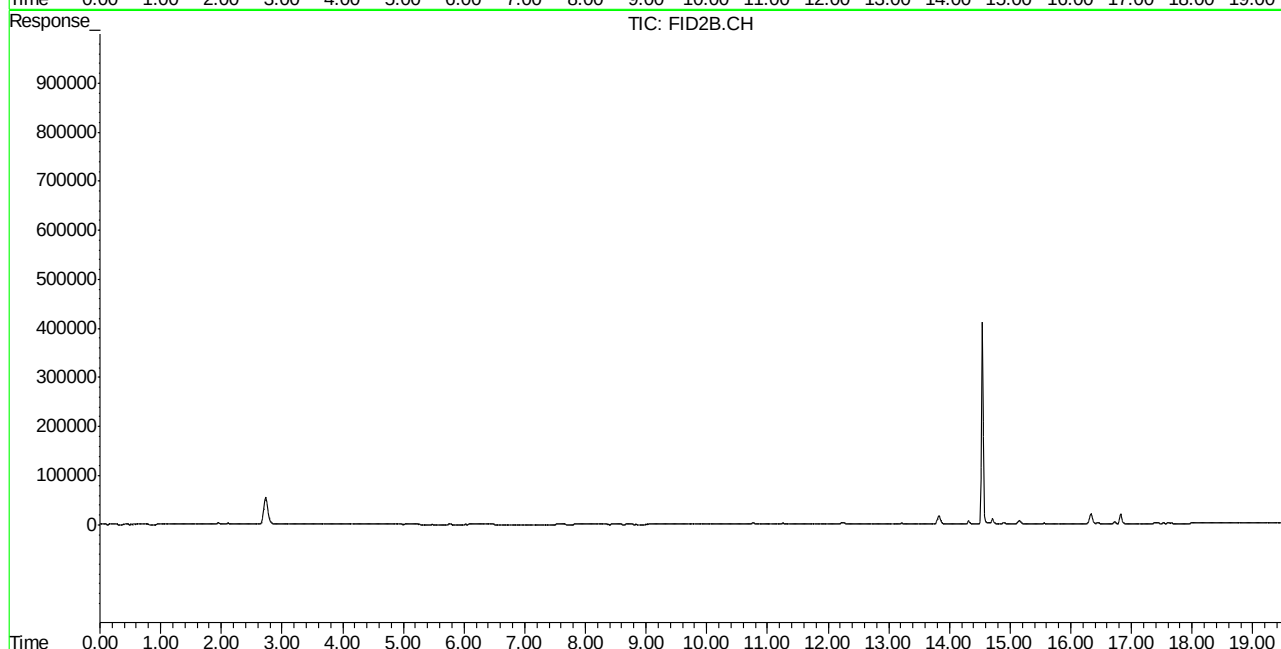
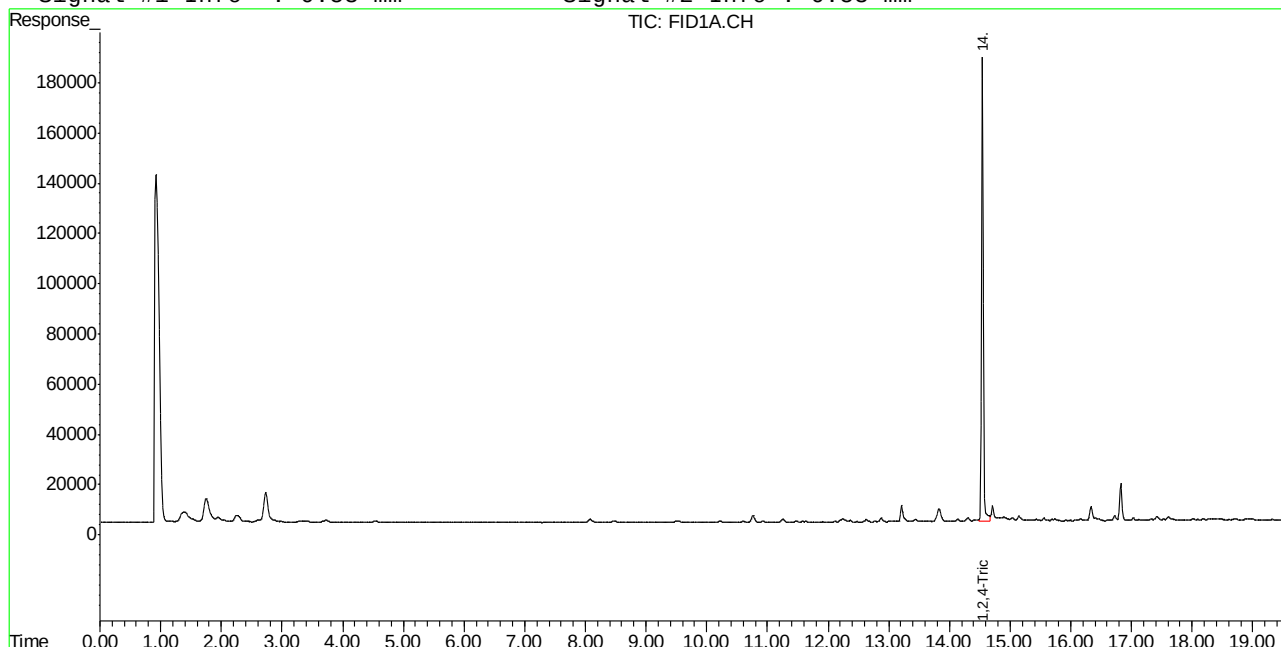
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.54	3722499	101.606 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

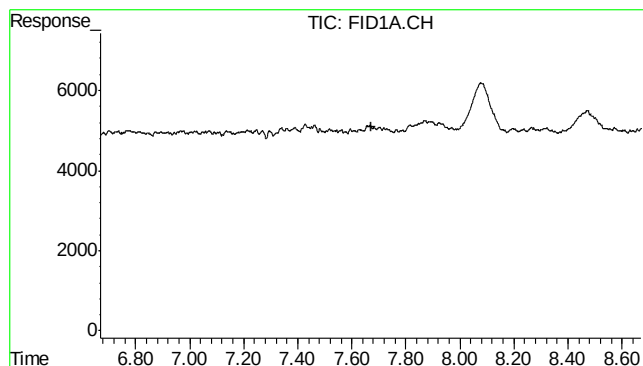
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0263.D\FID1A.CH Vial: 26
 Signal #2 : Z:\012111\GA0263.D\FID2B.CH
 Acq On : 21 Jan 2011 11:56 pm Operator: BrianR
 Sample : D20552-2 Inst : BTEX2
 Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 22 14:49 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat Jan 22 16:51:10 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

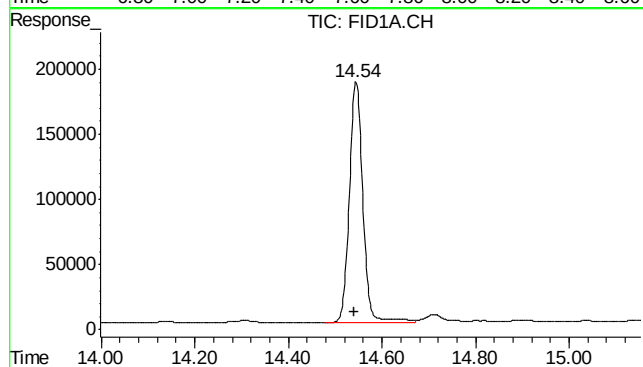
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





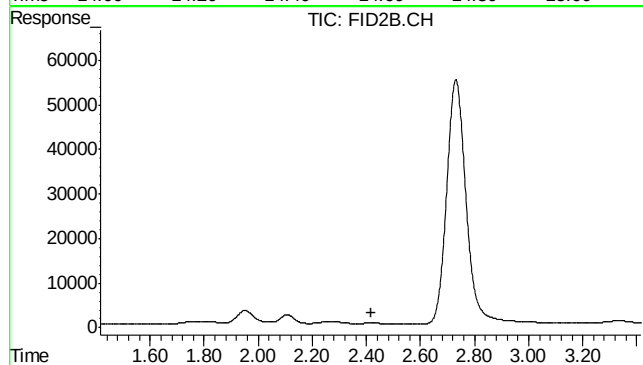
#1 TVH-Gasoline

R.T.: 0.000 min
Exp R.T.: 7.670 min
Response: 0
Conc: N.D.



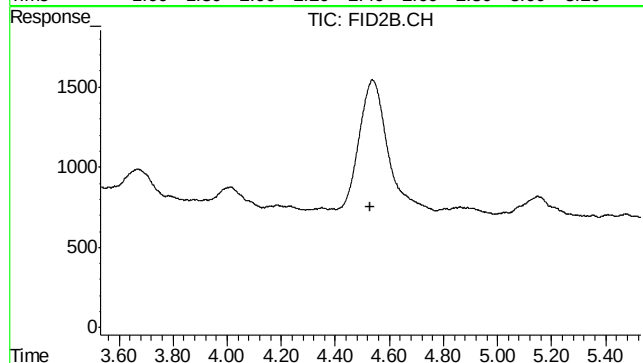
#2 1,2,4-Trichlorobenzene

R.T.: 14.545 min
Delta R.T.: 0.003 min
Response: 3722499
Conc: 101.61 %



#4 Methyl-t-butyl-ether

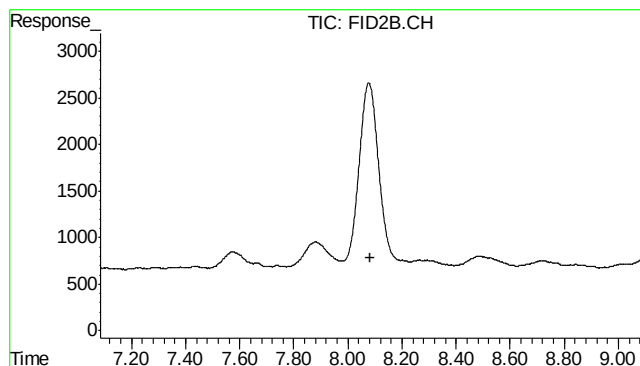
R.T.: 0.000 min
Exp R.T.: 2.416 min
Response: 0
Conc: N.D.



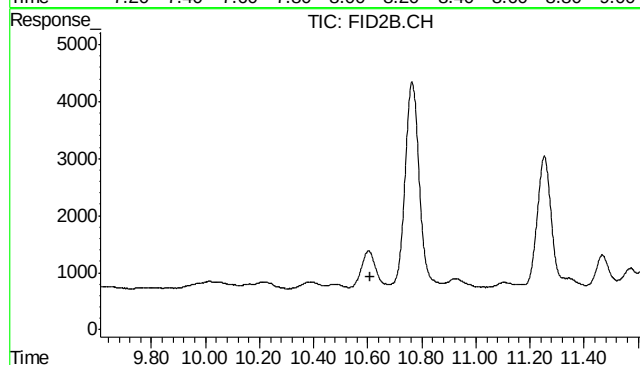
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.531 min
Response: 0
Conc: N.D.

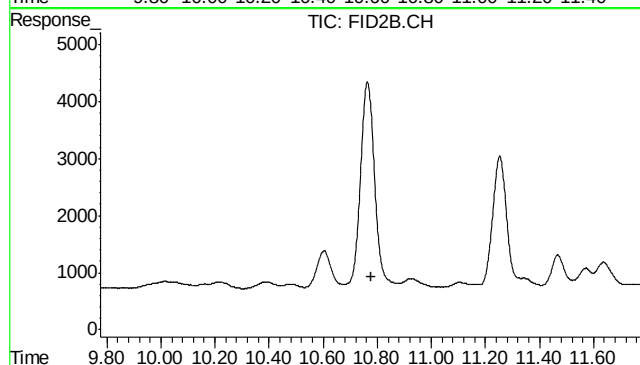
8.12
8



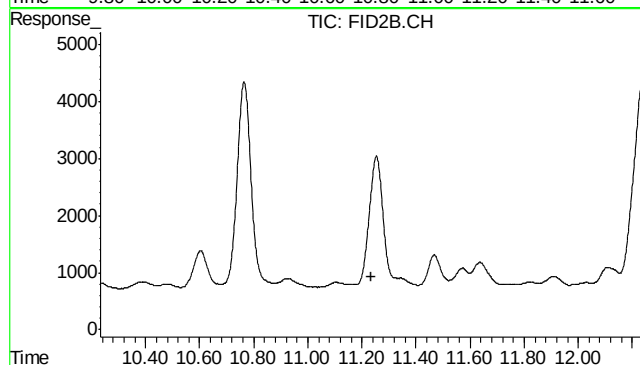
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.084 min
 Response: 0
 Conc: N.D.



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.611 min
 Response: 0
 Conc: N.D.

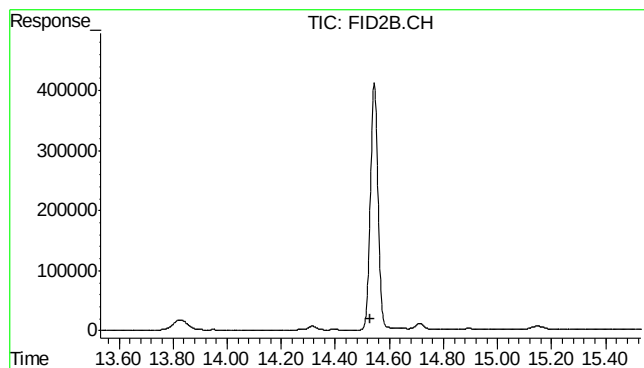


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.776 min
 Response: 0
 Conc: N.D.



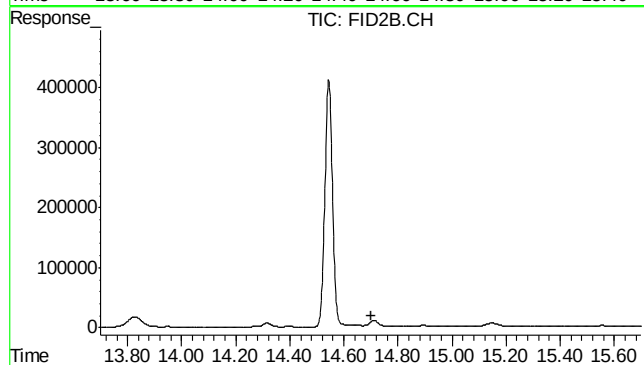
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.233 min
 Response: 0
 Conc: N.D.

8.1.2
 8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.531 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.699 min
 Response: 0
 Conc: N.D.

8.1.2

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0260.D\FID1A.CH Vial: 23
Signal #2 : Z:\012111\GA0260.D\FID2B.CH
Acq On : 21 Jan 2011 10:10 pm Operator: BrianR
Sample : D20552-3 Inst : BTEX2
Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 22 16:52:02 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Jan 22 16:51:10 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.54	4190321	114.376	%
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D.	% d
Target Compounds					
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

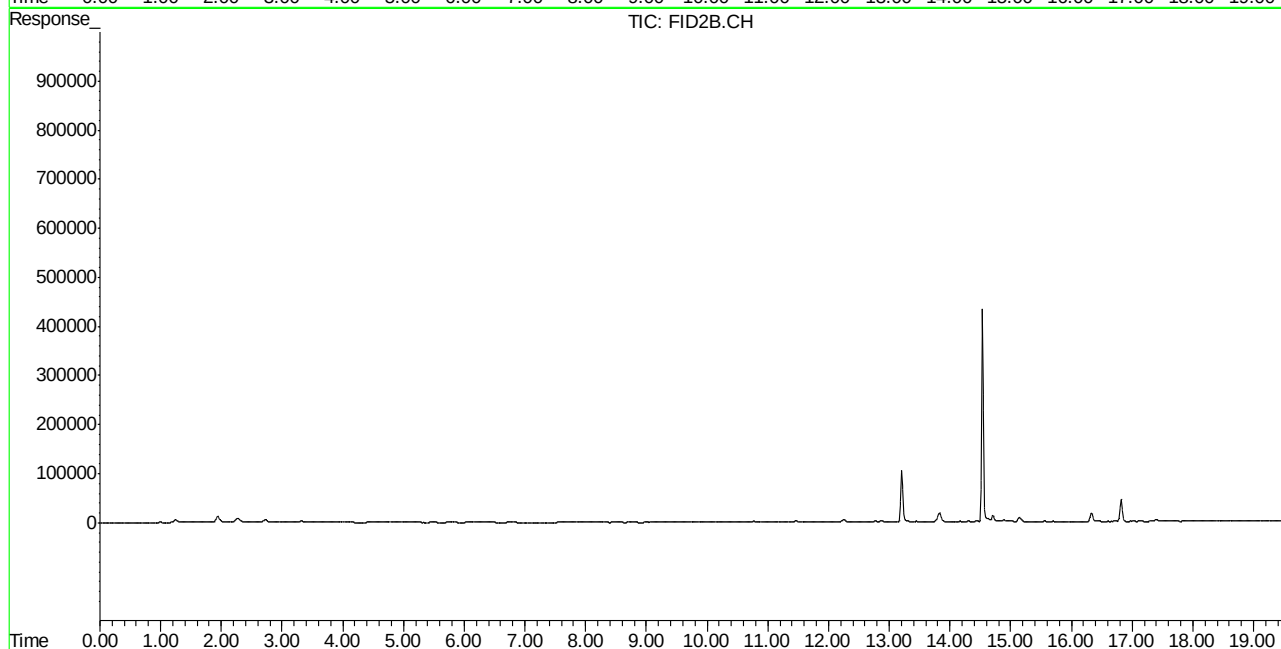
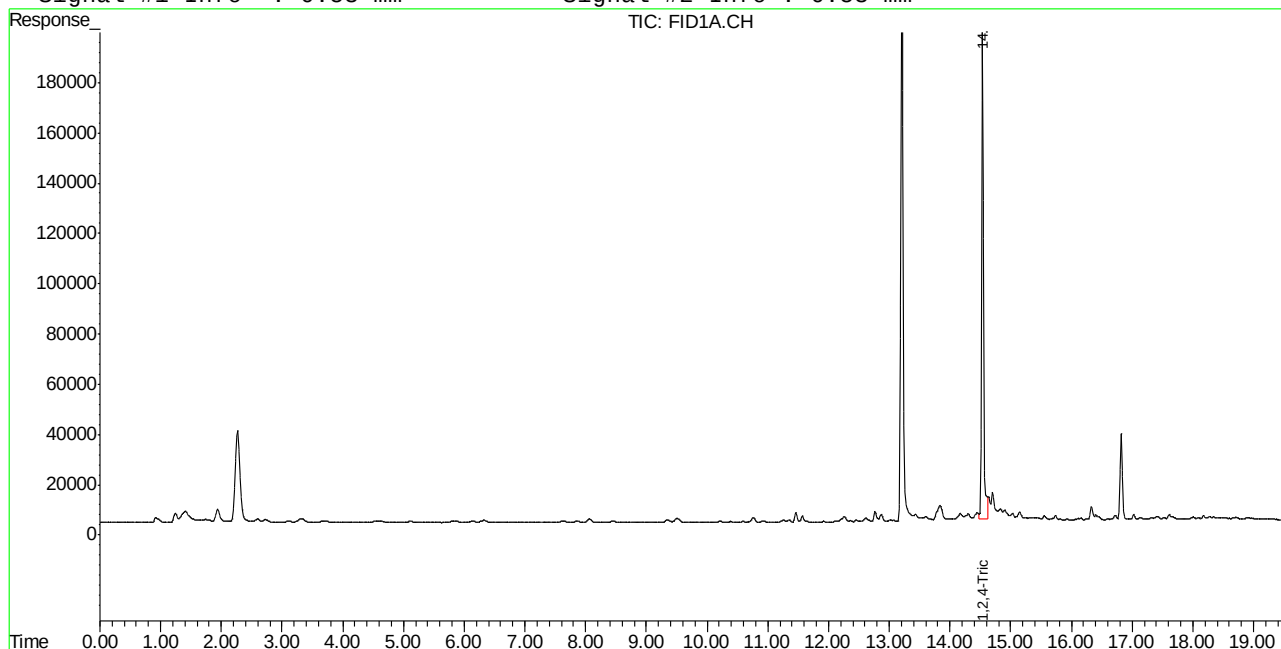
(f)=RT Delta > 1/2 Window (m)=manual int.
GA0260.D TA582GA534.M Sat Jan 22 17:20:34 2011 GC

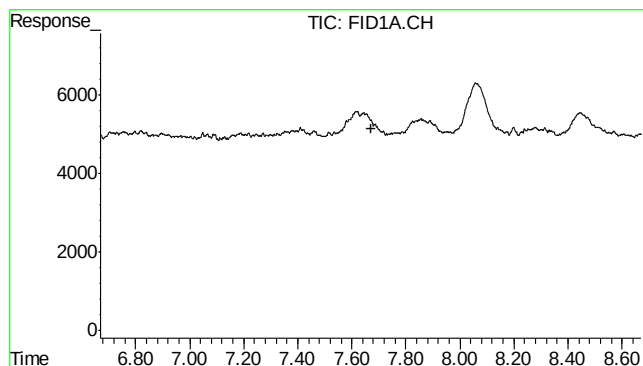
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0260.D\FID1A.CH Vial: 23
 Signal #2 : Z:\012111\GA0260.D\FID2B.CH
 Acq On : 21 Jan 2011 10:10 pm Operator: BrianR
 Sample : D20552-3 Inst : BTEX2
 Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 22 14:48 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat Jan 22 16:51:10 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

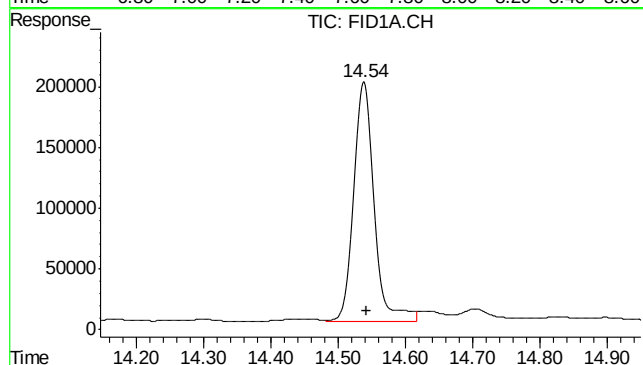
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





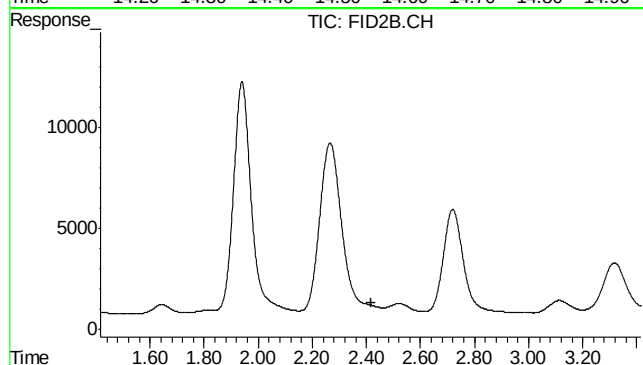
#1 TVH-Gasoline

R.T.: 0.000 min
Exp R.T.: 7.670 min
Response: 0
Conc: N.D.



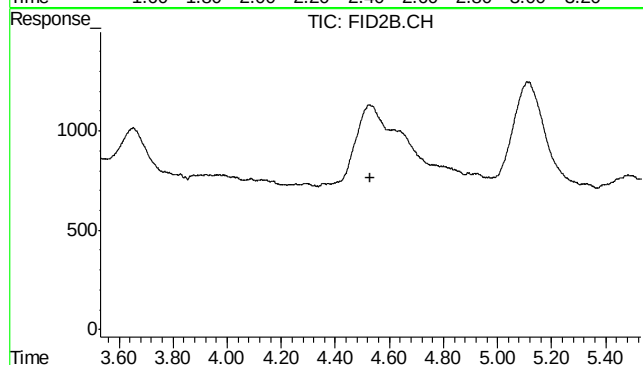
#2 1,2,4-Trichlorobenzene

R.T.: 14.539 min
Delta R.T.: -0.004 min
Response: 4190321
Conc: 114.38 %



#4 Methyl-t-butyl-ether

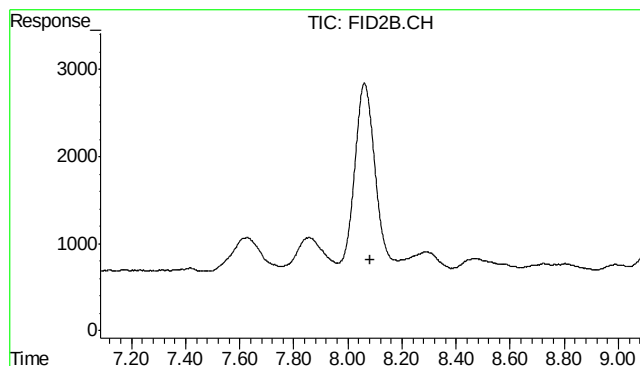
R.T.: 0.000 min
Exp R.T.: 2.416 min
Response: 0
Conc: N.D.



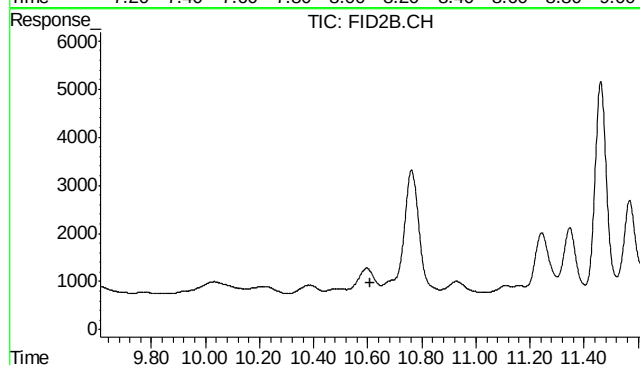
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.531 min
Response: 0
Conc: N.D.

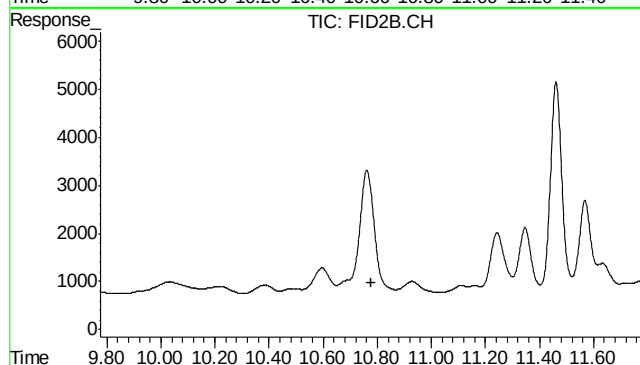
8.1.3
8



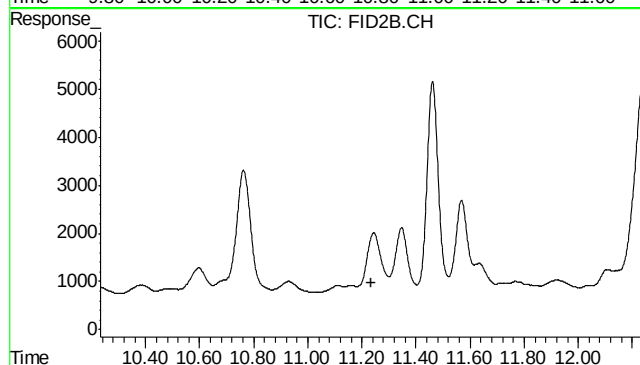
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.084 min
 Response: 0
 Conc: N.D.



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.611 min
 Response: 0
 Conc: N.D.

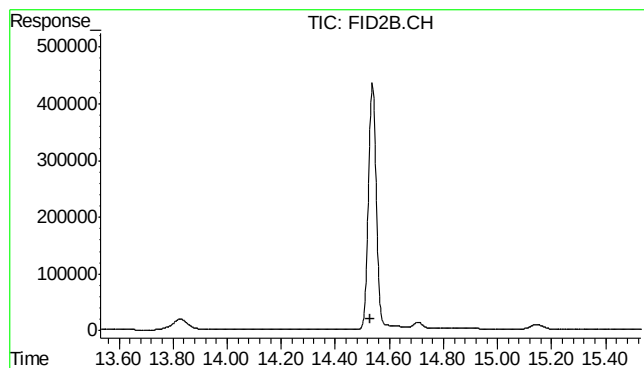


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.776 min
 Response: 0
 Conc: N.D.



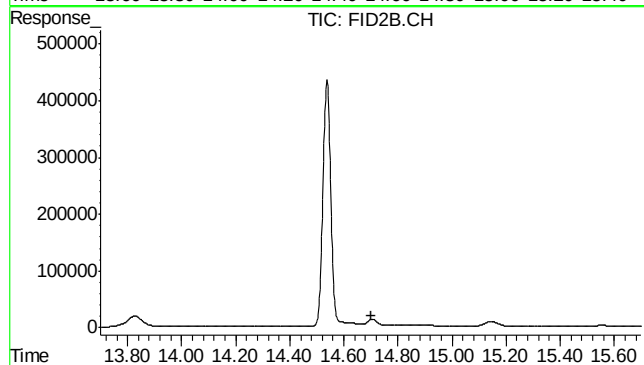
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.233 min
 Response: 0
 Conc: N.D.

8.1.3
 8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.531 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.699 min
Response: 0
Conc: N.D.

8.1.3

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0265.D\FID1A.CH Vial: 28
Signal #2 : Z:\012111\GA0265.D\FID2B.CH
Acq On : 22 Jan 2011 1:06 am Operator: BrianR
Sample : D20552-4 Inst : BTEX2
Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 22 16:52:17 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Jan 22 16:51:10 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

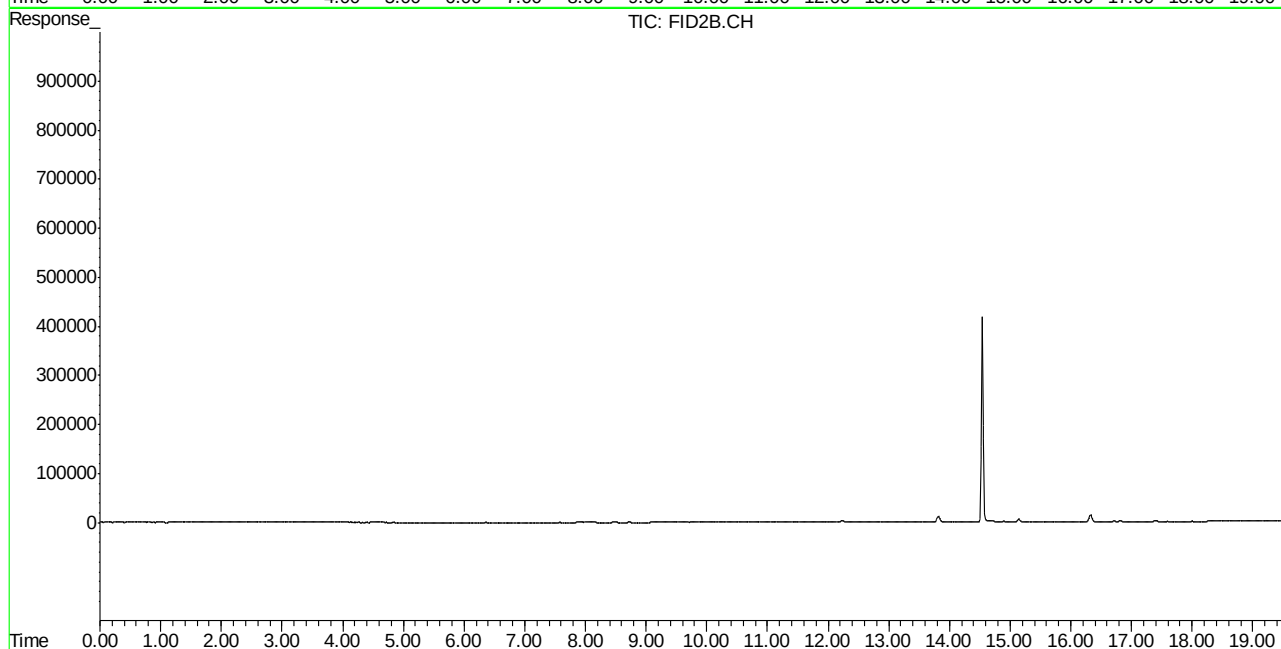
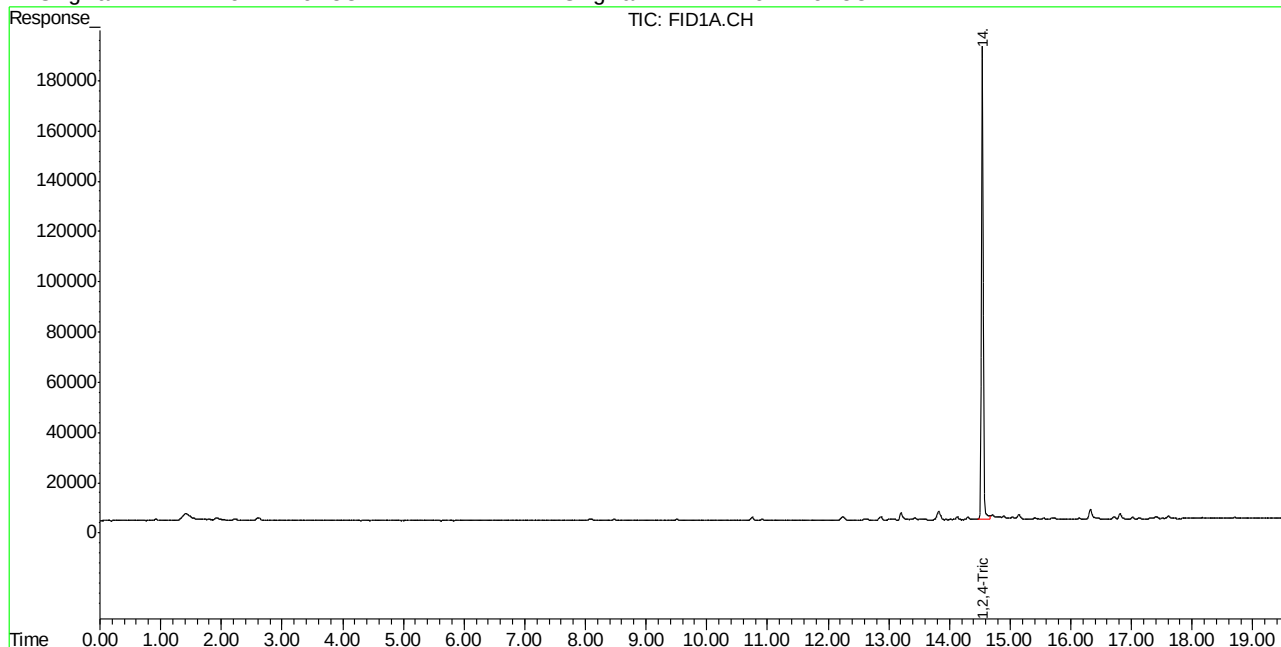
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.54	3861661	105.405 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

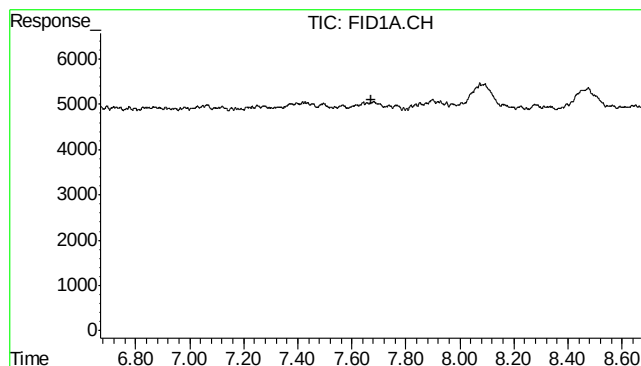
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0265.D\FID1A.CH Vial: 28
Signal #2 : Z:\012111\GA0265.D\FID2B.CH
Acq On : 22 Jan 2011 1:06 am Operator: BrianR
Sample : D20552-4 Inst : BTEX2
Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 22 14:50 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Jan 22 16:51:10 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

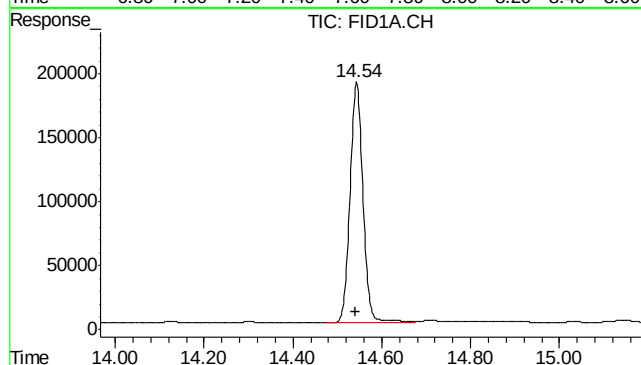
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





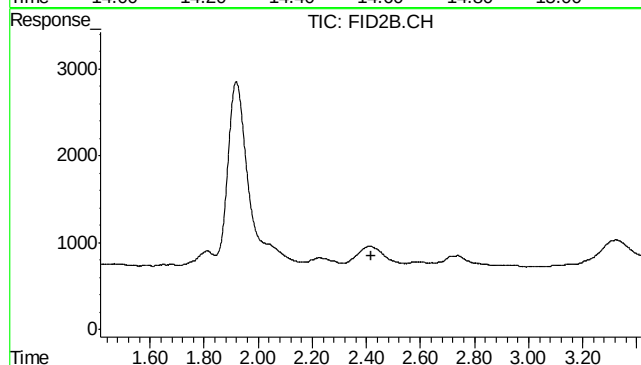
#1 TVH-Gasoline

R.T.: 0.000 min
Exp R.T.: 7.670 min
Response: 0
Conc: N.D.



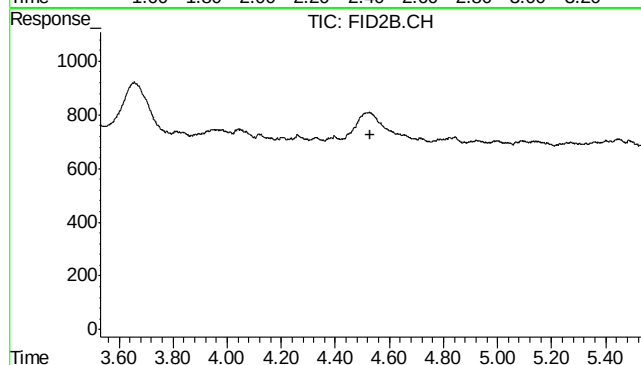
#2 1,2,4-Trichlorobenzene

R.T.: 14.544 min
Delta R.T.: 0.001 min
Response: 3861661
Conc: 105.40 %



#4 Methyl-t-butyl-ether

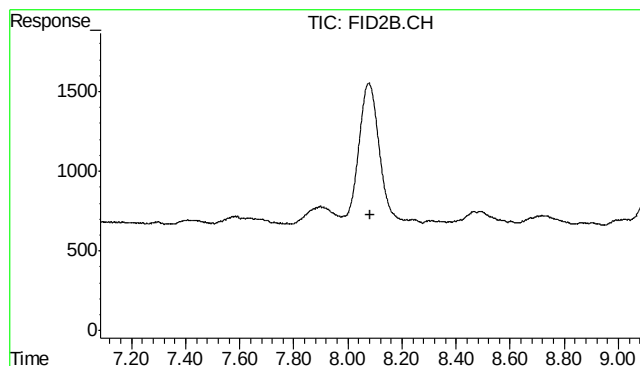
R.T.: 0.000 min
Exp R.T.: 2.416 min
Response: 0
Conc: N.D.



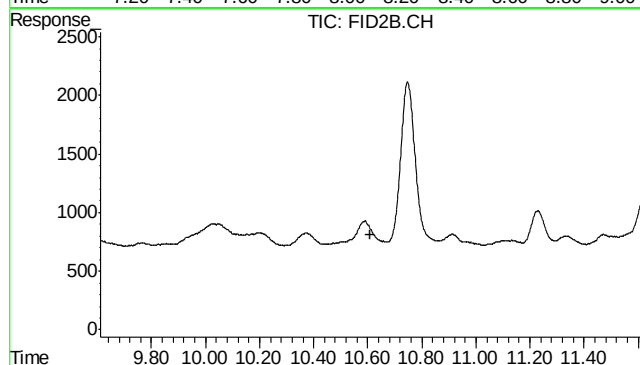
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.531 min
Response: 0
Conc: N.D.

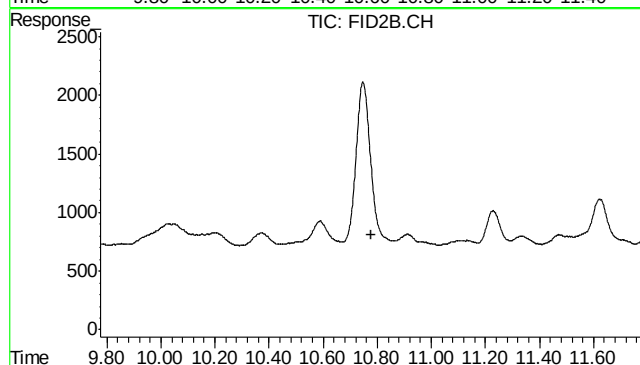
8.1.4
8



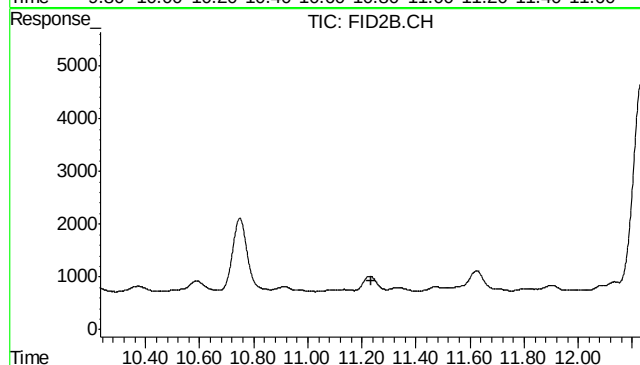
#6 Toluene
 R.T.: 0.000 min
 Exp R.T. : 8.084 min
 Response: 0
 Conc: N.D.



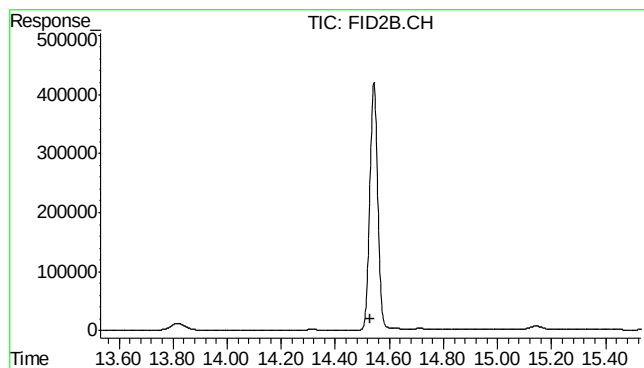
#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T. : 10.611 min
 Response: 0
 Conc: N.D.



#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T. : 10.776 min
 Response: 0
 Conc: N.D.

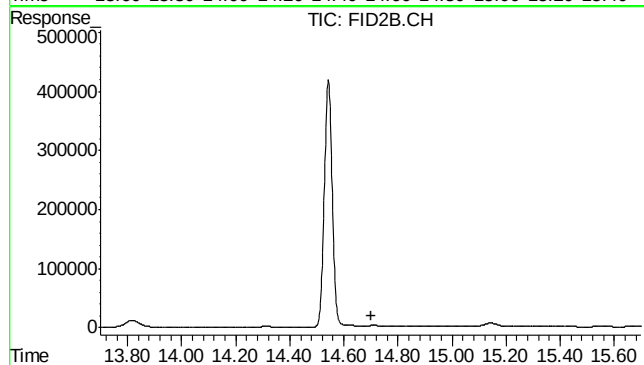


#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T. : 11.233 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.531 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.699 min
 Response: 0
 Conc: N.D.

8.1.4

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0258.D\FID1A.CH Vial: 21
 Signal #2 : Z:\012111\GA0258.D\FID2B.CH
 Acq On : 21 Jan 2011 9:00 pm Operator: BrianR
 Sample : MB, W Inst : BTEX2
 Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 22 16:51:56 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat Jan 22 16:51:10 2011
 Response via : Initial Calibration
 DataAcq Meth : TVB2.M

Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units	

System Monitoring Compounds						
2) S	1,2,4-Trichlorobenzene	14.54	3878747	105.871	%	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D.	%	d
Target Compounds						
1) H	TVH-Gasoline	0.00	0	N.D.	mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	0.00	0	N.D.	ug/L	d
6) T	Toluene	0.00	0	N.D.	ug/L	d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9) T	o-Xylene	0.00	0	N.D.	ug/L	d
11) T	Naphthalene	0.00	0	N.D.	ug/L	d

(f)=RT Delta > 1/2 Window

GA0258.D TA582GA534.M

Sat Jan 22 17:20:28 2011

(m)=manual int.

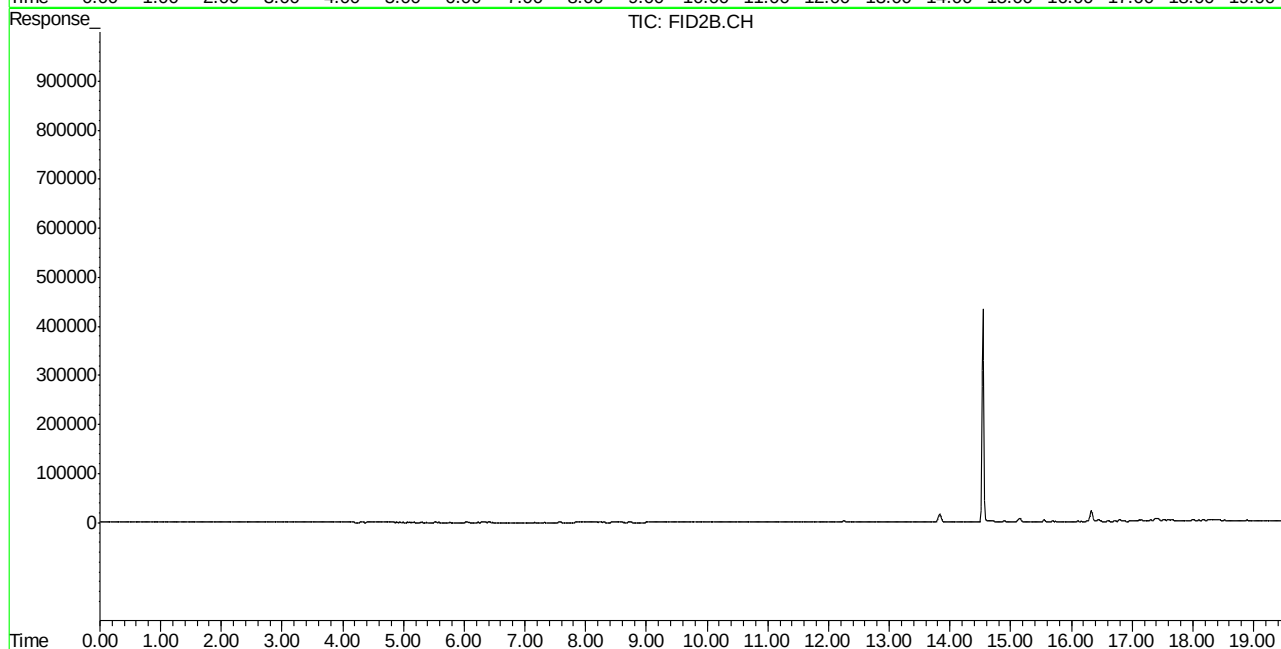
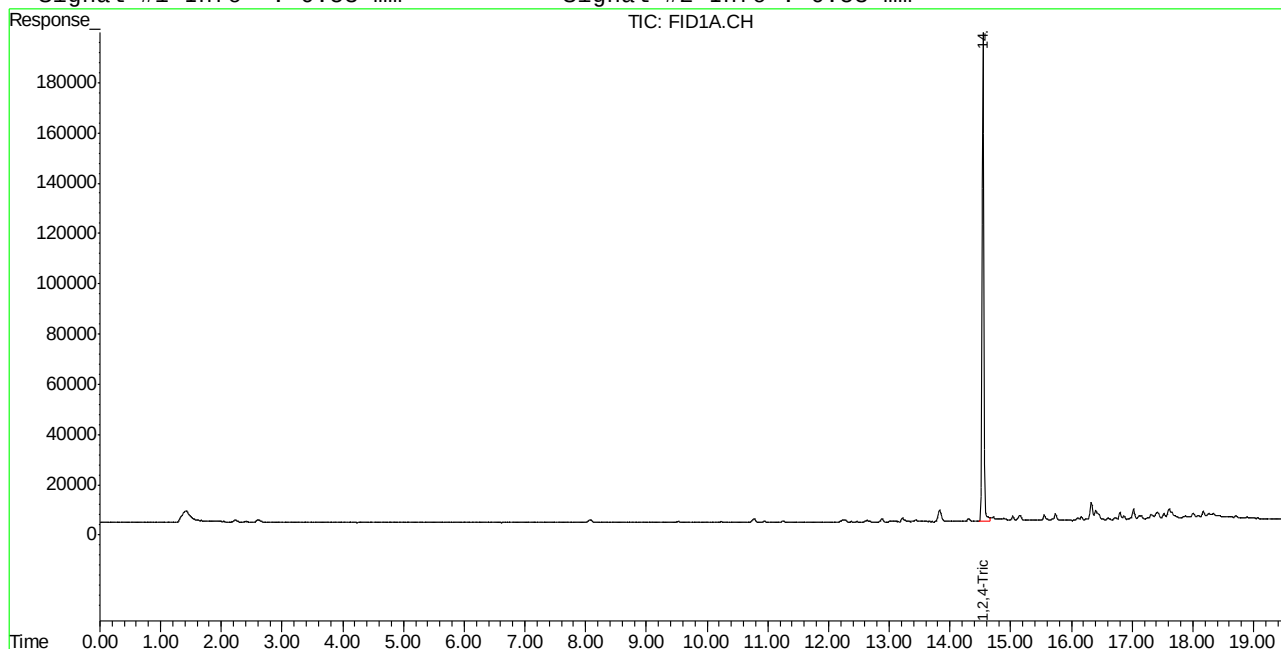
GC

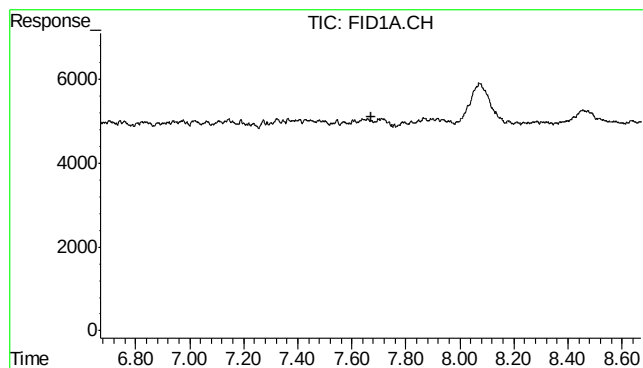
Quantitation Report (QT Reviewed)

Signal #1 : Z:\012111\GA0258.D\FID1A.CH Vial: 21
Signal #2 : Z:\012111\GA0258.D\FID2B.CH
Acq On : 21 Jan 2011 9:00 pm Operator: BrianR
Sample : MB, W Inst : BTEX2
Misc : GC1617,GGA557,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 22 14:47 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Jan 22 16:51:10 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

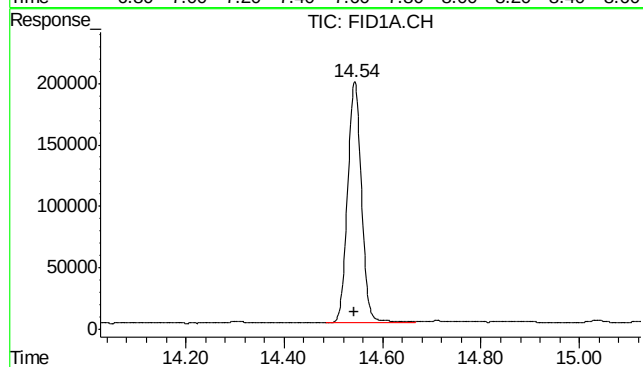
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





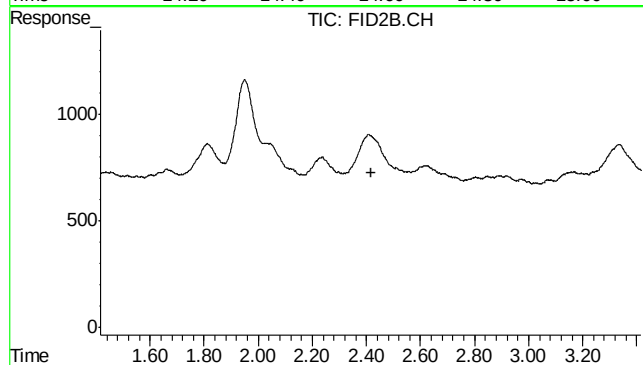
#1 TVH-Gasoline

R.T.: 0.000 min
Exp R.T.: 7.670 min
Response: 0
Conc: N.D.



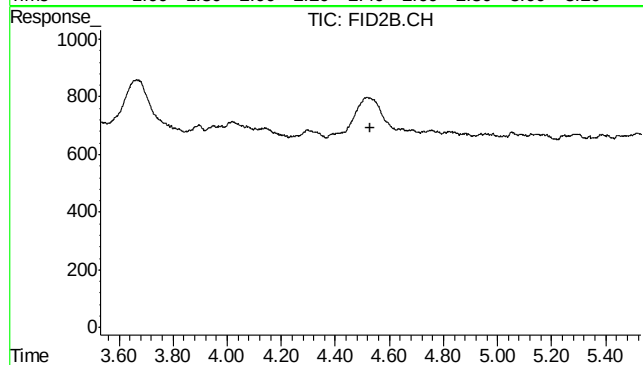
#2 1,2,4-Trichlorobenzene

R.T.: 14.544 min
Delta R.T.: 0.002 min
Response: 3878747
Conc: 105.87 %



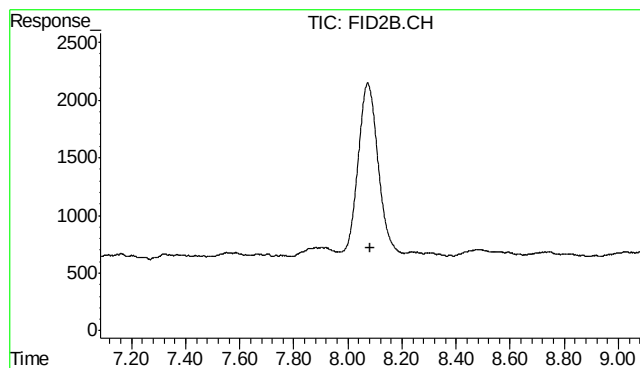
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.416 min
Response: 0
Conc: N.D.



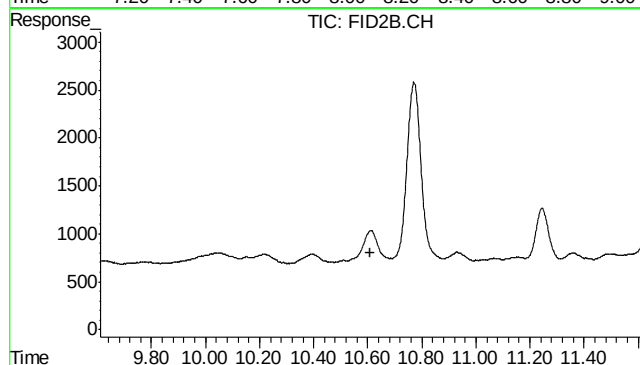
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.531 min
Response: 0
Conc: N.D.



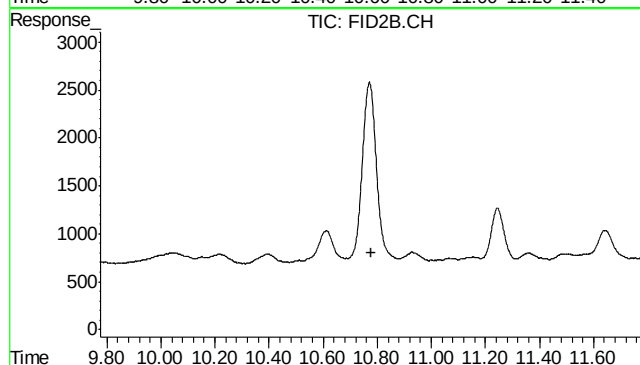
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.084 min
Response: 0
Conc: N.D.



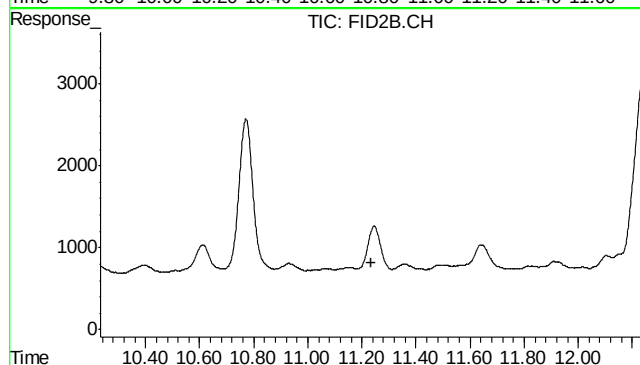
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.611 min
Response: 0
Conc: N.D.



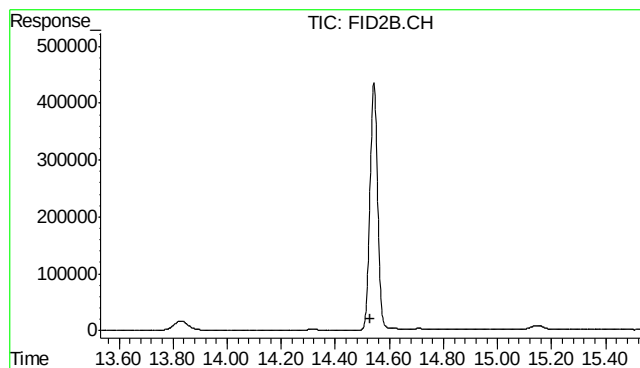
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.776 min
Response: 0
Conc: N.D.



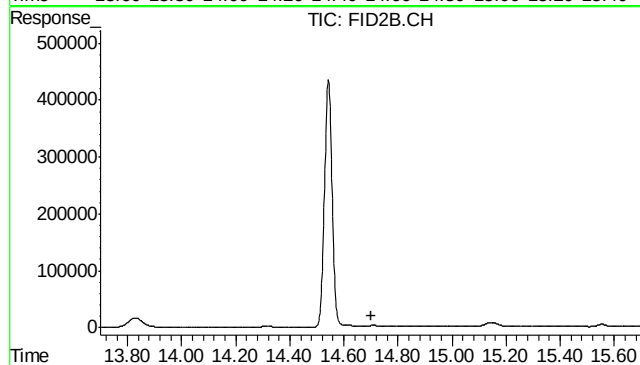
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 11.233 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.531 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.699 min
Response: 0
Conc: N.D.

8.2.1
8

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/24/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	7	10		
Antimony	30	1.7	1.4		
Arsenic	25	2.8	3.6		
Barium	10	.14	.46	0.20	<10
Beryllium	10	1.4	.57		
Boron	50	3.5	1.4		
Cadmium	10	.22	.46		
Calcium	400	17	51	14.1	<400
Chromium	10	.27	.18		
Cobalt	5.0	.48	.4		
Copper	5.0	1.6	.76		
Iron	70	7.7	8	2.4	<70
Lead	50	1.3	1.2		
Lithium	2.0	.76	1.6		
Magnesium	200	5.8	13	-0.20	<200
Manganese	5.0	.21	.3	0.20	<5.0
Molybdenum	10	.41	.64		
Nickel	30	.38	.3		
Phosphorus	100	15	15		
Potassium	1000	380	140	95.0	<1000
Selenium	50	2.8	1.5		
Silicon	50	12	13		
Silver	30	.98	.3		
Sodium	400	230	55	163	<400
Strontium	5.0	.091	.22	0.10	<5.0
Thallium	10	3.1	2.3		
Tin	50	14	9.9		
Titanium	10	.098	.15		
Uranium	50	2.2	2.5		
Vanadium	10	.27	.25		
Zinc	30	.76	3.5		

Associated samples MP3878: D20552-1F, D20552-2F, D20552-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/24/11

Metal	D20552-1F Original MS		SpikeLot MPICALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	276	2280	2000	100.2	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium	33500	59400	25000	103.6	70-130
Chromium					
Cobalt					
Copper	anr				
Iron	32.7	4810	5000	95.5	70-130
Lead	anr				
Lithium					
Magnesium	47.6	25000	25000	99.8	70-130
Manganese	0.40	473	500	94.5	70-130
Molybdenum					
Nickel					
Phosphorus					
Potassium	2230	28500	25000	105.1	70-130
Selenium					
Silicon					
Silver					
Sodium	583000	612000	25000	116.0	70-130
Strontium	843	1370	500	105.4	70-130
Thallium					
Tin					
Titanium					
Uranium	anr				
Vanadium					
Zinc	anr				

Associated samples MP3878: D20552-1F, D20552-2F, D20552-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/24/11

Metal	D20552-1F Original MSD		Spikelet MPICALL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	276	2280	2000	100.2	0.0	20
Beryllium						
Boron						
Cadmium	anr					
Calcium	33500	58400	25000	99.6	1.7	20
Chromium						
Cobalt						
Copper	anr					
Iron	32.7	4790	5000	95.1	0.4	20
Lead	anr					
Lithium						
Magnesium	47.6	24800	25000	99.0	0.8	20
Manganese	0.40	469	500	93.7	0.8	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	2230	28300	25000	104.3	0.7	20
Selenium						
Silicon						
Silver						
Sodium	583000	602000	25000	76.0	1.6	20
Strontium	843	1350	500	101.4	1.5	20
Thallium						
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	anr					

Associated samples MP3878: D20552-1F, D20552-2F, D20552-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/24/11

Metal	BSP Result	Spike lot MPICALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	1990	2000	99.5	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium	26300	25000	105.2	85-115
Chromium				
Cobalt				
Copper	anr			
Iron	4830	5000	96.6	85-115
Lead	anr			
Lithium				
Magnesium	25300	25000	101.2	85-115
Manganese	490	500	98.0	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	26000	25000	104.0	85-115
Selenium				
Silicon				
Silver				
Sodium	26200	25000	104.8	85-115
Strontium	506	500	101.2	85-115
Thallium				
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP3878: D20552-1F, D20552-2F, D20552-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.1.3

9

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO ₃	GN8039	5.0	0.0	mg/l	100	102	102.3	90-110%
Bromide	GP3641/GN7984	0.20	0.0	mg/l	20	19.9	99.5	90-110%
Chloride	GP3641/GN7984	0.50	0.21	mg/l	20	19.9	99.5	90-110%
Hydrogen Sulfide	GN8009	0.50	<0.50	mg/l	2.74	2.6	94.9	60-120%
Iron, Ferrous	GN7987	0.10	0.0	mg/l	1.0	0.99	99.0	85-115%
Nitrogen, Ammonia	GP3663/GN8026	0.10	<0.10	mg/l	20	20.1	100.2	90-110%
Nitrogen, Nitrate	GP3641/GN7984	0.045	0.0	mg/l	4.52	4.45	98.5	90-110%
Nitrogen, Nitrite	GP3641/GN7984	0.061	0.0	mg/l	6.09	6.17	101.3	90-110%
Phosphate, Ortho	GP3641/GN7984	0.065	0.0	mg/l	9.78	9.65	98.6	90-110%
Solids, Total Dissolved	GN8008	10	0.0	mg/l	400	410	102.5	90-110%
Sulfate	GP3641/GN7984	0.50	0.0	mg/l	30	30.0	100.0	90-110%

Associated Samples:

Batch GN7987: D20552-1F, D20552-2F, D20552-3F
Batch GN8008: D20552-1, D20552-2, D20552-3
Batch GN8009: D20552-1, D20552-2, D20552-3
Batch GN8039: D20552-1, D20552-2, D20552-3
Batch GP3641: D20552-1, D20552-2, D20552-3
Batch GP3663: D20552-1, D20552-2, D20552-3
(*) Outside of QC limits

10.1
10

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN8039	D20552-1	mg/l	76.7	76.2	0.7	0-20%
Hydrogen Sulfide	GN8009	D20552-1	mg/l	<0.50	<0.50	0.0	0-20%
Iron, Ferrous	GN7987	D20552-1F	mg/l	0.0	0.0	0.0	0-20%
Nitrogen, Ammonia	GP3663/GN8026	D20552-1	mg/l	0.62	0.64	3.2	0-20%
Solids, Total Dissolved	GN8008	D20552-1	mg/l	1740	1730	0.6	0-25%

Associated Samples:

Batch GN7987: D20552-1F, D20552-2F, D20552-3F

Batch GN8008: D20552-1, D20552-2, D20552-3

Batch GN8009: D20552-1, D20552-2, D20552-3

Batch GN8039: D20552-1, D20552-2, D20552-3

Batch GP3663: D20552-1, D20552-2, D20552-3

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN8039	D20552-1	mg/l	76.7	100	174	97.7	80-120%
Bromide	GP3641/GN7984	D20546-1	mg/l	0.0	2.5	2.5	100.0	80-120%
Chloride	GP3641/GN7984	D20546-1	mg/l	1.1	10	11.2	101.0	80-120%
Hydrogen Sulfide	GN8009	D20552-2	mg/l	<0.50	2.74	2.2	80.3	60-120%
Iron, Ferrous	GN7987	D20552-3F	mg/l	0.0	1.0	0.25	25.0*(a)	75-125%
Nitrogen, Ammonia	GP3663/GN8026	D20552-1	mg/l	0.62	10	10.9	109.2	80-120%
Nitrogen, Nitrate	GP3641/GN7984	D20546-1	mg/l	0.15	0.565	0.74	104.4	80-120%
Nitrogen, Nitrite	GP3641/GN7984	D20546-1	mg/l	0.0	0.305	0.30	98.5	80-120%
Phosphate, Ortho	GP3641/GN7984	D20546-1	mg/l	0.018	0.815	0.82	98.4	80-120%
Sulfate	GP3641/GN7984	D20546-1	mg/l	4.1	10	14.3	102.0	80-120%

Associated Samples:

Batch GN7987: D20552-1F, D20552-2F, D20552-3F

Batch GN8009: D20552-1, D20552-2, D20552-3

Batch GN8039: D20552-1, D20552-2, D20552-3

Batch GP3641: D20552-1, D20552-2, D20552-3

Batch GP3663: D20552-1, D20552-2, D20552-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference, even with the sample diluted.

10.3
10

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20552
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN8039	D20552-1	mg/l	76.7	100	177	1.4	20%
Bromide	GP3641/GN7984	D20546-1	mg/l	0.0	2.5	2.5	0.0	20%
Chloride	GP3641/GN7984	D20546-1	mg/l	1.1	10	11.3	0.9	20%
Nitrogen, Ammonia	GP3663/GN8026	D20552-1	mg/l	0.62	10	10.6	3.0	
Nitrogen, Nitrate	GP3641/GN7984	D20546-1	mg/l	0.15	0.565	0.71	4.1	20%
Nitrogen, Nitrite	GP3641/GN7984	D20546-1	mg/l	0.0	0.305	0.30	0.0	20%
Phosphate, Ortho	GP3641/GN7984	D20546-1	mg/l	0.018	0.815	0.83	1.2	20%
Sulfate	GP3641/GN7984	D20546-1	mg/l	4.1	10	14.4	0.7	20%

Associated Samples:

Batch GN8039: D20552-1, D20552-2, D20552-3

Batch GP3641: D20552-1, D20552-2, D20552-3

Batch GP3663: D20552-1, D20552-2, D20552-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.4
10



02/03/11

Technical Report for

Geotrans, Inc.

Garfield County

Accutest Job Number: D20581

Sampling Date: 01/21/11

Report to:

Geotrans, Inc.

David.Bohmann@geotransinc.com

ATTN: David Bohmann

Total number of pages in report: **114**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'J. Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

Geotrans, Inc.

Job No: D20581

Garfield County

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D20581-1	01/21/11	10:12 KT	01/22/11	AQ	Ground Water	MW-1A_012111
D20581-1F	01/21/11	10:12 KT	01/22/11	AQ	Groundwater Filtered	MW-1A_012111
D20581-2	01/21/11	12:07 KT	01/22/11	AQ	Ground Water	MW-1B_012111
D20581-2F	01/21/11	12:07 KT	01/22/11	AQ	Groundwater Filtered	MW-1B_012111
D20581-3	01/21/11	00:00 KT	01/22/11	AQ	Trip Blank Water	TB-03_012111

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Geotrans, Inc.

Job No D20581

Site: Garfield County

Report Dat 2/2/2011 1:56:01 PM

On 01/22/2011, two (2) samples, one (1) Trip Blank, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 5.9°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D20581 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: V3V475

- All samples were analyzed within the recommended method holding time.
- Samples D20581-1MS and D20581-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The blank spike (BS) recovery of Vinyl Acetate is outside control limits. Since the bias for Vinyl Acetate is high and the sample is non-detect for this analyte, no further action is required.
- The matrix spike and matrix spike duplicate (MS/MSD) recovery(s) of 1,1,2,2-Tetrachloroethane, Trichloroethylene, and Vinyl Acetate are outside control limits. Outside control limits due to possible matrix interference. Refer to the lab control or spike blank for recovery information.
- The RPDs for the MS and MSD recoveries of 1,1,2,2-Tetrachloroethane and Vinyl Acetate are outside control limits for sample D20581-1MSD. Probable cause due to sample homogeneity.

Volatiles by GC By Method SW846 8015B

Matrix AQ	Batch ID: GGB494

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20575-1MS and D20575-1MSD were used as the QC samples indicated.

Metals By Method EPA 200.7

Matrix AQ	Batch ID: MP3878

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20552-1FMS and D20552-1FMSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP3647

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20539-1MS and D20539-1MSD were used as the QC samples for the anion analysis.
- Samples D20581-1 and D20581-2 for Nitrate-N and Nitrite-N: The reporting limits (RL) were raised due to matrix interference.

Matrix AQ

Batch ID: GP3669

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20603-1MS and D20603-1MSD were used as the QC samples for the anion analysis.

Wet Chemistry By Method HACH 8146

Matrix AQ

Batch ID: GN7987

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20552-1FDUP and D20552-3FMS were used as the QC samples for the Ferrous Iron analysis.
- The matrix spike (MS) recovery of Ferrous Iron is outside control limits. The spike recovery indicates possible matrix interference, even with the sample diluted.
- Samples D20581-1F and D20581-2F for Ferrous Iron: The reporting limits (RL) were raised due to matrix interference.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ

Batch ID: R6058

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D20581-1F and D20581-2F.
- Ferric Iron: Calculated as: (Iron) - (Ferrous Iron)

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN8039

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20552-1DUP, D20552-1MS, and D20552-1MSD were used as the QC samples for the Total Alkalinity, as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN8008

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Sample D20581-1DUP was used as the QC sample for the Total Dissolved Solids analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ

Batch ID: GN8009

- All samples were analyzed within the recommended method holding time.
- the method blank for this batch meets method specific criteria.
- Samples D20552-1DUP and D20552-2MS were used as the QC samples for the Hydrogen Sulfide analysis.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ

Batch ID: GP3663

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20552-1DUP, D20552-1MS, and D20552-1MSD were used as the QC samples for the Ammonia-N analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: MW-1A_012111

Lab Sample ID: D20581-1

Date Sampled: 01/21/11

Matrix: AQ - Ground Water

Date Received: 01/22/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08656.D	1	01/25/11	DC	n/a	n/a	V3V475
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	45.6	10	4.0	ug/l	
71-43-2	Benzene	0.62	1.0	0.30	ug/l	J
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	0.86	2.0	0.50	ug/l	J
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	1.0	2.0	1.0	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	4.3	10	2.5	ug/l	J
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1A_012111**Lab Sample ID:** D20581-1**Date Sampled:** 01/21/11**Matrix:** AQ - Ground Water**Date Received:** 01/22/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	88%		63-130%
2037-26-5	Toluene-D8	93%		68-130%
460-00-4	4-Bromofluorobenzene	87%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
107-21-1	1,2-Ethanediol	4.31	5.2	ug/l	JN
124-38-9	Carbon dioxide	4.43	20	ug/l	JN
	Total TIC, Volatile		5.2	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-1A_012111	Date Sampled:	01/21/11
Lab Sample ID:	D20581-1	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB9235.D	1	01/24/11	JL	n/a	n/a	GGB494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	113%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1A_012111**Lab Sample ID:** D20581-1**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 01/21/11**Date Received:** 01/22/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	2350	5.0	mg/l	1	01/27/11	JK	SM20 2320B
Chloride	172	13	mg/l	25	01/22/11 13:05	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	01/25/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	2.1	0.10	mg/l	1	01/26/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	01/22/11 17:24	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.31	0.31	mg/l	5	01/22/11 17:24	JML	EPA 300/SW846 9056
Solids, Total Dissolved	3440	10	mg/l	1	01/25/11	CJ	SM20 2540C
Sulfate	26.4	13	mg/l	25	01/22/11 13:05	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-1A_012111**Lab Sample ID:** D20581-1F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 01/21/11**Date Received:** 01/22/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1320	10	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Calcium	269000	400	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Iron	133	70	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	< 200	200	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Manganese	< 5.0	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Potassium	168000	1000	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Sodium	808000	400	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Strontium	9850	50	ug/l	10	01/24/11	01/26/11 JM	EPA 200.7 ²	EPA 200.7 ³

(1) Instrument QC Batch: MA1272

(2) Instrument QC Batch: MA1274

(3) Prep QC Batch: MP3878

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-1A_012111	Date Sampled:	01/21/11
Lab Sample ID:	D20581-1F	Date Received:	01/22/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 2.6	2.6	mg/l	1	01/25/11 18:51	JM	SM18 3500FED M
Iron, Ferrous ^b	< 2.5	2.5	mg/l	25	01/22/11 08:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	MW-1B_012111	Date Sampled:	01/21/11
Lab Sample ID:	D20581-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08659.D	1	01/25/11	DC	n/a	n/a	V3V475
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	36.7	10	4.0	ug/l	
71-43-2	Benzene	5.3	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1B_012111

Lab Sample ID: D20581-2

Date Sampled: 01/21/11

Matrix: AQ - Ground Water

Date Received: 01/22/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	90%		63-130%
2037-26-5	Toluene-D8	93%		68-130%
460-00-4	4-Bromofluorobenzene	88%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.44	43	ug/l	JN
74-98-6	Propane	4.88	110	ug/l	JN
75-28-5	Isobutane	5.44	27	ug/l	JN
108-22-5	1-Propen-2-ol, acetate	5.91	6.8	ug/l	JN
	Total TIC, Volatile		143.8	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-1B_012111	Date Sampled:	01/21/11
Lab Sample ID:	D20581-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB9236.D	1	01/24/11	JL	n/a	n/a	GGB494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	115%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1B_012111**Lab Sample ID:** D20581-2**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 01/21/11**Date Received:** 01/22/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	1020	5.0	mg/l	1	01/27/11	JK	SM20 2320B
Chloride	1610	50	mg/l	100	01/25/11 12:51	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	01/25/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	2.3	0.10	mg/l	1	01/26/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	01/22/11 17:39	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 1.5	1.5	mg/l	25	01/22/11 13:19	JML	EPA 300/SW846 9056
Solids, Total Dissolved	3860	10	mg/l	1	01/25/11	CJ	SM20 2540C
Sulfate	89.0	13	mg/l	25	01/22/11 13:19	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-1B_012111**Lab Sample ID:** D20581-2F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 01/21/11**Date Received:** 01/22/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1180	10	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Calcium	160000	400	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Iron	< 70	70	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	< 200	200	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Manganese	< 5.0	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Potassium	136000	1000	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Sodium	1250000	4000	ug/l	10	01/24/11	01/26/11 JM	EPA 200.7 ²	EPA 200.7 ³
Strontium	7670	5.0	ug/l	1	01/24/11	01/25/11 JM	EPA 200.7 ¹	EPA 200.7 ³

(1) Instrument QC Batch: MA1272

(2) Instrument QC Batch: MA1274

(3) Prep QC Batch: MP3878

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-1B_012111	Date Sampled:	01/21/11
Lab Sample ID:	D20581-2F	Date Received:	01/22/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 2.6	2.6	mg/l	1	01/25/11 19:15	JM	SM18 3500FED M
Iron, Ferrous ^b	< 2.5	2.5	mg/l	25	01/22/11 08:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	TB-03_012111	Date Sampled:	01/21/11
Lab Sample ID:	D20581-3	Date Received:	01/22/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08660.D	1	01/25/11	DC	n/a	n/a	V3V475
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-03_012111

Lab Sample ID: D20581-3

Date Sampled: 01/21/11

Matrix: AQ - Trip Blank Water

Date Received: 01/22/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	93%		63-130%
2037-26-5	Toluene-D8	93%		68-130%
460-00-4	4-Bromofluorobenzene	88%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
74-99-7	1-Propyne	4.32	5.1	ug/l	JN
124-38-9	Carbon dioxide	4.43	31	ug/l	JN
	Total TIC, Volatile		5.1	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	TB-03_012111	Date Sampled:	01/21/11
Lab Sample ID:	D20581-3	Date Received:	01/22/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB9237.D	1	01/24/11	JL	n/a	n/a	GGB494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	108%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job # D20581	

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)												Matrix Codes	
Company Name GeoTrans Inc		Project Name Garfield County															
Street Address 363 Centennial Parkway Suite 210		Street															
City Louisville, CO		City State CO															
Project Contact Brendan Shine or David Bohmann		Project #															
Phone # 303-665-4390		Client Purchase Order #															
Sampler(s) Name(s) Karl Thompson		Project Manager David Bohmann															
		Attention: David Bohmann															

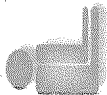
Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles												Alkalinity, TDS, AMN	Dissolved Metals (see note)	CHL, NO3, NO2, SO4	XFE3 (FE, FE2, FE3)	Total Coliform	V8015GRO, V8260HSL+	Hydrogen Sulfide	B8015DRO	B8270PAH	V8260HSL	TOC	LAB USE ONLY
								PCB	NaOH	HN03	HN02	DI Water	MEOH	ENCORE																	
	MW-1A-012111		1/21/11	1012	KT	GW	14	14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	01			
	MW-1B-012111		1/21/11	1207	KT	GW	14	14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	02				
					KT	GW	16	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	03				
					KT	GW	16	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	03				
					KT	GW	16	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	03				
					KT	GW	16	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	03				
					KT	SO	2	2																			03				
	TB-03-012111		-	-	KT	SO	2	2																			03				

Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions	
☐ Std. 15 Business Days ☒ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day Emergency ☐ 2 Day Emergency ☐ 1 Day Emergency ☐ Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM): / Date: _____ ☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☒ COMMEN ☒ COMMEN+ ☐ Commercial "A" = Results Only ☐ Commercial "B" = Results + QC Summary ☐ Commercial BN = Results/QC/Narrative (+ = chromatograms)		Metals (200.7) : Ba, Ca, Mg, Mn, K, Na, Sr, Fe: Note: Sample has been field filtered EMAIL ONLY: bshine@geotransinc.com and dbohmann@geotransinc.com ☒ Report by PDF ☒ EDD Format	

Sample/Custody must be documented below each time samples change possession, including courier delivery.					
Relinquished by Sampler: 1	Date Time: 1/21/11 11:00	Received By: Jacob Porter	Date Time: 1/21/11 11:00	Relinquished By: 2	Date Time: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Date Time:	Relinquished By: 4	Date Time:
Relinquished by: 5	Date Time:	Received By: 5	Date Time:	Custody Seal # 2	Intact ☒ Not Intact ☐
				Preserved where applicable 2	Cooler Temp. 5.9

D20581: Chain of Custody

Page 1 of 3



Industrial LABORATORIES

Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 1/24/2011

Date Reported: 1/26/2011

PO Number: D20581X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110124001-01A	D20581X-1, 1/21/11, 10:12am	* Total Coliforms MPN SM 9221 B	<2 fecal; total	MPN/100mL		GH 1/24/2011
110124001-02A	D20581X-2, 1/21/11, 12:07pm	* Total Coliforms MPN SM 9221 B	<2 fecal; total	MPN/100mL		GH 1/24/2011

* = Scope Analysis

= Subcontracted Analysis

MDL = Method Detection Limit

ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industrialabs.net

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D20581: Chain of Custody
Page 3 of 3

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 2

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V475-MB1	3V08653.D	1	01/25/11	DC	n/a	n/a	V3V475

The QC reported here applies to the following samples:

Method: SW846 8260B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V475-MB1	3V08653.D	1	01/25/11	DC	n/a	n/a	V3V475

The QC reported here applies to the following samples:

Method: SW846 8260B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	91% 63-130%
2037-26-5	Toluene-D8	92% 68-130%
460-00-4	4-Bromofluorobenzene	86% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
107-21-1	1,2-Ethanediol	4.31	5.4	ug/l	JN
124-38-9	Carbon dioxide	4.43	38	ug/l	JN
	Total TIC, Volatile		5.4	ug/l	J

Blank Spike Summary

Page 1 of 2

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V475-BS1	3V08654.D	1	01/25/11	DC	n/a	n/a	V3V475

The QC reported here applies to the following samples:

Method: SW846 8260B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	47.5	95	49-130
71-43-2	Benzene	50	50.5	101	70-130
75-27-4	Bromodichloromethane	50	48.5	97	70-130
75-25-2	Bromoform	50	48.9	98	48-138
108-90-7	Chlorobenzene	50	51.2	102	70-130
75-00-3	Chloroethane	50	44.4	89	61-130
67-66-3	Chloroform	50	51.1	102	70-130
110-75-8	2-Chloroethyl vinyl ether	50	42.6	85	22-185
75-15-0	Carbon disulfide	50	49.8	100	55-130
56-23-5	Carbon tetrachloride	50	51.9	104	70-130
75-34-3	1,1-Dichloroethane	50	51.5	103	70-130
75-35-4	1,1-Dichloroethylene	50	52.7	105	70-130
107-06-2	1,2-Dichloroethane	50	45.9	92	70-130
78-87-5	1,2-Dichloropropane	50	48.7	97	70-130
124-48-1	Dibromochloromethane	50	45.3	91	64-132
156-59-2	cis-1,2-Dichloroethylene	50	51.8	104	70-130
10061-01-5	cis-1,3-Dichloropropene	50	49.1	98	67-130
541-73-1	m-Dichlorobenzene	50	48.4	97	52-148
95-50-1	o-Dichlorobenzene	50	48.9	98	53-146
106-46-7	p-Dichlorobenzene	50	48.6	97	57-136
156-60-5	trans-1,2-Dichloroethylene	50	51.9	104	70-130
10061-02-6	trans-1,3-Dichloropropene	50	46.0	92	66-130
100-41-4	Ethylbenzene	50	51.7	103	70-130
591-78-6	2-Hexanone	50	48.0	96	38-130
108-10-1	4-Methyl-2-pentanone	50	50.4	101	68-130
74-83-9	Methyl bromide	50	42.7	85	35-151
74-87-3	Methyl chloride	50	38.8	78	46-138
75-09-2	Methylene chloride	50	48.9	98	70-130
78-93-3	Methyl ethyl ketone	50	50.5	101	37-130
100-42-5	Styrene	50	50.0	100	38-130
71-55-6	1,1,1-Trichloroethane	50	48.1	96	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	51.5	103	70-130
79-00-5	1,1,2-Trichloroethane	50	49.7	99	69-130
127-18-4	Tetrachloroethylene	50	51.0	102	66-134
108-88-3	Toluene	50	49.6	99	70-140
79-01-6	Trichloroethylene	50	50.4	101	70-130

Blank Spike Summary

Page 2 of 2

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V475-BS1	3V08654.D	1	01/25/11	DC	n/a	n/a	V3V475

The QC reported here applies to the following samples:

Method: SW846 8260B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl chloride	50	37.7	75	58-135
108-05-4	Vinyl Acetate	50	82.3	165* ^a	50-130
1330-20-7	Xylene (total)	100	94.2	94	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	90%	63-130%
2037-26-5	Toluene-D8	93%	68-130%
460-00-4	4-Bromofluorobenzene	89%	61-130%

(a) Compound ND in associated samples.

Blank Spike Summary

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V475-BS1	3V08655.D	1	01/25/11	DC	n/a	n/a	V3V475

The QC reported here applies to the following samples: Method: SW846 8260B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	91%	63-130%
2037-26-5	Toluene-D8	93%	68-130%
460-00-4	4-Bromofluorobenzene	86%	61-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20581-1MS	3V08657.D	1	01/25/11	DC	n/a	n/a	V3V475
D20581-1MSD	3V08658.D	1	01/25/11	DC	n/a	n/a	V3V475
D20581-1	3V08656.D	1	01/25/11	DC	n/a	n/a	V3V475

The QC reported here applies to the following samples:

Method: SW846 8260B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	D20581-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	45.6		50	98.4	106	97.4	104	1	21-130/30
71-43-2	Benzene	0.62	J	50	52.4	104	53.6	106	2	59-132/30
75-27-4	Bromodichloromethane	ND		50	50.0	100	51.7	103	3	58-130/30
75-25-2	Bromoform	ND		50	50.1	100	51.0	102	2	45-140/30
108-90-7	Chlorobenzene	ND		50	53.5	107	54.0	108	1	70-130/30
75-00-3	Chloroethane	ND		50	47.1	94	49.0	98	4	61-130/30
67-66-3	Chloroform	0.86	J	50	54.1	106	56.1	110	4	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	68.9	138	70.9	142	3	20-168/30
75-15-0	Carbon disulfide	ND		50	52.0	104	53.4	107	3	41-132/30
56-23-5	Carbon tetrachloride	ND		50	53.8	108	55.6	111	3	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	54.3	109	55.5	111	2	70-130/30
75-35-4	1,1-Dichloroethylene	ND		50	55.0	110	56.2	112	2	69-137/30
107-06-2	1,2-Dichloroethane	ND		50	48.3	97	49.3	99	2	62-130/30
78-87-5	1,2-Dichloropropane	ND		50	50.3	101	52.4	105	4	63-131/30
124-48-1	Dibromochloromethane	ND		50	46.7	93	48.4	97	4	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND		50	54.6	109	56.5	113	3	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	50.7	101	52.1	104	3	51-134/30
541-73-1	m-Dichlorobenzene	ND		50	50.6	101	51.2	102	1	38-148/30
95-50-1	o-Dichlorobenzene	ND		50	50.5	101	51.1	102	1	40-148/30
106-46-7	p-Dichlorobenzene	ND		50	50.3	101	51.2	102	2	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND		50	55.2	110	56.2	112	2	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	48.4	97	49.0	98	1	50-130/30
100-41-4	Ethylbenzene	ND		50	53.6	107	55.0	110	3	68-130/30
591-78-6	2-Hexanone	1.0	J	50	53.9	106	53.9	106	0	29-130/30
108-10-1	4-Methyl-2-pentanone	ND		50	51.1	102	51.7	103	1	62-130/30
74-83-9	Methyl bromide	ND		50	46.0	92	49.2	98	7	20-171/30
74-87-3	Methyl chloride	ND		50	42.6	85	43.6	87	2	25-148/30
75-09-2	Methylene chloride	ND		50	50.4	101	52.1	104	3	58-139/30
78-93-3	Methyl ethyl ketone	4.3	J	50	59.1	110	59.6	111	1	37-130/30
100-42-5	Styrene	ND		50	51.3	103	51.9	104	1	27-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	49.6	99	51.0	102	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	12.8	26* a	3.6	7* a	112*	61-140/30
79-00-5	1,1,2-Trichloroethane	ND		50	51.0	102	52.0	104	2	52-135/30
127-18-4	Tetrachloroethylene	ND		50	54.8	110	54.3	109	1	61-134/30
108-88-3	Toluene	ND		50	52.1	104	52.8	106	1	56-142/30
79-01-6	Trichloroethylene	ND		50	85.6	171* a	95.5	191* a	11	61-132/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20581-1MS	3V08657.D	1	01/25/11	DC	n/a	n/a	V3V475
D20581-1MSD	3V08658.D	1	01/25/11	DC	n/a	n/a	V3V475
D20581-1	3V08656.D	1	01/25/11	DC	n/a	n/a	V3V475

The QC reported here applies to the following samples:

Method: SW846 8260B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	D20581-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl chloride	ND	50	41.1	82	41.7	83	1	54-148/30
108-05-4	Vinyl Acetate	ND	50	ND	0* ^a	1.0	2* ^a	200*	40-139/30
1330-20-7	Xylene (total)	ND	100	98.6	99	99.5	100	1	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D20581-1	Limits
17060-07-0	1,2-Dichloroethane-D4	90%	91%	88%	63-130%
2037-26-5	Toluene-D8	93%	92%	93%	68-130%
460-00-4	4-Bromofluorobenzene	89%	90%	87%	61-130%

(a) Outside control limits due to possible matrix interference.

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08656.D
Acq On : 25 Jan 2011 10:48 am
Operator : DONC
Sample : D20581-1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 26 13:09:10 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.892	168	520525	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.685	114	774860	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.319	117	698838	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.308	152	388856	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.287	102	58310	44.16	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	88.32%	
55) Toluene-d8	14.074	98	937849	46.45	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	92.90%	
59) 4-Bromofluorobenzene	16.266	95	327173	43.33	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	86.66%	

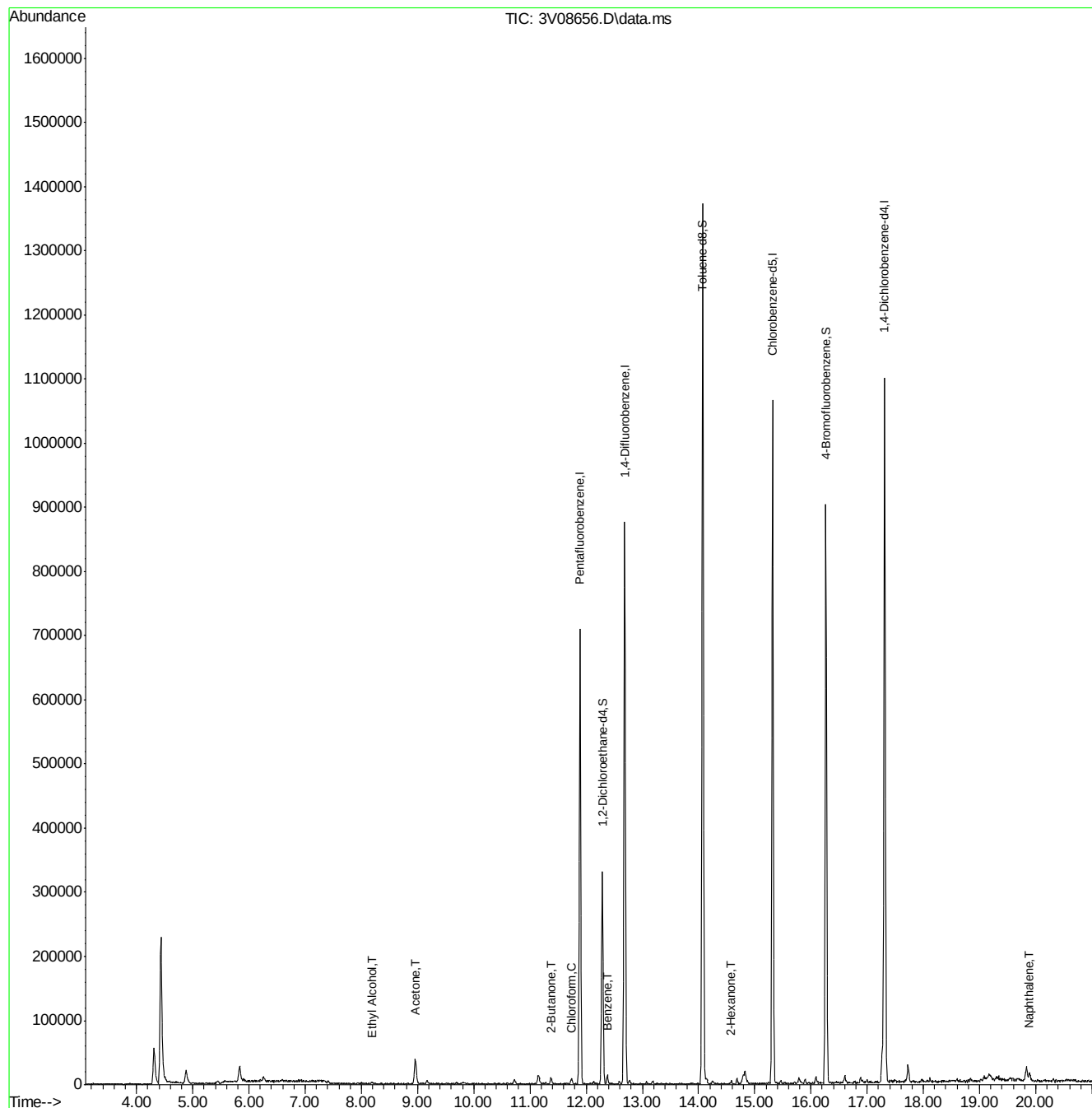
Target Compounds						Qvalue
9) Ethyl Alcohol	8.192	45	2009	44.66	ug/l #	61
14) Acetone	8.962	58	22591	45.64	ug/l #	87
24) 2-Butanone	11.366	72	3043	4.34	ug/l	76
27) Chloroform	11.738	83	7097	0.86	ug/l	99
45) Benzene	12.377	78	13232	0.62	ug/l	100
50) 2-Hexanone	14.591	43	3167	1.04	ug/l	85
72) Naphthalene	19.888	128	13557	0.61	ug/l	100

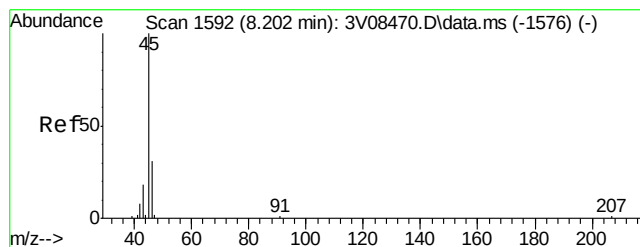
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08656.D
Acq On : 25 Jan 2011 10:48 am
Operator : DONC
Sample : D20581-1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 6 Sample Multiplier: 1

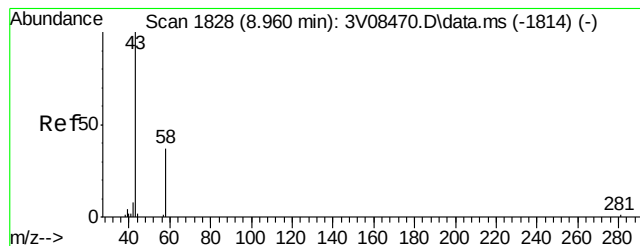
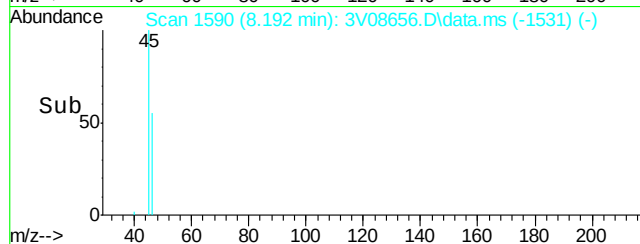
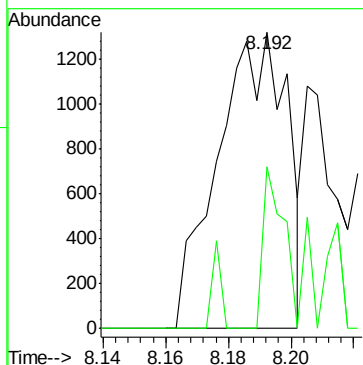
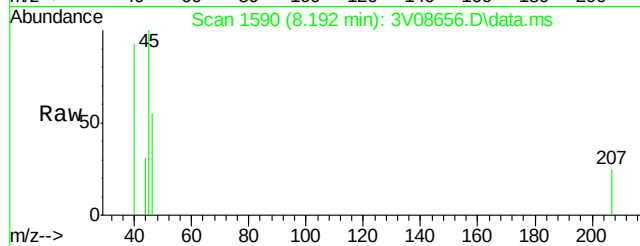
Quant Time: Jan 26 13:09:10 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





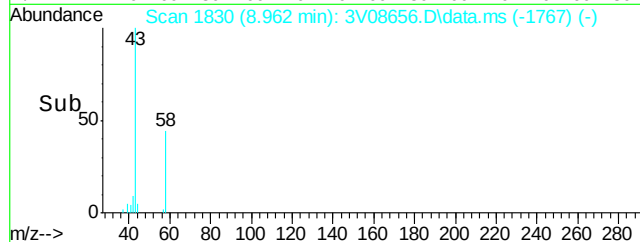
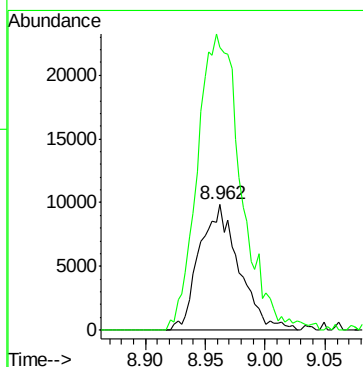
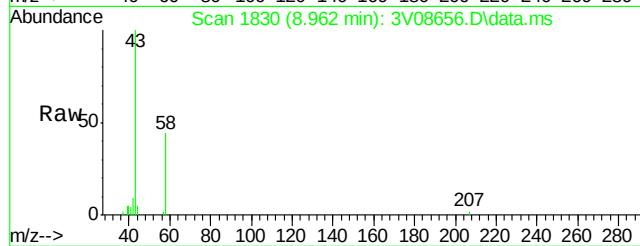
#9
Ethyl Alcohol
Concen: 44.66 ug/l
RT: 8.192 min Scan# 1590
Delta R.T. -0.010 min
Lab File: 3V08656.D
Acq: 25 Jan 2011 10:48 am

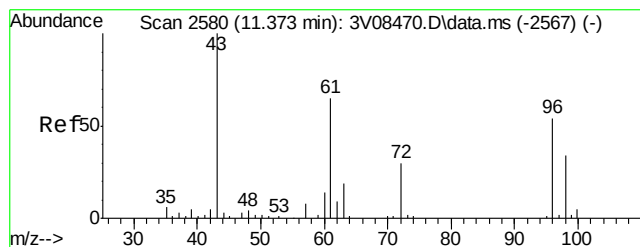
Tgt Ion	Ratio	Lower	Upper
45	100		
46	16.3	32.2	48.4#



#14
Acetone
Concen: 45.64 ug/l
RT: 8.962 min Scan# 1830
Delta R.T. 0.003 min
Lab File: 3V08656.D
Acq: 25 Jan 2011 10:48 am

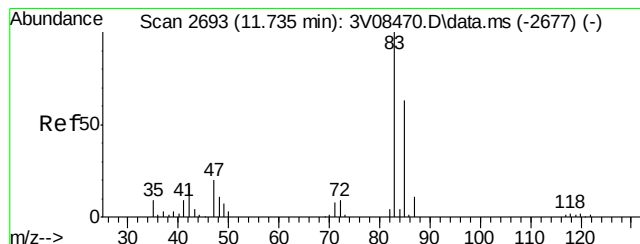
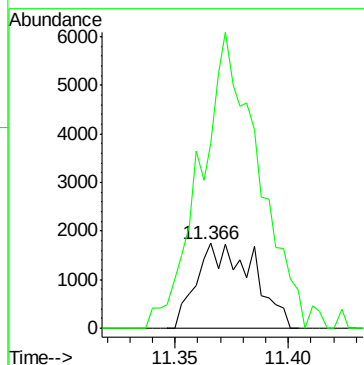
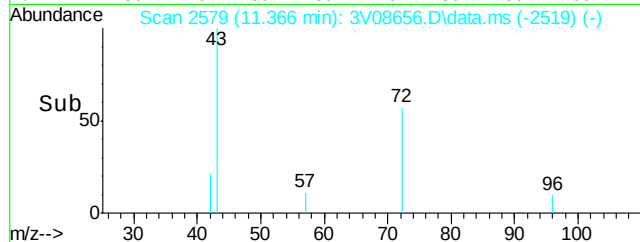
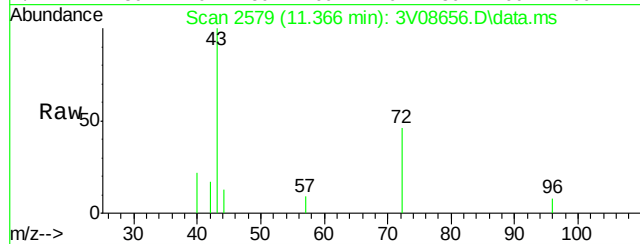
Tgt Ion	Ratio	Lower	Upper
58	100		
43	262.2	267.1	307.1#





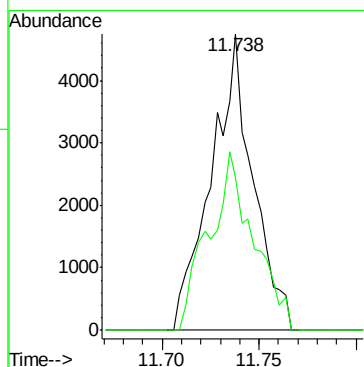
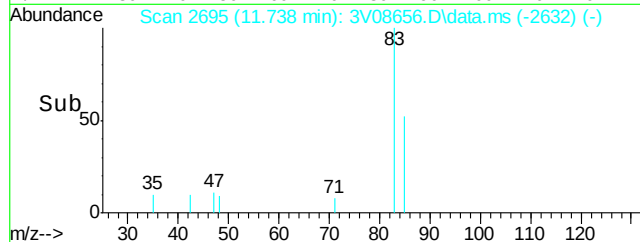
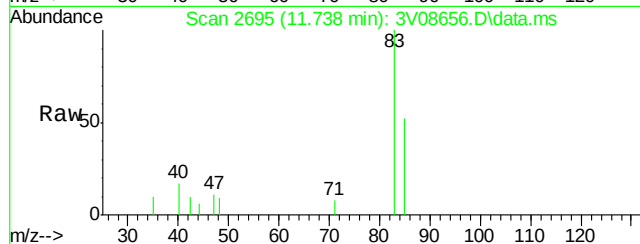
#24
2-Butanone
Concen: 4.34 ug/l
RT: 11.366 min Scan# 2579
Delta R.T. -0.007 min
Lab File: 3V08656.D
Acq: 25 Jan 2011 10:48 am

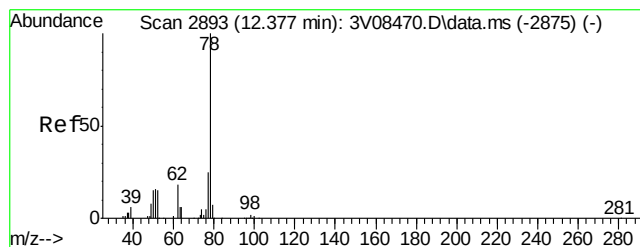
Tgt Ion: 72 Resp: 3043
Ion Ratio Lower Upper
72 100
43 363.1 252.0 378.0



#27
Chloroform
Concen: 0.86 ug/l
RT: 11.738 min Scan# 2695
Delta R.T. 0.003 min
Lab File: 3V08656.D
Acq: 25 Jan 2011 10:48 am

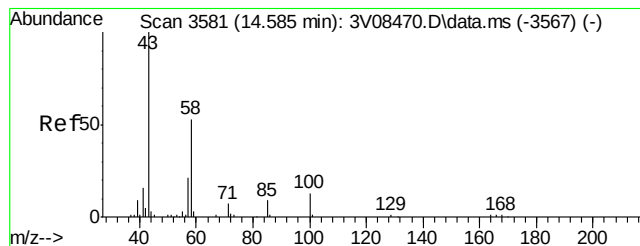
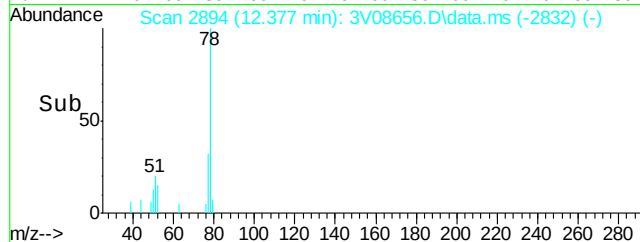
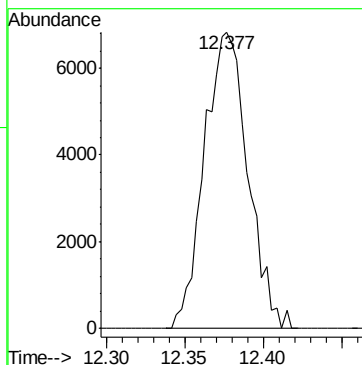
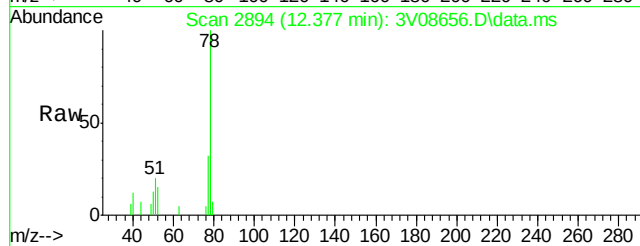
Tgt Ion: 83 Resp: 7097
Ion Ratio Lower Upper
83 100
85 64.2 45.1 85.1





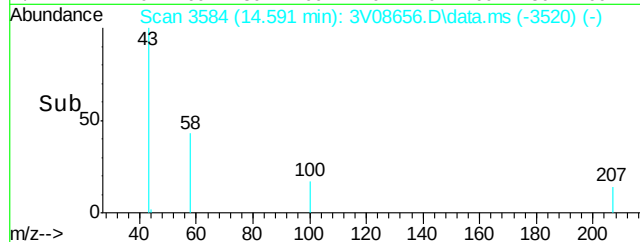
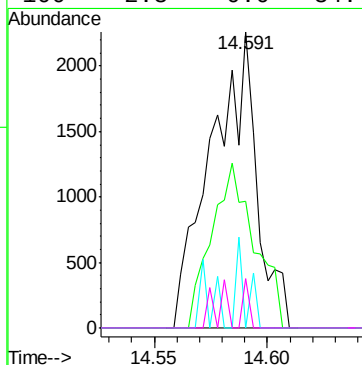
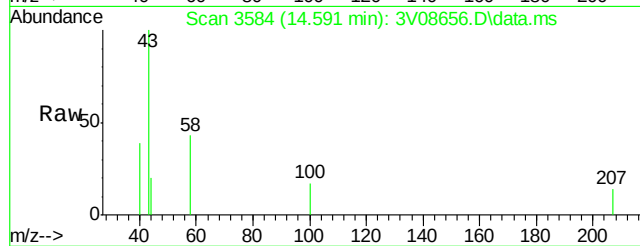
#45
Benzene
Concen: 0.62 ug/l
RT: 12.377 min Scan# 2894
Delta R.T. -0.000 min
Lab File: 3V08656.D
Acq: 25 Jan 2011 10:48 am

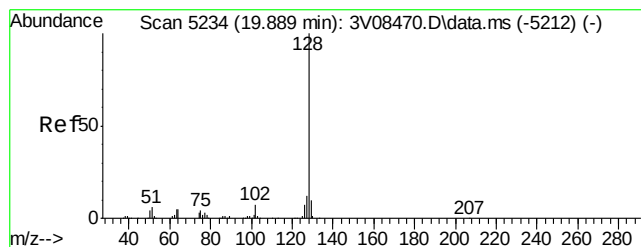
Tgt Ion: 78 Resp: 13232



#50
2-Hexanone
Concen: 1.04 ug/l
RT: 14.591 min Scan# 3584
Delta R.T. 0.006 min
Lab File: 3V08656.D
Acq: 25 Jan 2011 10:48 am

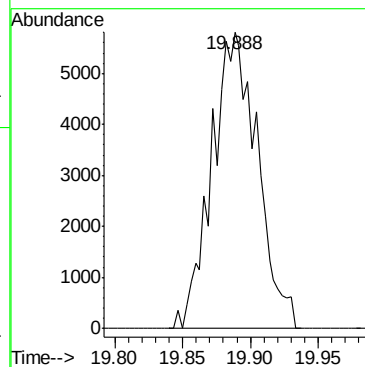
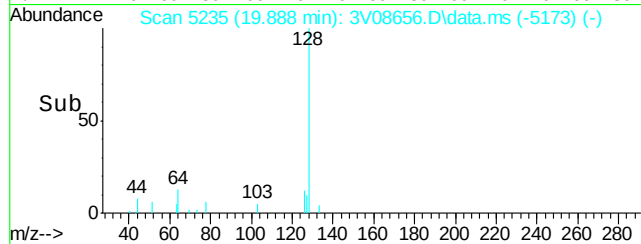
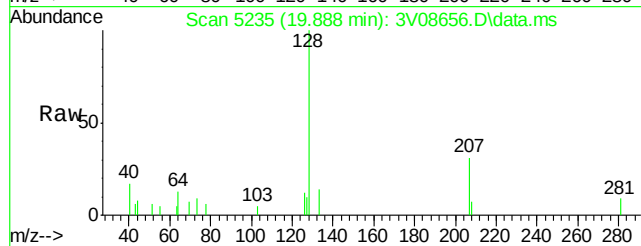
Tgt Ion: 43 Resp: 3167
Ion Ratio Lower Upper
43 100
58 52.8 37.5 77.5
57 6.8 0.0 39.9
100 2.3 0.0 34.7





#72
Naphthalene
Concen: 0.61 ug/l
RT: 19.888 min Scan# 5235
Delta R.T. -0.000 min
Lab File: 3V08656.D
Acq: 25 Jan 2011 10:48 am

Tgt Ion:128 Resp: 13557



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08656.D
Acq On : 25 Jan 2011 10:48 am
Operator : DONC
Sample : D20581-1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08656.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.306	366	379	396	rBV	56039	135689	5.52%	1.072%
2	4.432	403	418	436	rBV	228454	531696	21.64%	4.201%
3	4.881	545	558	575	rBV4	20235	51750	2.11%	0.409%
4	5.837	847	856	865	rVB4	20036	38840	1.58%	0.307%
5	8.959	1813	1829	1842	rBV2	38366	93187	3.79%	0.736%
6	11.892	2728	2743	2758	rBV	708657	1314041	53.48%	10.383%
7	12.287	2852	2866	2881	rBV2	331729	640347	26.06%	5.060%
8	12.377	2884	2894	2905	rVB3	14508	25516	1.04%	0.202%
9	12.685	2975	2990	3007	rBV	875390	1605909	65.35%	12.690%
10	14.074	3407	3423	3439	rBV	1372938	2457236	100.00%	19.417%
11	15.316	3795	3810	3826	rBV	1066521	1898479	77.26%	15.002%
12	16.266	4093	4106	4121	rBV2	903110	1610915	65.56%	12.729%
13	17.308	4408	4431	4449	rVB	1097578	2192773	89.24%	17.327%
14	17.726	4551	4561	4563	rBV	25024	30974	1.26%	0.245%
15	19.831	5206	5217	5219	rBV	22111	27896	1.14%	0.220%

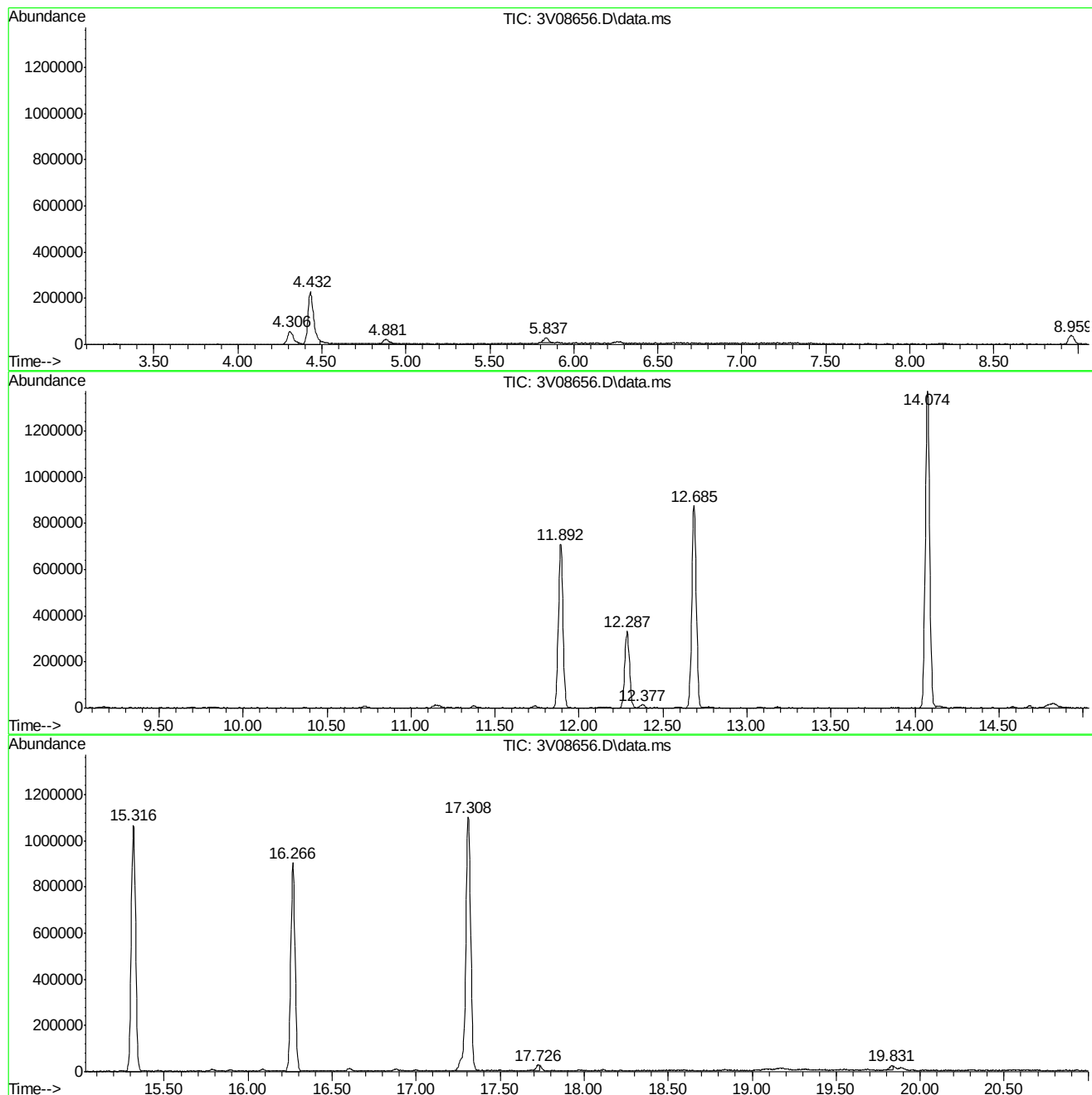
Sum of corrected areas: 12655248

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08656.D
Acq On : 25 Jan 2011 10:48 am
Operator : DONC
Sample : D20581-1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08656.D
 Acq On : 25 Jan 2011 10:48 am
 Operator : DONC
 Sample : D20581-1
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 6 Sample Multiplier: 1

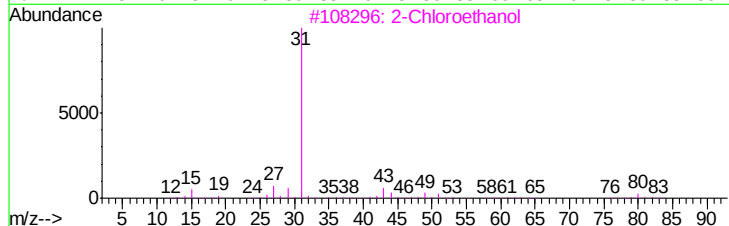
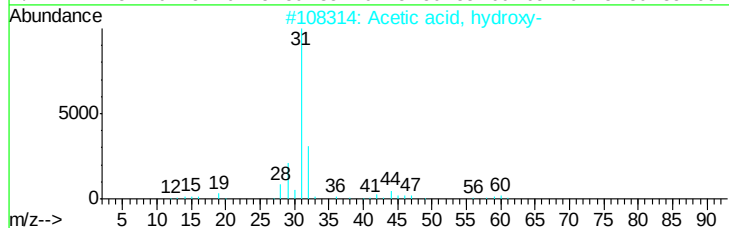
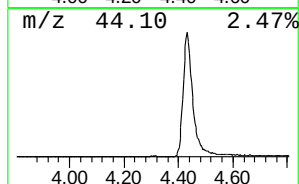
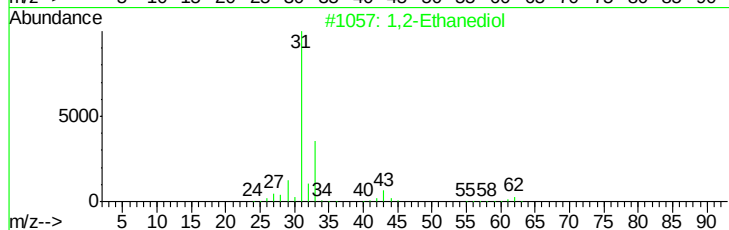
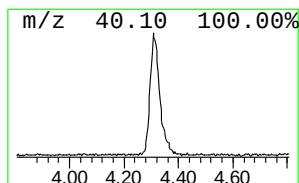
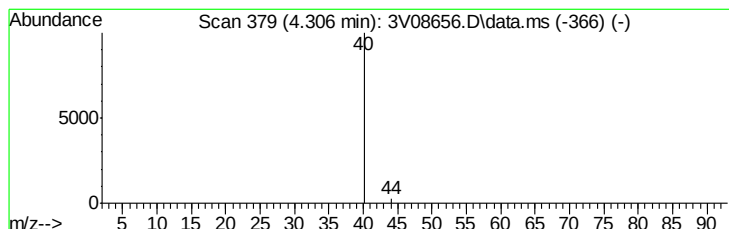
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 1,2-Ethanedio1 Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.306	5.16 ug/l	135689	Pentafluorobenzene	11.892

Hit# of	5	Tentative ID	MW	MolForm	CAS#	Qual
1		1,2-Ethanedio1	62	C2H6O2	000107-21-1	1
2		Acetic acid, hydroxy-	76	C2H4O3	000079-14-1	1
3		2-Chloroethanol	80	C2H5ClO	000107-07-3	1
4		2-Chloroethanol	80	C2H5ClO	000107-07-3	1
5		Glycyl-dl-alanine	146	C5H10N2O3	000926-77-2	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08656.D
 Acq On : 25 Jan 2011 10:48 am
 Operator : DONC
 Sample : D20581-1
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 6 Sample Multiplier: 1

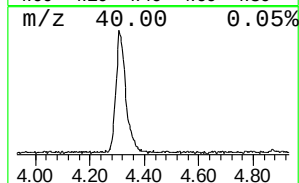
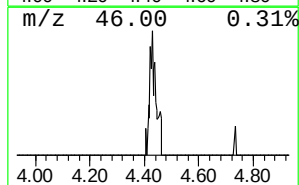
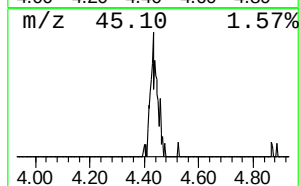
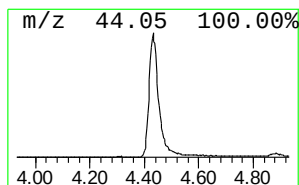
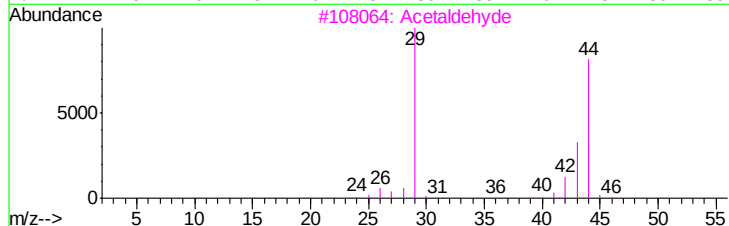
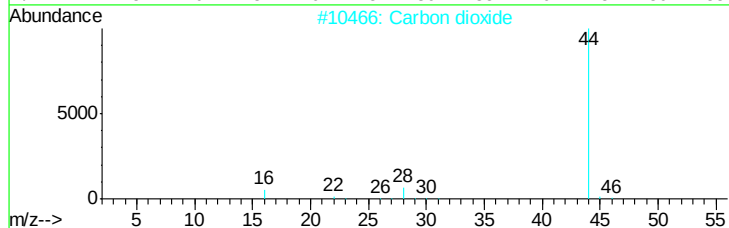
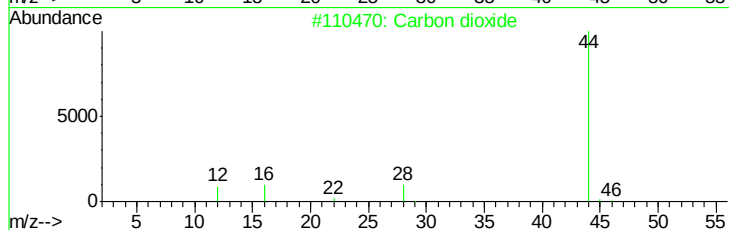
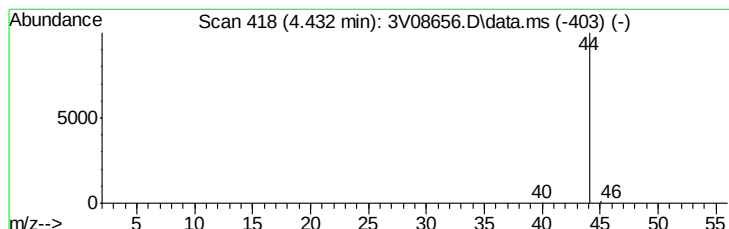
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.432	20.23 ug/l	531696	Pentafluorobenzene	11.892

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide	44	CO2	000124-38-9	4
2	Carbon dioxide	44	CO2	000124-38-9	4
3	Acetaldehyde	44	C2H4O	000075-07-0	3
4	Ethyne, fluoro-	44	C2HF	002713-09-9	3
5	Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08656.D
Acq On : 25 Jan 2011 10:48 am
Operator : DONC
Sample : D20581-1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
1,2-Ethanedio1	4.306	5.2	ug/l	135689	1	11.892	1314040	50.0
Carbon dioxide	4.432	20.2	ug/l	531696	1	11.892	1314040	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08659.D
 Acq On : 25 Jan 2011 12:20 pm
 Operator : DONC
 Sample : D20581-2
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 26 13:11:49 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260
 QLast Update : Mon Jan 17 09:47:23 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.892	168	488481	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.684	114	731876	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.319	117	660824	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.315	152	370943	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.287	102	55540	44.82	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	89.64%	
55) Toluene-d8	14.074	98	890248	46.63	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.26%	
59) 4-Bromofluorobenzene	16.269	95	315762	44.22	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	88.44%	

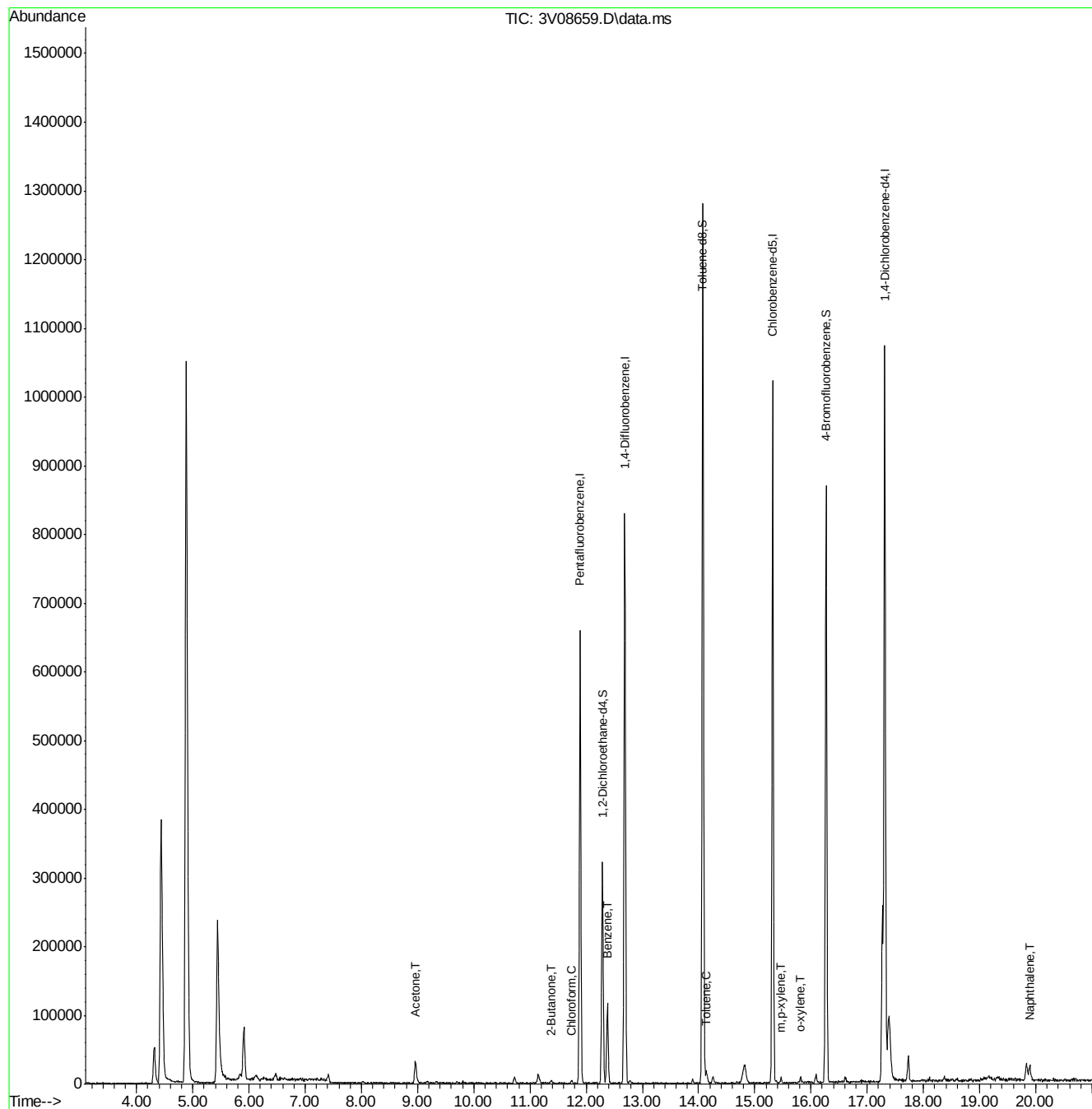
Target Compounds						Qvalue
14) Acetone	8.969	58	17065	36.74	ug/l	99
24) 2-Butanone	11.369	72	1198	1.82	ug/l	# 40
27) Chloroform	11.728	83	3401m	0.44	ug/l	
45) Benzene	12.376	78	106619	5.27	ug/l	100
56) Toluene	14.135	92	8018	0.61	ug/l	95
61) m,p-xylene	15.460	106	2347	0.22	ug/l	89
62) o-xylene	15.816	106	2361	0.22	ug/l	95
72) Naphthalene	19.895	128	27690	1.31	ug/l	100

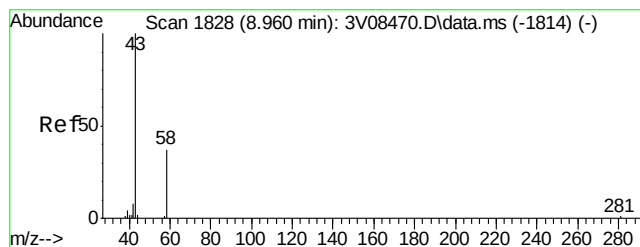
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08659.D
Acq On : 25 Jan 2011 12:20 pm
Operator : DONC
Sample : D20581-2
Misc : MS1766,V3V475,,,,,1
ALS Vial : 9 Sample Multiplier: 1

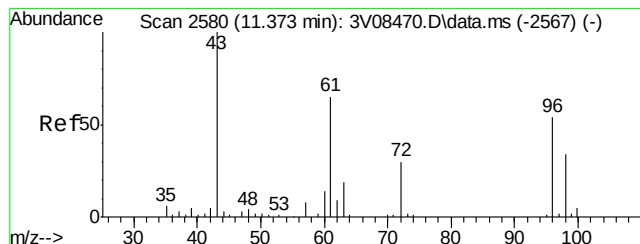
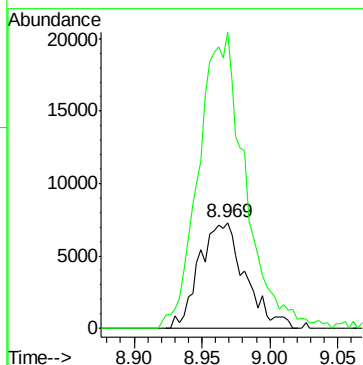
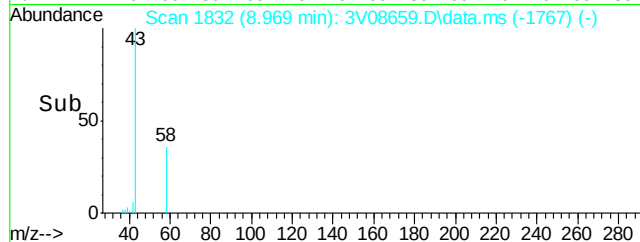
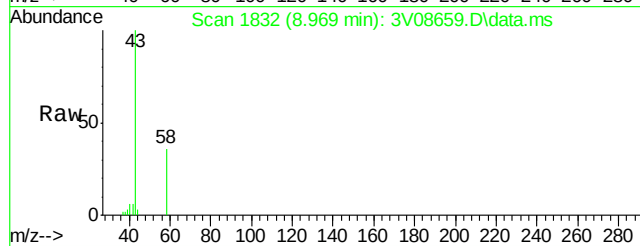
Quant Time: Jan 26 13:11:49 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





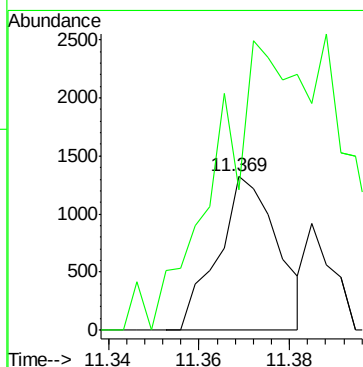
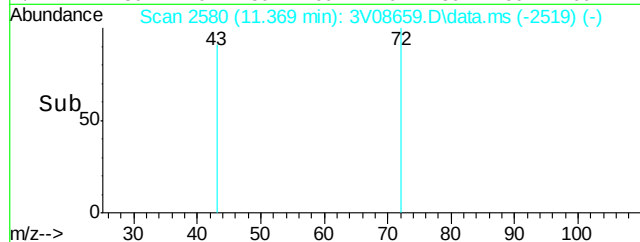
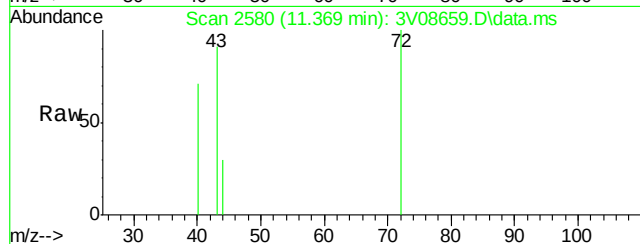
#14
Acetone
Concen: 36.74 ug/l
RT: 8.969 min Scan# 1832
Delta R.T. 0.010 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

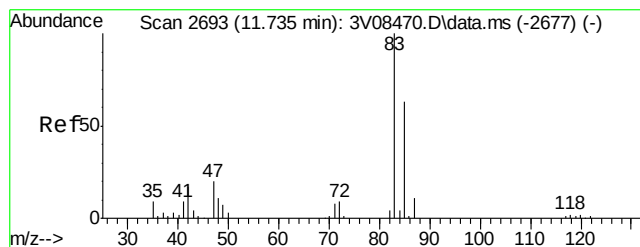
Tgt Ion: 58 Resp: 17065
Ion Ratio Lower Upper
58 100
43 285.0 267.1 307.1



#24
2-Butanone
Concen: 1.82 ug/l
RT: 11.369 min Scan# 2580
Delta R.T. -0.004 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

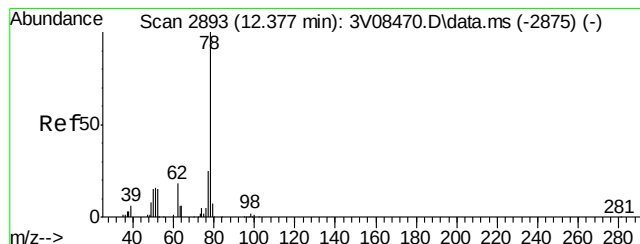
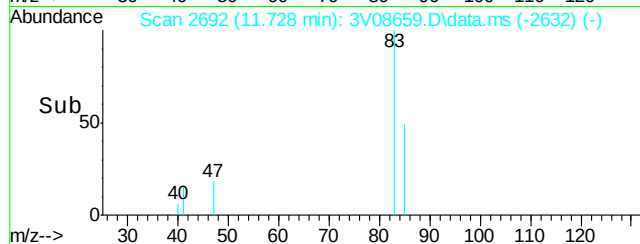
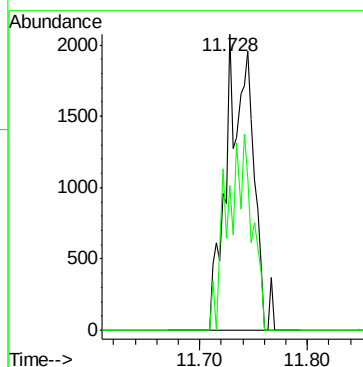
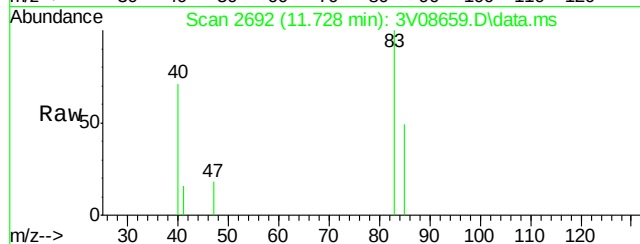
Tgt Ion: 72 Resp: 1198
Ion Ratio Lower Upper
72 100
43 437.3 252.0 378.0#





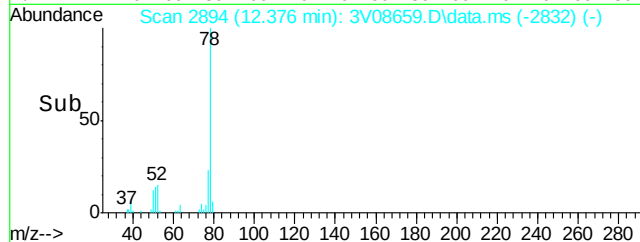
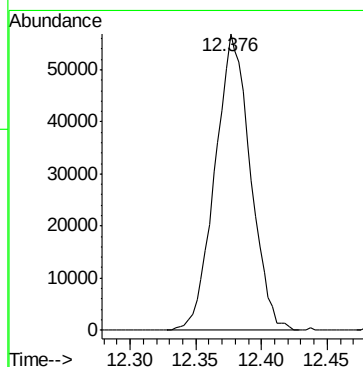
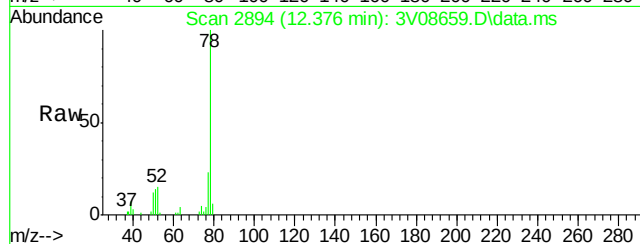
#27
Chloroform
Concen: 0.44 ug/l m
RT: 11.728 min Scan# 2692
Delta R.T. -0.007 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

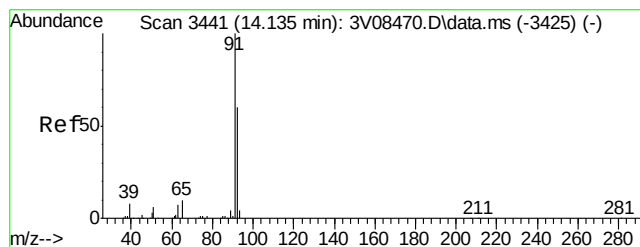
Tgt Ion: 83 Resp: 3401
Ion Ratio Lower Upper
83 100
85 39.4 45.1 85.1#



#45
Benzene
Concen: 5.27 ug/l
RT: 12.376 min Scan# 2894
Delta R.T. -0.001 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

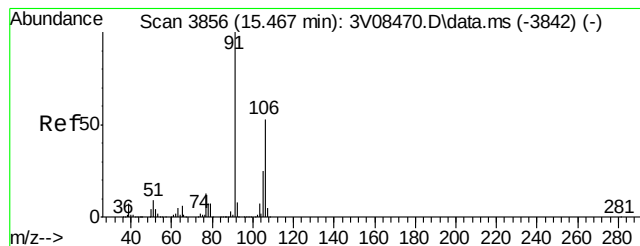
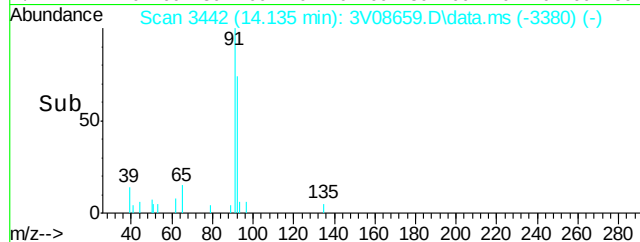
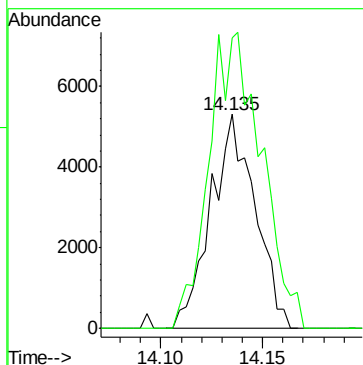
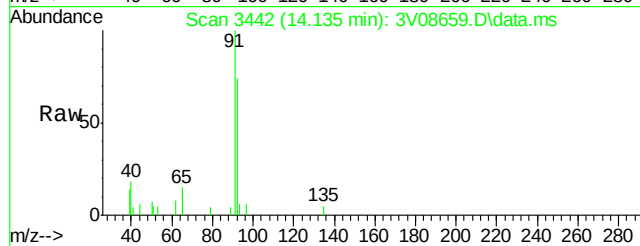
Tgt Ion: 78 Resp: 106619





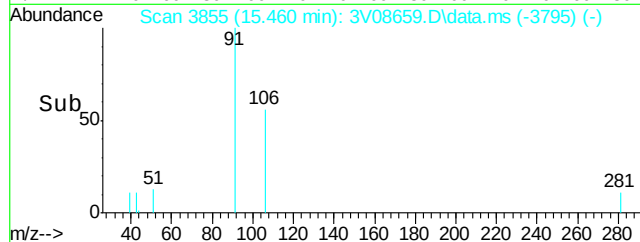
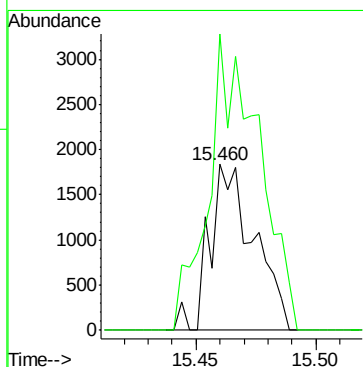
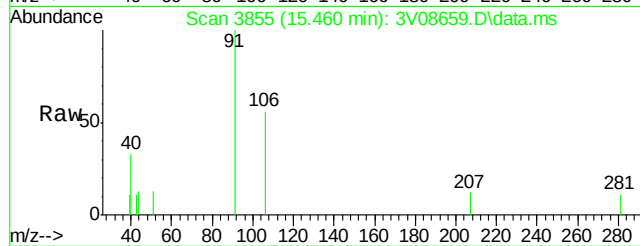
#56
Toluene
Concen: 0.61 ug/l
RT: 14.135 min Scan# 3442
Delta R.T. -0.001 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

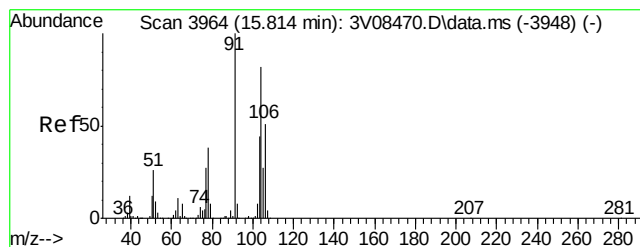
Tgt Ion	Ratio	Lower	Upper
92	100		
91	164.4	151.6	191.6



#61
m,p-xylene
Concen: 0.22 ug/l
RT: 15.460 min Scan# 3855
Delta R.T. -0.007 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

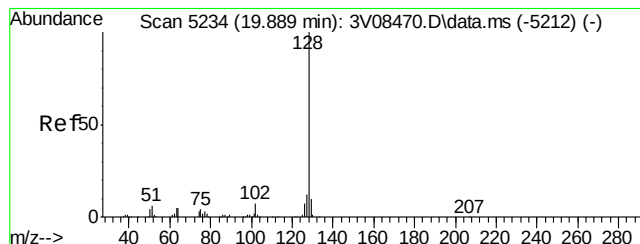
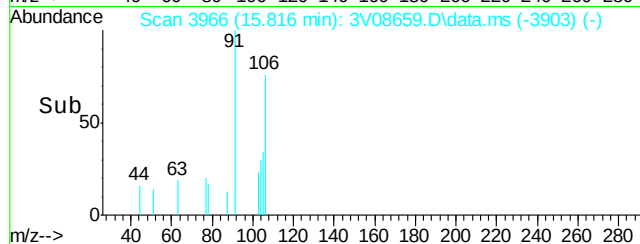
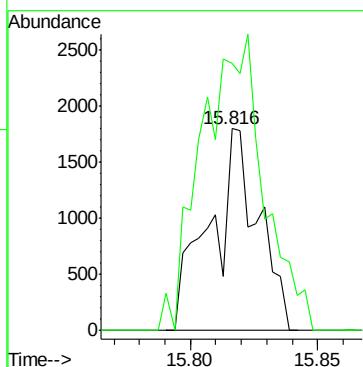
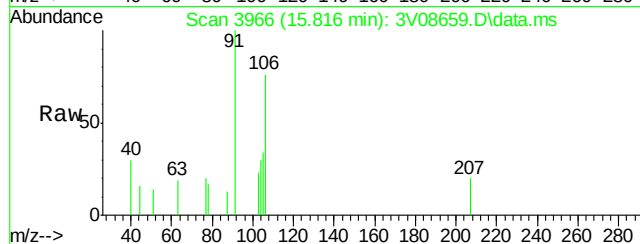
Tgt Ion	Ratio	Lower	Upper
106	100		
91	203.3	167.5	207.5





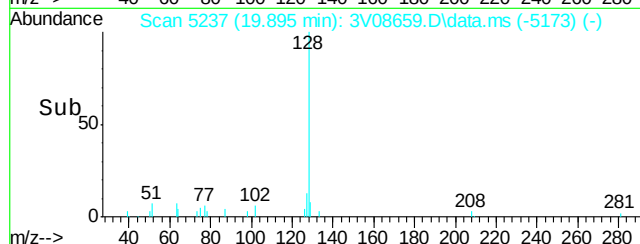
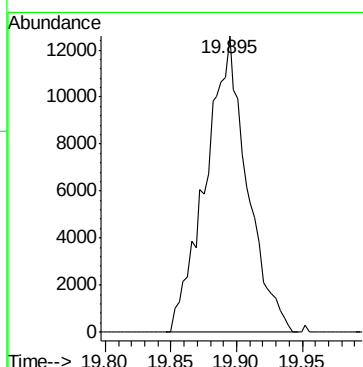
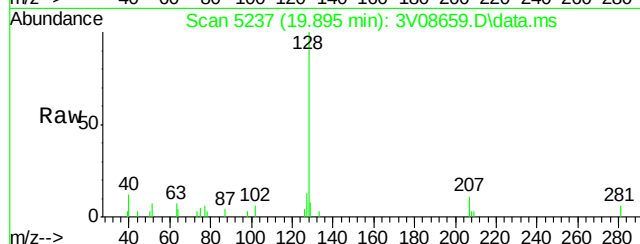
#62
o-xylene
Concen: 0.22 ug/l
RT: 15.816 min Scan# 3966
Delta R.T. 0.003 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

Tgt Ion:106 Resp: 2361
Ion Ratio Lower Upper
106 100
91 190.4 158.2 237.2



#72
Naphthalene
Concen: 1.31 ug/l
RT: 19.895 min Scan# 5237
Delta R.T. 0.006 min
Lab File: 3V08659.D
Acq: 25 Jan 2011 12:20 pm

Tgt Ion:128 Resp: 27690



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08659.D
Acq On : 25 Jan 2011 12:20 pm
Operator : DONC
Sample : D20581-2
Misc : MS1766,V3V475,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08659.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.316	367	382	395	rBV	52506	123630	4.39%	0.737%
2	4.435	403	419	447	rBV	383236	1077706	38.27%	6.424%
3	4.881	542	558	589	rBV3	1049758	2815999	100.00%	16.786%
4	5.439	714	732	757	rBV2	236551	679791	24.14%	4.052%
5	5.911	864	879	892	rVB4	73871	169496	6.02%	1.010%
6	8.959	1819	1829	1831	rBV	31656	40177	1.43%	0.239%
7	11.892	2726	2743	2760	rBV2	658869	1244428	44.19%	7.418%
8	12.290	2851	2867	2880	rBV3	321905	617718	21.94%	3.682%
9	12.376	2882	2894	2911	rVB2	116800	221402	7.86%	1.320%
10	12.684	2973	2990	3005	rBV	829029	1519108	53.95%	9.056%
11	14.074	3408	3423	3438	rBV	1280602	2327176	82.64%	13.872%
12	14.821	3648	3656	3665	rVB6	16039	33810	1.20%	0.202%
13	15.316	3795	3810	3825	rBV2	1021906	1805739	64.12%	10.764%
14	16.269	4091	4107	4122	rBV	868644	1554948	55.22%	9.269%
15	17.270	4405	4419	4423	rBV2	256764	434696	15.44%	2.591%
16	17.312	4423	4432	4445	rVB2	1032474	1956892	69.49%	11.665%
17	17.385	4445	4455	4456	rBV4	50168	69512	2.47%	0.414%
18	17.729	4552	4562	4563	rBV2	33911	36680	1.30%	0.219%
19	19.834	5208	5218	5229	rBV2	22456	46616	1.66%	0.278%

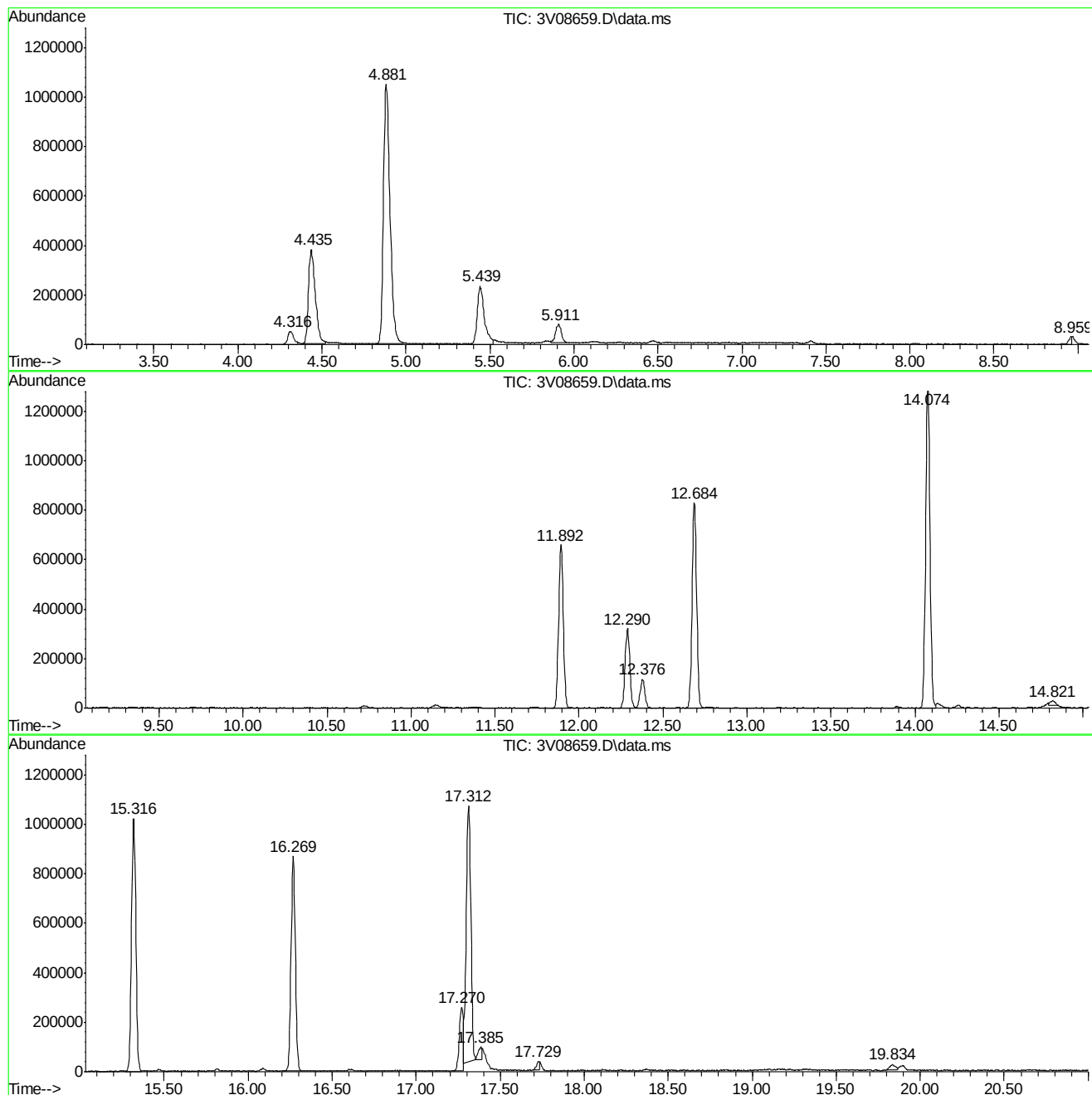
Sum of corrected areas: 16775524

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08659.D
Acq On : 25 Jan 2011 12:20 pm
Operator : DONC
Sample : D20581-2
Misc : MS1766,V3V475,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08659.D
 Acq On : 25 Jan 2011 12:20 pm
 Operator : DONC
 Sample : D20581-2
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 9 Sample Multiplier: 1

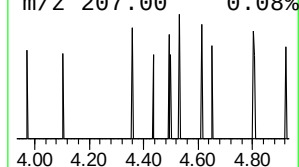
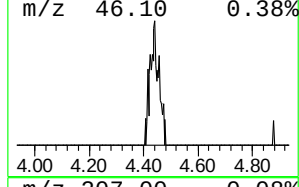
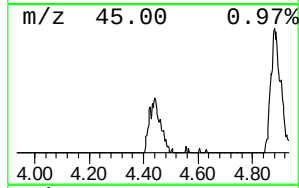
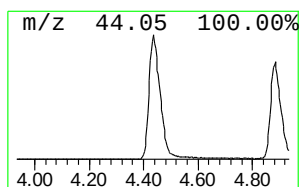
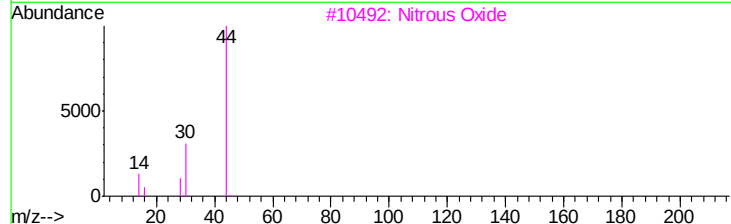
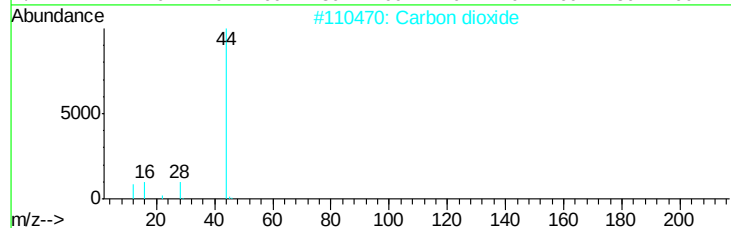
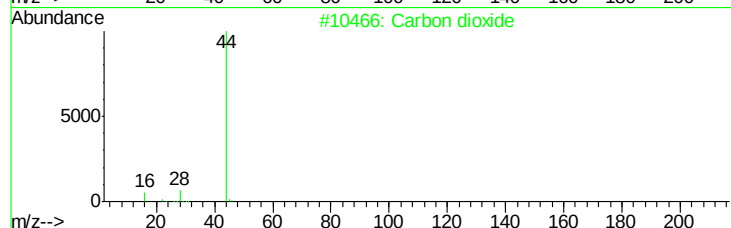
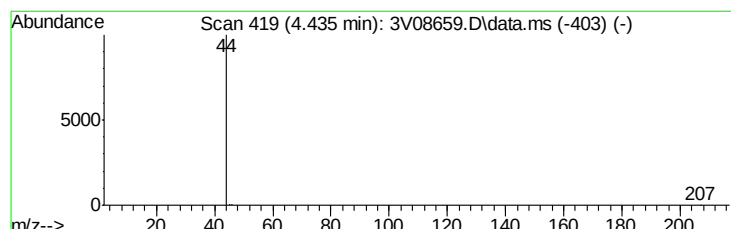
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 Carbon dioxide Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.435	43.30 ug/l	1077710	Pentafluorobenzene	11.892

Hit# of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide		44	CO2	000124-38-9	4
2	Carbon dioxide		44	CO2	000124-38-9	4
3	Nitrous Oxide		44	N2O	010024-97-2	3
4	Nitrous Oxide		44	N2O	010024-97-2	3
5	Nitrous Oxide		44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08659.D
 Acq On : 25 Jan 2011 12:20 pm
 Operator : DONC
 Sample : D20581-2
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 9 Sample Multiplier: 1

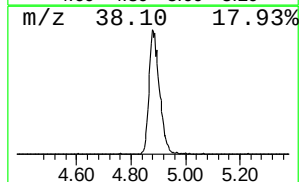
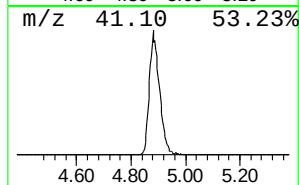
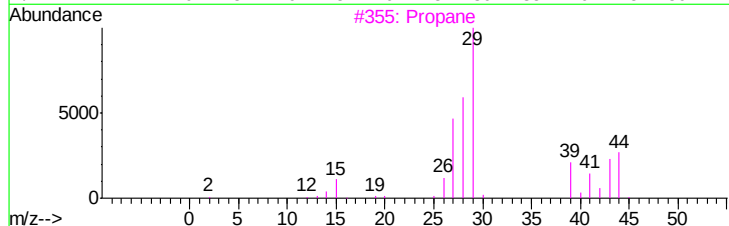
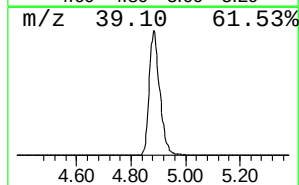
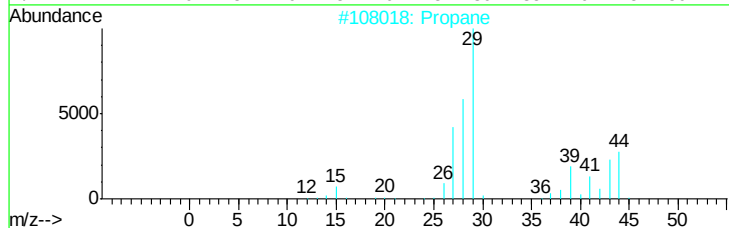
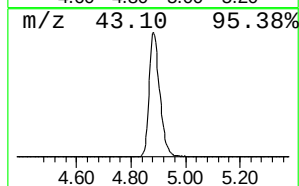
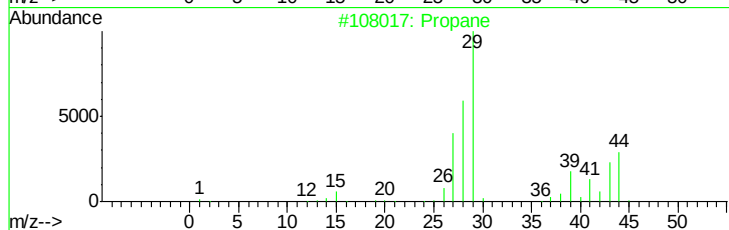
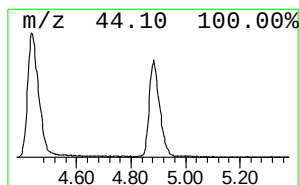
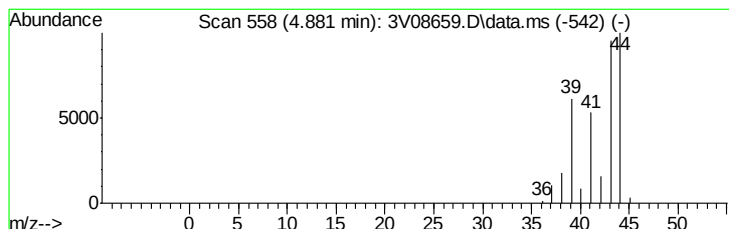
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Propane Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.881	113.14 ug/l	2816000	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane			44	C3H8	000074-98-6	74
2	Propane			44	C3H8	000074-98-6	83
3	Propane			44	C3H8	000074-98-6	7
4	Acetaldehyde			44	C2H4O	000075-07-0	5
5	Oxiranemethanol, (R)-			74	C3H6O2	057044-25-4	2



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08659.D
Acq On : 25 Jan 2011 12:20 pm
Operator : DONC
Sample : D20581-2
Misc : MS1766,V3V475,,,,,1
ALS Vial : 9 Sample Multiplier: 1

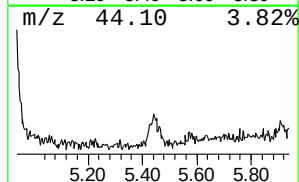
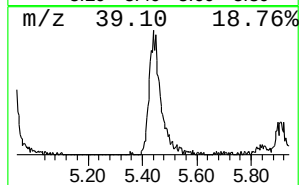
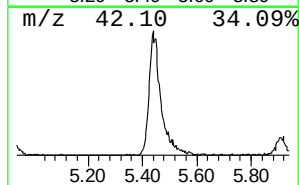
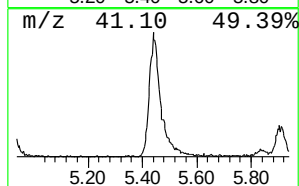
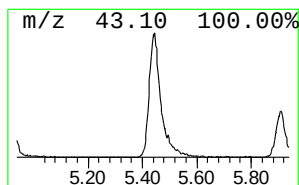
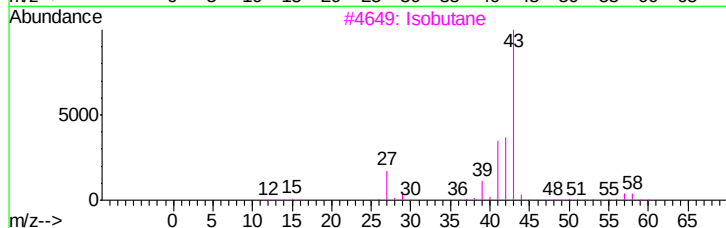
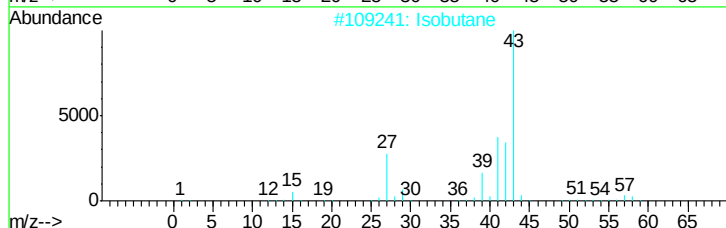
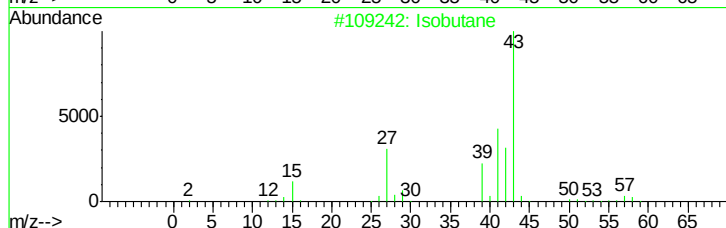
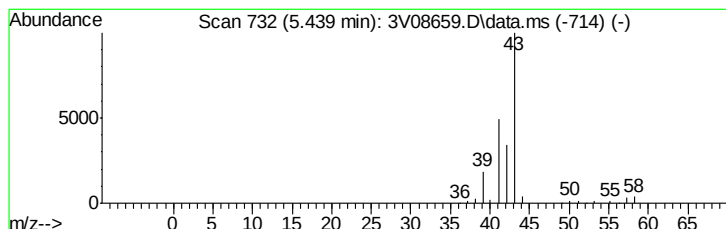
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 3 Isobutane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.439	27.31 ug/l	679791	Pentafluorobenzene	11.892

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	78
2	Isobutane	58	C4H10	000075-28-5	78
3	Isobutane	58	C4H10	000075-28-5	72
4	Propane, 1-chloro-2-methyl-	92	C4H9Cl	000513-36-0	2
5	Butane	58	C4H10	000106-97-8	2



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08659.D
 Acq On : 25 Jan 2011 12:20 pm
 Operator : DONC
 Sample : D20581-2
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 9 Sample Multiplier: 1

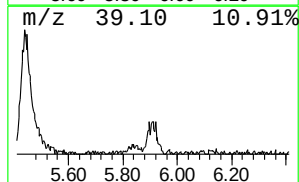
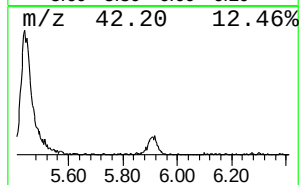
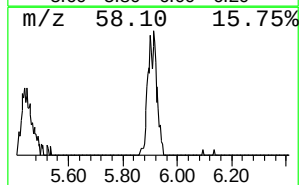
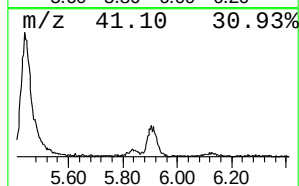
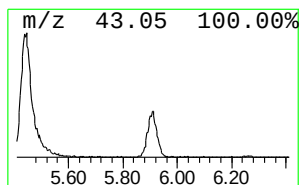
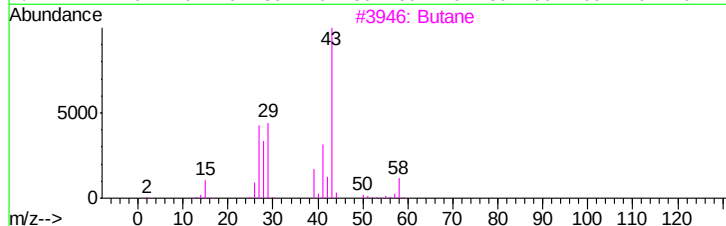
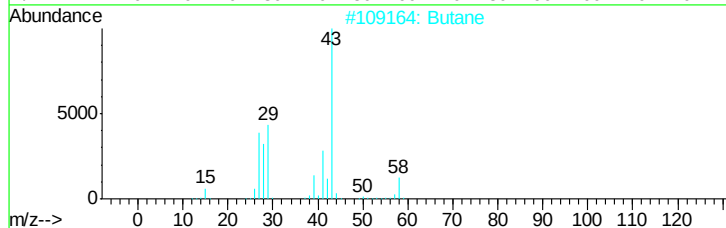
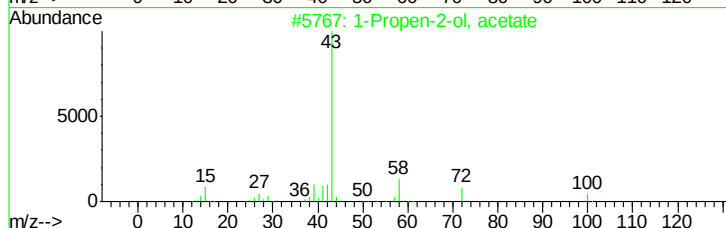
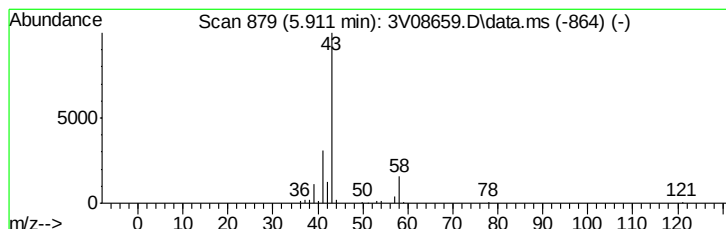
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 4 1-Propen-2-ol, acetate Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.911	6.81 ug/l	169496	Pentafluorobenzene	11.892

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propen-2-ol, acetate	100	C5H8O2	000108-22-5	56
2	Butane	58	C4H10	000106-97-8	50
3	Butane	58	C4H10	000106-97-8	50
4	1-Propen-2-ol, acetate	100	C5H8O2	000108-22-5	39
5	Formic acid, chloro-, (3,4,4-tri...	194	C7H11ClO4	107323-92-2	9



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08659.D
Acq On : 25 Jan 2011 12:20 pm
Operator : DONC
Sample : D20581-2
Misc : MS1766,V3V475,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Carbon dioxide	4.435	43.3	ug/l	1077710	1	11.892	1244430	50.0
Propane	4.881	113.1	ug/l	2816000	1	11.892	1244430	50.0
Isobutane	5.439	27.3	ug/l	679791	1	11.892	1244430	50.0
1-Propen-2-ol, ...	5.911	6.8	ug/l	169496	1	11.892	1244430	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08660.D
 Acq On : 25 Jan 2011 12:51 pm
 Operator : DONC
 Sample : D20581-3
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 26 13:12:44 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260
 QLast Update : Mon Jan 17 09:47:23 2011
 Response via : Initial Calibration

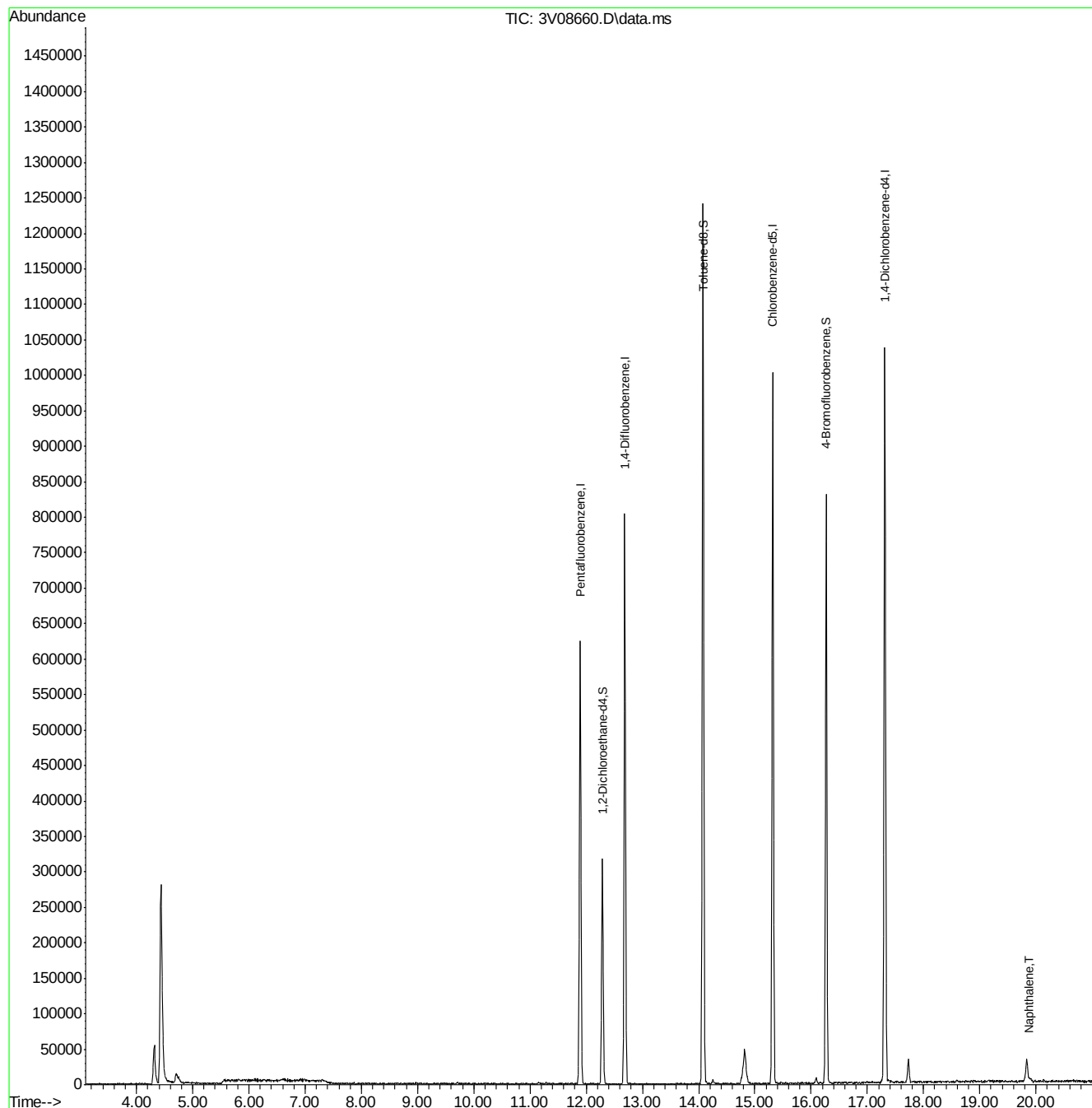
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.896	168	474758	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	717978	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.320	117	646810	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	362539	50.00	ug/l	0.00
System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.287	102	55842	46.37	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	92.74%	
55) Toluene-d8	14.078	98	870429	46.58	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.16%	
59) 4-Bromofluorobenzene	16.269	95	307798	44.04	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	88.08%	
Target Compounds						
72) Naphthalene	19.882	128	5390	0.26	ug/l	Qvalue 100

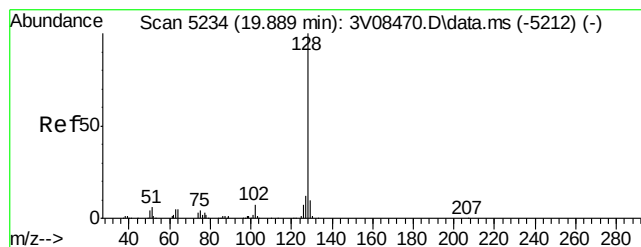
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08660.D
Acq On : 25 Jan 2011 12:51 pm
Operator : DONC
Sample : D20581-3
Misc : MS1766,V3V475,,,,,1
ALS Vial : 10 Sample Multiplier: 1

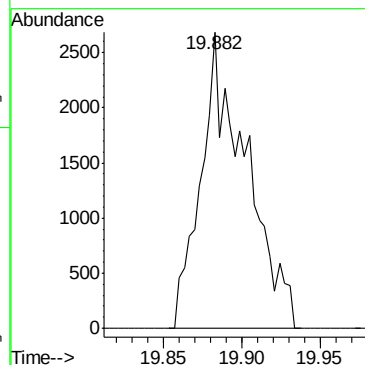
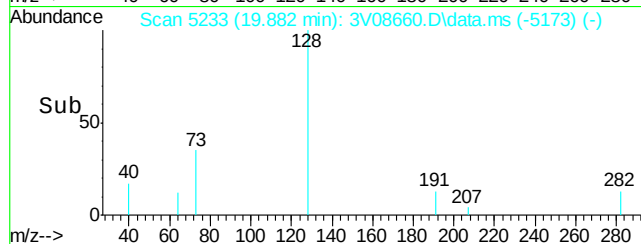
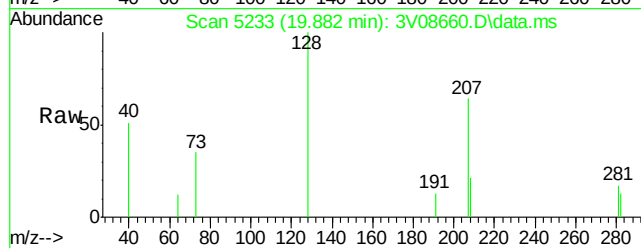
Quant Time: Jan 26 13:12:44 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





#72
 Naphthalene
 Concen: 0.26 ug/l
 RT: 19.882 min Scan# 5233
 Delta R.T. -0.006 min
 Lab File: 3V08660.D
 Acq: 25 Jan 2011 12:51 pm

Tgt Ion:128 Resp: 5390



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08660.D
 Acq On : 25 Jan 2011 12:51 pm
 Operator : DONC
 Sample : D20581-3
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0

Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V08660.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.317	368	382	399	rBV	53759	123190	5.42%	1.030%
2	4.432	404	418	444	rBV	280247	740932	32.57%	6.194%
3	4.708	489	504	510	rBV5	13389	29474	1.30%	0.246%
4	11.893	2729	2743	2758	rBV2	624331	1207006	53.06%	10.091%
5	12.287	2852	2866	2882	rBV	317280	611075	26.86%	5.109%
6	12.685	2974	2990	3006	rBV	804311	1493033	65.64%	12.482%
7	14.075	3409	3423	3440	rBV2	1241498	2274662	100.00%	19.017%
8	14.819	3647	3655	3674	rVB2	47412	127451	5.60%	1.066%
9	15.316	3794	3810	3824	rBV	1003858	1766391	77.66%	14.767%
10	16.269	4092	4107	4120	rBV	830816	1498614	65.88%	12.529%
11	17.312	4412	4432	4448	rBV2	1036405	1972556	86.72%	16.491%
12	17.729	4552	4562	4564	rBV2	32485	41254	1.81%	0.345%
13	19.838	5204	5219	5229	rBV3	30526	75869	3.34%	0.634%

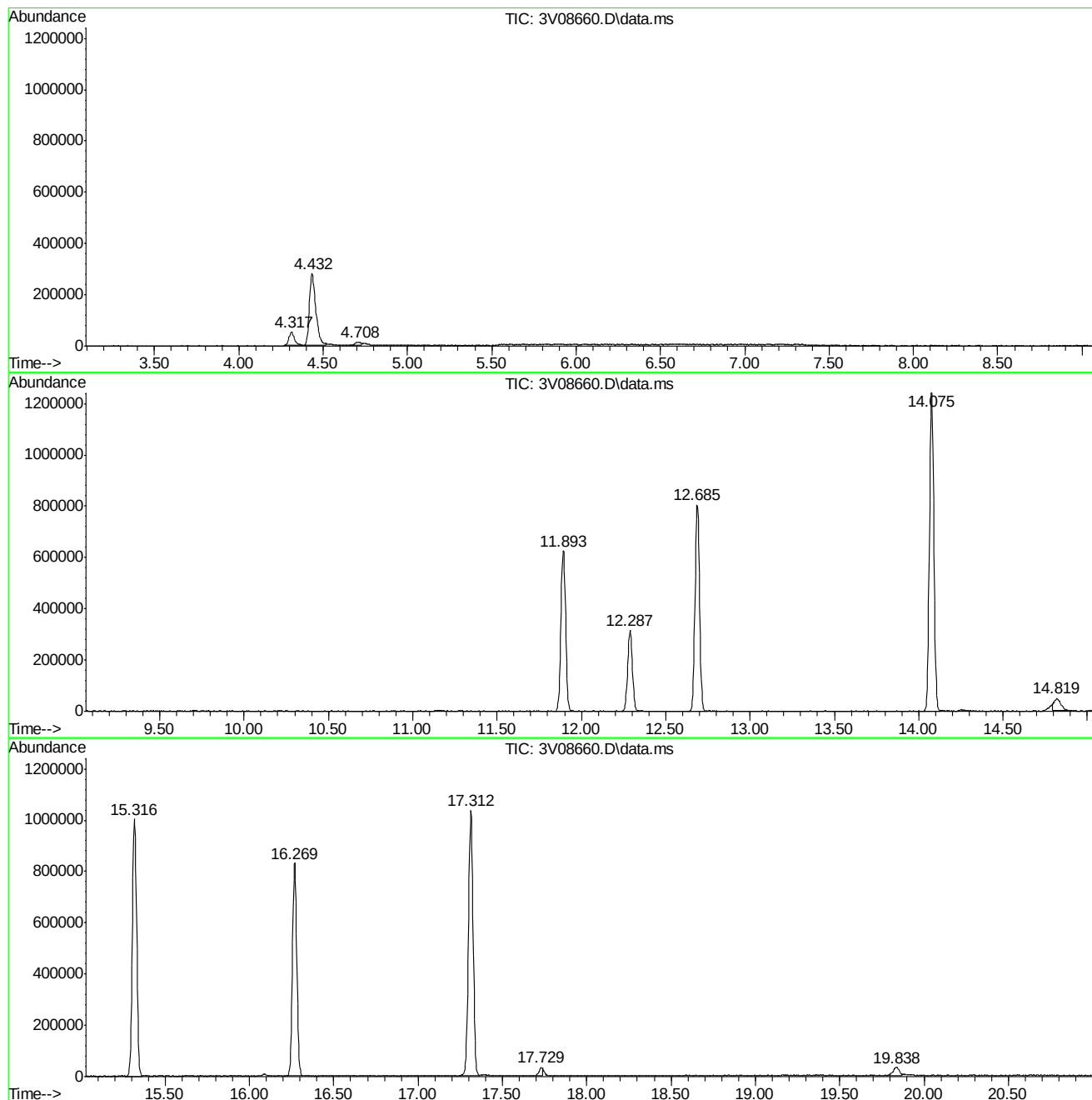
Sum of corrected areas: 11961507

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08660.D
Acq On : 25 Jan 2011 12:51 pm
Operator : DONC
Sample : D20581-3
Misc : MS1766,V3V475,,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08660.D
 Acq On : 25 Jan 2011 12:51 pm
 Operator : DONC
 Sample : D20581-3
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 10 Sample Multiplier: 1

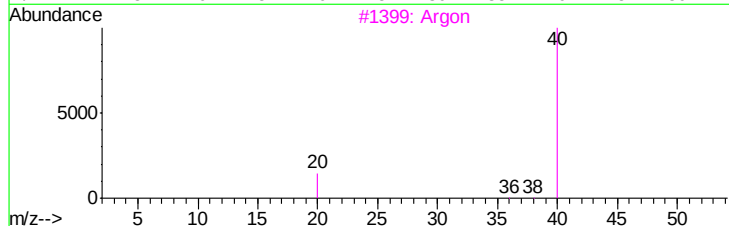
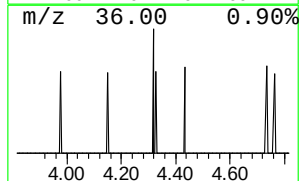
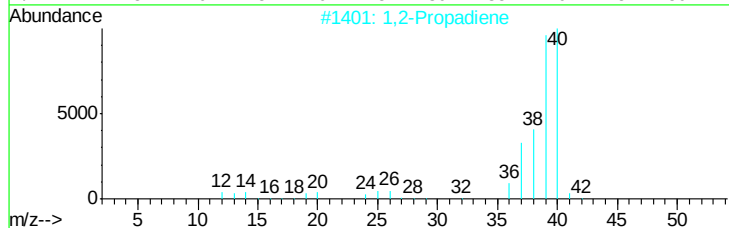
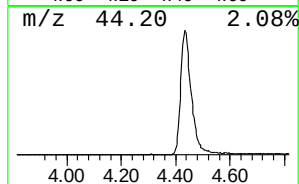
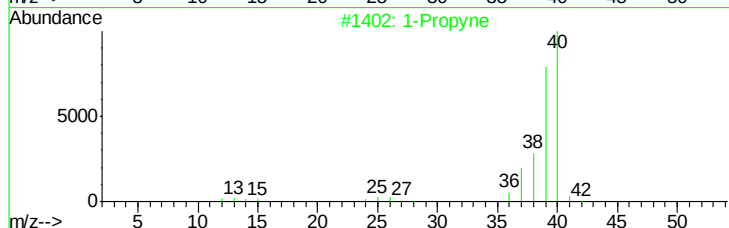
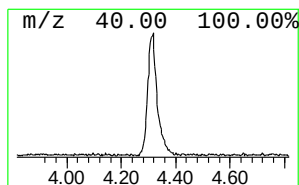
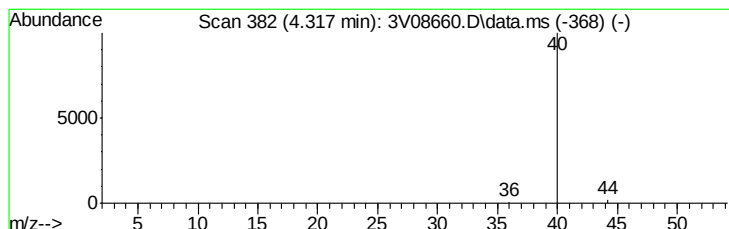
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 1-Propyne Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.317	5.10 ug/l	123190	Pentafluorobenzene	11.896

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propyne	40	C3H4	000074-99-7	2
2	1,2-Propadiene	40	C3H4	000463-49-0	2
3	Argon	40	Ar	007440-37-1	2
4	Boron, carbonyltrihydro-, (T-4)-	42	CH3BO	013205-44-2	1
5	Ethane, nitro-	75	C2H5NO2	000079-24-3	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
 Data File : 3V08660.D
 Acq On : 25 Jan 2011 12:51 pm
 Operator : DONC
 Sample : D20581-3
 Misc : MS1766,V3V475,,,,,1
 ALS Vial : 10 Sample Multiplier: 1

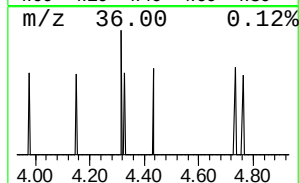
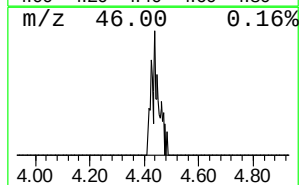
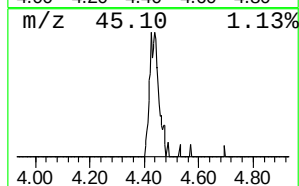
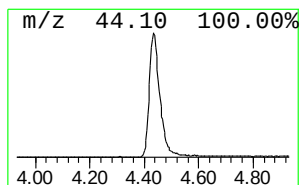
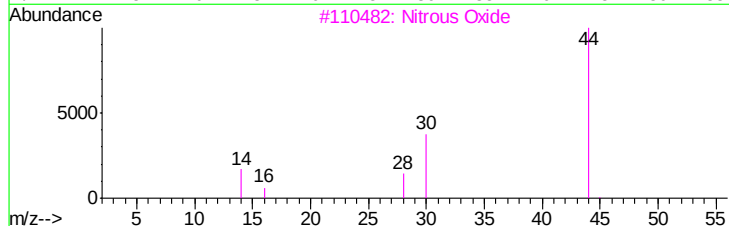
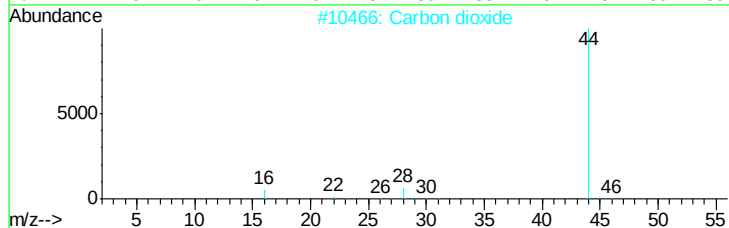
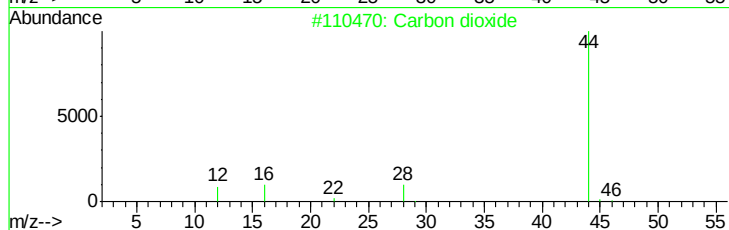
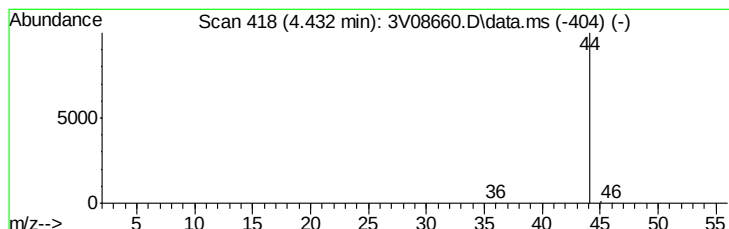
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.432	30.69 ug/l	740932	Pentafluorobenzene	11.896

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	3
2			Carbon dioxide	44	CO2	000124-38-9	3
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08660.D
Acq On : 25 Jan 2011 12:51 pm
Operator : DONC
Sample : D20581-3
Misc : MS1766,V3V475,,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
1-Propyne	4.317	5.1	ug/l	123190	1	11.896	1207010	50.0
Carbon dioxide	4.432	30.7	ug/l	740932	1	11.896	1207010	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08653.D
Acq On : 25 Jan 2011 9:11 am
Operator : DONC
Sample : MB1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 26 13:04:51 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.891	168	554589	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.683	114	828423	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.318	117	741652	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.310	152	407583	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.282	102	64192	45.63	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	91.26%	
55) Toluene-d8	14.073	98	989943	46.20	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	92.40%	
59) 4-Bromofluorobenzene	16.264	95	344555	42.99	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	85.98%	

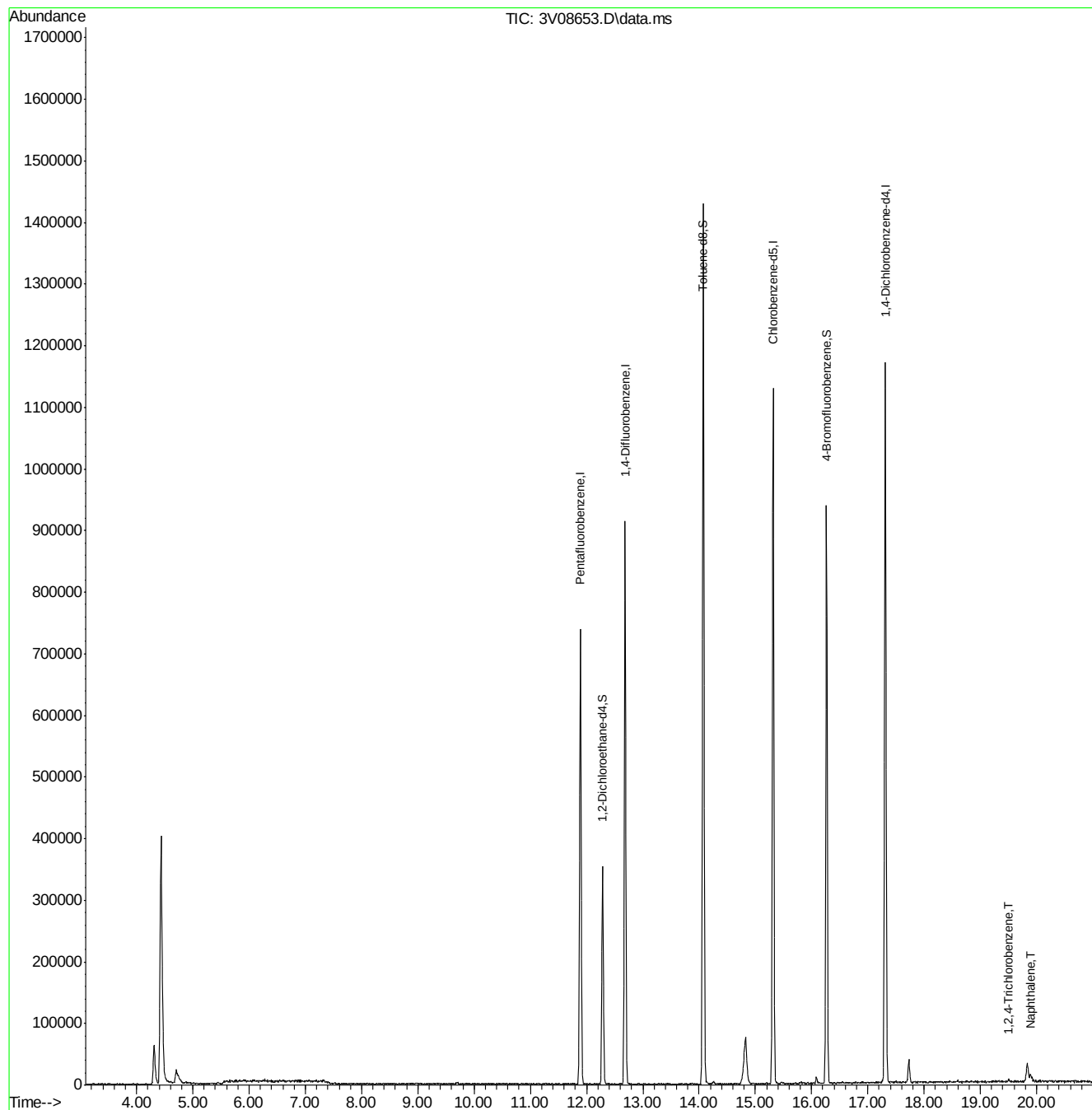
Target Compounds			Qvalue		
71) 1,2,4-Trichlorobenzene	19.505	180	2331	0.24	ug/l # 16
72) Naphthalene	19.897	128	15908	0.68	ug/l 100

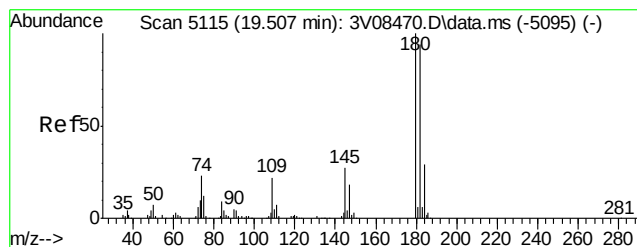
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08653.D
Acq On : 25 Jan 2011 9:11 am
Operator : DONC
Sample : MB1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 3 Sample Multiplier: 1

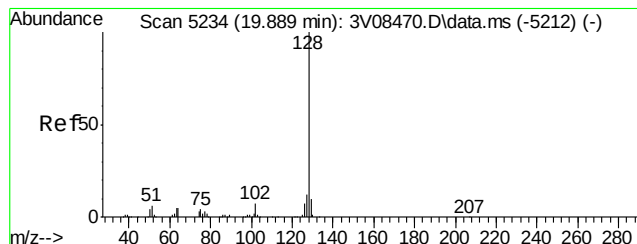
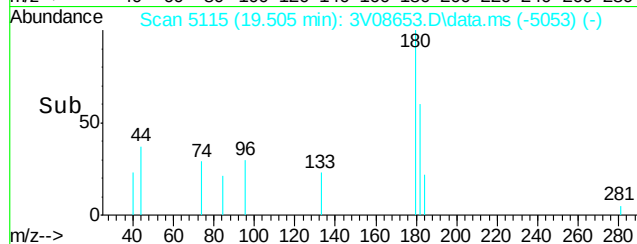
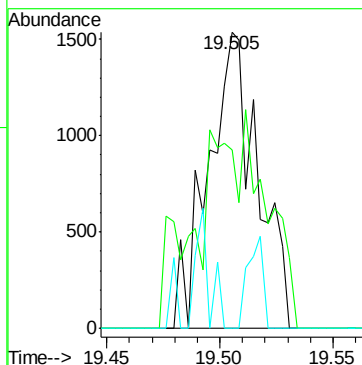
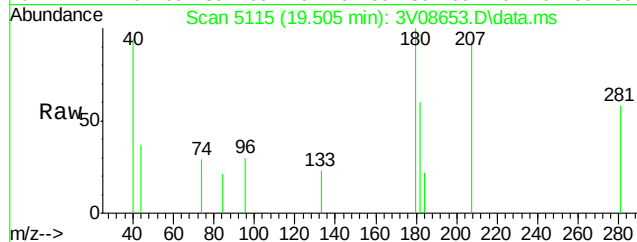
Quant Time: Jan 26 13:04:51 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





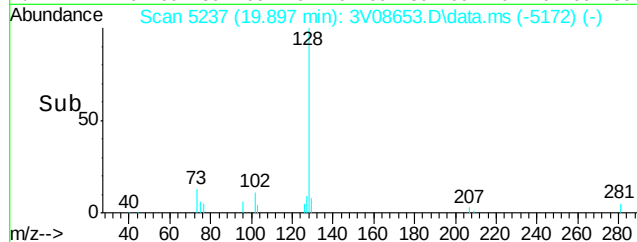
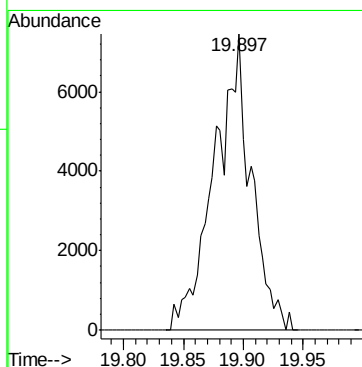
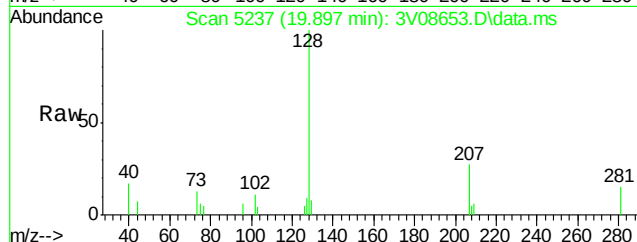
#71
1,2,4-Trichlorobenzene
Concen: 0.24 ug/l
RT: 19.505 min Scan# 5115
Delta R.T. -0.002 min
Lab File: 3V08653.D
Acq: 25 Jan 2011 9:11 am

Tgt Ion:	180	Resp:	2331
Ion Ratio	Lower	Upper	
180	100		
182	0.0	76.7	115.1#
145	9.7	22.2	33.2#



#72
Naphthalene
Concen: 0.68 ug/l
RT: 19.897 min Scan# 5237
Delta R.T. 0.008 min
Lab File: 3V08653.D
Acq: 25 Jan 2011 9:11 am

Tgt Ion:	128	Resp:	15908



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08653.D
Acq On : 25 Jan 2011 9:11 am
Operator : DONC
Sample : MB1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08653.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.312	366	380	398	rBV	62716	149594	5.83%	1.085%
2	4.433	402	418	445	rBV	401904	1056921	41.20%	7.663%
3	4.709	492	504	509	rBV5	20971	43132	1.68%	0.313%
4	11.891	2728	2742	2758	rVB	738064	1391785	54.26%	10.091%
5	12.285	2848	2865	2881	rBV2	353836	677518	26.41%	4.913%
6	12.683	2972	2989	3005	rBV	914284	1698138	66.20%	12.313%
7	14.073	3408	3422	3438	rBV2	1429194	2565032	100.00%	18.598%
8	14.824	3649	3656	3674	rVB3	70968	186282	7.26%	1.351%
9	15.315	3793	3809	3825	rBV	1128812	2004303	78.14%	14.533%
10	16.264	4090	4105	4121	rBV2	938626	1686058	65.73%	12.225%
11	17.310	4414	4431	4449	rVB2	1169788	2194702	85.56%	15.913%
12	17.728	4550	4561	4573	rVB2	36970	74263	2.90%	0.538%
13	19.833	5205	5217	5228	rBV	27842	63953	2.49%	0.464%

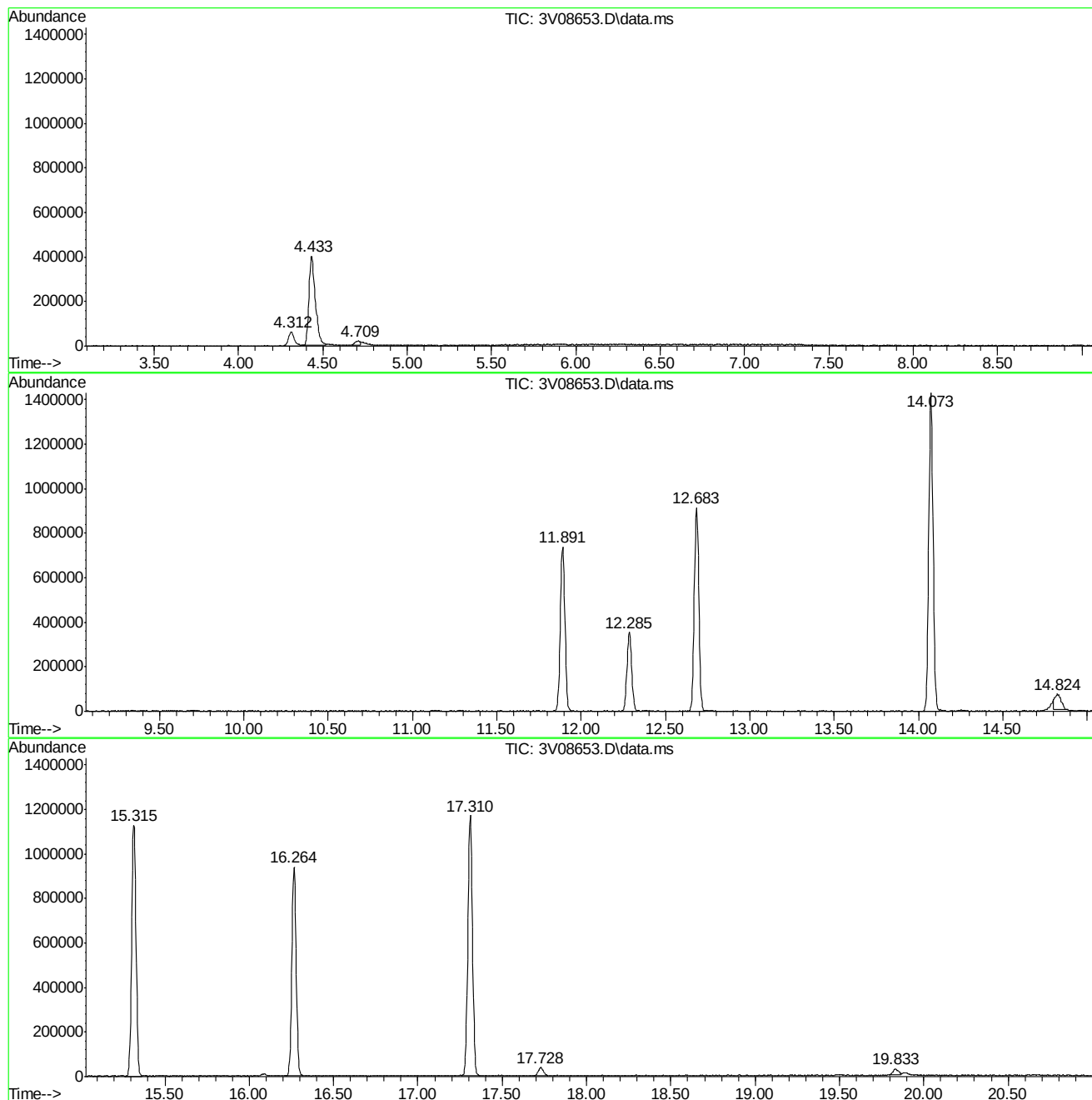
Sum of corrected areas: 13791681

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08653.D
Acq On : 25 Jan 2011 9:11 am
Operator : DONC
Sample : MB1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08653.D
Acq On : 25 Jan 2011 9:11 am
Operator : DONC
Sample : MB1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 3 Sample Multiplier: 1

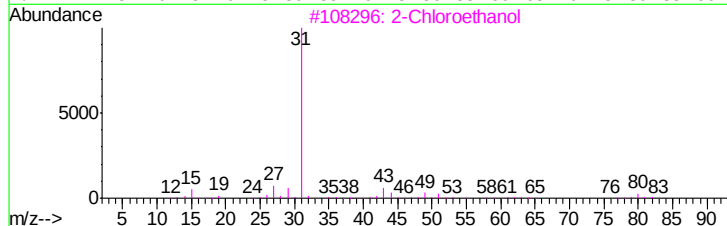
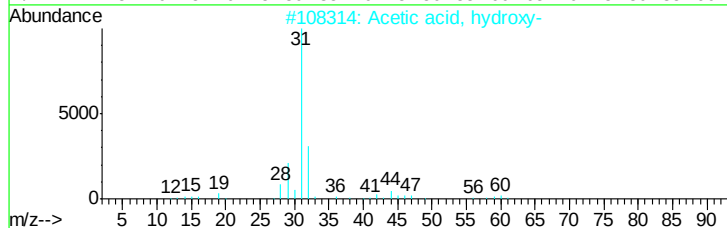
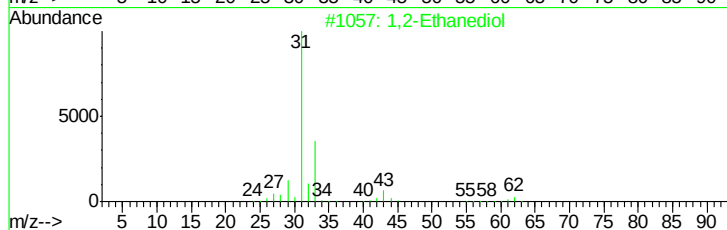
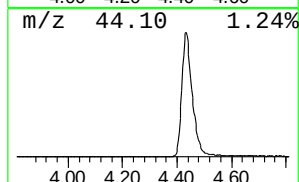
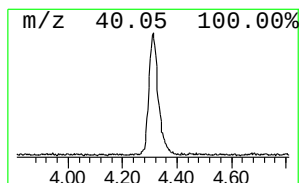
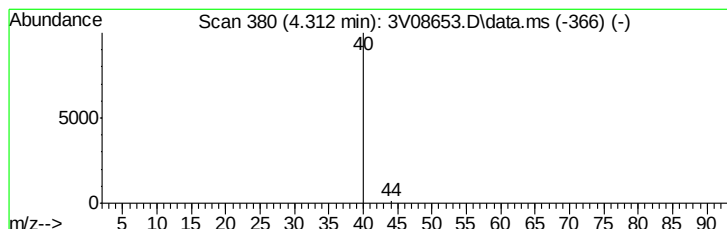
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 1,2-Ethanediol Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.312	5.37 ug/l	149594	Pentafluorobenzene	11.891

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			1,2-Ethanediol	62	C2H6O2	000107-21-1	1
2			Acetic acid, hydroxy-	76	C2H4O3	000079-14-1	1
3			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
4			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
5			1-Butanamine, 3-methyl-	87	C5H13N	000107-85-7	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08653.D
Acq On : 25 Jan 2011 9:11 am
Operator : DONC
Sample : MB1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 3 Sample Multiplier: 1

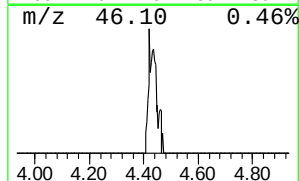
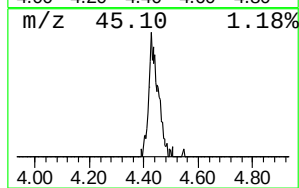
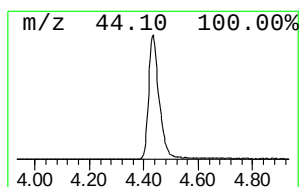
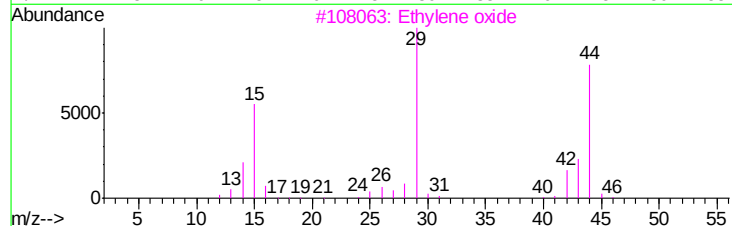
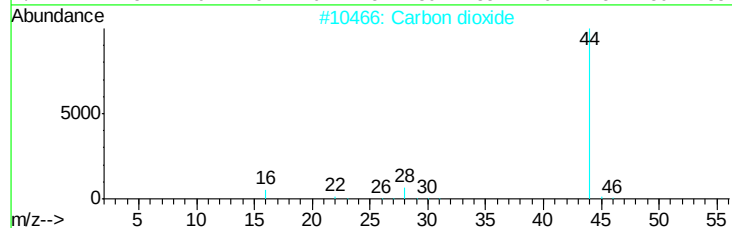
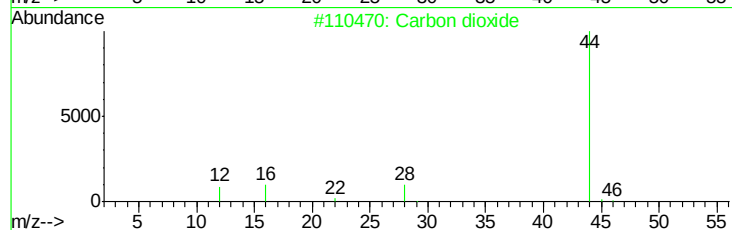
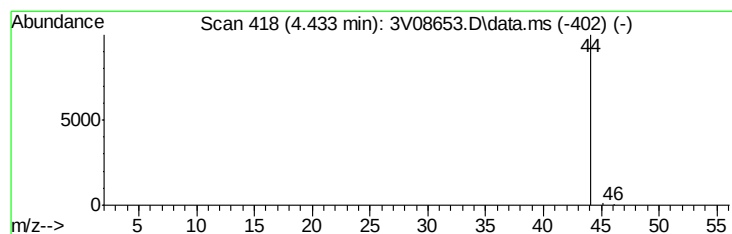
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.433	37.97 ug/l	1056920	Pentafluorobenzene	11.891

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Ethylene oxide	44	C2H4O	000075-21-8	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3012511.S\
Data File : 3V08653.D
Acq On : 25 Jan 2011 9:11 am
Operator : DONC
Sample : MB1
Misc : MS1766,V3V475,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response		--Internal Standard--		
					#	RT	Resp	Conc
1,2-Ethanedio1	4.312	5.4	ug/l	149594	1	11.891	1391790	50.0
Carbon dioxide	4.433	38.0	ug/l	1056920	1	11.891	1391790	50.0

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB494-MB	GB9220A.D	1	01/24/11	JL	n/a	n/a	GGB494

The QC reported here applies to the following samples:

Method: SW846 8015B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	115% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB494-BS	GB9221A.D	1	01/24/11	JL	n/a	n/a	GGB494

The QC reported here applies to the following samples: Method: SW846 8015B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.69	77	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	123%	60-140%

7.2.1
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D20581
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20575-1MS	GB9231.D	1	01/24/11	JL	n/a	n/a	GGB494
D20575-1MSD	GB9232.D	1	01/24/11	JL	n/a	n/a	GGB494
D20575-1	GB9230.D	1	01/24/11	JL	n/a	n/a	GGB494

The QC reported here applies to the following samples: Method: SW846 8015B

D20581-1, D20581-2, D20581-3

CAS No.	Compound	D20575-1 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	1.98	90	1.95	89	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D20575-1	Limits
120-82-1	1,2,4-Trichlorobenzene	121%	121%	115%	60-140%

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9235.D\FID1A.CH Vial: 17
Signal #2 : Y:\1\DATA\012411\GB9235.D\FID2B.CH
Acq On : 24 Jan 2011 7:36 pm Operator: JESSICA1
Sample : D20581-1 Inst : GC/MS Ins
Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 25 07:42:16 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Dec 10 12:50:00 2010
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

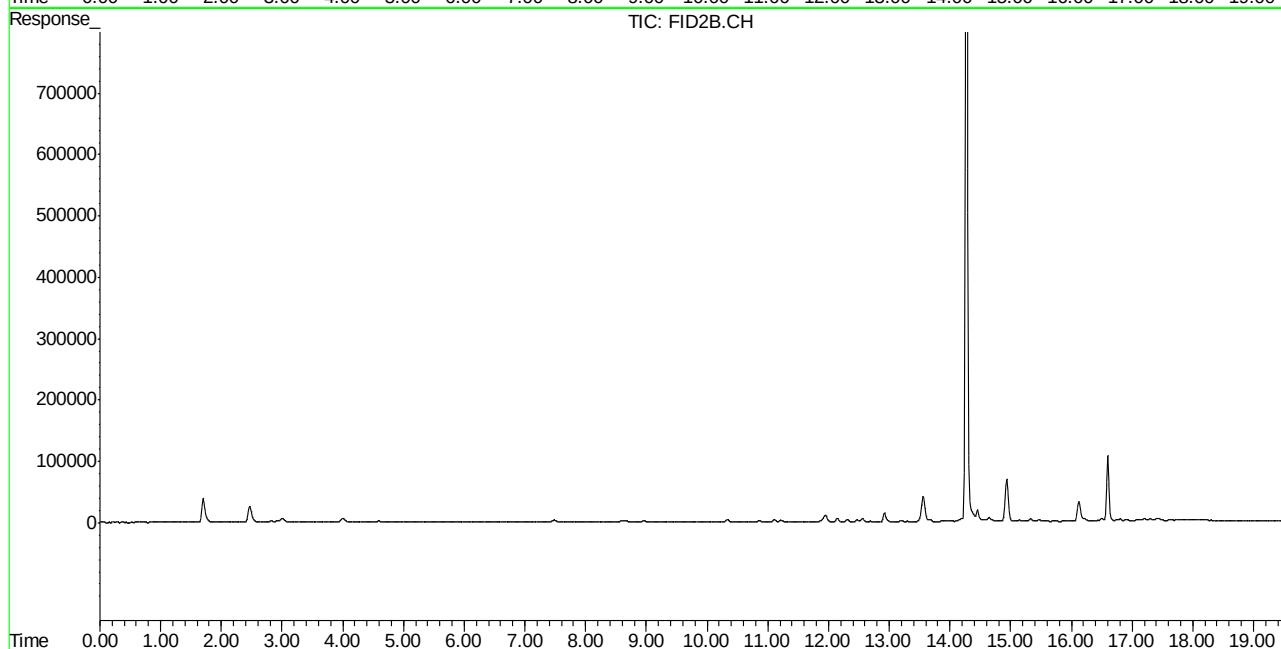
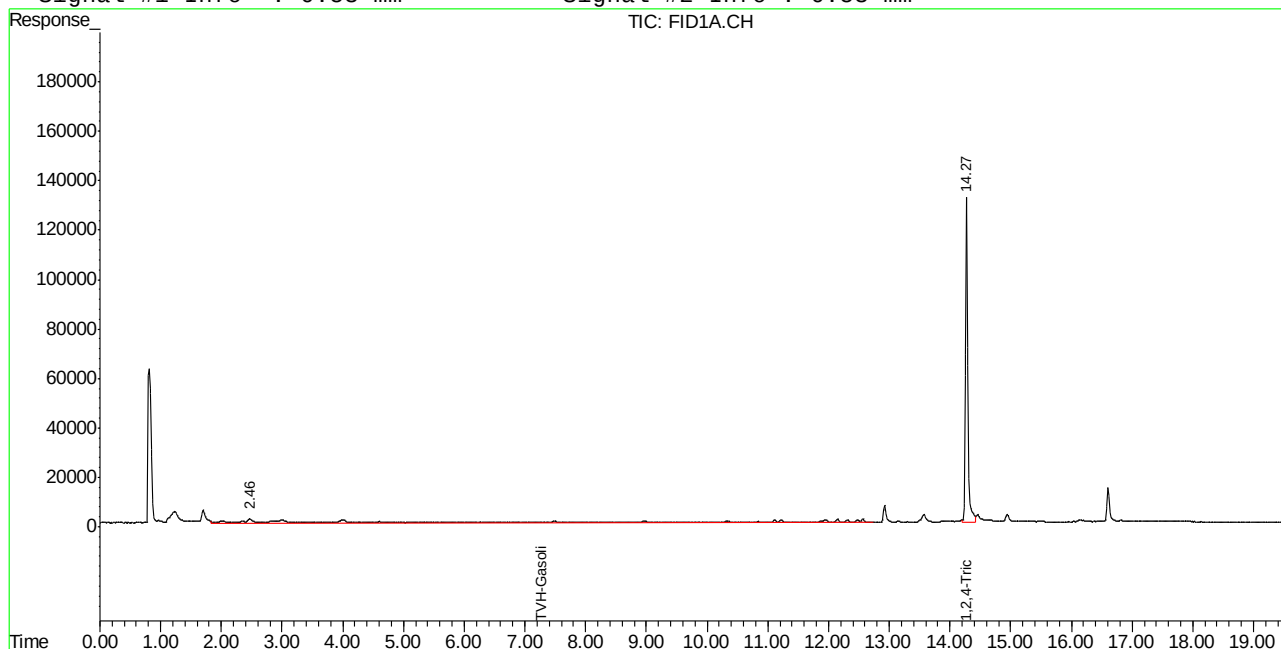
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.27	3438751	113.004	%
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D.	% d
Target Compounds					
1) H	TVH-Gasoline	7.27	1568762	0.024	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

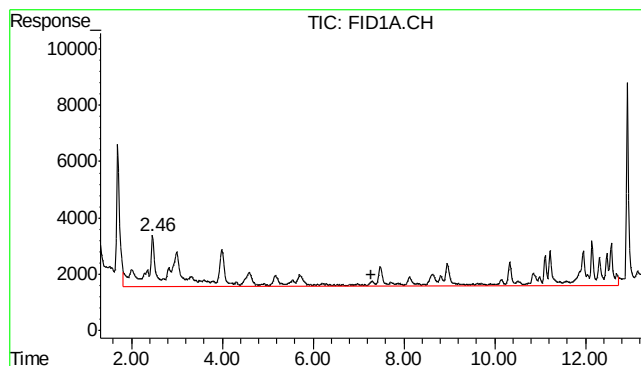
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9235.D\FID1A.CH Vial: 17
 Signal #2 : Y:\1\DATA\012411\GB9235.D\FID2B.CH
 Acq On : 24 Jan 2011 7:36 pm Operator: JESSICA1
 Sample : D20581-1 Inst : GC/MS Ins
 Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 25 6:27 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Dec 10 12:50:00 2010
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

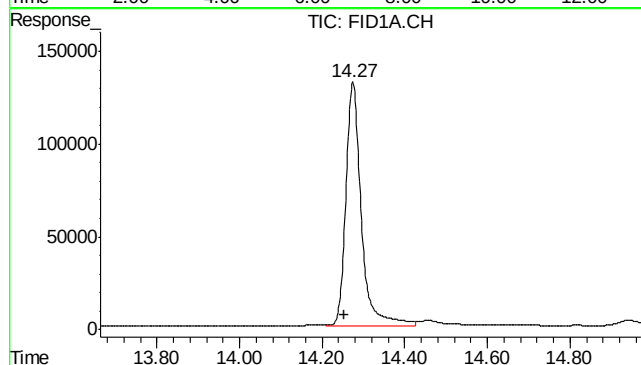
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





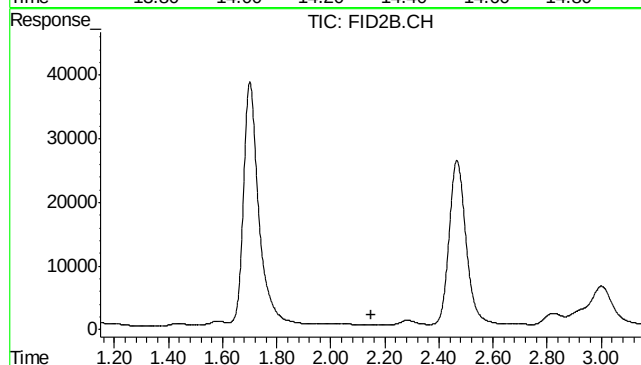
#1 TVH-Gasoline

R.T.: 7.270 min
Delta R.T.: 0.000 min
Response: 1568762
Conc: 0.02 mg/L m



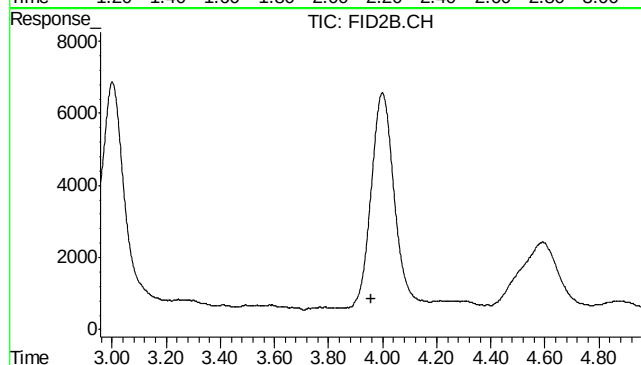
#2 1,2,4-Trichlorobenzene

R.T.: 14.275 min
Delta R.T.: 0.021 min
Response: 3438751
Conc: 113.00 %



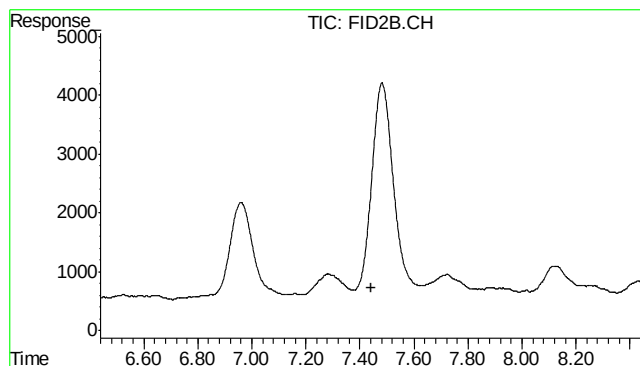
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.148 min
Response: 0
Conc: N.D.



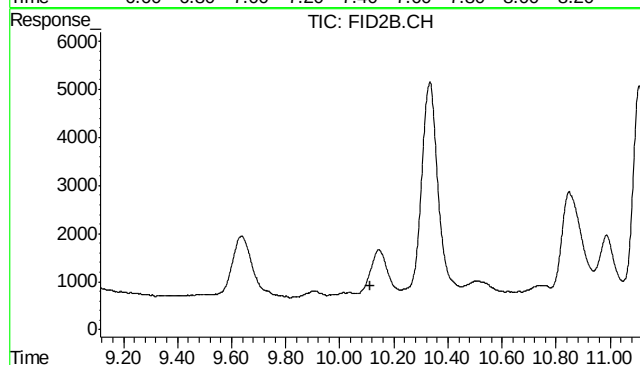
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 3.956 min
Response: 0
Conc: N.D.



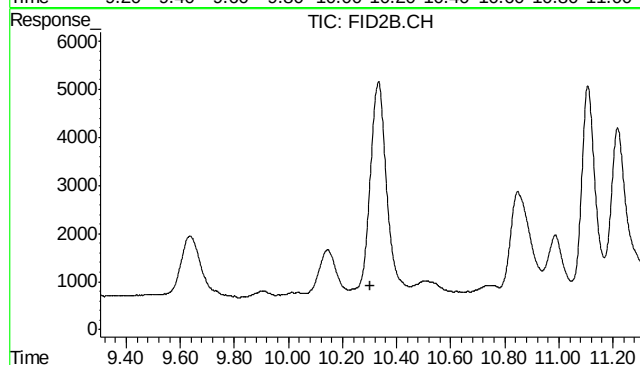
#6 Toluene

R.T.: 0.000 min
 Exp R.T.: 7.440 min
 Response: 0
 Conc: N.D.



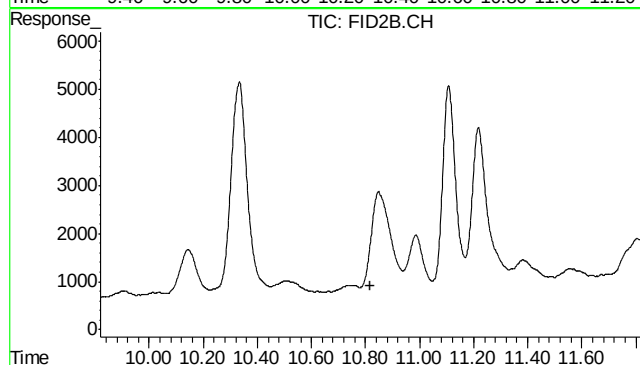
#7 Ethylbenzene

R.T.: 0.000 min
 Exp R.T.: 10.114 min
 Response: 0
 Conc: N.D.



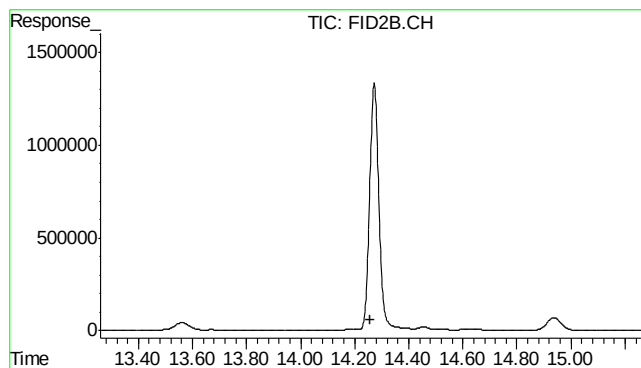
#8 m,p-Xylene

R.T.: 0.000 min
 Exp R.T.: 10.304 min
 Response: 0
 Conc: N.D.



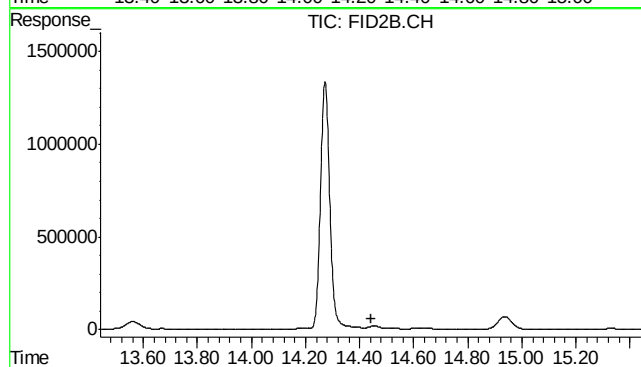
#9 o-Xylene

R.T.: 0.000 min
 Exp R.T.: 10.819 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.259 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.441 min
Response: 0
Conc: N.D.

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9236.D\FID1A.CH Vial: 18
Signal #2 : Y:\1\DATA\012411\GB9236.D\FID2B.CH
Acq On : 24 Jan 2011 8:12 pm Operator: JESSICA1
Sample : D20581-2 Inst : GC/MS Ins
Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 25 07:42:18 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Dec 10 12:50:00 2010
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

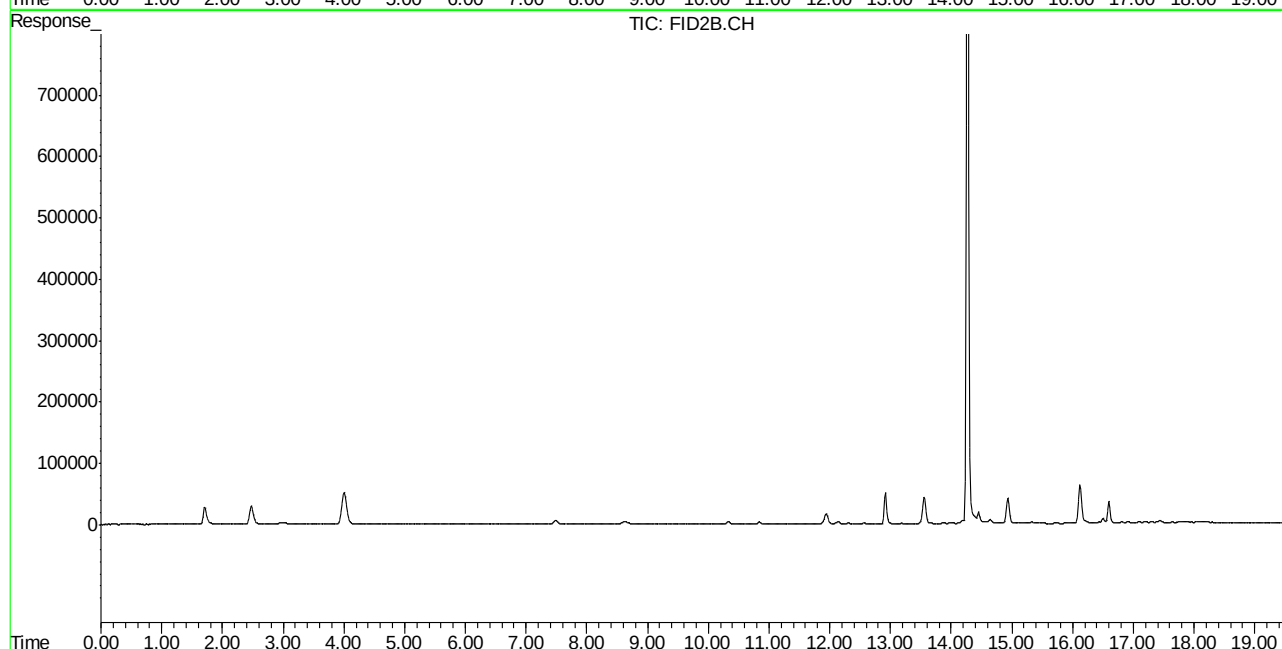
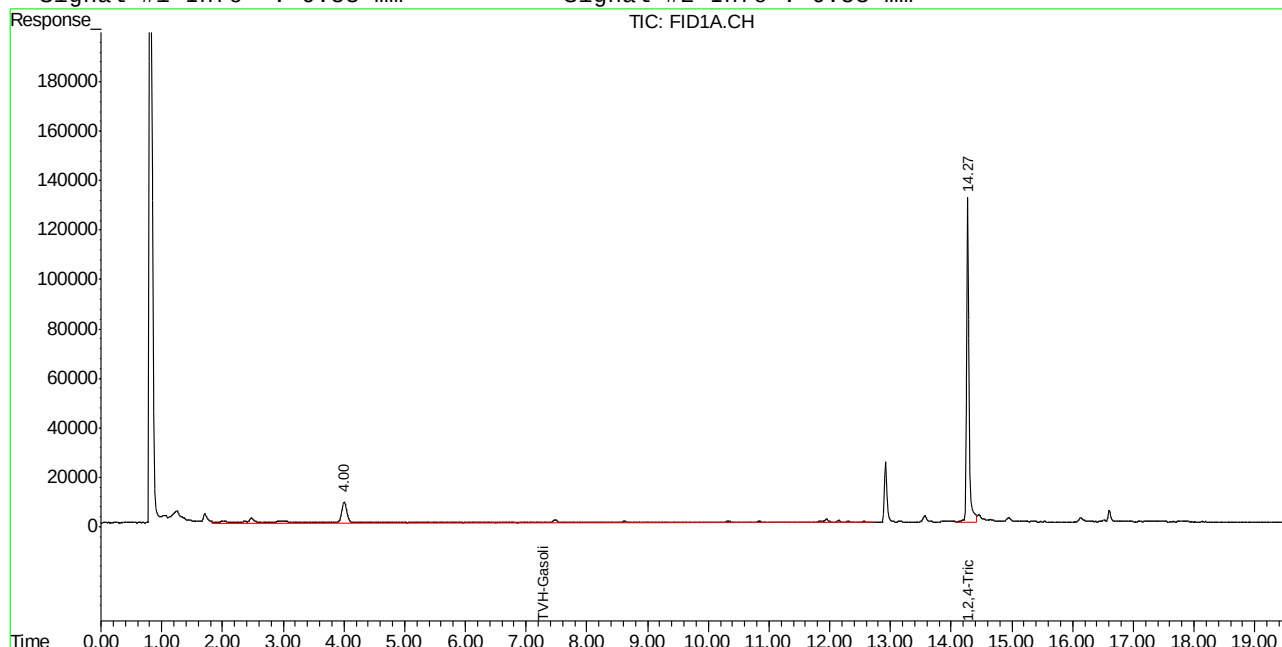
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.27	3487611	114.609	%
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D.	% d
Target Compounds					
1) H	TVH-Gasoline	7.27	1806472	0.028	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

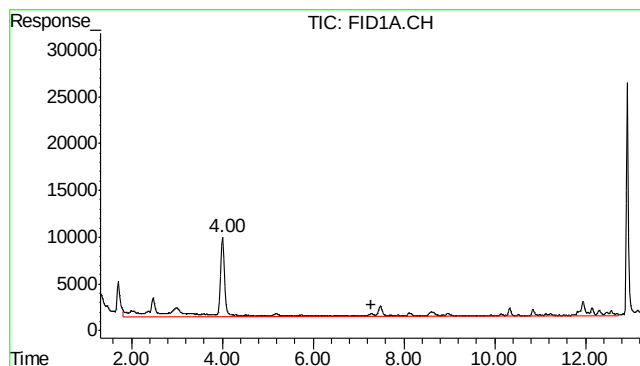
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9236.D\FID1A.CH Vial: 18
 Signal #2 : Y:\1\DATA\012411\GB9236.D\FID2B.CH
 Acq On : 24 Jan 2011 8:12 pm Operator: JESSICA1
 Sample : D20581-2 Inst : GC/MS Ins
 Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 25 6:27 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Dec 10 12:50:00 2010
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

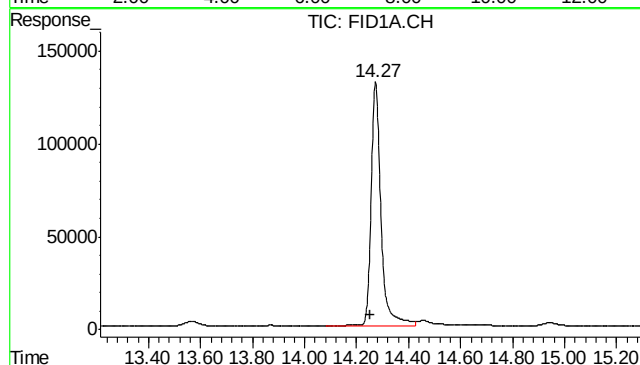
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





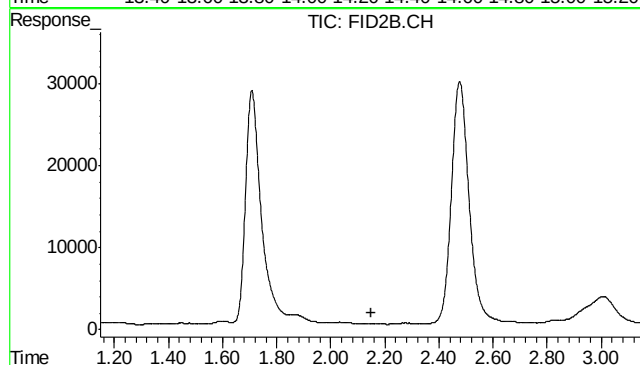
#1 TVH-Gasoline

R.T.: 7.270 min
 Delta R.T.: 0.000 min
 Response: 1806472
 Conc: 0.03 mg/L m



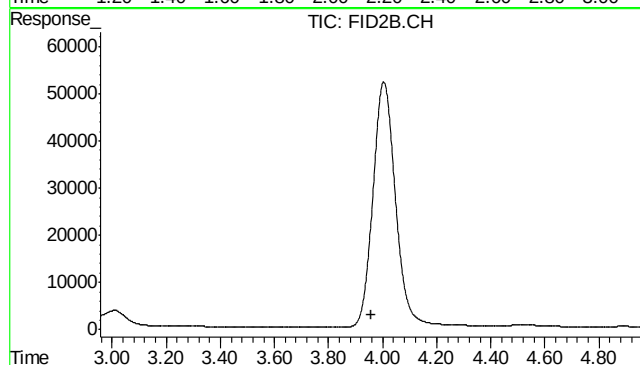
#2 1,2,4-Trichlorobenzene

R.T.: 14.274 min
 Delta R.T.: 0.020 min
 Response: 3487611
 Conc: 114.61 %



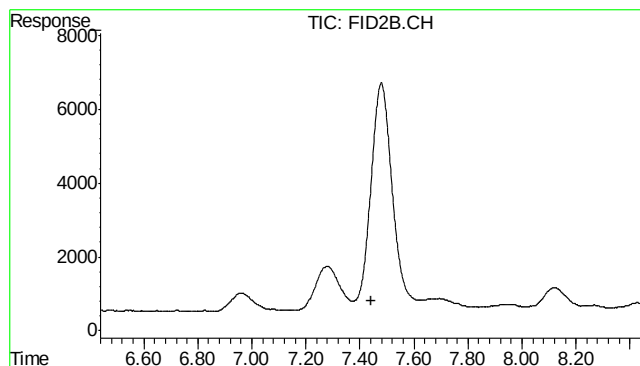
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
 Exp R.T.: 2.148 min
 Response: 0
 Conc: N.D.

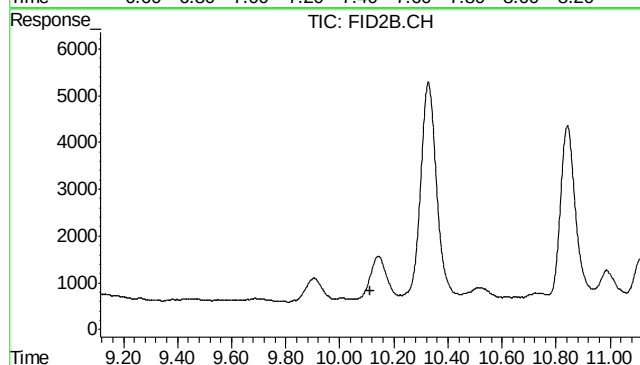


#5 Benzene

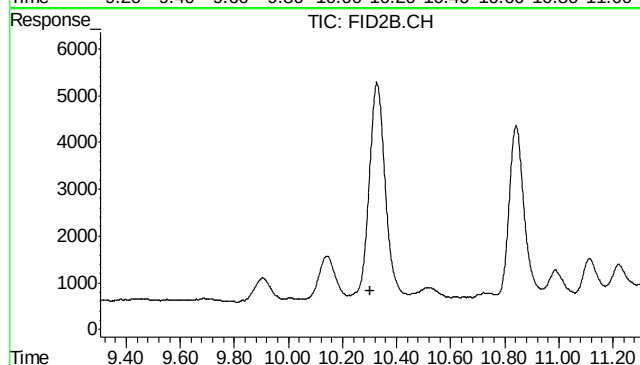
R.T.: 0.000 min
 Exp R.T.: 3.956 min
 Response: 0
 Conc: N.D.



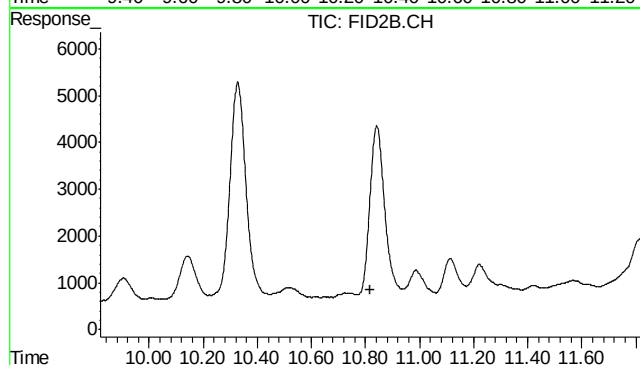
#6 Toluene
 R.T.: 0.000 min
 Exp R.T. : 7.440 min
 Response: 0
 Conc: N.D.



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T. : 10.114 min
 Response: 0
 Conc: N.D.

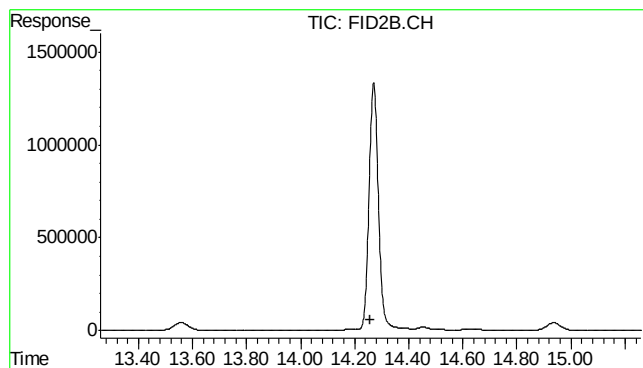


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T. : 10.304 min
 Response: 0
 Conc: N.D.



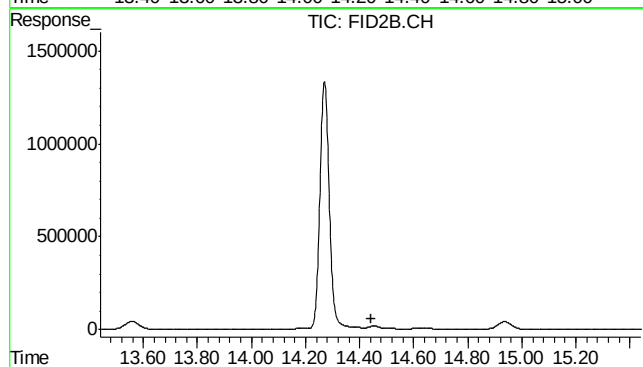
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T. : 10.819 min
 Response: 0
 Conc: N.D.

8.12
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.259 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.441 min
 Response: 0
 Conc: N.D.

8.1.2

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9237.D\FID1A.CH Vial: 19
Signal #2 : Y:\1\DATA\012411\GB9237.D\FID2B.CH
Acq On : 24 Jan 2011 8:47 pm Operator: JESSICA1
Sample : D20581-3 Inst : GC/MS Ins
Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 25 07:42:20 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Dec 10 12:50:00 2010
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.27	3271412	107.505	%
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D.	% d
Target Compounds					
1) H	TVH-Gasoline	7.27	740545	0.011	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

(f)=RT Delta > 1/2 Window

(m)=manual int.

GB9237.D TB460GB460.M

Tue Jan 25 07:52:27 2011

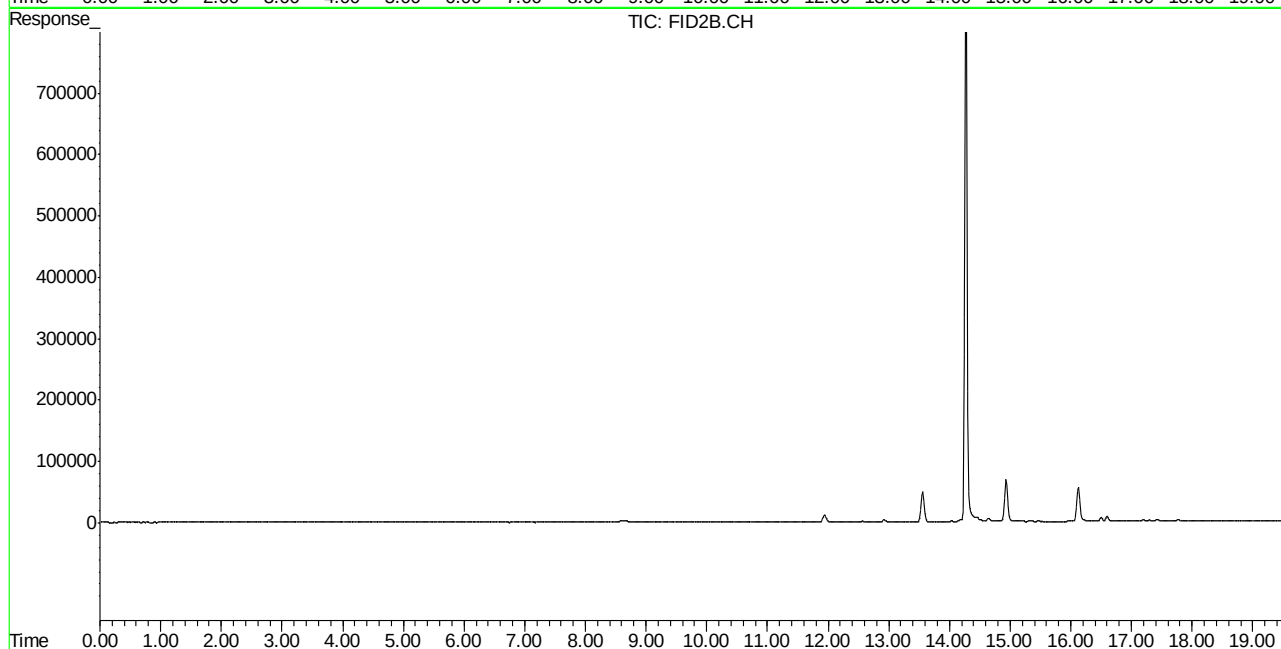
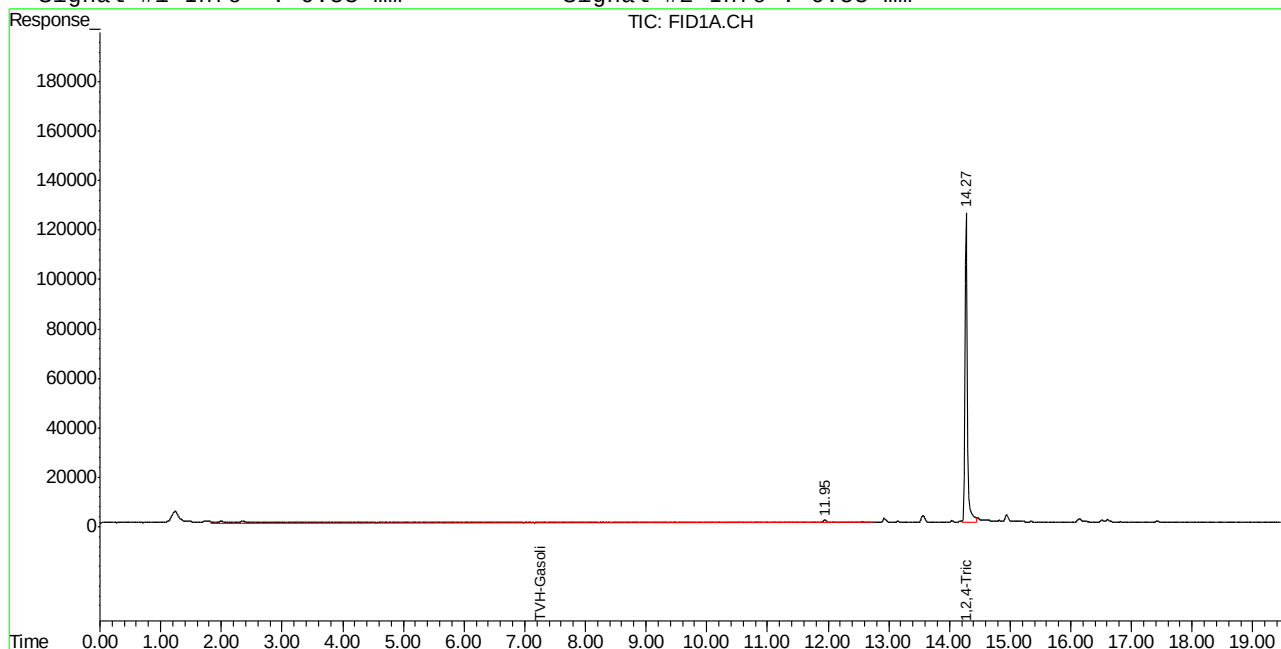
GC

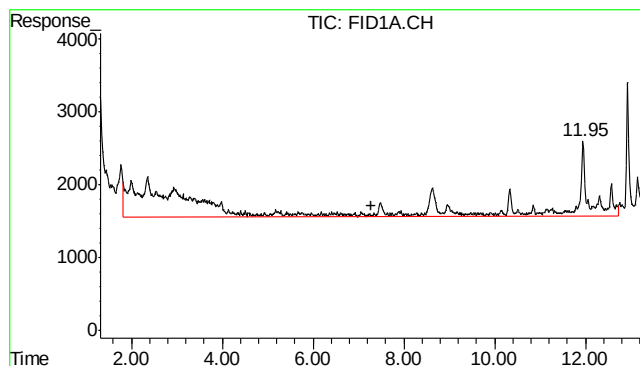
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9237.D\FID1A.CH Vial: 19
 Signal #2 : Y:\1\DATA\012411\GB9237.D\FID2B.CH
 Acq On : 24 Jan 2011 8:47 pm Operator: JESSICA1
 Sample : D20581-3 Inst : GC/MS Ins
 Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Jan 25 6:28 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Dec 10 12:50:00 2010
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

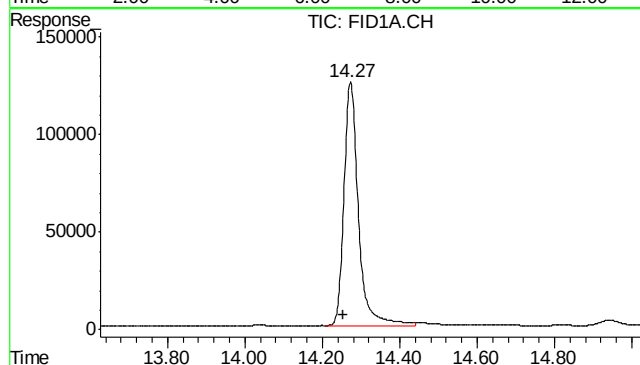
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





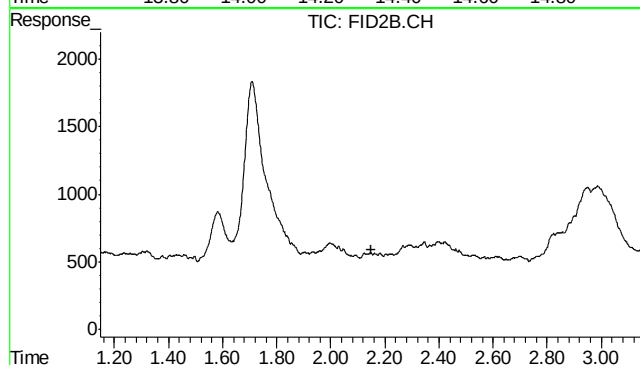
#1 TVH-Gasoline

R.T.: 7.270 min
Delta R.T.: 0.000 min
Response: 740545
Conc: 0.01 mg/L m



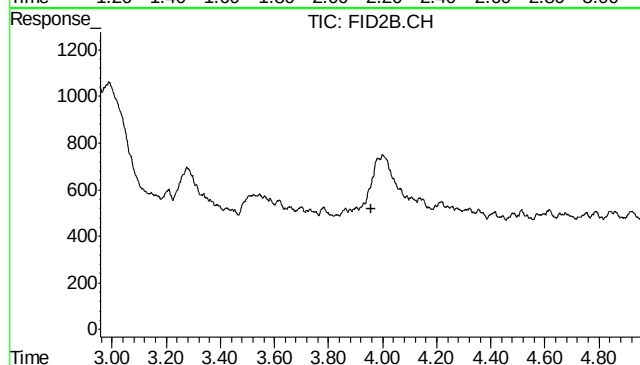
#2 1,2,4-Trichlorobenzene

R.T.: 14.273 min
Delta R.T.: 0.019 min
Response: 3271412
Conc: 107.50 %



#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.148 min
Response: 0
Conc: N.D.

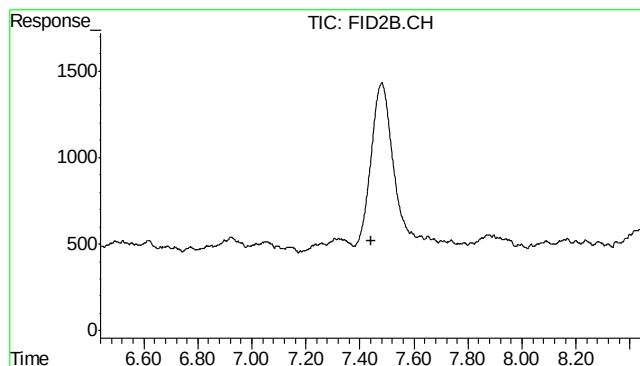


#5 Benzene

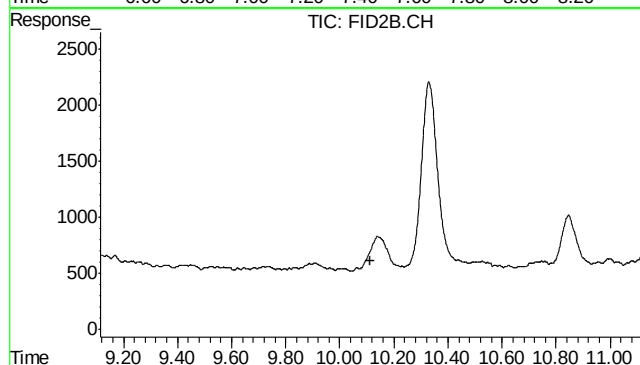
R.T.: 0.000 min
Exp R.T.: 3.956 min
Response: 0
Conc: N.D.

8.1.3

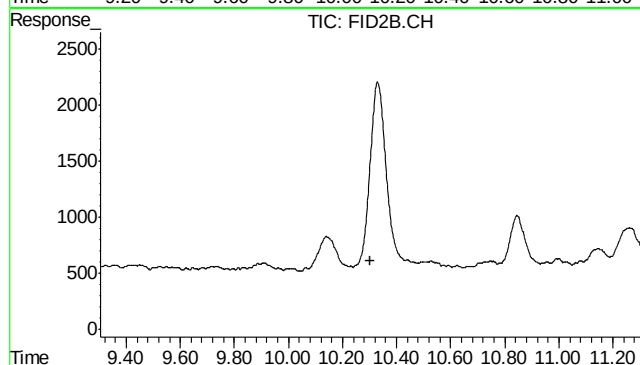
8



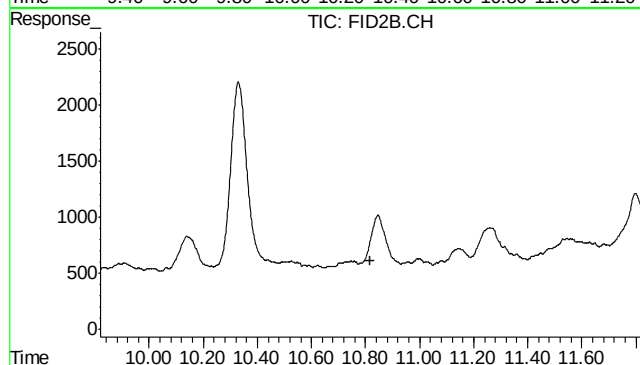
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 7.440 min
 Response: 0
 Conc: N.D.



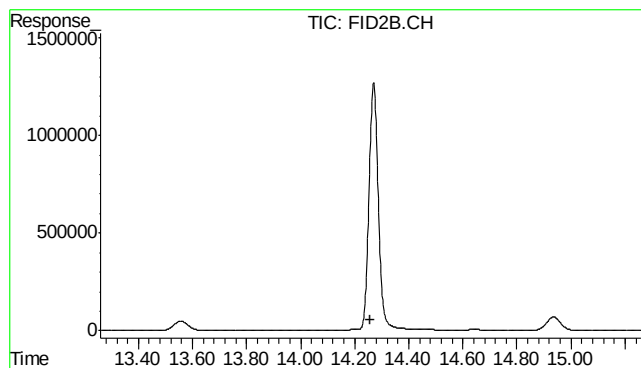
#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.114 min
 Response: 0
 Conc: N.D.



#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.304 min
 Response: 0
 Conc: N.D.

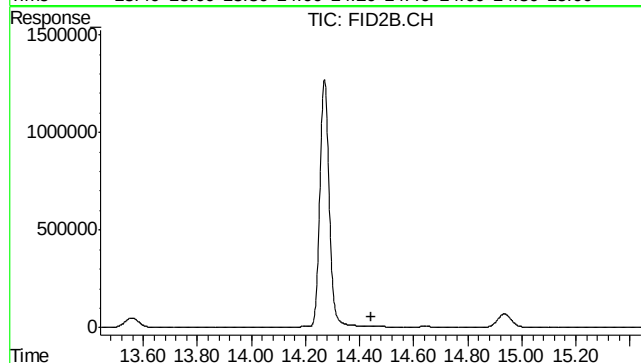


#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.819 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.259 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.441 min
Response: 0
Conc: N.D.

8.1.3

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9220A.D\FID1A.CH Vial: 2
Signal #2 : Y:\1\DATA\012411\GB9220A.D\FID2B.CH
Acq On : 24 Jan 2011 10:20 am Operator: JESSICA1
Sample : MB, W Inst : GC/MS Ins
Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 24 14:31:59 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Dec 10 12:50:00 2010
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.27	3508775	115.305 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	7.27	926177	0.014 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T	Benzene	0.00	0	N.D. ug/L	d
6) T	Toluene	0.00	0	N.D. ug/L	d
7) T	Ethylbenzene	0.00	0	N.D. ug/L	d
8) T	m,p-Xylene	0.00	0	N.D. ug/L	d
9) T	o-Xylene	0.00	0	N.D. ug/L	d
11) T	Naphthalene	0.00	0	N.D. ug/L	d

(f)=RT Delta > 1/2 Window

GB9220A.D TB460GB460.M

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(m)=manual int.

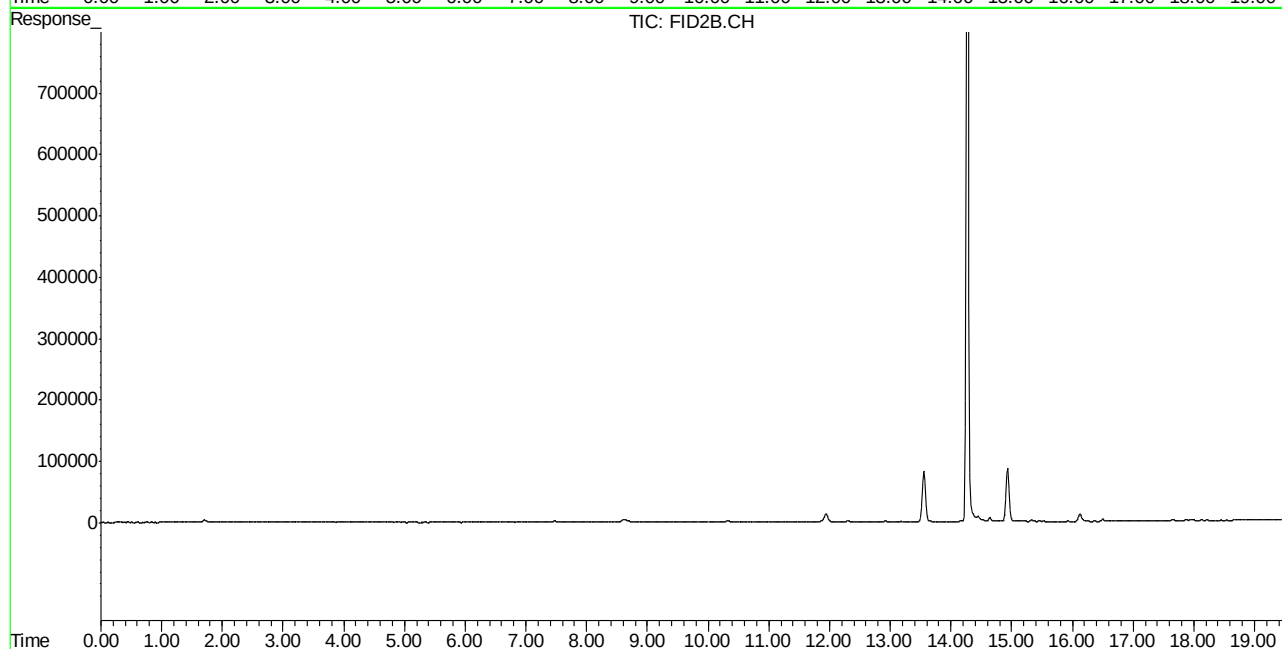
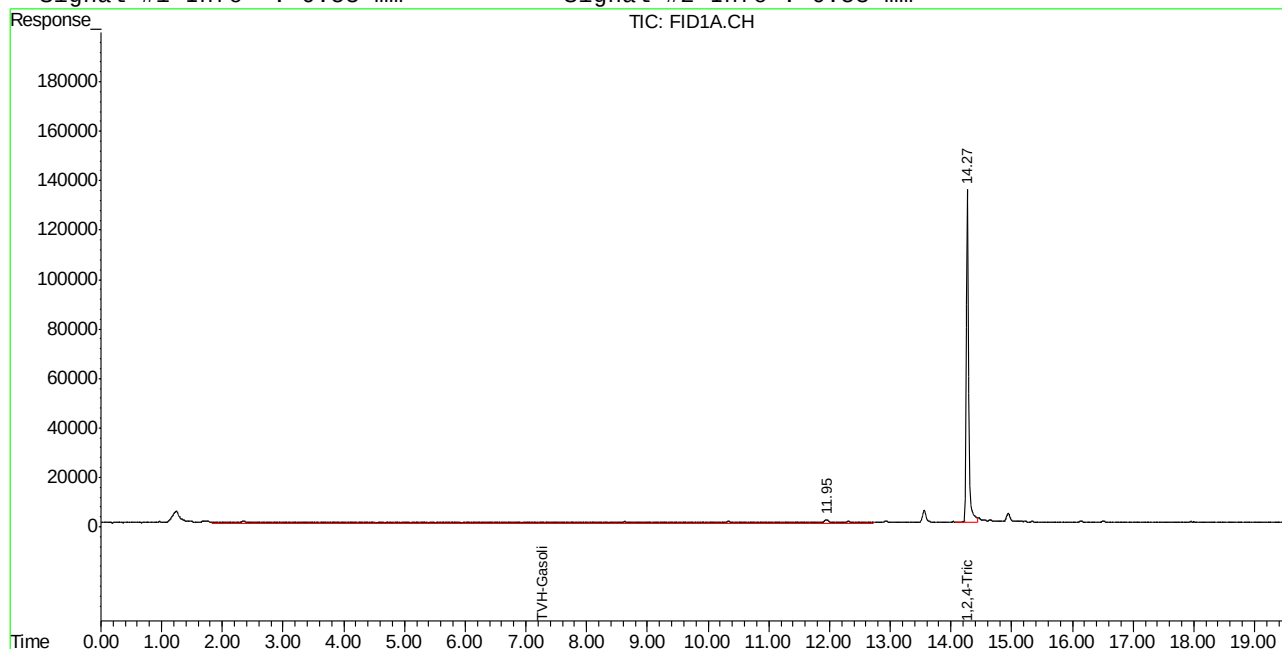
GC

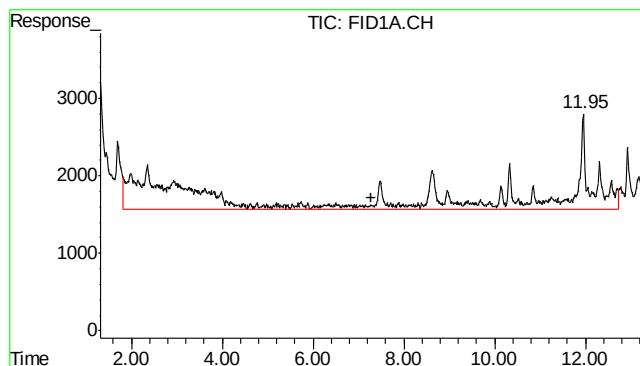
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\012411\GB9220A.D\FID1A.CH Vial: 2
Signal #2 : Y:\1\DATA\012411\GB9220A.D\FID2B.CH
Acq On : 24 Jan 2011 10:20 am Operator: JESSICA1
Sample : MB, W Inst : GC/MS Ins
Misc : GC1625,GGB494,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 24 13:14 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Dec 10 12:50:00 2010
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

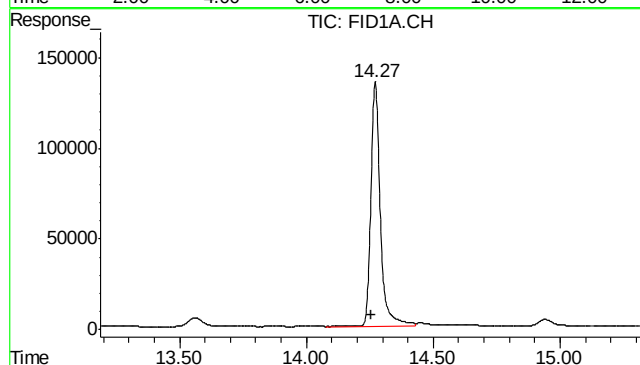
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





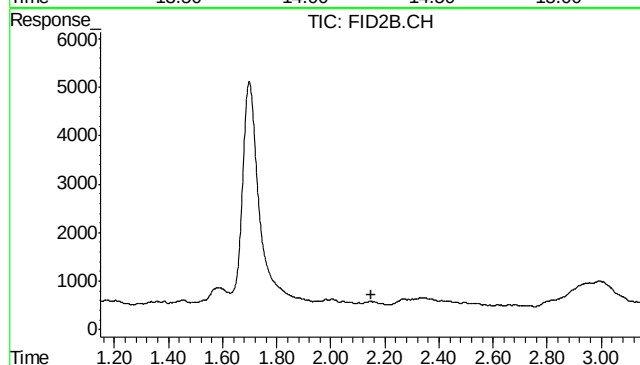
#1 TVH-Gasoline

R.T.: 7.270 min
Delta R.T.: 0.000 min
Response: 926177
Conc: 0.01 mg/L m



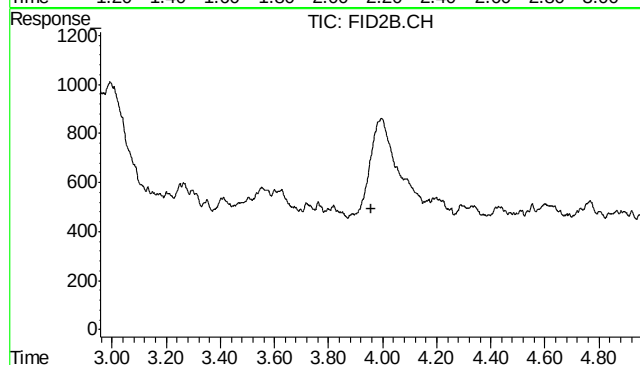
#2 1,2,4-Trichlorobenzene

R.T.: 14.271 min
Delta R.T.: 0.017 min
Response: 3508775
Conc: 115.30 %



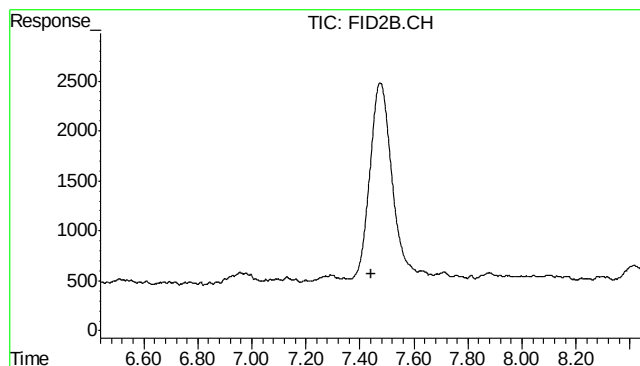
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.148 min
Response: 0
Conc: N.D.



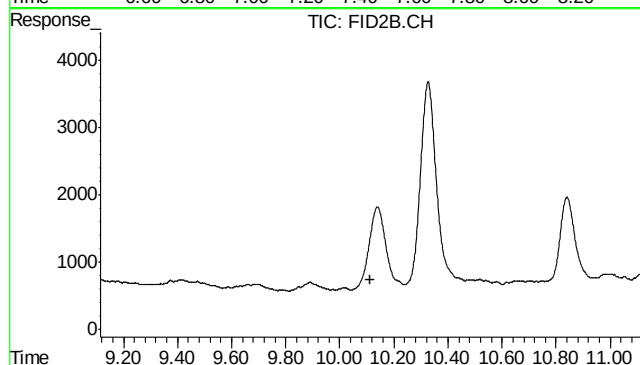
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 3.956 min
Response: 0
Conc: N.D.



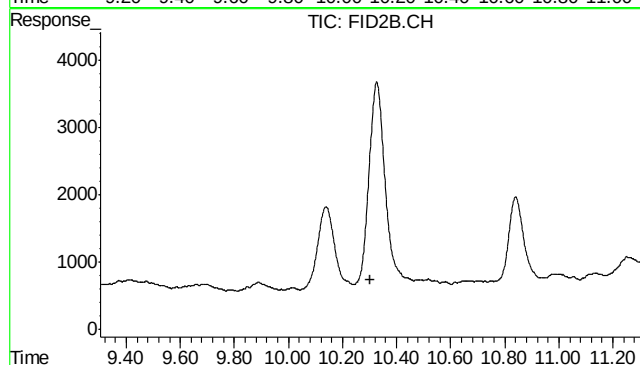
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 7.440 min
Response: 0
Conc: N.D.



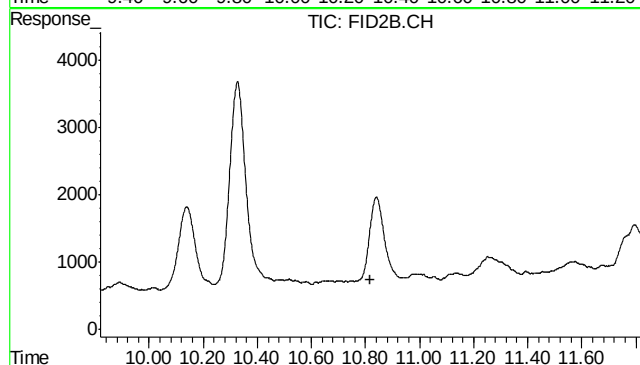
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.114 min
Response: 0
Conc: N.D.



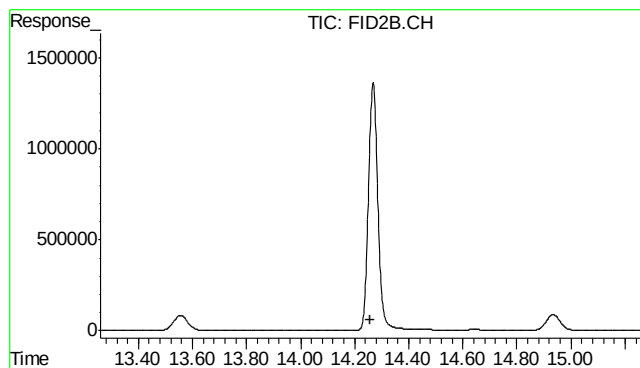
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.304 min
Response: 0
Conc: N.D.



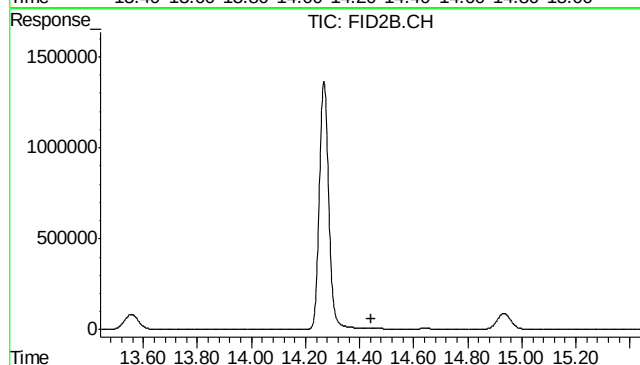
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.819 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.259 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.441 min
Response: 0
Conc: N.D.

8.2.1
8

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/24/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	7	10		
Antimony	30	1.7	1.4		
Arsenic	25	2.8	3.6		
Barium	10	.14	.46	0.20	<10
Beryllium	10	1.4	.57		
Boron	50	3.5	1.4		
Cadmium	10	.22	.46		
Calcium	400	17	51	14.1	<400
Chromium	10	.27	.18		
Cobalt	5.0	.48	.4		
Copper	5.0	1.6	.76		
Iron	70	7.7	8	2.4	<70
Lead	50	1.3	1.2		
Lithium	2.0	.76	1.6		
Magnesium	200	5.8	13	-0.20	<200
Manganese	5.0	.21	.3	0.20	<5.0
Molybdenum	10	.41	.64		
Nickel	30	.38	.3		
Phosphorus	100	15	15		
Potassium	1000	380	140	95.0	<1000
Selenium	50	2.8	1.5		
Silicon	50	12	13		
Silver	30	.98	.3		
Sodium	400	230	55	163	<400
Strontium	5.0	.091	.22	0.10	<5.0
Thallium	10	3.1	2.3		
Tin	50	14	9.9		
Titanium	10	.098	.15		
Uranium	50	2.2	2.5		
Vanadium	10	.27	.25		
Zinc	30	.76	3.5		

Associated samples MP3878: D20581-1F, D20581-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/24/11

Metal	D20552-1F Original MS		Spikelet MPICALL % Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	276	2280	2000	100.2 70-130
Beryllium				
Boron				
Cadmium	anr			
Calcium	33500	59400	25000	103.6 70-130
Chromium				
Cobalt				
Copper	anr			
Iron	32.7	4810	5000	95.5 70-130
Lead	anr			
Lithium				
Magnesium	47.6	25000	25000	99.8 70-130
Manganese	0.40	473	500	94.5 70-130
Molybdenum				
Nickel				
Phosphorus				
Potassium	2230	28500	25000	105.1 70-130
Selenium				
Silicon				
Silver				
Sodium	583000	612000	25000	116.0 70-130
Strontium	843	1370	500	105.4 70-130
Thallium				
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP3878: D20581-1F, D20581-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/24/11

Metal	D20552-1F Original MSD		Spikelet MPICALL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	276	2280	2000	100.2	0.0	20
Beryllium						
Boron						
Cadmium	anr					
Calcium	33500	58400	25000	99.6	1.7	20
Chromium						
Cobalt						
Copper	anr					
Iron	32.7	4790	5000	95.1	0.4	20
Lead	anr					
Lithium						
Magnesium	47.6	24800	25000	99.0	0.8	20
Manganese	0.40	469	500	93.7	0.8	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	2230	28300	25000	104.3	0.7	20
Selenium						
Silicon						
Silver						
Sodium	583000	602000	25000	76.0	1.6	20
Strontium	843	1350	500	101.4	1.5	20
Thallium						
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	anr					

Associated samples MP3878: D20581-1F, D20581-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20581
 Account: GEOTCOL - Geotrans, Inc.
 Project: Garfield County

QC Batch ID: MP3878
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 01/24/11

Metal	BSP Result	Spike lot MPICALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	1990	2000	99.5	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium	26300	25000	105.2	85-115
Chromium				
Cobalt				
Copper	anr			
Iron	4830	5000	96.6	85-115
Lead	anr			
Lithium				
Magnesium	25300	25000	101.2	85-115
Manganese	490	500	98.0	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	26000	25000	104.0	85-115
Selenium				
Silicon				
Silver				
Sodium	26200	25000	104.8	85-115
Strontium	506	500	101.2	85-115
Thallium				
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP3878: D20581-1F, D20581-2F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3878
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO ₃	GN8039	5.0	0.0	mg/l	100	102	102.3	90-110%
Chloride	GP3647/GN8004	0.50	0.20	mg/l	20	20.0	100.0	90-110%
Chloride	GP3669/GN8047	0.50	0.20	mg/l	20	20.0	100.0	90-110%
Hydrogen Sulfide	GN8009	0.50	<0.50	mg/l	2.74	2.6	94.9	60-120%
Iron, Ferrous	GN7987	0.10	0.0	mg/l	1.0	0.99	99.0	85-115%
Nitrogen, Ammonia	GP3663/GN8026	0.10	<0.10	mg/l	20	20.1	100.2	90-110%
Nitrogen, Nitrate	GP3647/GN8004	0.045	0.0	mg/l	4.52	4.48	99.2	90-110%
Nitrogen, Nitrite	GP3647/GN8004	0.061	0.0	mg/l	6.09	6.20	101.8	90-110%
Solids, Total Dissolved	GN8008	10	0.0	mg/l	400	410	102.5	90-110%
Sulfate	GP3647/GN8004	0.50	0.0	mg/l	30	30.1	100.3	90-110%
Sulfate	GP3669/GN8047	0.50	0.0	mg/l	30	30.1	100.3	90-110%

Associated Samples:

Batch GN7987: D20581-1F, D20581-2F
Batch GN8008: D20581-1, D20581-2
Batch GN8009: D20581-1, D20581-2
Batch GN8039: D20581-1, D20581-2
Batch GP3647: D20581-1, D20581-2
Batch GP3663: D20581-1, D20581-2
Batch GP3669: D20581-2

(*) Outside of QC limits

10.1
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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN8039	D20552-1	mg/l	76.7	76.2	0.7	0-20%
Hydrogen Sulfide	GN8009	D20552-1	mg/l	<0.50	<0.50	0.0	0-20%
Iron, Ferrous	GN7987	D20552-1F	mg/l	0.0	0.0	0.0	0-20%
Nitrogen, Ammonia	GP3663/GN8026	D20552-1	mg/l	0.62	0.64	3.2	0-20%
Solids, Total Dissolved	GN8008	D20581-1	mg/l	3440	3470	0.9	0-25%

Associated Samples:

Batch GN7987: D20581-1F, D20581-2F
Batch GN8008: D20581-1, D20581-2
Batch GN8009: D20581-1, D20581-2
Batch GN8039: D20581-1, D20581-2
Batch GP3663: D20581-1, D20581-2
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN8039	D20552-1	mg/l	76.7	100	174	97.7	80-120%
Chloride	GP3647/GN8004	D20539-1	mg/l	170	100	273	103.0	80-120%
Chloride	GP3669/GN8047	D20603-1	mg/l	1770	1000	2800	103.0	80-120%
Hydrogen Sulfide	GN8009	D20552-2	mg/l	<0.50	2.74	2.2	80.3	60-120%
Iron, Ferrous	GN7987	D20552-3F	mg/l	0.0	1.0	0.25	25.0*(a)	75-125%
Nitrogen, Ammonia	GP3663/GN8026	D20552-1	mg/l	0.62	10	10.9	109.2	80-120%
Nitrogen, Nitrate	GP3647/GN8004	D20539-1	mg/l	8.0	5.65	14.1	102.7	80-120%
Nitrogen, Nitrate	GP3647/GN8004	D20539-1	mg/l	8.3	5.65	14.1	102.7	80-120%
Nitrogen, Nitrite	GP3647/GN8004	D20539-1	mg/l	0.061	3.05	2.9	95.1	80-120%
Nitrogen, Nitrite	GP3647/GN8004	D20539-1	mg/l	0.0	3.05	2.9	95.1	80-120%
Sulfate	GP3647/GN8004	D20539-1	mg/l	2100	1000	3040	94.0	80-120%
Sulfate	GP3669/GN8047	D20603-1	mg/l	34.1	1000	1020	98.6	80-120%

Associated Samples:

Batch GN7987: D20581-1F, D20581-2F

Batch GN8009: D20581-1, D20581-2

Batch GN8039: D20581-1, D20581-2

Batch GP3647: D20581-1, D20581-2

Batch GP3663: D20581-1, D20581-2

Batch GP3669: D20581-2

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference, even with the sample diluted.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20581
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN8039	D20552-1	mg/l	76.7	100	177	1.4	20%
Chloride	GP3647/GN8004	D20539-1	mg/l	170	100	276	1.1	20%
Chloride	GP3669/GN8047	D20603-1	mg/l	1770	1000	2820	0.7	20%
Nitrogen, Ammonia	GP3663/GN8026	D20552-1	mg/l	0.62	10	10.6	3.0	
Nitrogen, Nitrate	GP3647/GN8004	D20539-1	mg/l	8.0	5.65	14.4	2.1	20%
Nitrogen, Nitrate	GP3647/GN8004	D20539-1	mg/l	8.3	5.65	14.4	2.1	20%
Nitrogen, Nitrite	GP3647/GN8004	D20539-1	mg/l	0.061	3.09	3.0	3.4	20%
Nitrogen, Nitrite	GP3647/GN8004	D20539-1	mg/l	0.0	3.09	3.0	3.4	20%
Sulfate	GP3647/GN8004	D20539-1	mg/l	2100	1000	3050	0.3	20%
Sulfate	GP3669/GN8047	D20603-1	mg/l	34.1	1000	1040	1.9	20%

Associated Samples:

Batch GN8039: D20581-1, D20581-2

Batch GP3647: D20581-1, D20581-2

Batch GP3663: D20581-1, D20581-2

Batch GP3669: D20581-2

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



02/08/11

Technical Report for

Geotrans, Inc.

Garfield County

Accutest Job Number: D20806

Sampling Date: 02/01/11

Report to:

Geotrans, Inc.
363 Centennial Parkway, Suite 210
Louisville, CO 80027
bshine@geotransinc.com; david.bohmann@geotransinc.com
ATTN: Brendan Shine

Total number of pages in report: **93**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'J. Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

Geotrans, Inc.

Job No: D20806

Garfield County

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D20806-1	02/01/11	12:20 KT	02/02/11	AQ	Ground Water	MW-2B_020111
D20806-1F	02/01/11	12:20 KT	02/02/11	AQ	Groundwater Filtered	MW-2B_020111
D20806-2	02/01/11	00:00 KT	02/02/11	AQ	Ground Water	TB-04_020111

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Geotrans, Inc.

Job No D20806

Site: Garfield County

Report Dat 2/8/2011 11:04:34 AM

On 02/02/2011, two (2) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 1.2°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D20806 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: V3V484

- All samples were analyzed within the recommended method holding time.
- Samples D20786-2MS and D20786-2MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The blank spike (BS) recovery of Vinyl Acetate are outside control limits. Since the bias for Vinyl Acetate is high and the samples are non-detect for this analyte, no further action is required.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of Vinyl Acetate are outside control limits. Since the bias for Vinyl Acetate is high and the samples are non-detect for this analyte, no further action is required.

Volatiles by GC By Method SW846 8015B

Matrix AQ

Batch ID: GGB501

- All samples were analyzed within the recommended method holding time.
- Samples D20806-1MS and D20806-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Metals By Method EPA 200.7

Matrix AQ

Batch ID: MP3958

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20725-1MS and D20725-1MSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recoveries of Calcium, Magnesium, and Sodium are outside control limits. The spike recovery indicates possible matrix interference and/or sample nonhomogeneity. Refer to the lab control or spike blank for recovery information.
- The matrix spike (MS) recovery of Potassium is outside control limits. The spike amount is low relative to the sample amount. Refer to the lab control or spike blank for recovery information.
- The RPD for the MS and MSD recoveries of Magnesium is outside control limits for sample MP3958-S2. The high RPD is due to possible sample nonhomogeneity.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP3713

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20792-4MS and D20792-4MSD were used as the QC samples for the anion analysis.
- Sample D20806-1 for Nitrate-N and Nitrite-N: the reporting limit (RL) was raised due to matrix interference.

Wet Chemistry By Method HACH 8146

Matrix AQ

Batch ID: GN8125

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20806-1FDUP and D20806-1FMS were used as the QC samples for the Ferrous Iron analysis.
- The matrix spike (MS) recovery of Ferrous Iron is outside control limits. Zero recovery due to matrix interference. The spike was treated the same as the sample, with similar results.
- Sample D20806-1F for Ferrous Iron: The result was a false positive due to matrix interference that could not be overcome by filtration, dilution, or de-aeration.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ

Batch ID: R6134

- The data for SM18 3500FED M meets quality control requirements.
- The following sample was run outside of holding time for method SM18 3500FED M: D20806-1F.
- Ferric Iron: Calculated as: (Iron) - (Ferrous Iron)

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN8160

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20821-2DUP, D20821-2MS, and D20821-2MSD were used as the QC samples for the Total Alkalinity, as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN8132

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Sample D20780-1DUP was used as the QC sample for the Total Dissolved Solids analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ

Batch ID: GN8142

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20808-1DUP and D20812-1MS were used as the QC samples for the Hydrogen Sulfide analysis.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ

Batch ID: GP3714

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20738-2DUP, D20738-2MS, and D20738-2MSD were used as the QC samples for the Ammonia-N analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: MW-2B_020111

Lab Sample ID: D20806-1

Date Sampled: 02/01/11

Matrix: AQ - Ground Water

Date Received: 02/02/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08772.D	1	02/02/11	DC	n/a	n/a	V3V484
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	130	10	4.0	ug/l	
71-43-2	Benzene	3.4	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	6.4	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	2.8	10	2.0	ug/l	J
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	24.5	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-2B_020111	Date Sampled:	02/01/11
Lab Sample ID:	D20806-1	Date Received:	02/02/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	93%		63-130%
2037-26-5	Toluene-D8	94%		68-130%
460-00-4	4-Bromofluorobenzene	83%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
74-99-7	1-Propyne	4.31	6.3	ug/l	JN
124-38-9	Carbon dioxide	4.44	64	ug/l	JN
74-98-6	Propane	4.89	18	ug/l	JN
	Total TIC, Volatile		24.3	ug/l	J

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-2B_020111	Date Sampled:	02/01/11
Lab Sample ID:	D20806-1	Date Received:	02/02/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB9318.D	1	02/03/11	BR	n/a	n/a	GGB501
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	99%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2B_020111**Lab Sample ID:** D20806-1**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 02/01/11**Date Received:** 02/02/11**Percent Solids:** n/a**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	1680	5.0	mg/l	1	02/07/11	CJ	SM20 2320B
Chloride	527	13	mg/l	25	02/02/11 15:09	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	02/04/11	CJ	SM20 4500 S2 H
Nitrogen, Ammonia	5.7	0.10	mg/l	1	02/03/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.45	0.45	mg/l	10	02/02/11 14:26	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.61	0.61	mg/l	10	02/02/11 14:26	JML	EPA 300/SW846 9056
Solids, Total Dissolved	3270	10	mg/l	1	02/03/11	JK	SM20 2540C
Sulfate	136	5.0	mg/l	10	02/02/11 14:26	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-2B_020111**Lab Sample ID:** D20806-1F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 02/01/11**Date Received:** 02/02/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	437	10	ug/l	1	02/02/11	02/03/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Calcium	45200	400	ug/l	1	02/02/11	02/03/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Iron	105	70	ug/l	1	02/02/11	02/03/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	< 200	200	ug/l	1	02/02/11	02/03/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Manganese	< 5.0	5.0	ug/l	1	02/02/11	02/03/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Potassium	90800	1000	ug/l	1	02/02/11	02/03/11 JM	EPA 200.7 ¹	EPA 200.7 ³
Sodium	1130000	4000	ug/l	10	02/02/11	02/03/11 GJ	EPA 200.7 ²	EPA 200.7 ³
Strontium	2710	5.0	ug/l	1	02/02/11	02/03/11 JM	EPA 200.7 ¹	EPA 200.7 ³

(1) Instrument QC Batch: MA1288

(2) Instrument QC Batch: MA1292

(3) Prep QC Batch: MP3958

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-2B_020111	Date Sampled:	02/01/11
Lab Sample ID:	D20806-1F	Date Received:	02/02/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.17	0.17	mg/l	1	02/03/11 02:58	JM	SM18 3500FED M
Iron, Ferrous ^b	< 0.10	0.10	mg/l	1	02/02/11 14:30	CJ	HACH 8146

- (a) Calculated as: (Iron) - (Iron, Ferrous)
- (b) Result was a false positive due to matrix interference that could not be overcome by filtration, dilution or de-aeration.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: TB-04_020111

Lab Sample ID: D20806-2

Date Sampled: 02/01/11

Matrix: AQ - Ground Water

Date Received: 02/02/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V08773.D	1	02/02/11	DC	n/a	n/a	V3V484
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-04_020111

Lab Sample ID: D20806-2

Date Sampled: 02/01/11

Matrix: AQ - Ground Water

Date Received: 02/02/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		63-130%
2037-26-5	Toluene-D8	94%		68-130%
460-00-4	4-Bromofluorobenzene	85%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.44	74	ug/l	JN
541-05-9	Cyclotrisiloxane, hexamethyl-	14.26	6.9	ug/l	JN
556-67-2	Cyclotetrasiloxane, octamethyl-	16.09	10	ug/l	JN
	Total TIC, Volatile		16.9	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	TB-04_020111	Date Sampled:	02/01/11
Lab Sample ID:	D20806-2	Date Received:	02/02/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB9321.D	1	02/03/11	BR	n/a	n/a	GGB501
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	107%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL: 303-425-6021 877-737-4521
FAX: 303-425-6021

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job # D20806	

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)		Matrix Codes	
Company Name Geo Trans Inc.	Project Name Garfield City	Billing Information (If different from Report to)		Alkalinity, TDS, Ammonia, Dissolved Metals (see table), Cu, NO₃, NO₂, Fe, F⁻, Total Chloride UO15620 UO26 H47 Hydroxyl Sulfate		DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Street Address 363 Centennial Plwy	Street St. 210	Company Name Geo Trans Inc					
City Louisville CO	City CO	Street Address 363 Centennial Plwy					
Project Contact David Bolman	Project#	City Louisville CO					
Phone # 303-665-4396	Client PO#	State CO					
Sampler(s) Name(s) K. Thompson	Project Manager David Bolman	Attention: David Bolman		Zip 80022			

Accutest Sample #	Field ID / Point of Collection	MEQH/DI Viol #	Collection		Sampled by	Matrix	# of bottles	Number of preserved Bottles										LAB USE ONLY
			Date	Time				FCD	NOH	HHO3	H2SO4	NONE	DI Water	MEDH	ENCORE	Biofilm		
	MW-2B-020111		2/1/11	1230	KT	GW	14	2	X	X	X	X	X	X	X	X	01	
	TB-04-020111		2/1/11			GW	2										02	

Data Deliverable Information		Comments / Special Instructions	
Turnaround Time (Business days) ☐ Std. 10 Business Days ☒ Std. 5 Business Days (By Contract only) ☐ 5 Day R/SH ☐ 3 Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 1 Day EMERGENCY Emergency & Rush T/A data available VIA LabLink	Approved By (Accutest PM) / Date: _____ _____ _____	☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☒ Commercial "B" + Narrative ☒ FULLT1 (Level 3+4) Commercial "A" = Results Only Commercial "B" = Results + QC Summary	☐ State Forms ☐ EDD Format ☒ PDF HARDS (200.7) Be, Co, Mg, Mn, K, Na, Sr, etc Fe (has been found before) bolman@geotransinc.com dbolman@geotransinc.com

Sample Custody must be documented below, each time samples change possession, including courier delivery.							
Relinquished by Sampler: 1	Date Time: 2/1/11 10:00	Received By: 1	Date Time: 2/1/11 12:00 PM	Relinquished By: 2	Date Time:	Received By:	
Relinquished by Sampler:	Date Time:	Received By:		Relinquished By:	Date Time:	Received By:	
Relinquished by:	Date Time:	Received By:		Relinquished By:	Date Time:	Received By:	
5		5		Custody Seal #	☒ Intact ☐ Not Intact	Preserved where applicable ☒	On Ice ☒

4.1
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D20806: Chain of Custody

Page 1 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D20806

Client: GEO TRANS INC.

Immediate Client Services Action Required: No

Date / Time Received: 2/2/2011 10:00:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: GARFIELD CODY

Airbill #'s: HD

Cooler Security

Y or N

Y or N

1. Custody Seals Present:	☒	☐	3. COC Present:	☒	☐
2. Custody Seals Intact:	☒	☐	4. Smpl Dates/Time OK	☒	☐

Cooler Temperature

Y or N

1. Temp criteria achieved:	☒	☐
2. Cooler temp verification:	Infrared gun	
3. Cooler media:	Ice (bag)	

Quality Control Preservation

Y or N

N/A

1. Trip Blank present / cooler:	☒	☐	
2. Trip Blank listed on COC:	☒	☐	
3. Samples preserved properly:	☒	☐	
4. VOCs headspace free:	☒	☐	☐

Sample Integrity - Documentation

Y or N

1. Sample labels present on bottles:	☒	☐
2. Container labeling complete:	☒	☐
3. Sample container label / COC agree:	☒	☐

Sample Integrity - Condition

Y or N

1. Sample recvd within HT:	☒	☐
2. All containers accounted for:	☒	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions

Y or N N/A

1. Analysis requested is clear:	☒	☐	
2. Bottles received for unspecified tests	☐	☒	
3. Sufficient volume rec'd for analysis:	☒	☐	
4. Compositing instructions clear:	☐	☐	☒
5. Filtering instructions clear:	☐	☐	☒

Comments

Accutest Laboratories
V.(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com



Industrial LABORATORIES

Industrial Laboratories is your independent,
third-party analytical testing laboratory.

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 2/2/2011

Date Reported: 2/4/2011

PO Number: D20806X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110202010-01A	D20806X-1, 2/1/11, 12:20pm	* Total Coliforms MPN	<2 Feecal, <2 Total	MPN/100mL		RB
		SM 9221 B				2/2/2011

* = Scope Analysis
= Subcontracted Analysis
MDL = Method Detection Limit
ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9591 • (303) 287-0964 FAX • www.industriallabs.net
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D20806: Chain of Custody
Page 4 of 4

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 2

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V484-MB1	3V08763A.D 1		02/02/11	DC	n/a	n/a	V3V484

The QC reported here applies to the following samples:

Method: SW846 8260B

D20806-1, D20806-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V484-MB1	3V08763A.D1		02/02/11	DC	n/a	n/a	V3V484

The QC reported here applies to the following samples:

Method: SW846 8260B

D20806-1, D20806-2

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	92% 63-130%
2037-26-5	Toluene-D8	93% 68-130%
460-00-4	4-Bromofluorobenzene	85% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.43	34	ug/l	JN
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Page 1 of 2

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V484-BS1	3V08764A.D1		02/02/11	DC	n/a	n/a	V3V484

The QC reported here applies to the following samples:

Method: SW846 8260B

D20806-1, D20806-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	47.9	96	49-130
71-43-2	Benzene	50	54.5	109	70-130
75-27-4	Bromodichloromethane	50	51.4	103	70-130
75-25-2	Bromoform	50	50.8	102	48-138
108-90-7	Chlorobenzene	50	55.2	110	70-130
75-00-3	Chloroethane	50	39.5	79	61-130
67-66-3	Chloroform	50	53.9	108	70-130
110-75-8	2-Chloroethyl vinyl ether	50	41.1	82	22-185
75-15-0	Carbon disulfide	50	50.5	101	55-130
56-23-5	Carbon tetrachloride	50	57.2	114	70-130
75-34-3	1,1-Dichloroethane	50	53.9	108	70-130
75-35-4	1,1-Dichloroethylene	50	56.1	112	70-130
107-06-2	1,2-Dichloroethane	50	45.7	91	70-130
78-87-5	1,2-Dichloropropane	50	52.5	105	70-130
124-48-1	Dibromochloromethane	50	48.0	96	64-132
156-59-2	cis-1,2-Dichloroethylene	50	56.6	113	70-130
10061-01-5	cis-1,3-Dichloropropene	50	52.1	104	67-130
541-73-1	m-Dichlorobenzene	50	52.1	104	52-148
95-50-1	o-Dichlorobenzene	50	52.3	105	53-146
106-46-7	p-Dichlorobenzene	50	52.0	104	57-136
156-60-5	trans-1,2-Dichloroethylene	50	54.8	110	70-130
10061-02-6	trans-1,3-Dichloropropene	50	47.8	96	66-130
100-41-4	Ethylbenzene	50	55.8	112	70-130
591-78-6	2-Hexanone	50	46.0	92	38-130
108-10-1	4-Methyl-2-pentanone	50	50.2	100	68-130
74-83-9	Methyl bromide	50	45.1	90	35-151
74-87-3	Methyl chloride	50	34.8	70	46-138
75-09-2	Methylene chloride	50	51.2	102	70-130
78-93-3	Methyl ethyl ketone	50	47.0	94	37-130
100-42-5	Styrene	50	52.4	105	38-130
71-55-6	1,1,1-Trichloroethane	50	51.5	103	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	51.8	104	70-130
79-00-5	1,1,2-Trichloroethane	50	53.4	107	69-130
127-18-4	Tetrachloroethylene	50	56.3	113	66-134
108-88-3	Toluene	50	53.7	107	70-140
79-01-6	Trichloroethylene	50	54.9	110	70-130

Blank Spike Summary

Page 2 of 2

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V484-BS1	3V08764A.D1		02/02/11	DC	n/a	n/a	V3V484

The QC reported here applies to the following samples:

Method: SW846 8260B

D20806-1, D20806-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl chloride	50	33.2	66	58-135
108-05-4	Vinyl Acetate	50	86.9	174* ^a	50-130
1330-20-7	Xylene (total)	100	102	102	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	63-130%
2037-26-5	Toluene-D8	92%	68-130%
460-00-4	4-Bromofluorobenzene	86%	61-130%

(a) Compound ND in associated samples.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20786-2MS	3V08769.D	1	02/02/11	DC	n/a	n/a	V3V484
D20786-2MSD	3V08770.D	1	02/02/11	DC	n/a	n/a	V3V484
D20786-2	3V08768.D	1	02/02/11	DC	n/a	n/a	V3V484

The QC reported here applies to the following samples:

Method: SW846 8260B

D20806-1, D20806-2

CAS No.	Compound	D20786-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	49.5	99	52.1	104	5	21-130/30
71-43-2	Benzene	ND	50	54.4	109	54.1	108	1	59-132/30
75-27-4	Bromodichloromethane	ND	50	51.6	103	53.1	106	3	58-130/30
75-25-2	Bromoform	ND	50	51.0	102	52.6	105	3	45-140/30
108-90-7	Chlorobenzene	ND	50	55.2	110	55.3	111	0	70-130/30
75-00-3	Chloroethane	ND	50	43.8	88	42.8	86	2	61-130/30
67-66-3	Chloroform	ND	50	56.5	113	55.9	112	1	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	50	43.8	88	43.1	86	2	20-168/30
75-15-0	Carbon disulfide	ND	50	50.6	101	50.9	102	1	41-132/30
56-23-5	Carbon tetrachloride	ND	50	56.9	114	57.3	115	1	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	55.7	111	56.3	113	1	70-130/30
75-35-4	1,1-Dichloroethylene	ND	50	56.2	112	56.6	113	1	69-137/30
107-06-2	1,2-Dichloroethane	ND	50	48.0	96	49.2	98	2	62-130/30
78-87-5	1,2-Dichloropropane	ND	50	52.7	105	53.5	107	2	63-131/30
124-48-1	Dibromochloromethane	ND	50	48.8	98	50.1	100	3	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND	50	57.8	116	57.3	115	1	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	53.2	106	53.0	106	0	51-134/30
541-73-1	m-Dichlorobenzene	ND	50	53.2	106	52.5	105	1	38-148/30
95-50-1	o-Dichlorobenzene	ND	50	53.2	106	52.8	106	1	40-148/30
106-46-7	p-Dichlorobenzene	ND	50	52.8	106	52.6	105	0	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND	50	55.7	111	55.8	112	0	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	49.0	98	50.2	100	2	50-130/30
100-41-4	Ethylbenzene	ND	50	55.6	111	55.8	112	0	68-130/30
591-78-6	2-Hexanone	ND	50	50.0	100	51.2	102	2	29-130/30
108-10-1	4-Methyl-2-pentanone	ND	50	51.4	103	53.1	106	3	62-130/30
74-83-9	Methyl bromide	ND	50	46.5	93	47.3	95	2	20-171/30
74-87-3	Methyl chloride	ND	50	37.9	76	37.6	75	1	25-148/30
75-09-2	Methylene chloride	ND	50	52.8	106	52.7	105	0	58-139/30
78-93-3	Methyl ethyl ketone	ND	50	50.8	102	52.2	104	3	37-130/30
100-42-5	Styrene	ND	50	52.6	105	52.6	105	0	27-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	51.9	104	51.2	102	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	54.3	109	54.3	109	0	61-140/30
79-00-5	1,1,2-Trichloroethane	ND	50	54.4	109	54.5	109	0	52-135/30
127-18-4	Tetrachloroethylene	ND	50	55.6	111	55.9	112	1	61-134/30
108-88-3	Toluene	ND	50	53.4	107	53.4	107	0	56-142/30
79-01-6	Trichloroethylene	ND	50	55.4	111	55.1	110	1	61-132/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20786-2MS	3V08769.D	1	02/02/11	DC	n/a	n/a	V3V484
D20786-2MSD	3V08770.D	1	02/02/11	DC	n/a	n/a	V3V484
D20786-2	3V08768.D	1	02/02/11	DC	n/a	n/a	V3V484

The QC reported here applies to the following samples:

Method: SW846 8260B

D20806-1, D20806-2

CAS No.	Compound	D20786-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl chloride	ND	50	36.3	73	35.9	72	1	54-148/30
108-05-4	Vinyl Acetate	ND	50	89.7	179* a	86.9	174* a	3	40-139/30
1330-20-7	Xylene (total)	ND	100	101	101	102	102	1	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D20786-2	Limits
17060-07-0	1,2-Dichloroethane-D4	94%	95%	98%	63-130%
2037-26-5	Toluene-D8	93%	94%	94%	68-130%
460-00-4	4-Bromofluorobenzene	87%	87%	86%	61-130%

(a) Compound ND in associated samples.

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020211.S\
 Data File : 3V08772.D
 Acq On : 2 Feb 2011 3:12 pm
 Operator : DONC
 Sample : D20806-1
 Misc : MS1791,V3V484,,,,,1
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 03 08:02:05 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260
 QLast Update : Mon Jan 17 09:47:23 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.898	168	474992	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.687	114	723543	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.322	117	644807	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.317	152	347283	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.289	102	56167	46.62	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.24%	
55) Toluene-d8	14.080	98	877966	47.13	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	94.26%	
59) 4-Bromofluorobenzene	16.268	95	289095	41.49	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	82.98%	

Target Compounds

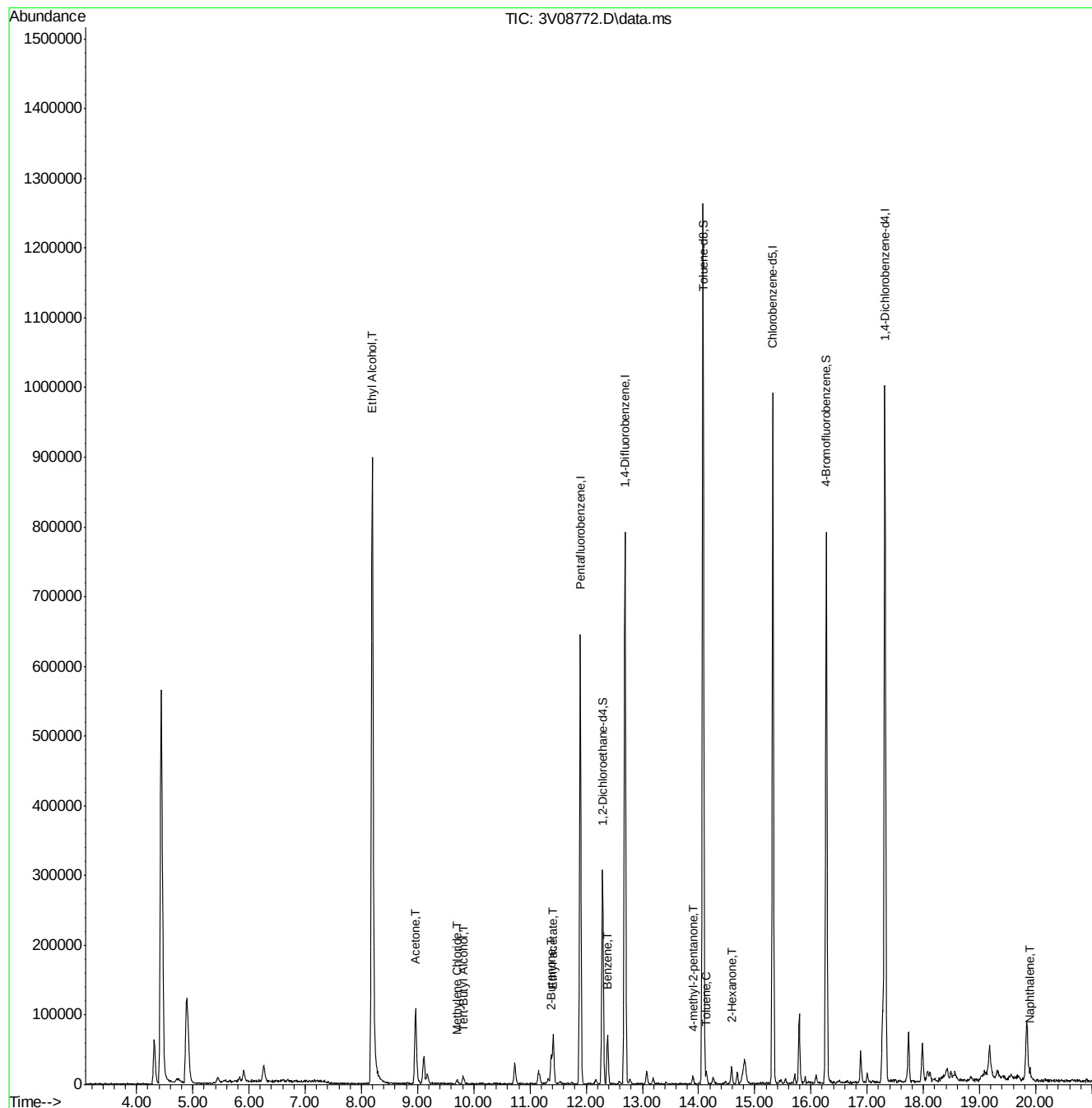
						Qvalue
9) Ethyl Alcohol	8.195	45	1331774	23744.26	ug/l	100
14) Acetone	8.968	58	58895	130.39	ug/l	90
16) Methylene Chloride	9.706	84	3625	0.69	ug/l #	39
17) Tert-Butyl Alcohol	9.809	59	14434	32.54	ug/l #	93
24) 2-Butanone	11.375	72	15656	24.49	ug/l	90
34) Ethyl acetate	11.410	45	11598	19.49	ug/l #	1
45) Benzene	12.382	78	67427	3.37	ug/l	100
49) 4-methyl-2-pentanone	13.907	100	1620m	2.82	ug/l	
50) 2-Hexanone	14.584	43	17934	6.38	ug/l	85
56) Toluene	14.141	92	8413	0.65	ug/l	89
72) Naphthalene	19.897	128	18532	0.93	ug/l	100

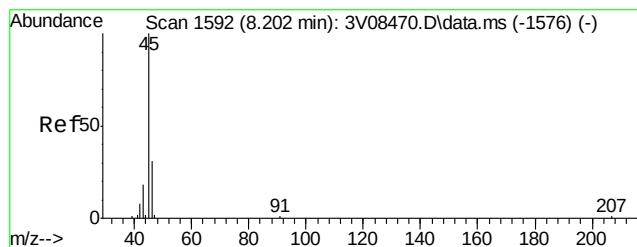
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

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Data File : 3V08772.D
Acq On : 2 Feb 2011 3:12 pm
Operator : DONC
Sample : D20806-1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 12 Sample Multiplier: 1

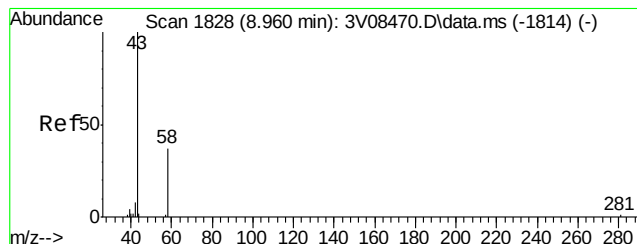
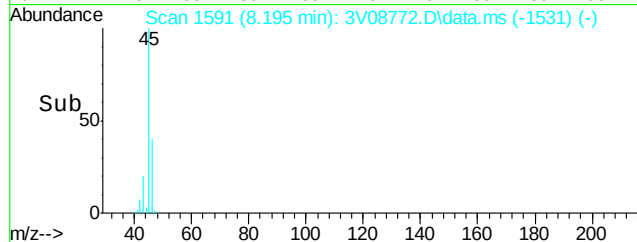
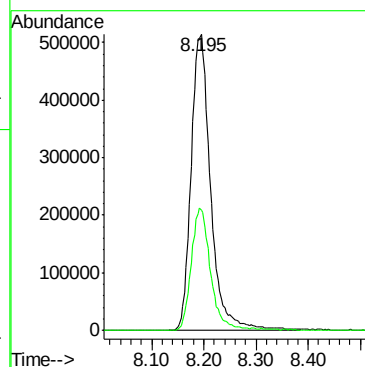
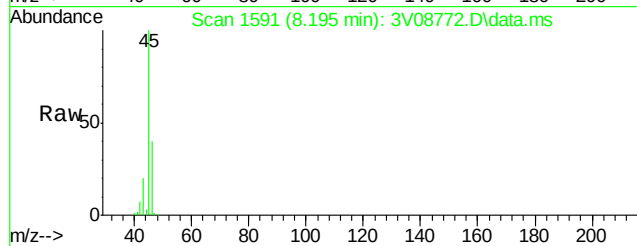
Quant Time: Feb 03 08:02:05 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





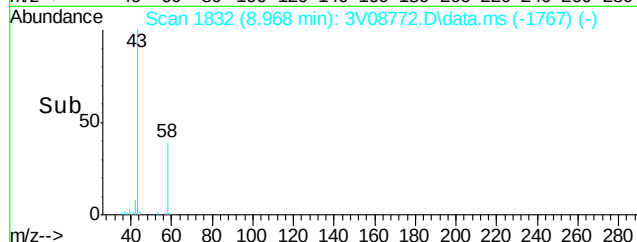
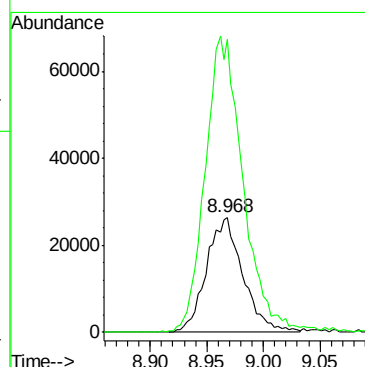
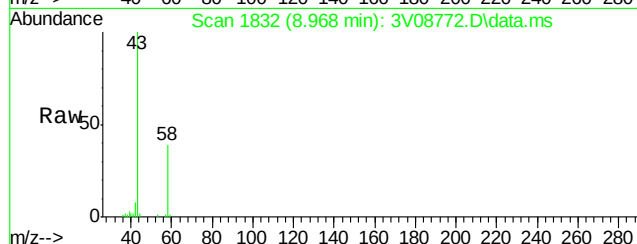
#9
Ethyl Alcohol
Concen: 23744.26 ug/l
RT: 8.195 min Scan# 1591
Delta R.T. -0.007 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

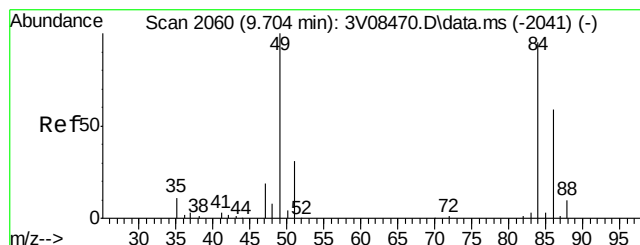
Tgt Ion: 45 Resp: 1331774
Ion Ratio Lower Upper
45 100
46 40.4 32.2 48.4



#14
Acetone
Concen: 130.39 ug/l
RT: 8.968 min Scan# 1832
Delta R.T. 0.009 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

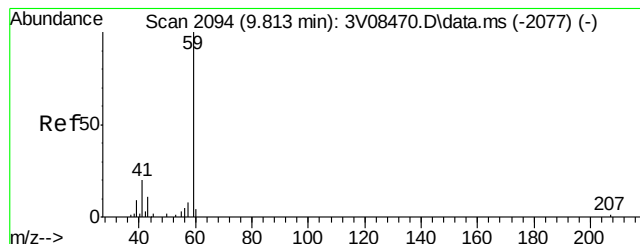
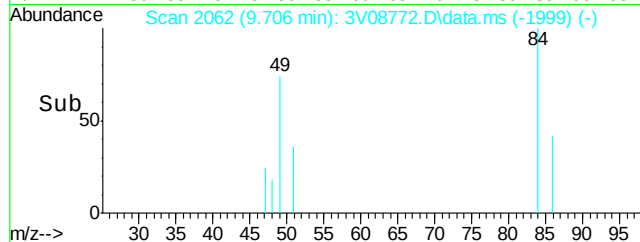
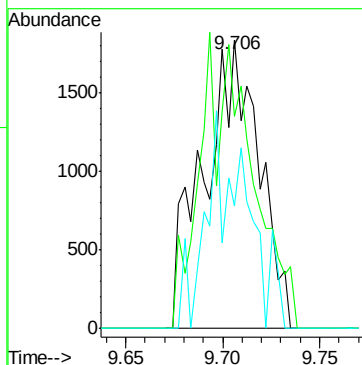
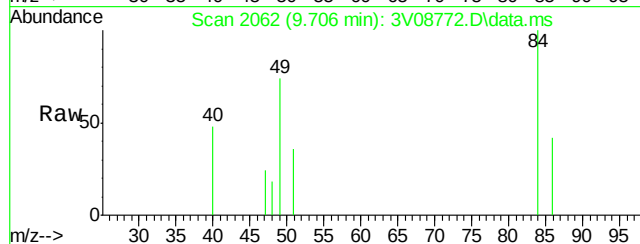
Tgt Ion: 58 Resp: 58895
Ion Ratio Lower Upper
58 100
43 268.6 267.1 307.1





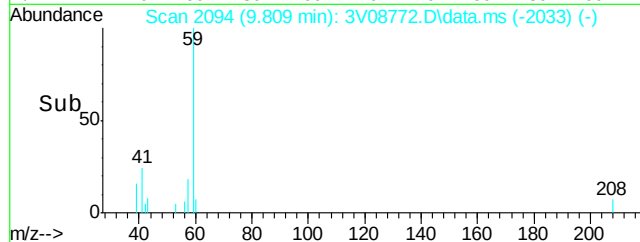
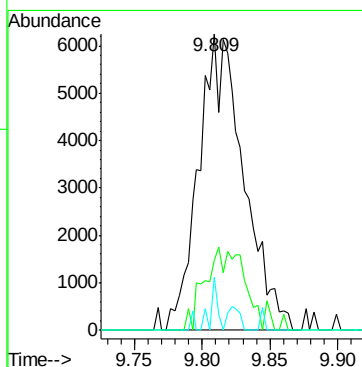
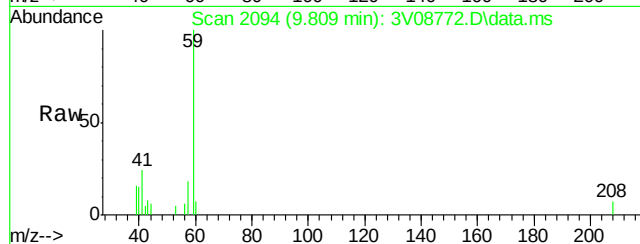
#16
Methylene Chloride
Concen: 0.69 ug/l
RT: 9.706 min Scan# 2062
Delta R.T. 0.002 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

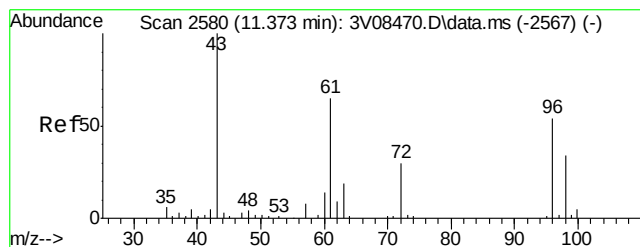
Tgt Ion:	84	Resp:	3625
Ion Ratio	Lower	Upper	
84	100		
49	53.3	89.3	129.3#
86	5.2	44.0	84.0#



#17
Tert-Butyl Alcohol
Concen: 32.54 ug/l
RT: 9.809 min Scan# 2094
Delta R.T. -0.004 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

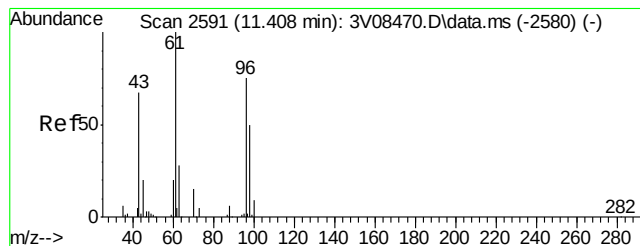
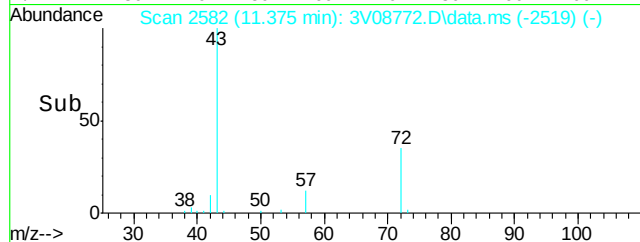
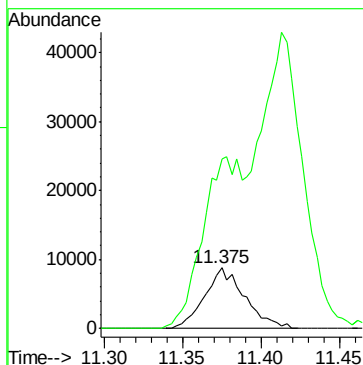
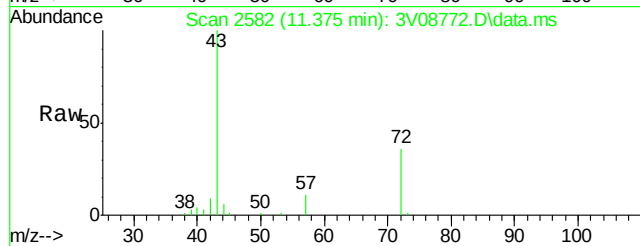
Tgt Ion:	59	Resp:	14434
Ion Ratio	Lower	Upper	
59	100		
41	24.1	18.6	28.0
57	2.5	8.2	12.4#





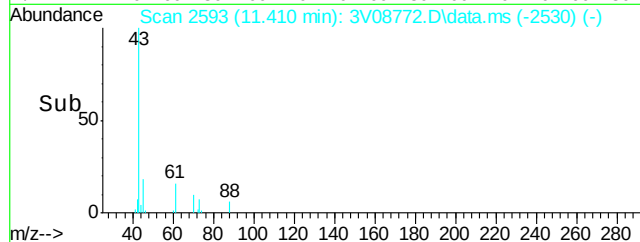
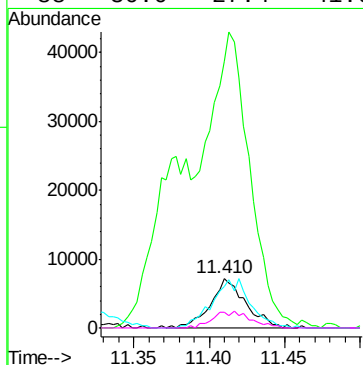
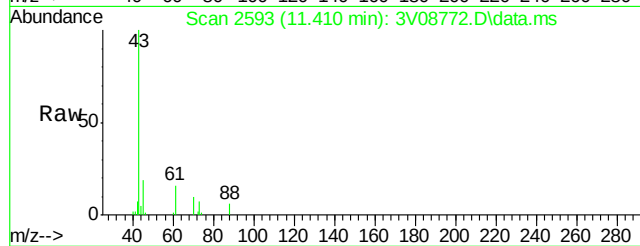
#24
2-Butanone
Concen: 24.49 ug/l
RT: 11.375 min Scan# 2582
Delta R.T. 0.002 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

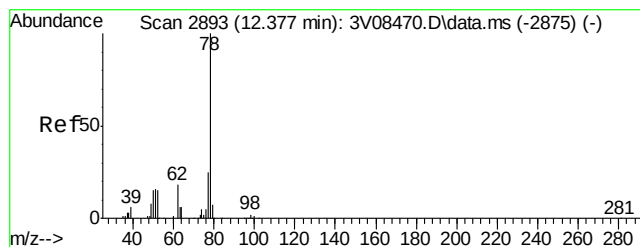
Tgt Ion: 72 Resp: 15656
Ion Ratio Lower Upper
72 100
43 294.8 252.0 378.0



#34
Ethyl acetate
Concen: 19.49 ug/l
RT: 11.410 min Scan# 2593
Delta R.T. 0.002 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

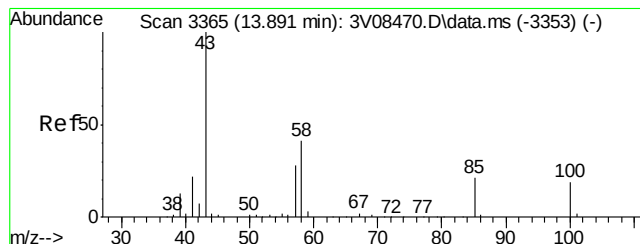
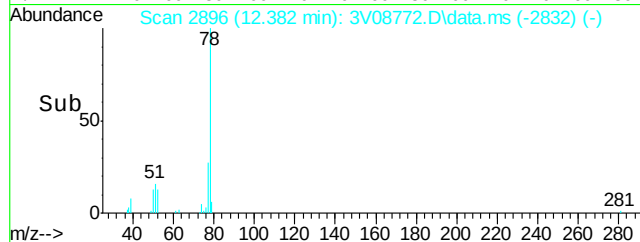
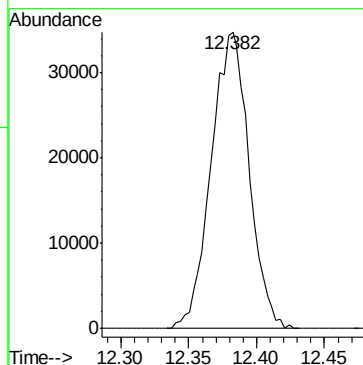
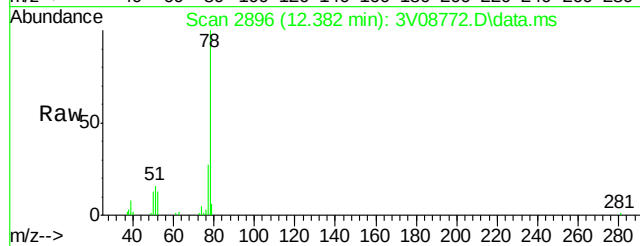
Tgt Ion: 45 Resp: 11598
Ion Ratio Lower Upper
45 100
43 702.7 573.2 859.8
61 107.2 901.2 1351.8#
88 36.0 27.4 41.0





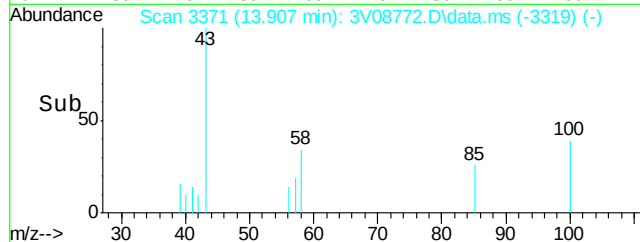
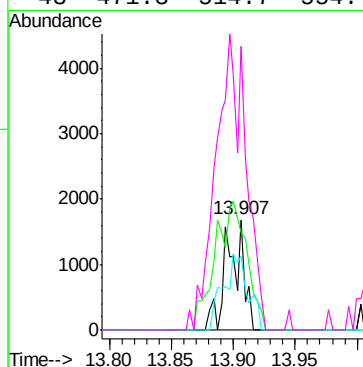
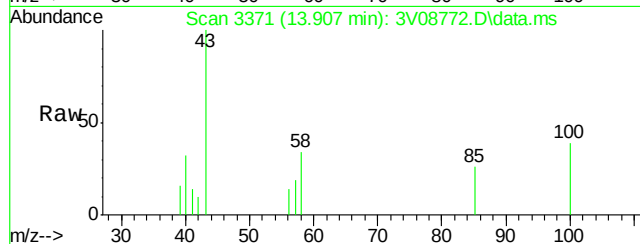
#45
Benzene
Concen: 3.37 ug/l
RT: 12.382 min Scan# 2896
Delta R.T. 0.005 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

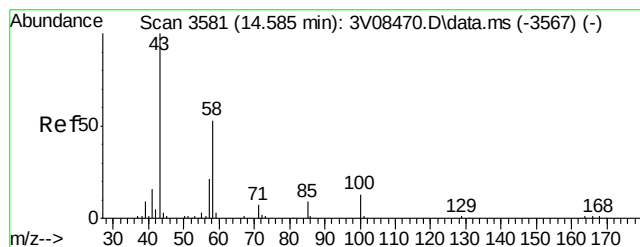
Tgt Ion: 78 Resp: 67427



#49
4-methyl-2-pentanone
Concen: 2.82 ug/l m
RT: 13.907 min Scan# 3371
Delta R.T. 0.016 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

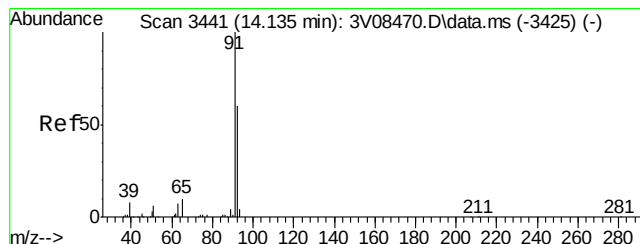
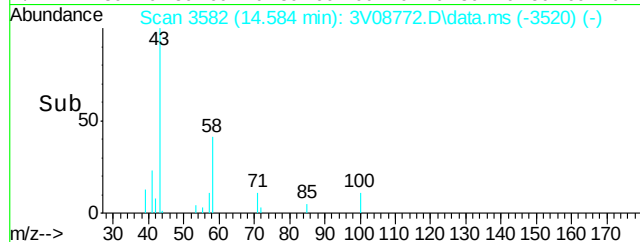
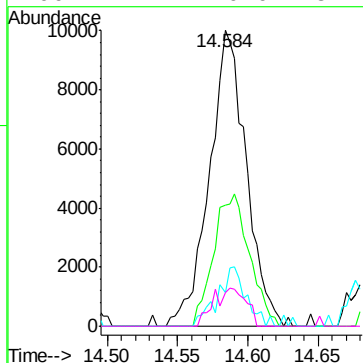
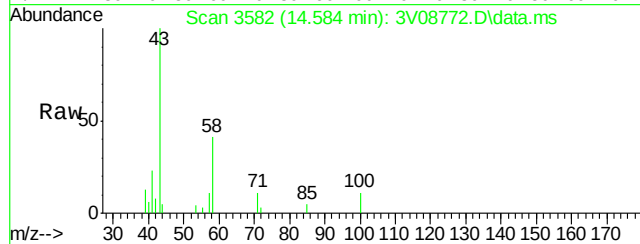
Tgt Ion:100 Resp: 1620
Ion Ratio Lower Upper
100 100
58 216.9 199.9 239.9
85 99.0 87.1 127.1
43 471.3 514.7 554.7#





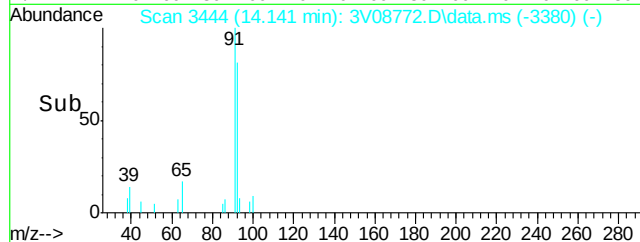
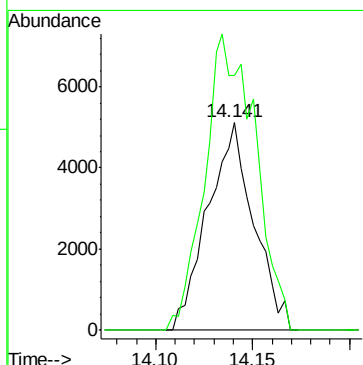
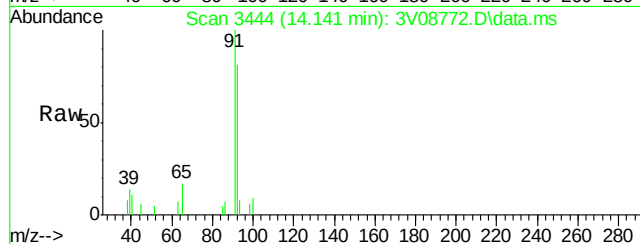
#50
2-Hexanone
Concen: 6.38 ug/l
RT: 14.584 min Scan# 3582
Delta R.T. -0.001 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

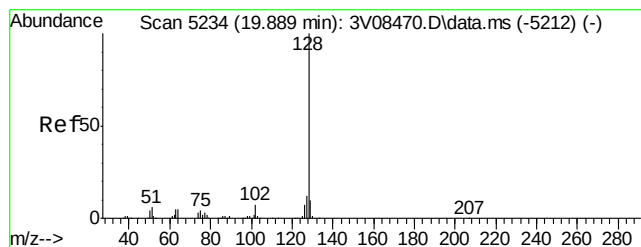
Tgt Ion:	43	Resp:	17934
Ion Ratio	Lower	Upper	
43	100		
58	43.4	37.5	77.5
57	15.6	0.0	39.9
100	11.4	0.0	34.7



#56
Toluene
Concen: 0.65 ug/l
RT: 14.141 min Scan# 3444
Delta R.T. 0.005 min
Lab File: 3V08772.D
Acq: 2 Feb 2011 3:12 pm

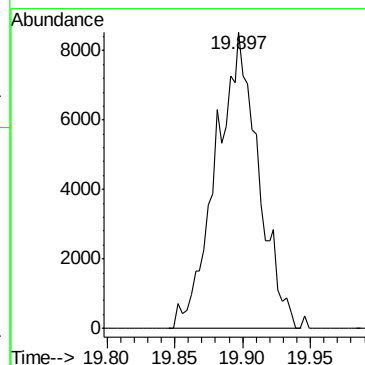
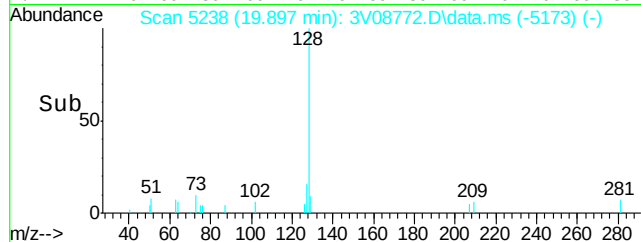
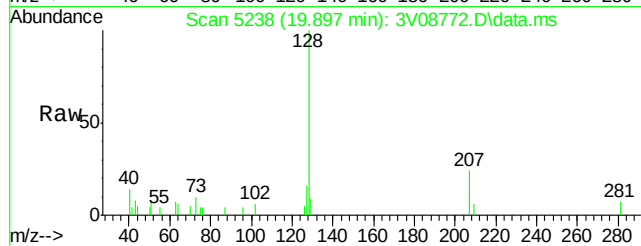
Tgt Ion:	92	Resp:	8413
Ion Ratio	Lower	Upper	
92	100		
91	156.1	151.6	191.6





#72
 Naphthalene
 Concen: 0.93 ug/l
 RT: 19.897 min Scan# 5238
 Delta R.T. 0.009 min
 Lab File: 3V08772.D
 Acq: 2 Feb 2011 3:12 pm

Tgt Ion:128 Resp: 18532



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08772.D
Acq On : 2 Feb 2011 3:12 pm
Operator : DONC
Sample : D20806-1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08772.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.309	367	380	401	rBV	63867	152001	6.57%	0.904%
2	4.437	403	420	447	rBV	564013	1550121	66.96%	9.221%
3	4.893	546	562	592	rBV6	121281	431595	18.64%	2.567%
4	6.260	976	988	989	rBV3	21650	28353	1.22%	0.169%
5	8.192	1572	1590	1620	rBV	898117	2315068	100.00%	13.772%
6	8.968	1815	1832	1847	rBV2	108258	247655	10.70%	1.473%
7	9.109	1861	1876	1877	rBV2	38166	53437	2.31%	0.318%
8	10.727	2367	2380	2381	rBV2	30873	35739	1.54%	0.213%
9	11.157	2502	2514	2515	rBV	19789	26660	1.15%	0.159%
10	11.375	2572	2582	2588	rBV2	38764	71475	3.09%	0.425%
11	11.413	2588	2594	2608	rVB3	70232	124657	5.38%	0.742%
12	11.895	2729	2744	2759	rBV	644914	1202618	51.95%	7.154%
13	12.293	2851	2868	2884	rBV2	307800	607981	26.26%	3.617%
14	12.379	2884	2895	2910	rVB	71137	137809	5.95%	0.820%
15	12.690	2976	2992	3008	rBV	791352	1478268	63.85%	8.794%
16	13.075	3103	3112	3123	rBV2	18660	32905	1.42%	0.196%
17	14.080	3409	3425	3438	rBV2	1262376	2291587	98.99%	13.632%
18	14.587	3571	3583	3596	rBV4	24587	42104	1.82%	0.250%
19	15.322	3799	3812	3828	rBV	991022	1750841	75.63%	10.416%
20	15.790	3947	3958	3976	rVB3	100026	169899	7.34%	1.011%
21	16.271	4093	4108	4123	rBV2	790063	1426441	61.62%	8.486%
22	16.881	4287	4298	4309	rBV2	47020	81908	3.54%	0.487%
23	17.273	4405	4420	4422	rBV3	104292	147111	6.35%	0.875%
24	17.314	4423	4433	4451	rVB	998578	1909899	82.50%	11.362%
25	17.738	4552	4565	4577	rVB	72606	145299	6.28%	0.864%
26	17.978	4627	4640	4655	rBV5	56358	120329	5.20%	0.716%
27	18.075	4660	4670	4677	rBV8	13691	28564	1.23%	0.170%
28	19.175	5003	5013	5022	rBV6	40654	82618	3.57%	0.491%
29	19.836	5205	5219	5220	rBV2	80576	117008	5.05%	0.696%

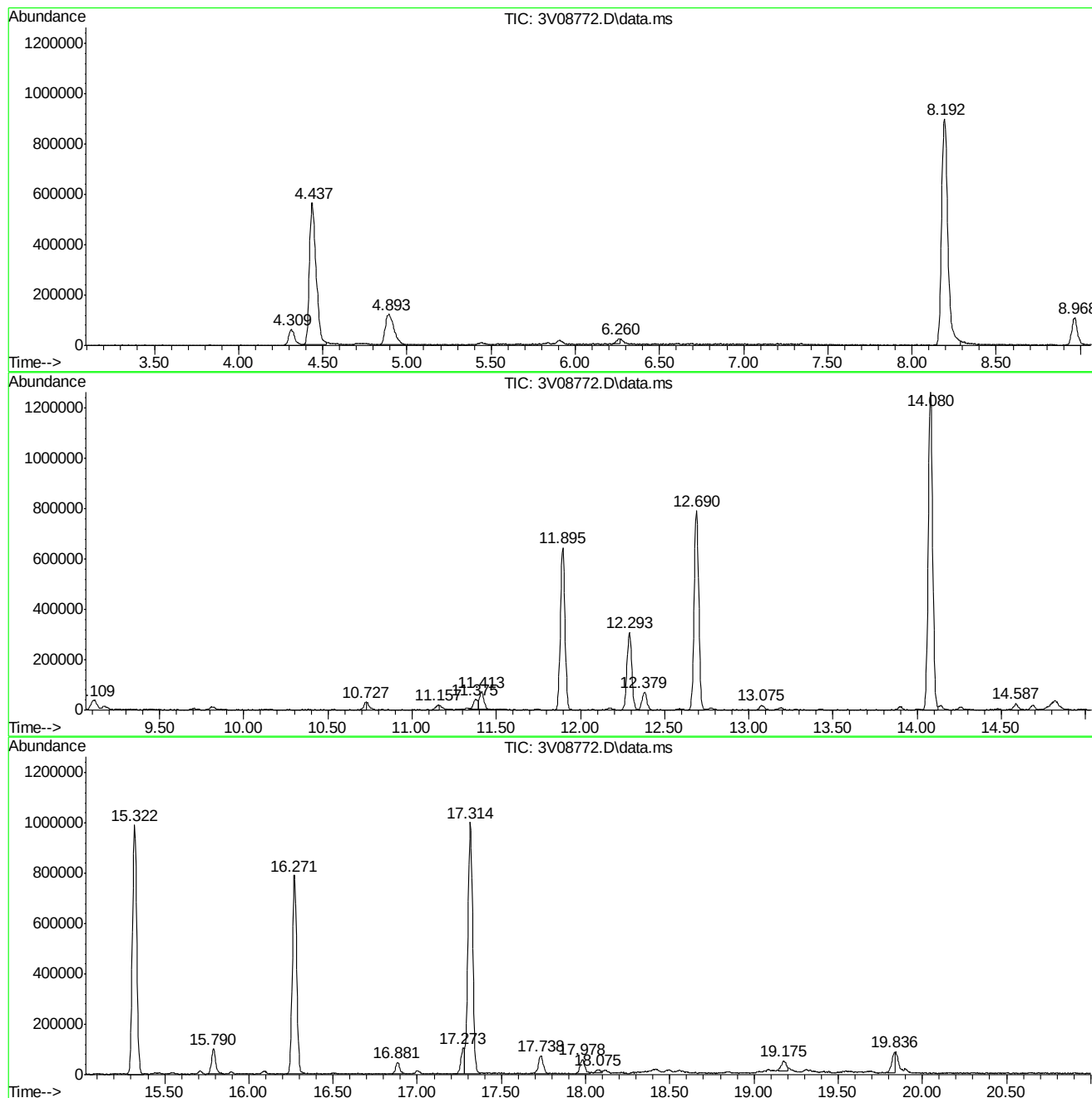
Sum of corrected areas: 16809950

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08772.D
Acq On : 2 Feb 2011 3:12 pm
Operator : DONC
Sample : D20806-1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
 Data File : 3V08772.D
 Acq On : 2 Feb 2011 3:12 pm
 Operator : DONC
 Sample : D20806-1
 Misc : MS1791,V3V484,,,,,1
 ALS Vial : 12 Sample Multiplier: 1

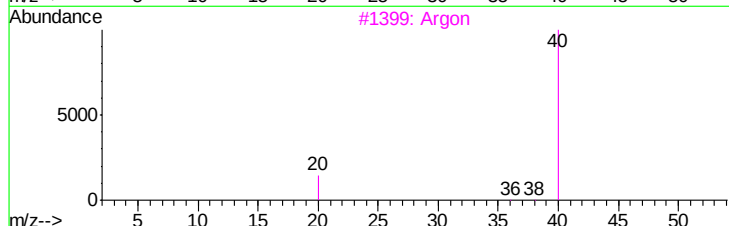
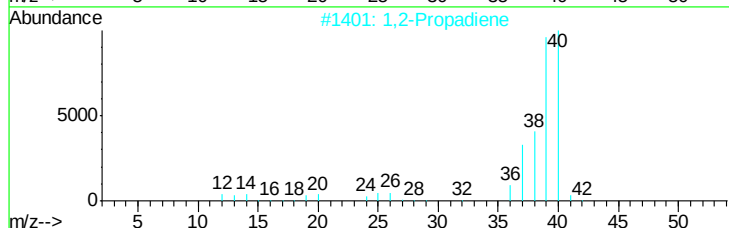
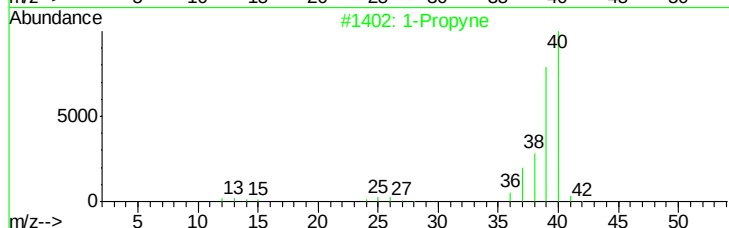
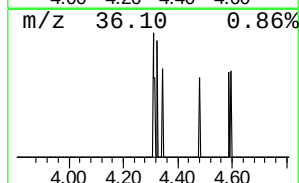
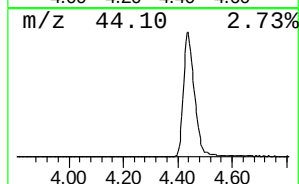
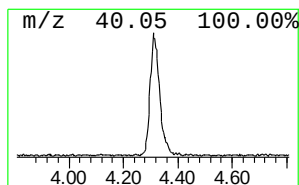
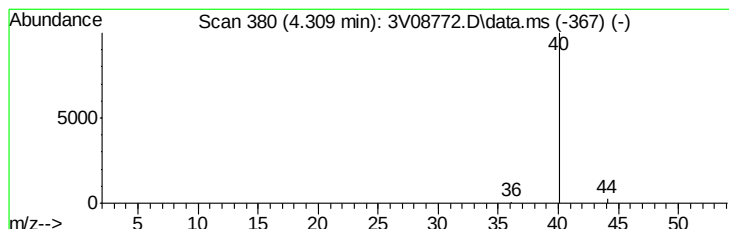
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 1-Propyne Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.309	6.32 ug/l	152001	Pentafluorobenzene	11.898

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propyne	40	C3H4	000074-99-7	2
2	1,2-Propadiene	40	C3H4	000463-49-0	2
3	Argon	40	Ar	007440-37-1	2
4	Boron, carbonyltrihydro-, (T-4)-	42	CH3BO	013205-44-2	1
5	Propane	44	C3H8	000074-98-6	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
 Data File : 3V08772.D
 Acq On : 2 Feb 2011 3:12 pm
 Operator : DONC
 Sample : D20806-1
 Misc : MS1791,V3V484,,,,,1
 ALS Vial : 12 Sample Multiplier: 1

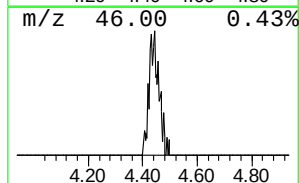
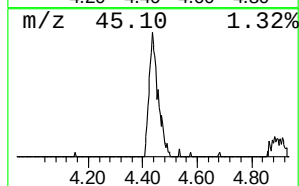
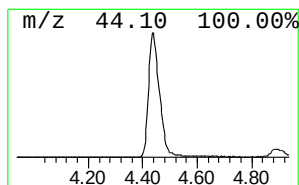
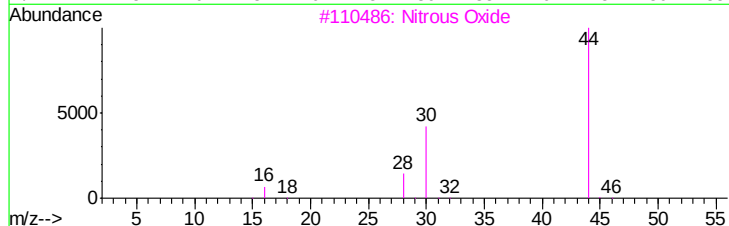
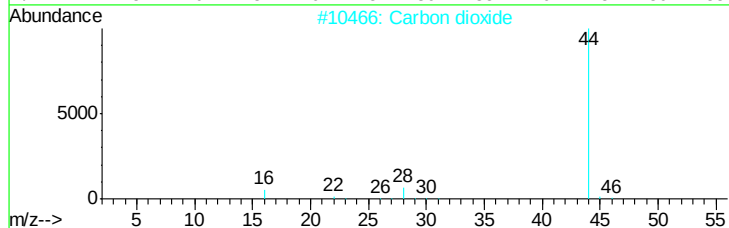
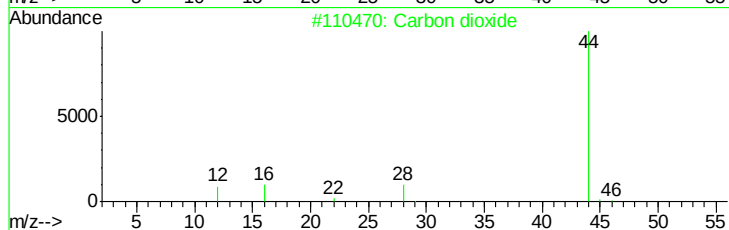
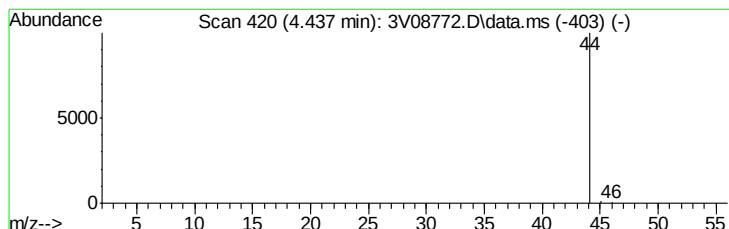
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.437	64.45 ug/l	1550120	Pentafluorobenzene	11.898

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide	44	CO2	000124-38-9	4
2	Carbon dioxide	44	CO2	000124-38-9	4
3	Nitrous Oxide	44	N2O	010024-97-2	3
4	Nitrous Oxide	44	N2O	010024-97-2	3
5	Nitrous Oxide	44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
 Data File : 3V08772.D
 Acq On : 2 Feb 2011 3:12 pm
 Operator : DONC
 Sample : D20806-1
 Misc : MS1791,V3V484,,,,,1
 ALS Vial : 12 Sample Multiplier: 1

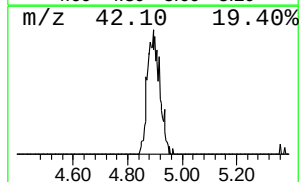
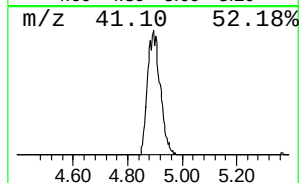
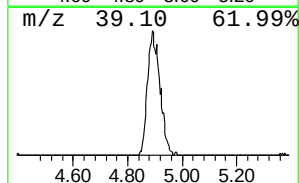
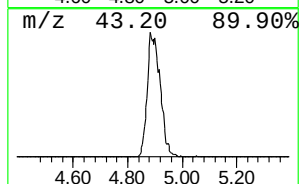
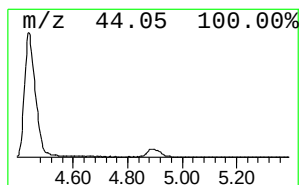
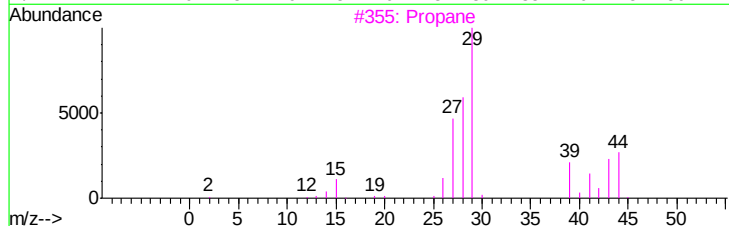
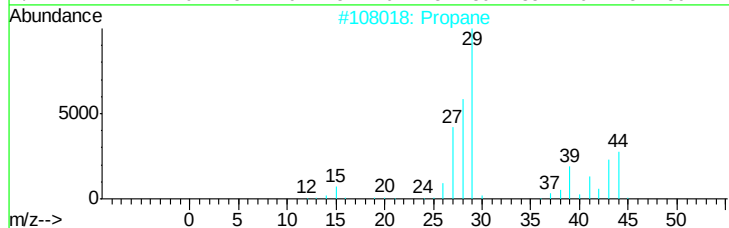
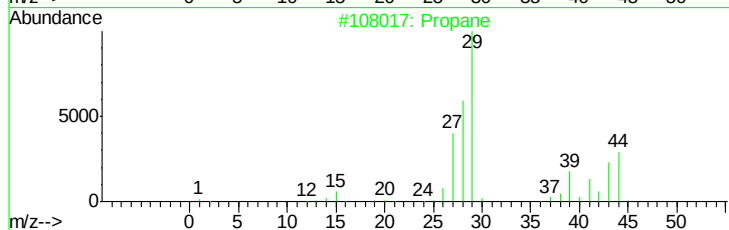
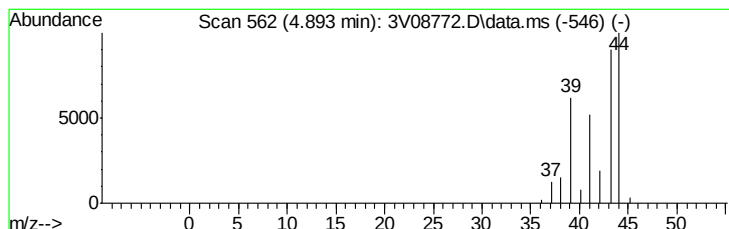
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 3 Propane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.893	17.94 ug/l	431595	Pentafluorobenzene	11.898

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane	44	C3H8	000074-98-6	83
2	Propane	44	C3H8	000074-98-6	83
3	Propane	44	C3H8	000074-98-6	9
4	Acetaldehyde	44	C2H4O	000075-07-0	9
5	Hydroxyurea	76	CH4N2O2	000127-07-1	2



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08772.D
Acq On : 2 Feb 2011 3:12 pm
Operator : DONC
Sample : D20806-1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---			
					#	RT	Resp	Conc
1-Propyne	4.309	6.3	ug/l	152001	1	11.898	1202620	50.0
Carbon dioxide	4.437	64.4	ug/l	1550120	1	11.898	1202620	50.0
Propane	4.893	17.9	ug/l	431595	1	11.898	1202620	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08773.D
Acq On : 2 Feb 2011 3:43 pm
Operator : DONC
Sample : D20806-2
Misc : MS1791,V3V484,,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 03 08:03:41 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

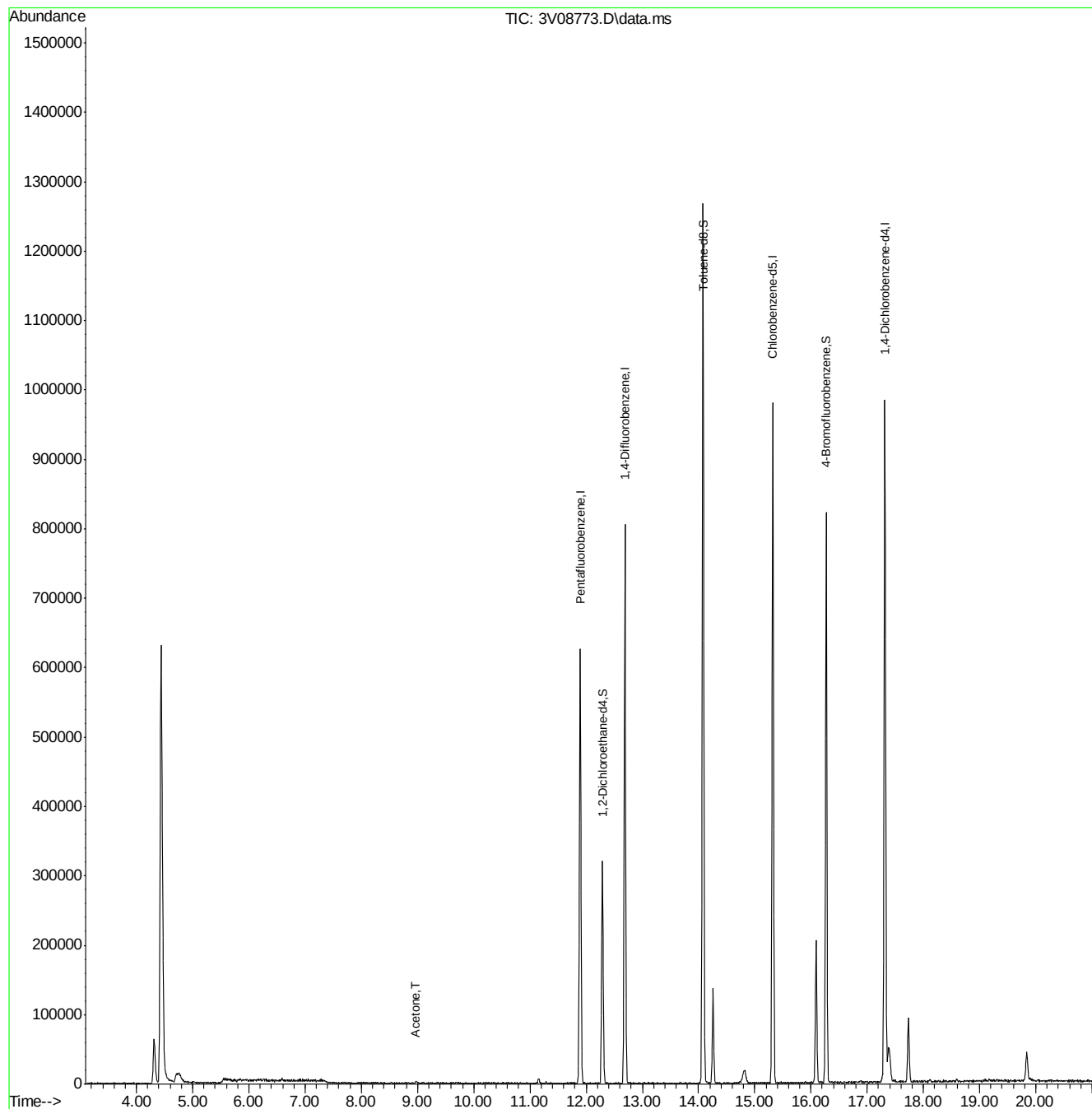
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.895	168	469990	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.690	114	716027	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.321	117	642902	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.314	152	349250	50.00	ug/l	0.00
System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.289	102	57999	48.65	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	97.30%	
55) Toluene-d8	14.076	98	876081	47.17	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	94.34%	
59) 4-Bromofluorobenzene	16.271	95	295877	42.59	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	85.18%	
Target Compounds						
14) Acetone	8.965	58	495	1.11	ug/l	Qvalue # 65

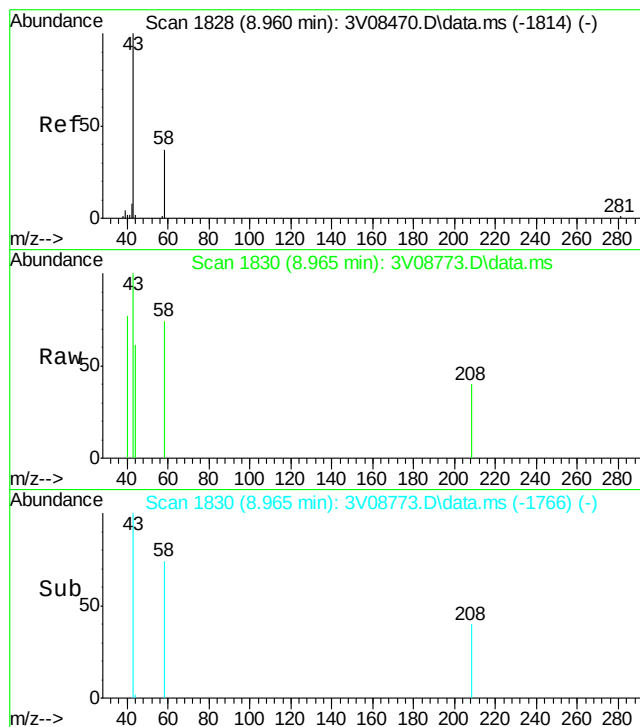
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08773.D
Acq On : 2 Feb 2011 3:43 pm
Operator : DONC
Sample : D20806-2
Misc : MS1791,V3V484,,,,,1
ALS Vial : 13 Sample Multiplier: 1

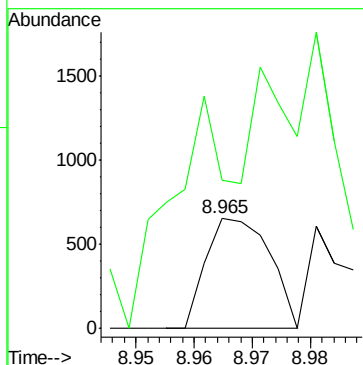
Quant Time: Feb 03 08:03:41 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





#14
 Acetone
 Concen: 1.11 ug/l
 RT: 8.965 min Scan# 1830
 Delta R.T. 0.006 min
 Lab File: 3V08773.D
 Acq: 2 Feb 2011 3:43 pm

Tgt Ion	Ratio	Lower	Upper
58	100		
43	221.0	267.1	307.1#



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
 Data File : 3V08773.D
 Acq On : 2 Feb 2011 3:43 pm
 Operator : DONC
 Sample : D20806-2
 Misc : MS1791,V3V484,,,,,1
 ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0
 Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V08773.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.309	366	379	380	rBV	63802	64600	2.82%	0.485%
2	4.437	402	419	442	rBV	630705	1759089	76.80%	13.200%
3	11.895	2729	2743	2760	rBV2	626287	1187923	51.87%	8.914%
4	12.292	2851	2867	2883	rVB	320130	623966	27.24%	4.682%
5	12.690	2975	2991	3008	rBV	805385	1469914	64.18%	11.030%
6	14.076	3409	3423	3439	rBV2	1267806	2290401	100.00%	17.186%
7	14.256	3467	3479	3492	rBV	136557	241632	10.55%	1.813%
8	15.321	3797	3811	3829	rVB2	979849	1739112	75.93%	13.050%
9	16.092	4038	4051	4065	rVB2	205074	364392	15.91%	2.734%
10	16.271	4093	4107	4123	rVB	822136	1441995	62.96%	10.820%
11	17.314	4419	4432	4445	rBV3	974389	1860941	81.25%	13.964%
12	17.735	4550	4563	4578	rVB2	92817	182885	7.98%	1.372%
13	19.839	5204	5219	5234	rBV2	40961	99926	4.36%	0.750%

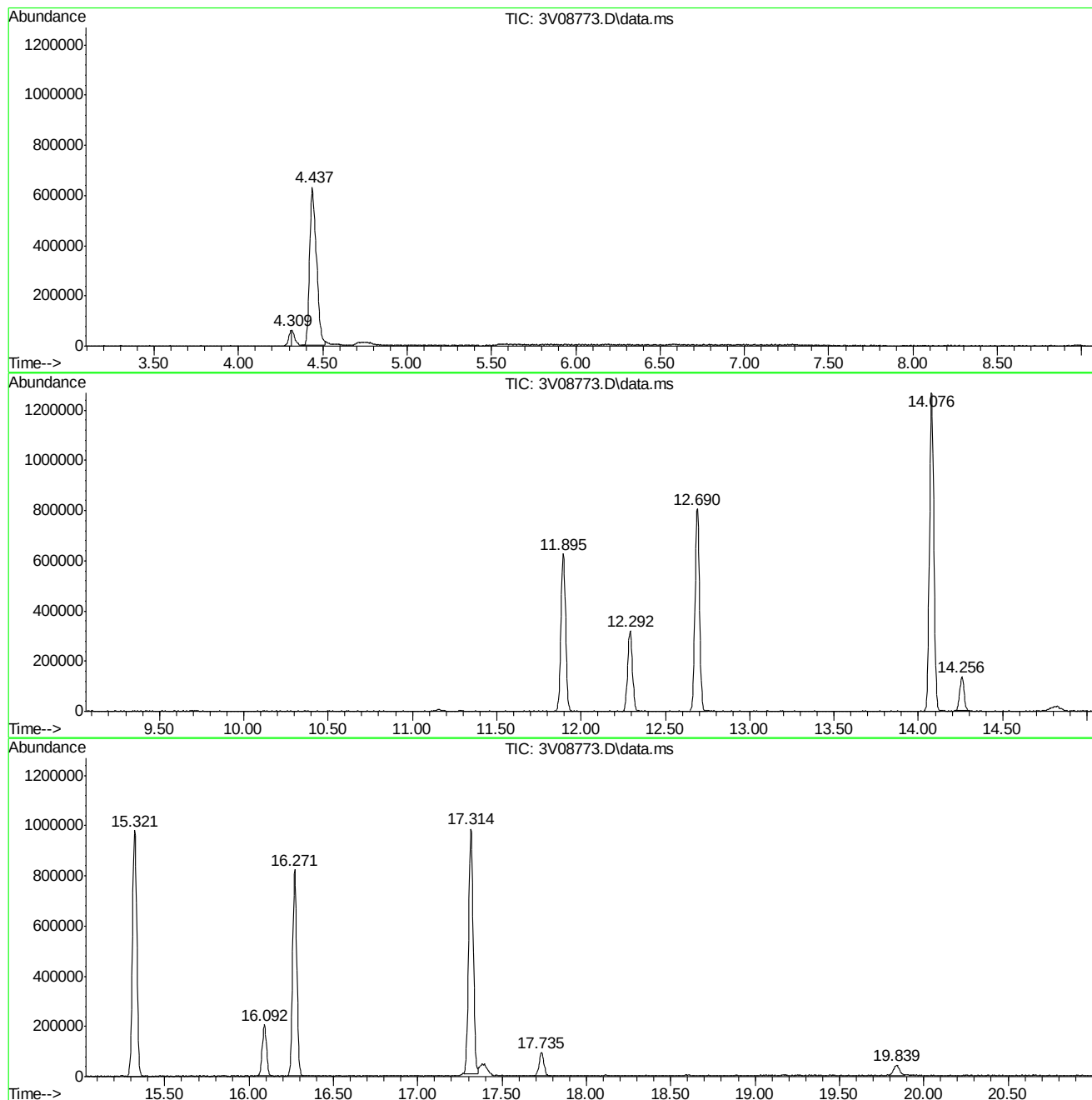
Sum of corrected areas: 13326776

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08773.D
Acq On : 2 Feb 2011 3:43 pm
Operator : DONC
Sample : D20806-2
Misc : MS1791,V3V484,,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
 Data File : 3V08773.D
 Acq On : 2 Feb 2011 3:43 pm
 Operator : DONC
 Sample : D20806-2
 Misc : MS1791,V3V484,,,,,1
 ALS Vial : 13 Sample Multiplier: 1

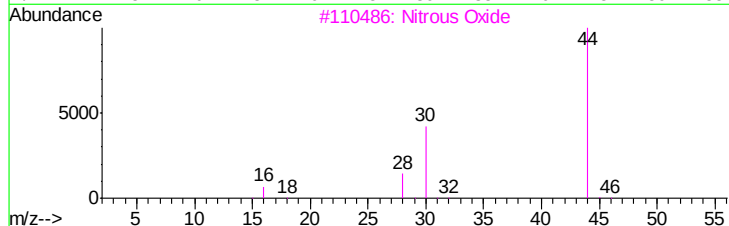
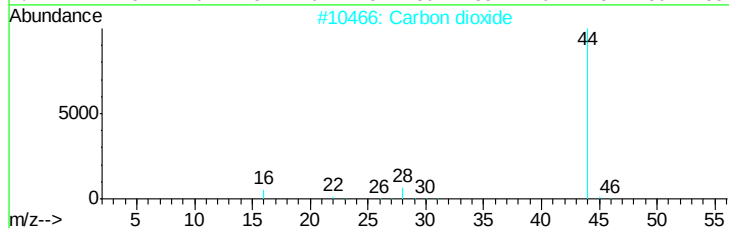
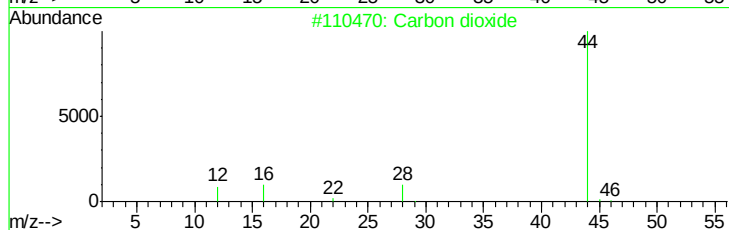
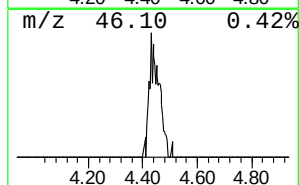
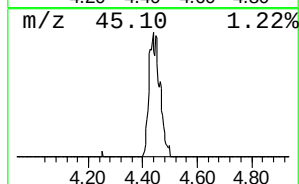
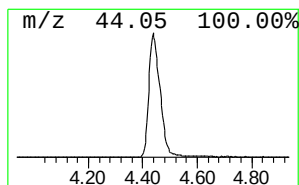
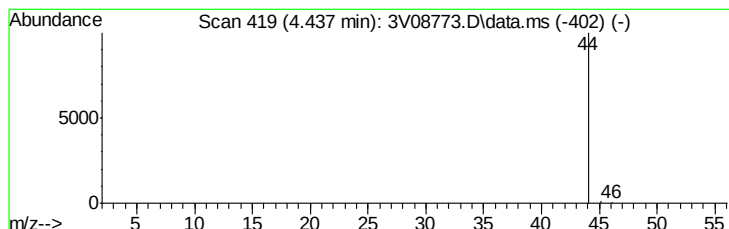
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.437	74.04 ug/l	1759090	Pentafluorobenzene	11.895

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide	44	CO2	000124-38-9	4
2	Carbon dioxide	44	CO2	000124-38-9	4
3	Nitrous Oxide	44	N2O	010024-97-2	3
4	Nitrous Oxide	44	N2O	010024-97-2	3
5	Nitrous Oxide	44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08773.D
Acq On : 2 Feb 2011 3:43 pm
Operator : DONC
Sample : D20806-2
Misc : MS1791,V3V484,,,,,1
ALS Vial : 13 Sample Multiplier: 1

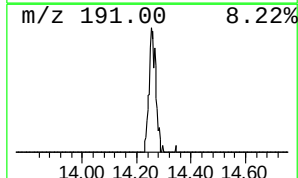
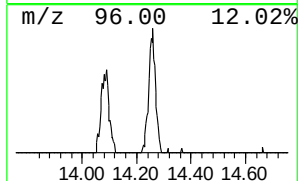
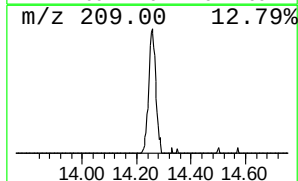
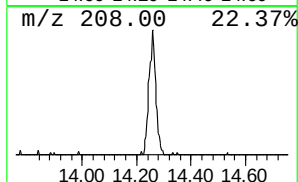
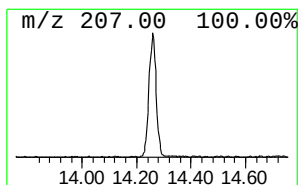
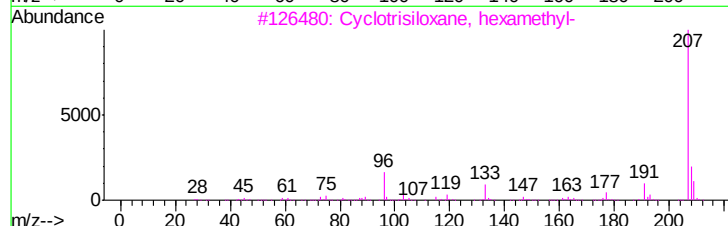
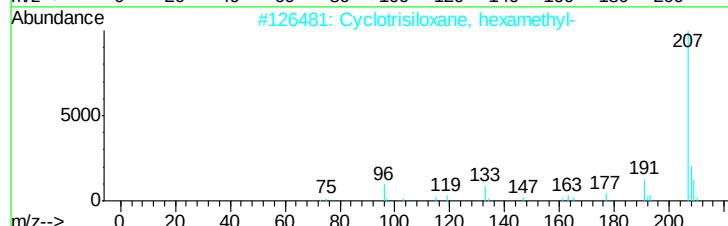
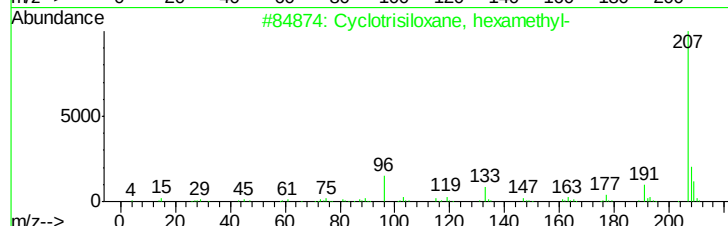
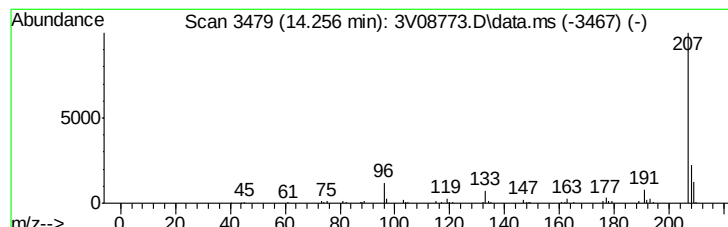
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 2 Cyclotrisiloxane, hexamethyl- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.256	6.95 ug/l	241632	Chlorobenzene-d5	15.322

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Cyclotrisiloxane, hexamethyl-	222	C6H1803Si3	000541-05-9	87
2			Cyclotrisiloxane, hexamethyl-	222	C6H1803Si3	000541-05-9	49
3			Cyclotrisiloxane, hexamethyl-	222	C6H1803Si3	000541-05-9	87
4			Arsenous acid, tris(trimethylsil...	342	C9H27AsO3Si3	055429-29-3	56
5			Cyclotrisiloxane, hexamethyl-	222	C6H1803Si3	000541-05-9	72



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08773.D
Acq On : 2 Feb 2011 3:43 pm
Operator : DONC
Sample : D20806-2
Misc : MS1791,V3V484,,,,,1
ALS Vial : 13 Sample Multiplier: 1

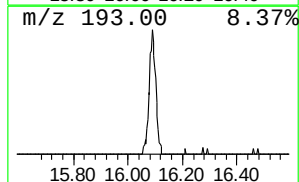
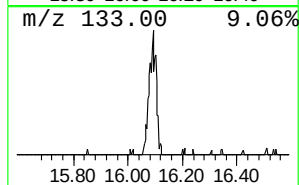
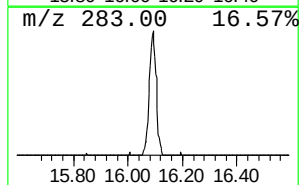
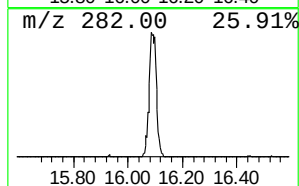
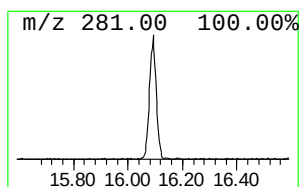
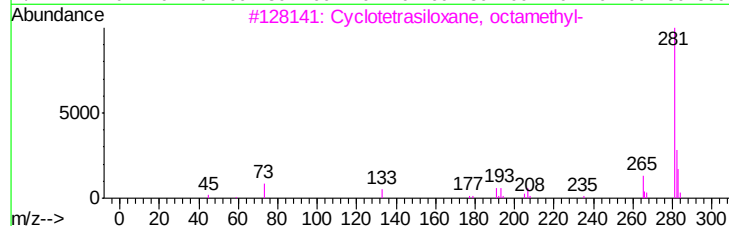
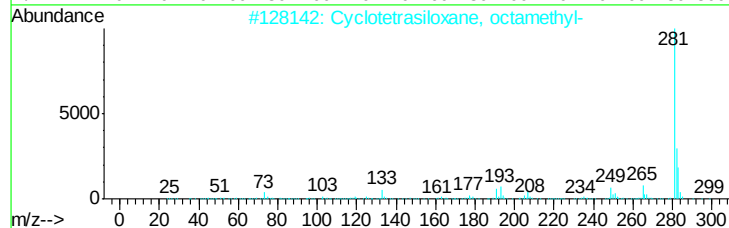
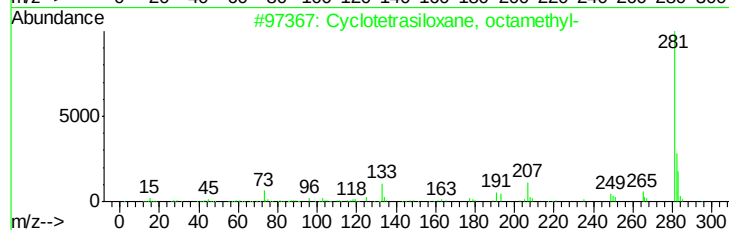
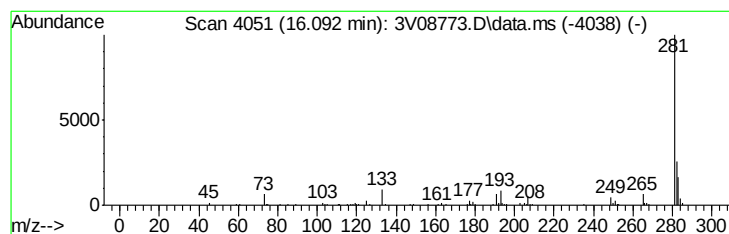
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 3 Cyclotetrasiloxane, octamet... Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.092	10.48 ug/l	364392	Chlorobenzene-d5	15.322

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Cyclotetrasiloxane, octamethyl-	296	C8H24O4Si4	000556-67-2	78
2			Cyclotetrasiloxane, octamethyl-	296	C8H24O4Si4	000556-67-2	46
3			Cyclotetrasiloxane, octamethyl-	296	C8H24O4Si4	000556-67-2	23
4			Benzoic acid, 3-methyl-2-trimeth...	296	C14H24O3Si2	1000153-57-1	40
5			6,7-Benzo-phenothiazine-5,5-dioxide	281	C16H11N02S	001225-11-2	9



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08773.D
Acq On : 2 Feb 2011 3:43 pm
Operator : DONC
Sample : D20806-2
Misc : MS1791,V3V484,,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Carbon dioxide	4.437	74.0	ug/l	1759090	1	11.895	1187920	50.0
Cyclotrisiloxan...	14.256	6.9	ug/l	241632	3	15.322	1739110	50.0
Cyclotetrasilox...	16.092	10.5	ug/l	364392	3	15.322	1739110	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08763A.D
Acq On : 2 Feb 2011 10:32 am
Operator : DONC
Sample : MB1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 03 07:48:54 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.894	168	632204	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.687	114	933583	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.318	117	829061	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.314	152	468833	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.289	102	73412	45.78	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	91.56%	
55) Toluene-d8	14.076	98	1119395	46.74	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.48%	
59) 4-Bromofluorobenzene	16.268	95	379199	42.33	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	84.66%	

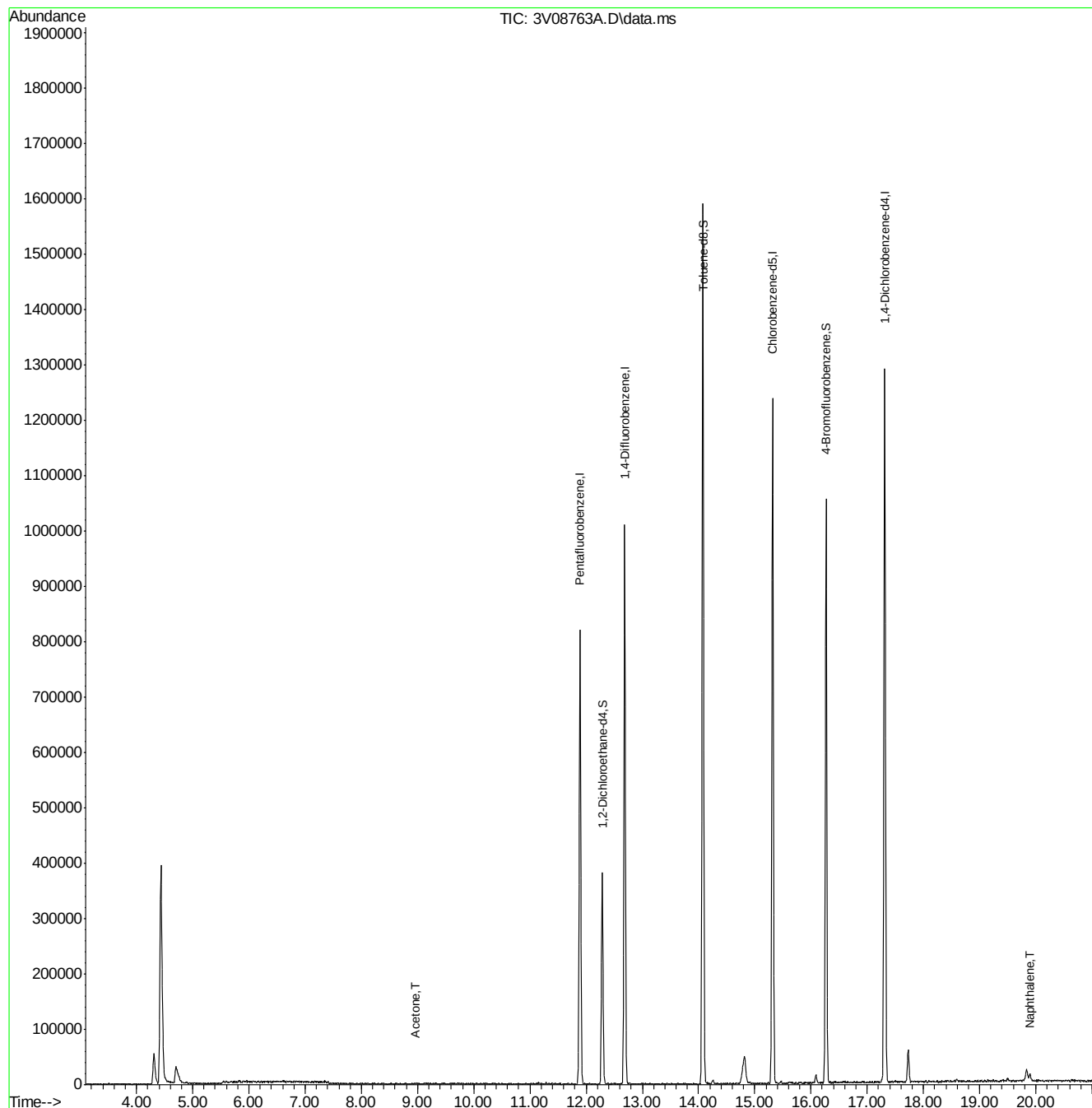
Target Compounds						Qvalue
14) Acetone	8.967	58	498	0.83	ug/l #	45
72) Naphthalene	19.893	128	16500	0.62	ug/l	100

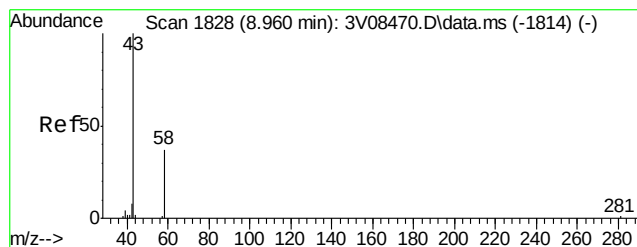
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08763A.D
Acq On : 2 Feb 2011 10:32 am
Operator : DONC
Sample : MB1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 3 Sample Multiplier: 1

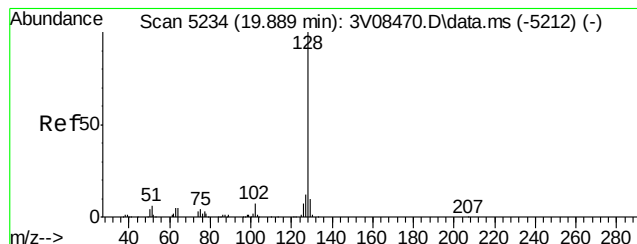
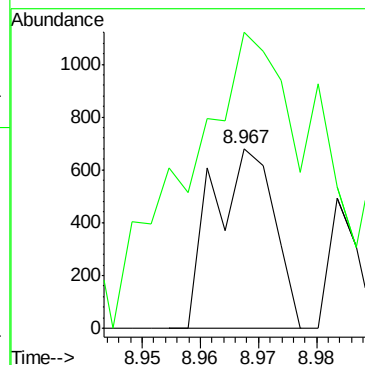
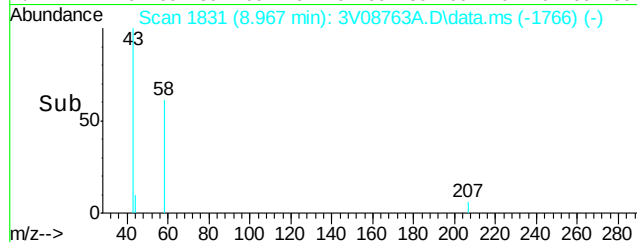
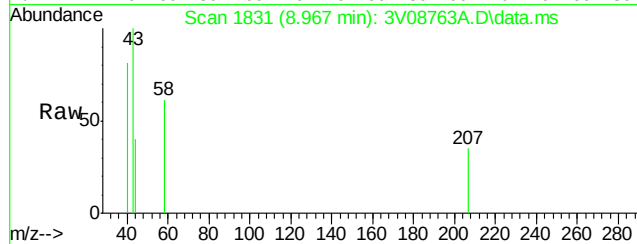
Quant Time: Feb 03 07:48:54 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration





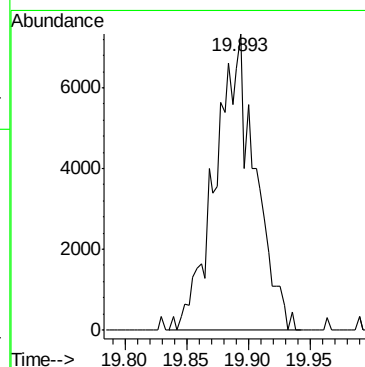
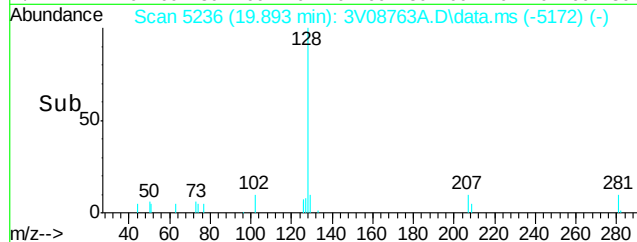
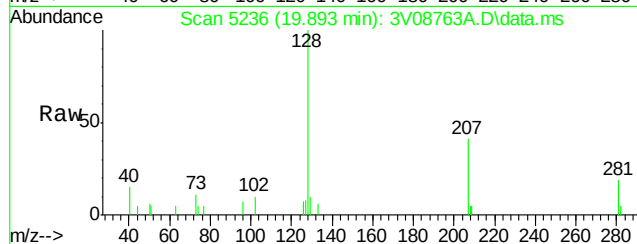
#14
Acetone
Concen: 0.83 ug/l
RT: 8.967 min Scan# 1831
Delta R.T. 0.008 min
Lab File: 3V08763A.D
Acq: 2 Feb 2011 10:32 am

Tgt Ion: 58 Resp: 498
Ion Ratio Lower Upper
58 100
43 392.8 267.1 307.1#



#72
Naphthalene
Concen: 0.62 ug/l
RT: 19.893 min Scan# 5236
Delta R.T. 0.005 min
Lab File: 3V08763A.D
Acq: 2 Feb 2011 10:32 am

Tgt Ion: 128 Resp: 16500



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08763A.D
Acq On : 2 Feb 2011 10:32 am
Operator : DONC
Sample : MB1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V08763A.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.312	364	380	402	rBV	55300	141134	4.87%	0.938%
2	4.433	402	418	440	rBV	393567	1052351	36.33%	6.997%
3	4.700	492	501	506	rBV2	29093	49954	1.72%	0.332%
4	11.891	2724	2742	2756	rBV2	820265	1565244	54.03%	10.408%
5	12.289	2851	2866	2881	rBV2	381390	757146	26.14%	5.034%
6	12.687	2975	2990	3007	rBV	1010686	1877061	64.79%	12.481%
7	14.076	3406	3423	3440	rBV2	1590349	2896966	100.00%	19.262%
8	15.318	3795	3810	3827	rBV	1237078	2202778	76.04%	14.647%
9	16.268	4092	4106	4121	rBV	1055512	1869367	64.53%	12.430%
10	17.310	4417	4431	4447	rVB	1286653	2454251	84.72%	16.319%
11	17.728	4547	4561	4576	rVB2	60095	128740	4.44%	0.856%
12	19.833	5207	5217	5226	rBV3	20285	44479	1.54%	0.296%

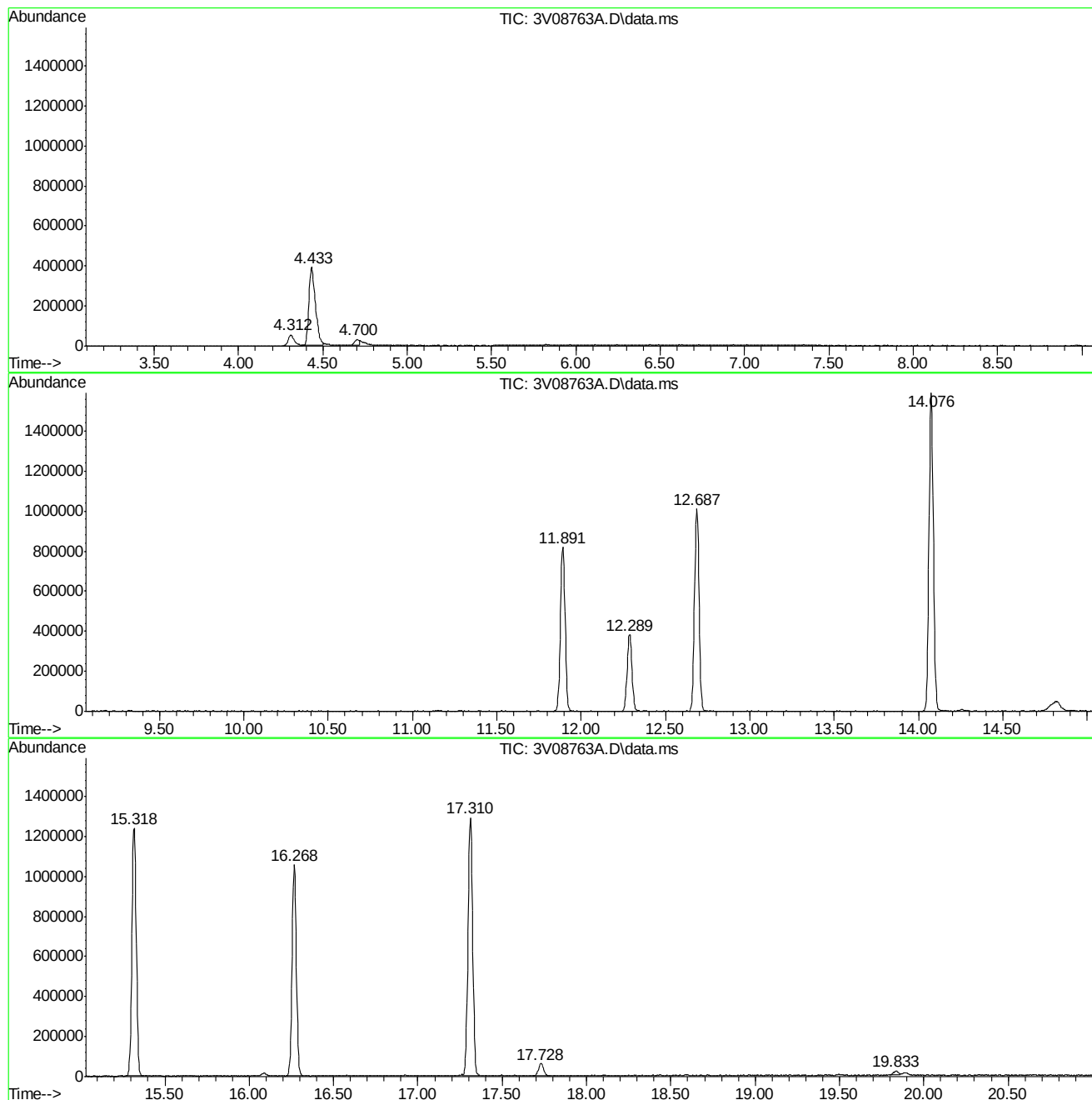
Sum of corrected areas: 15039471

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08763A.D
Acq On : 2 Feb 2011 10:32 am
Operator : DONC
Sample : MB1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08763A.D
Acq On : 2 Feb 2011 10:32 am
Operator : DONC
Sample : MB1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 3 Sample Multiplier: 1

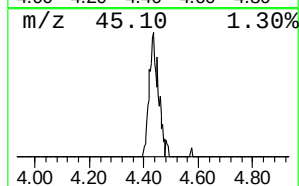
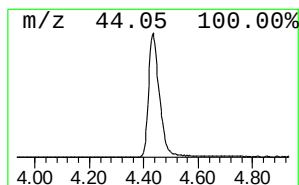
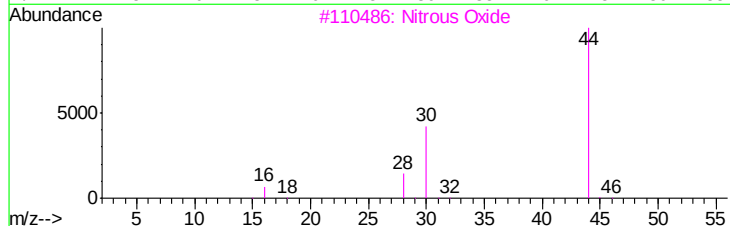
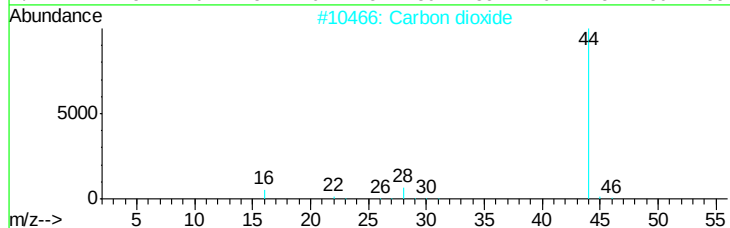
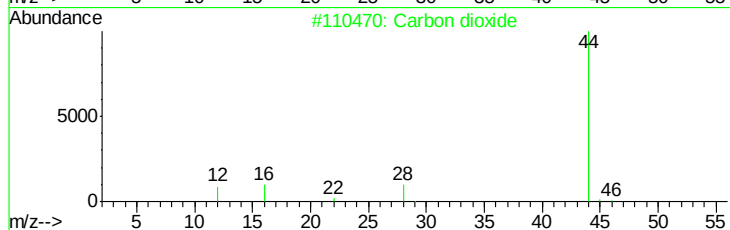
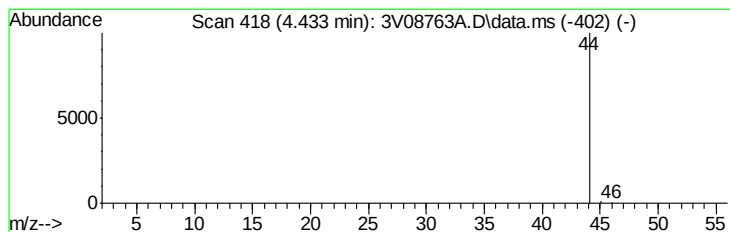
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.433	33.62 ug/l	1052350	Pentafluorobenzene	11.894

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3020211.S\
Data File : 3V08763A.D
Acq On : 2 Feb 2011 10:32 am
Operator : DONC
Sample : MB1
Misc : MS1791,V3V484,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---
					# RT Resp Conc
Carbon dioxide	4.433	33.6	ug/l	1052350	1 11.894 1565240 50.0

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB501-MB	GB9316.D	1	02/03/11	BR	n/a	n/a	GGB501

The QC reported here applies to the following samples:

Method: SW846 8015B

D20806-1, D20806-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	104% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB501-BS	GB9317.D	1	02/03/11	BR	n/a	n/a	GGB501

The QC reported here applies to the following samples: Method: SW846 8015B

D20806-1, D20806-2

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.88	85	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	117%	60-140%

7.2.1
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D20806
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D20806-1MS	GB9319.D	1	02/03/11	BR	n/a	n/a	GGB501
D20806-1MSD	GB9320.D	1	02/03/11	BR	n/a	n/a	GGB501
D20806-1	GB9318.D	1	02/03/11	BR	n/a	n/a	GGB501

The QC reported here applies to the following samples: Method: SW846 8015B

D20806-1, D20806-2

CAS No.	Compound	D20806-1 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	1.89	86	1.88	85	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D20806-1	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	104%	99%	60-140%

7.3.1
7

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020311\GB9318.D\FID1A.CH Vial: 5
Signal #2 : Y:\1\DATA\020311\GB9318.D\FID2B.CH
Acq On : 3 Feb 2011 2:06 pm Operator: BrianR
Sample : D20806-1 Inst : GC/MS Ins
Misc : GC1647,GGB501,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 04 08:28:13 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Feb 04 08:27:46 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

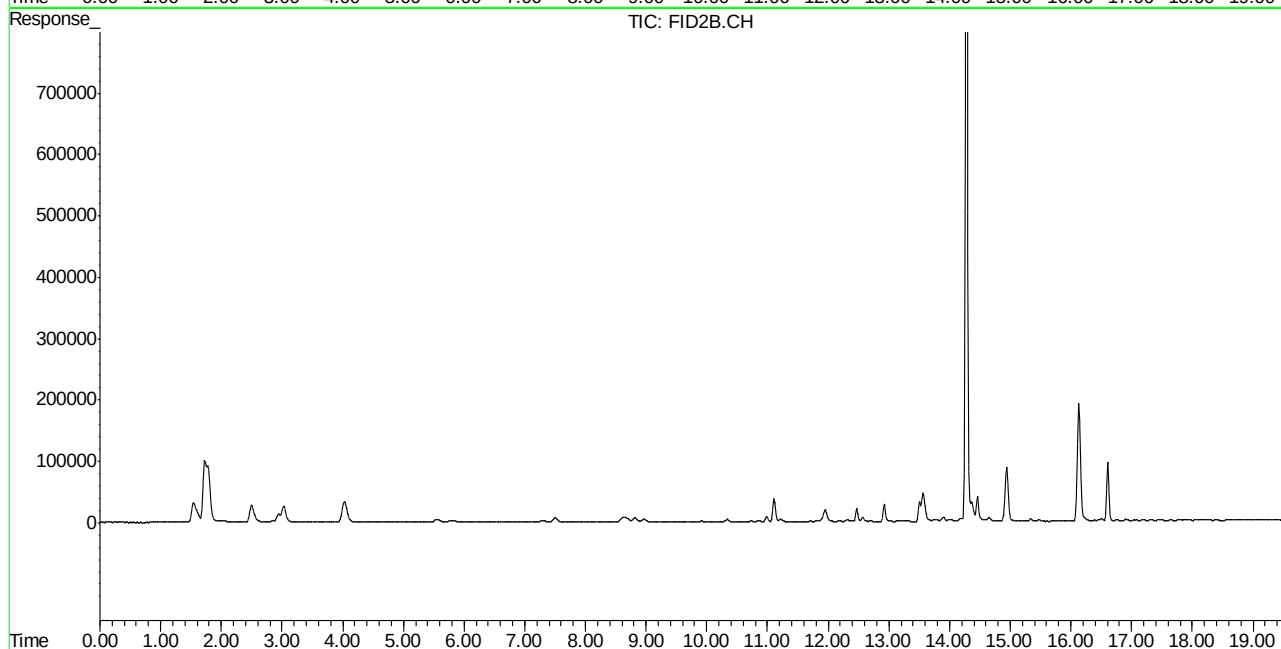
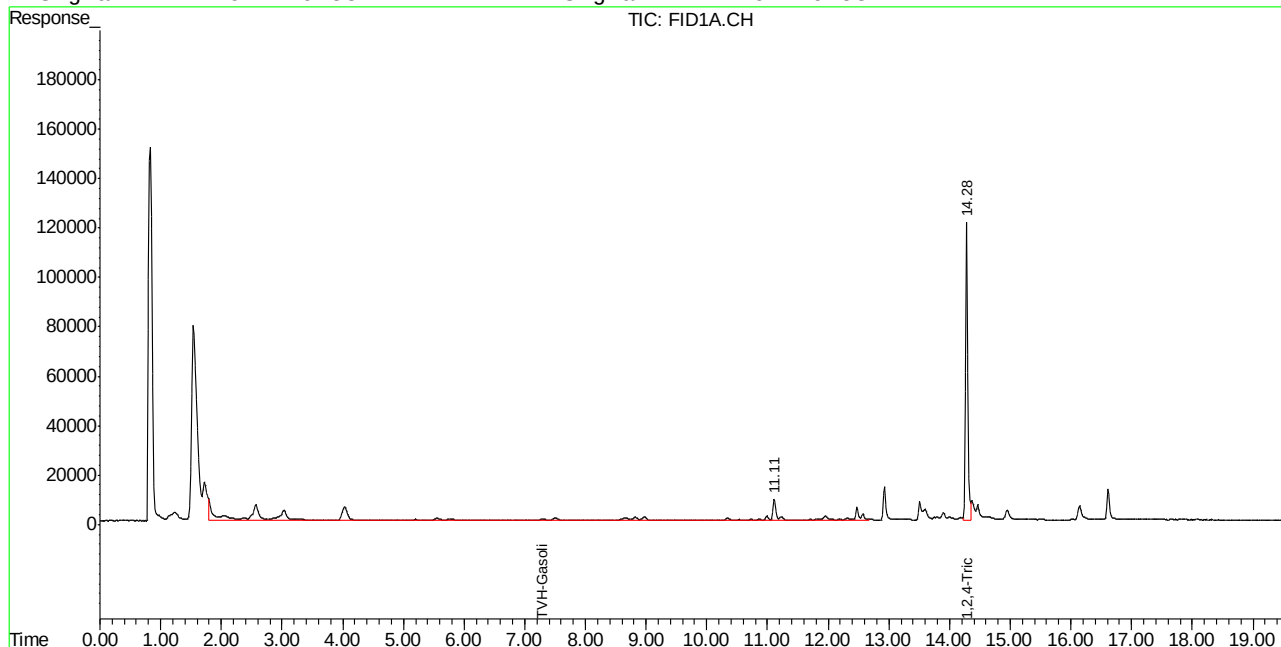
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.28	3008756	98.873 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	7.27	4049409	0.063 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T	Benzene	0.00	0	N.D. ug/L	d
6) T	Toluene	0.00	0	N.D. ug/L	d
7) T	Ethylbenzene	0.00	0	N.D. ug/L	d
8) T	m,p-Xylene	0.00	0	N.D. ug/L	d
9) T	o-Xylene	0.00	0	N.D. ug/L	d
11) T	Naphthalene	0.00	0	N.D. ug/L	d

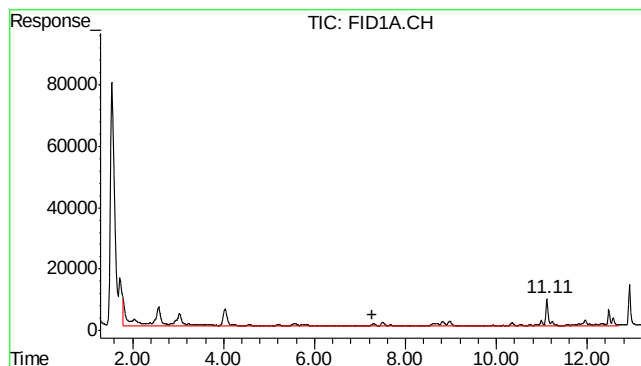
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020311\GB9318.D\FID1A.CH Vial: 5
Signal #2 : Y:\1\DATA\020311\GB9318.D\FID2B.CH
Acq On : 3 Feb 2011 2:06 pm Operator: BrianR
Sample : D20806-1 Inst : GC/MS Ins
Misc : GC1647,GGB501,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 4 7:32 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Feb 04 08:27:46 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

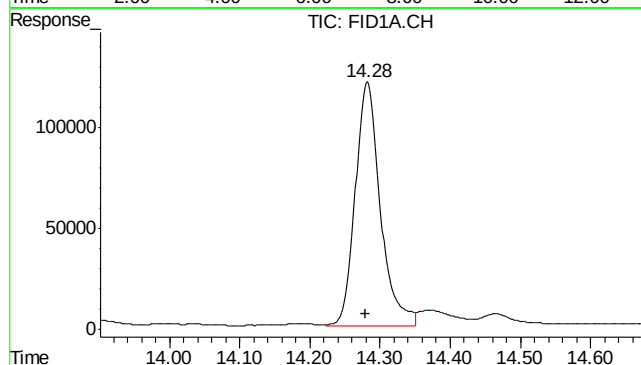
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





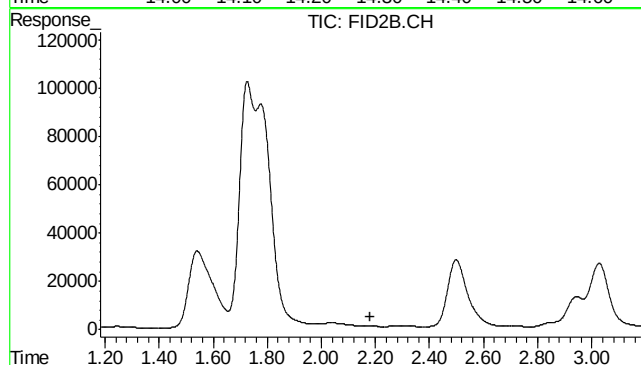
#1 TVH-Gasoline

R.T.: 7.270 min
Delta R.T.: 0.000 min
Response: 4049409
Conc: 0.06 mg/L m



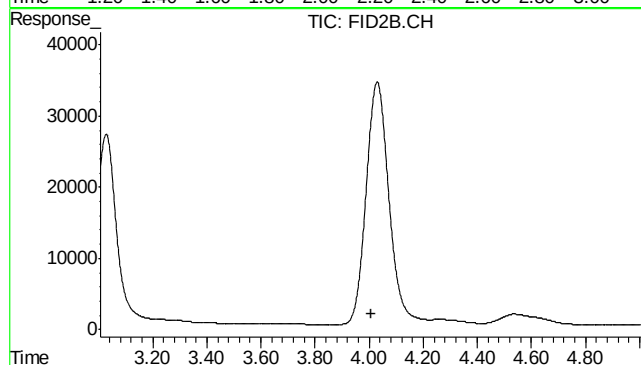
#2 1,2,4-Trichlorobenzene

R.T.: 14.282 min
Delta R.T.: 0.002 min
Response: 3008756
Conc: 98.87 %



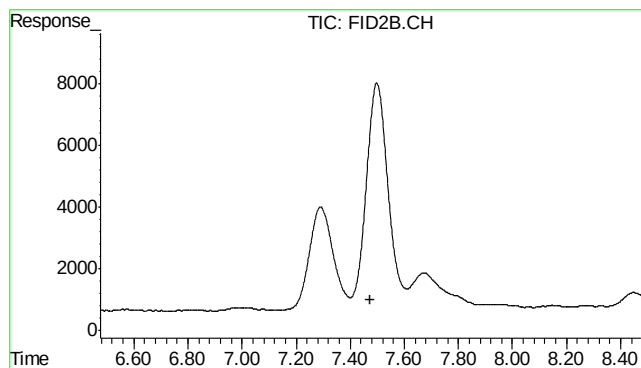
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.182 min
Response: 0
Conc: N.D.

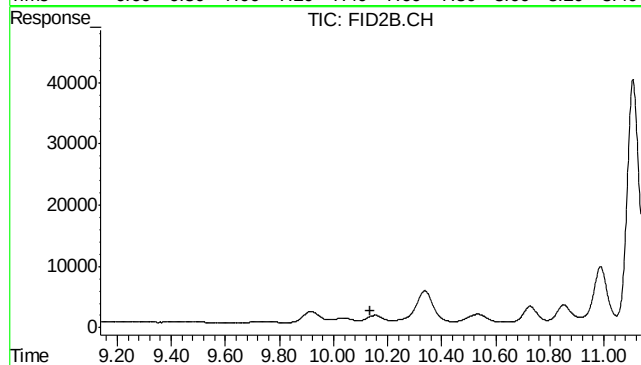


#5 Benzene

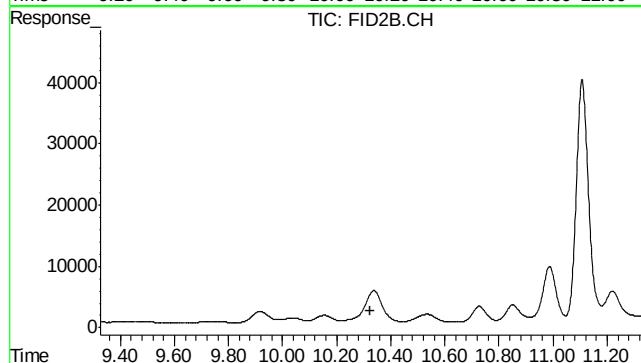
R.T.: 0.000 min
Exp R.T.: 4.006 min
Response: 0
Conc: N.D.



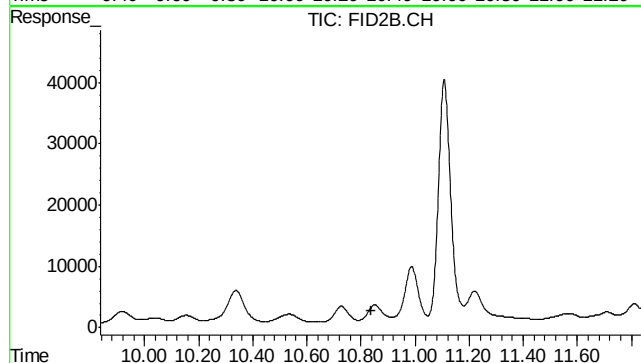
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 7.475 min
 Response: 0
 Conc: N.D.



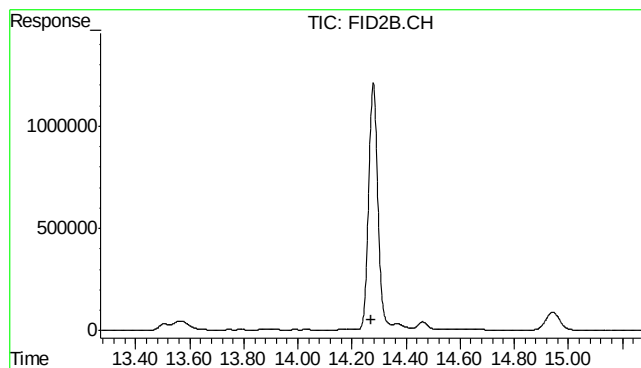
#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.137 min
 Response: 0
 Conc: N.D.



#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.325 min
 Response: 0
 Conc: N.D.

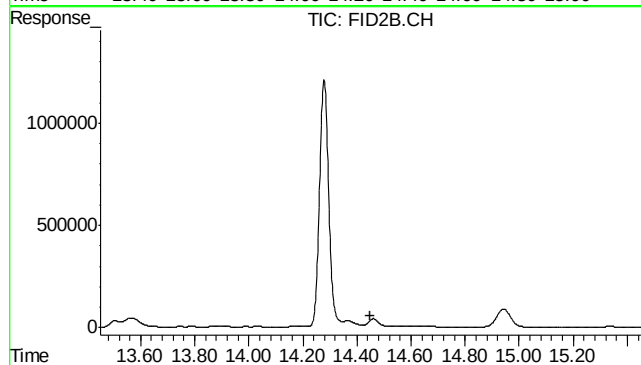


#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.837 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.270 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.451 min
Response: 0
Conc: N.D.

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020311\GB9321.D\FID1A.CH Vial: 8
Signal #2 : Y:\1\DATA\020311\GB9321.D\FID2B.CH
Acq On : 3 Feb 2011 3:54 pm Operator: BrianR
Sample : D20806-2 Inst : GC/MS Ins
Misc : GC1647,GGB501,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 04 08:28:22 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Feb 04 08:27:46 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

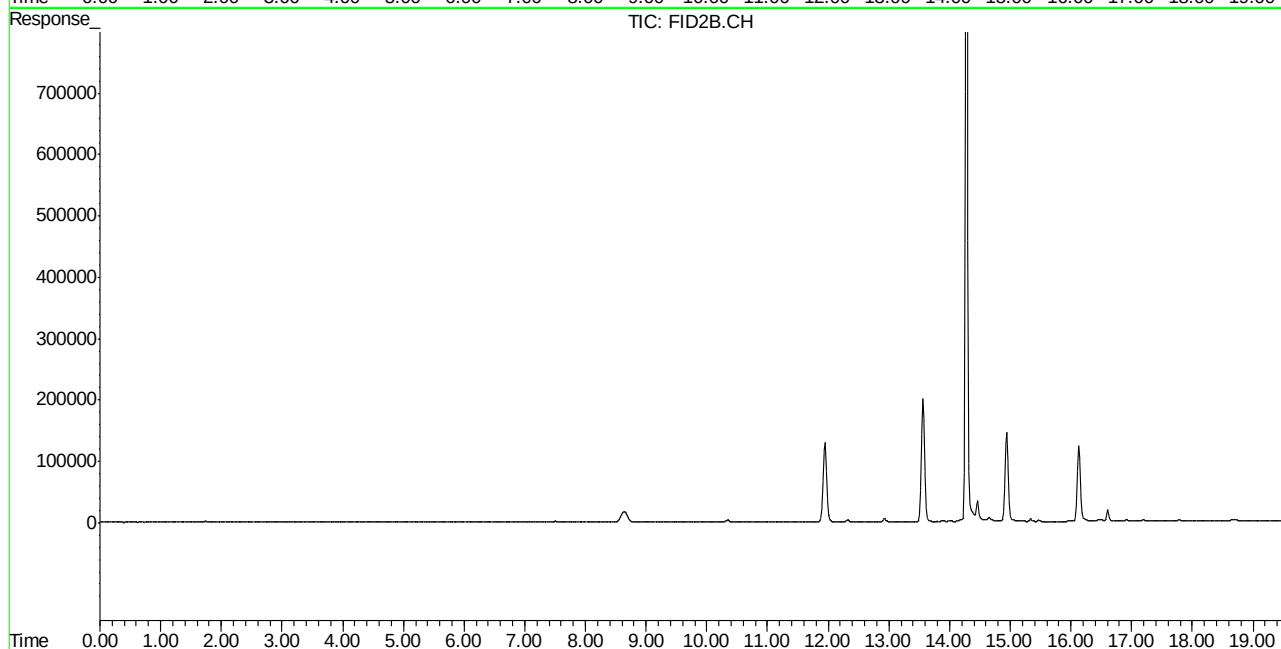
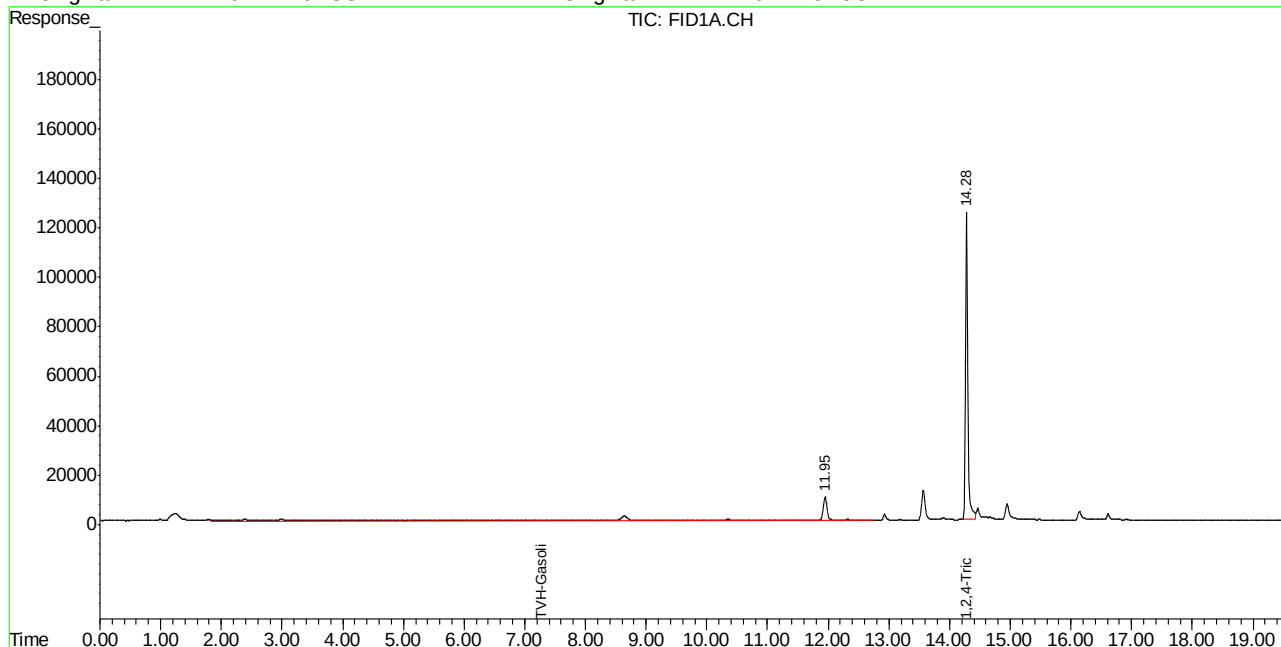
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.28	3249521	106.785 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	7.27	1329801	0.021 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T	Benzene	0.00	0	N.D. ug/L	d
6) T	Toluene	0.00	0	N.D. ug/L	d
7) T	Ethylbenzene	0.00	0	N.D. ug/L	d
8) T	m,p-Xylene	0.00	0	N.D. ug/L	d
9) T	o-Xylene	0.00	0	N.D. ug/L	d
11) T	Naphthalene	0.00	0	N.D. ug/L	d

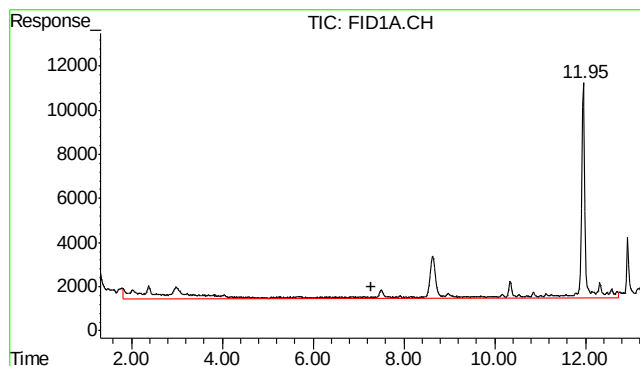
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020311\GB9321.D\FID1A.CH Vial: 8
Signal #2 : Y:\1\DATA\020311\GB9321.D\FID2B.CH
Acq On : 3 Feb 2011 3:54 pm Operator: BrianR
Sample : D20806-2 Inst : GC/MS Ins
Misc : GC1647,GGB501,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 4 7:33 2011 Quant Results File: TB460GB460.RES

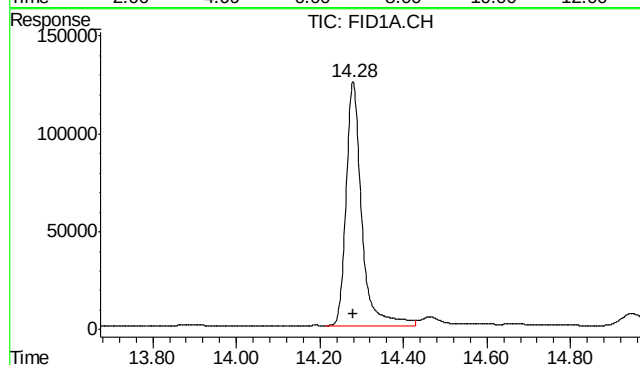
Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Feb 04 08:27:46 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

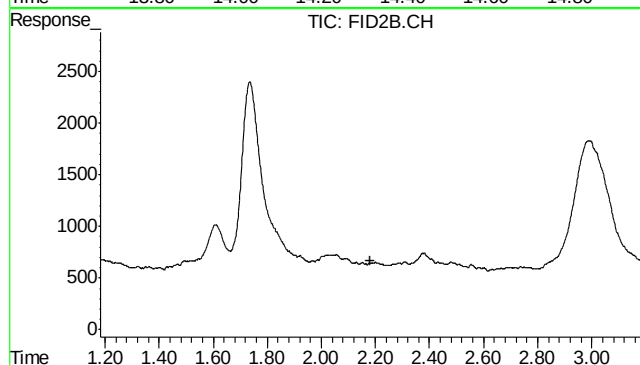




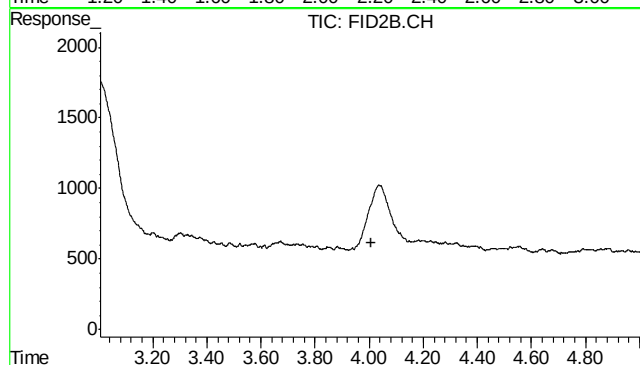
#1 TVH-Gasoline
 R.T.: 7.270 min
 Delta R.T.: 0.000 min
 Response: 1329801
 Conc: 0.02 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.280 min
 Delta R.T.: 0.000 min
 Response: 3249521
 Conc: 106.79 %

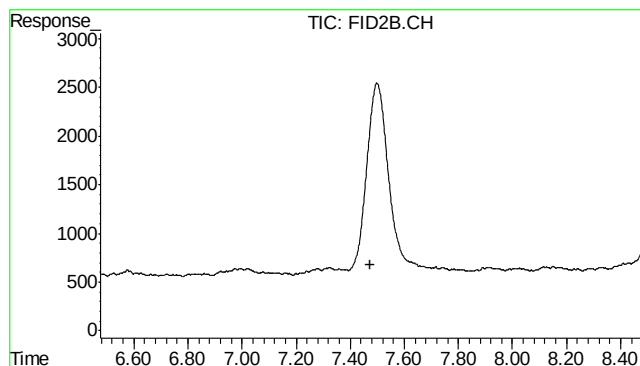


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.182 min
 Response: 0
 Conc: N.D.

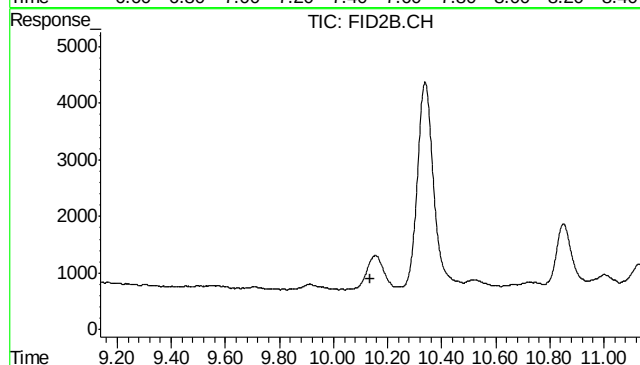


#5 Benzene
 R.T.: 0.000 min
 Exp R.T.: 4.006 min
 Response: 0
 Conc: N.D.

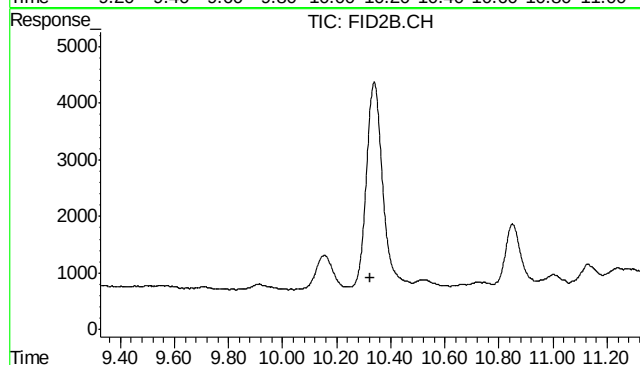
8.12
8



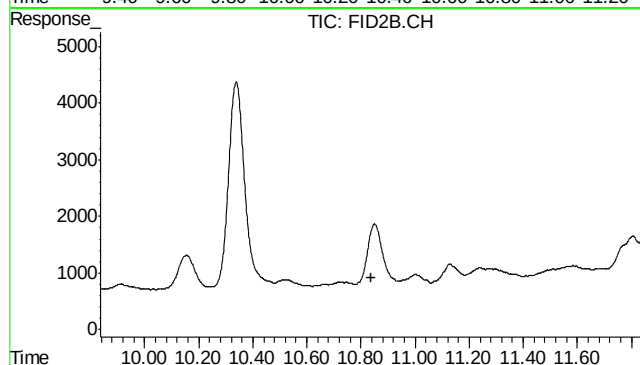
#6 Toluene
 R.T.: 0.000 min
 Exp R.T. : 7.475 min
 Response: 0
 Conc: N.D.



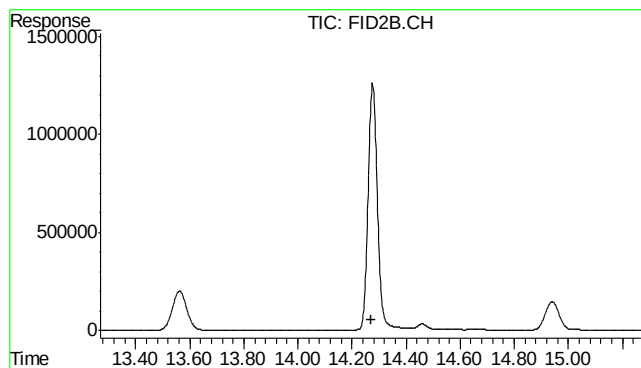
#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T. : 10.137 min
 Response: 0
 Conc: N.D.



#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T. : 10.325 min
 Response: 0
 Conc: N.D.

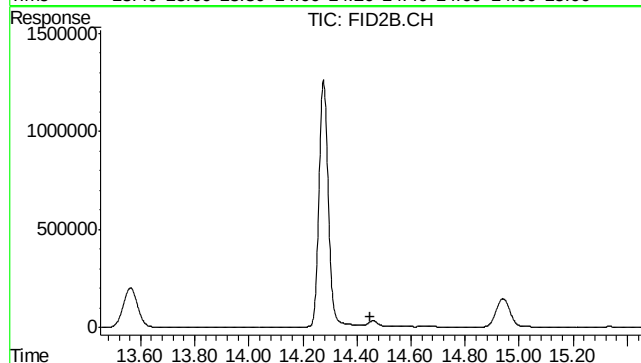


#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T. : 10.837 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.270 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.451 min
 Response: 0
 Conc: N.D.

8.1.2
8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020311\GB9316.D\FID1A.CH Vial: 3
 Signal #2 : Y:\1\DATA\020311\GB9316.D\FID2B.CH
 Acq On : 3 Feb 2011 12:54 pm Operator: BrianR
 Sample : MB, W Inst : GC/MS Ins
 Misc : GC1647,GGB501,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Feb 04 08:28:07 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Feb 04 08:27:46 2011
 Response via : Initial Calibration
 DataAcq Meth : TVB4.M

Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.28	3167574	104.092 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	7.27	801258	0.012 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T	Benzene	0.00	0	N.D. ug/L	d
6) T	Toluene	0.00	0	N.D. ug/L	d
7) T	Ethylbenzene	0.00	0	N.D. ug/L	d
8) T	m,p-Xylene	0.00	0	N.D. ug/L	d
9) T	o-Xylene	0.00	0	N.D. ug/L	d
11) T	Naphthalene	0.00	0	N.D. ug/L	d

(f)=RT Delta > 1/2 Window

GB9316.D TB460GB460.M

Fri Feb 04 08:39:35 2011

(m)=manual int.

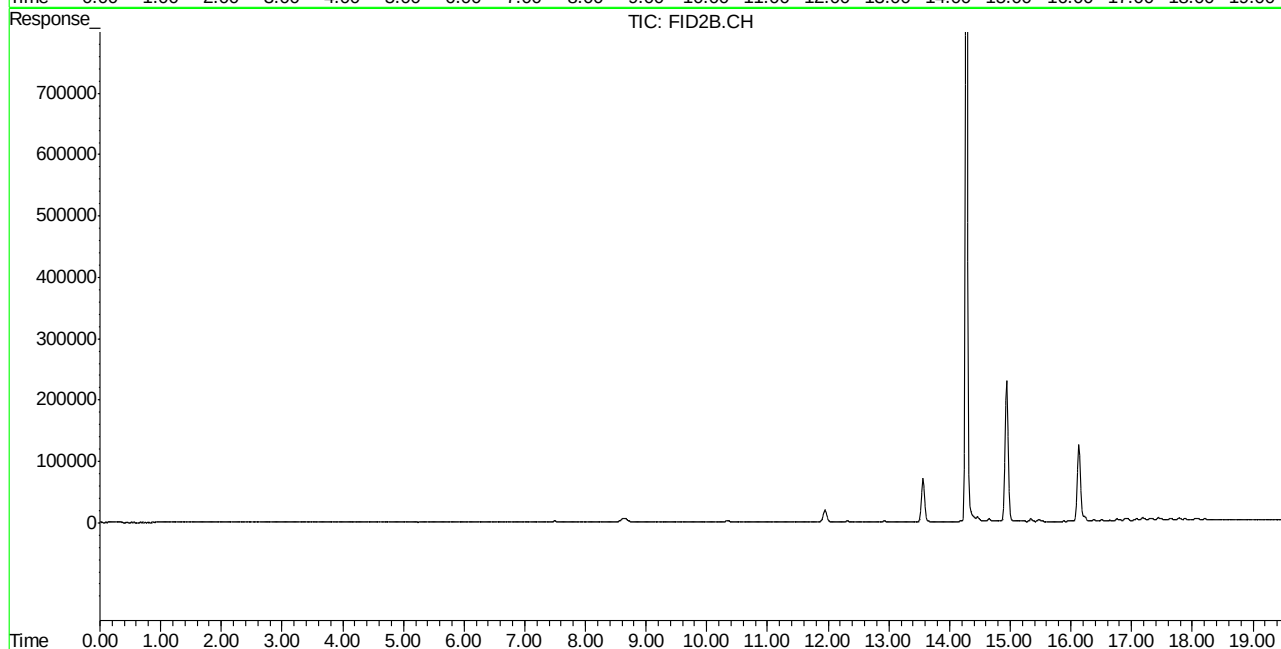
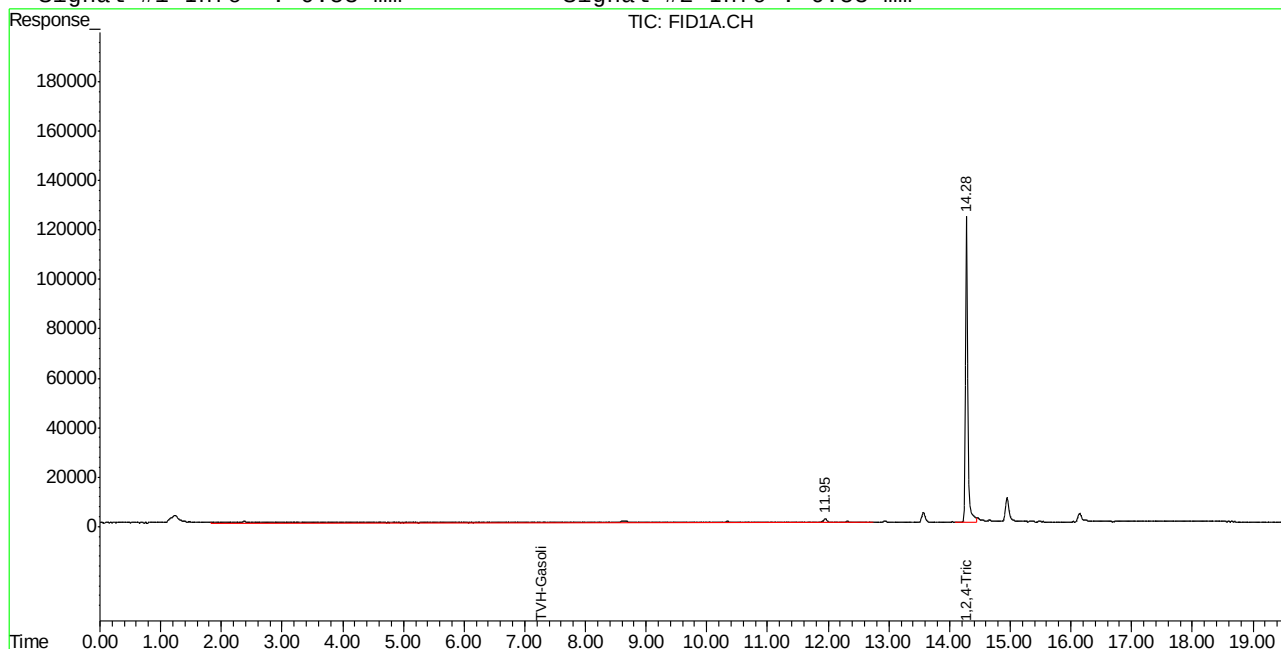
GC

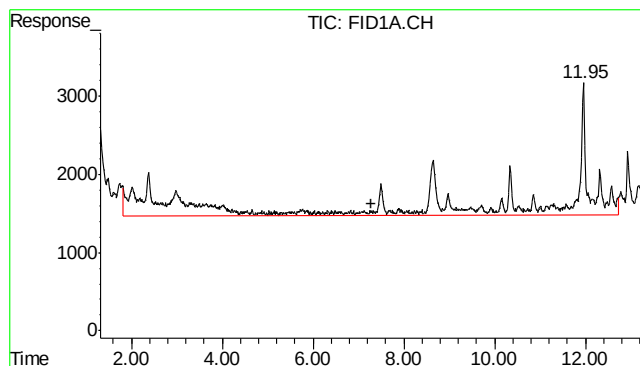
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020311\GB9316.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\020311\GB9316.D\FID2B.CH
Acq On : 3 Feb 2011 12:54 pm Operator: BrianR
Sample : MB, W Inst : GC/MS Ins
Misc : GC1647,GGB501,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 4 7:31 2011 Quant Results File: TB460GB460.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB460GB460.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Feb 04 08:27:46 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

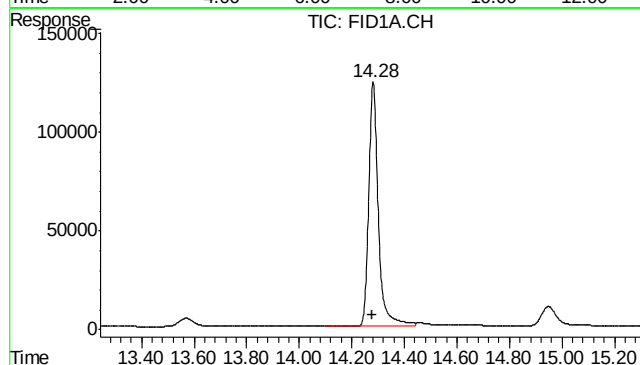
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





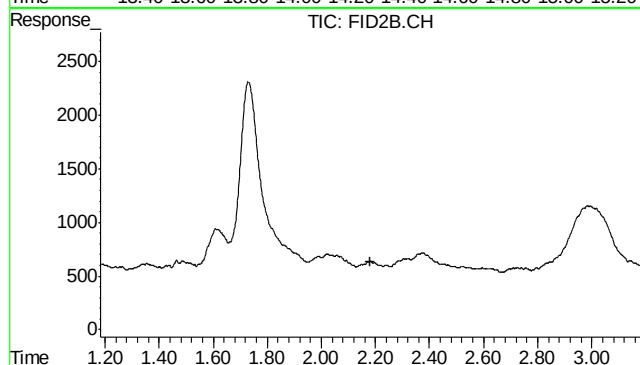
#1 TVH-Gasoline

R.T.: 7.270 min
Delta R.T.: 0.000 min
Response: 801258
Conc: 0.01 mg/L m



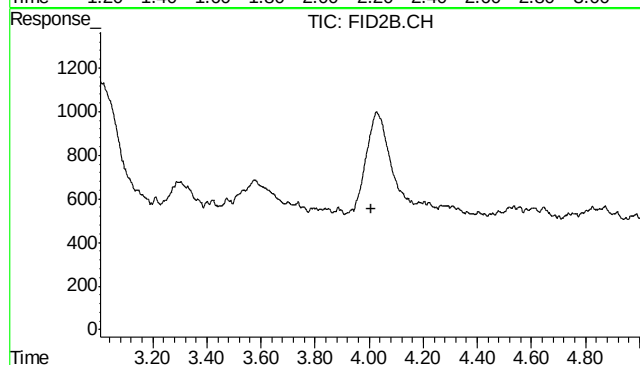
#2 1,2,4-Trichlorobenzene

R.T.: 14.281 min
Delta R.T.: 0.001 min
Response: 3167574
Conc: 104.09 %



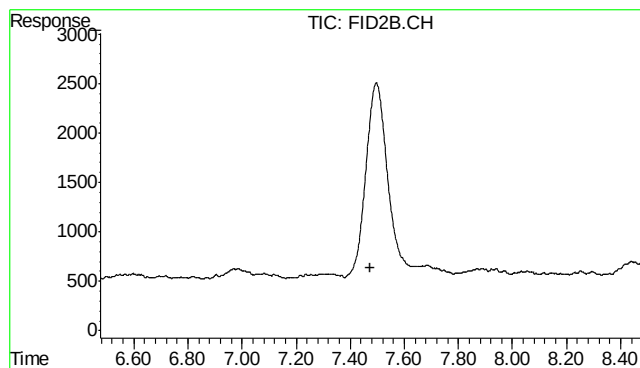
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.182 min
Response: 0
Conc: N.D.



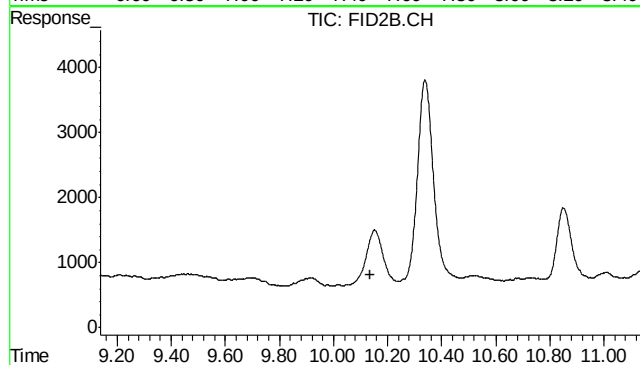
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.006 min
Response: 0
Conc: N.D.



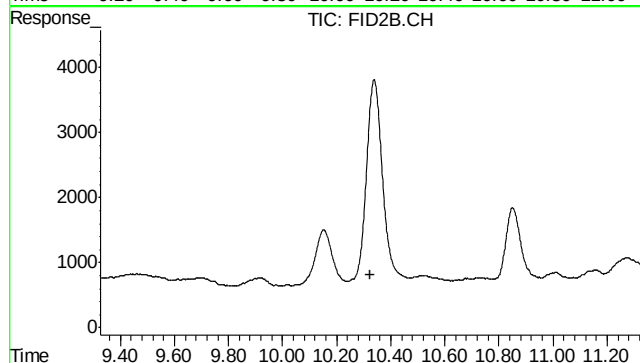
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 7.475 min
Response: 0
Conc: N.D.



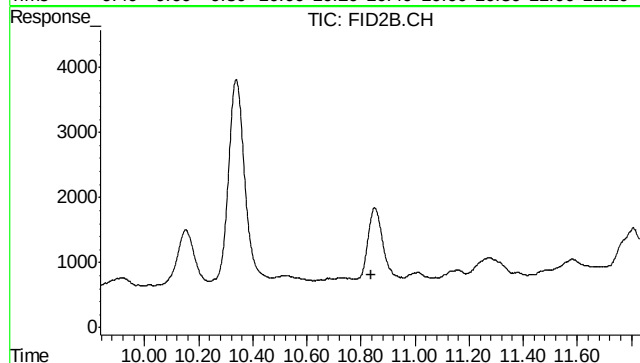
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.137 min
Response: 0
Conc: N.D.



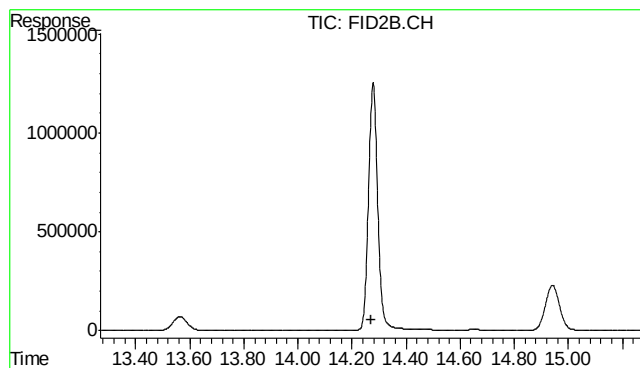
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.325 min
Response: 0
Conc: N.D.



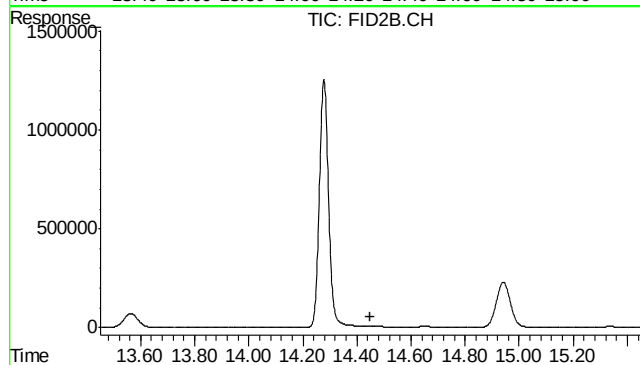
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.837 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.270 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.451 min
Response: 0
Conc: N.D.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/02/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	7	10		
Antimony	30	1.7	1.4		
Arsenic	25	2.8	3.6		
Barium	10	.14	.46	0.20	<10
Beryllium	10	1.4	.57		
Boron	50	3.5	1.4		
Cadmium	10	.22	.46		
Calcium	400	17	51	1.8	<400
Chromium	10	.27	.18		
Cobalt	5.0	.48	.4		
Copper	5.0	1.6	.76		
Iron	70	7.7	8	5.7	<70
Lead	50	1.3	1.2		
Lithium	2.0	.76	1.6		
Magnesium	200	5.8	13	8.2	<200
Manganese	5.0	.21	.3	0.0	<5.0
Molybdenum	10	.41	.64		
Nickel	30	.38	.3		
Phosphorus	100	15	15		
Potassium	1000	380	140	146	<1000
Selenium	50	2.8	1.5		
Silicon	50	12	13		
Silver	30	.98	.3		
Sodium	400	230	55	191	<400
Strontium	5.0	.091	.22	-0.10	<5.0
Thallium	10	3.1	2.3		
Tin	50	14	9.9		
Titanium	10	.098	.15		
Uranium	50	2.2	2.5		
Vanadium	10	.27	.25		
Zinc	30	.76	3.5		

Associated samples MP3958: D20806-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/02/11

Metal	D20725-1 Original MS		SpikeLot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	21.7	2030	2000	100.4	70-130
Beryllium					
Boron					
Cadmium					
Calcium	13200	47800	25000	138.4N(a)	70-130
Chromium	anr				
Cobalt					
Copper					
Iron	2440	7350	5000	98.2	70-130
Lead					
Lithium					
Magnesium	7480	41600	25000	136.5N(a)	70-130
Manganese	97.3	584	500	97.3	70-130
Molybdenum					
Nickel					
Phosphorus					
Potassium	220000	262000	25000	168.0(b)	70-130
Selenium					
Silicon					
Silver	anr				
Sodium	33300	66200	25000	137.6N(a)	70-130
Strontium	145	670	500	105.0	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP3958: D20806-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- (b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/02/11

Metal	D20725-1 Original	MSD	Spikelet MPICALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	21.7	2020	2000	99.9	0.5	20
Beryllium						
Boron						
Cadmium						
Calcium	13200	39100	25000	103.6	20.0	20
Chromium	anr					
Cobalt						
Copper						
Iron	2440	7280	5000	96.8	1.0	20
Lead						
Lithium						
Magnesium	7480	33600	25000	104.5	21.3 (a)	20
Manganese	97.3	580	500	96.5	0.7	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	220000	247000	25000	108.0	5.9	20
Selenium						
Silicon						
Silver	anr					
Sodium	33300	58000	25000	104.8	13.2	20
Strontium	145	664	500	103.8	0.9	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP3958: D20806-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) High RPD due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/02/11

Metal	BSP Result	Spike lot MPICALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	2000	2000	100.0	85-115
Beryllium				
Boron				
Cadmium				
Calcium	26800	25000	107.2	85-115
Chromium	anr			
Cobalt				
Copper				
Iron	4950	5000	99.0	85-115
Lead				
Lithium				
Magnesium	26200	25000	104.8	85-115
Manganese	501	500	100.2	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	27200	25000	108.8	85-115
Selenium				
Silicon				
Silver	anr			
Sodium	26200	25000	104.8	85-115
Strontium	520	500	104.0	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP3958: D20806-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP3958
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO ₃	GN8160	5.0	2.9	mg/l	100	102	101.6	90-110%
Chloride	GP3713/GN8130	0.50	0.21	mg/l	20	18.9	94.5	90-110%
Hydrogen Sulfide	GN8142	0.50	<0.50	mg/l	2.74	2.8	102.2	60-120%
Iron, Ferrous	GN8125	0.10	0.0	mg/l	1.0	1.0	100.0	85-115%
Nitrogen, Ammonia	GP3714/GN8135	0.10	<0.10	mg/l	20	19.4	97.0	90-110%
Nitrogen, Nitrate	GP3713/GN8130	0.045	0.0	mg/l	4.52	4.39	97.2	90-110%
Nitrogen, Nitrite	GP3713/GN8130	0.061	0.0	mg/l	6.09	6.11	100.3	90-110%
Solids, Total Dissolved	GN8132	10	0.0	mg/l	400	415	103.8	90-110%
Sulfate	GP3713/GN8130	0.50	0.0	mg/l	30	28.1	93.7	90-110%

Associated Samples:

Batch GN8125: D20806-1F

Batch GN8132: D20806-1

Batch GN8142: D20806-1

Batch GN8160: D20806-1

Batch GP3713: D20806-1

Batch GP3714: D20806-1

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN8160	D20821-2	mg/l	31.8	31.6	0.8	0-20%
Hydrogen Sulfide	GN8142	D20808-1	mg/l	<0.50	<0.50	0.0	0-20%
Iron, Ferrous	GN8125	D20806-1F	mg/l	0.0	0.0	0.0	0-20%
Nitrogen, Ammonia	GP3714/GN8135	D20738-2	mg/l	1.6	1.7	1.2	0-20%
Solids, Total Dissolved	GN8132	D20780-1	mg/l	366	388	5.8	0-25%

Associated Samples:

Batch GN8125: D20806-1F

Batch GN8132: D20806-1

Batch GN8142: D20806-1

Batch GN8160: D20806-1

Batch GP3714: D20806-1

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN8160	D20821-2	mg/l	31.8	100	131	99.6	80-120%
Chloride	GP3713/GN8130	D20792-4	mg/l	15.8	20	36.3	102.5	80-120%
Hydrogen Sulfide	GN8142	D20812-1	mg/l	<0.50	2.74	<0.50	85.0	60-120%
Iron, Ferrous	GN8125	D20806-1F	mg/l	0.0	1.0	0.0	0.0* (a)	75-125%
Nitrogen, Ammonia	GP3714/GN8135	D20738-2	mg/l	1.6	10	11.3	96.8	80-120%
Nitrogen, Nitrate	GP3713/GN8130	D20792-4	mg/l	0.78	1.13	1.9	95.6	80-120%
Nitrogen, Nitrate	GP3713/GN8130	D20792-4	mg/l	0.82	1.13	1.9	95.6	80-120%
Nitrogen, Nitrite	GP3713/GN8130	D20792-4	mg/l	0.0	0.609	0.62	101.8	80-120%
Nitrogen, Nitrite	GP3713/GN8130	D20792-4	mg/l	0.0	0.609	0.62	101.8	80-120%
Sulfate	GP3713/GN8130	D20792-4	mg/l	152	100	252	100.0	80-120%

Associated Samples:

Batch GN8125: D20806-1F

Batch GN8142: D20806-1

Batch GN8160: D20806-1

Batch GP3713: D20806-1

Batch GP3714: D20806-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Zero recovery due to matrix interference. Spike was treated the same as the sample, with similar results.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D20806
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN8160	D20821-2	mg/l	31.8	100	128	2.8	20%
Chloride	GP3713/GN8130	D20792-4	mg/l	15.8	20	36.4	0.3	20%
Nitrogen, Ammonia	GP3714/GN8135	D20738-2	mg/l	1.6	10	11.7	3.6	
Nitrogen, Nitrate	GP3713/GN8130	D20792-4	mg/l	0.78	1.13	2.0	5.1	20%
Nitrogen, Nitrate	GP3713/GN8130	D20792-4	mg/l	0.82	1.13	2.0	5.1	20%
Nitrogen, Nitrite	GP3713/GN8130	D20792-4	mg/l	0.0	0.609	0.63	1.6	20%
Nitrogen, Nitrite	GP3713/GN8130	D20792-4	mg/l	0.0	0.609	0.63	1.6	20%
Sulfate	GP3713/GN8130	D20792-4	mg/l	152	100	254	0.8	20%

Associated Samples:

Batch GN8160: D20806-1

Batch GP3713: D20806-1

Batch GP3714: D20806-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



03/02/11

Technical Report for

Geotrans, Inc.

Garfield County

Accutest Job Number: D21212

Sampling Date: 02/21/11

Report to:

Geotrans, Inc.
363 Centennial Parkway, Suite 210
Louisville, CO 80027
bshine@geotransinc.com; david.bohmann@geotransinc.com
ATTN: Brendan Shine

Total number of pages in report: 93



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'J. Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

Geotrans, Inc.

Job No: D21212

Garfield County

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D21212-1	02/21/11	16:37	LTBD 02/22/11	AQ	Ground Water	MW-3B_022111
D21212-1F	02/21/11	16:37	LTBD 02/22/11	AQ	Groundwater Filtered	MW-3B_022111
D21212-2	02/21/11	00:00	LTBD 02/22/11	AQ	Trip Blank Water	TB-04_022111

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Geotrans, Inc.

Job No D21212

Site: Garfield County

Report Dat 3/2/2011 1:48:26 PM

On 02/22/2011, one (1) sample, one (1) Trip Blank, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 4.7°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D21212 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: V3V511

- All samples were analyzed within the recommended method holding time.
- Samples D21207-15MS and D21207-15MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The blank spike (BS) recovery of Vinyl Acetate is outside control limits.
- The matrix spike and matrix spike duplicate (MS) recoveries of Vinyl Acetate are outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.
- The matrix spike and matrix spike duplicate (MS) recoveries of 2-Chloroethyl vinyl ether are outside control limits. Recovery of 2-Chloroethyl vinyl ether is affected by sample preservation.

Volatiles by GC By Method SW846 8015B

Matrix AQ	Batch ID: GGA568

- All samples were analyzed within the recommended method holding time.
- Samples D21212-1MS and D21212-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Metals By Method EPA 200.7

Matrix AQ	Batch ID: MP4086

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21272-21MS and D21272-21MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ	Batch ID: GP3837

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21204-1MS and D21204-1MSD were used as the QC samples for the anion analysis.
- Sample D21212-1 for Nitrate-N and Nitrite-N: The reporting limit (RL) was raised due to matrix interference.

Wet Chemistry By Method HACH 8146

Matrix AQ

Batch ID: GN8395

- The method blank for this batch meets method specific criteria.
- Sample D21212-1FDUP was used as the QC sample for the Ferrous Iron analysis.
- The following sample was run outside of holding time for method HACH 8146: D21212-1F.
- The duplicate RPD for Ferrous Iron is outside control limits for sample GN8395-D1. The RPD is acceptable due to low duplicate and sample concentrations.
- Sample D21212-1F for Ferrous Iron: Sample dilution was required due to matrix interference.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ

Batch ID: R6343

- The data for SM18 3500FED M meets quality control requirements.
- The following sample was run outside of holding time for method SM18 3500FED M: D21212-1F.
- Ferric Iron: Calculated as: (Iron) - (Ferrous Iron)

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN8421

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21235-3DUP, D21235-3MS, and D21235-3MSD were used as the QC samples for the Total Alkalinity, as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN8398

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Sample D21212-1DUP was used as the QC sample for the Total Dissolved Solids analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ

Batch ID: GN8424

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21269-1DUP and D21269-2MS were used as the QC samples for the Hydrogen Sulfide analysis.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ

Batch ID: GP3866

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21235-1DUP, D21235-1MS, and D21235-1MSD were used as the QC samples for the Ammonia-N analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: MW-3B_022111

Lab Sample ID: D21212-1

Date Sampled: 02/21/11

Matrix: AQ - Ground Water

Date Received: 02/22/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V09175.D	1	02/25/11	DC	n/a	n/a	V3V511
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	100	10	4.0	ug/l	
71-43-2	Benzene	1.2	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	4.7	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	32.6	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3B_022111**Lab Sample ID:** D21212-1**Date Sampled:** 02/21/11**Matrix:** AQ - Ground Water**Date Received:** 02/22/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	96%		63-130%
2037-26-5	Toluene-D8	91%		68-130%
460-00-4	4-Bromofluorobenzene	84%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.43	19	ug/l	JN
115-11-7	1-Propene, 2-methyl-	5.84	8.8	ug/l	JN
	Total TIC, Volatile		8.8	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3B_022111	Date Sampled:	02/21/11
Lab Sample ID:	D21212-1	Date Received:	02/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0451.D	1	02/22/11	BR	n/a	n/a	GGA568
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	112%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3B_022111**Lab Sample ID:** D21212-1**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 02/21/11**Date Received:** 02/22/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	2550	5.0	mg/l	1	02/25/11	JD	SM20 2320B
Chloride	722	13	mg/l	25	02/22/11 13:43	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	02/25/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	3.9	0.10	mg/l	1	02/28/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	02/22/11 13:32	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.31	0.31	mg/l	5	02/22/11 13:32	JML	EPA 300/SW846 9056
Solids, Total Dissolved	4820	10	mg/l	1	02/24/11	CJ	SM20 2540C
Sulfate	5.4	2.5	mg/l	5	02/22/11 13:32	JML	EPA 300/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-3B_022111**Lab Sample ID:** D21212-1F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 02/21/11**Date Received:** 02/22/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1190	10	ug/l	1	02/24/11	02/25/11 JB	EPA 200.7 ¹	EPA 200.7 ³
Calcium	151000	400	ug/l	1	02/24/11	02/25/11 JB	EPA 200.7 ¹	EPA 200.7 ³
Iron	158	70	ug/l	1	02/24/11	02/25/11 JB	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	< 200	200	ug/l	1	02/24/11	02/25/11 JB	EPA 200.7 ¹	EPA 200.7 ³
Manganese	< 5.0	5.0	ug/l	1	02/24/11	02/25/11 JB	EPA 200.7 ¹	EPA 200.7 ³
Potassium	223000	1000	ug/l	1	02/24/11	02/25/11 JB	EPA 200.7 ¹	EPA 200.7 ³
Sodium	1470000	4000	ug/l	10	02/24/11	02/28/11 JM	EPA 200.7 ²	EPA 200.7 ³
Strontium	7280	5.0	ug/l	1	02/24/11	02/25/11 JB	EPA 200.7 ¹	EPA 200.7 ³

(1) Instrument QC Batch: MA1347

(2) Instrument QC Batch: MA1349

(3) Prep QC Batch: MP4086

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-3B_022111	Date Sampled:	02/21/11
Lab Sample ID:	D21212-1F	Date Received:	02/22/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 2.6	2.6	mg/l	1	02/25/11 18:15	JB	SM18 3500FED M
Iron, Ferrous ^b	< 2.5	2.5	mg/l	1	02/23/11 14:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Dilution required due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: TB-04_022111

Lab Sample ID: D21212-2

Date Sampled: 02/21/11

Matrix: AQ - Trip Blank Water

Date Received: 02/22/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V09176.D	1	02/25/11	DC	n/a	n/a	V3V511
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-04_022111

Lab Sample ID: D21212-2

Date Sampled: 02/21/11

Matrix: AQ - Trip Blank Water

Date Received: 02/22/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		63-130%
2037-26-5	Toluene-D8	91%		68-130%
460-00-4	4-Bromofluorobenzene	83%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.44	70	ug/l	JN
	Total TIC, Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	TB-04_022111	Date Sampled:	02/21/11
Lab Sample ID:	D21212-2	Date Received:	02/22/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0454.D	1	02/22/11	BR	n/a	n/a	GGA568
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	110%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL. 303-425-6021 877-737-4521
FAX 303-425-6021

[illegible]

D21212: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D21212

Client:
Immediate Client Services Action Required: No

Date / Time Received: 2/22/2011

No. Coolers:
Client Service Action Required at Login: No

Project:
Airbill #'s:
Cooler Security
Y or N
Y or N

1. Custody Seals Present: ☒ ☐	3. COC Present: ☒ ☐
2. Custody Seals Intact: ☒ ☐	4. Smpl Dates/Time OK ☒ ☐

Cooler Temperature
Y or N

1. Temp criteria achieved: ☒ ☐	Infrared gun
2. Cooler temp verification:	Ice (bag)
3. Cooler media:	

Quality Control Preservation
Y or N
N/A

1. Trip Blank present / cooler:	☐	☐	
2. Trip Blank listed on COC:	☐	☐	
3. Samples preserved properly:	☒	☐	
4. VOCs headspace free:	☐	☐	☒

Sample Integrity - Documentation
Y or N

1. Sample labels present on bottles:	☒ ☐
2. Container labeling complete:	☒ ☐
3. Sample container label / COC agree:	☒ ☐

Sample Integrity - Condition
Y or N

1. Sample recvd within HT:	☒ ☐
2. All containers accounted for:	☒ ☐
3. Condition of sample:	Intact

Sample Integrity - Instructions
Y or N N/A

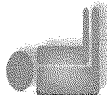
1. Analysis requested is clear:	☒	☐	
2. Bottles received for unspecified tests	☐	☒	
3. Sufficient volume rec'd for analysis:	☒	☐	
4. Compositing instructions clear:	☐	☐	☒
5. Filtering instructions clear:	☐	☐	☒

Comments

 Accutest Laboratories
 V.(303) 425-6021

 4036 Youngfield Street
 F: (303) 425-6854

 Wheat Ridge, CO
 www.accutest.com



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third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 2/22/2011

Date Reported: 2/24/2011

PO Number: D21212X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110222013-01A	D21212X-1, 2/21/11, 4:37pm	* Total Coliforms MPN	<2 fecal, <2 total	MPN/100mL		GH
		SM 9221 B				2/22/2011

* = Scope Analysis

= Subcontracted Analysis

MDL = Method Detection Limit

ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industrialabs.net

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D21212: Chain of Custody

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GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 2

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V511-MB1	3V09162.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	1.0	ug/l	
75-00-3	Chloroethane	ND	4.0	1.5	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.0	ug/l	
74-83-9	Methyl bromide	ND	4.0	1.5	ug/l	
74-87-3	Methyl chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	4.3	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	4.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V511-MB1	3V09162.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/l	
108-05-4	Vinyl Acetate	ND	4.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	98% 63-130%
2037-26-5	Toluene-D8	90% 68-130%
460-00-4	4-Bromofluorobenzene	84% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	4.43	34	ug/l	JN
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Page 1 of 2

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V511-BS1	3V09163.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	56.8	114	49-130
71-43-2	Benzene	50	52.9	106	70-130
75-27-4	Bromodichloromethane	50	51.8	104	70-130
75-25-2	Bromoform	50	55.2	110	48-138
108-90-7	Chlorobenzene	50	52.7	105	70-130
75-00-3	Chloroethane	50	36.1	72	61-130
67-66-3	Chloroform	50	53.7	107	70-130
110-75-8	2-Chloroethyl vinyl ether	50	47.9	96	22-185
75-15-0	Carbon disulfide	50	53.5	107	55-130
56-23-5	Carbon tetrachloride	50	55.3	111	70-130
75-34-3	1,1-Dichloroethane	50	53.3	107	70-130
75-35-4	1,1-Dichloroethylene	50	55.7	111	70-130
107-06-2	1,2-Dichloroethane	50	45.7	91	70-130
78-87-5	1,2-Dichloropropane	50	52.1	104	70-130
124-48-1	Dibromochloromethane	50	52.2	104	64-132
156-59-2	cis-1,2-Dichloroethylene	50	56.6	113	70-130
10061-01-5	cis-1,3-Dichloropropene	50	53.4	107	67-130
541-73-1	m-Dichlorobenzene	50	50.3	101	52-148
95-50-1	o-Dichlorobenzene	50	50.7	101	53-146
106-46-7	p-Dichlorobenzene	50	49.9	100	57-136
156-60-5	trans-1,2-Dichloroethylene	50	55.6	111	70-130
10061-02-6	trans-1,3-Dichloropropene	50	50.0	100	66-130
100-41-4	Ethylbenzene	50	51.8	104	70-130
591-78-6	2-Hexanone	50	50.9	102	38-130
108-10-1	4-Methyl-2-pentanone	50	53.3	107	68-130
74-83-9	Methyl bromide	50	46.3	93	35-151
74-87-3	Methyl chloride	50	31.9	64	46-138
75-09-2	Methylene chloride	50	52.8	106	70-130
78-93-3	Methyl ethyl ketone	50	53.4	107	37-130
100-42-5	Styrene	50	49.4	99	38-130
71-55-6	1,1,1-Trichloroethane	50	48.2	96	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	53.9	108	70-130
79-00-5	1,1,2-Trichloroethane	50	55.2	110	69-130
127-18-4	Tetrachloroethylene	50	53.5	107	66-134
108-88-3	Toluene	50	50.0	100	70-140
79-01-6	Trichloroethylene	50	53.1	106	70-130

Blank Spike Summary

Page 2 of 2

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V511-BS1	3V09163.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl chloride	50	29.6	59	58-135
108-05-4	Vinyl Acetate	50	88.1	176* a	50-130
1330-20-7	Xylene (total)	100	96.7	97	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	96%	63-130%
2037-26-5	Toluene-D8	89%	68-130%
460-00-4	4-Bromofluorobenzene	87%	61-130%

(a) Compound ND in associated samples.

Blank Spike Summary

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V511-BS1	3V09164.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	96%	63-130%
2037-26-5	Toluene-D8	91%	68-130%
460-00-4	4-Bromofluorobenzene	85%	61-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21207-15MS	3V09166.D	1	02/25/11	DC	n/a	n/a	V3V511
D21207-15MSD	3V09167.D	1	02/25/11	DC	n/a	n/a	V3V511
D21207-15	3V09165.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	D21207-15 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	48.5	97	50.1	100	3	21-130/30
71-43-2	Benzene	ND	50	54.3	109	55.1	110	1	59-132/30
75-27-4	Bromodichloromethane	ND	50	52.0	104	53.0	106	2	58-130/30
75-25-2	Bromoform	ND	50	54.5	109	56.6	113	4	45-140/30
108-90-7	Chlorobenzene	ND	50	53.3	107	55.5	111	4	70-130/30
75-00-3	Chloroethane	ND	50	36.9	74	38.2	76	3	61-130/30
67-66-3	Chloroform	ND	50	55.4	111	56.6	113	2	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	50	ND	0*	ND	0*	nc	20-168/30
75-15-0	Carbon disulfide	ND	50	54.5	109	55.8	112	2	41-132/30
56-23-5	Carbon tetrachloride	ND	50	57.4	115	58.8	118	2	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	54.8	110	56.7	113	3	70-130/30
75-35-4	1,1-Dichloroethylene	ND	50	56.0	112	57.8	116	3	69-137/30
107-06-2	1,2-Dichloroethane	ND	50	46.4	93	47.9	96	3	62-130/30
78-87-5	1,2-Dichloropropane	ND	50	53.6	107	54.5	109	2	63-131/30
124-48-1	Dibromochloromethane	ND	50	51.4	103	52.6	105	2	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND	50	57.6	115	58.9	118	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	54.0	108	55.1	110	2	51-134/30
541-73-1	m-Dichlorobenzene	ND	50	51.1	102	52.8	106	3	38-148/30
95-50-1	o-Dichlorobenzene	ND	50	51.5	103	52.4	105	2	40-148/30
106-46-7	p-Dichlorobenzene	ND	50	51.4	103	52.4	105	2	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND	50	57.5	115	60.0	120	4	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	50.2	100	51.9	104	3	50-130/30
100-41-4	Ethylbenzene	ND	50	53.3	107	55.5	111	4	68-130/30
591-78-6	2-Hexanone	ND	50	48.3	97	49.3	99	2	29-130/30
108-10-1	4-Methyl-2-pentanone	ND	50	49.1	98	51.1	102	4	62-130/30
74-83-9	Methyl bromide	ND	50	49.2	98	49.1	98	0	20-171/30
74-87-3	Methyl chloride	ND	50	33.1	66	34.0	68	3	25-148/30
75-09-2	Methylene chloride	ND	50	53.5	107	54.3	109	1	58-139/30
78-93-3	Methyl ethyl ketone	ND	50	51.9	104	51.3	103	1	37-130/30
100-42-5	Styrene	ND	50	49.6	99	51.9	104	5	27-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	49.9	100	50.6	101	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	53.0	106	54.0	108	2	61-140/30
79-00-5	1,1,2-Trichloroethane	ND	50	54.8	110	56.4	113	3	52-135/30
127-18-4	Tetrachloroethylene	ND	50	53.5	107	55.6	111	4	61-134/30
108-88-3	Toluene	ND	50	51.6	103	53.1	106	3	56-142/30
79-01-6	Trichloroethylene	ND	50	54.4	109	55.4	111	2	61-132/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21207-15MS	3V09166.D	1	02/25/11	DC	n/a	n/a	V3V511
D21207-15MSD	3V09167.D	1	02/25/11	DC	n/a	n/a	V3V511
D21207-15	3V09165.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	D21207-15 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl chloride	ND	50	30.8	62	31.5	63	2	54-148/30
108-05-4	Vinyl Acetate	ND	50	92.1	184* ^a	89.4	179* ^a	3	40-139/30
1330-20-7	Xylene (total)	ND	100	98.0	98	102	102	4	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D21207-15	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	100%	98%	63-130%
2037-26-5	Toluene-D8	90%	91%	91%	68-130%
460-00-4	4-Bromofluorobenzene	86%	86%	85%	61-130%

(a) Compound ND in associated samples.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21207-15MS	3V09168.D	1	02/25/11	DC	n/a	n/a	V3V511
D21207-15MSD	3V09169.D	1	02/25/11	DC	n/a	n/a	V3V511
D21207-15	3V09165.D	1	02/25/11	DC	n/a	n/a	V3V511

The QC reported here applies to the following samples:

Method: SW846 8260B

D21212-1, D21212-2

CAS No.	Compound	D21207-15 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD

CAS No.	Surrogate Recoveries	MS	MSD	D21207-15	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	99%	98%	63-130%
2037-26-5	Toluene-D8	91%	93%	91%	68-130%
460-00-4	4-Bromofluorobenzene	87%	88%	85%	61-130%

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09175.D
Acq On : 25 Feb 2011 5:26 pm
Operator : DONC
Sample : D21212-1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 01 10:10:06 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.894	168	508135	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.687	114	787952	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.321	117	733990	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.314	152	410736	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.286	102	62016	48.11	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	96.22%	
55) Toluene-d8	14.080	98	969064	45.70	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	91.40%	
59) 4-Bromofluorobenzene	16.271	95	332062	41.87	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.74%	

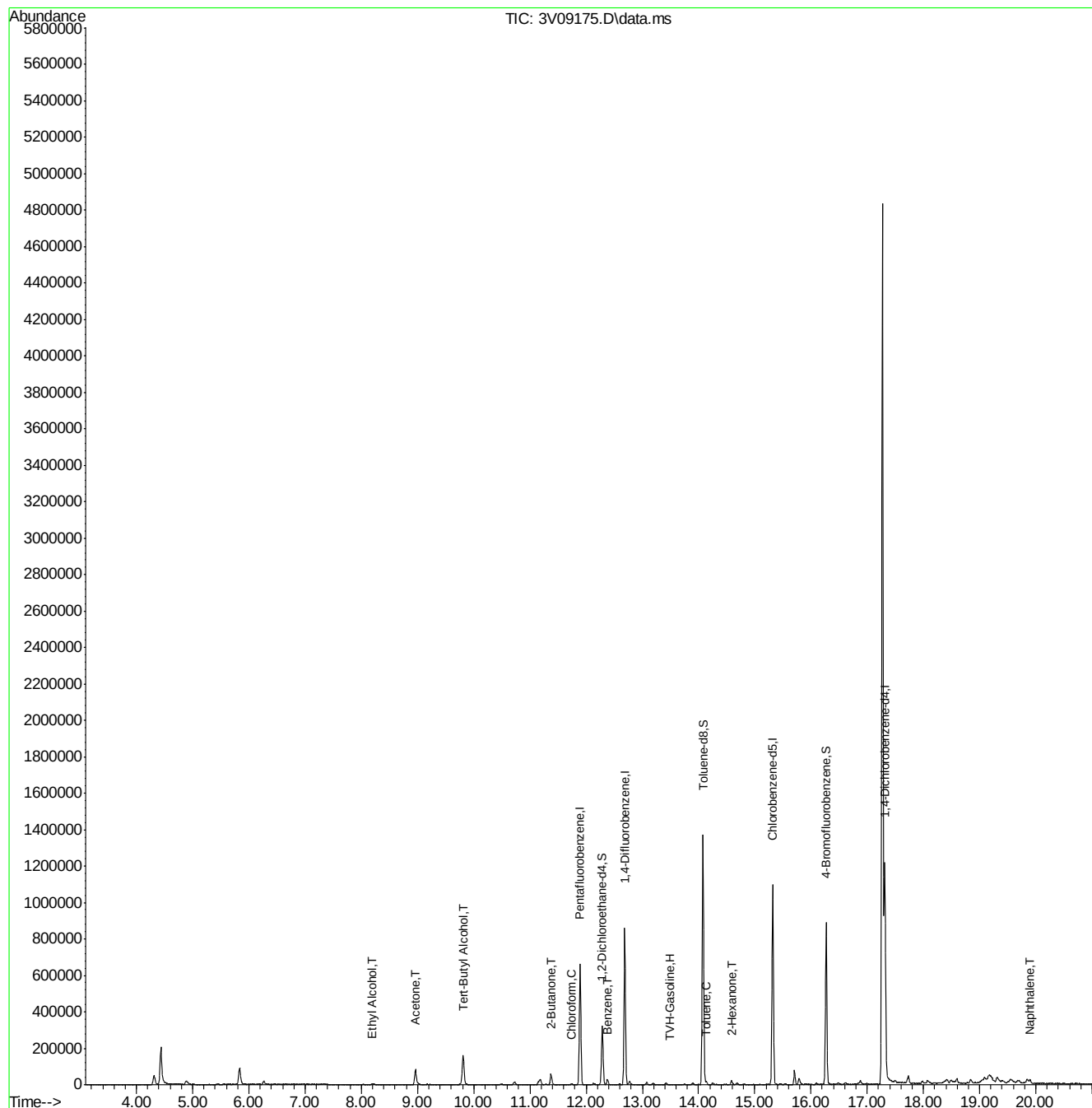
Target Compounds						Qvalue
1) TVH-Gasoline	13.491	TIC	414471m	70.29	ug/l	
9) Ethyl Alcohol	8.201	45	8188	148.38	ug/l #	63
14) Acetone	8.965	58	48560	100.50	ug/l #	82
17) Tert-Butyl Alcohol	9.812	59	210195	442.90	ug/l	98
24) 2-Butanone	11.375	72	22268	32.56	ug/l	95
27) Chloroform	11.737	83	3284	0.41	ug/l	93
45) Benzene	12.376	78	27177	1.25	ug/l	100
50) 2-Hexanone	14.590	43	14936	4.67	ug/l	98
56) Toluene	14.141	92	7737	0.53	ug/l	90
72) Naphthalene	19.897	128	24181	1.03	ug/l	100

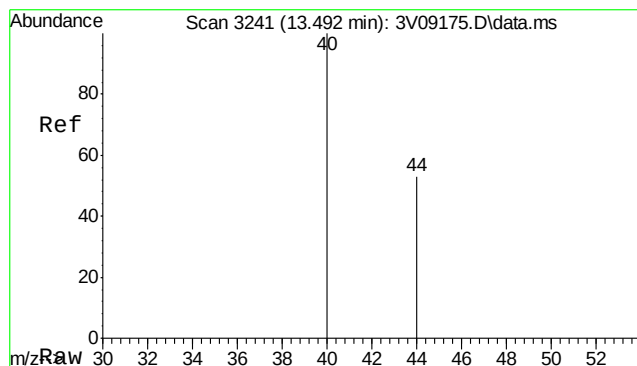
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Quantitation Report (QT Reviewed)

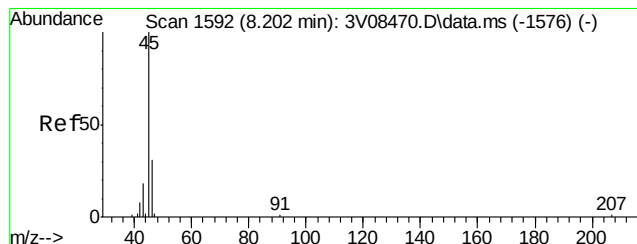
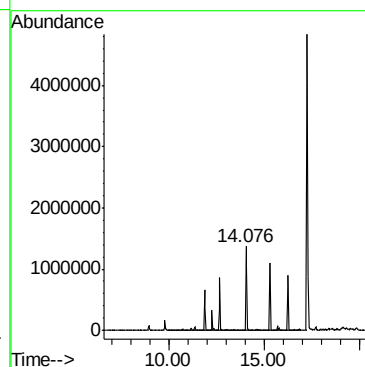
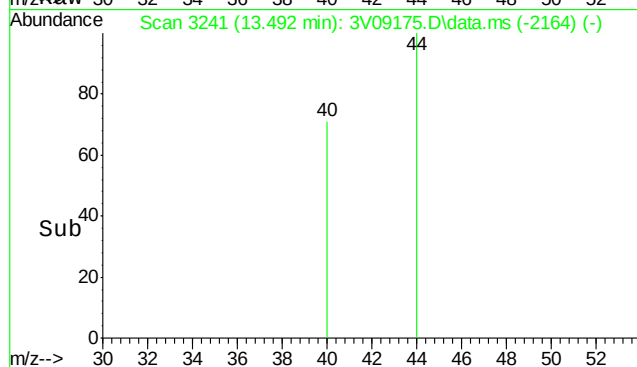
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Data File : 3V09175.D
Acq On : 25 Feb 2011 5:26 pm
Operator : DONC
Sample : D21212-1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 01 10:10:06 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration



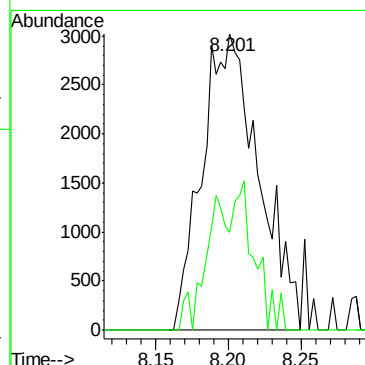
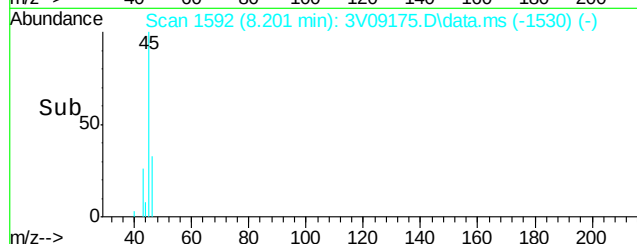
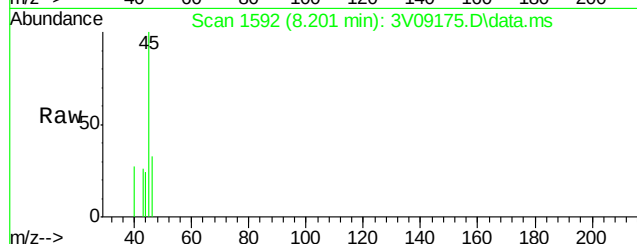


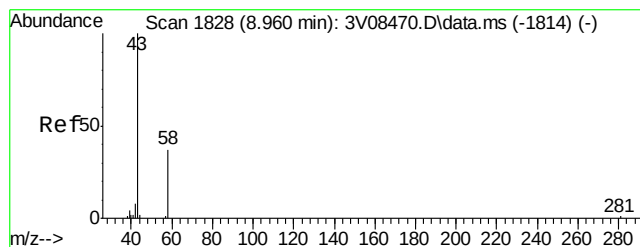
#1
TVH-Gasoline
Concen: 70.29 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm
Tgt Ion:TIC Resp: 414471



#9
Ethyl Alcohol
Concen: 148.38 ug/l
RT: 8.201 min Scan# 1592
Delta R.T. -0.001 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

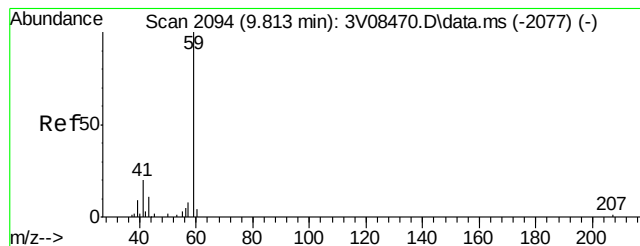
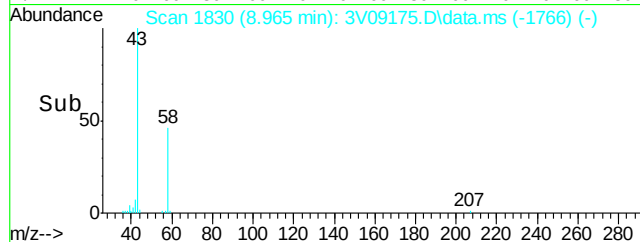
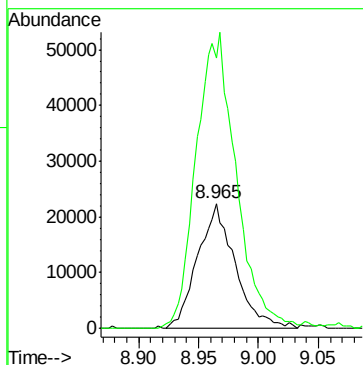
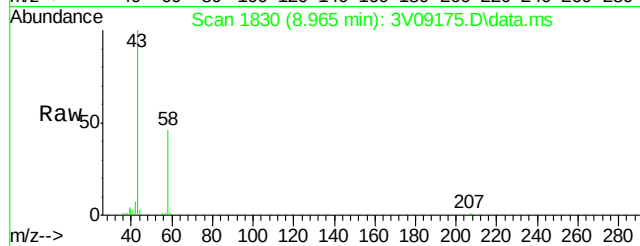
Tgt Ion: 45 Resp: 8188
Ion Ratio Lower Upper
45 100
46 17.5 32.2 48.4#





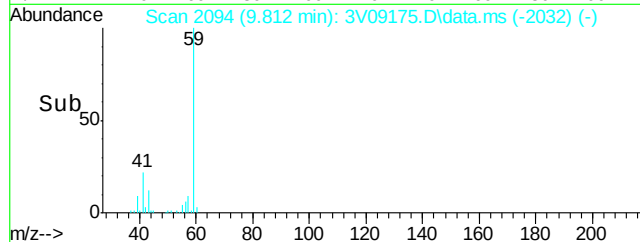
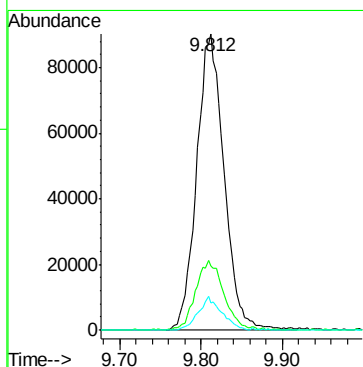
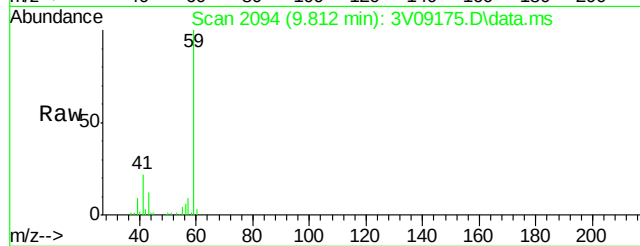
#14
Acetone
Concen: 100.50 ug/l
RT: 8.965 min Scan# 1830
Delta R.T. 0.006 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

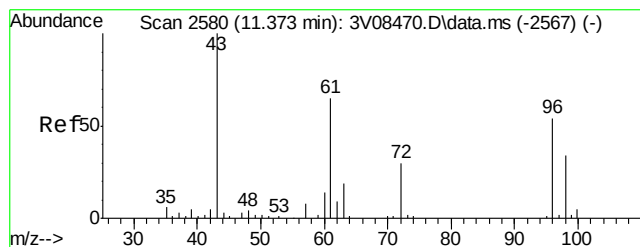
Tgt Ion: 58 Resp: 48560
Ion Ratio Lower Upper
58 100
43 253.2 267.1 307.1#



#17
Tert-Butyl Alcohol
Concen: 442.90 ug/l
RT: 9.812 min Scan# 2094
Delta R.T. -0.001 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

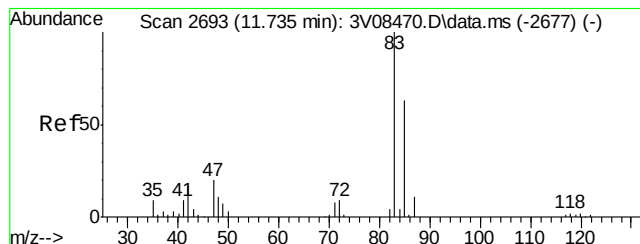
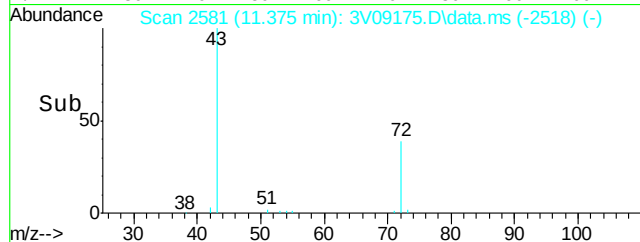
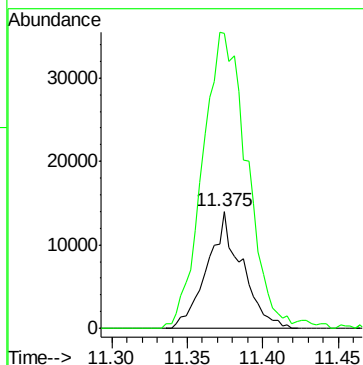
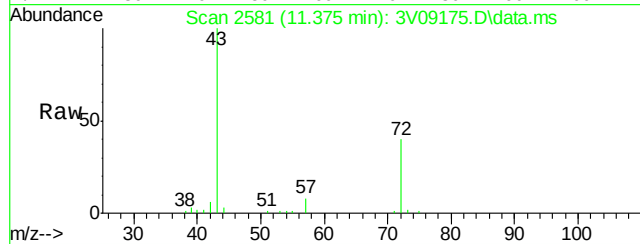
Tgt Ion: 59 Resp: 210195
Ion Ratio Lower Upper
59 100
41 24.0 18.6 28.0
57 9.6 8.2 12.4





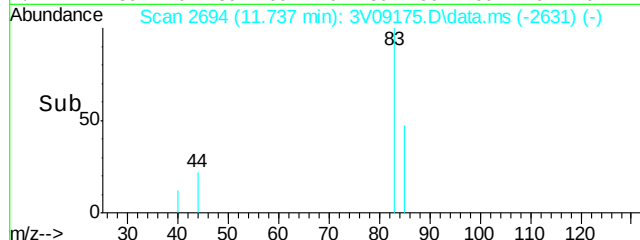
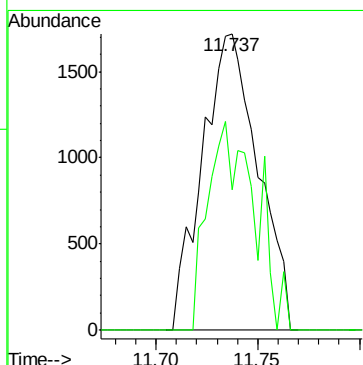
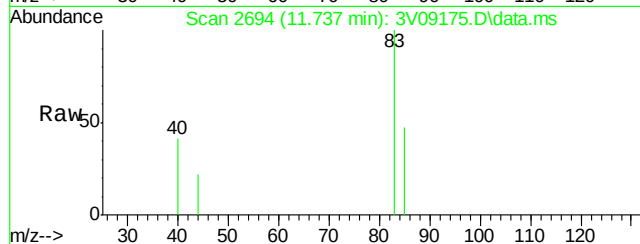
#24
2-Butanone
Concen: 32.56 ug/l
RT: 11.375 min Scan# 2581
Delta R.T. 0.002 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

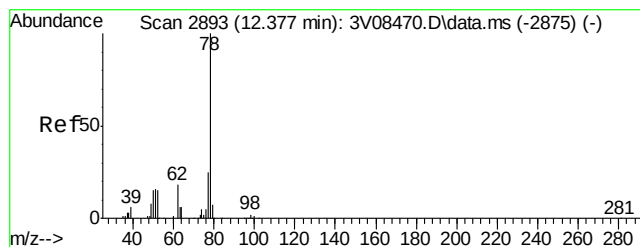
Tgt Ion: 72 Resp: 22268
Ion Ratio Lower Upper
72 100
43 325.1 252.0 378.0



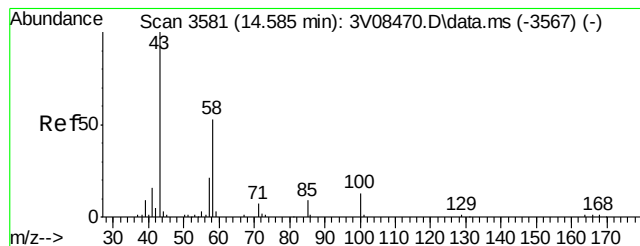
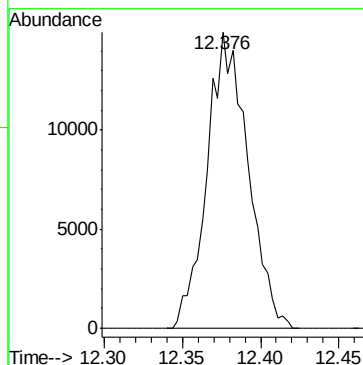
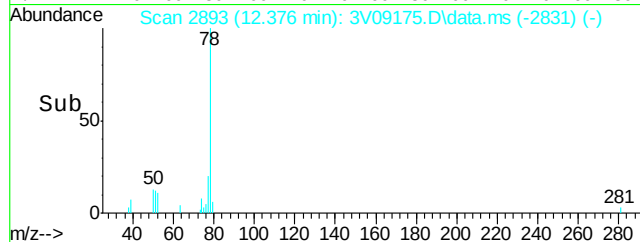
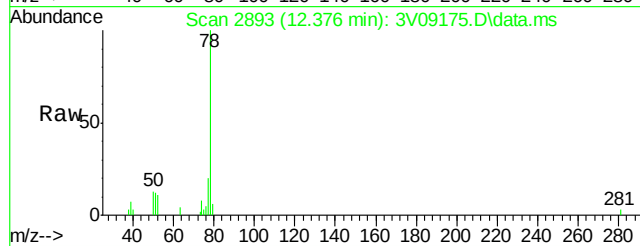
#27
Chloroform
Concen: 0.41 ug/l
RT: 11.737 min Scan# 2694
Delta R.T. 0.002 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

Tgt Ion: 83 Resp: 3284
Ion Ratio Lower Upper
83 100
85 59.9 45.1 85.1



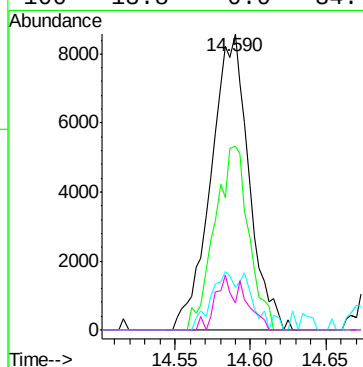
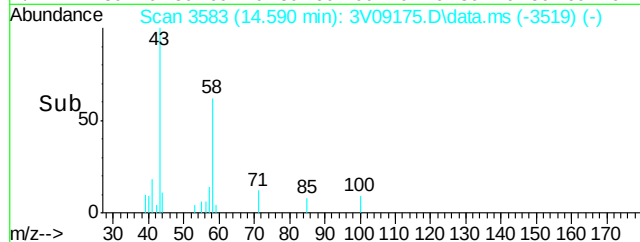
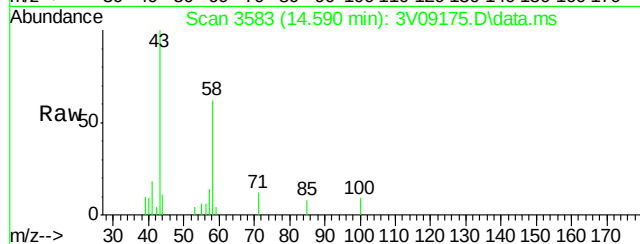


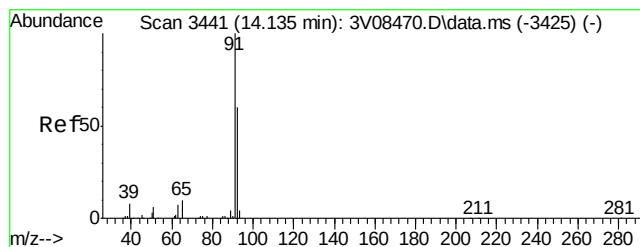
#45
Benzene
Concen: 1.25 ug/l
RT: 12.376 min Scan# 2893
Delta R.T. -0.001 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm
Tgt Ion: 78 Resp: 27177



#50
2-Hexanone
Concen: 4.67 ug/l
RT: 14.590 min Scan# 3583
Delta R.T. 0.005 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

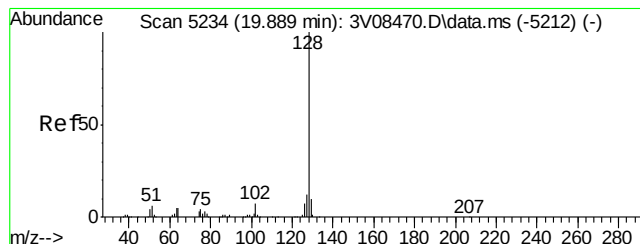
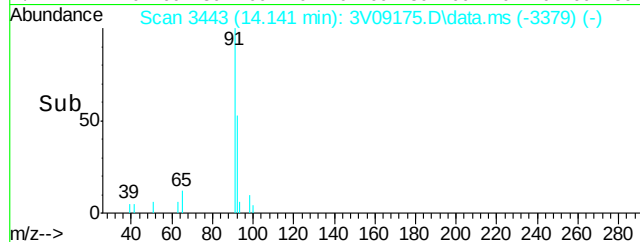
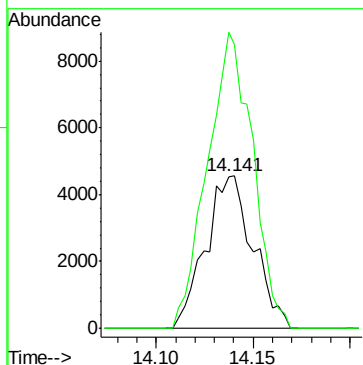
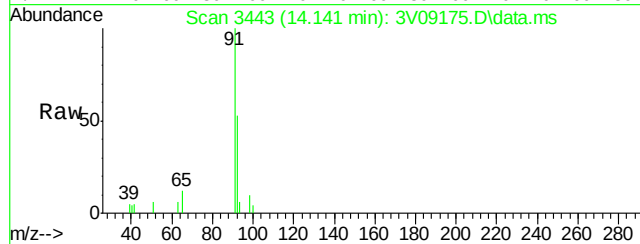
Tgt Ion: 43 Resp: 14936
Ion Ratio Lower Upper
43 100
58 56.0 37.5 77.5
57 19.6 0.0 39.9
100 13.8 0.0 34.7





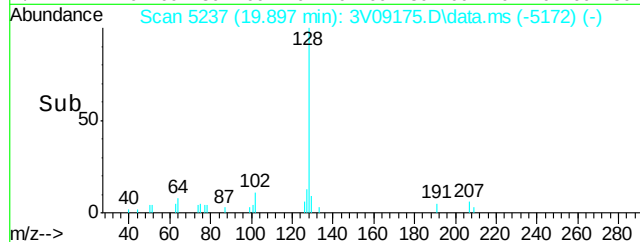
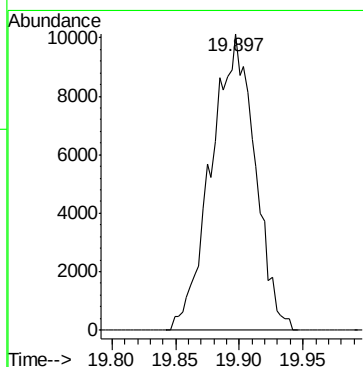
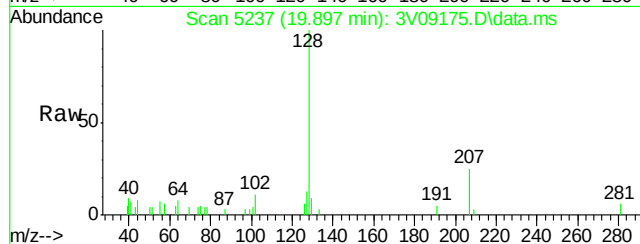
#56
Toluene
Concen: 0.53 ug/l
RT: 14.141 min Scan# 3443
Delta R.T. 0.005 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

Tgt Ion: 92 Resp: 7737
Ion Ratio Lower Upper
92 100
91 185.1 151.6 191.6



#72
Naphthalene
Concen: 1.03 ug/l
RT: 19.897 min Scan# 5237
Delta R.T. 0.008 min
Lab File: 3V09175.D
Acq: 25 Feb 2011 5:26 pm

Tgt Ion: 128 Resp: 24181



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09175.D
Acq On : 25 Feb 2011 5:26 pm
Operator : DONC
Sample : D21212-1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V09175.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.434	403	418	440	rBV	203898	479952	5.69%	2.229%
2	5.836	840	855	871	rBV2	90055	219973	2.61%	1.021%
3	8.968	1814	1831	1841	rBV2	82426	189687	2.25%	0.881%
4	9.809	2076	2093	2112	rBV2	161853	379171	4.49%	1.761%
5	11.182	2500	2521	2533	rBV4	29464	91411	1.08%	0.424%
6	11.375	2569	2581	2593	rBV	59519	112471	1.33%	0.522%
7	11.891	2726	2742	2761	rBV2	663661	1256669	14.89%	5.835%
8	12.286	2848	2865	2883	rVV2	323992	638812	7.57%	2.966%
9	12.687	2976	2990	3005	rBV2	860305	1581254	18.74%	7.342%
10	14.076	3407	3423	3436	rBV	1372915	2495231	29.56%	11.586%
11	15.321	3795	3811	3824	rBV	1096211	1934567	22.92%	8.983%
12	15.706	3921	3931	3946	rVB2	76816	120155	1.42%	0.558%
13	16.271	4093	4107	4123	rBV2	887620	1584099	18.77%	7.356%
14	17.269	4400	4418	4427	rBV	4834483	8439875	100.00%	39.190%
15	17.314	4428	4432	4453	rVB	1197711	1920171	22.75%	8.916%
16	17.734	4547	4563	4575	rVB2	43226	92192	1.09%	0.428%

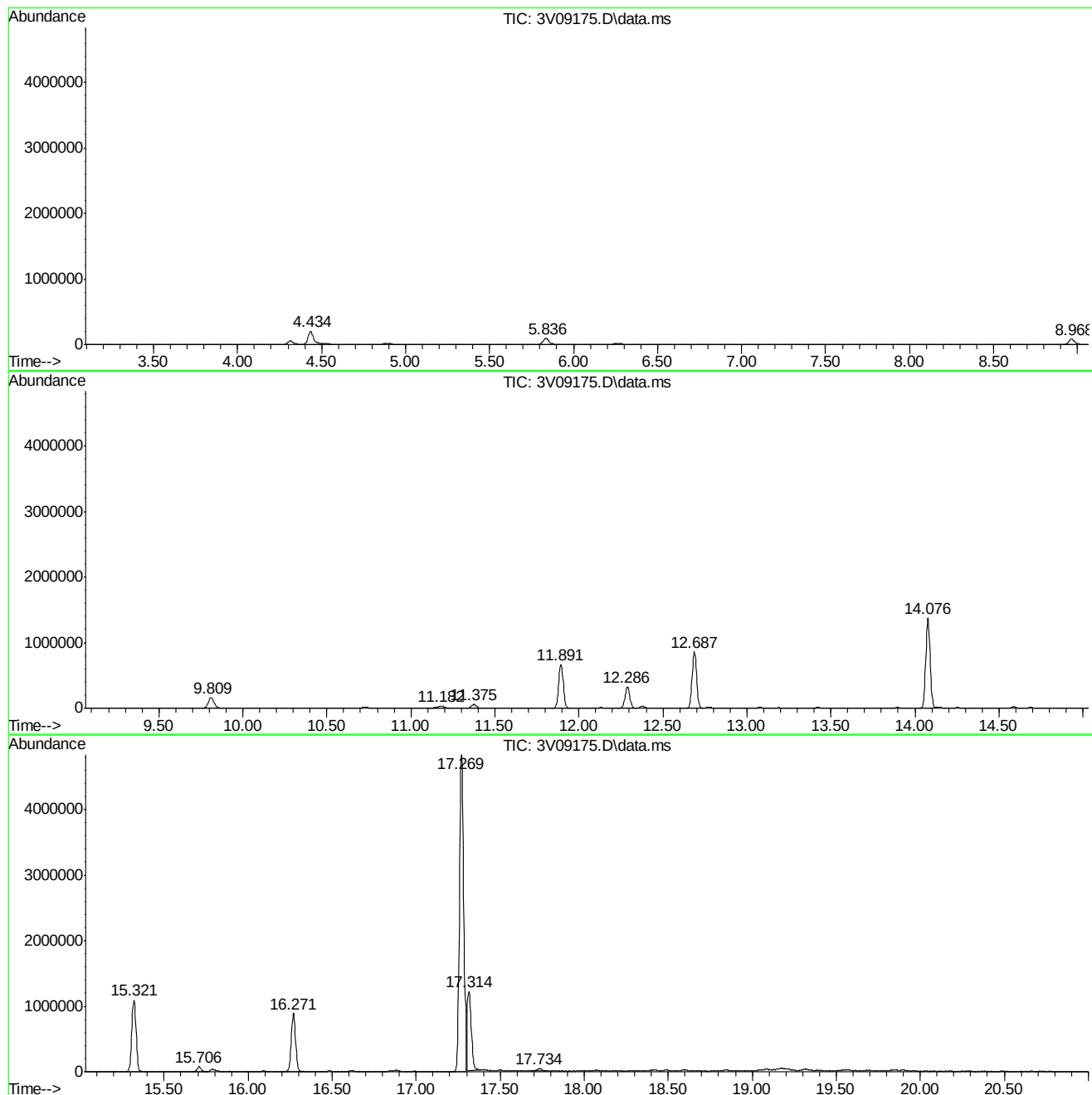
Sum of corrected areas: 21535690

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09175.D
Acq On : 25 Feb 2011 5:26 pm
Operator : DONC
Sample : D21212-1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09175.D
Acq On : 25 Feb 2011 5:26 pm
Operator : DONC
Sample : D21212-1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 17 Sample Multiplier: 1

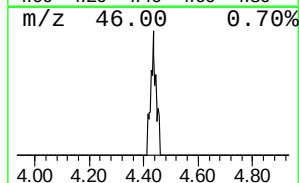
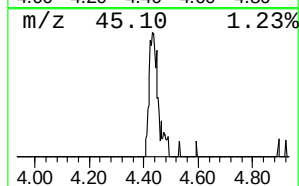
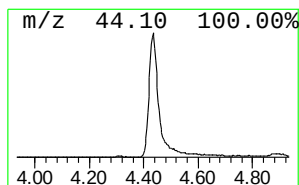
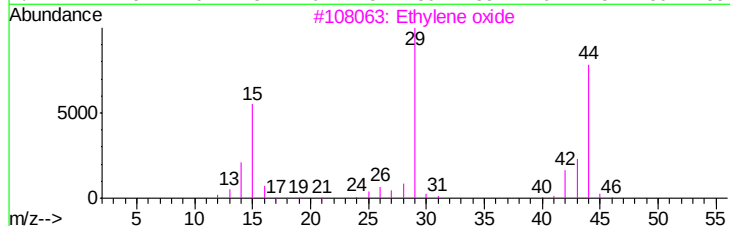
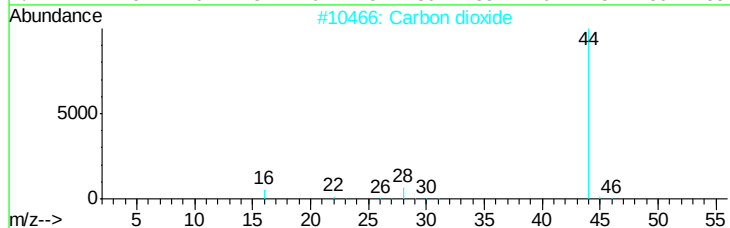
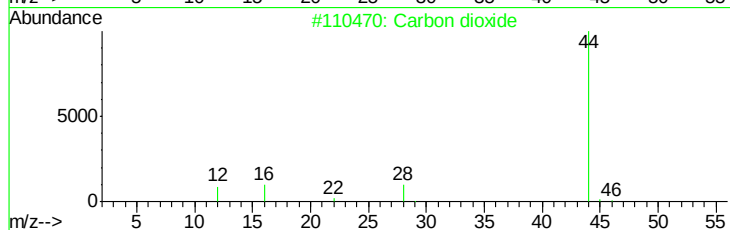
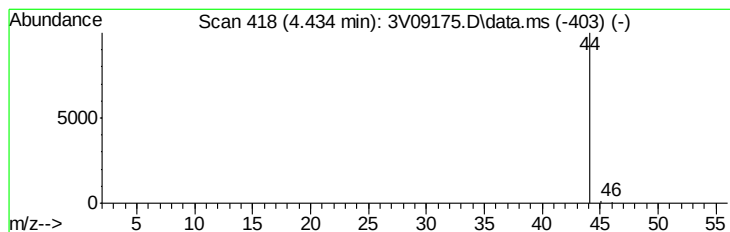
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.434	19.10 ug/l	479952	Pentafluorobenzene	11.894

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Ethylene oxide	44	C2H4O	000075-21-8	3
4			Ethylene oxide	44	C2H4O	000075-21-8	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09175.D
Acq On : 25 Feb 2011 5:26 pm
Operator : DONC
Sample : D21212-1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 17 Sample Multiplier: 1

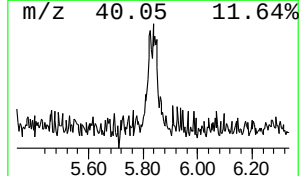
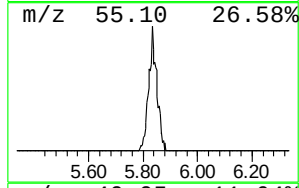
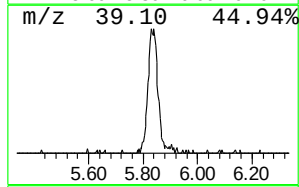
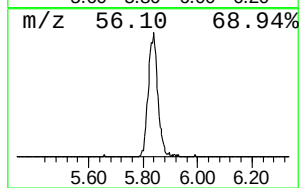
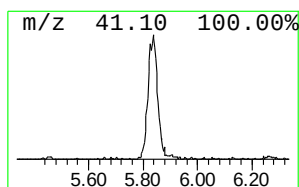
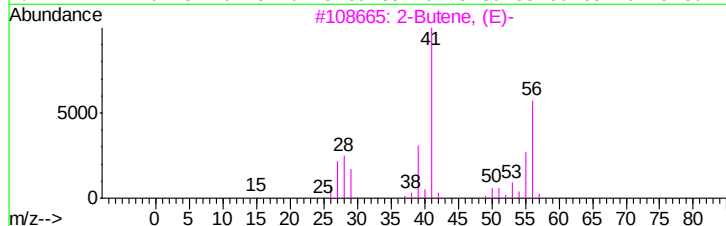
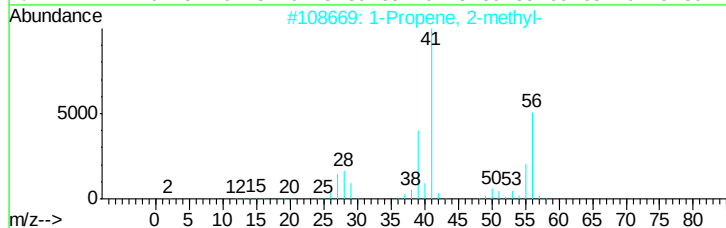
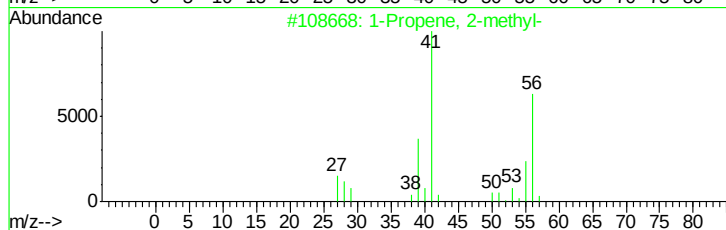
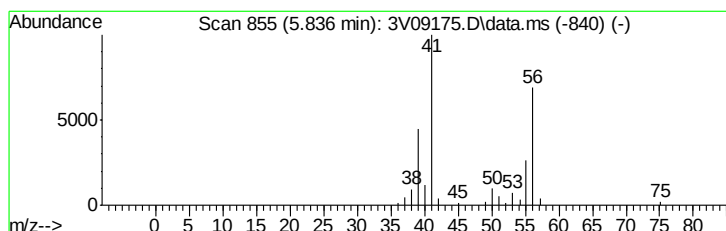
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 2 1-Propene, 2-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.836	8.75 ug/l	219973	Pentafluorobenzene	11.894

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propene, 2-methyl-			56	C4H8	000115-11-7	80
2	1-Propene, 2-methyl-			56	C4H8	000115-11-7	90
3	2-Butene, (E)-			56	C4H8	000624-64-6	50
4	2-Butene			56	C4H8	000107-01-7	43
5	2-Butene, (Z)-			56	C4H8	000590-18-1	86



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09175.D
Acq On : 25 Feb 2011 5:26 pm
Operator : DONC
Sample : D21212-1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Carbon dioxide	4.434	19.1	ug/l	479952	1	11.894	1256670	50.0
1-Propene, 2-me...	5.836	8.8	ug/l	219973	1	11.894	1256670	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09176.D
Acq On : 25 Feb 2011 5:57 pm
Operator : DONC
Sample : D21212-2
Misc : MS1865,V3V511,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 01 10:10:30 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.892	168	494892	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	768649	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.319	117	721621	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	393539	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.287	102	60692	48.35	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	96.70%	
55) Toluene-d8	14.078	98	943877	45.28	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	90.56%	
59) 4-Bromofluorobenzene	16.269	95	323053	41.43	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	82.86%	

Target Compounds						Qvalue
1) TVH-Gasoline	13.491	TIC	154689m	61.60	ug/l	
56) Toluene	14.139	92	4876	0.34	ug/l	89

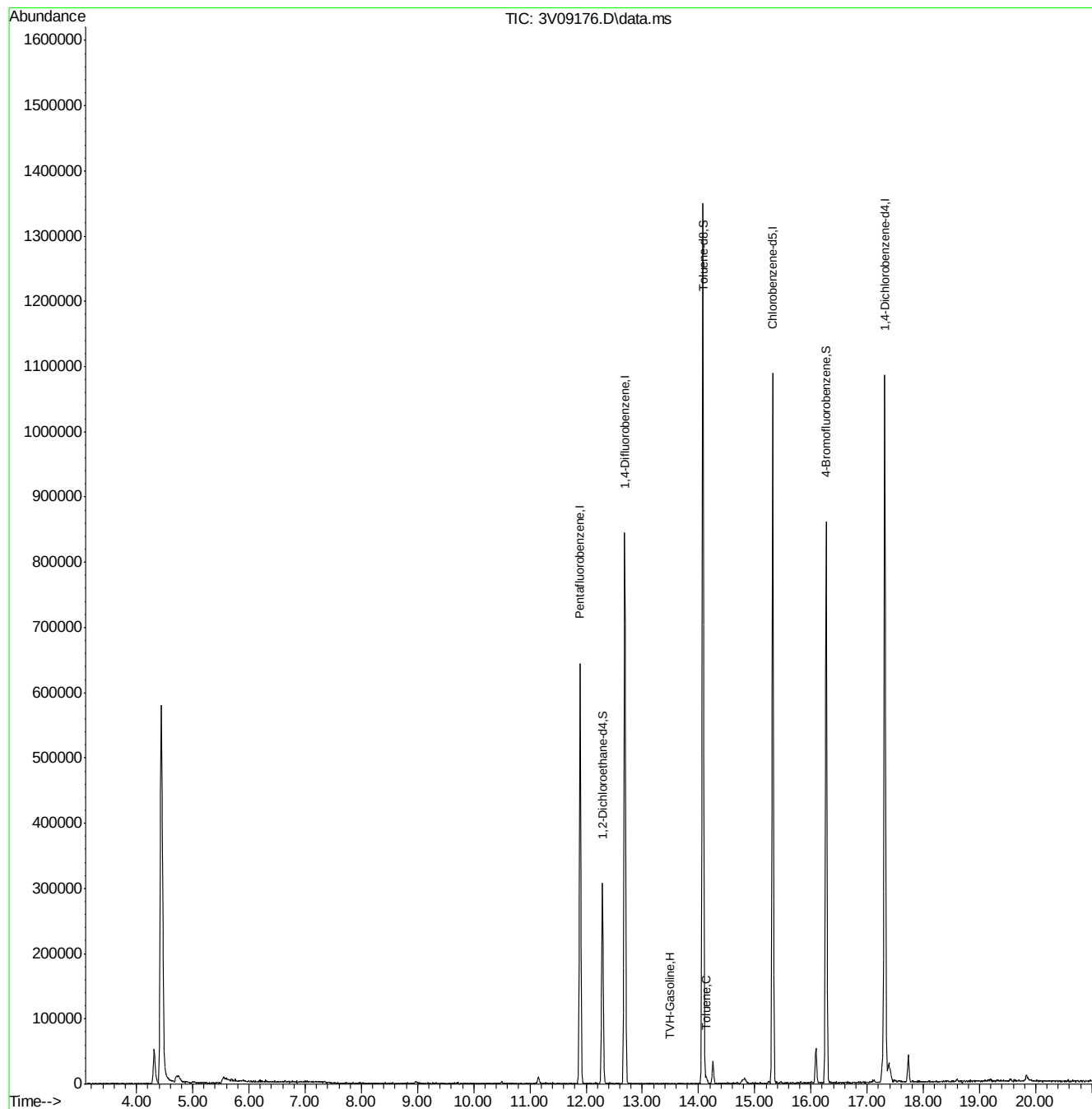
(#) = qualifier out of range (m) = manual integration (+) = signals summed

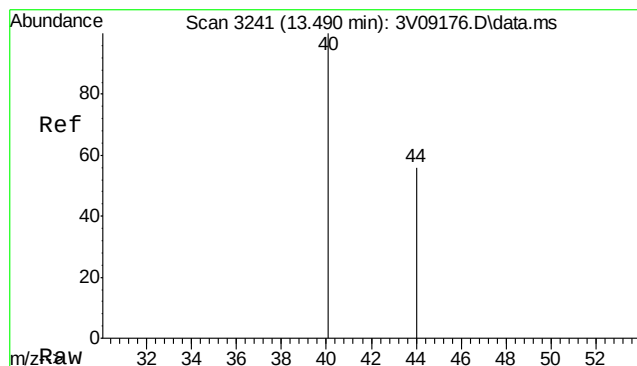
6.1.3
6

Quantitation Report (QT Reviewed)

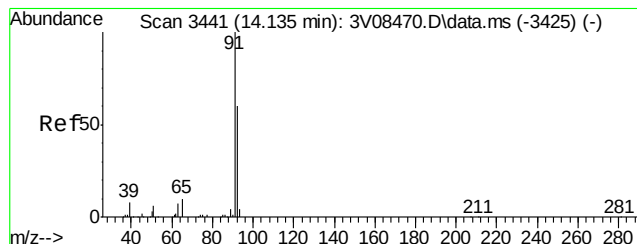
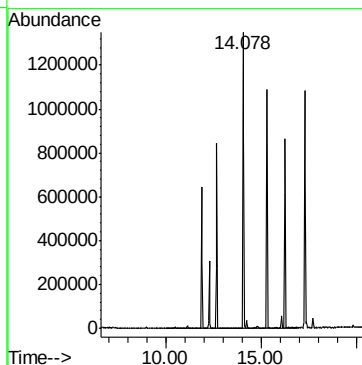
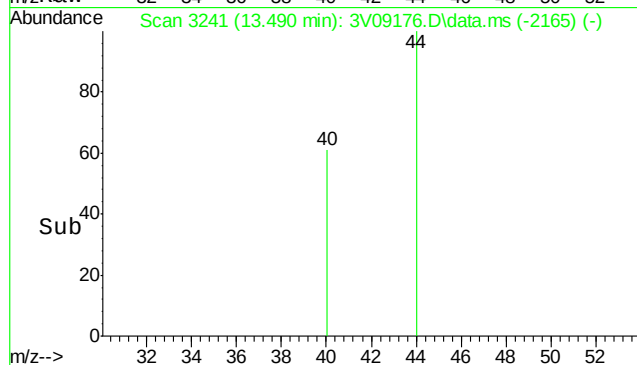
Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09176.D
Acq On : 25 Feb 2011 5:57 pm
Operator : DONC
Sample : D21212-2
Misc : MS1865,V3V511,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 01 10:10:30 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration



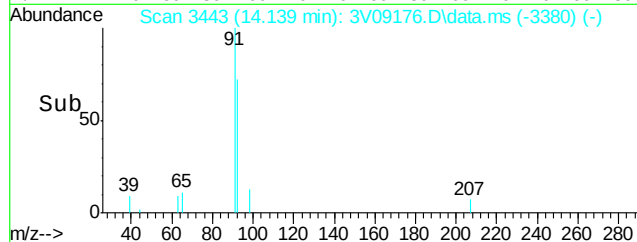
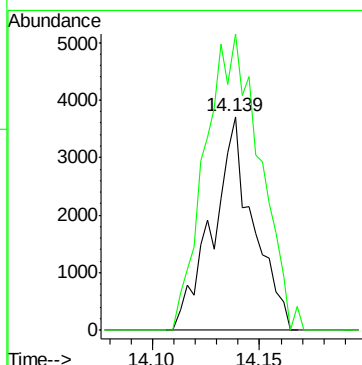
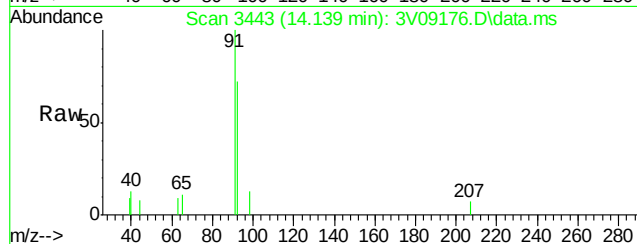


#1
TVH-Gasoline
Concen: 61.60 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V09176.D
Acq: 25 Feb 2011 5:57 pm
Tgt Ion:TIC Resp: 154689



#56
Toluene
Concen: 0.34 ug/l
RT: 14.139 min Scan# 3443
Delta R.T. 0.003 min
Lab File: 3V09176.D
Acq: 25 Feb 2011 5:57 pm

Tgt Ion: 92 Resp: 4876
Ion Ratio Lower Upper
92 100
91 187.3 151.6 191.6



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3022511.S\
 Data File : 3V09176.D
 Acq On : 25 Feb 2011 5:57 pm
 Operator : DONC
 Sample : D21212-2
 Misc : MS1865,V3V511,,,,,1
 ALS Vial : 18 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.2
 Stop Thrs : 0
 Filtering: 5
 Min Area: 1 % of largest Peak
 Max Peaks: 100
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Title : 8260

Signal : TIC: 3V09176.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.313	365	381	393	rBV	53576	119147	4.93%	0.884%
2	4.435	403	419	453	rBV	578907	1722738	71.22%	12.780%
3	11.892	2729	2743	2759	rBV	644515	1228452	50.78%	9.114%
4	12.290	2852	2867	2882	rBV2	307436	614745	25.41%	4.561%
5	12.688	2975	2991	3006	rBV	844519	1544758	63.86%	11.460%
6	14.078	3408	3424	3437	rBV	1349304	2418932	100.00%	17.945%
7	14.254	3466	3479	3496	rVB	34004	61437	2.54%	0.456%
8	15.319	3795	3811	3825	rBV	1088704	1892733	78.25%	14.042%
9	16.090	4040	4051	4065	rVB2	53992	98582	4.08%	0.731%
10	16.269	4093	4107	4121	rBV2	860274	1543990	63.83%	11.454%
11	17.312	4407	4432	4447	rBV2	1084302	2152566	88.99%	15.969%
12	17.732	4551	4563	4575	rBV2	43219	81368	3.36%	0.604%

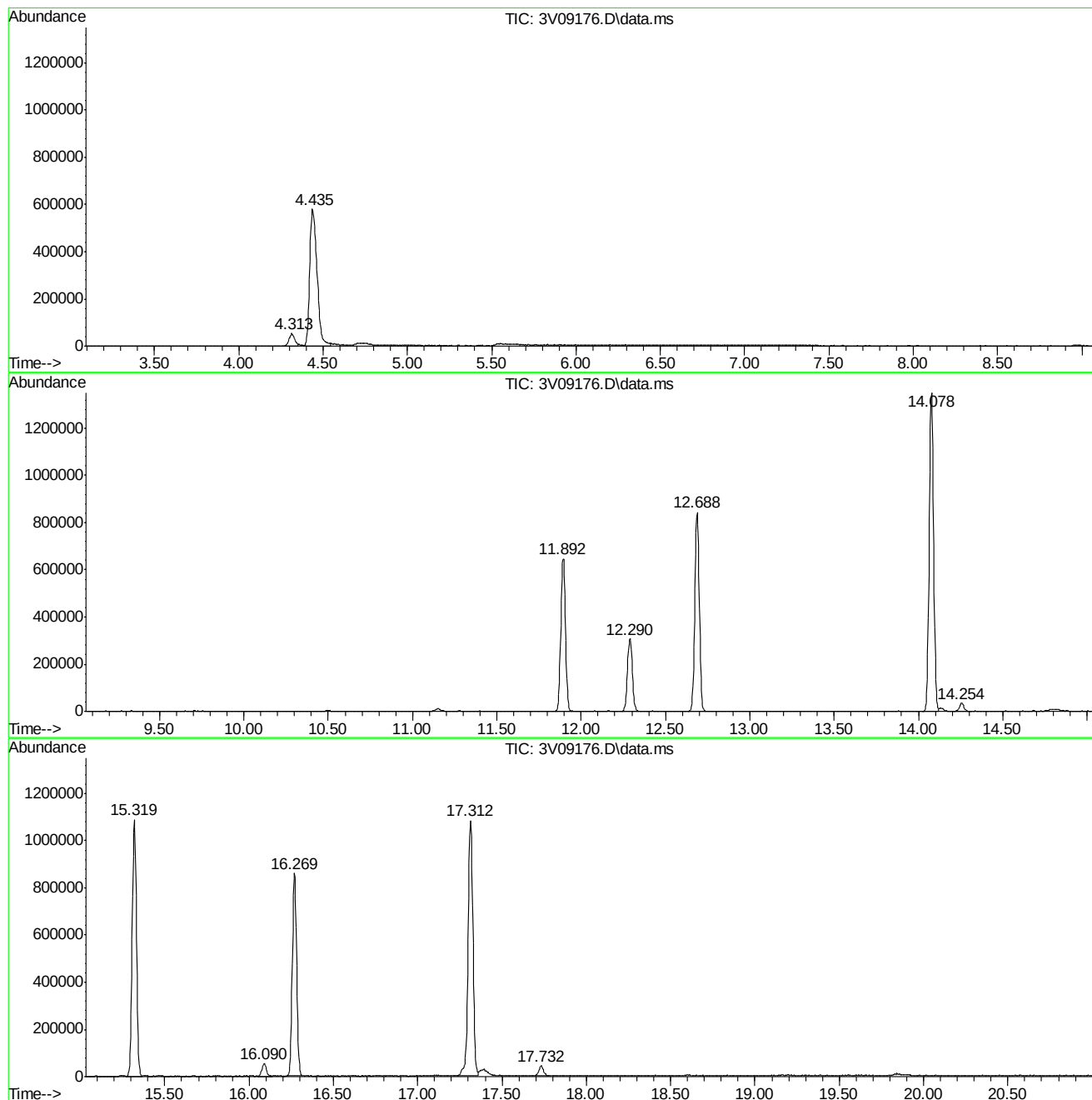
Sum of corrected areas: 13479448

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09176.D
Acq On : 25 Feb 2011 5:57 pm
Operator : DONC
Sample : D21212-2
Misc : MS1865,V3V511,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3022511.S\
 Data File : 3V09176.D
 Acq On : 25 Feb 2011 5:57 pm
 Operator : DONC
 Sample : D21212-2
 Misc : MS1865,V3V511,,,,,1
 ALS Vial : 18 Sample Multiplier: 1

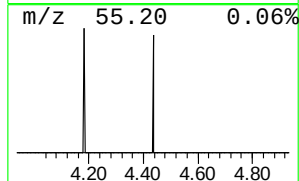
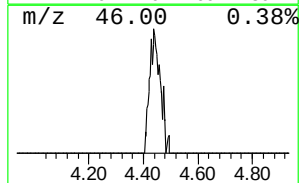
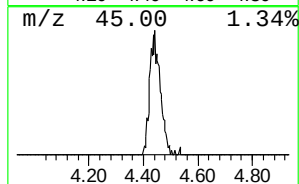
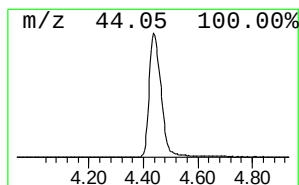
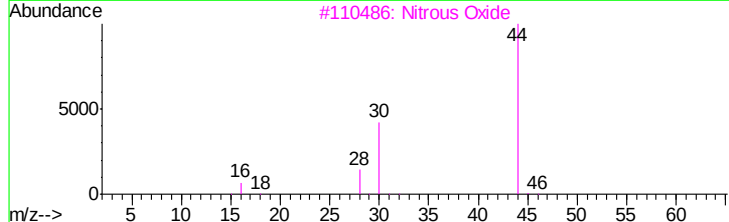
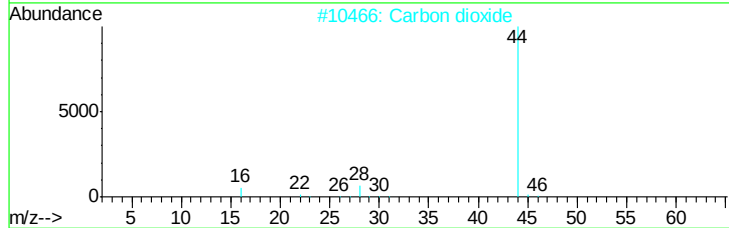
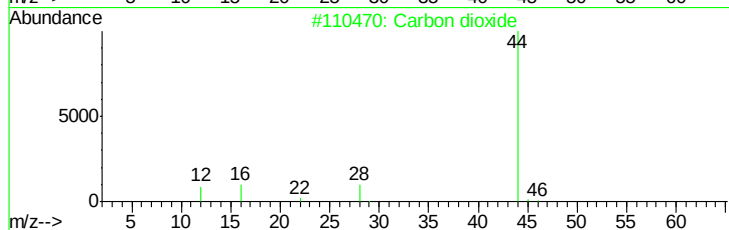
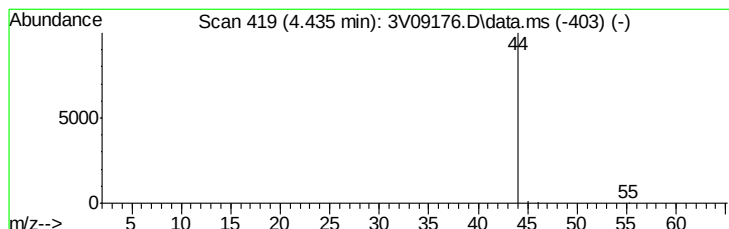
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.435	70.12 ug/l	1722740	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide			44	CO2	000124-38-9	4
2	Carbon dioxide			44	CO2	000124-38-9	4
3	Nitrous Oxide			44	N2O	010024-97-2	3
4	Nitrous Oxide			44	N2O	010024-97-2	3
5	Nitrous Oxide			44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09176.D
Acq On : 25 Feb 2011 5:57 pm
Operator : DONC
Sample : D21212-2
Misc : MS1865,V3V511,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Carbon dioxide	4.435	70.1	ug/l	1722740	1	11.892	1228450	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09162.D
Acq On : 25 Feb 2011 10:43 am
Operator : DONC
Sample : MB1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 01 09:59:20 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.891	168	523148	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.687	114	807685	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.318	117	755063	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.314	152	434527	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.289	102	65152	49.10	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	98.20%	
55) Toluene-d8	14.076	98	982250	45.03	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	90.06%	
59) 4-Bromofluorobenzene	16.268	95	341380	41.84	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.68%	

Target Compounds

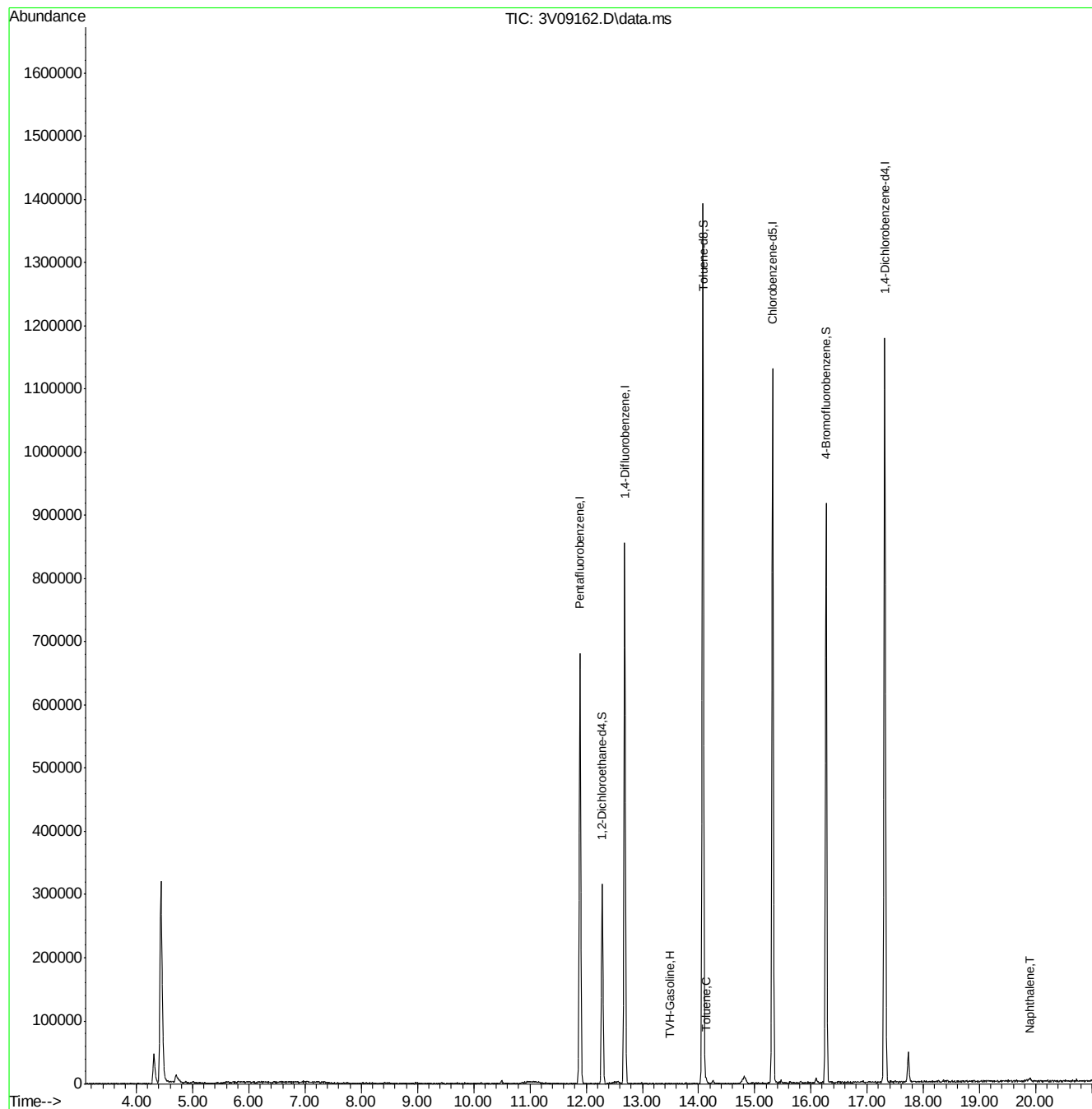
						Qvalue
1) TVH-Gasoline	13.491	TIC	113578m	60.22	ug/l	
56) Toluene	14.131	92	3863	0.26	ug/l	94
72) Naphthalene	19.897	128	5220	0.21	ug/l	100

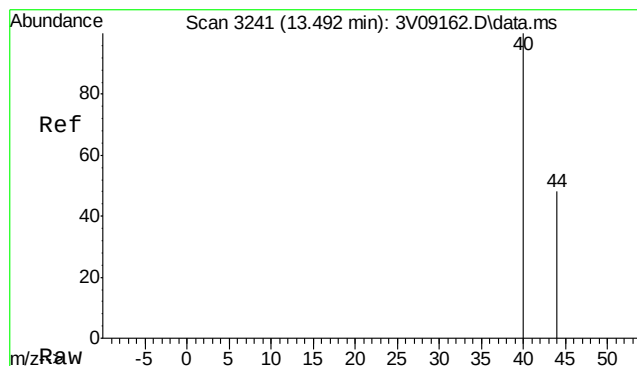
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

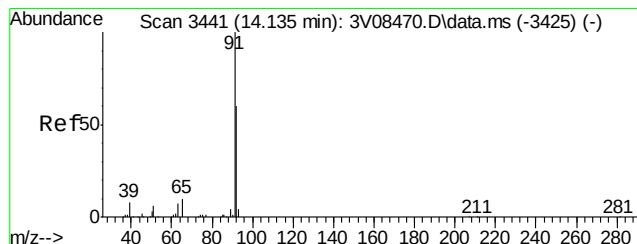
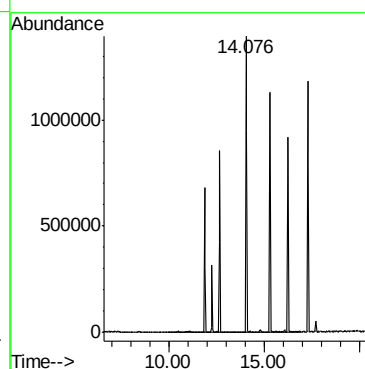
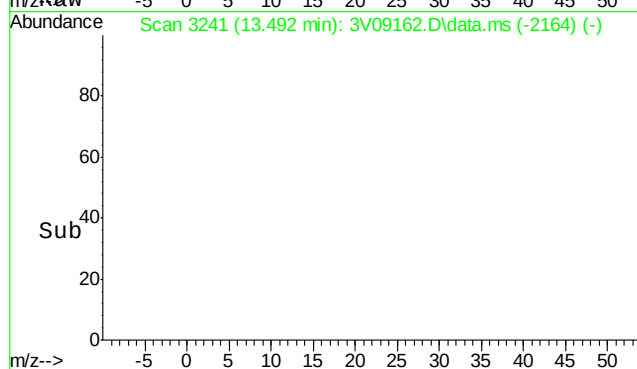
Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09162.D
Acq On : 25 Feb 2011 10:43 am
Operator : DONC
Sample : MB1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 01 09:59:20 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260
QLast Update : Mon Jan 17 09:47:23 2011
Response via : Initial Calibration



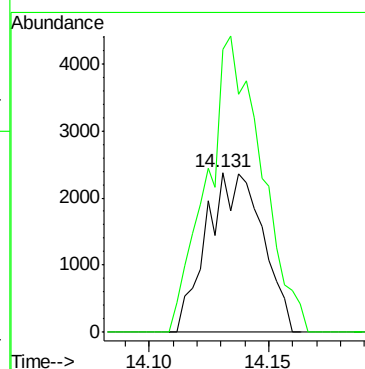
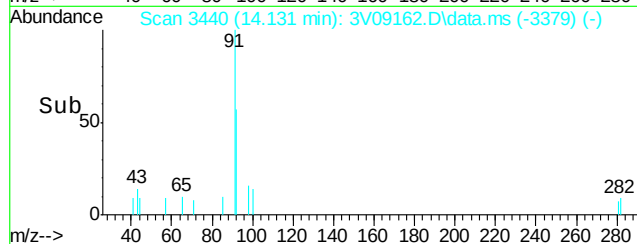
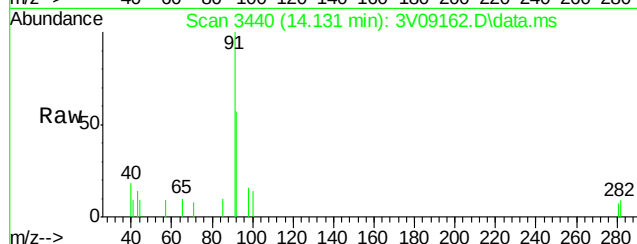


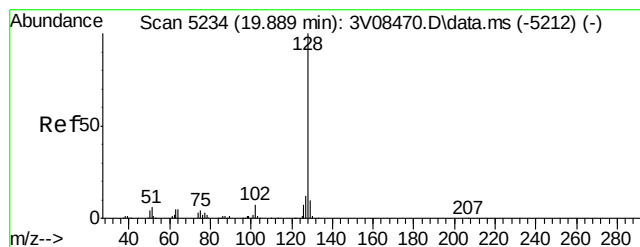
#1
TVH-Gasoline
Concen: 60.22 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V09162.D
Acq: 25 Feb 2011 10:43 am
Tgt Ion:TIC Resp: 113578



#56
Toluene
Concen: 0.26 ug/l
RT: 14.131 min Scan# 3440
Delta R.T. -0.004 min
Lab File: 3V09162.D
Acq: 25 Feb 2011 10:43 am

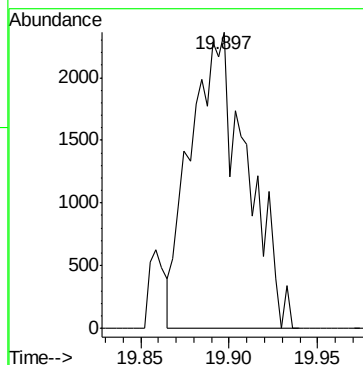
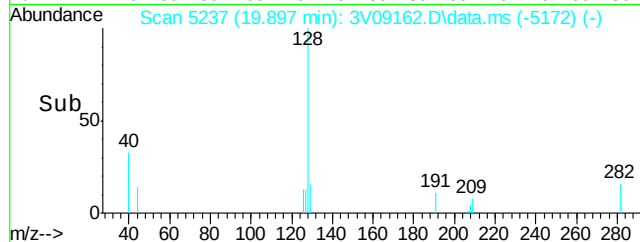
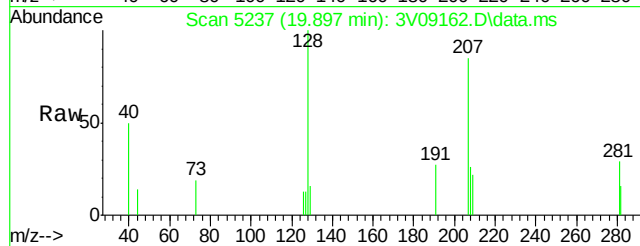
Tgt Ion: 92 Resp: 3863
Ion Ratio Lower Upper
92 100
91 179.4 151.6 191.6





#72
Naphthalene
Concen: 0.21 ug/l
RT: 19.897 min Scan# 5237
Delta R.T. 0.008 min
Lab File: 3V09162.D
Acq: 25 Feb 2011 10:43 am

Tgt Ion:128 Resp: 5220



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09162.D
Acq On : 25 Feb 2011 10:43 am
Operator : DONC
Sample : MB1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Title : 8260

Signal : TIC: 3V09162.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.309	367	379	401	rBV	46620	113560	4.54%	0.877%
2	4.434	402	418	442	rBV	319350	864815	34.55%	6.680%
3	11.891	2728	2742	2756	rBV	680506	1280581	51.16%	9.892%
4	12.286	2850	2865	2883	rBV2	316005	627321	25.06%	4.846%
5	12.687	2973	2990	3008	rBV	856175	1603101	64.05%	12.383%
6	14.076	3409	3423	3437	rBV	1392663	2502972	100.00%	19.334%
7	15.318	3796	3810	3829	rBV2	1130101	1972510	78.81%	15.237%
8	16.268	4092	4106	4125	rBV	917389	1642850	65.64%	12.690%
9	17.314	4413	4432	4447	rBV	1177997	2252124	89.98%	17.397%
10	17.731	4551	4562	4575	rBV2	47601	85927	3.43%	0.664%

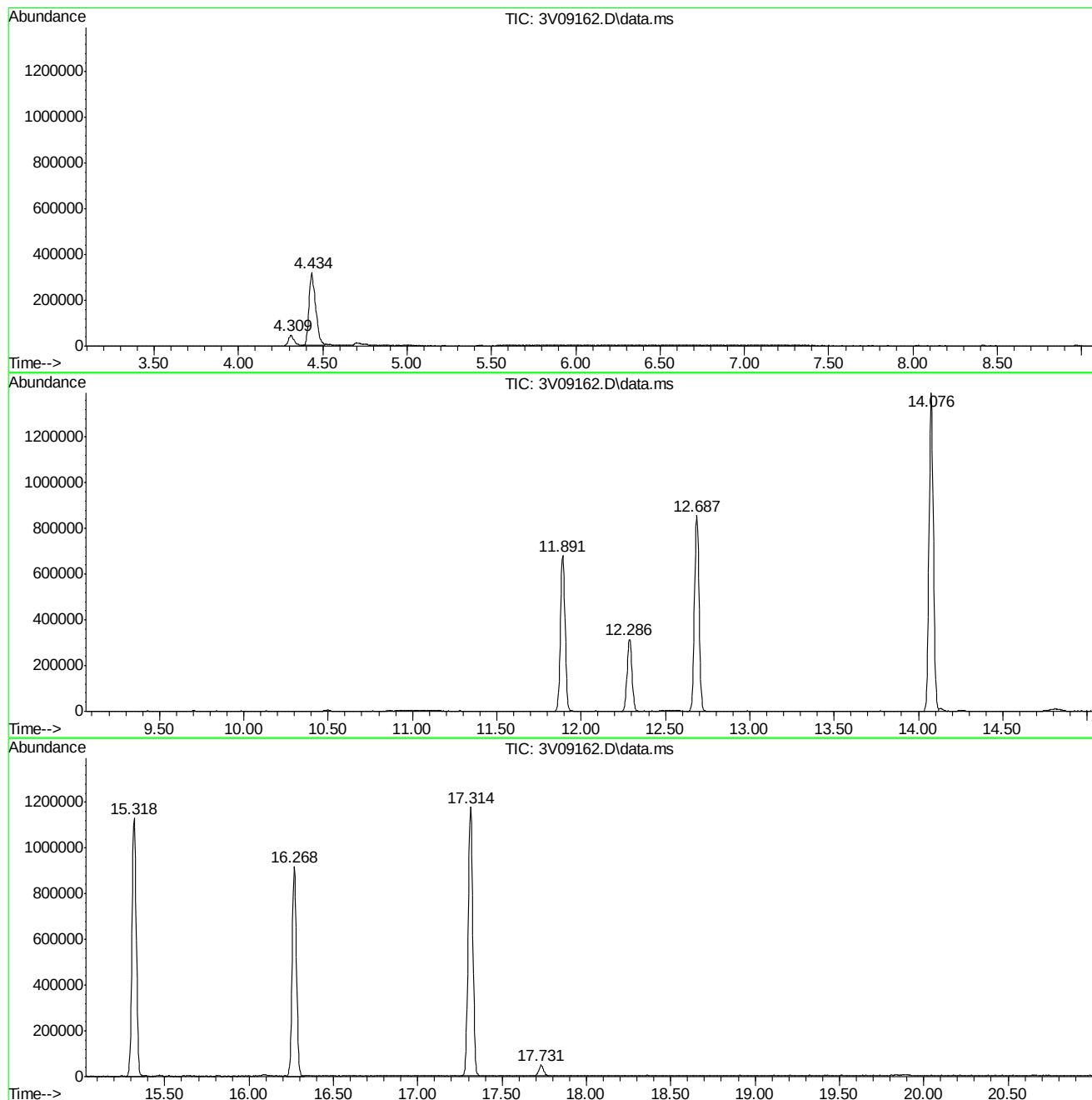
Sum of corrected areas: 12945761

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09162.D
Acq On : 25 Feb 2011 10:43 am
Operator : DONC
Sample : MB1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09162.D
Acq On : 25 Feb 2011 10:43 am
Operator : DONC
Sample : MB1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 4 Sample Multiplier: 1

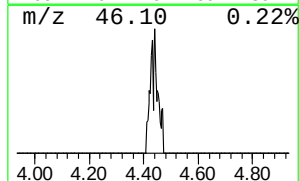
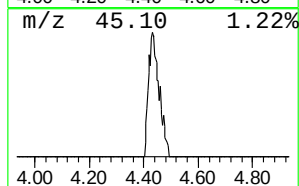
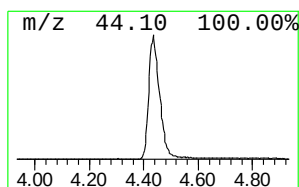
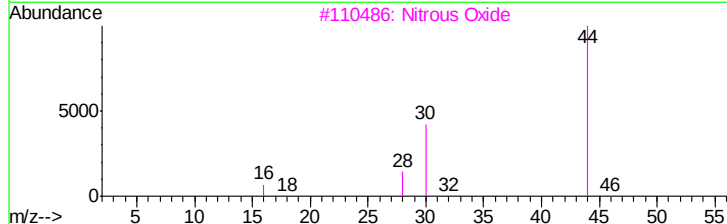
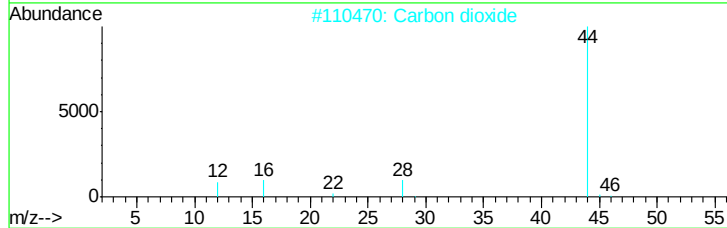
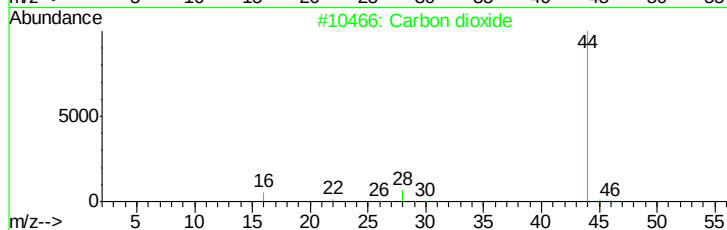
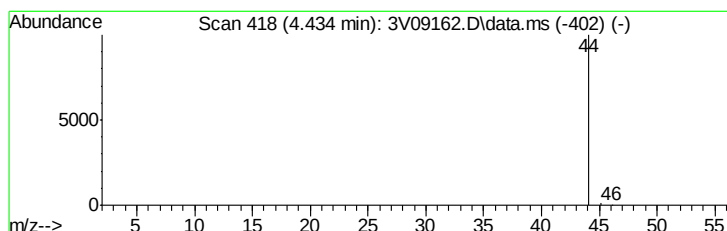
Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.434	33.77 ug/l	864815	Pentafluorobenzene	11.891

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	3
2			Carbon dioxide	44	CO2	000124-38-9	3
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3022511.S\
Data File : 3V09162.D
Acq On : 25 Feb 2011 10:43 am
Operator : DONC
Sample : MB1
Misc : MS1865,V3V511,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL462TVH462.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---
					# RT Resp Conc
Carbon dioxide	4.434	33.8	ug/l	864815	1 11.891 1280580 50.0

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA568-MB	GA0449.D	1	02/22/11	BR	n/a	n/a	GGA568

The QC reported here applies to the following samples:

Method: SW846 8015B

D21212-1, D21212-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.20	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	116% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA568-BS	GA0450.D	1	02/22/11	BR	n/a	n/a	GGA568

The QC reported here applies to the following samples: Method: SW846 8015B

D21212-1, D21212-2

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.12	96	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	119%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D21212
Account: GEOTCOL Geotrans, Inc.
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21212-1MS	GA0452.D	1	02/22/11	BR	n/a	n/a	GGA568
D21212-1MSD	GA0453.D	1	02/22/11	BR	n/a	n/a	GGA568
D21212-1	GA0451.D	1	02/22/11	BR	n/a	n/a	GGA568

The QC reported here applies to the following samples: Method: SW846 8015B

D21212-1, D21212-2

CAS No.	Compound	D21212-1 mg/l	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.03	92	1.94	88	5	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21212-1	Limits
120-82-1	1,2,4-Trichlorobenzene	120%	124%	112%	60-140%

7.3.1
7

GC Volatiles

Raw Data

∞

Manual Integrations

APPROVED

(compounds with "m" flag)

Judy Melson

02/23/11 09:14

Quantitation Report (QT Reviewed)

Signal #1 : Z:\022211\GA0451.D\FID1A.CH Vial: 7
Signal #2 : Z:\022211\GA0451.D\FID2B.CH
Acq On : 22 Feb 2011 2:39 pm Operator: BrianR
Sample : D21212-1 Inst : BTEX2
Misc : GC1679,GGA568,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 23 08:16:10 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Feb 23 08:15:42 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.56	4097449	111.841 %	m
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	7.56	5634108	0.058 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T	Benzene	0.00	0	N.D. ug/L	d
6) T	Toluene	0.00	0	N.D. ug/L	d
7) T	Ethylbenzene	0.00	0	N.D. ug/L	d
8) T	m,p-Xylene	0.00	0	N.D. ug/L	d
9) T	o-Xylene	0.00	0	N.D. ug/L	d
11) T	Naphthalene	0.00	0	N.D. ug/L	d

8.1.1

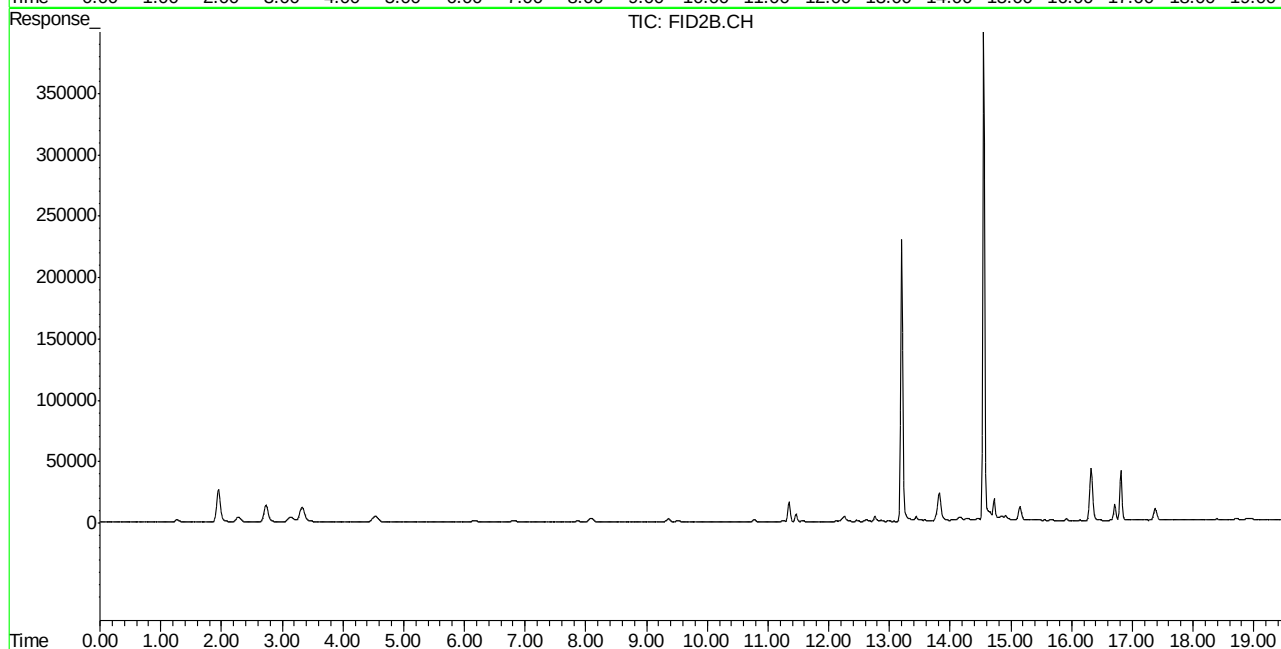
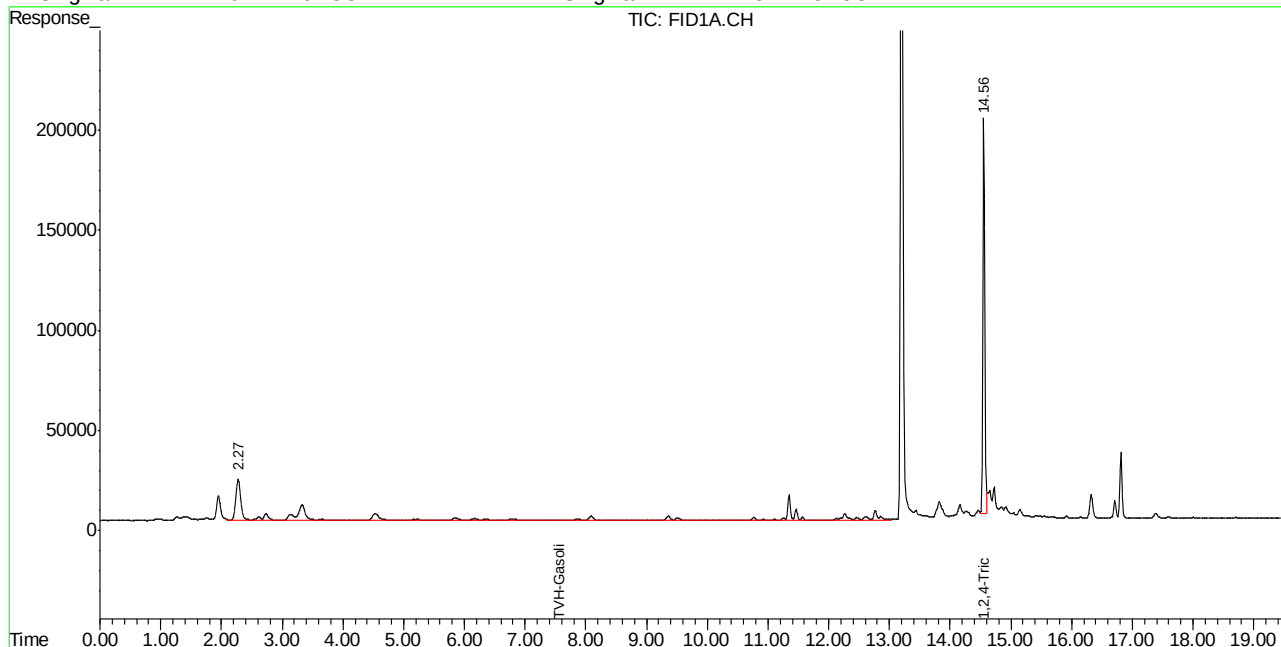
8

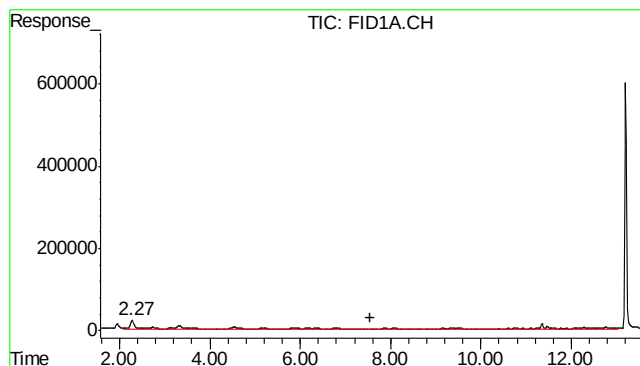
Quantitation Report (QT Reviewed)

Signal #1 : Z:\022211\GA0451.D\FID1A.CH Vial: 7
Signal #2 : Z:\022211\GA0451.D\FID2B.CH
Acq On : 22 Feb 2011 2:39 pm Operator: BrianR
Sample : D21212-1 Inst : BTEX2
Misc : GC1679,GGA568,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 23 6:05 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Feb 23 08:15:42 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

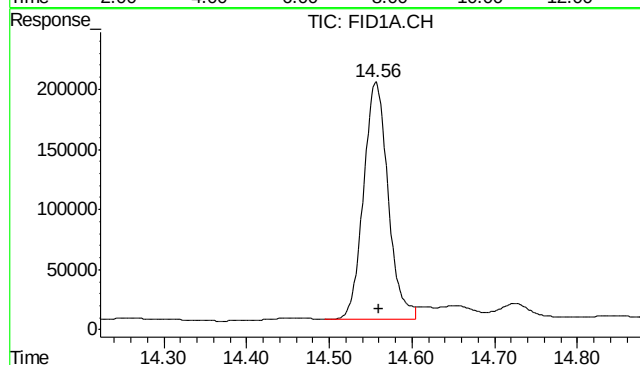
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





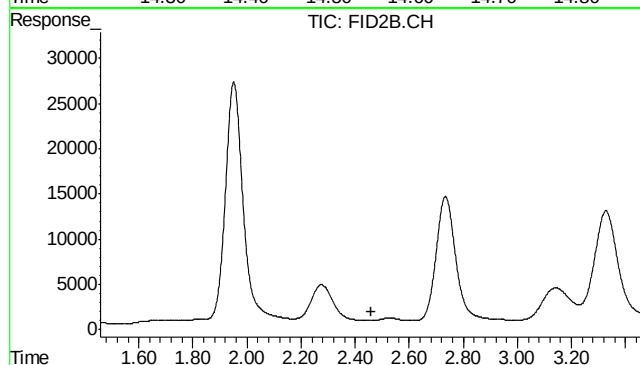
#1 TVH-Gasoline

R.T.: 7.560 min
Delta R.T.: 0.000 min
Response: 5634108
Conc: 0.06 mg/L m



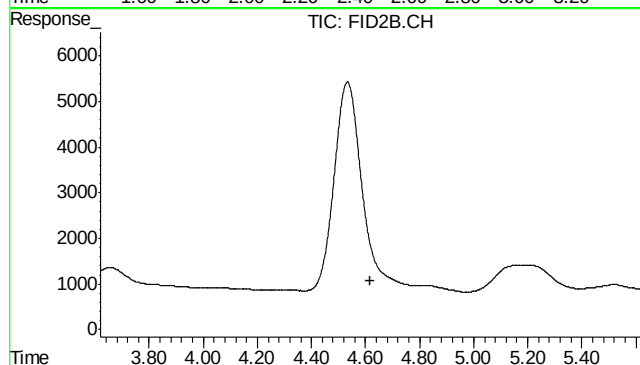
#2 1,2,4-Trichlorobenzene

R.T.: 14.556 min
Delta R.T.: -0.004 min
Response: 4097449
Conc: 111.84 % m



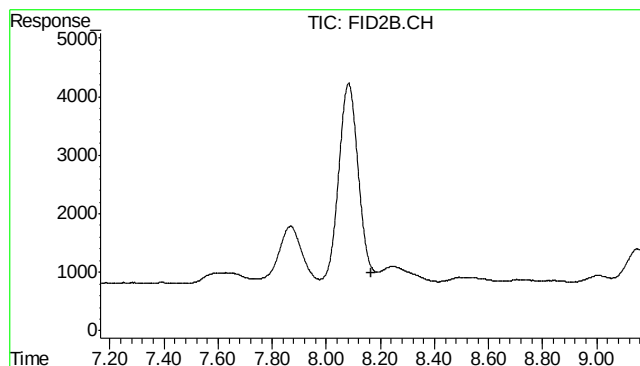
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.458 min
Response: 0
Conc: N.D.

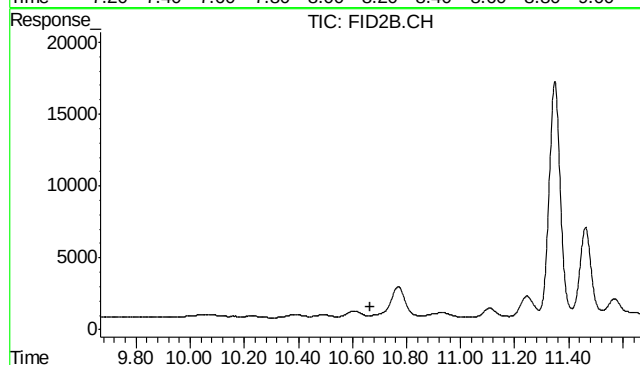


#5 Benzene

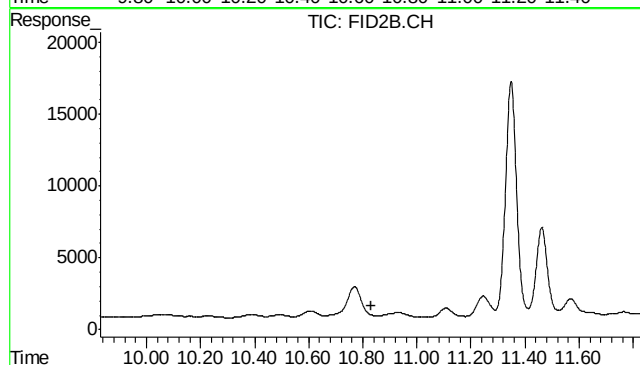
R.T.: 0.000 min
Exp R.T.: 4.618 min
Response: 0
Conc: N.D.



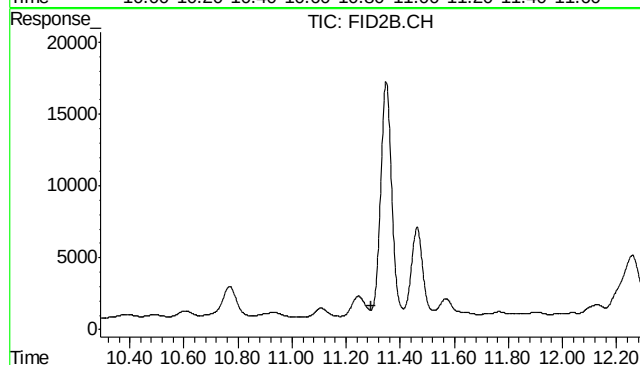
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.164 min
 Response: 0
 Conc: N.D.



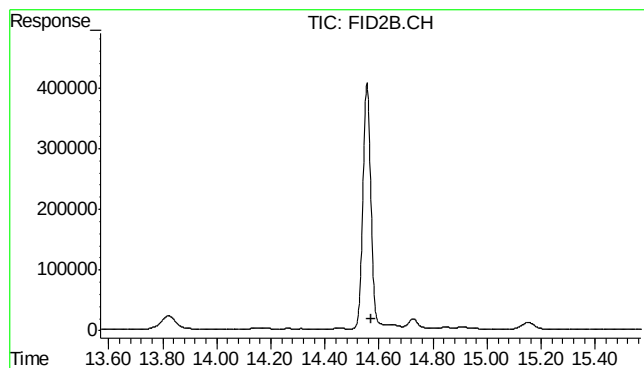
#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.667 min
 Response: 0
 Conc: N.D.



#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.829 min
 Response: 0
 Conc: N.D.

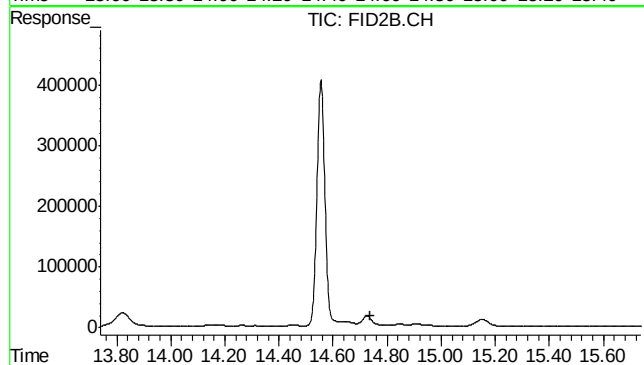


#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.291 min
 Response: 0
 Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.570 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.738 min
 Response: 0
 Conc: N.D.

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\022211\GA0454.D\FID1A.CH Vial: 10
Signal #2 : Z:\022211\GA0454.D\FID2B.CH
Acq On : 22 Feb 2011 4:26 pm Operator: BrianR
Sample : D21212-2 Inst : BTEX2
Misc : GC1679,GGA568,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 23 08:16:19 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Feb 23 08:15:42 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

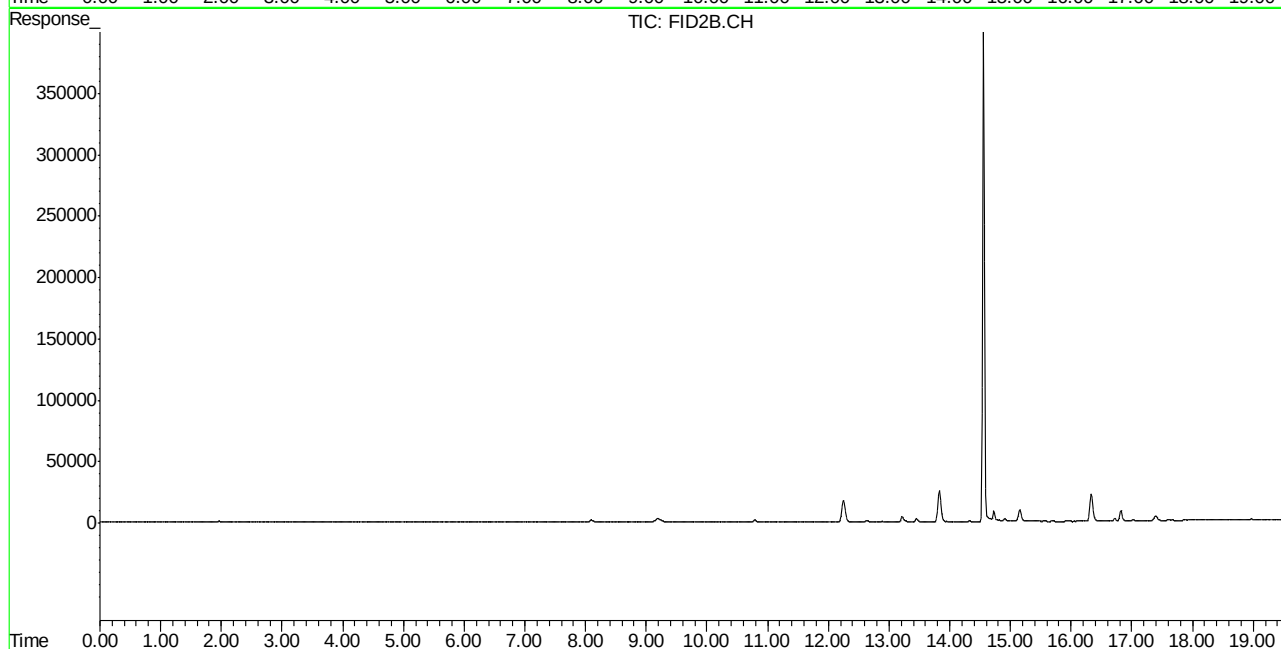
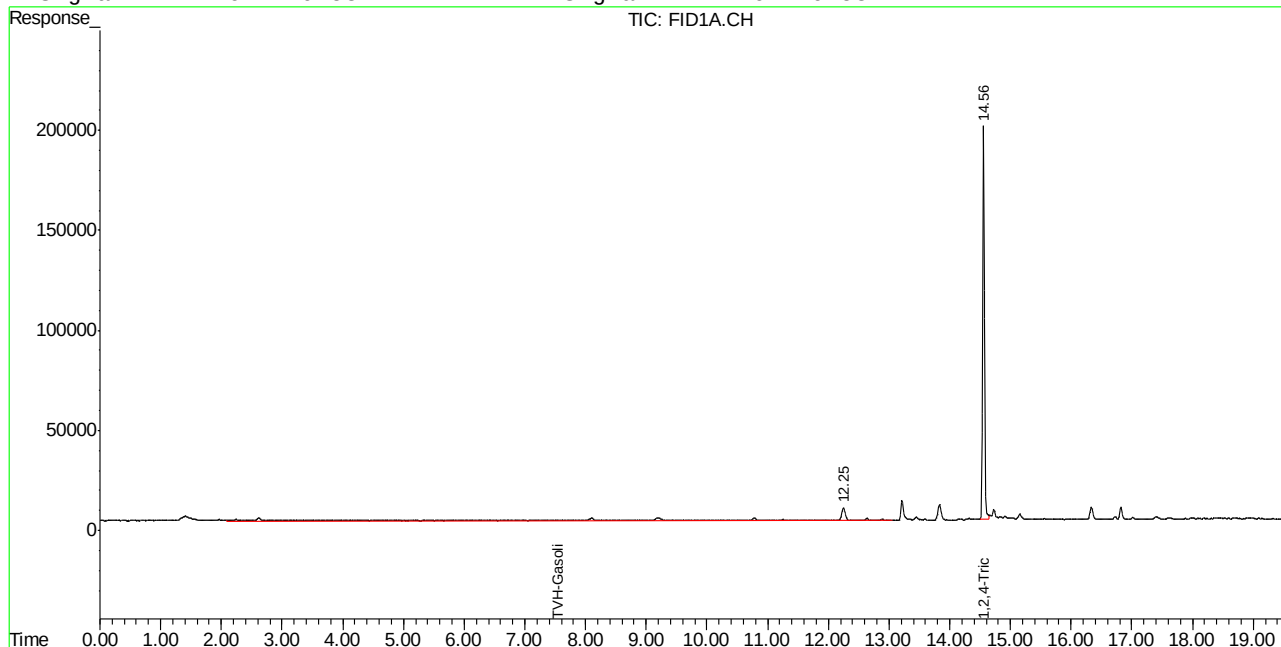
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.56	4015805	109.612 %	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d
Target Compounds					
1) H	TVH-Gasoline	7.56	1428593	0.015 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T	Benzene	0.00	0	N.D. ug/L	d
6) T	Toluene	0.00	0	N.D. ug/L	d
7) T	Ethylbenzene	0.00	0	N.D. ug/L	d
8) T	m,p-Xylene	0.00	0	N.D. ug/L	d
9) T	o-Xylene	0.00	0	N.D. ug/L	d
11) T	Naphthalene	0.00	0	N.D. ug/L	d

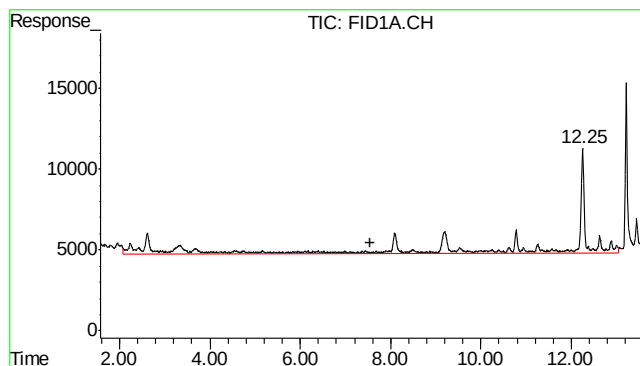
Quantitation Report (QT Reviewed)

Signal #1 : Z:\022211\GA0454.D\FID1A.CH Vial: 10
Signal #2 : Z:\022211\GA0454.D\FID2B.CH
Acq On : 22 Feb 2011 4:26 pm Operator: BrianR
Sample : D21212-2 Inst : BTEX2
Misc : GC1679,GGA568,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 23 6:06 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Feb 23 08:15:42 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

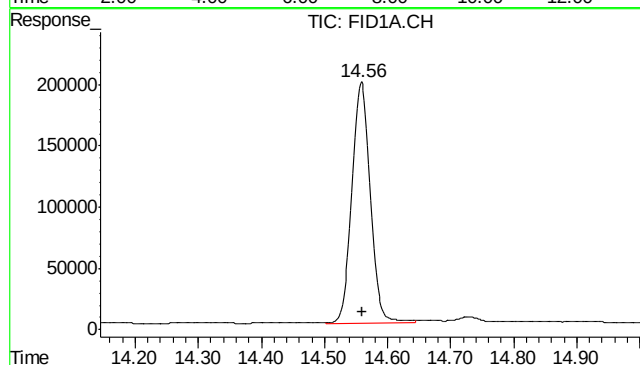
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





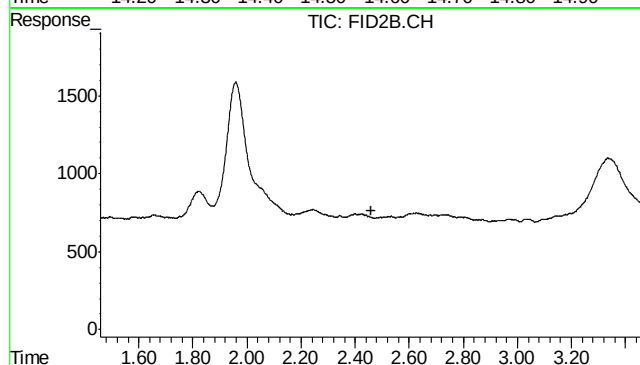
#1 TVH-Gasoline

R.T.: 7.560 min
Delta R.T.: 0.000 min
Response: 1428593
Conc: 0.01 mg/L m



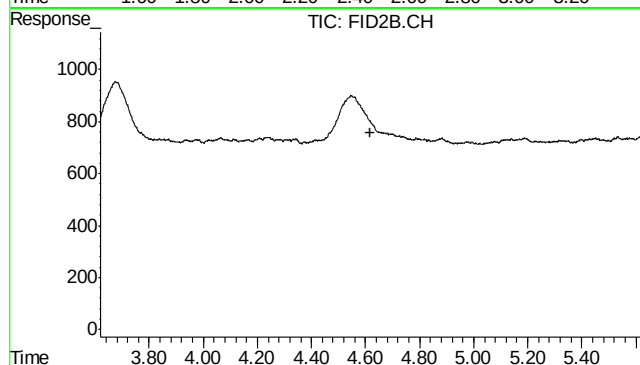
#2 1,2,4-Trichlorobenzene

R.T.: 14.559 min
Delta R.T.: -0.001 min
Response: 4015805
Conc: 109.61 %



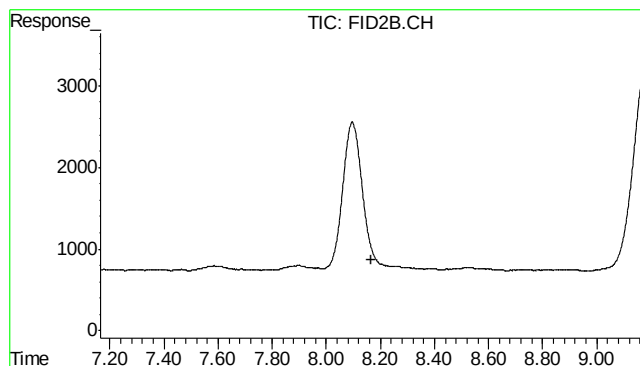
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.458 min
Response: 0
Conc: N.D.

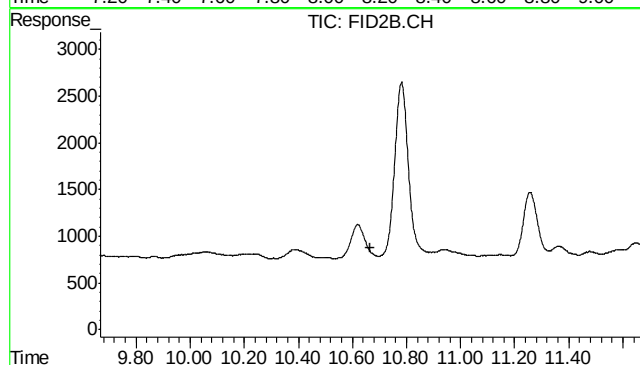


#5 Benzene

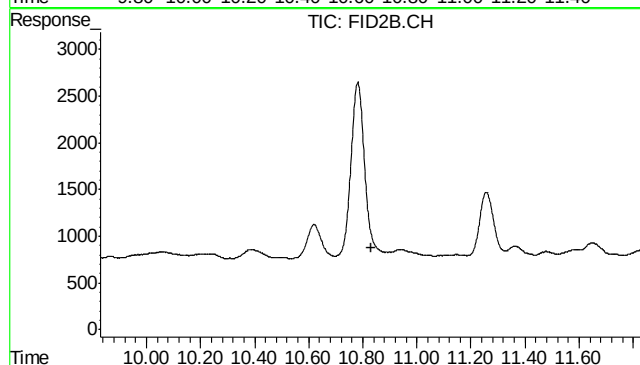
R.T.: 0.000 min
Exp R.T.: 4.618 min
Response: 0
Conc: N.D.



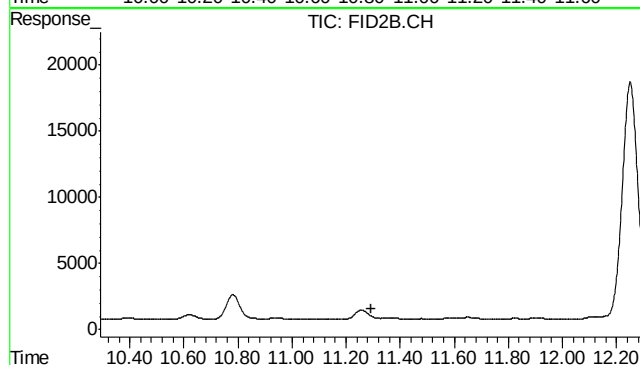
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.164 min
 Response: 0
 Conc: N.D.



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.667 min
 Response: 0
 Conc: N.D.

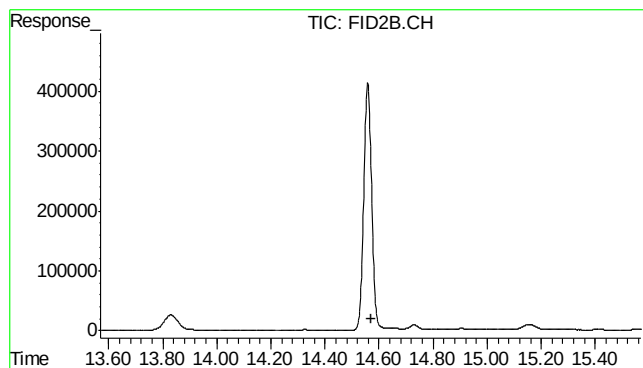


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.829 min
 Response: 0
 Conc: N.D.



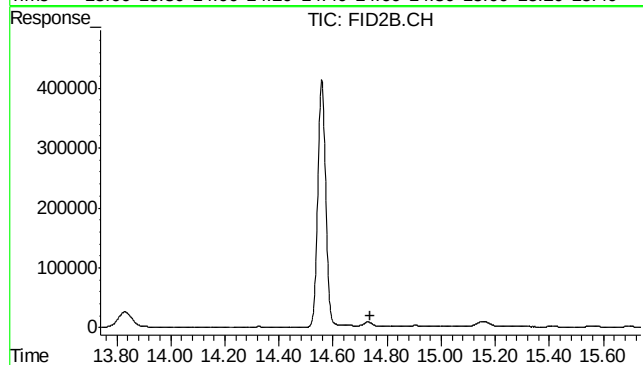
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.291 min
 Response: 0
 Conc: N.D.

8.1.2
 8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
 Exp R.T. : 14.570 min
 Response: 0
 Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.738 min
 Response: 0
 Conc: N.D.

8.1.2

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\022211\GA0449.D\FID1A.CH Vial: 5
Signal #2 : Z:\022211\GA0449.D\FID2B.CH
Acq On : 22 Feb 2011 1:29 pm Operator: BrianR
Sample : MB, W Inst : BTEX2
Misc : GC1679,GGA568,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 23 08:16:04 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Feb 23 08:15:42 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.56	4233100	115.543	%
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D.	% d
Target Compounds					
1) H	TVH-Gasoline	7.56	1411988	0.015	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	0.00	0	N.D.	ug/L d

(f)=RT Delta > 1/2 Window

GA0449.D TA582GA534.M

Wed Feb 23 08:30:57 2011

(m)=manual int.

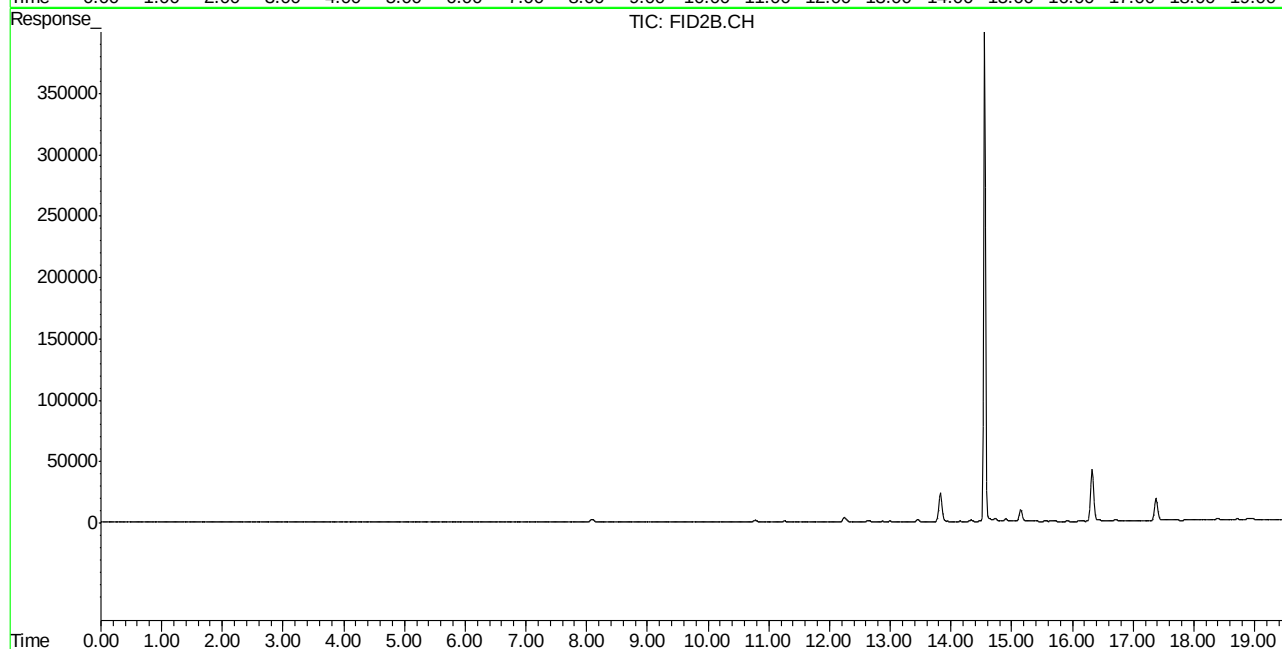
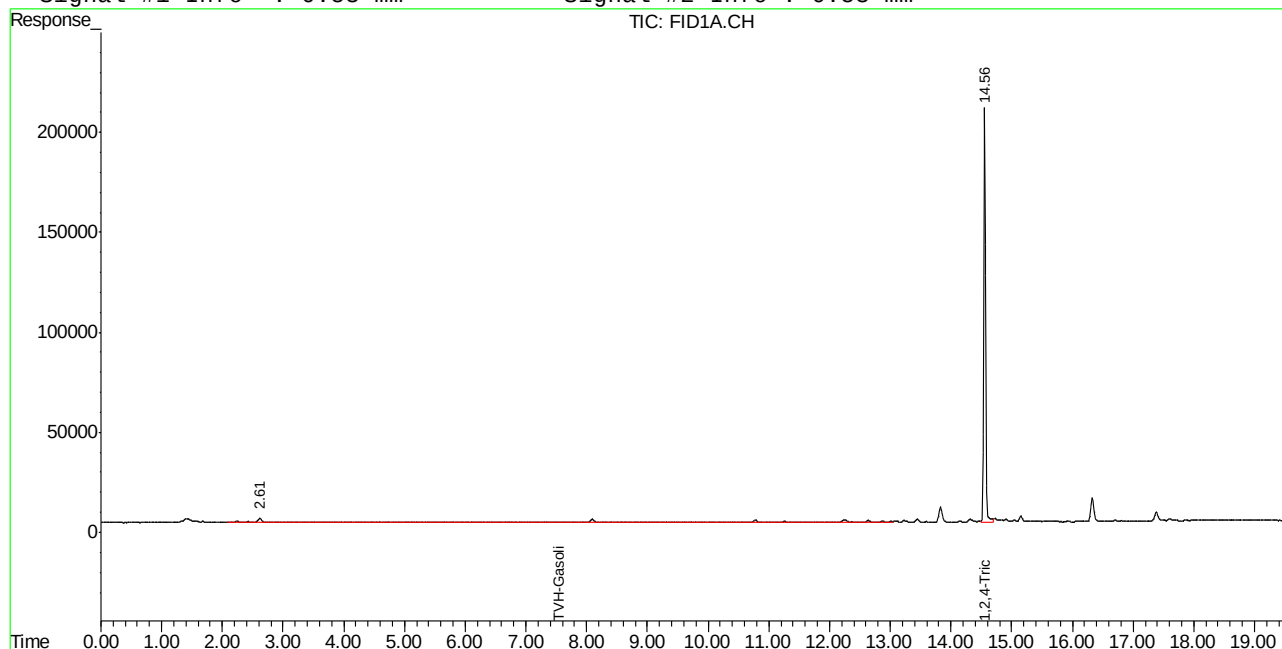
GC

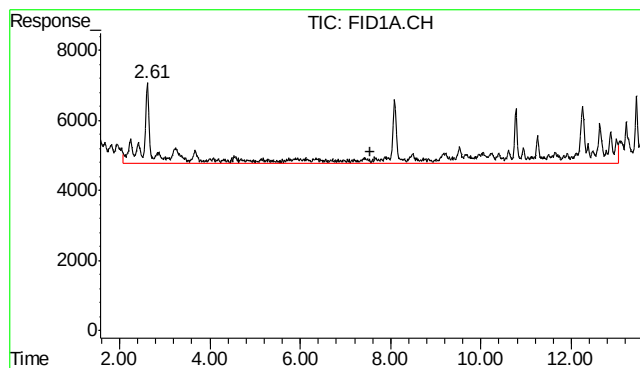
Quantitation Report (QT Reviewed)

Signal #1 : Z:\022211\GA0449.D\FID1A.CH Vial: 5
Signal #2 : Z:\022211\GA0449.D\FID2B.CH
Acq On : 22 Feb 2011 1:29 pm Operator: BrianR
Sample : MB, W Inst : BTEX2
Misc : GC1679,GGA568,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 23 6:04 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Feb 23 08:15:42 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

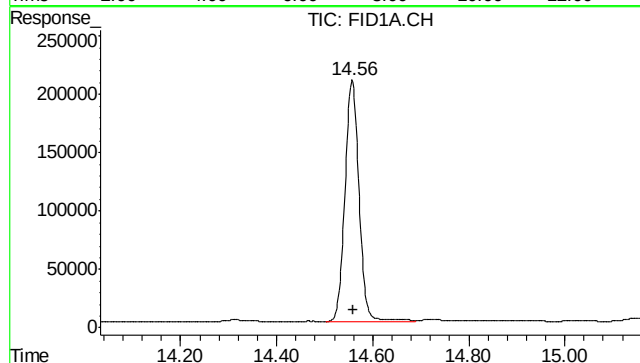
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





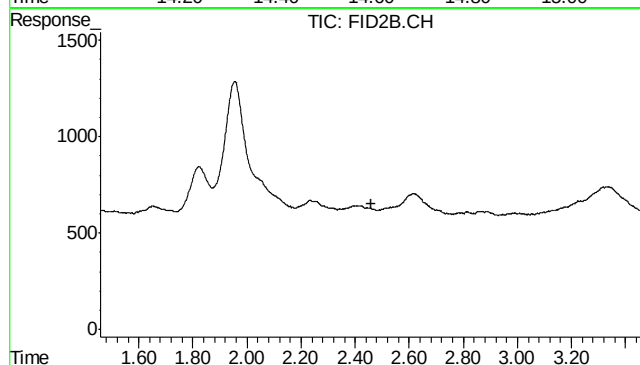
#1 TVH-Gasoline

R.T.: 7.560 min
Delta R.T.: 0.000 min
Response: 1411988
Conc: 0.01 mg/L m



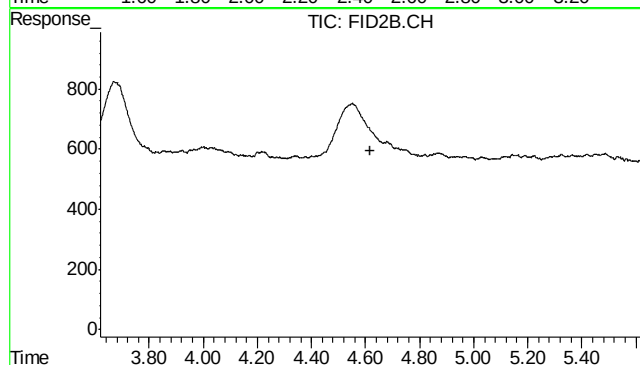
#2 1,2,4-Trichlorobenzene

R.T.: 14.557 min
Delta R.T.: -0.003 min
Response: 4233100
Conc: 115.54 %



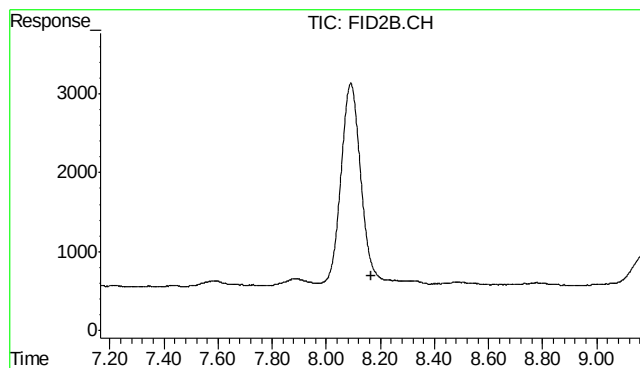
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.458 min
Response: 0
Conc: N.D.



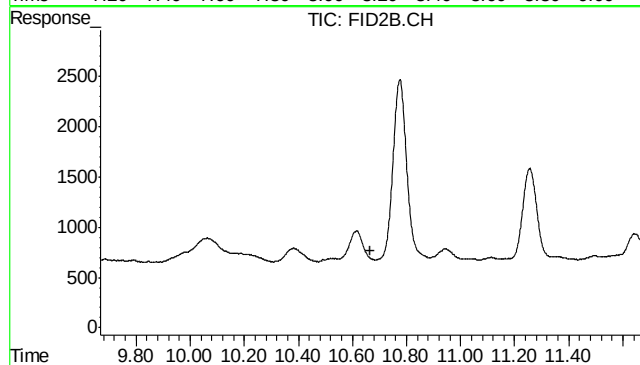
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.618 min
Response: 0
Conc: N.D.



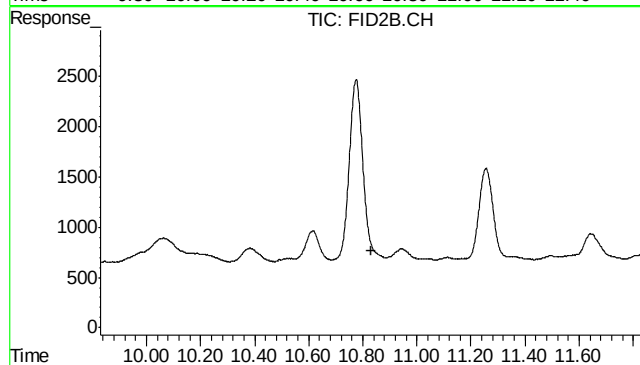
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.164 min
Response: 0
Conc: N.D.



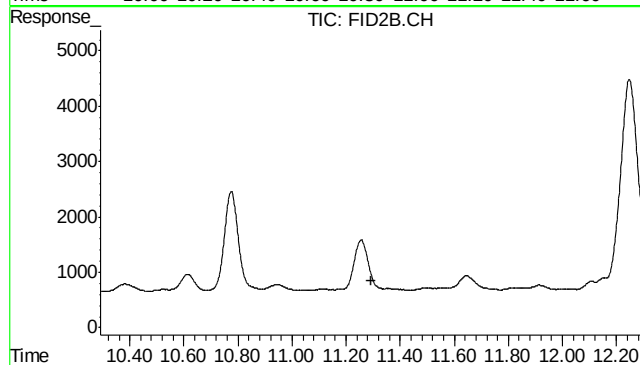
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.667 min
Response: 0
Conc: N.D.



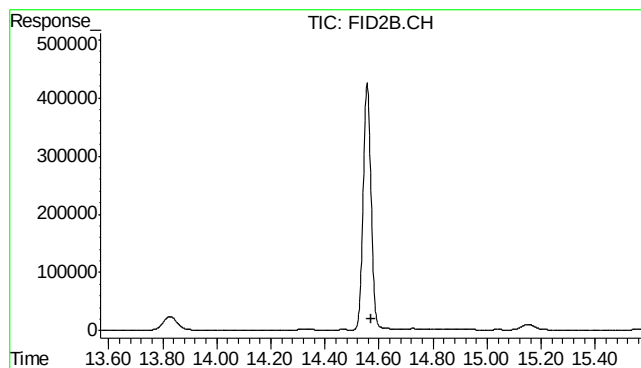
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.829 min
Response: 0
Conc: N.D.



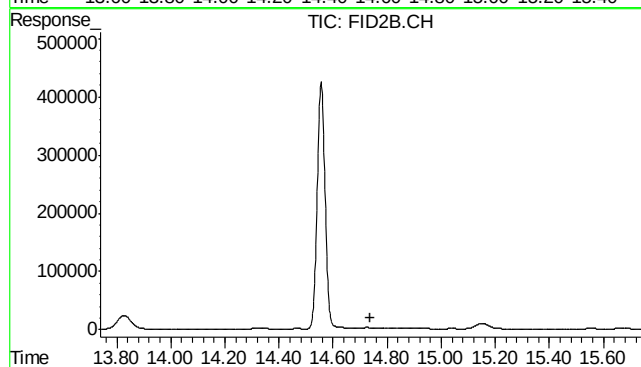
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 11.291 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 0.000 min
Exp R.T. : 14.570 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.738 min
Response: 0
Conc: N.D.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/24/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	7	10		
Antimony	30	1.7	1.4		
Arsenic	25	2.8	3.6		
Barium	10	.14	.46	0.0	<10
Beryllium	10	1.4	.57		
Boron	50	3.5	1.4		
Cadmium	10	.22	.46		
Calcium	400	17	51	12.7	<400
Chromium	10	.27	.18		
Cobalt	5.0	.48	.4		
Copper	10	1.6	.76		
Iron	70	7.7	8	1.7	<70
Lead	50	1.3	1.2		
Lithium	2.0	.76	1.6		
Magnesium	200	5.8	13	0.0	<200
Manganese	5.0	.21	.3	0.10	<5.0
Molybdenum	10	.41	.64		
Nickel	30	.38	.3		
Phosphorus	100	15	15		
Potassium	1000	380	140	61.0	<1000
Selenium	50	2.8	1.5		
Silicon	50	12	13		
Silver	30	.98	.3		
Sodium	400	230	55	-26	<400
Strontium	5.0	.091	.22	0.0	<5.0
Thallium	10	3.1	2.3		
Tin	50	14	9.9		
Titanium	10	.098	.15		
Uranium	50	2.2	2.5		
Vanadium	10	.27	.25		
Zinc	30	.76	3.5		

Associated samples MP4086: D21212-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/24/11

Metal	D21272-21 Original MS		SpikeLot MPICALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	50.6	2090	2000	102.0	70-130
Beryllium					
Boron	anr				
Cadmium	anr				
Calcium	46200	72100	25000	103.6	70-130
Chromium	anr				
Cobalt					
Copper	anr				
Iron	26.1	5260	5000	104.7	70-130
Lead	anr				
Lithium					
Magnesium	14900	40700	25000	103.2	70-130
Manganese	5.9	536	500	106.0	70-130
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	2080	28200	25000	104.5	70-130
Selenium					
Silicon					
Silver	anr				
Sodium	18800	44000	25000	100.8	70-130
Strontium	291	806	500	103.0	70-130
Thallium					
Tin					
Titanium					
Uranium	anr				
Vanadium					
Zinc	anr				

Associated samples MP4086: D21212-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/24/11

Metal	D21272-21 Original MSD		Spikelet MPICALL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	50.6	2070	2000	101.0	1.0	20
Beryllium						
Boron	anr					
Cadmium	anr					
Calcium	46200	70800	25000	98.4	1.8	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	26.1	5210	5000	103.7	1.0	20
Lead	anr					
Lithium						
Magnesium	14900	39900	25000	100.0	2.0	20
Manganese	5.9	531	500	105.0	0.9	20
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	2080	27400	25000	101.3	2.9	20
Selenium						
Silicon						
Silver	anr					
Sodium	18800	43200	25000	97.6	1.8	20
Strontium	291	797	500	101.2	1.1	20
Thallium						
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	anr					

Associated samples MP4086: D21212-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/24/11

Metal	BSP Result	Spike lot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	1990	2000	99.5	85-115
Beryllium				
Boron	anr			
Cadmium	anr			
Calcium	26800	25000	107.2	85-115
Chromium	anr			
Cobalt				
Copper	anr			
Iron	5160	5000	103.2	85-115
Lead	anr			
Lithium				
Magnesium	25400	25000	101.6	85-115
Manganese	531	500	106.2	85-115
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	24900	25000	99.6	85-115
Selenium				
Silicon				
Silver	anr			
Sodium	24500	25000	98.0	85-115
Strontium	508	500	101.6	85-115
Thallium				
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP4086: D21212-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

QC Batch ID: MP4086
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO ₃	GN8421	5.0	0.0	mg/l	100	101	101.2	90-110%
Chloride	GP3837/GN8377	0.50	0.45	mg/l	20	19.6	98.0	90-110%
Hydrogen Sulfide	GN8424	0.50	<0.50	mg/l	2.74	2.4	87.6	60-120%
Iron, Ferrous	GN8395	0.10	0.0	mg/l	1.0	1.0	101.0	85-115%
Nitrogen, Ammonia	GP3866/GN8442	0.10	<0.10	mg/l	20	21.7	108.6	90-110%
Nitrogen, Nitrate	GP3837/GN8377	0.045	0.0	mg/l	4.52	4.24	93.8	90-110%
Nitrogen, Nitrite	GP3837/GN8377	0.061	0.0	mg/l	6.09	5.92	97.2	90-110%
Solids, Total Dissolved	GN8398	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP3837/GN8377	0.50	0.26	mg/l	30	28.2	94.0	90-110%

Associated Samples:

Batch GN8395: D21212-1F

Batch GN8398: D21212-1

Batch GN8421: D21212-1

Batch GN8424: D21212-1

Batch GP3837: D21212-1

Batch GP3866: D21212-1

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO ₃	GN8421	D21235-3	mg/l	25.8	24.6	6.0	0-20%
Hydrogen Sulfide	GN8424	D21269-1	mg/l	<0.50	<0.50	0.0	0-20%
Iron, Ferrous	GN8395	D21212-1F	mg/l	0.0	0.25	200.0(a)	0-20%
Nitrogen, Ammonia	GP3866/GN8442	D21235-1	mg/l	0.29	0.29	0.0	0-20%
Solids, Total Dissolved	GN8398	D21212-1	mg/l	4820	4800	0.4	0-25%

Associated Samples:

Batch GN8395: D21212-1F

Batch GN8398: D21212-1

Batch GN8421: D21212-1

Batch GN8424: D21212-1

Batch GP3866: D21212-1

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN8421	D21235-3	mg/l	25.8	100	120	93.8	80-120%
Chloride	GP3837/GN8377	D21204-1	mg/l	1.4	10	10.5	91.0	80-120%
Hydrogen Sulfide	GN8424	D21269-2	mg/l	<0.50	2.74	2.0	73.0	60-120%
Nitrogen, Ammonia	GP3866/GN8442	D21235-1	mg/l	0.29	10	11.2	111.7	80-120%
Nitrogen, Nitrate	GP3837/GN8377	D21204-1	mg/l	1.6	2.83	4.5	102.7	80-120%
Nitrogen, Nitrite	GP3837/GN8377	D21204-1	mg/l	0.0	0.305	0.29	95.2	80-120%
Sulfate	GP3837/GN8377	D21204-1	mg/l	1.7	10	10.7	90.0	80-120%

Associated Samples:

Batch GN8421: D21212-1

Batch GN8424: D21212-1

Batch GP3837: D21212-1

Batch GP3866: D21212-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D21212
Account: GEOTCOL - Geotrans, Inc.
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN8421	D21235-3	mg/l	25.8	100	118	0.9	20%
Chloride	GP3837/GN8377	D21204-1	mg/l	1.4	10	10.7	1.9	20%
Nitrogen, Ammonia	GP3866/GN8442	D21235-1	mg/l	0.29	10	11.2	0.4	
Nitrogen, Nitrate	GP3837/GN8377	D21204-1	mg/l	1.6	2.83	4.5	0.0	20%
Nitrogen, Nitrite	GP3837/GN8377	D21204-1	mg/l	0.0	0.305	0.30	3.4	20%
Sulfate	GP3837/GN8377	D21204-1	mg/l	1.7	10	10.9	1.9	20%

Associated Samples:

Batch GN8421: D21212-1

Batch GP3837: D21212-1

Batch GP3866: D21212-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.4
10

Lab #: 203076 Job #: 14603
 Sample Name/Number: MW-1A-012111
 Company: GeoTrans, Inc.
 Date Sampled: 1/21/2011
 Container: IsoBag
 Field/Site Name: Garfield County
 Location: Rifle, CO
 Formation/Depth:
 Sampling Point:
 Date Received: 1/25/2011 Date Reported: 2/18/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.025			
Hydrogen Sulfide -----	nd			
Helium -----	0.0061			
Hydrogen -----	nd			
Argon -----	0.803			
Oxygen -----	15.99			
Nitrogen -----	66.63			
Carbon Dioxide -----	nd			
Methane -----	16.50	-55.94	-189.6	
Ethane -----	0.0482			
Ethylene -----	nd			
Propane -----	0.0017			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 168

Specific gravity, calculated: 0.924

Remarks:

Concentration of methane in water = 15 cc/L ; 9.8 ppm

Revised report issued 03-30-2011 to include dissolved methane concentration.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 203077 Job #: 14603
 Sample Name/Number: MW-1B-012111
 Company: GeoTrans, Inc.
 Date Sampled: 1/21/2011
 Container: IsoBag
 Field/Site Name: Garfield County
 Location: Rifle, CO
 Formation/Depth:
 Sampling Point:
 Date Received: 1/25/2011 Date Reported: 2/18/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.014			
Hydrogen Sulfide -----	nd			
Helium -----	0.0064			
Hydrogen -----	nd			
Argon -----	0.417			
Oxygen -----	10.18			
Nitrogen -----	24.83			
Carbon Dioxide -----	0.005			
Methane -----	63.18	-36.33	-170.4	
Ethane -----	1.26			
Ethylene -----	nd			
Propane -----	0.100			
Iso-butane -----	0.0080			
N-butane -----	0.0018			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 665

Specific gravity, calculated: 0.723

Remarks:

Concentration of methane in water = 53 cc/L ; 35 ppm

Revised report issued 03-30-2011 to include dissolved methane concentration.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 203996 Job #: 14714
 Sample Name/Number: MW-2B-020111
 Company: GeoTrans, Inc.
 Date Sampled: 2/01/2011
 Container: IsoBag
 Field/Site Name: Garfield County
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 2/14/2011 Date Reported: 3/11/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.030			
Hydrogen Sulfide -----	nd			
Helium -----	na			
Hydrogen -----	na			
Argon -----	0.596			
Oxygen -----	14.06			
Nitrogen -----	35.84			
Carbon Dioxide -----	nd			
Methane -----	48.69	-38.29	-184.4	
Ethane -----	0.763			
Ethylene -----	0.0013			
Propane -----	0.0158			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 507

Specific gravity, calculated: 0.788

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.47

Concentration of methane in water = 33 cc/L ; 22 ppm

*Addition of helium negates the ability to detect native helium or hydrogen.

Revised report issued 03-30-2011 to include dissolved methane concentration.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 204626 Job #: 14768
 Sample Name/Number: MW-3B_022111
 Company: GeoTrans, Inc.
 Date Sampled: 2/21/2011
 Container: IsoBag
 Field/Site Name: Garfield County
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 2/23/2011 Date Reported: 3/23/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.021			
Hydrogen Sulfide -----	nd			
Helium -----	0.0039			
Hydrogen -----	0.0019			
Argon -----	1.03			
Oxygen -----	20.68			
Nitrogen -----	77.75			
Carbon Dioxide -----	nd			
Methane -----	0.497	-44.01	-196.0	
Ethane -----	0.0115			
Ethylene -----	0.0007			
Propane -----	0.0009			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 5 Specific gravity, calculated: 0.998

Remarks:

Concentration of methane in water = 0.53 cc/L ; 0.36 ppm

** Isotopes obtained online via GC-C-IRMS

Revised report issued 03-30-2011 to include dissolved methane concentration.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 202873 Job #: 14574
 Sample Name/Number: Currie Well_011911
 Company: GeoTrans, Inc.
 Date Sampled: 1/19/2011
 Container: IsoBag
 Field/Site Name: Garfield County
 Location: Mamm Creek
 Formation/Depth:
 Sampling Point:
 Date Received: 1/21/2011 Date Reported: 2/17/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	nd			
Helium -----	0.0093			
Hydrogen -----	nd			
Argon -----	0.967			
Oxygen -----	10.49			
Nitrogen -----	83.71			
Carbon Dioxide -----	0.42			
Methane -----	4.40	-82.03	-192.1	
Ethane -----	0.0037			
Ethylene -----	nd			
Propane -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 45

Specific gravity, calculated: 0.970

Remarks:

Concentration of methane in water = 8.5 cc/L ; 5.6 ppm

Revised report issued 03-30-2011 to include dissolved methane concentration.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 202874 Job #: 14574
 Sample Name/Number: MW-2A-012011
 Company: GeoTrans, Inc.
 Date Sampled: 1/20/2011
 Container: IsoBag
 Field/Site Name: Garfield County
 Location: Mamm Creek
 Formation/Depth:
 Sampling Point:
 Date Received: 1/21/2011 Date Reported: 2/17/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.008			
Hydrogen Sulfide -----	nd			
Helium -----	0.0077			
Hydrogen -----	nd			
Argon -----	0.395			
Oxygen -----	3.35			
Nitrogen -----	19.21			
Carbon Dioxide -----	0.006			
Methane -----	76.94	-59.31	-206.8	
Ethane -----	0.0835			
Ethylene -----	0.0046			
Propane -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 781

Specific gravity, calculated: 0.656

Remarks:

Concentration of methane in water = 130 cc/L ; 84 ppm

Revised report issued 03-30-2011 to include dissolved methane concentration.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 202875 Job #: 14574
 Sample Name/Number: MW-3A-012011
 Company: GeoTrans, Inc.
 Date Sampled: 1/20/2011
 Container: IsoBag
 Field/Site Name: Garfield County
 Location: Mamm Creek
 Formation/Depth:
 Sampling Point:
 Date Received: 1/21/2011 Date Reported: 2/17/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.047			
Hydrogen Sulfide -----	nd			
Helium -----	0.0068			
Hydrogen -----	nd			
Argon -----	0.801			
Oxygen -----	16.07			
Nitrogen -----	77.10			
Carbon Dioxide -----	nd			
Methane -----	5.97	-61.51	-211.4	
Ethane -----	0.0062			
Ethylene -----	nd			
Propane -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 61

Specific gravity, calculated: 0.968

Remarks:

Concentration of methane in water = 8.9 cc/L ; 5.9 ppm

Revised report issued 03-30-2011 to include dissolved methane concentration.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Round 2 Sampling Event
May 11, 2011 – May 13, 2011



05/20/11

Technical Report for

TetraTech GEO

Garfield County

Accutest Job Number: D23412

Sampling Date: 05/11/11

Report to:

Geotrans, Inc.
363 Centennial Parkway, Suite 210
Louisville, CO 80027
brendan.shine@geotransinc.com; david.bohmann@geotransinc.com
ATTN: Brendan Shine

Total number of pages in report: **123**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'J. Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

TetraTech GEO
Garfield County

Job No: D23412

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D23412-1	05/11/11	08:40 KT	05/12/11	AQ	Ground Water	MW-3A-051111
D23412-1F	05/11/11	08:40 KT	05/12/11	AQ	Groundwater Filtered	MW-3A-051111
D23412-2	05/11/11	10:35 KT	05/12/11	AQ	Ground Water	MW-3B-051111
D23412-2F	05/11/11	10:35 KT	05/12/11	AQ	Groundwater Filtered	MW-3B-051111
D23412-3	05/11/11	12:30 KT	05/12/11	AQ	Ground Water	CURRIE WELL-501111
D23412-3F	05/11/11	12:30 KT	05/12/11	AQ	Groundwater Filtered	CURRIE WELL-501111

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: TetraTech GEO

Job No D23412

Site: Garfield County

Report Dat 5/20/2011 5:36:01 PM

On 05/12/2011, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D23412 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: V3V647

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23338-1MS, D23338-1MSD were used as the QC samples indicated.
- The blank spike (BS) recovery(s) of Vinyl Acetate are outside control limits. Compound ND in associated samples.
- D23338-1MS/MSD for 2-Chloroethyl vinyl ether: Recovery of 2-chloroethyl vinyl ether is affected by sample preservation.

Volatiles by GC By Method SW846 8015B

Matrix AQ

Batch ID: GGA633

- All samples were analyzed within the recommended method holding time.
- Sample(s) D23310-1MS, D23310-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method EPA 200.7

Matrix AQ

Batch ID: MP4699

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23363-1MS, D23363-1MSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP4433

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23390-3MS, D23390-3MSD were used as the QC samples for the anions analysis.
- D23412-1 through D23412-3 for Nitrate-N, Nitrite-N: Elevated detection limit due to matrix interference.

Wet Chemistry By Method HACH 8146

Matrix AQ

Batch ID: GN9531

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23412-2FDUP were used as the QC samples for the Iron, Ferrous analysis.
- D23412-1F for Iron, Ferrous: Dilution required due to matrix interference.
- D23412-2F for Iron, Ferrous: Dilution required due to matrix interference.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ

Batch ID: R7485

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D23412-1F
- D23412-1F for Iron, Ferric: Calculated as: (Iron) - (Iron, Ferrous)

Matrix AQ

Batch ID: R7486

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D23412-2F
- D23412-2F for Iron, Ferric: Calculated as: (Iron) - (Iron, Ferrous)

Matrix AQ

Batch ID: R7487

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D23412-3F
- D23412-3F for Iron, Ferric: Calculated as: (Iron) - (Iron, Ferrous)

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN9556

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23440-1DUP, D23440-1MS, D23440-1MSD were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN9551

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23412-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ

Batch ID: GN9528

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23412-2MS, D23412-3DUP were used as the QC samples for the Hydrogen Sulfide analysis.

Wet Chemistry By Method SM20 4500H**Matrix** AQ**Batch ID:** GN9534

- The following samples were run outside of holding time for method SM20 4500H: D23412-3

Matrix AQ**Batch ID:** GN9535

- The following samples were run outside of holding time for method SM20 4500H: D23412-1, D23412-2

Wet Chemistry By Method SM20 4500NH3 D**Matrix** AQ**Batch ID:** GP4451

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D23440-1DUP, D23440-1MS, D23440-1MSD were used as the QC samples for the Nitrogen, Ammonia analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: MW-3A-051111

Lab Sample ID: D23412-1

Date Sampled: 05/11/11

Matrix: AQ - Ground Water

Date Received: 05/12/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V11507.D	1	05/18/11	DC	n/a	n/a	V3V647
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	18.2	10	5.0	ug/l	J
71-43-2	Benzene	0.69	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	25.7	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	2.1	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3A-051111**Lab Sample ID:** D23412-1**Date Sampled:** 05/11/11**Matrix:** AQ - Ground Water**Date Received:** 05/12/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		63-130%
2037-26-5	Toluene-D8	83%		68-130%
460-00-4	4-Bromofluorobenzene	80%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
87156-70-5	Pent-3-enylamine	4.31	7.4	ug/l	JN
124-38-9	Carbon dioxide	4.43	35	ug/l	JN
	Total TIC, Volatile		7.4	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3A-051111	Date Sampled:	05/11/11
Lab Sample ID:	D23412-1	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA11571.D	1	05/13/11	BR	n/a	n/a	GGA633
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	88%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3A-051111**Lab Sample ID:** D23412-1**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 05/11/11**Date Received:** 05/12/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	1780	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	2780	50	mg/l	100	05/12/11 15:28	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/13/11	JD	SM20 4500 S2 H
Nitrogen, Ammonia	2.4	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.45	0.45	mg/l	10	05/12/11 11:59	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 6.1	6.1	mg/l	100	05/12/11 15:28	JML	EPA 300/SW846 9056
Solids, Total Dissolved	11200	10	mg/l	1	05/16/11	JK	SM20 2540C
Sulfate	39.5	5.0	mg/l	10	05/12/11 11:59	JML	EPA 300/SW846 9056
pH	12.57		su	1	05/13/11 11:00	JD	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-3A-051111**Lab Sample ID:** D23412-1F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 05/11/11**Date Received:** 05/12/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	5760	10	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Calcium	614000	400	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Iron	< 70	70	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	< 200	200	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Manganese	< 5.0	5.0	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Potassium	48300	1000	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Sodium	1760000	4000	ug/l	10	05/13/11	05/16/11 JB	EPA 200.7 ²	EPA 200.7 ³
Strontium	16500	50	ug/l	10	05/13/11	05/16/11 JB	EPA 200.7 ²	EPA 200.7 ³

(1) Instrument QC Batch: MA1526

(2) Instrument QC Batch: MA1531

(3) Prep QC Batch: MP4699

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-3A-051111	Date Sampled:	05/11/11
Lab Sample ID:	D23412-1F	Date Received:	05/12/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.57	0.57	mg/l	1	05/13/11 21:27	GJ	SM18 3500FED M
Iron, Ferrous ^b	< 0.50	0.50	mg/l	5	05/12/11 15:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Dilution required due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	MW-3B-051111	Date Sampled:	05/11/11
Lab Sample ID:	D23412-2	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V11508.D	1	05/18/11	DC	n/a	n/a	V3V647
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	132	10	5.0	ug/l	
71-43-2	Benzene	0.73	1.0	0.25	ug/l	J
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	8.6	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	0.60	2.0	0.58	ug/l	J
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3B-051111

Lab Sample ID: D23412-2

Matrix: AQ - Ground Water

Method: SW846 8260B

Project: Garfield County

Date Sampled: 05/11/11

Date Received: 05/12/11

Percent Solids: n/a

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	96%		63-130%
2037-26-5	Toluene-D8	82%		68-130%
460-00-4	4-Bromofluorobenzene	78%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
2170-03-8	2,5-Furandione, dihydro-3-methylene-	4.31	7.6	ug/l	JN
124-38-9	Carbon dioxide	4.43	28	ug/l	JN
115-11-7	1-Propene, 2-methyl-	5.84	27	ug/l	JN
78-93-3	2-Butanone	11.38	7.1	ug/l	JN
	Total TIC, Volatile		41.7	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3B-051111	Date Sampled:	05/11/11
Lab Sample ID:	D23412-2	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA11572.D	1	05/13/11	BR	n/a	n/a	GGA633
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	84%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3B-051111
Lab Sample ID: D23412-2
Matrix: AQ - Ground Water
Project: Garfield County

Date Sampled: 05/11/11
Date Received: 05/12/11
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	2740	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	1290	50	mg/l	100	05/12/11 17:08	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/13/11	JD	SM20 4500 S2 H
Nitrogen, Ammonia	3.4	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.45	0.45	mg/l	10	05/12/11 12:14	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 1.5	1.5	mg/l	25	05/12/11 15:42	JML	EPA 300/SW846 9056
Solids, Total Dissolved	4840	10	mg/l	1	05/16/11	JK	SM20 2540C
Sulfate	40.4	13	mg/l	25	05/12/11 15:42	JML	EPA 300/SW846 9056
pH	12.86		su	1	05/13/11 11:00	JD	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-3B-051111**Lab Sample ID:** D23412-2F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 05/11/11**Date Received:** 05/12/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1800	10	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Calcium	212000	400	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Iron	79.9	70	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	< 200	200	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Manganese	< 5.0	5.0	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Potassium	156000	1000	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³
Sodium	1530000	4000	ug/l	10	05/13/11	05/16/11 JB	EPA 200.7 ²	EPA 200.7 ³
Strontium	8540	5.0	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ³

(1) Instrument QC Batch: MA1526

(2) Instrument QC Batch: MA1531

(3) Prep QC Batch: MP4699

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-3B-051111	Date Sampled:	05/11/11
Lab Sample ID:	D23412-2F	Date Received:	05/12/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.57	0.57	mg/l	1	05/13/11 21:39	GJ	SM18 3500FED M
Iron, Ferrous ^b	< 0.50	0.50	mg/l	5	05/12/11 15:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Dilution required due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	CURRIE WELL-501111	Date Sampled:	05/11/11
Lab Sample ID:	D23412-3	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V11509.D	1	05/18/11	DC	n/a	n/a	V3V647
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	1.5	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CURRIE WELL-501111**Lab Sample ID:** D23412-3**Date Sampled:** 05/11/11**Matrix:** AQ - Ground Water**Date Received:** 05/12/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	92%		63-130%
2037-26-5	Toluene-D8	83%		68-130%
460-00-4	4-Bromofluorobenzene	81%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
156-87-6	1-Propanol, 3-amino-	4.31	7.6	ug/l	JN
124-38-9	Carbon dioxide	4.44	310	ug/l	JN
7446-09-5	Sulfur dioxide	5.47	10	ug/l	JN
	Total TIC, Volatile		17.6	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CURRIE WELL-501111				
Lab Sample ID:	D23412-3			Date Sampled:	05/11/11
Matrix:	AQ - Ground Water			Date Received:	05/12/11
Method:	SW846 8015B			Percent Solids:	n/a
Project:	Garfield County				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA11573.D	1	05/13/11	BR	n/a	n/a	GGA633
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CURRIE WELL-501111**Lab Sample ID:** D23412-3**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 05/11/11**Date Received:** 05/12/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	428	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	400	13	mg/l	25	05/12/11 17:23	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/13/11	JD	SM20 4500 S2 H
Nitrogen, Ammonia	0.65	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	05/12/11 12:28	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 1.5	1.5	mg/l	25	05/12/11 17:23	JML	EPA 300/SW846 9056
Solids, Total Dissolved	2030	10	mg/l	1	05/16/11	JK	SM20 2540C
Sulfate	604	13	mg/l	25	05/12/11 17:23	JML	EPA 300/SW846 9056
pH	8.07		su	1	05/13/11 11:00	JD	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: CURRIE WELL-501111
Lab Sample ID: D23412-3F
Matrix: AQ - Groundwater Filtered
Project: Garfield County

Date Sampled: 05/11/11
Date Received: 05/12/11
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	58.1	10	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²
Calcium	52200	400	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²
Iron	< 70	70	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	2510	200	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²
Manganese	25.0	5.0	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²
Potassium	1600	1000	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²
Sodium	645000	400	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²
Strontium	1670	5.0	ug/l	1	05/13/11	05/13/11 GJ	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1526

(2) Prep QC Batch: MP4699

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CURRIE WELL-501111	Date Sampled:	05/11/11
Lab Sample ID:	D23412-3F	Date Received:	05/12/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.17	0.17	mg/l	1	05/13/11 21:49	GJ	SM18 3500FED M
Iron, Ferrous	< 0.10	0.10	mg/l	1	05/12/11 15:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL: 303-425-6021 877-737-4521
FAX: 303-425-6021

FED-EX Tracking # 8606 680 378 Bottle Order Control #
Accutest Quote # 023412 Accutest Job #

Client / Reporting Information				Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes	
Company Name <u>Geo Trans, Inc</u>				Project Name <u>Garfield County</u>				<u>Alkalinity, TDS, AMN</u> <u>Dissolved Metals (No. 2)</u> <u>CHL, NO3, NO2, SO4</u> <u>XFE3 (Fe, Fe2, Fe3)</u> <u>Total Coliform</u> <u>ESB15 GBS, V8260 LST</u> <u>Hydrogen Sulfide</u>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipes FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Street Address <u>363 Centennial Plwy</u>				City <u>Louisville, CO</u>																	
State <u>CO</u> Zip <u>80026</u>				Billing Information (If different from Report to)																	
Project Contact <u>Dave Bohman</u> E-mail <u></u>				Company Name <u>Geo Trans, Inc</u>																	
Phone # <u>303-465-4380</u> Fax # <u></u>				Street Address <u>363 Centennial Plwy</u>																	
Sampler(s) Name(s) <u>B. B. 16. Thompson</u> Phone # <u></u>				City <u>Louisville</u> State <u>CO</u> Zip <u></u>																	
Project Manager <u>Dave Bohman</u> Attention: <u></u> PO# <u></u>																					
Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection			Matrix	# of bottles	Number of preserved Bottles										LAB USE ONLY			
			Date	Time	Sampled by			HCl	NaOH	H2SO4	HNO3	H2O2	None	DI Water	MEOH	ENCORE	Illustrate				
	<u>MW-3A-051111</u>		<u>5/11/11</u>	<u>0840</u>	<u>KT GW</u>	<u>14</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>01</u>				
	<u>MW-3B-051111</u>		<u>5/11/11</u>	<u>1035</u>	<u>KT GW</u>	<u>14</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>02</u>				
	<u>Currie Well-051111</u>		<u>5/11/11</u>	<u>1230</u>	<u>KT GW</u>	<u>14</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>03</u>				
																	<u>TK</u>				

Data Deliverable Information		Comments / Special Instructions	
Turnaround Time (Business days) ☒ Std. 10 Business Days ☐ Std. 5 Business Days (By Contract only) ☐ 5 Day <u>RF SH</u> ☐ 3 Day <u>EMERGENCY</u> ☐ 2 Day <u>EMERGENCY</u> ☐ 1 Day <u>EMERGENCY</u> Emergency & Rush T/A data available VIA Lablink	Approved By (Accutest PM): / Date: _____ _____ _____ _____ _____	☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☒ Commercial "B" - Narrative ☐ FULLT1 (Level 3+4) Commercial "A" = Results Only Commercial "B" = Results + QC Summary	☐ State Forms ☐ EDD Format ☒ PDF <u>Notes (200.1) Ba, Co, Mg, Mn, K, Na, Sr, Fe</u> <u>Has been field filtered</u>

Sample Custody must be documented below each time samples change possession, including courier delivery.					
Relinquished by: <u>1</u> <u>Bohman</u>	Date Time: <u>5/11/11 1600</u>	Received By: <u>1</u> <u>Bohman</u>	Date Time: <u>5/11/11 5120</u>	Relinquished By: <u>2</u>	Date Time: <u></u>
Relinquished by: <u>3</u>	Date Time: <u></u>	Received By: <u>3</u>	Date Time: <u></u>	Relinquished By: <u>4</u>	Date Time: <u></u>
Relinquished by: <u>5</u>	Date Time: <u></u>	Received By: <u>5</u>	Date Time: <u></u>	Custody Seal # <u></u>	☒ Intact ☐ Not Intact Preserved where applicable ☒ On Ice ☐ Cooler Temp. <u>2.28</u>

D23412: Chain of Custody

Page 1 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D23412

Client: GEO TRANS INC.

Immediate Client Services Action Required: No

Date / Time Received: 5/12/2011 8:30:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: GARFIELD COUNTY

Airbill #'s: Fedex

Cooler Security

Y or N

Y or N

1. Custody Seals Present:	☒	☐	3. COC Present:	☒	☐
2. Custody Seals Intact:	☒	☐	4. Smpl Dates/Time OK	☒	☐

Cooler Temperature

Y or N

1. Temp criteria achieved:	☒	☐
2. Cooler temp verification:	Infrared gun	
3. Cooler media:	Ice (bag)	

Quality Control Preservation

Y or N

N/A

1. Trip Blank present / cooler:	☐	☐	
2. Trip Blank listed on COC:	☐	☐	
3. Samples preserved properly:	☒	☐	
4. VOCs headspace free:	☒	☐	☐

Sample Integrity - Documentation

Y or N

1. Sample labels present on bottles:	☒	☐
2. Container labeling complete:	☒	☐
3. Sample container label / COC agree:	☒	☐

Sample Integrity - Condition

Y or N

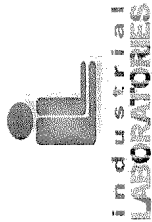
1. Sample recvd within HT:	☒	☐
2. All containers accounted for:	☒	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions

Y or N N/A

1. Analysis requested is clear:	☒	☐	
2. Bottles received for unspecified tests	☐	☒	
3. Sufficient volume rec'd for analysis:	☒	☐	
4. Compositing instructions clear:	☐	☐	☒
5. Filtering instructions clear:	☐	☐	☒

Comments



Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 5/12/2011

Date Reported: 5/18/2011

PO Number: D23412X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110512010-01A	D23412X-1, 5/11/11, 8:40am	* Total Coliforms MPN SM 9221 B	<2 fecal; <2 total	MPN/100mL		GH 5/12/2011
110512010-02A	D23412X-2, 5/11/11, 10:35am	* Total Coliforms MPN SM 9221 B	<2 fecal; <2 total	MPN/100mL		GH 5/12/2011
110512010-03A	D23412X-3, 5/11/11, 12:30pm	* Total Coliforms MPN SM 9221 B	2 fecal; 2 total	MPN/100mL		GH 5/12/2011

* = Scope Analysis
= Subcontracted Analysis
MDL = Method Detection Limit
ND = Not Detected at the Method Detection Limit
Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0984 FAX • www.industriallabs.net
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D23412: Chain of Custody
Page 4 of 4

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V647-MB1	3V11495.D	1	05/18/11	DC	n/a	n/a	V3V647

The QC reported here applies to the following samples:

Method: SW846 8260B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V647-MB1	3V11495.D	1	05/18/11	DC	n/a	n/a	V3V647

The QC reported here applies to the following samples:

Method: SW846 8260B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	96% 63-130%
2037-26-5	Toluene-D8	83% 68-130%
460-00-4	4-Bromofluorobenzene	79% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
107-07-3	2-Chloroethanol	4.31	7	ug/l	JN
124-38-9	Carbon dioxide	4.44	63	ug/l	JN
	Total TIC, Volatile		7	ug/l	J

Blank Spike Summary

Page 1 of 2

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V647-BS1	3V11496.D	1	05/18/11	DC	n/a	n/a	V3V647

The QC reported here applies to the following samples:

Method: SW846 8260B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	54.3	109	49-130
71-43-2	Benzene	50	43.7	87	70-130
75-27-4	Bromodichloromethane	50	45.4	91	70-130
75-25-2	Bromoform	50	51.2	102	48-138
108-90-7	Chlorobenzene	50	44.4	89	70-130
75-00-3	Chloroethane	50	38.4	77	61-130
67-66-3	Chloroform	50	47.7	95	70-130
110-75-8	2-Chloroethyl vinyl ether	50	67.4	135	22-185
75-15-0	Carbon disulfide	50	45.9	92	55-130
56-23-5	Carbon tetrachloride	50	47.6	95	70-130
75-34-3	1,1-Dichloroethane	50	47.6	95	70-130
75-35-4	1,1-Dichloroethylene	50	42.8	86	70-130
107-06-2	1,2-Dichloroethane	50	48.2	96	70-130
78-87-5	1,2-Dichloropropane	50	43.9	88	70-130
124-48-1	Dibromochloromethane	50	46.6	93	64-132
156-59-2	cis-1,2-Dichloroethylene	50	45.5	91	70-130
10061-01-5	cis-1,3-Dichloropropene	50	46.9	94	67-130
541-73-1	m-Dichlorobenzene	50	40.7	81	52-148
95-50-1	o-Dichlorobenzene	50	41.5	83	53-146
106-46-7	p-Dichlorobenzene	50	40.7	81	57-136
156-60-5	trans-1,2-Dichloroethylene	50	44.5	89	70-130
10061-02-6	trans-1,3-Dichloropropene	50	45.2	90	66-130
100-41-4	Ethylbenzene	50	45.7	91	70-130
591-78-6	2-Hexanone	50	53.5	107	38-130
108-10-1	4-Methyl-2-pentanone	50	54.1	108	68-130
74-83-9	Methyl bromide	50	41.4	83	35-151
74-87-3	Methyl chloride	50	32.8	66	46-138
75-09-2	Methylene chloride	50	45.5	91	70-130
78-93-3	Methyl ethyl ketone	50	56.2	112	37-130
100-42-5	Styrene	50	43.6	87	38-130
71-55-6	1,1,1-Trichloroethane	50	44.4	89	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	45.4	91	70-130
79-00-5	1,1,2-Trichloroethane	50	47.8	96	69-130
127-18-4	Tetrachloroethylene	50	43.3	87	66-134
108-88-3	Toluene	50	46.2	92	70-140
79-01-6	Trichloroethylene	50	43.7	87	70-130

Blank Spike Summary

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V647-BS1	3V11496.D	1	05/18/11	DC	n/a	n/a	V3V647

The QC reported here applies to the following samples: Method: SW846 8260B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl chloride	50	34.9	70	58-135
108-05-4	Vinyl Acetate	50	71.1	142* a	50-130
1330-20-7	Xylene (total)	100	86.6	87	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	63-130%
2037-26-5	Toluene-D8	84%	68-130%
460-00-4	4-Bromofluorobenzene	87%	61-130%

(a) Compound ND in associated samples.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23338-1MS	3V11498.D	1	05/18/11	DC	n/a	n/a	V3V647
D23338-1MSD	3V11499.D	1	05/18/11	DC	n/a	n/a	V3V647
D23338-1	3V11497.D	1	05/18/11	DC	n/a	n/a	V3V647

The QC reported here applies to the following samples:

Method: SW846 8260B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	D23338-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	58.8	118	55.4	111	6	21-130/30
71-43-2	Benzene	ND	50	44.5	89	46.4	93	4	59-132/30
75-27-4	Bromodichloromethane	ND	50	46.4	93	49.0	98	5	58-130/30
75-25-2	Bromoform	ND	50	54.1	108	54.1	108	0	45-140/30
108-90-7	Chlorobenzene	ND	50	45.7	91	47.1	94	3	70-130/30
75-00-3	Chloroethane	ND	50	40.2	80	41.4	83	3	61-130/30
67-66-3	Chloroform	ND	50	49.9	100	50.9	102	2	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	50	ND	0* a	ND	0* a	nc	20-168/30
75-15-0	Carbon disulfide	ND	50	47.6	95	48.1	96	1	41-132/30
56-23-5	Carbon tetrachloride	ND	50	49.4	99	52.1	104	5	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	50.0	100	51.3	103	3	70-130/30
75-35-4	1,1-Dichloroethylene	ND	50	44.4	89	45.4	91	2	69-137/30
107-06-2	1,2-Dichloroethane	ND	50	50.6	101	51.7	103	2	62-130/30
78-87-5	1,2-Dichloropropane	ND	50	45.0	90	48.0	96	6	63-131/30
124-48-1	Dibromochloromethane	ND	50	48.5	97	50.0	100	3	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND	50	46.8	94	48.1	96	3	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	47.6	95	49.5	99	4	51-134/30
541-73-1	m-Dichlorobenzene	ND	50	41.5	83	43.4	87	4	38-148/30
95-50-1	o-Dichlorobenzene	ND	50	43.0	86	44.0	88	2	40-148/30
106-46-7	p-Dichlorobenzene	ND	50	41.7	83	43.7	87	5	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND	50	46.4	93	47.2	94	2	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	47.9	96	48.8	98	2	50-130/30
100-41-4	Ethylbenzene	ND	50	46.4	93	47.9	96	3	68-130/30
591-78-6	2-Hexanone	ND	50	57.1	114	53.2	106	7	29-130/30
108-10-1	4-Methyl-2-pentanone	ND	50	58.0	116	53.3	107	8	62-130/30
74-83-9	Methyl bromide	ND	50	44.8	90	43.6	87	3	20-171/30
74-87-3	Methyl chloride	ND	50	34.4	69	34.5	69	0	25-148/30
75-09-2	Methylene chloride	ND	50	47.4	95	48.3	97	2	58-139/30
78-93-3	Methyl ethyl ketone	ND	50	58.3	117	52.5	105	10	37-130/30
100-42-5	Styrene	ND	50	43.5	87	45.0	90	3	27-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	46.1	92	47.7	95	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	48.2	96	49.0	98	2	61-140/30
79-00-5	1,1,2-Trichloroethane	ND	50	49.0	98	50.4	101	3	52-135/30
127-18-4	Tetrachloroethylene	4.6	50	47.5	86	50.6	92	6	61-134/30
108-88-3	Toluene	ND	50	44.3	89	46.6	93	5	56-142/30
79-01-6	Trichloroethylene	ND	50	44.7	89	46.8	94	5	61-132/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23338-1MS	3V11498.D	1	05/18/11	DC	n/a	n/a	V3V647
D23338-1MSD	3V11499.D	1	05/18/11	DC	n/a	n/a	V3V647
D23338-1	3V11497.D	1	05/18/11	DC	n/a	n/a	V3V647

The QC reported here applies to the following samples:

Method: SW846 8260B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	D23338-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl chloride	ND	50	37.3	75	37.1	74	1	54-148/30
108-05-4	Vinyl Acetate	ND	50	77.5	155* ^b	73.8	148* ^b	5	40-139/30
1330-20-7	Xylene (total)	ND	100	85.0	85	88.5	89	4	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D23338-1	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	93%	97%	63-130%
2037-26-5	Toluene-D8	83%	82%	81%	68-130%
460-00-4	4-Bromofluorobenzene	85%	83%	80%	61-130%

(a) Recovery of 2-chloroethyl vinyl ether is affected by sample preservation.

(b) Outside control limits due to possible matrix interference.

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11507.D
Acq On : 18 May 2011 6:29 pm
Operator : DONC
Sample : D23412-1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 19 07:30:40 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260
QLast Update : Mon Apr 25 08:11:47 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.896	168	273289	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.685	114	477887	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.323	117	433996	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.315	152	244488	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.290	102	35653	48.48	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	96.96%	
55) Toluene-d8	14.078	98	520435	41.58	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.16%	
59) 4-Bromofluorobenzene	16.272	95	177065	40.13	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	80.26%	

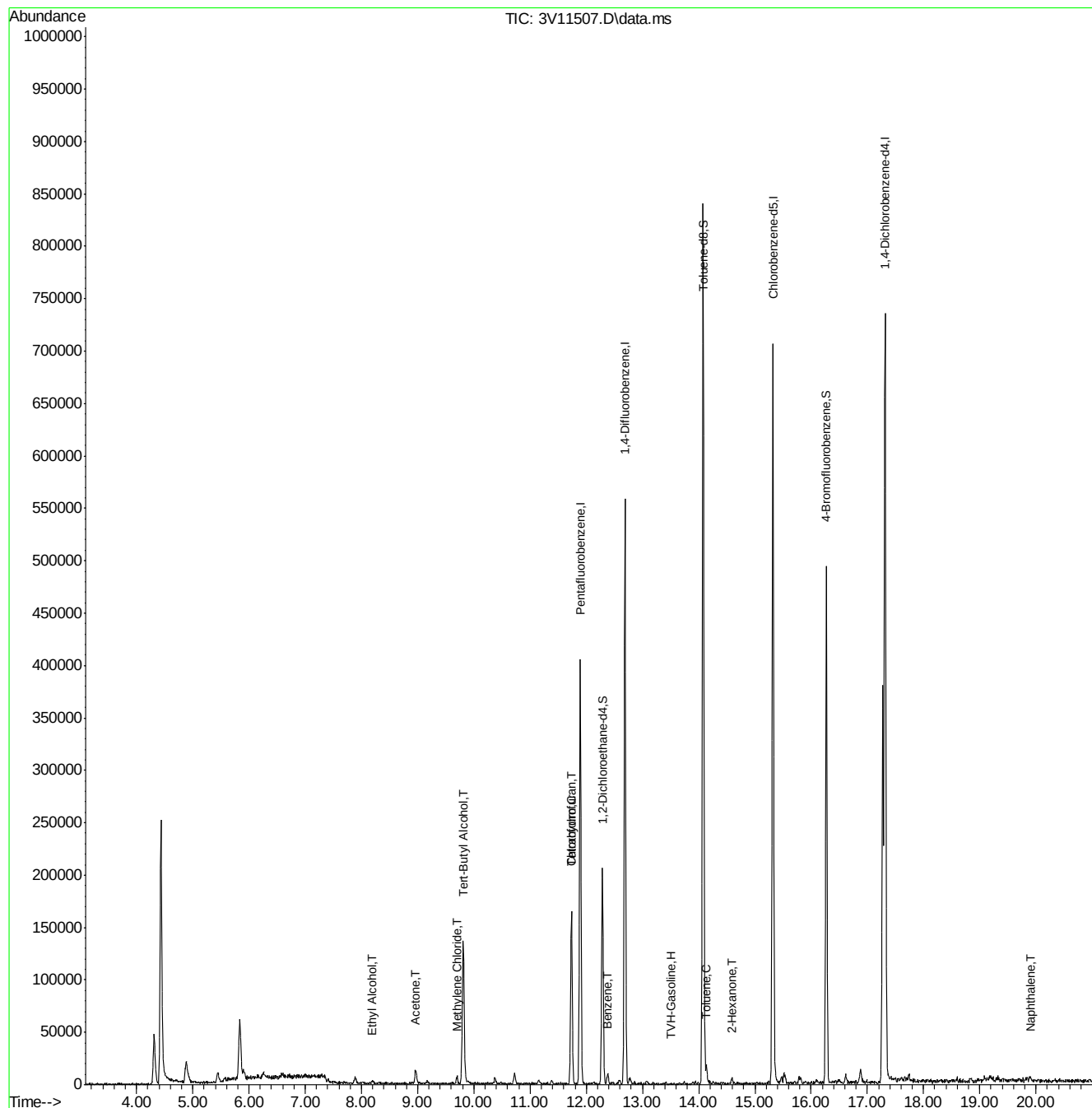
Target Compounds						Qvalue
1) TVH-Gasoline	13.491	TIC	425611m	87.80	ug/l	
9) Ethyl Alcohol	8.202	45	1961	43.15	ug/l	95
14) Acetone	8.966	58	5485	18.21	ug/l #	87
16) Methylene Chloride	9.701	84	3172	1.04	ug/l	88
17) Tert-Butyl Alcohol	9.810	59	147601	595.53	ug/l #	76
27) Chloroform	11.738	83	121735	25.73	ug/l	98
28) Tetrahydrofuran	11.729	42	676	0.63	ug/l	95
45) Benzene	12.383	78	8633	0.69	ug/l	100
50) 2-Hexanone	14.591	43	5046	2.05	ug/l	79
56) Toluene	14.135	92	6275	0.72	ug/l	95
72) Naphthalene	19.895	128	5907	0.41	ug/l	100

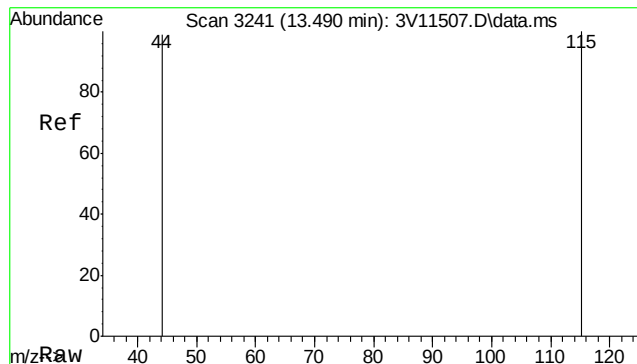
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

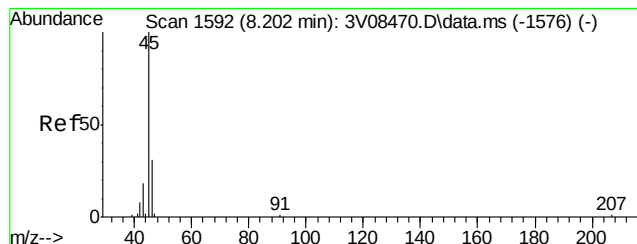
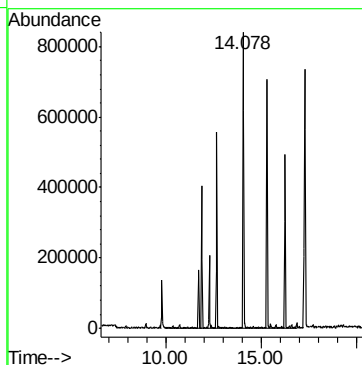
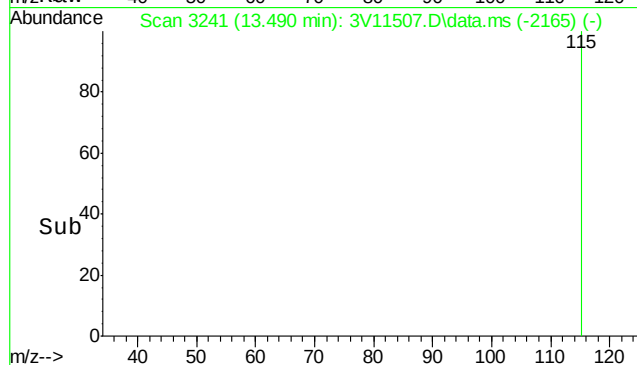
Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11507.D
Acq On : 18 May 2011 6:29 pm
Operator : DONC
Sample : D23412-1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 19 07:30:40 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260
QLast Update : Mon Apr 25 08:11:47 2011
Response via : Initial Calibration



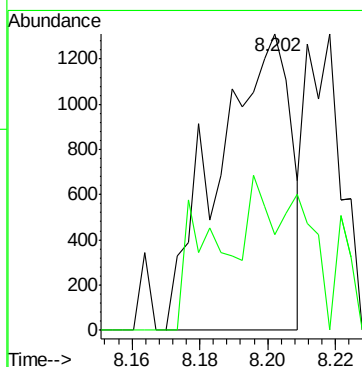
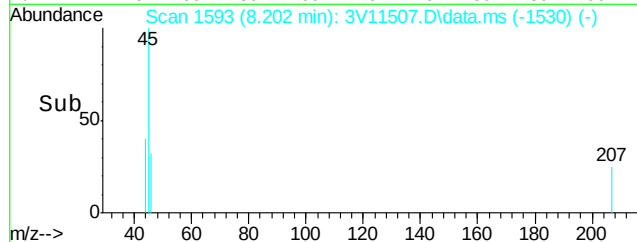
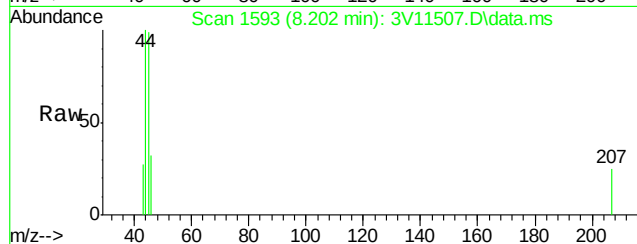


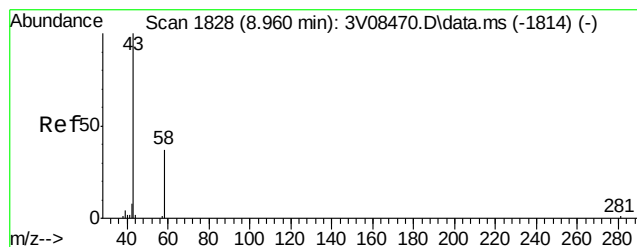
#1
TVH-Gasoline
Concen: 87.80 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm
Tgt Ion:TIC Resp: 425611



#9
Ethyl Alcohol
Concen: 43.15 ug/l
RT: 8.202 min Scan# 1593
Delta R.T. 0.003 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

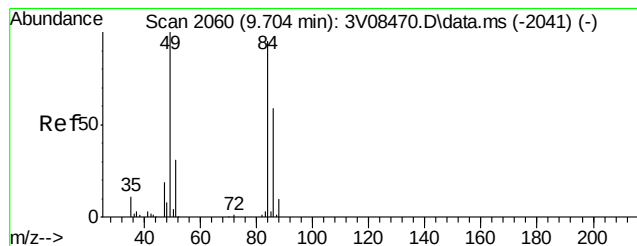
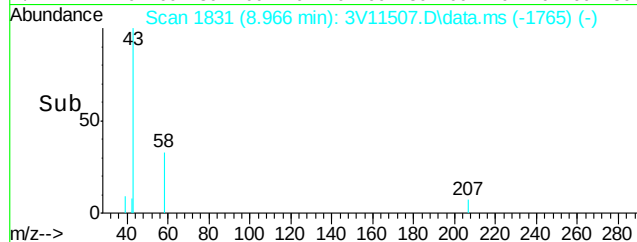
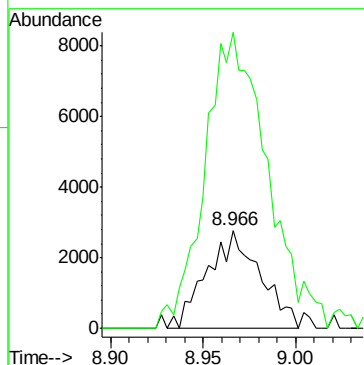
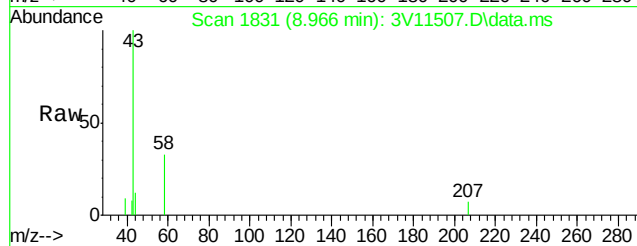
Tgt Ion: 45 Resp: 1961
Ion Ratio Lower Upper
45 100
46 36.0 31.1 46.7





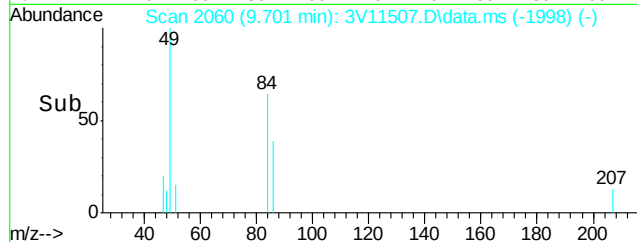
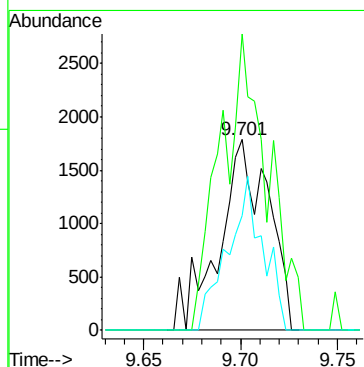
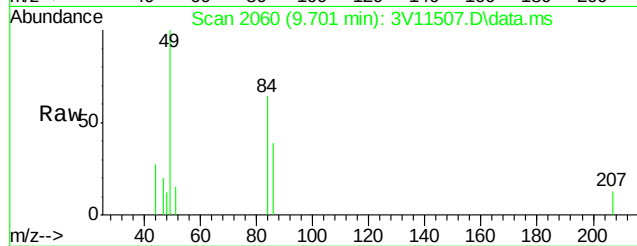
#14
Acetone
Concen: 18.21 ug/l
RT: 8.966 min Scan# 1831
Delta R.T. 0.013 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

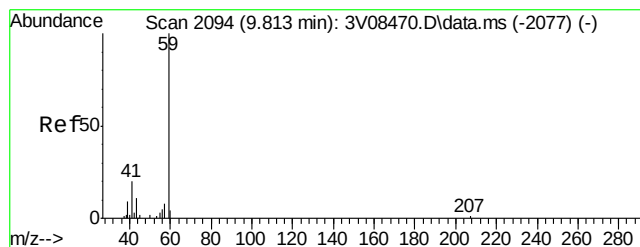
Tgt Ion: 58 Resp: 5485
Ion Ratio Lower Upper
58 100
43 358.8 369.2 409.2#



#16
Methylene Chloride
Concen: 1.04 ug/l
RT: 9.701 min Scan# 2060
Delta R.T. -0.000 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

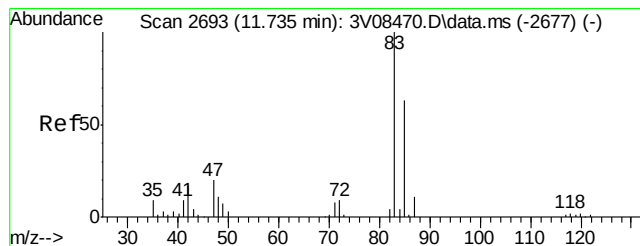
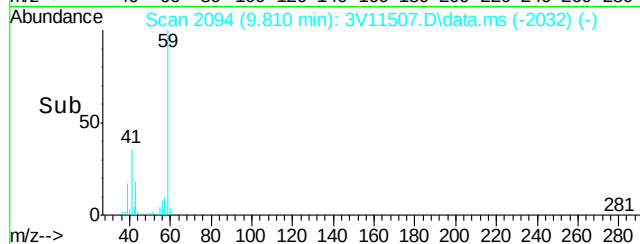
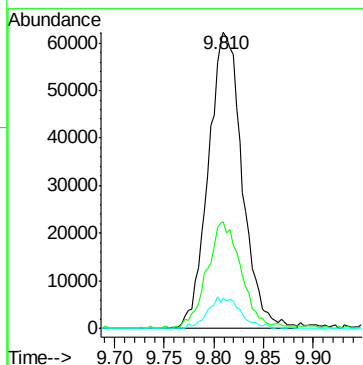
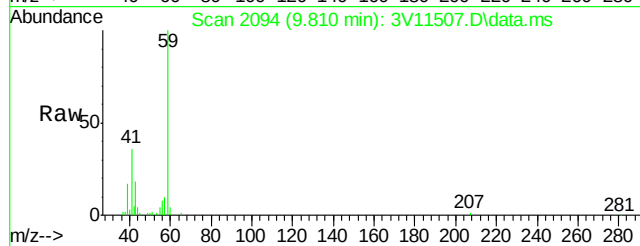
Tgt Ion: 84 Resp: 3172
Ion Ratio Lower Upper
84 100
49 147.8 146.3 186.3
86 57.2 43.4 83.4





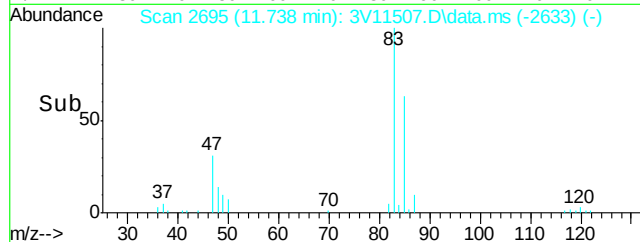
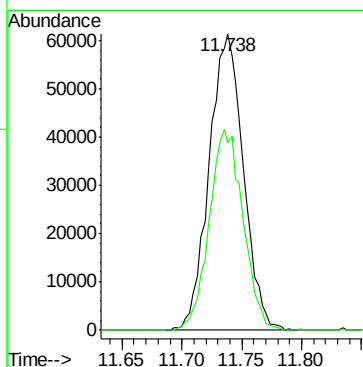
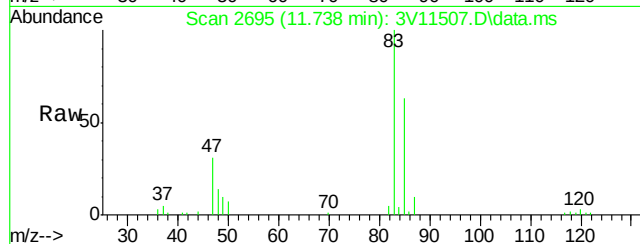
#17
Tert-Butyl Alcohol
Concen: 595.53 ug/l
RT: 9.810 min Scan# 2094
Delta R.T. -0.000 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

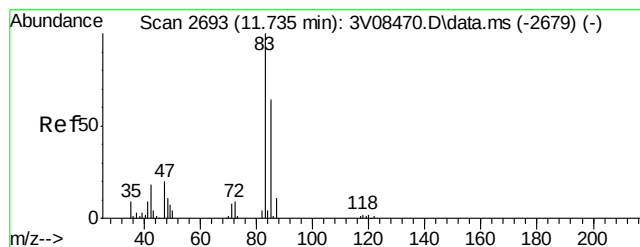
Tgt Ion	Ratio	Lower	Upper
59	100		
41	36.6	46.0	69.0#
57	10.0	8.6	12.8



#27
Chloroform
Concen: 25.73 ug/l
RT: 11.738 min Scan# 2695
Delta R.T. -0.000 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

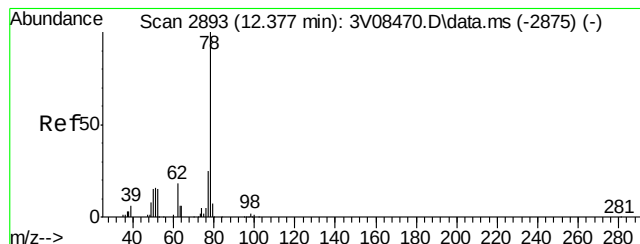
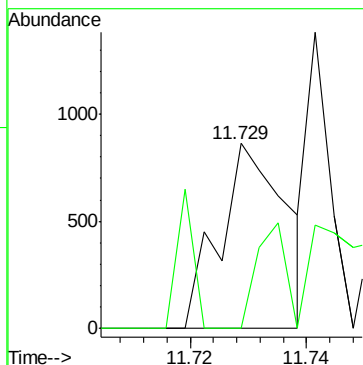
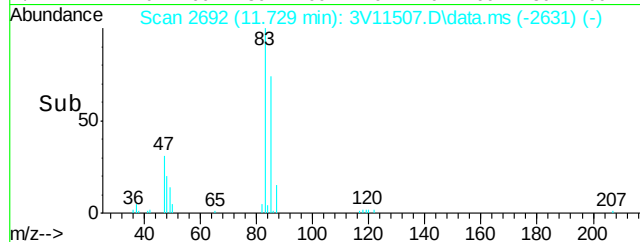
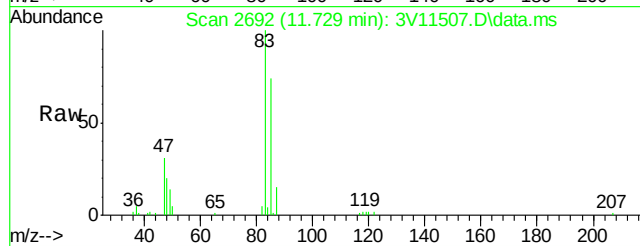
Tgt Ion	Ratio	Lower	Upper
83	100		
85	66.8	45.5	85.5





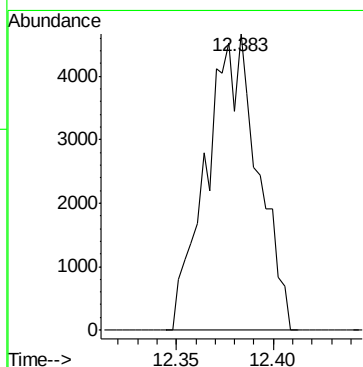
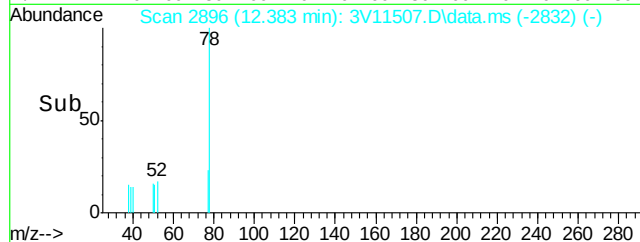
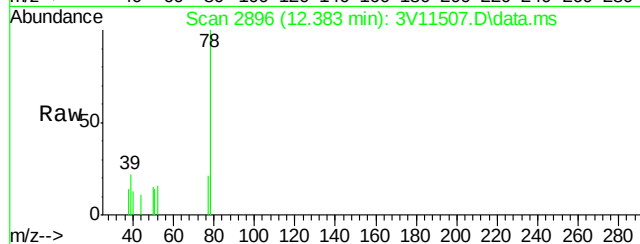
#28
Tetrahydrofuran
Concen: 0.63 ug/l
RT: 11.729 min Scan# 2692
Delta R.T. -0.004 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

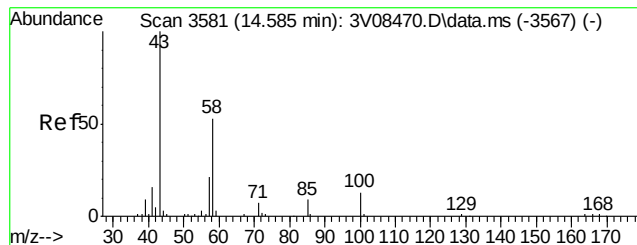
Tgt Ion: 42 Resp: 676
Ion Ratio Lower Upper
42 100
72 24.9 21.8 32.8



#45
Benzene
Concen: 0.69 ug/l
RT: 12.383 min Scan# 2896
Delta R.T. 0.006 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

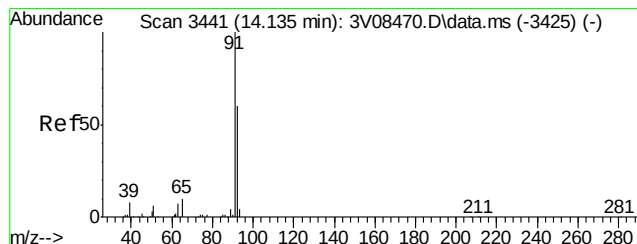
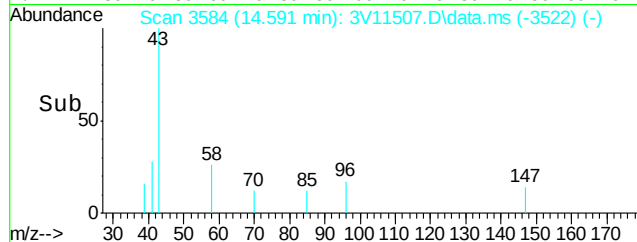
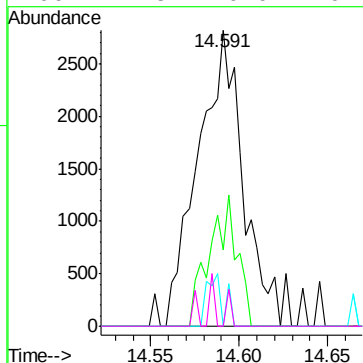
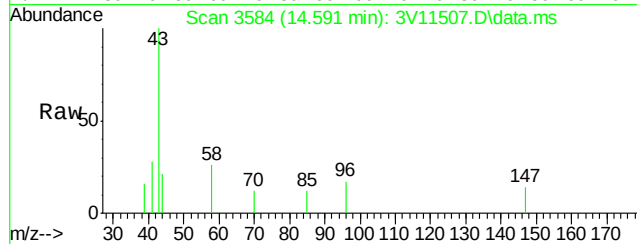
Tgt Ion: 78 Resp: 8633





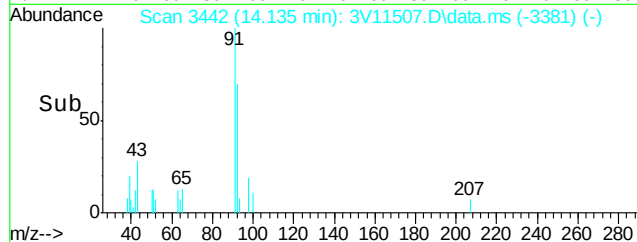
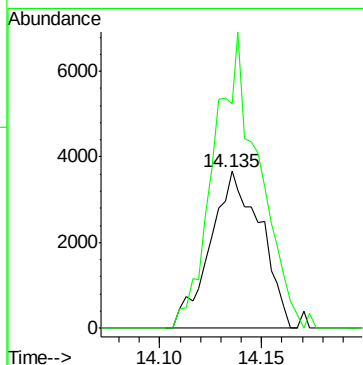
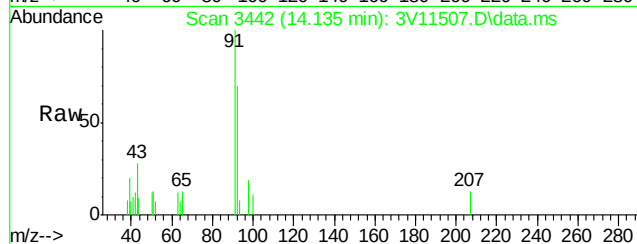
#50
2-Hexanone
Concen: 2.05 ug/l
RT: 14.591 min Scan# 3584
Delta R.T. -0.000 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

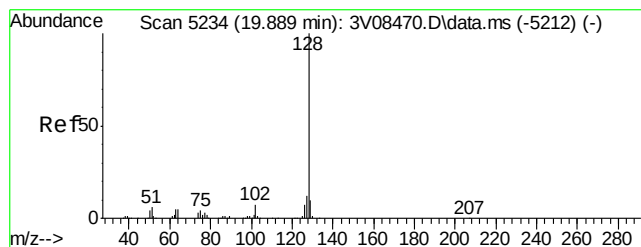
Tgt Ion:	43	Resp:	5046
Ion Ratio	Lower	Upper	
43	100		
58	27.1	21.3	61.3
57	6.5	0.0	33.4
100	1.3	0.0	29.2



#56
Toluene
Concen: 0.72 ug/l
RT: 14.135 min Scan# 3442
Delta R.T. -0.004 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

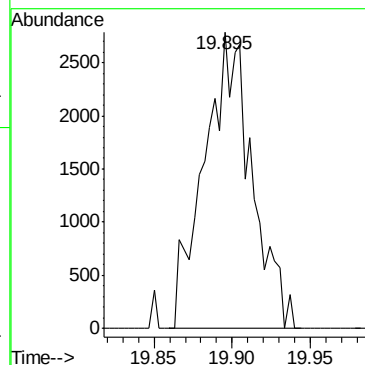
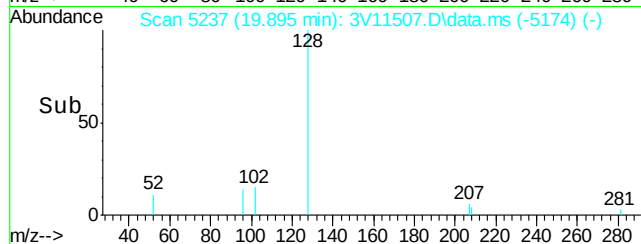
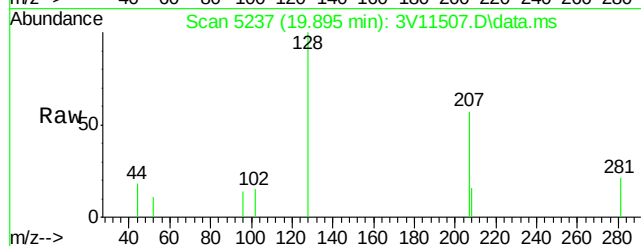
Tgt Ion:	92	Resp:	6275
Ion Ratio	Lower	Upper	
92	100		
91	170.3	144.3	184.3





#72
Naphthalene
Concen: 0.41 ug/l
RT: 19.895 min Scan# 5237
Delta R.T. 0.003 min
Lab File: 3V11507.D
Acq: 18 May 2011 6:29 pm

Tgt Ion:128 Resp: 5907



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11507.D
Acq On : 18 May 2011 6:29 pm
Operator : DONC
Sample : D23412-1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Title : 8260

Signal : TIC: 3V11507.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.313	367	381	399	rBV	47596	113330	7.67%	1.225%
2	4.432	404	418	436	rBV	251370	537854	36.42%	5.811%
3	5.828	840	853	854	rBV2	54734	57632	3.90%	0.623%
4	9.810	2077	2094	2111	rBV2	136400	326592	22.12%	3.529%
5	11.735	2681	2694	2710	rVB2	165098	333598	22.59%	3.604%
6	11.896	2729	2744	2758	rBV3	405453	761160	51.54%	8.224%
7	12.290	2850	2867	2881	rBV2	206072	407818	27.62%	4.406%
8	12.383	2886	2896	2906	rVB4	9518	18055	1.22%	0.195%
9	12.688	2975	2991	3005	rBV	558533	1022187	69.22%	11.045%
10	14.078	3409	3424	3438	rBV	840211	1476708	100.00%	15.956%
11	14.135	3441	3442	3453	rVB5	17208	19041	1.29%	0.206%
12	15.323	3796	3812	3831	rBV	707011	1256185	85.07%	13.573%
13	16.272	4093	4108	4123	rBV	493736	870723	58.96%	9.408%
14	17.273	4406	4420	4425	rBV2	379393	636609	43.11%	6.878%
15	17.315	4425	4433	4450	rVB	728694	1417634	96.00%	15.317%

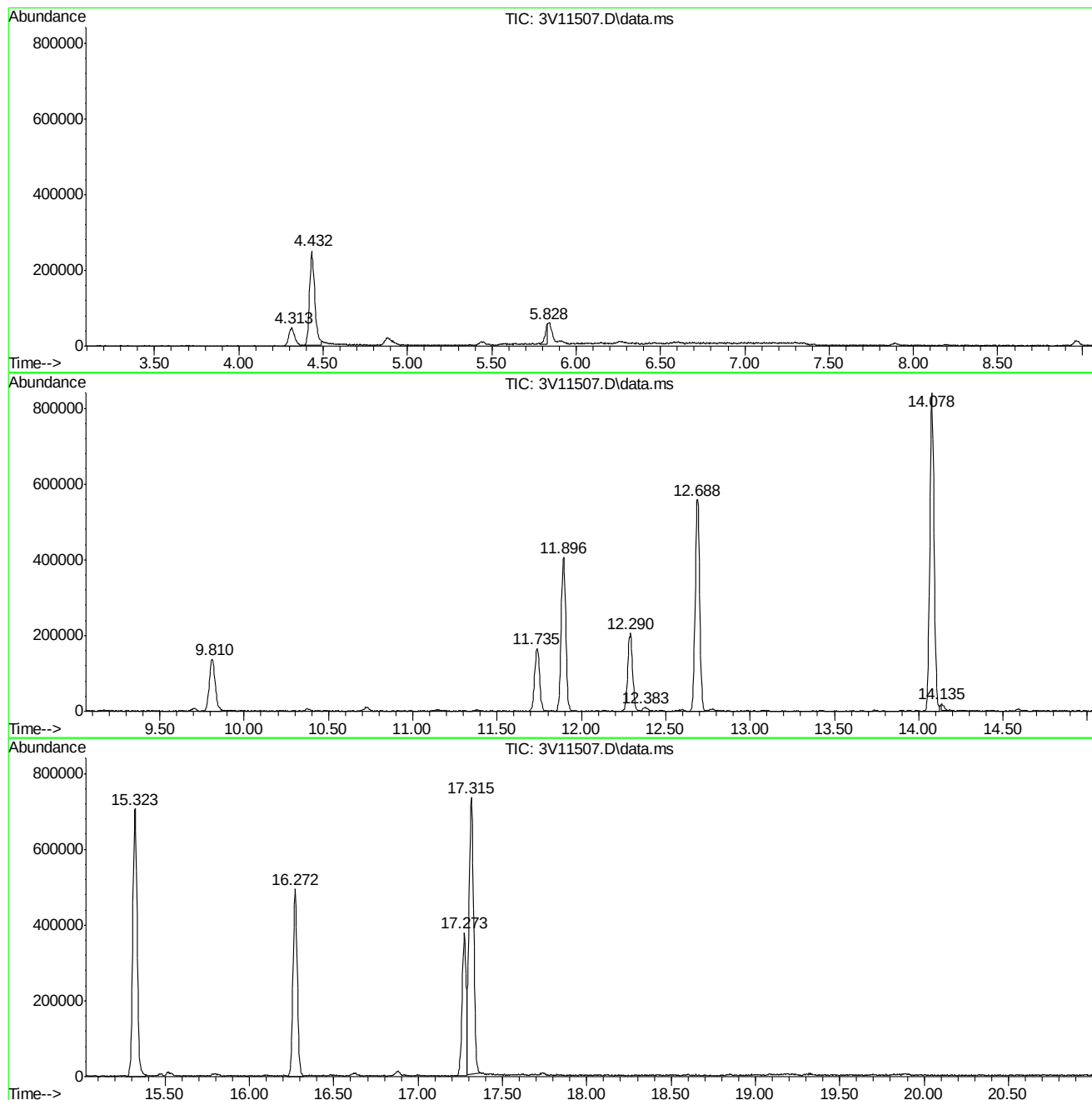
Sum of corrected areas: 9255126

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11507.D
 Acq On : 18 May 2011 6:29 pm
 Operator : DONC
 Sample : D23412-1
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11507.D
 Acq On : 18 May 2011 6:29 pm
 Operator : DONC
 Sample : D23412-1
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 15 Sample Multiplier: 1

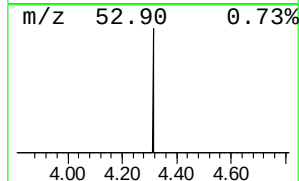
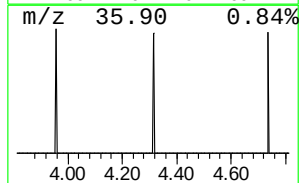
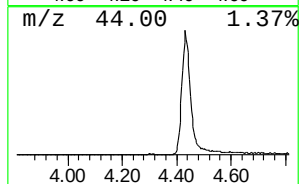
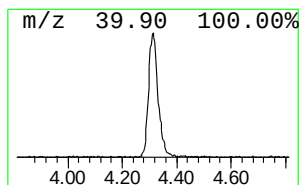
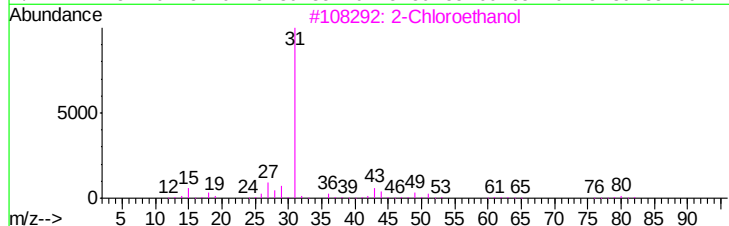
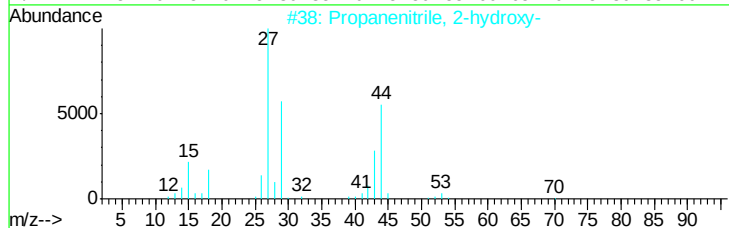
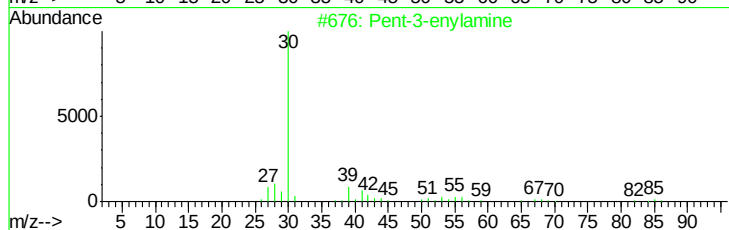
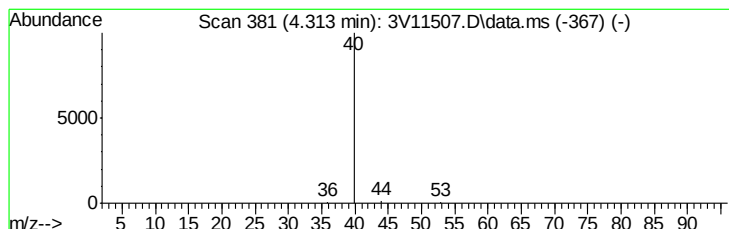
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 Pent-3-enylamine Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.313	7.44 ug/l	113330	Pentafluorobenzene	11.896

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pent-3-enylamine	85	C5H11N	087156-70-5	1
2	Propanenitrile, 2-hydroxy-	71	C3H5NO	000078-97-7	1
3	2-Chloroethanol	80	C2H5ClO	000107-07-3	1
4	Acetic acid, hydroxy-	76	C2H4O3	000079-14-1	1
5	2-Chloroethanol	80	C2H5ClO	000107-07-3	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11507.D
 Acq On : 18 May 2011 6:29 pm
 Operator : DONC
 Sample : D23412-1
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 15 Sample Multiplier: 1

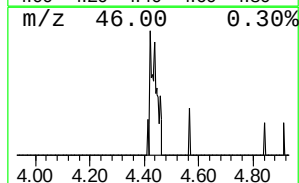
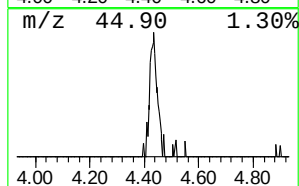
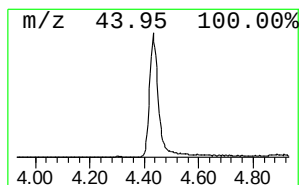
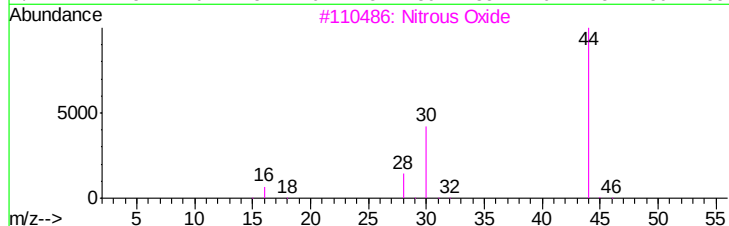
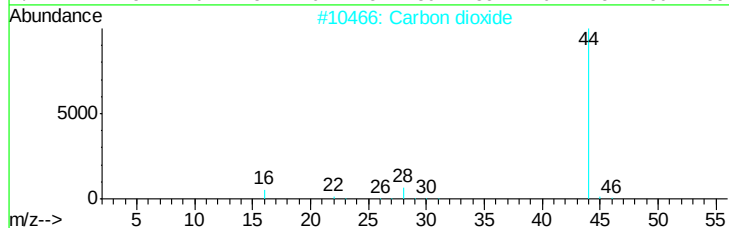
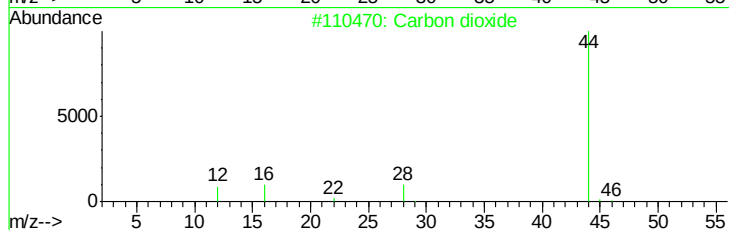
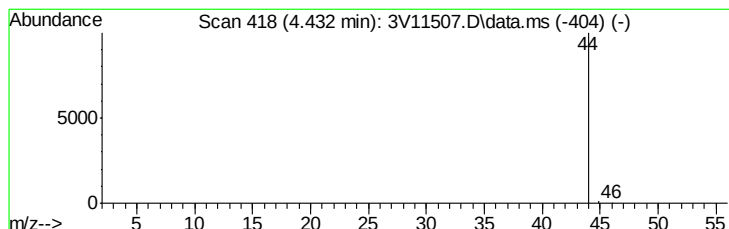
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.432	35.33 ug/l	537854	Pentafluorobenzene	11.896

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide			44	CO2	000124-38-9	4
2	Carbon dioxide			44	CO2	000124-38-9	4
3	Nitrous Oxide			44	N2O	010024-97-2	3
4	Nitrous Oxide			44	N2O	010024-97-2	3
5	Nitrous Oxide			44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11507.D
Acq On : 18 May 2011 6:29 pm
Operator : DONC
Sample : D23412-1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Pent-3-enylamine	4.313	7.4	ug/l	113330	1	11.896	761160	50.0
Carbon dioxide	4.432	35.3	ug/l	537854	1	11.896	761160	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11508.D
 Acq On : 18 May 2011 7:01 pm
 Operator : DONC
 Sample : D23412-2
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 19 07:20:31 2011
 Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260
 QLast Update : Mon Apr 25 08:11:47 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.893	168	265873	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.686	114	464984	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.320	117	423243	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.316	152	243326	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.291	102	34378	48.05	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	96.10%	
55) Toluene-d8	14.078	98	498254	40.82	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	81.64%	
59) 4-Bromofluorobenzene	16.273	95	168486	39.15	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	78.30%	

Target Compounds

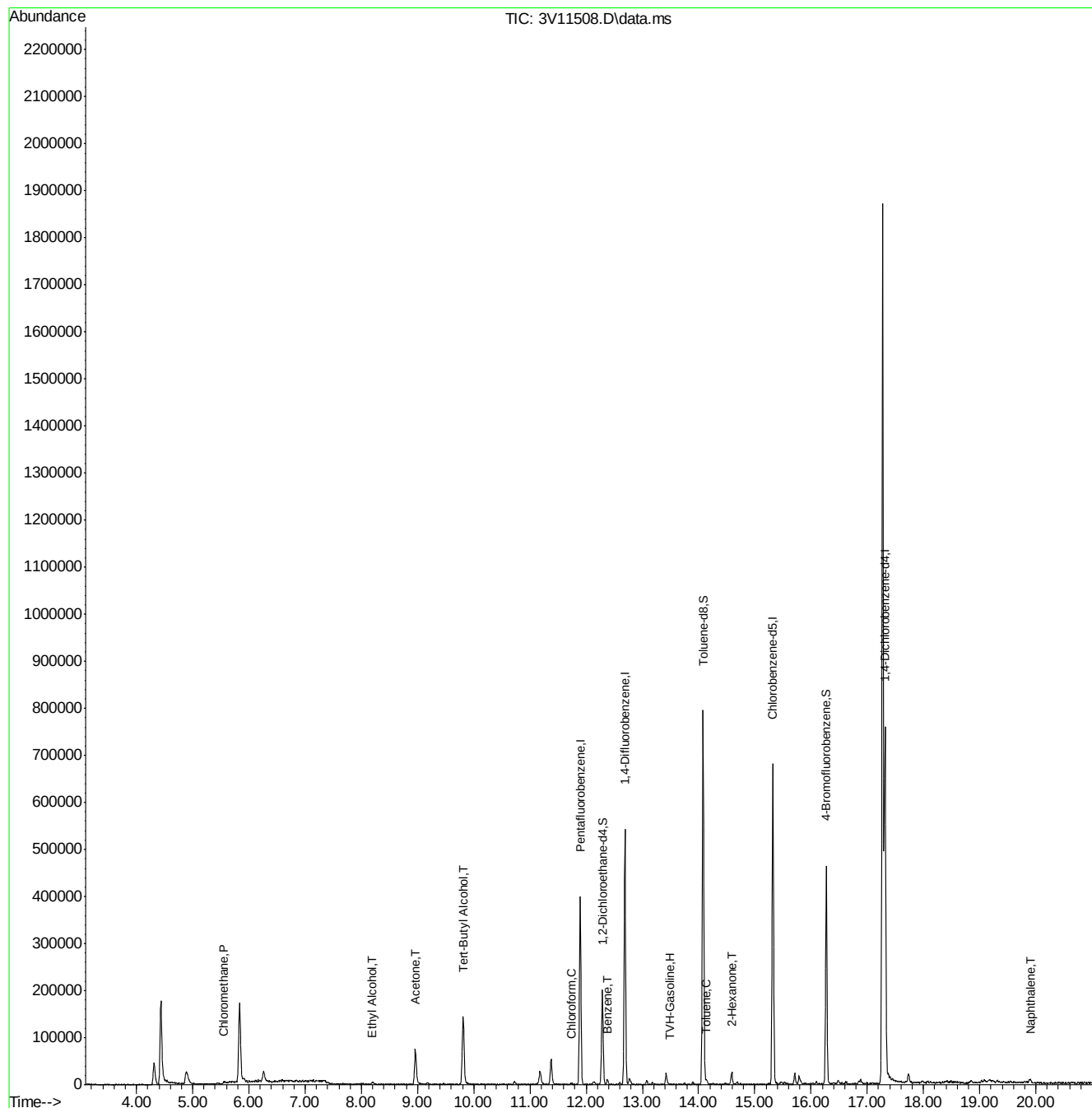
						Qvalue
1) TVH-Gasoline	13.491	TIC	417008m	87.44	ug/l	
4) Chloromethane	5.553	50	3891m	0.60	ug/l	
9) Ethyl Alcohol	8.197	45	6353	143.70	ug/l #	80
14) Acetone	8.960	58	31281	132.27	ug/l	93
17) Tert-Butyl Alcohol	9.814	59	159214	659.81	ug/l #	77
27) Chloroform	11.739	83	1958	0.43	ug/l	95
45) Benzene	12.375	78	8931	0.73	ug/l	100
50) 2-Hexanone	14.589	43	20577	8.59	ug/l	96
56) Toluene	14.133	92	3546	0.42	ug/l #	76
72) Naphthalene	19.893	128	10987	0.77	ug/l	100

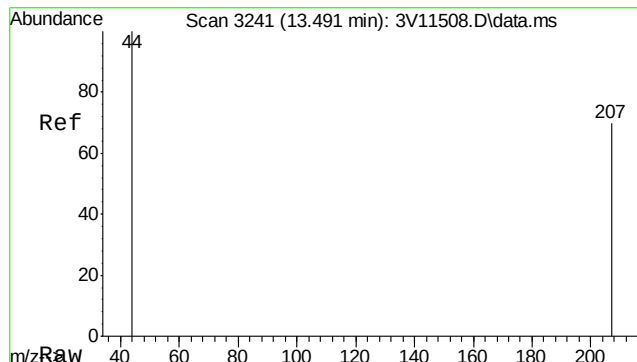
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

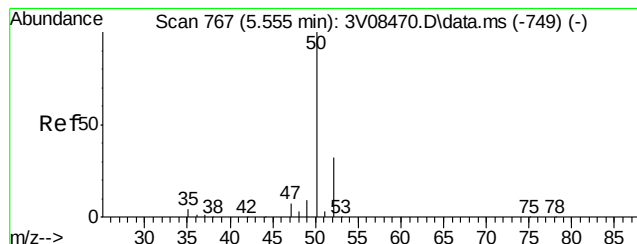
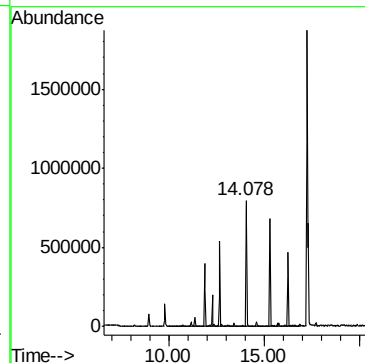
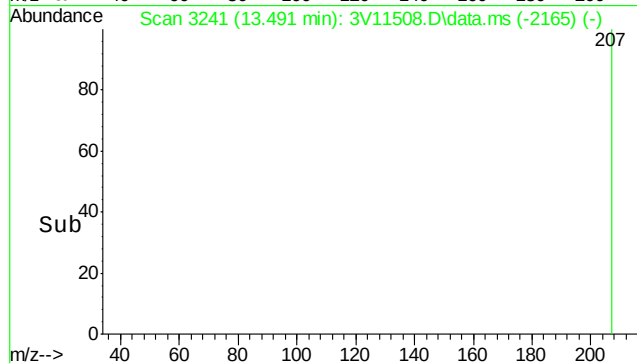
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Data File : 3V11508.D
Acq On : 18 May 2011 7:01 pm
Operator : DONC
Sample : D23412-2
Misc : MS2185,V3V647,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 19 07:20:31 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260
QLast Update : Mon Apr 25 08:11:47 2011
Response via : Initial Calibration



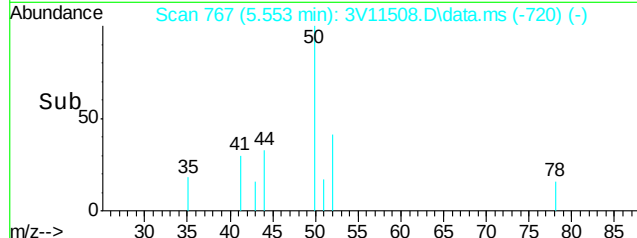
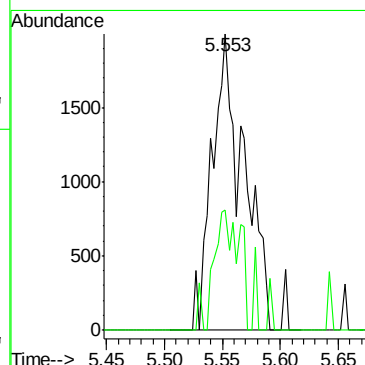
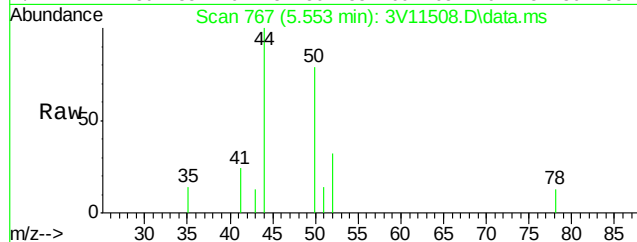


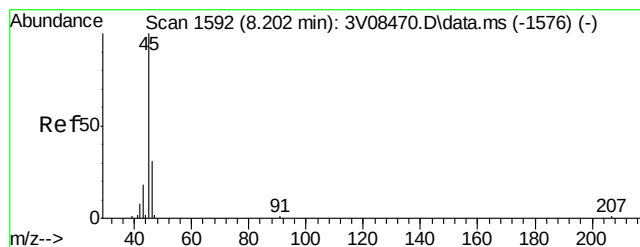
#1
TVH-Gasoline
Concen: 87.44 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm
Tgt Ion:TIC Resp: 417008



#4
Chloromethane
Concen: 0.60 ug/l m
RT: 5.553 min Scan# 767
Delta R.T. 0.001 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

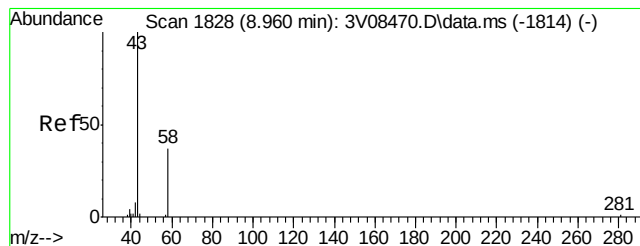
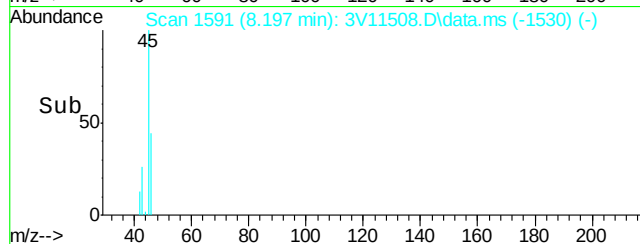
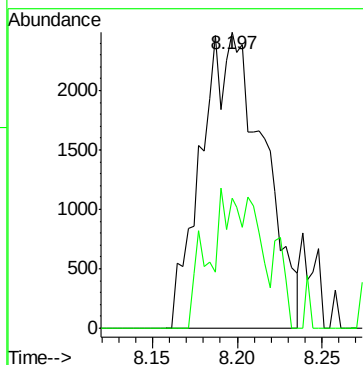
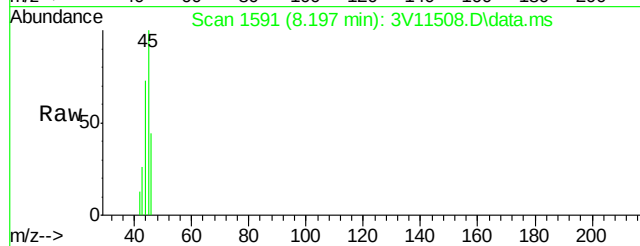
Tgt Ion: 50 Resp: 3891
Ion Ratio Lower Upper
50 100
52 30.6 10.9 50.9





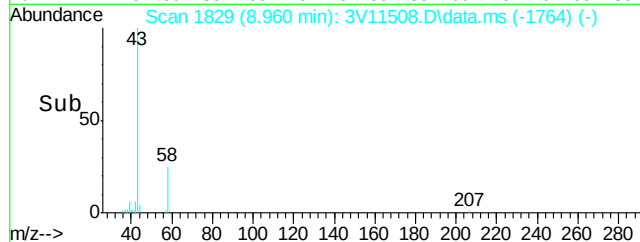
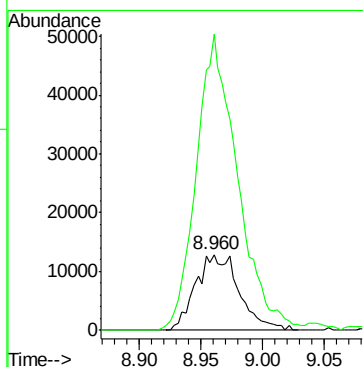
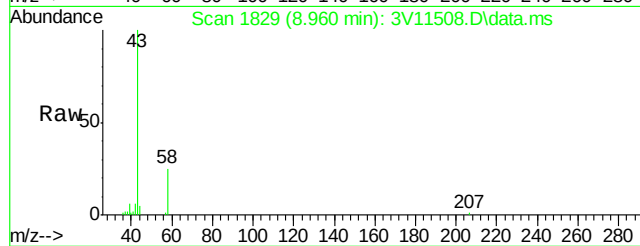
#9
Ethyl Alcohol
Concen: 143.70 ug/l
RT: 8.197 min Scan# 1591
Delta R.T. -0.003 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

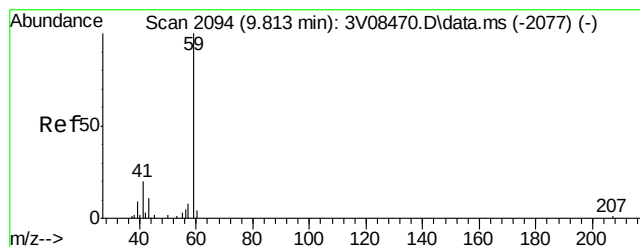
Tgt Ion	Ratio	Lower	Upper
45	100		
46	26.6	31.1	46.7#



#14
Acetone
Concen: 132.27 ug/l
RT: 8.960 min Scan# 1829
Delta R.T. 0.007 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

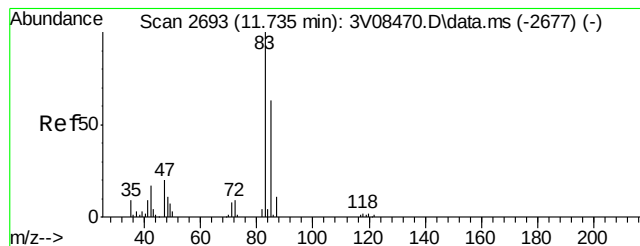
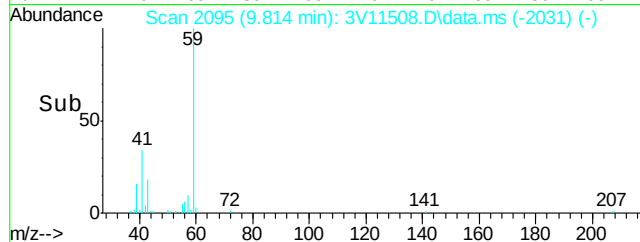
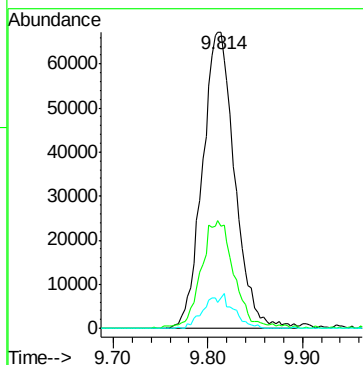
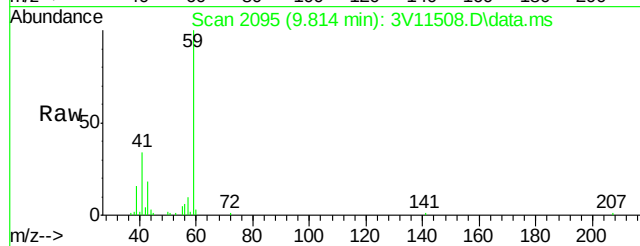
Tgt Ion	Ratio	Lower	Upper
58	100		
43	372.4	369.2	409.2





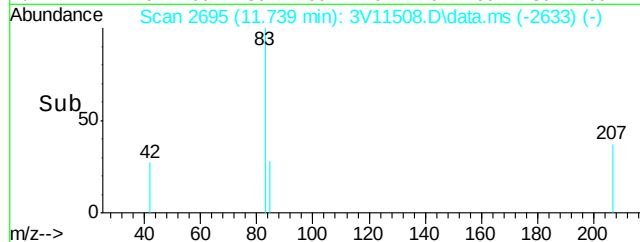
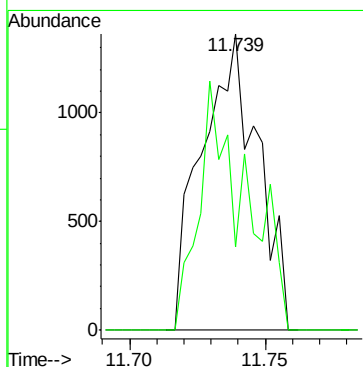
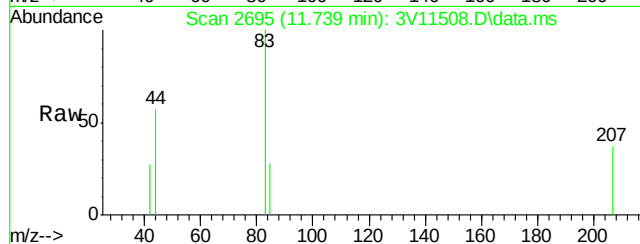
#17
Tert-Butyl Alcohol
Concen: 659.81 ug/l
RT: 9.814 min Scan# 2095
Delta R.T. 0.004 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

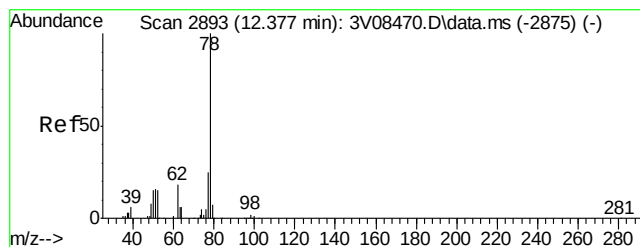
Tgt Ion:	59	Resp:	159214
Ion Ratio	Lower	Upper	
59	100		
41	37.2	46.0	69.0#
57	10.6	8.6	12.8



#27
Chloroform
Concen: 0.43 ug/l
RT: 11.739 min Scan# 2695
Delta R.T. 0.001 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

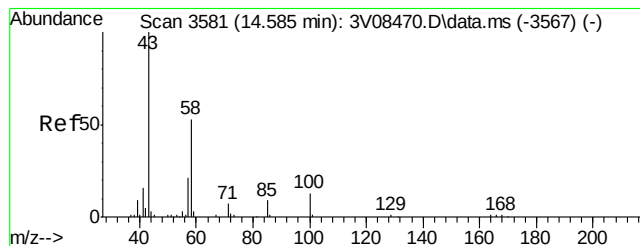
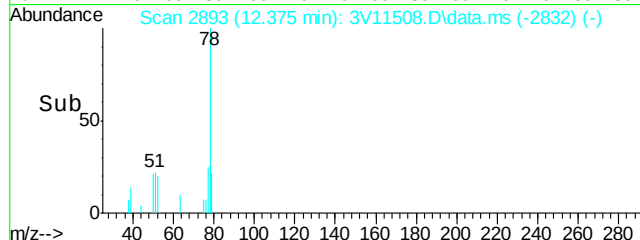
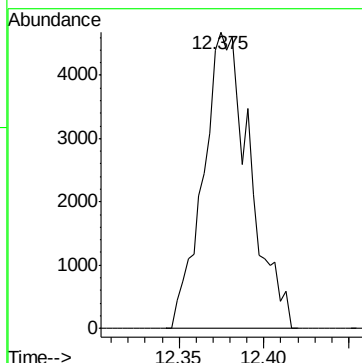
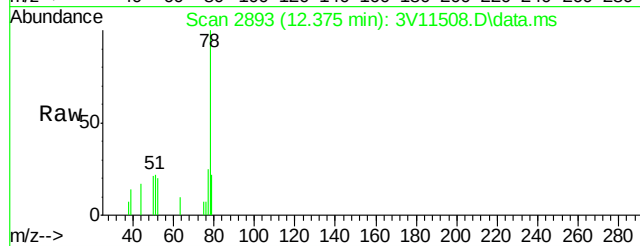
Tgt Ion:	83	Resp:	1958
Ion Ratio	Lower	Upper	
83	100		
85	69.8	45.5	85.5





#45
Benzene
Concen: 0.73 ug/l
RT: 12.375 min Scan# 2893
Delta R.T. -0.003 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

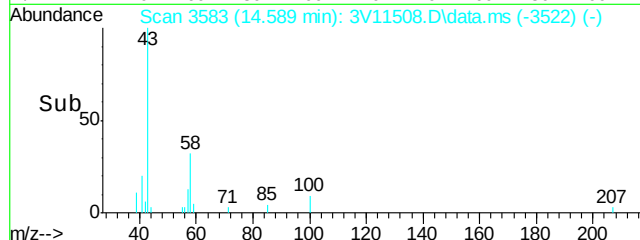
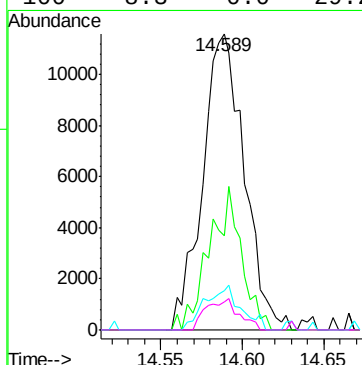
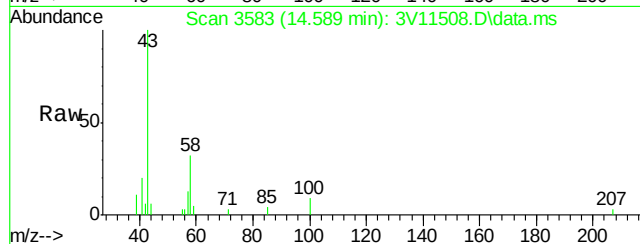
Tgt Ion: 78 Resp: 8931

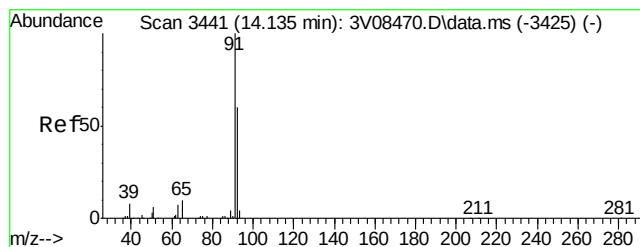


#50
2-Hexanone
Concen: 8.59 ug/l
RT: 14.589 min Scan# 3583
Delta R.T. -0.003 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

Tgt Ion: 43 Resp: 20577

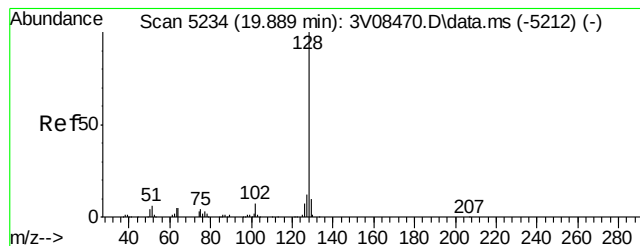
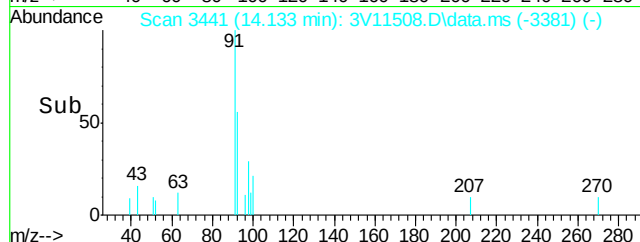
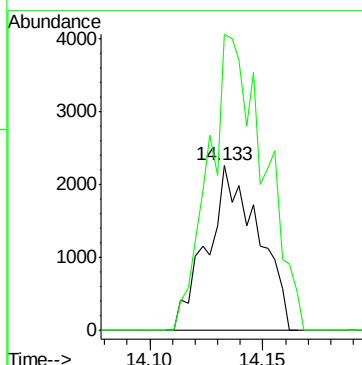
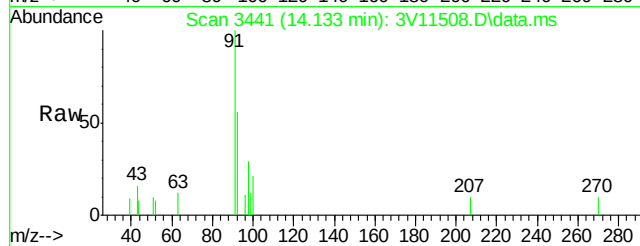
Ion	Ratio	Lower	Upper
43	100		
58	37.6	21.3	61.3
57	12.8	0.0	33.4
100	8.3	0.0	29.2





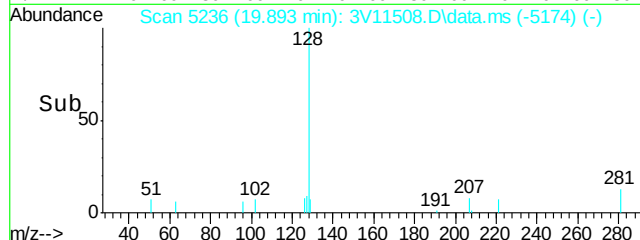
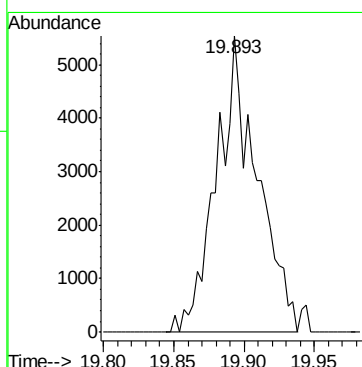
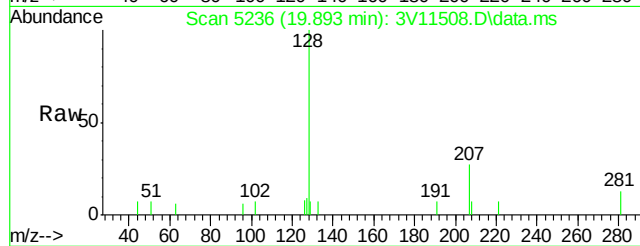
#56
Toluene
Concen: 0.42 ug/l
RT: 14.133 min Scan# 3441
Delta R.T. -0.006 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

Tgt Ion: 92 Resp: 3546
Ion Ratio Lower Upper
92 100
91 196.4 144.3 184.3#



#72
Naphthalene
Concen: 0.77 ug/l
RT: 19.893 min Scan# 5236
Delta R.T. 0.001 min
Lab File: 3V11508.D
Acq: 18 May 2011 7:01 pm

Tgt Ion: 128 Resp: 10987



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11508.D
Acq On : 18 May 2011 7:01 pm
Operator : DONC
Sample : D23412-2
Misc : MS2185,V3V647,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Title : 8260

Signal : TIC: 3V11508.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.311	364	380	399	rBV	48053	113170	3.51%	0.955%
2	4.433	405	418	440	rBV	177805	411187	12.77%	3.469%
3	4.882	548	558	562	rBV5	23974	43653	1.36%	0.368%
4	5.835	840	855	872	rBV2	167464	398786	12.38%	3.364%
5	8.960	1818	1829	1844	rBV	73665	166308	5.16%	1.403%
6	9.811	2079	2094	2113	rBV2	143785	343143	10.65%	2.895%
7	11.178	2508	2520	2523	rBV5	26722	39014	1.21%	0.329%
8	11.377	2570	2582	2597	rBV	52675	104837	3.25%	0.884%
9	11.893	2728	2743	2758	rBV2	399270	740797	23.00%	6.250%
10	12.291	2851	2867	2881	rVB	200780	395024	12.26%	3.333%
11	12.689	2976	2991	3008	rBV2	541991	994537	30.88%	8.391%
12	13.424	3209	3220	3233	rBV4	24490	47666	1.48%	0.402%
13	14.078	3406	3424	3439	rBV	795288	1424118	44.21%	12.015%
14	14.592	3573	3584	3594	rBV2	26858	44657	1.39%	0.377%
15	15.320	3797	3811	3828	rBV	681568	1199140	37.23%	10.117%
16	15.712	3922	3933	3944	rBV3	24703	44460	1.38%	0.375%
17	15.789	3949	3957	3971	rVV4	17183	33934	1.05%	0.286%
18	16.273	4091	4108	4122	rBV2	463956	835035	25.92%	7.045%
19	17.271	4404	4419	4427	rBV	1870869	3221091	100.00%	27.176%
20	17.316	4428	4433	4447	rVB2	741734	1252345	38.88%	10.566%

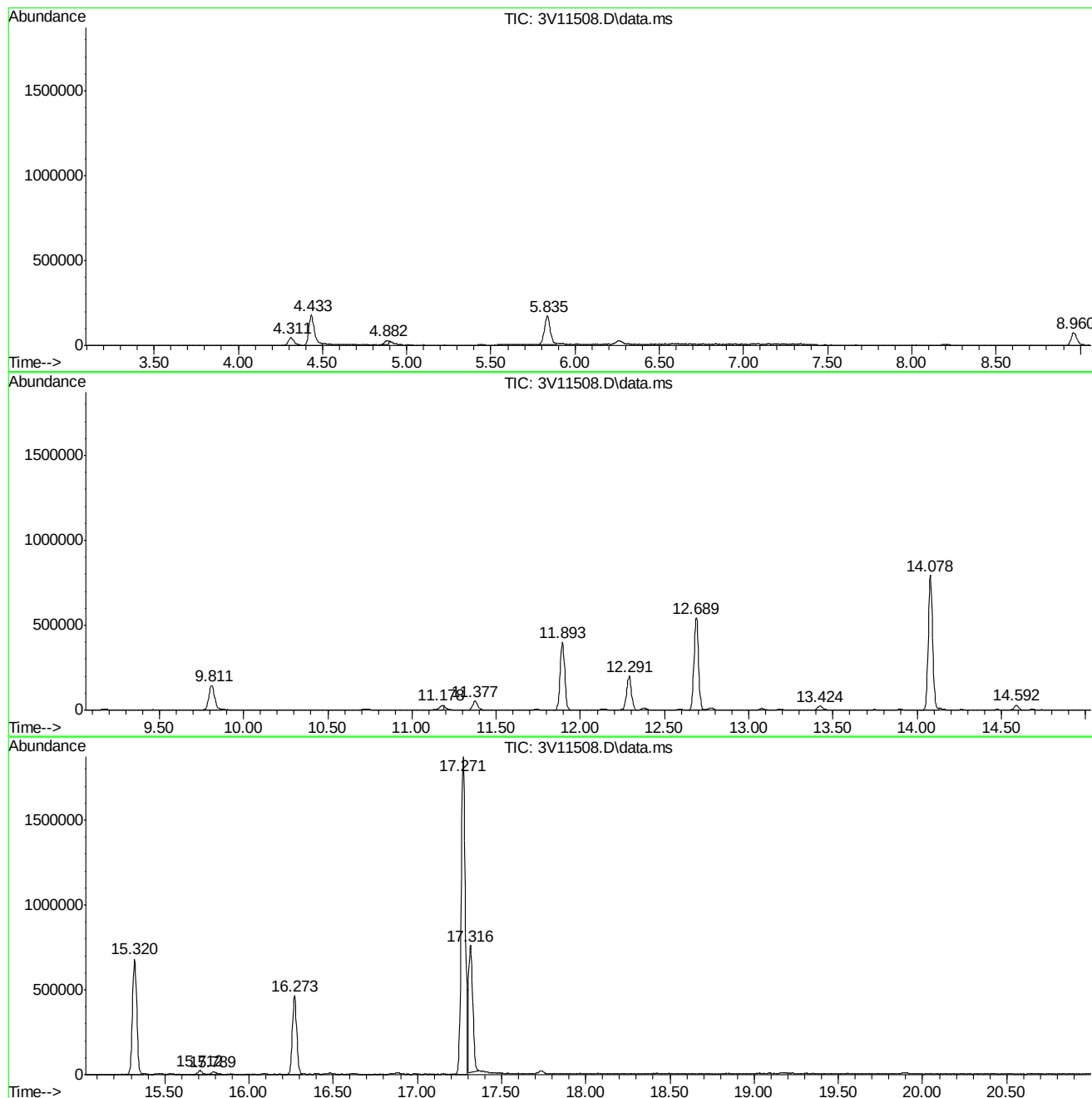
Sum of corrected areas: 11852902

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11508.D
Acq On : 18 May 2011 7:01 pm
Operator : DONC
Sample : D23412-2
Misc : MS2185,V3V647,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11508.D
Acq On : 18 May 2011 7:01 pm
Operator : DONC
Sample : D23412-2
Misc : MS2185,V3V647,,,,,1
ALS Vial : 16 Sample Multiplier: 1

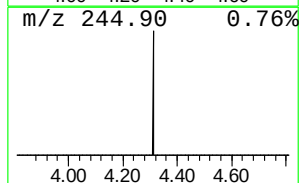
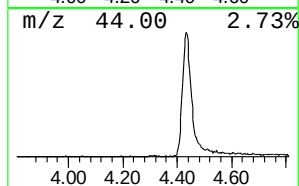
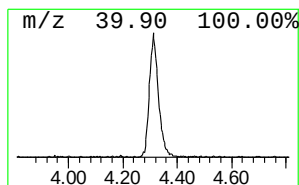
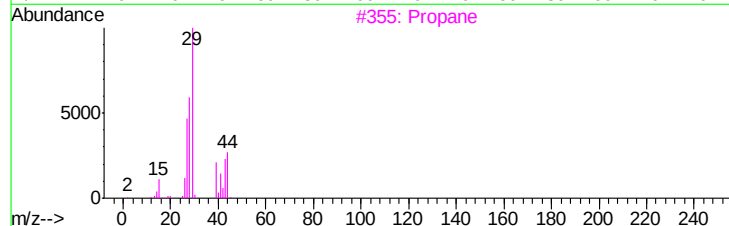
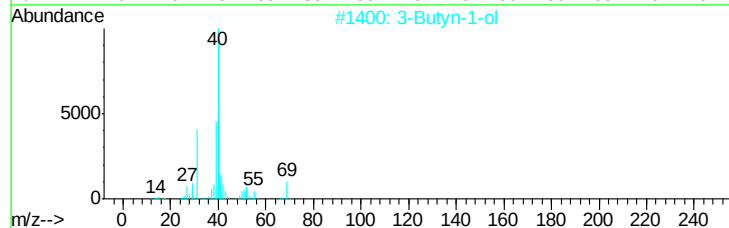
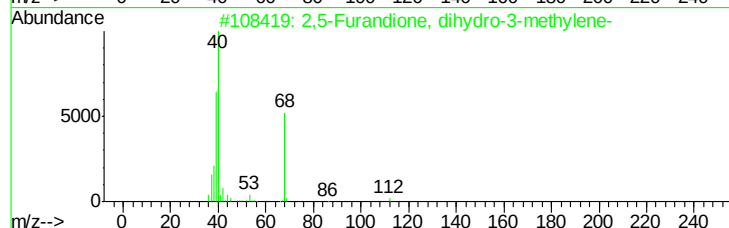
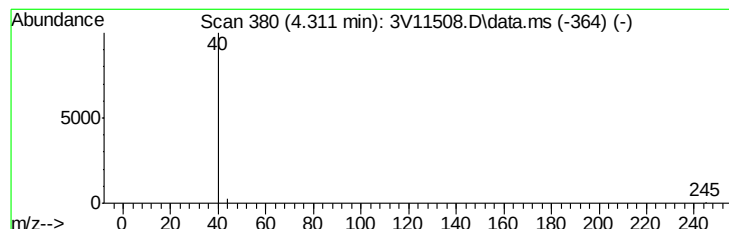
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 2,5-Furandione, dihydro-3-m... Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.311	7.64 ug/l	113170	Pentafluorobenzene	11.893

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			2,5-Furandione, dihydro-3-methyl...	112	C5H4O3	002170-03-8	1
2			3-Butyn-1-ol	70	C4H6O	000927-74-2	1
3			Propane	44	C3H8	000074-98-6	1
4			1-Butanamine, 3-methyl-	87	C5H13N	000107-85-7	1
5			1-Octanamine	129	C8H19N	000111-86-4	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11508.D
 Acq On : 18 May 2011 7:01 pm
 Operator : DONC
 Sample : D23412-2
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 16 Sample Multiplier: 1

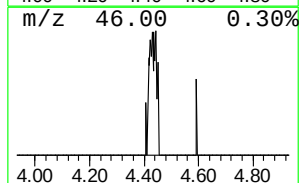
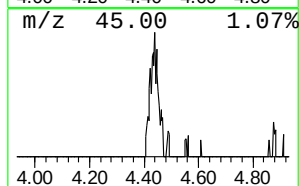
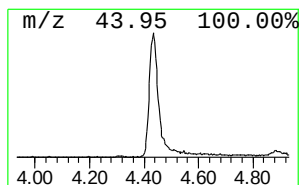
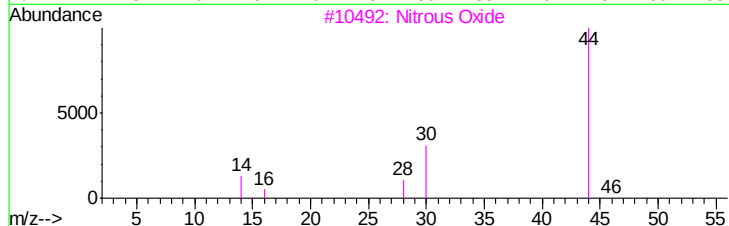
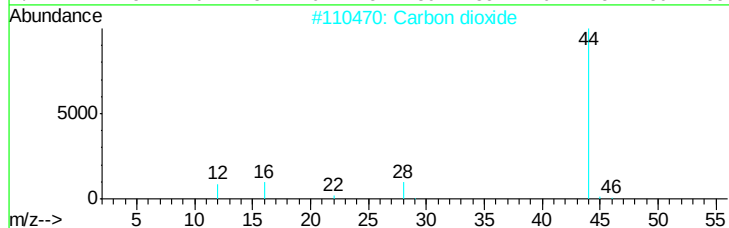
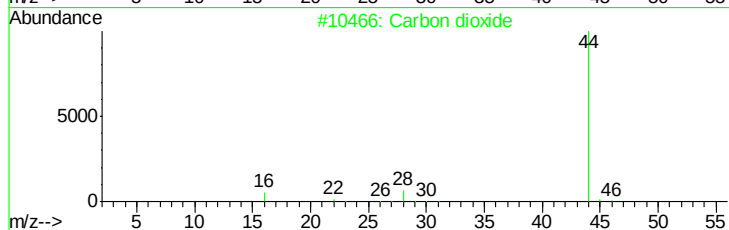
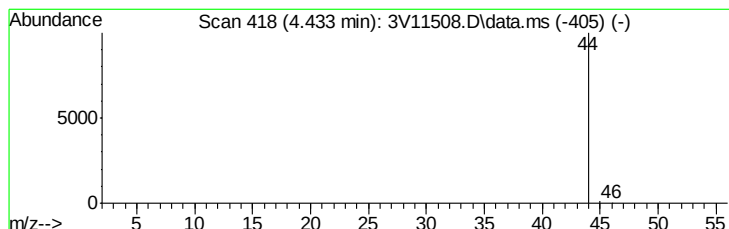
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.433	27.75 ug/l	411187	Pentafluorobenzene	11.893

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide			44	CO2	000124-38-9	4
2	Carbon dioxide			44	CO2	000124-38-9	4
3	Nitrous Oxide			44	N2O	010024-97-2	3
4	Nitrous Oxide			44	N2O	010024-97-2	3
5	Nitrous Oxide			44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11508.D
 Acq On : 18 May 2011 7:01 pm
 Operator : DONC
 Sample : D23412-2
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 16 Sample Multiplier: 1

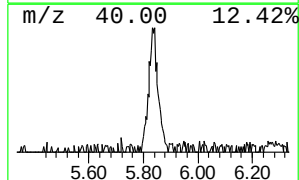
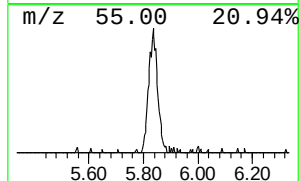
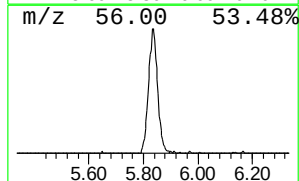
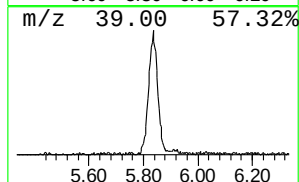
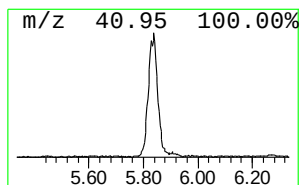
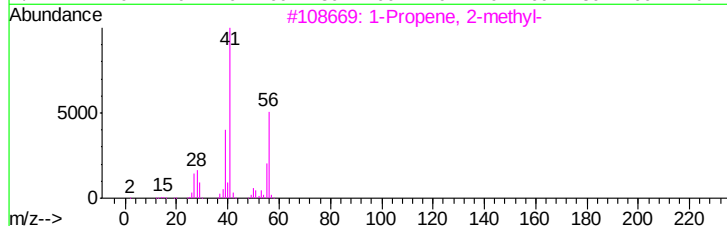
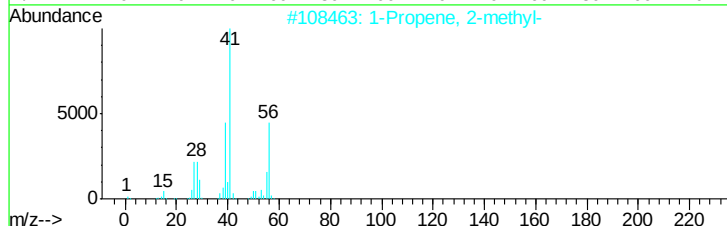
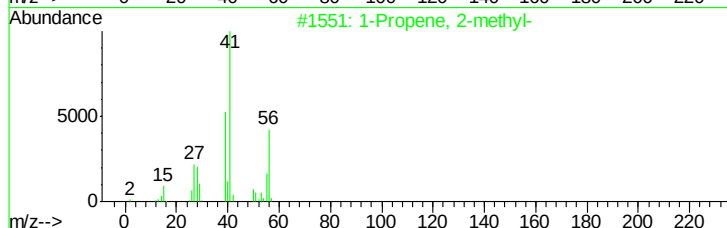
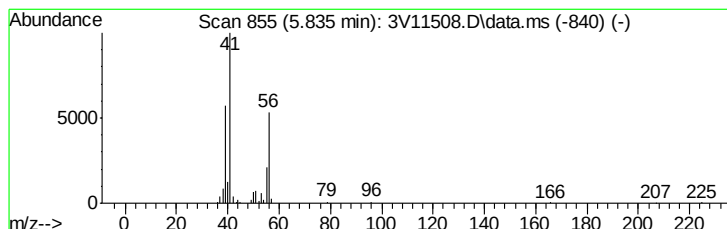
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 3 1-Propene, 2-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.835	26.92 ug/l	398786	Pentafluorobenzene	11.893

Hit# of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propene, 2-methyl-	56	C4H8	000115-11-7	80	
2	1-Propene, 2-methyl-	56	C4H8	000115-11-7	87	
3	1-Propene, 2-methyl-	56	C4H8	000115-11-7	58	
4	2-Butene	56	C4H8	000107-01-7	64	
5	2-Butene, (Z)-	56	C4H8	000590-18-1	47	



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11508.D
Acq On : 18 May 2011 7:01 pm
Operator : DONC
Sample : D23412-2
Misc : MS2185,V3V647,,,,,1
ALS Vial : 16 Sample Multiplier: 1

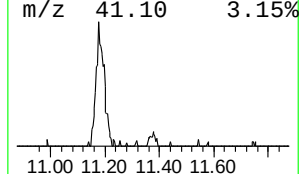
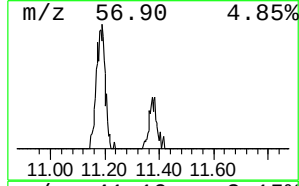
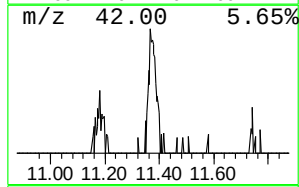
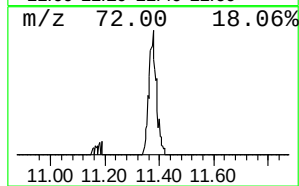
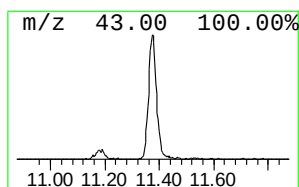
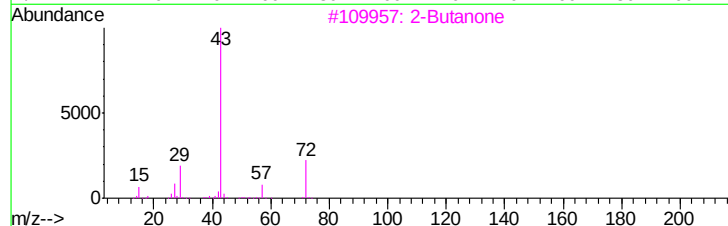
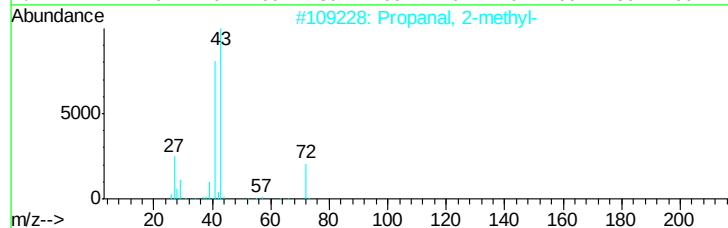
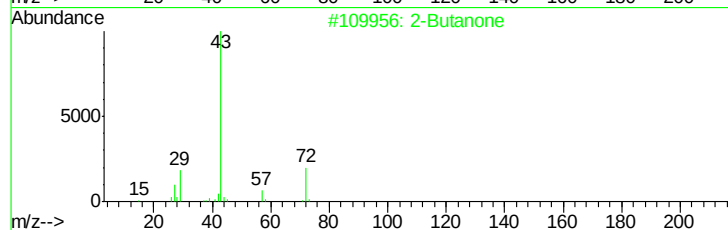
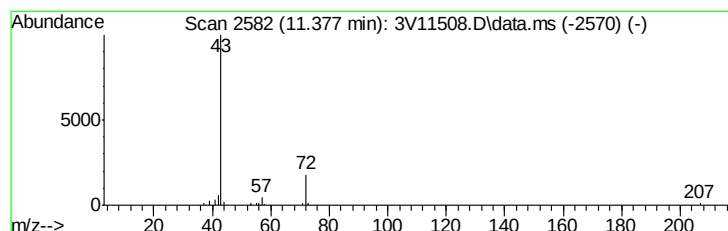
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 4 2-Butanone Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.377	7.08 ug/l	104837	Pentafluorobenzene	11.893

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	2-Butanone			72	C4H8O	000078-93-3	64
2	Propanal, 2-methyl-			72	C4H8O	000078-84-2	45
3	2-Butanone			72	C4H8O	000078-93-3	5
4	2-Butanone			72	C4H8O	000078-93-3	64
5	2-Butanone			72	C4H8O	000078-93-3	9



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11508.D
Acq On : 18 May 2011 7:01 pm
Operator : DONC
Sample : D23412-2
Misc : MS2185,V3V647,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
2,5-Furandione,...	4.311	7.6	ug/l	113170	1	11.893	740797	50.0
Carbon dioxide	4.433	27.8	ug/l	411187	1	11.893	740797	50.0
1-Propene, 2-me...	5.835	26.9	ug/l	398786	1	11.893	740797	50.0
2-Butanone	11.377	7.1	ug/l	104837	1	11.893	740797	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11509.D
Acq On : 18 May 2011 7:32 pm
Operator : DONC
Sample : D23412-3
Misc : MS2185,V3V647,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 19 07:26:19 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260
QLast Update : Mon Apr 25 08:11:47 2011
Response via : Initial Calibration

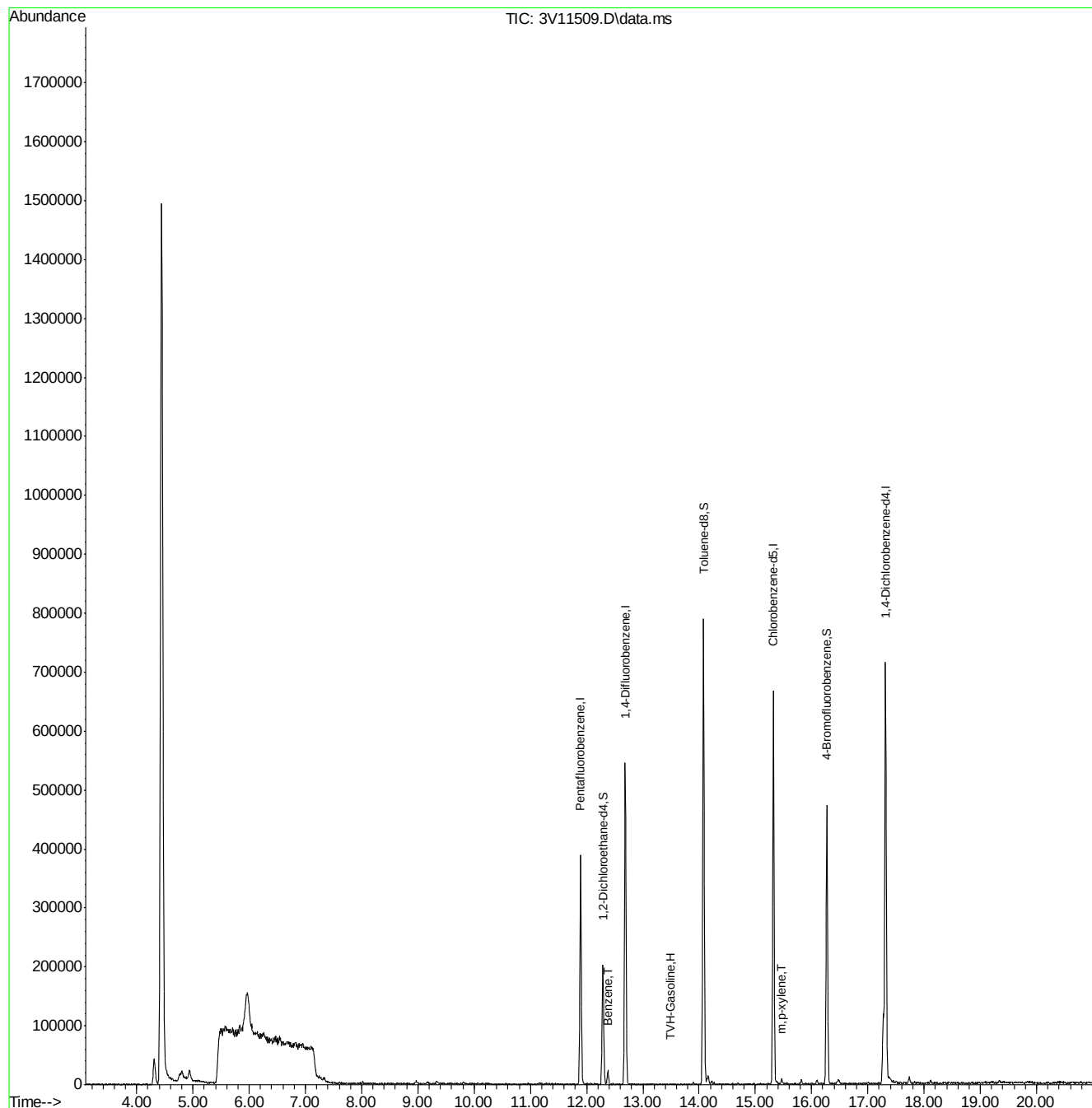
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.892	168	255204	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.688	114	456636	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.322	117	415533	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.318	152	234635	50.00	ug/l	0.00
System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.283	102	31566	45.96	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	91.92%	
55) Toluene-d8	14.077	98	494564	41.27	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	82.54%	
59) 4-Bromofluorobenzene	16.269	95	170785	40.43	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	80.86%	
Target Compounds						
1) TVH-Gasoline	13.491	TIC	140060m	75.87	ug/l	Qvalue
45) Benzene	12.376	78	17758	1.48	ug/l	100
61) m,p-xylene	15.476	106	2642	0.38	ug/l	92

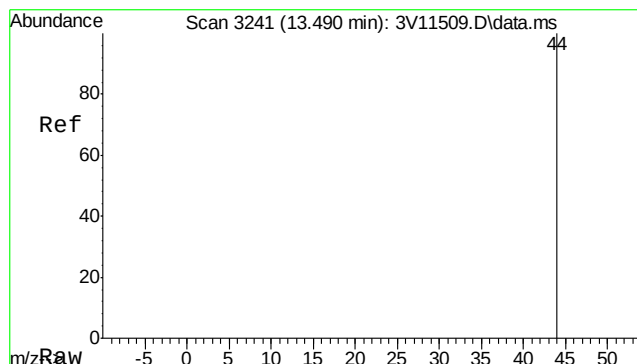
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Quantitation Report (QT Reviewed)

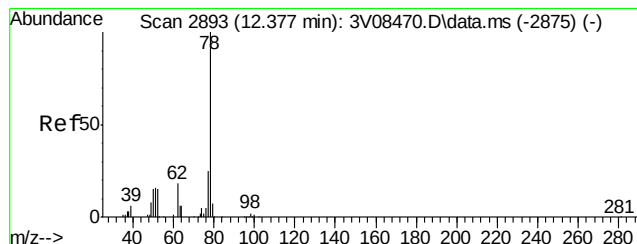
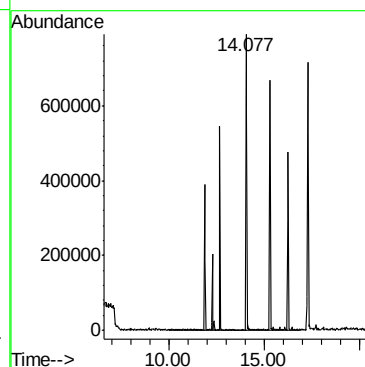
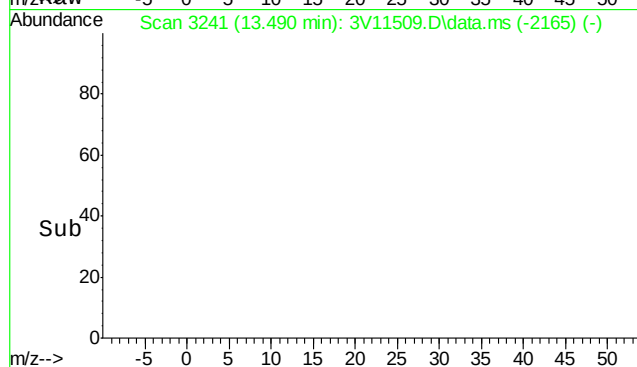
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Data File : 3V11509.D
Acq On : 18 May 2011 7:32 pm
Operator : DONC
Sample : D23412-3
Misc : MS2185,V3V647,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 19 07:26:19 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260
QLast Update : Mon Apr 25 08:11:47 2011
Response via : Initial Calibration

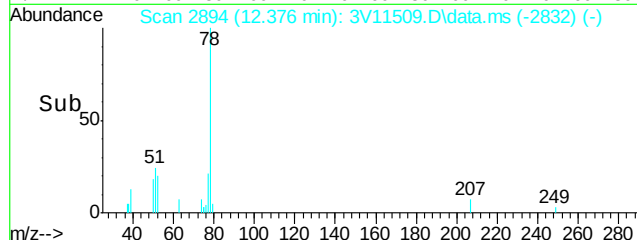
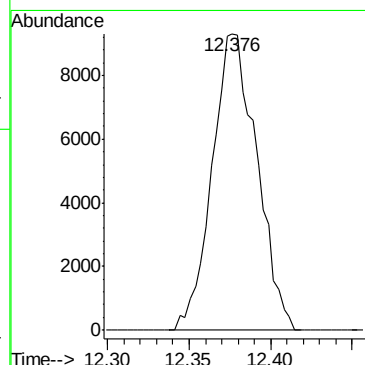
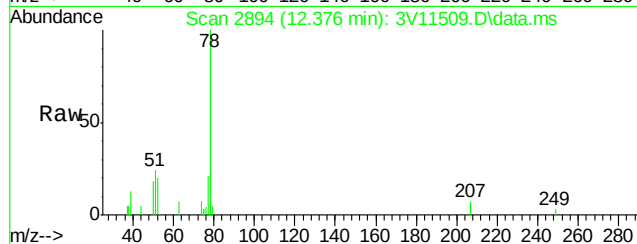


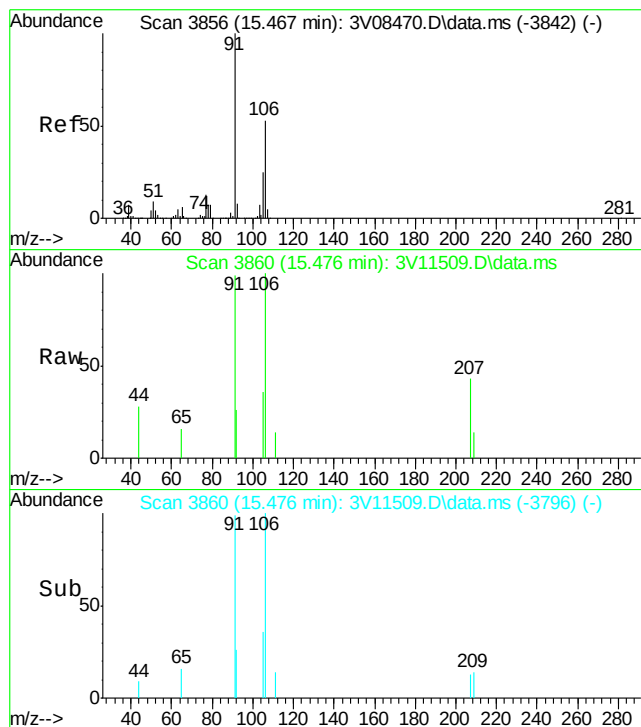


#1
TVH-Gasoline
Concen: 75.87 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V11509.D
Acq: 18 May 2011 7:32 pm
Tgt Ion:TIC Resp: 140060



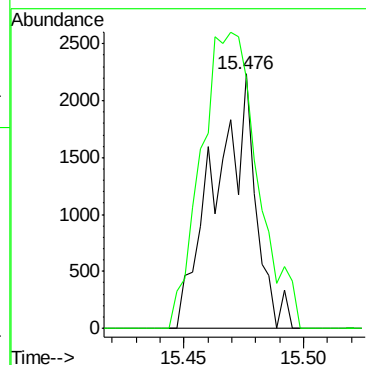
#45
Benzene
Concen: 1.48 ug/l
RT: 12.376 min Scan# 2894
Delta R.T. -0.001 min
Lab File: 3V11509.D
Acq: 18 May 2011 7:32 pm
Tgt Ion: 78 Resp: 17758





#61
m,p-xylene
Concen: 0.38 ug/l
RT: 15.476 min Scan# 3860
Delta R.T. 0.006 min
Lab File: 3V11509.D
Acq: 18 May 2011 7:32 pm

Tgt Ion	Ratio	Lower	Upper
106	100		
91	162.2	153.3	193.3



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11509.D
Acq On : 18 May 2011 7:32 pm
Operator : DONC
Sample : D23412-3
Misc : MS2185,V3V647,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0

Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Title : 8260

Signal : TIC: 3V11509.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.309	365	380	400	rBV	43653	108611	2.48%	0.930%
2	4.444	402	422	449	rBV	1493702	4387172	100.00%	37.550%
3	5.465	721	740	741	rBV	80202	147772	3.37%	1.265%
4	11.892	2728	2743	2758	rBV	388896	718982	16.39%	6.154%
5	12.290	2853	2867	2880	rBV3	203402	395832	9.02%	3.388%
6	12.688	2977	2991	3008	rBV	545448	977147	22.27%	8.364%
7	14.077	3409	3424	3440	rBV3	790448	1401557	31.95%	11.996%
8	15.322	3795	3812	3827	rBV	667832	1183613	26.98%	10.131%
9	16.272	4092	4108	4122	rBV2	474254	837252	19.08%	7.166%
10	17.273	4407	4420	4423	rBV4	118704	184898	4.21%	1.583%
11	17.315	4424	4433	4447	rVB	707328	1340614	30.56%	11.474%

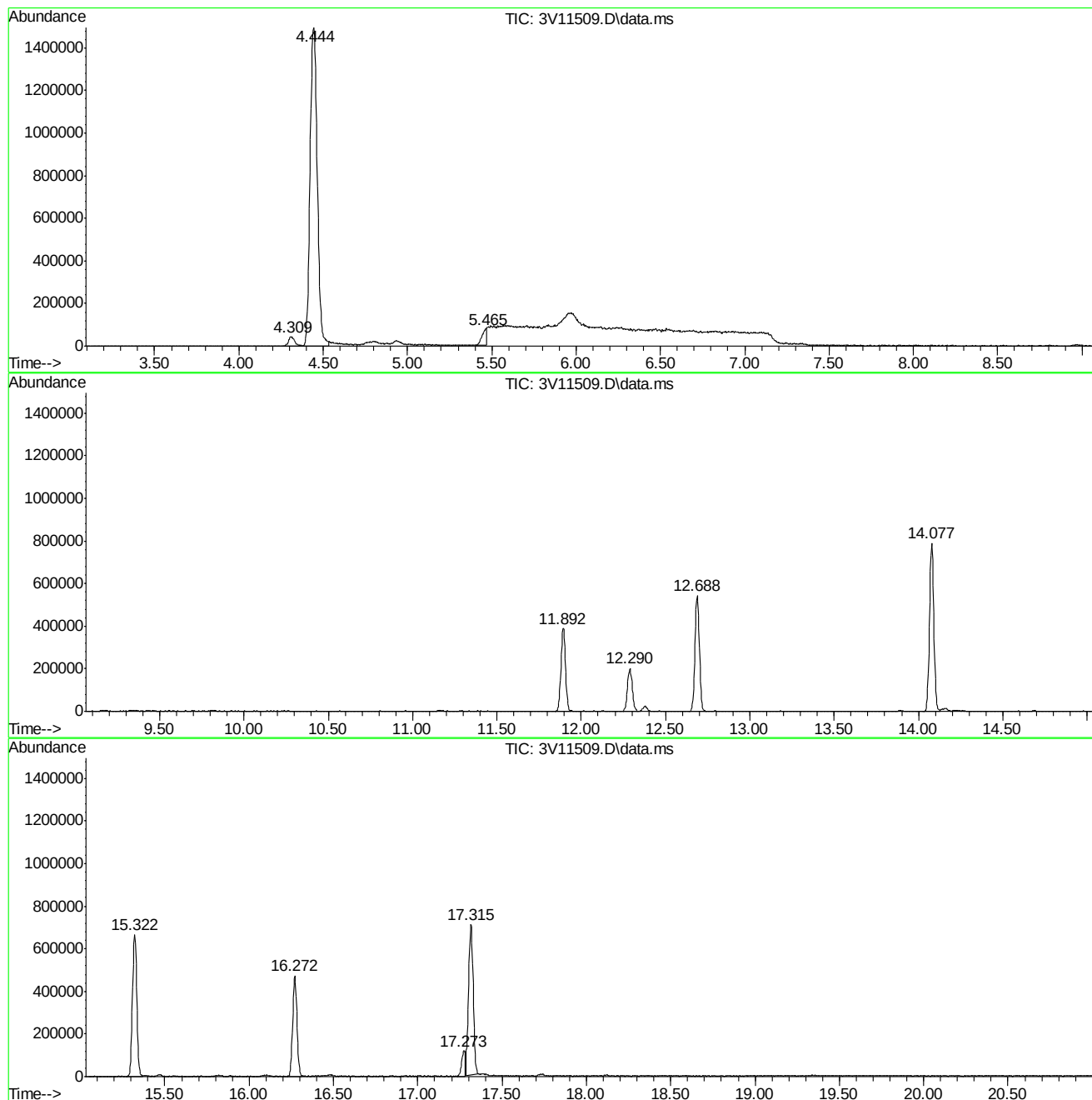
Sum of corrected areas: 11683450

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11509.D
Acq On : 18 May 2011 7:32 pm
Operator : DONC
Sample : D23412-3
Misc : MS2185,V3V647,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11509.D
 Acq On : 18 May 2011 7:32 pm
 Operator : DONC
 Sample : D23412-3
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 17 Sample Multiplier: 1

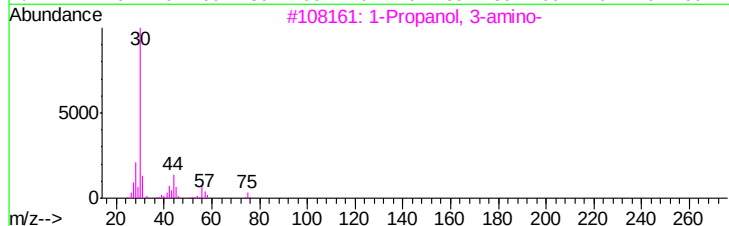
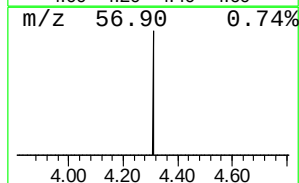
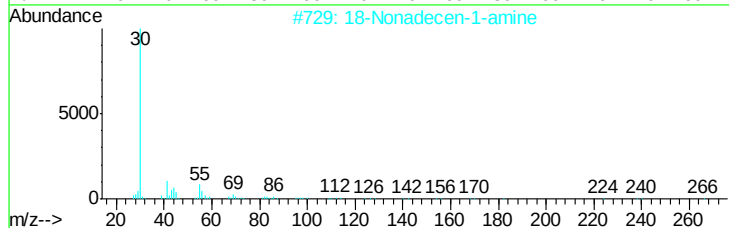
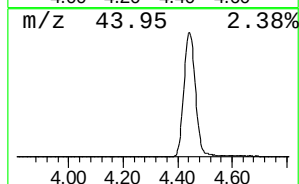
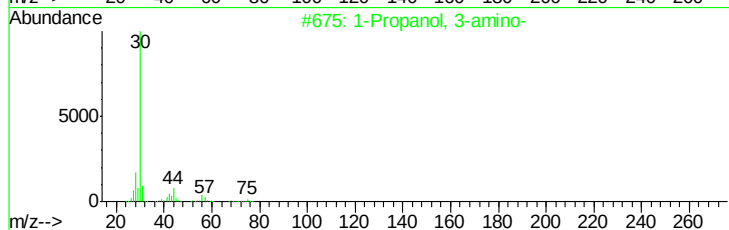
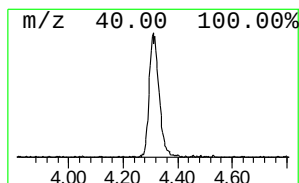
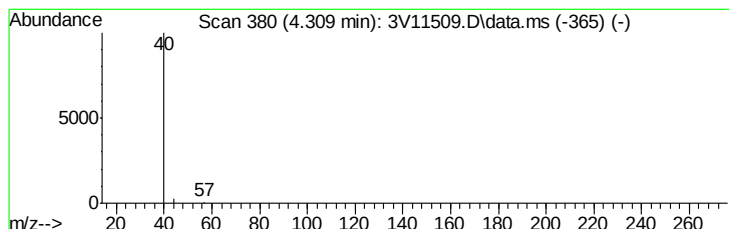
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 1-Propanol, 3-amino- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.309	7.55 ug/l	108611	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propanol, 3-amino-			75	C3H9NO	000156-87-6	1
2	18-Nonadecen-1-amine			281	C19H39N	1000221-52-8	1
3	1-Propanol, 3-amino-			75	C3H9NO	000156-87-6	1
4	Glycyl-dl-alanine			146	C5H10N2O3	000926-77-2	1
5	1-Nonanamine			143	C9H21N	000112-20-9	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11509.D
 Acq On : 18 May 2011 7:32 pm
 Operator : DONC
 Sample : D23412-3
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 17 Sample Multiplier: 1

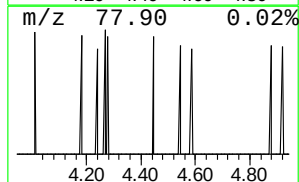
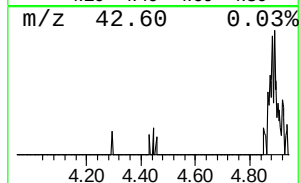
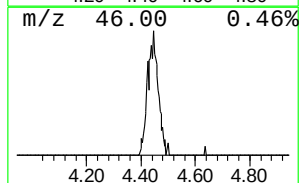
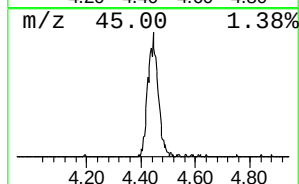
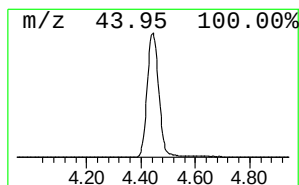
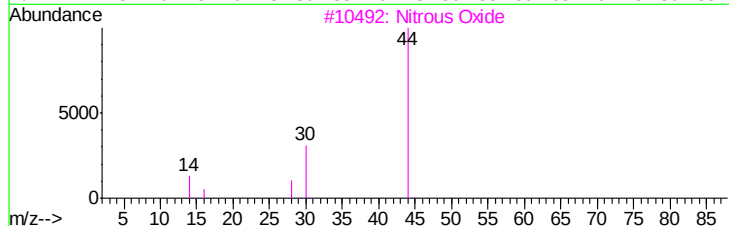
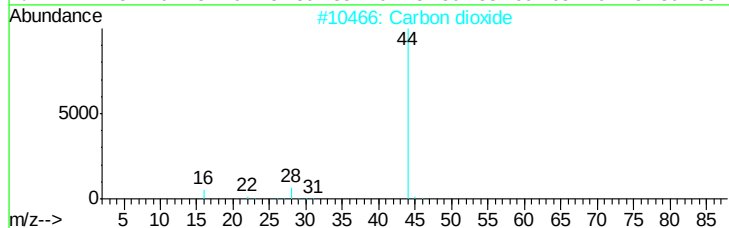
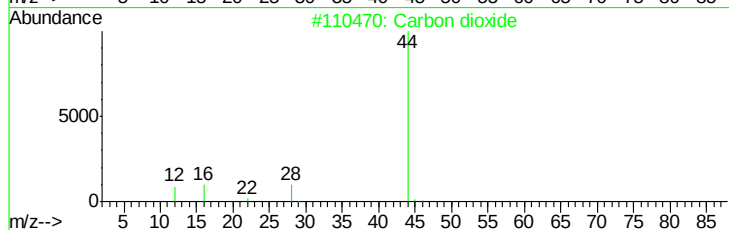
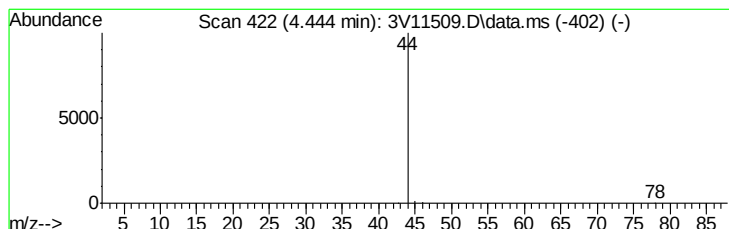
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.444	305.10 ug/l	4387170	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Carbon dioxide			44	CO2	000124-38-9	4
2	Carbon dioxide			44	CO2	000124-38-9	4
3	Nitrous Oxide			44	N2O	010024-97-2	3
4	Nitrous Oxide			44	N2O	010024-97-2	3
5	Nitrous Oxide			44	N2O	010024-97-2	3



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11509.D
Acq On : 18 May 2011 7:32 pm
Operator : DONC
Sample : D23412-3
Misc : MS2185,V3V647,,,,,1
ALS Vial : 17 Sample Multiplier: 1

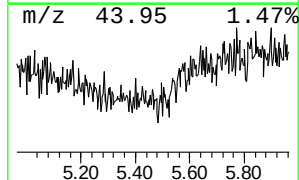
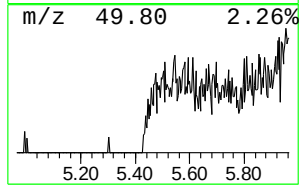
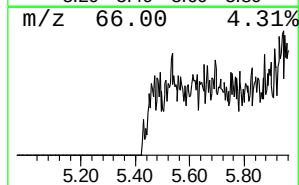
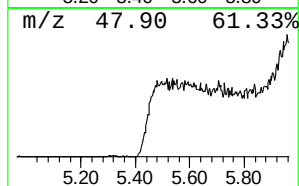
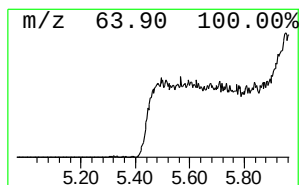
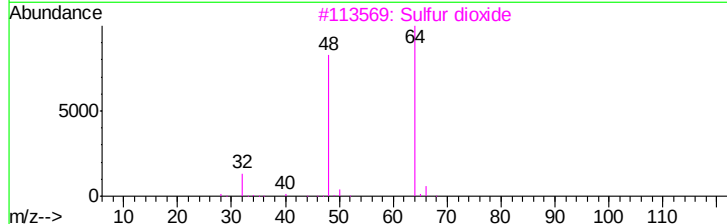
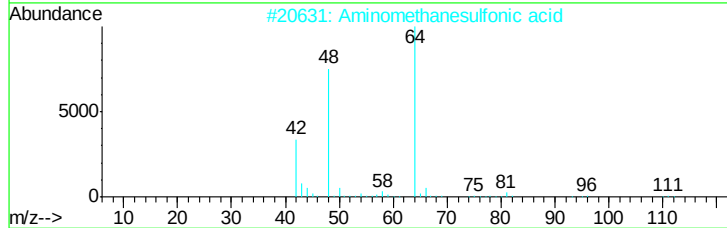
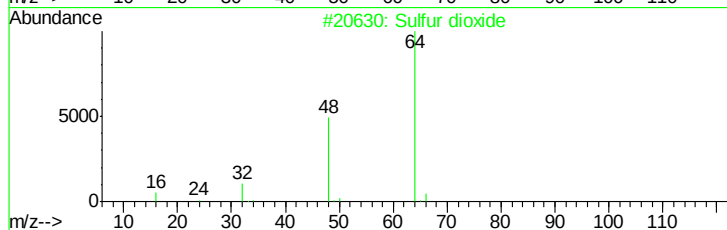
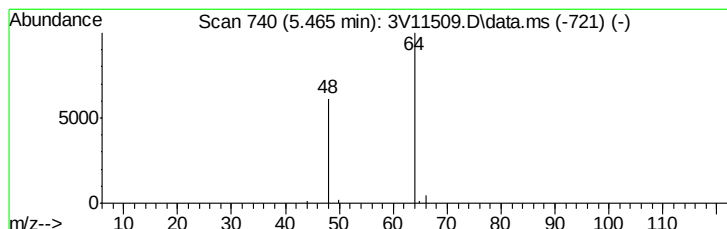
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 3 Sulfur dioxide Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.465	10.28 ug/l	147772	Pentafluorobenzene	11.892

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Sulfur dioxide	64	O2S	007446-09-5	83
2			Aminomethanesulfonic acid	111	CH5NO3S	013881-91-9	64
3			Sulfur dioxide	64	O2S	007446-09-5	83
4			Cysteic acid	169	C3H7NO5S	1000131-23-1	9
5			1-Propanesulfonyl chloride	142	C3H7ClO2S	010147-36-1	1



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3051811.S\
 Data File : 3V11509.D
 Acq On : 18 May 2011 7:32 pm
 Operator : DONC
 Sample : D23412-3
 Misc : MS2185,V3V647,,,,,1
 ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
1-Propanol, 3-a...	4.309	7.6	ug/l	108611	1	11.892	718982	50.0
Carbon dioxide	4.444	305.1	ug/l	4387170	1	11.892	718982	50.0
Sulfur dioxide	5.465	10.3	ug/l	147772	1	11.892	718982	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11495.D
Acq On : 18 May 2011 12:16 pm
Operator : DONC
Sample : MB1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 19 07:14:23 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260
QLast Update : Mon Apr 25 08:11:47 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.895	168	314239	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.691	114	552589	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.322	117	504095	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.315	152	268224	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.290	102	40532	47.93	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	95.86%	
55) Toluene-d8	14.077	98	605359	41.64	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.28%	
59) 4-Bromofluorobenzene	16.272	95	203124	39.63	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	79.26%	

Target Compounds

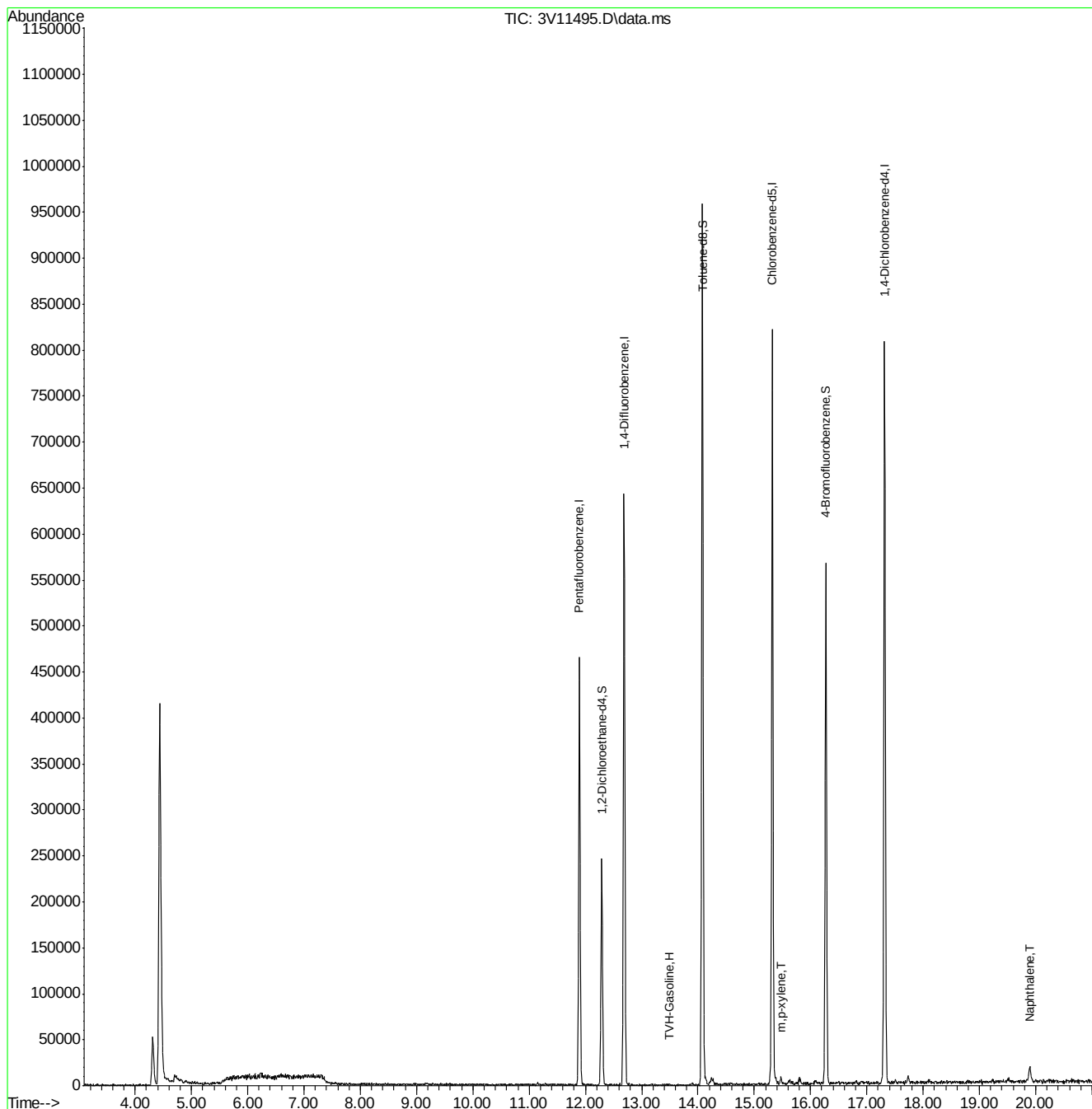
					Qvalue
1) TVH-Gasoline	13.491	TIC	147384m	76.17	ug/l
61) m,p-xylene	15.473	106	2558	0.30	ug/l # 73
72) Naphthalene	19.901	128	21391	1.36	ug/l 100

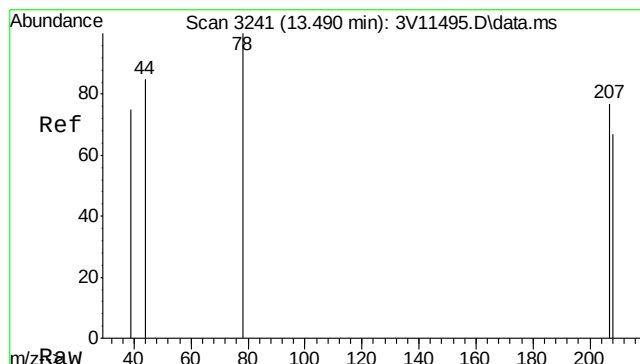
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11495.D
Acq On : 18 May 2011 12:16 pm
Operator : DONC
Sample : MB1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 3 Sample Multiplier: 1

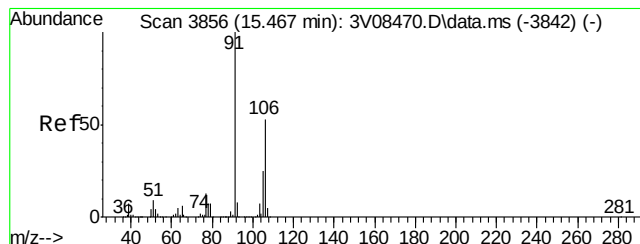
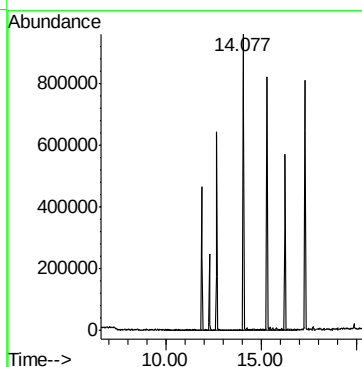
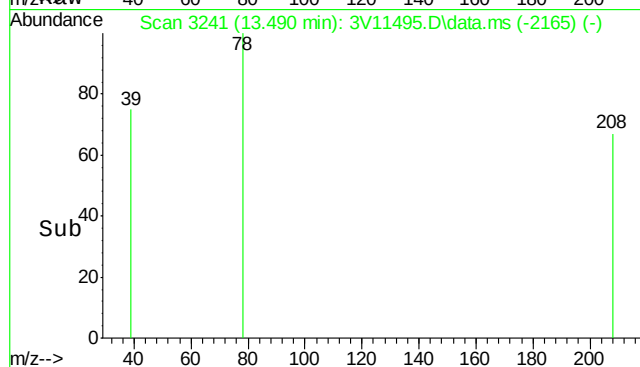
Quant Time: May 19 07:14:23 2011
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260
QLast Update : Mon Apr 25 08:11:47 2011
Response via : Initial Calibration





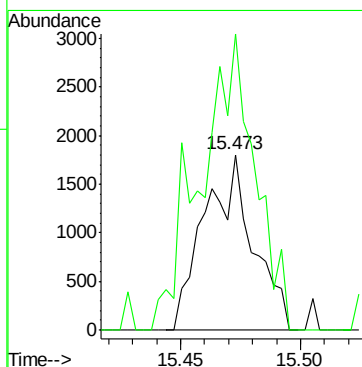
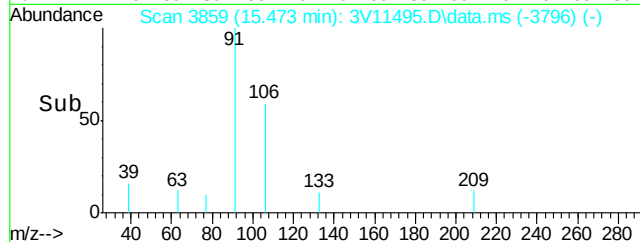
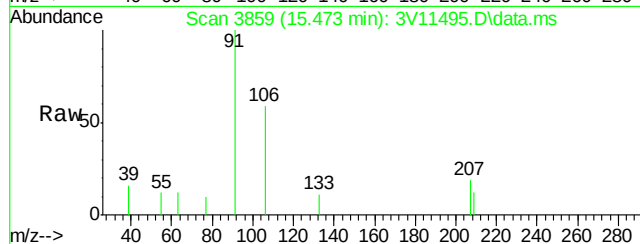
#1
TVH-Gasoline
Concen: 76.17 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V11495.D
Acq: 18 May 2011 12:16 pm

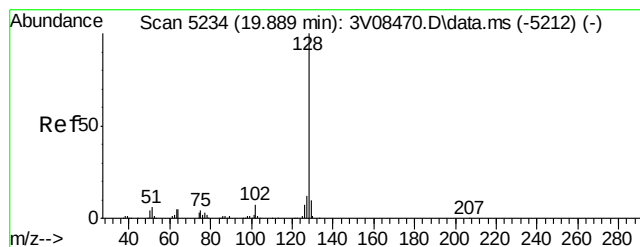
Tgt Ion:TIC Resp: 147384



#61
m,p-xylene
Concen: 0.30 ug/l
RT: 15.473 min Scan# 3859
Delta R.T. 0.002 min
Lab File: 3V11495.D
Acq: 18 May 2011 12:16 pm

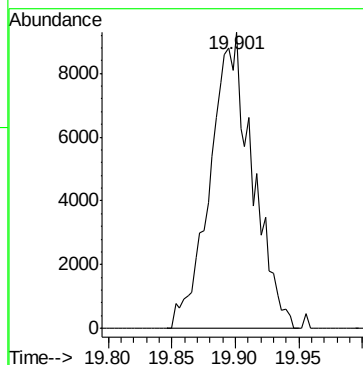
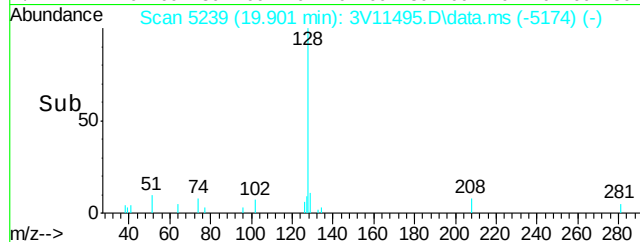
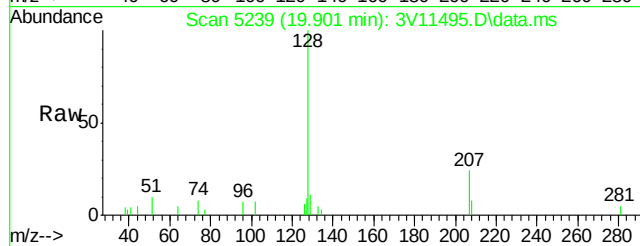
Tgt Ion:106 Resp: 2558
Ion Ratio Lower Upper
106 100
91 135.6 153.3 193.3#





#72
Naphthalene
Concen: 1.36 ug/l
RT: 19.901 min Scan# 5239
Delta R.T. 0.009 min
Lab File: 3V11495.D
Acq: 18 May 2011 12:16 pm

Tgt Ion:128 Resp: 21391



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11495.D
Acq On : 18 May 2011 12:16 pm
Operator : DONC
Sample : MB1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Title : 8260

Signal : TIC: 3V11495.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.313	368	381	400	rBV	52478	122191	7.13%	1.296%
2	4.438	403	420	441	rBV	413819	1096589	63.96%	11.632%
3	11.892	2730	2743	2757	rBV	464056	870547	50.78%	9.234%
4	12.290	2853	2867	2882	rBV	246328	466827	27.23%	4.952%
5	12.688	2976	2991	3008	rBV	643224	1179407	68.79%	12.510%
6	14.077	3410	3424	3439	rBV3	959008	1714496	100.00%	18.186%
7	15.322	3799	3812	3827	rVB	814550	1427223	83.24%	15.139%
8	16.272	4093	4108	4122	rBV2	565714	997908	58.20%	10.585%
9	17.315	4411	4433	4451	rBV3	807771	1552389	90.54%	16.466%

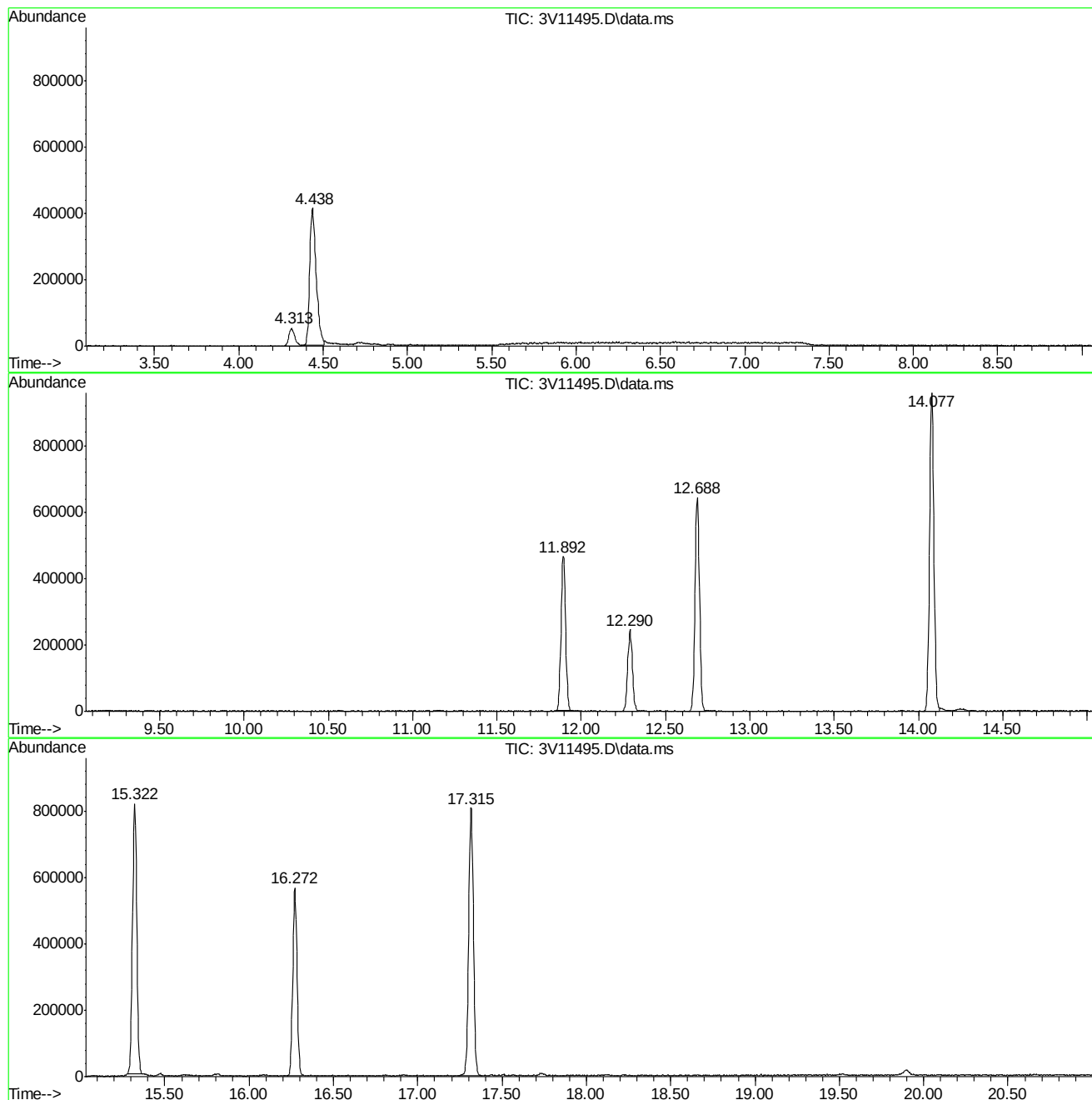
Sum of corrected areas: 9427577

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11495.D
Acq On : 18 May 2011 12:16 pm
Operator : DONC
Sample : MB1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11495.D
Acq On : 18 May 2011 12:16 pm
Operator : DONC
Sample : MB1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 3 Sample Multiplier: 1

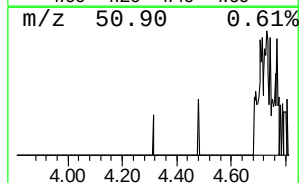
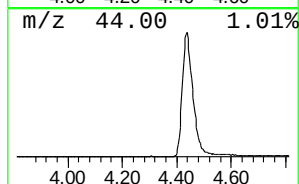
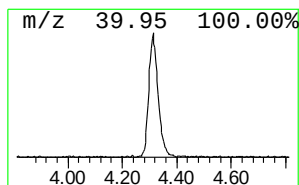
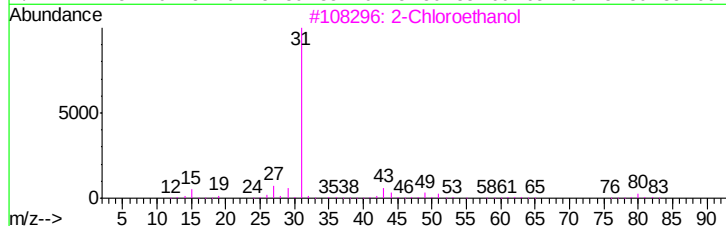
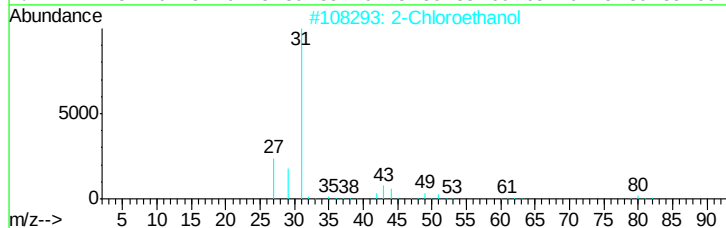
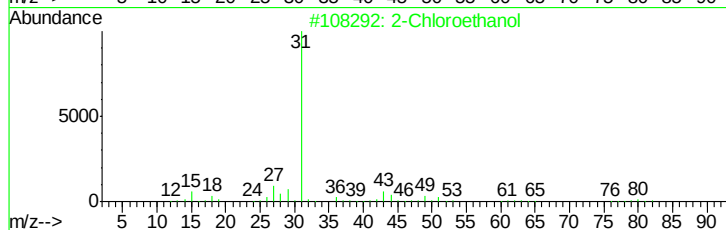
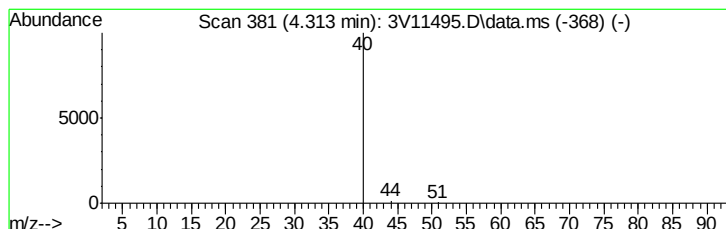
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 1 2-Chloroethanol Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.313	7.02 ug/l	122191	Pentafluorobenzene	11.895

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
2			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
3			2-Chloroethanol	80	C2H5ClO	000107-07-3	1
4			Pent-3-enylamine	85	C5H11N	087156-70-5	1
5			2-Chloroethanol	80	C2H5ClO	000107-07-3	1



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11495.D
Acq On : 18 May 2011 12:16 pm
Operator : DONC
Sample : MB1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 3 Sample Multiplier: 1

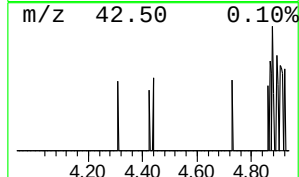
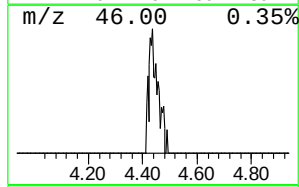
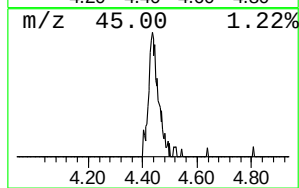
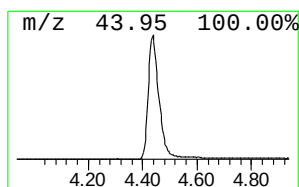
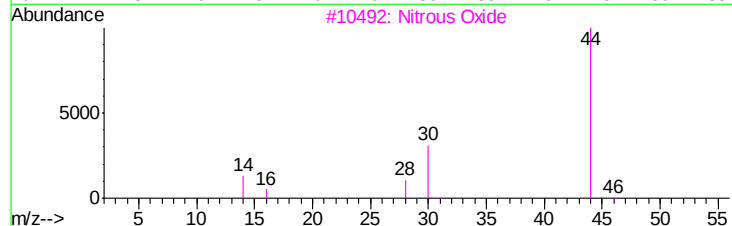
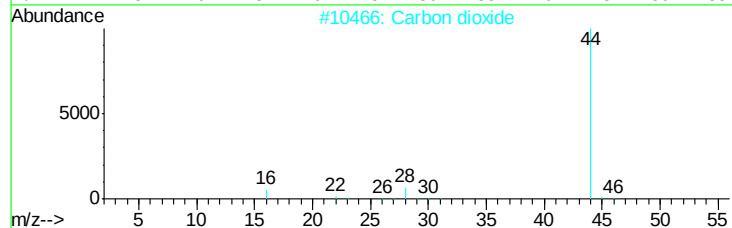
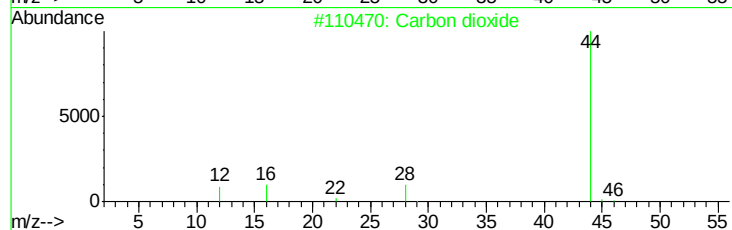
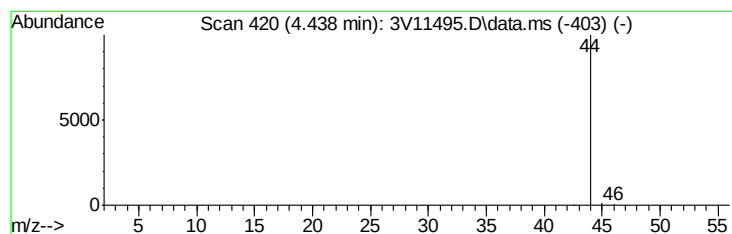
Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

Peak Number 2 Carbon dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.438	62.98 ug/l	1096590	Pentafluorobenzene	11.895

Hit#	of	5	Tentative ID	MW	MolForm	CAS#	Qual
1			Carbon dioxide	44	CO2	000124-38-9	4
2			Carbon dioxide	44	CO2	000124-38-9	4
3			Nitrous Oxide	44	N2O	010024-97-2	3
4			Nitrous Oxide	44	N2O	010024-97-2	3
5			Nitrous Oxide	44	N2O	010024-97-2	3



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V3051811.S\
Data File : 3V11495.D
Acq On : 18 May 2011 12:16 pm
Operator : DONC
Sample : MB1
Misc : MS2185,V3V647,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V3HSL603TVH603.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
2-Chloroethanol	4.313	7.0	ug/l	122191	1	11.895	870547	50.0
Carbon dioxide	4.438	63.0	ug/l	1096590	1	11.895	870547	50.0

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA633-MB	GA11547.D	1	05/12/11	BR	n/a	n/a	GGA633

The QC reported here applies to the following samples:

Method: SW846 8015B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	89% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA633-BS	GA11548.D	1	05/12/11	BR	n/a	n/a	GGA633

The QC reported here applies to the following samples: Method: SW846 8015B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.92	87	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	91%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D23412
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23310-1MS	GA11550.D	1	05/12/11	BR	n/a	n/a	GGA633
D23310-1MSD	GA11551.D	1	05/12/11	BR	n/a	n/a	GGA633
D23310-1	GA11549.D	1	05/12/11	BR	n/a	n/a	GGA633

The QC reported here applies to the following samples: Method: SW846 8015B

D23412-1, D23412-2, D23412-3

CAS No.	Compound	D23310-1 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.04	93	1.95	89	5	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D23310-1	Limits
120-82-1	1,2,4-Trichlorobenzene	95%	91%	88%	60-140%

7.3.1
7

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11571.D\FID1A.CH Vial: 44
Signal #2 : Z:\051211\GA11571.D\FID2B.CH
Acq On : 13 May 2011 11:31 am Operator: BrianR
Sample : D23412-1 Inst : BTEX2
Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 14 09:00:40 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat May 14 09:00:07 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.59	3117662	87.616	%
10) S	1,2,4-Trichlorobenzene (P)	14.59	6051956	93.904	%
Target Compounds					
1) H	TVH-Gasoline	7.50	4495812	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.64	214091	0.936	ug/L
6) T	Toluene	8.18	176579	0.840	ug/L
7) T	Ethylbenzene	10.66	98447	0.525	ug/L
8) T	m,p-Xylene	10.83	302592	1.402	ug/L
9) T	o-Xylene	11.29	353075	1.938	ug/L
11) T	Naphthalene	14.76	217394	0.781	ug/L

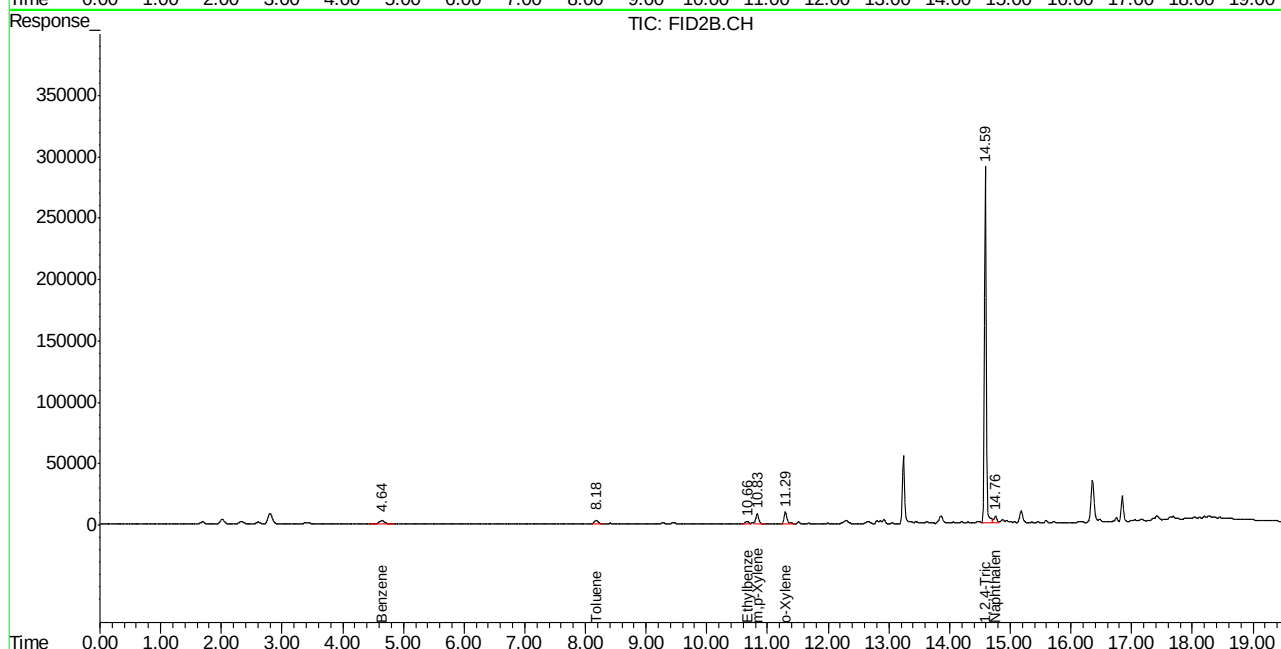
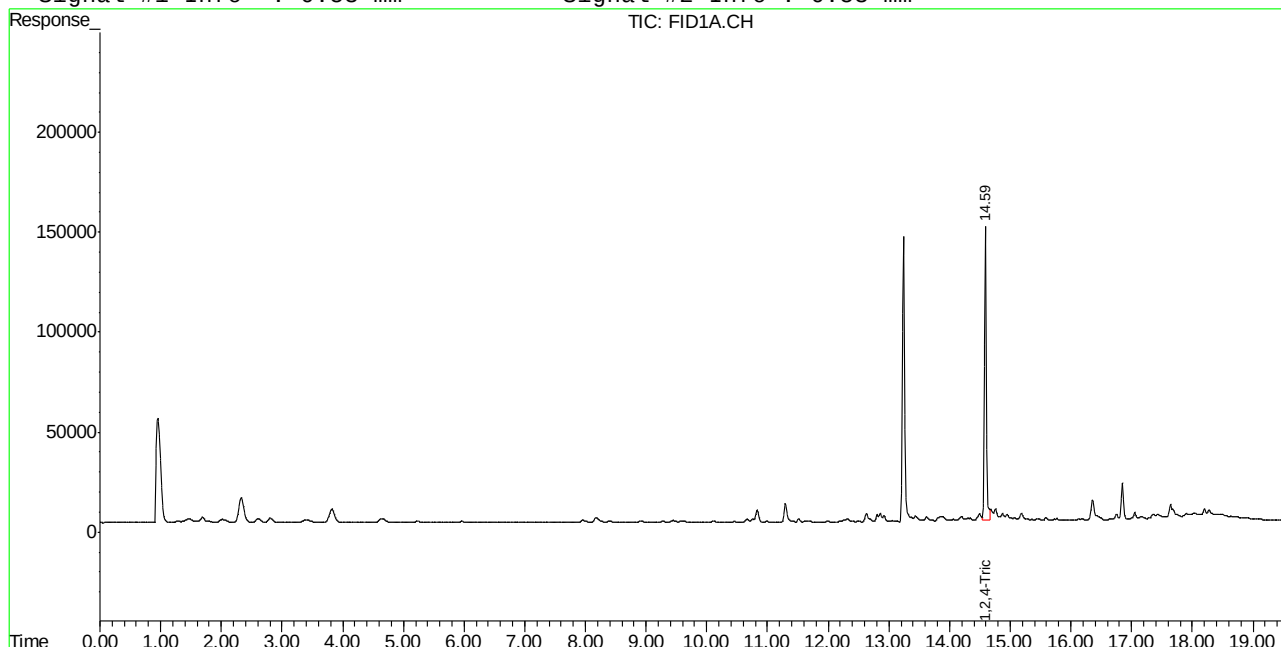
(f)=RT Delta > 1/2 Window (m)=manual int.
GA11571.D TA620GA620.M Sat May 14 12:50:30 2011 GC

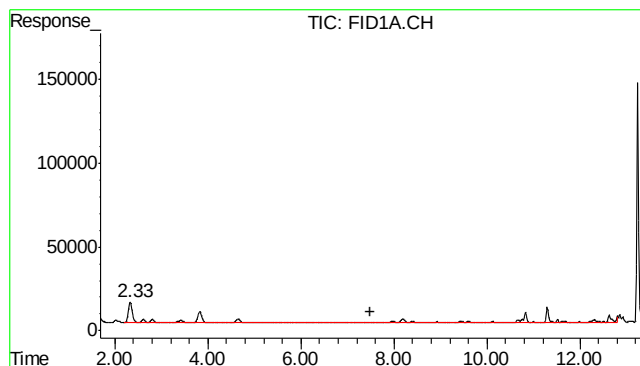
Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11571.D\FID1A.CH Vial: 44
 Signal #2 : Z:\051211\GA11571.D\FID2B.CH
 Acq On : 13 May 2011 11:31 am Operator: BrianR
 Sample : D23412-1 Inst : BTEX2
 Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 14 10:24 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat May 14 09:00:07 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

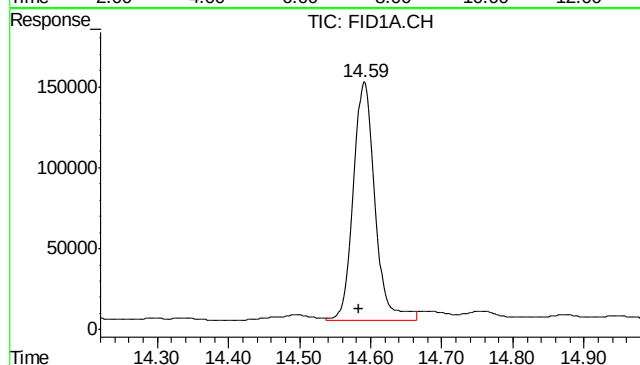
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





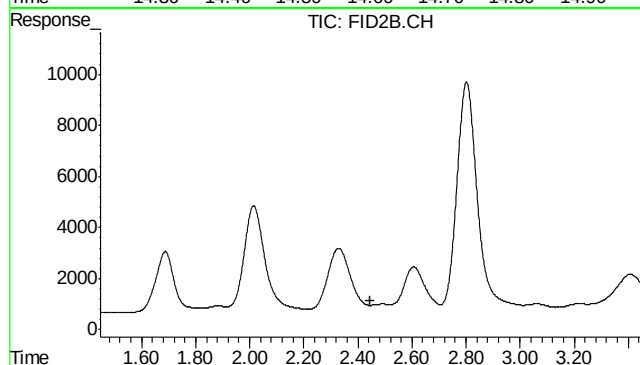
#1 TVH-Gasoline

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 4495812
Conc: N.D.



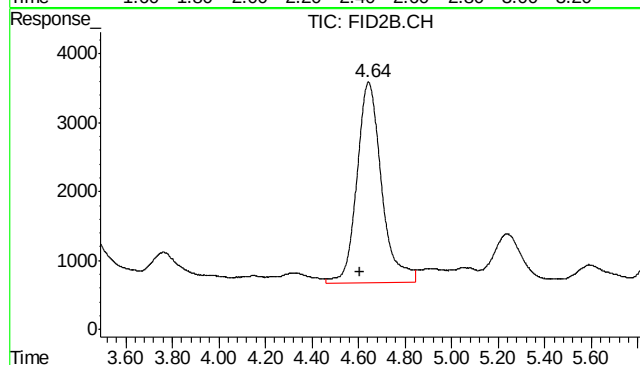
#2 1,2,4-Trichlorobenzene

R.T.: 14.591 min
Delta R.T.: 0.008 min
Response: 3117662
Conc: 87.62 %



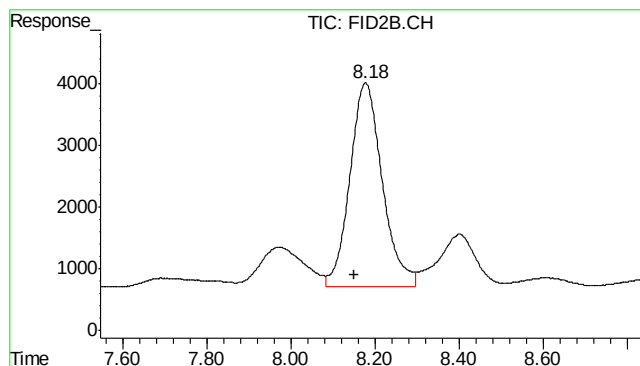
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.447 min
Response: 0
Conc: N.D.



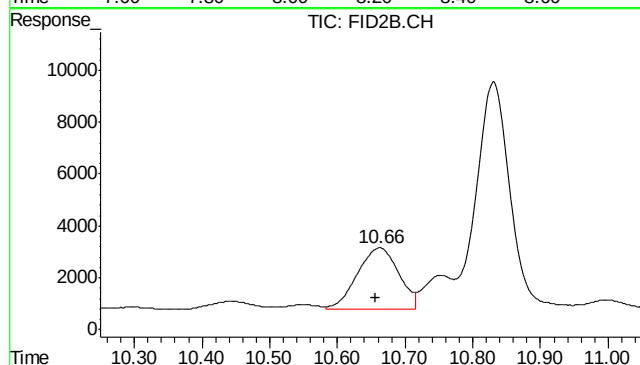
#5 Benzene

R.T.: 4.643 min
Delta R.T.: 0.037 min
Response: 214091
Conc: 0.94 ug/L



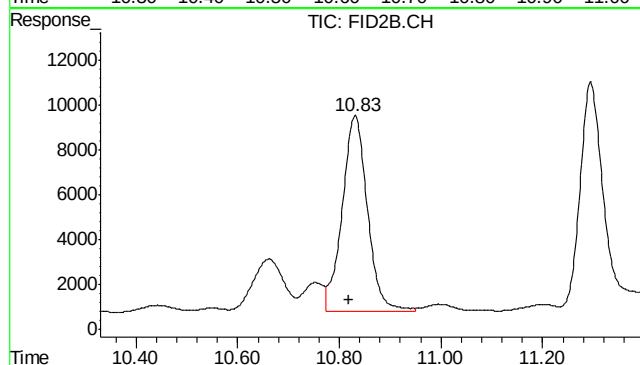
#6 Toluene

R.T.: 8.178 min
Delta R.T.: 0.026 min
Response: 176579
Conc: 0.84 ug/L



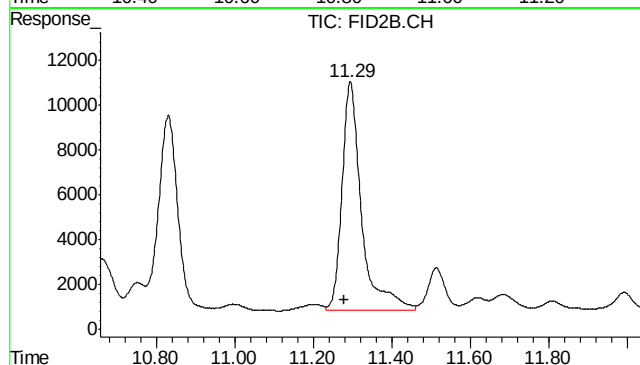
#7 Ethylbenzene

R.T.: 10.662 min
Delta R.T.: 0.006 min
Response: 98447
Conc: 0.52 ug/L



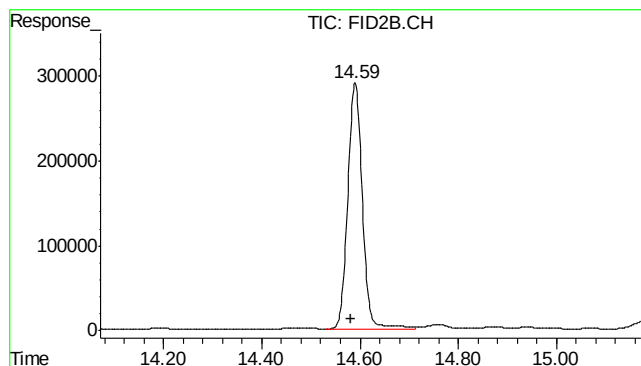
#8 m,p-Xylene

R.T.: 10.831 min
Delta R.T.: 0.012 min
Response: 302592
Conc: 1.40 ug/L



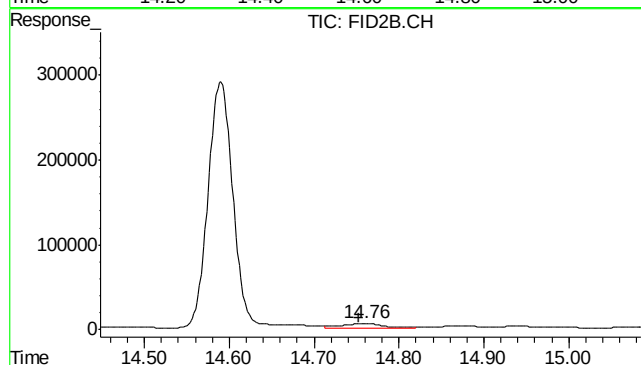
#9 o-Xylene

R.T.: 11.295 min
Delta R.T.: 0.014 min
Response: 353075
Conc: 1.94 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.590 min
Delta R.T.: 0.008 min
Response: 6051956
Conc: 93.90 %



#11 Naphthalene

R.T.: 14.759 min
Delta R.T.: 0.006 min
Response: 217394
Conc: 0.78 ug/L

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11572.D\FID1A.CH Vial: 45
Signal #2 : Z:\051211\GA11572.D\FID2B.CH
Acq On : 13 May 2011 12:06 pm Operator: BrianR
Sample : D23412-2 Inst : BTEX2
Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 14 09:00:43 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat May 14 09:00:07 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units

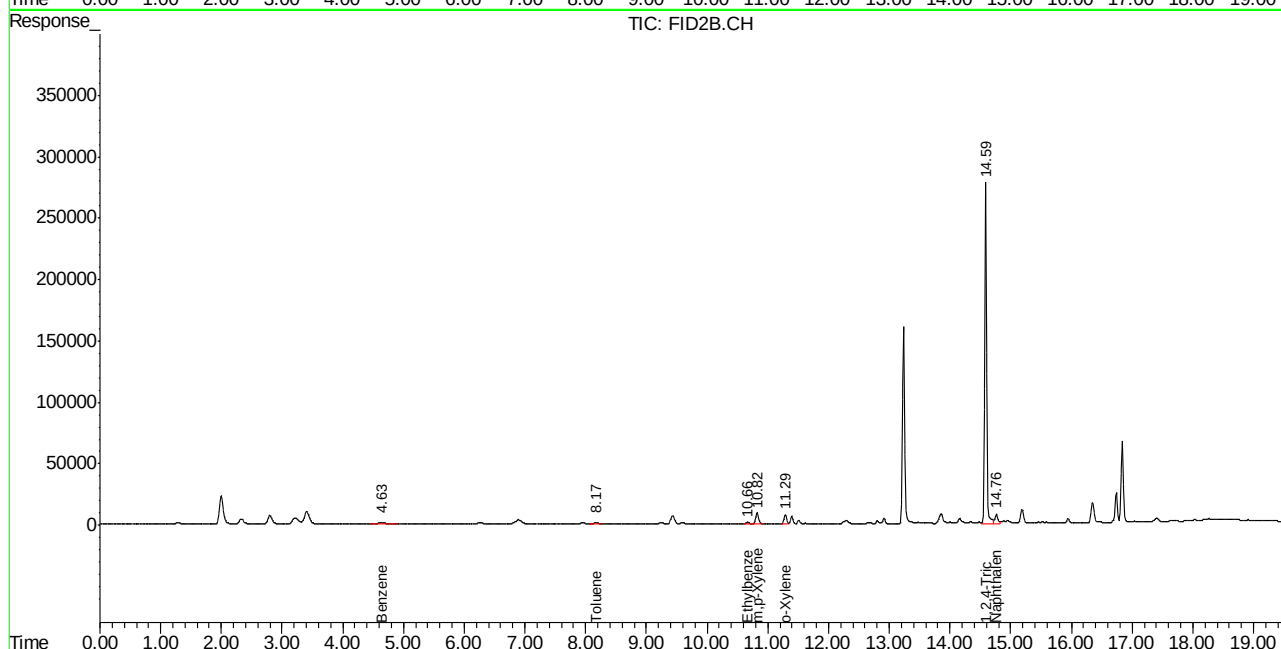
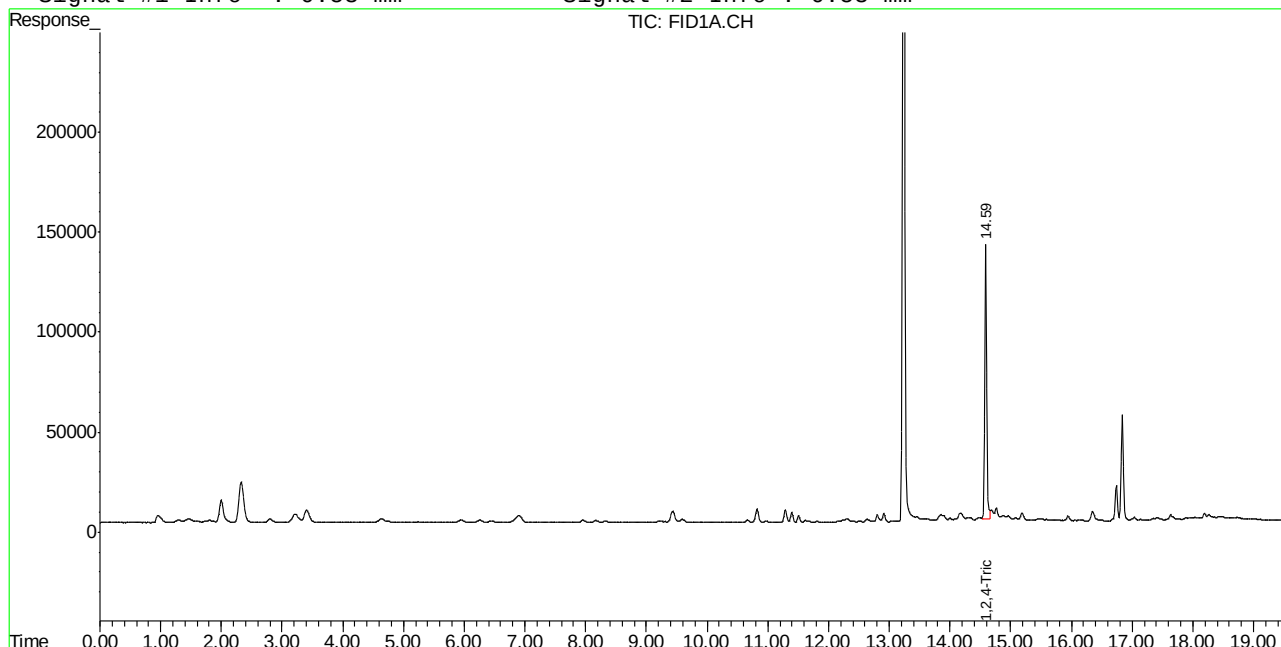
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.59	2984833	83.883 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.59	6027519	93.367 %	
Target Compounds					
1) H	TVH-Gasoline	7.50	5420455	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.64	130867	0.572	ug/L
6) T	Toluene	8.17	79941	0.380	ug/L
7) T	Ethylbenzene	10.66	62573	0.334	ug/L
8) T	m,p-Xylene	10.82	318322	1.475	ug/L
9) T	o-Xylene	11.29	238811	1.311	ug/L
11) T	Naphthalene	14.77	240472	0.980	ug/L

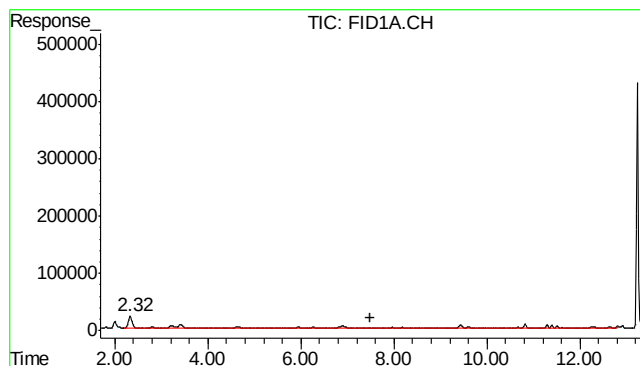
Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11572.D\FID1A.CH Vial: 45
 Signal #2 : Z:\051211\GA11572.D\FID2B.CH
 Acq On : 13 May 2011 12:06 pm Operator: BrianR
 Sample : D23412-2 Inst : BTEX2
 Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 14 10:24 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat May 14 09:00:07 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

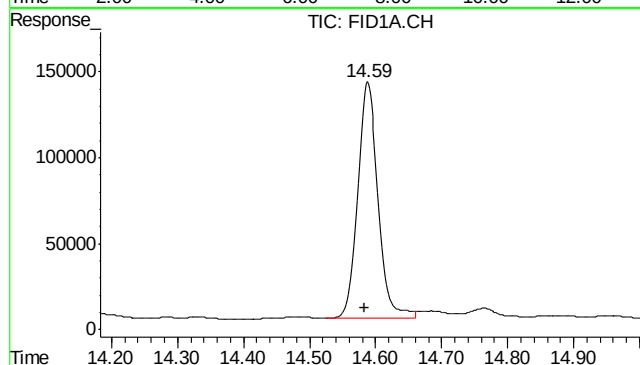
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





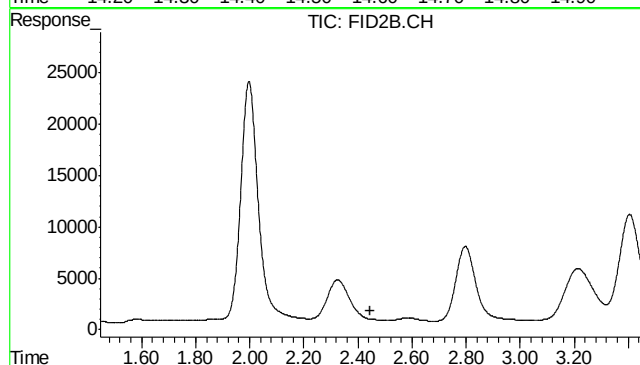
#1 TVH-Gasoline

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 5420455
Conc: N.D.



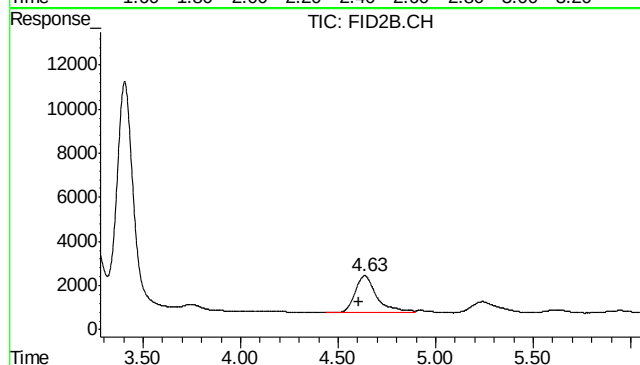
#2 1,2,4-Trichlorobenzene

R.T.: 14.587 min
Delta R.T.: 0.004 min
Response: 2984833
Conc: 83.88 % m



#4 Methyl-t-butyl-ether

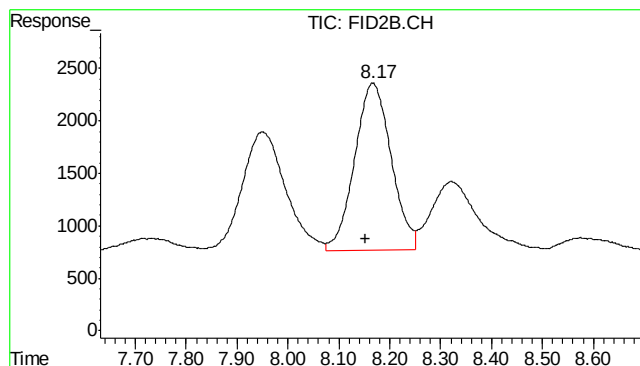
R.T.: 0.000 min
Exp R.T.: 2.447 min
Response: 0
Conc: N.D.



#5 Benzene

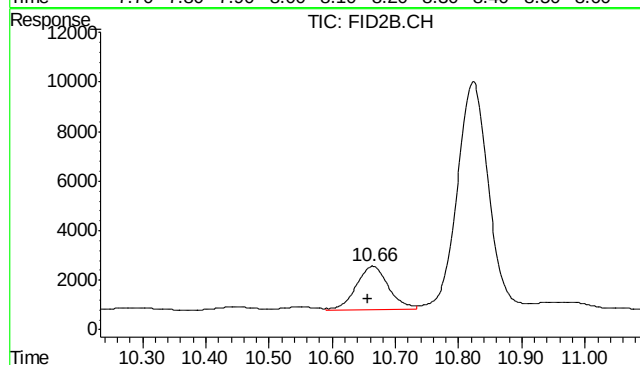
R.T.: 4.636 min
Delta R.T.: 0.030 min
Response: 130867
Conc: 0.57 ug/L

8.1.2
8



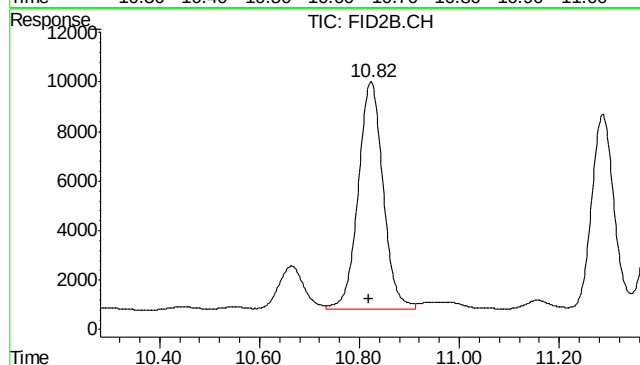
#6 Toluene

R.T.: 8.167 min
Delta R.T.: 0.015 min
Response: 79941
Conc: 0.38 ug/L



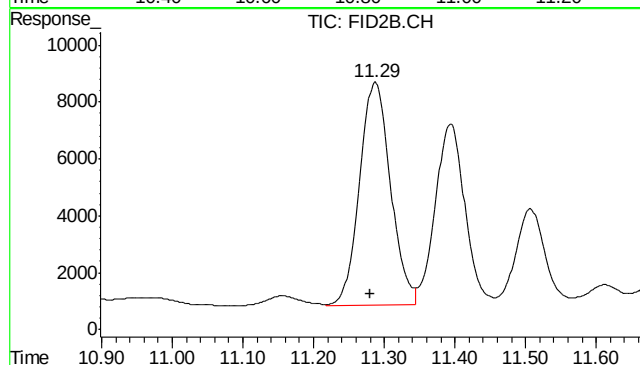
#7 Ethylbenzene

R.T.: 10.664 min
Delta R.T.: 0.008 min
Response: 62573
Conc: 0.33 ug/L



#8 m,p-Xylene

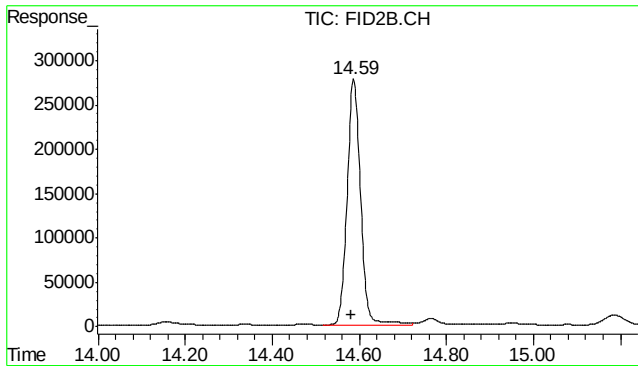
R.T.: 10.823 min
Delta R.T.: 0.004 min
Response: 318322
Conc: 1.47 ug/L



#9 o-Xylene

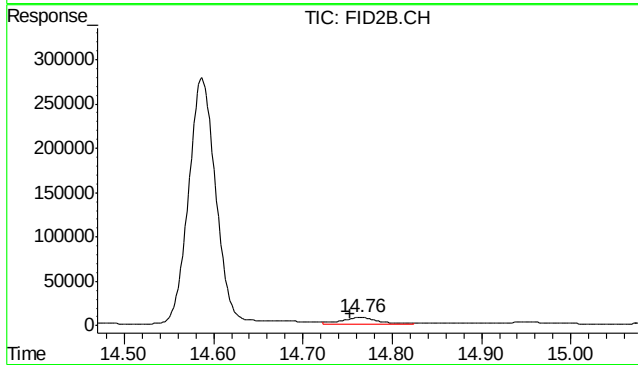
R.T.: 11.287 min
Delta R.T.: 0.007 min
Response: 238811
Conc: 1.31 ug/L

8.1.2
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.587 min
Delta R.T.: 0.005 min
Response: 6027519
Conc: 93.37 %



#11 Naphthalene

R.T.: 14.765 min
Delta R.T.: 0.012 min
Response: 240472
Conc: 0.98 ug/L

8.1.2

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11573.D\FID1A.CH Vial: 46
Signal #2 : Z:\051211\GA11573.D\FID2B.CH
Acq On : 13 May 2011 12:42 pm Operator: BrianR
Sample : D23412-3 Inst : BTEX2
Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 14 09:00:46 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat May 14 09:00:07 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.58	3030361	85.163	%
10) S	1,2,4-Trichlorobenzene (P)	14.58	5970130	92.108	%
Target Compounds					
1) H	TVH-Gasoline	7.50	2003912	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.61	349388	1.527	ug/L
6) T	Toluene	8.15	35126	0.167	ug/L
7) T	Ethylbenzene	10.65	68206	0.364	ug/L
8) T	m,p-Xylene	10.81	283614	1.314	ug/L
9) T	o-Xylene	11.28	207093	1.137	ug/L
11) T	Naphthalene	0.00	0	N.D.	ug/L d

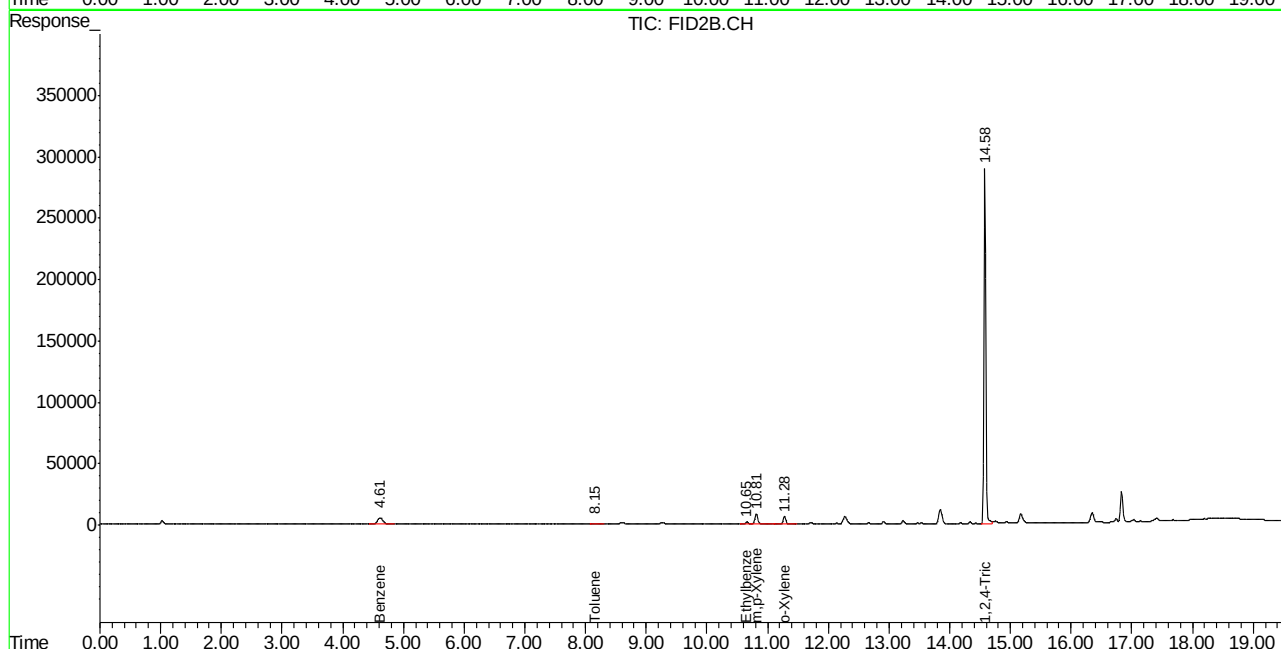
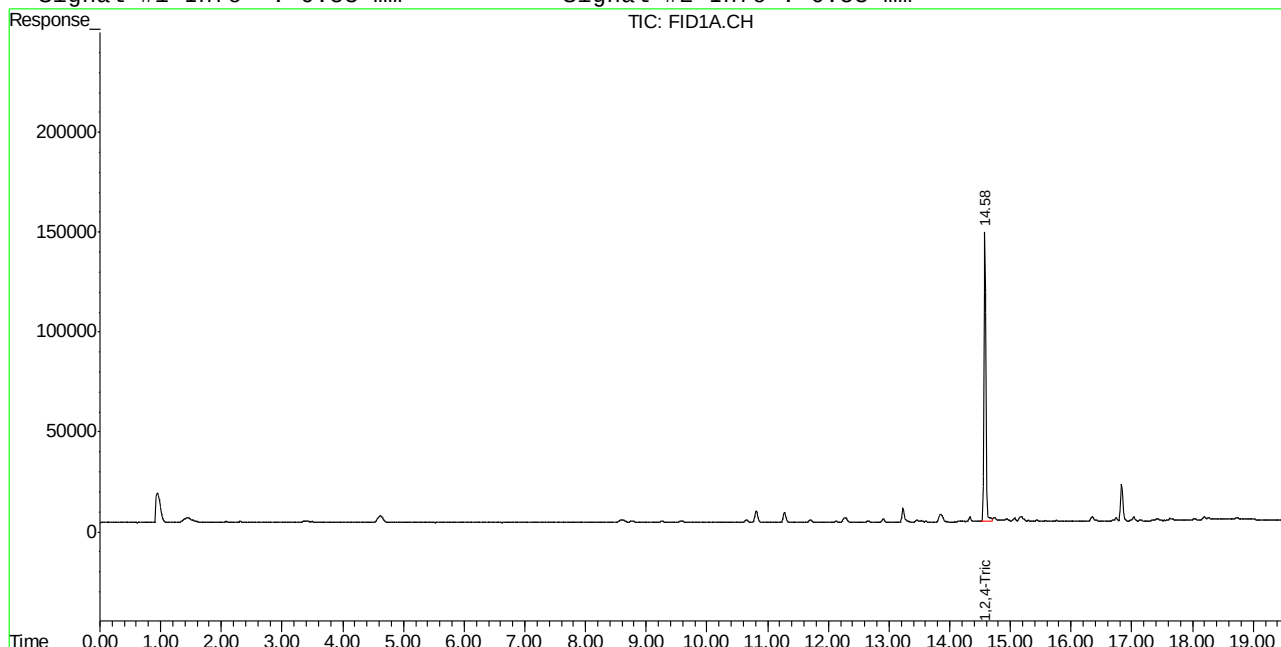
(f)=RT Delta > 1/2 Window (m)=manual int.
GA11573.D TA620GA620.M Sat May 14 12:50:36 2011 GC

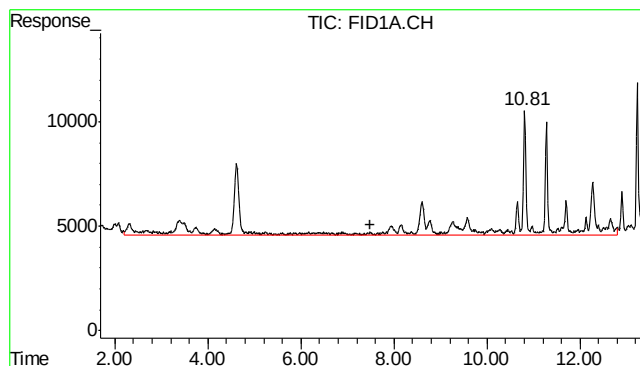
Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11573.D\FID1A.CH Vial: 46
 Signal #2 : Z:\051211\GA11573.D\FID2B.CH
 Acq On : 13 May 2011 12:42 pm Operator: BrianR
 Sample : D23412-3 Inst : BTEX2
 Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 14 10:24 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat May 14 09:00:07 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

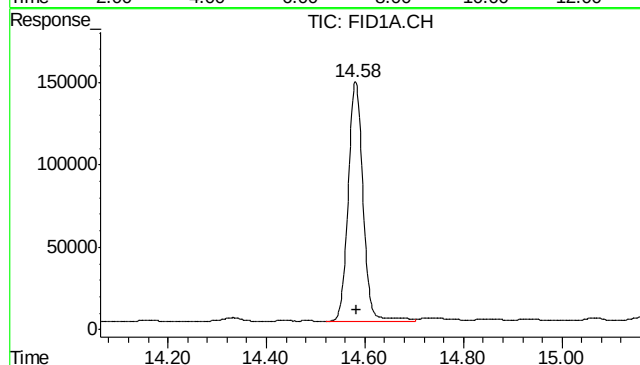
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





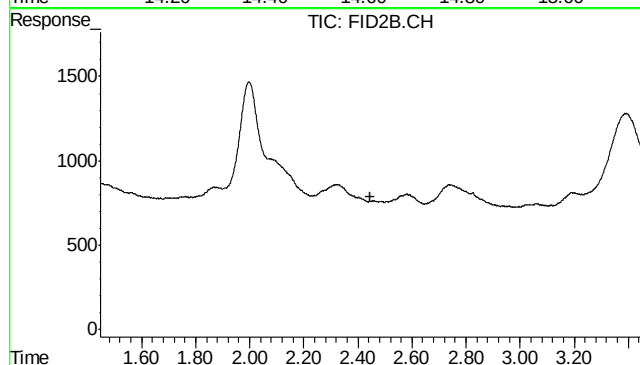
#1 TVH-Gasoline

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 2003912
Conc: N.D.



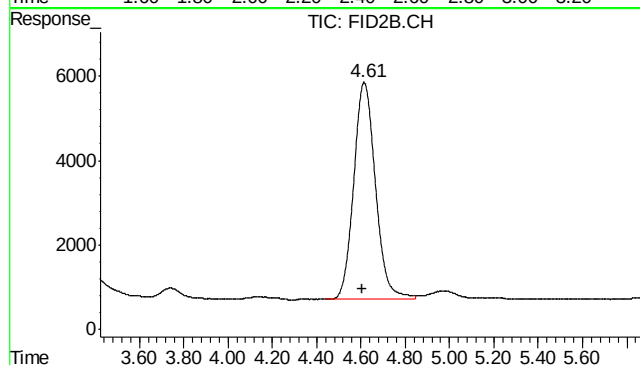
#2 1,2,4-Trichlorobenzene

R.T.: 14.581 min
Delta R.T.: -0.002 min
Response: 3030361
Conc: 85.16 %



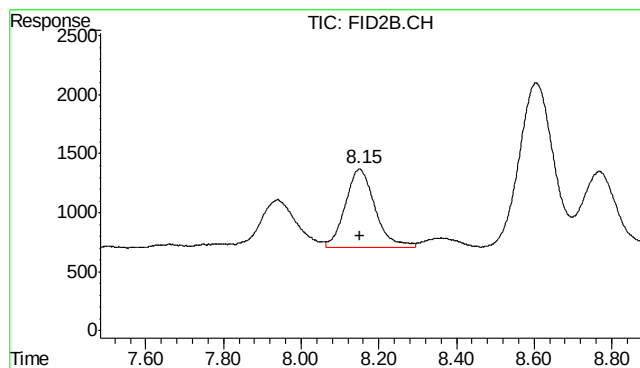
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.447 min
Response: 0
Conc: N.D.



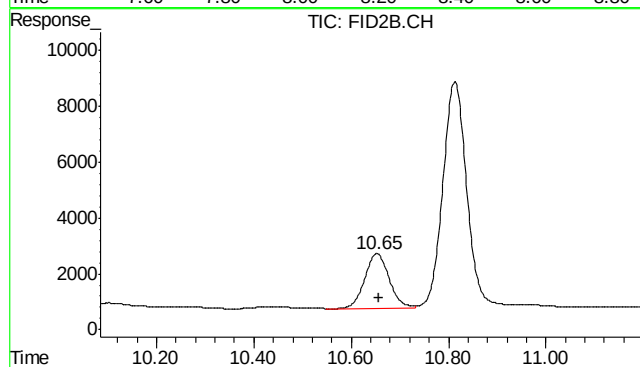
#5 Benzene

R.T.: 4.615 min
Delta R.T.: 0.009 min
Response: 349388
Conc: 1.53 ug/L



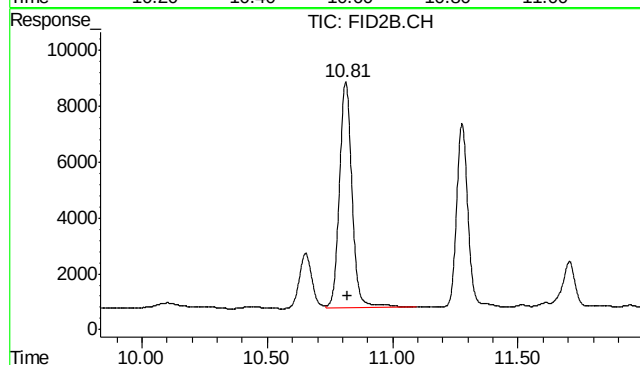
#6 Toluene

R.T.: 8.150 min
Delta R.T.: -0.002 min
Response: 35126
Conc: 0.17 ug/L



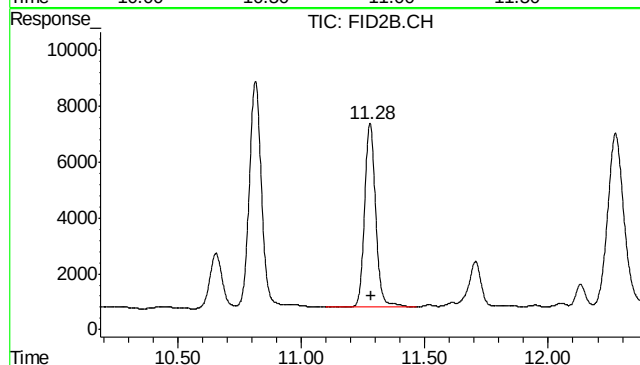
#7 Ethylbenzene

R.T.: 10.653 min
Delta R.T.: -0.003 min
Response: 68206
Conc: 0.36 ug/L



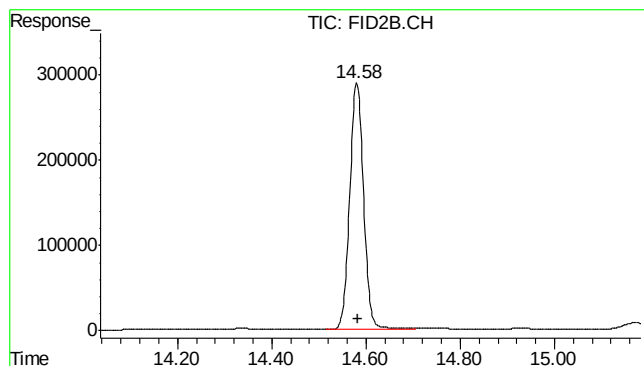
#8 m,p-Xylene

R.T.: 10.813 min
Delta R.T.: -0.006 min
Response: 283614
Conc: 1.31 ug/L



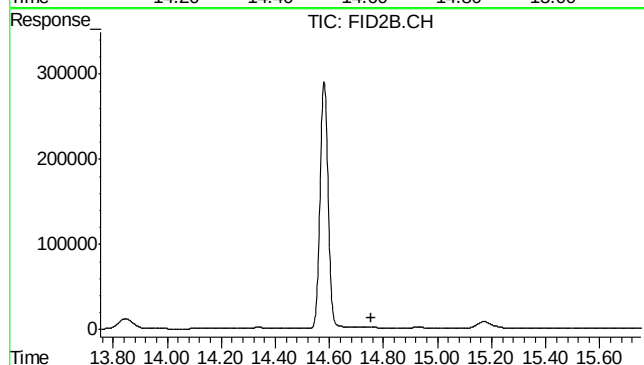
#9 o-Xylene

R.T.: 11.277 min
Delta R.T.: -0.003 min
Response: 207093
Conc: 1.14 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.581 min
Delta R.T.: -0.002 min
Response: 5970130
Conc: 92.11 %



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.753 min
Response: 0
Conc: N.D.

8.1.3

8

Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11547.D\FID1A.CH Vial: 20
Signal #2 : Z:\051211\GA11547.D\FID2B.CH
Acq On : 12 May 2011 9:17 pm Operator: BrianR
Sample : MB, W Inst : BTEX2
Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 14 08:57:01 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat May 14 08:55:57 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.59	3171554	89.131	%
10) S	1,2,4-Trichlorobenzene (P)	14.59	6284292	99.002	%
Target Compounds					
1) H	TVH-Gasoline	7.50	1223430	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	0.00	0	N.D.	ug/L d
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	10.82	50864	0.236	ug/L
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.77	172120	0.391	ug/L

(f)=RT Delta > 1/2 Window

GA11547.D TA620GA620.M

Sat May 14 12:49:30 2011

(m)=manual int.

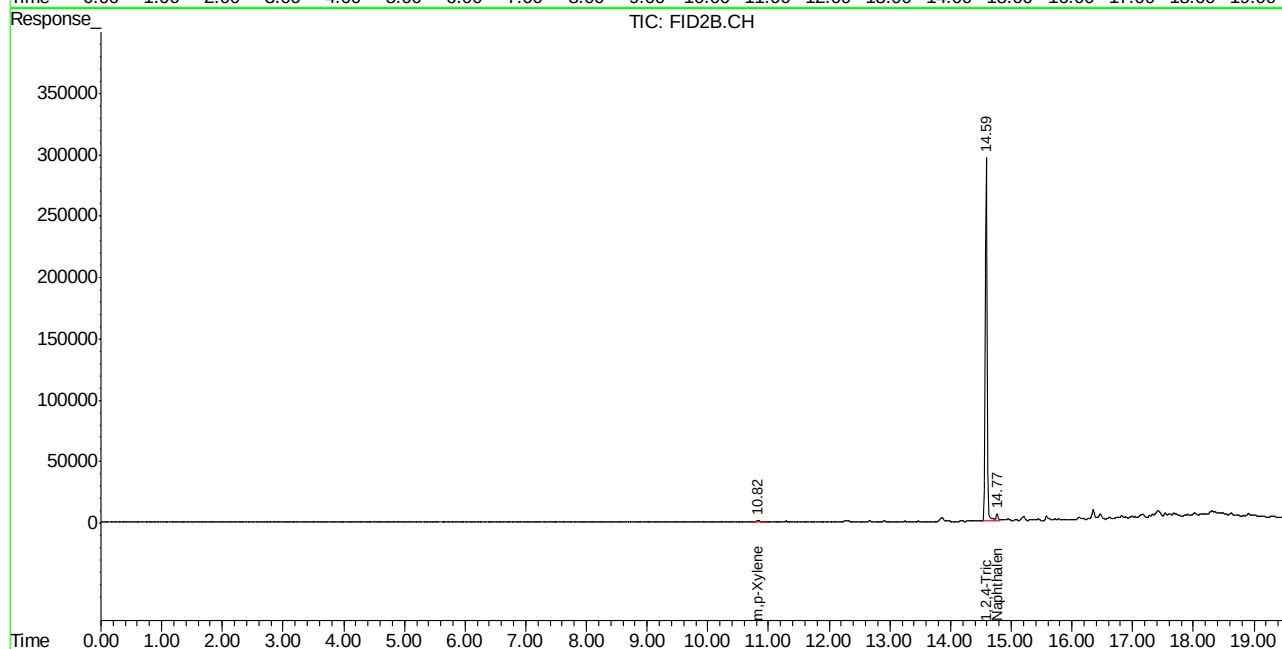
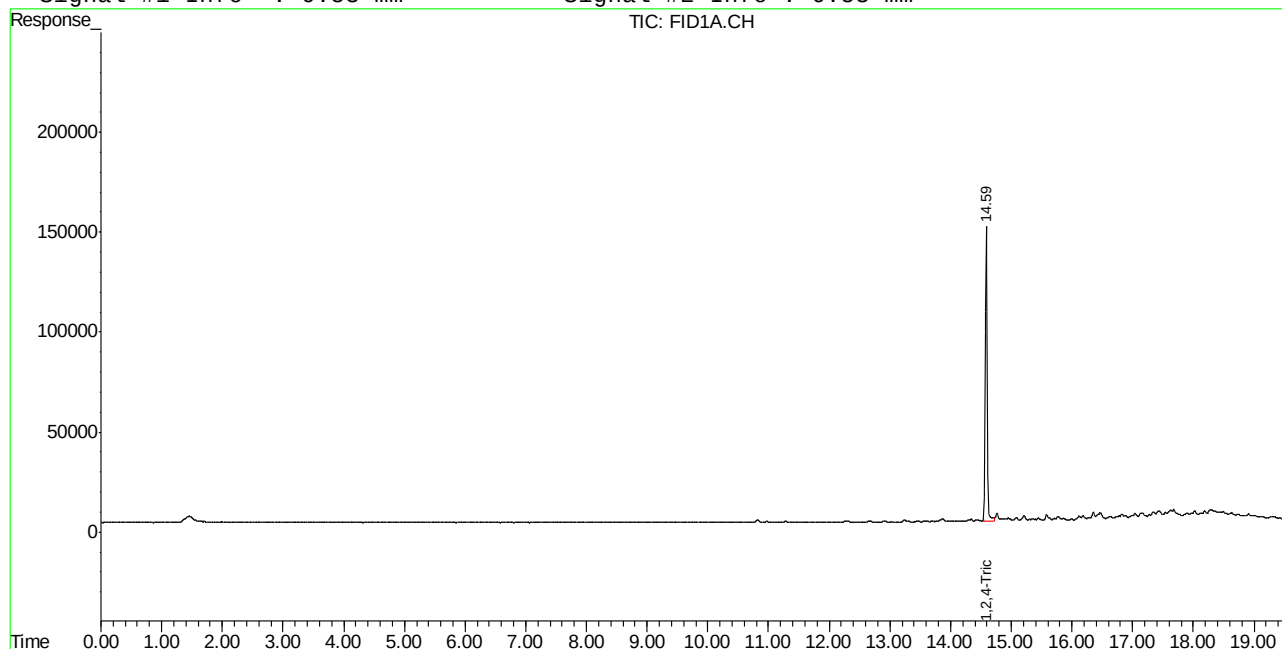
GC

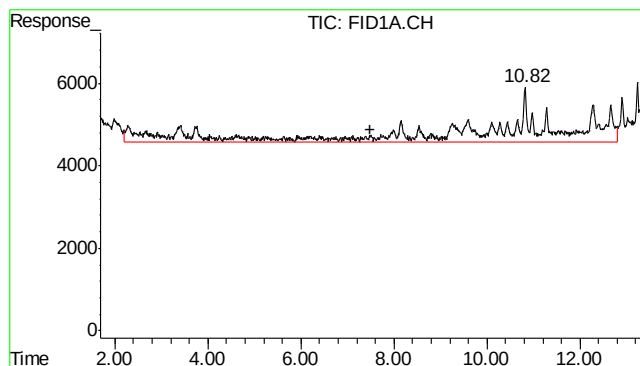
Quantitation Report (QT Reviewed)

Signal #1 : Z:\051211\GA11547.D\FID1A.CH Vial: 20
Signal #2 : Z:\051211\GA11547.D\FID2B.CH
Acq On : 12 May 2011 9:17 pm Operator: BrianR
Sample : MB, W Inst : BTEX2
Misc : GC1871,GGA633,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 14 10:12 2011 Quant Results File: TA620GA620.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA620GA620.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat May 14 08:55:57 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

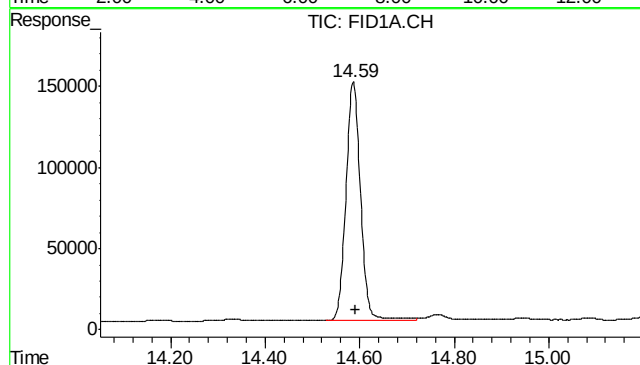
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





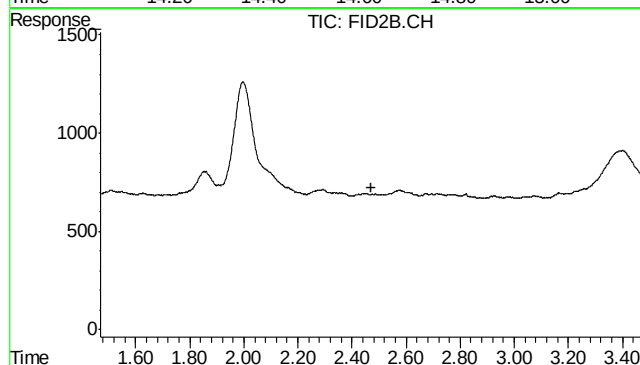
#1 TVH-Gasoline

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 1223430
Conc: N.D.



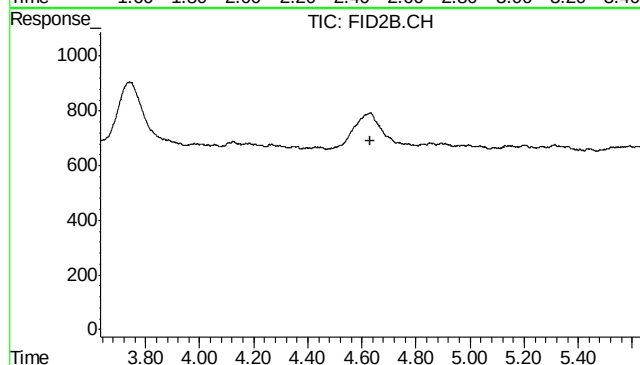
#2 1,2,4-Trichlorobenzene

R.T.: 14.587 min
Delta R.T.: -0.004 min
Response: 3171554
Conc: 89.13 %



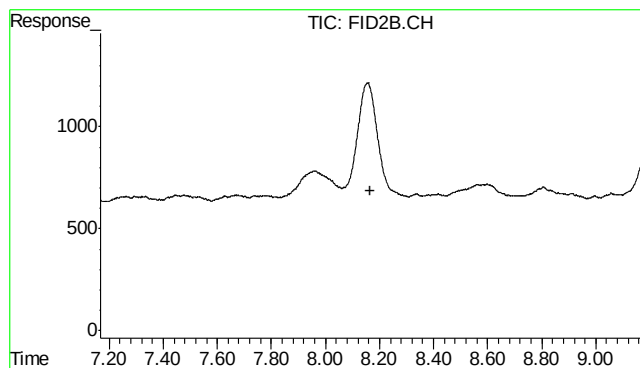
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.470 min
Response: 0
Conc: N.D.



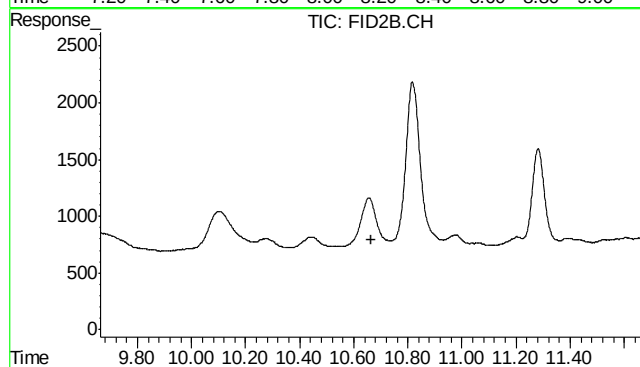
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.632 min
Response: 0
Conc: N.D.



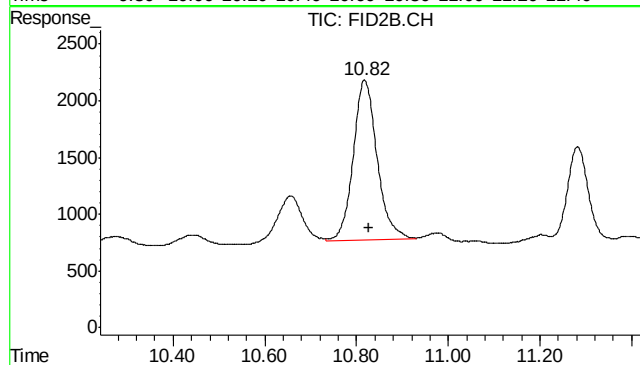
#6 Toluene

R.T.: 0.000 min
Exp R.T.: 8.167 min
Response: 0
Conc: N.D.



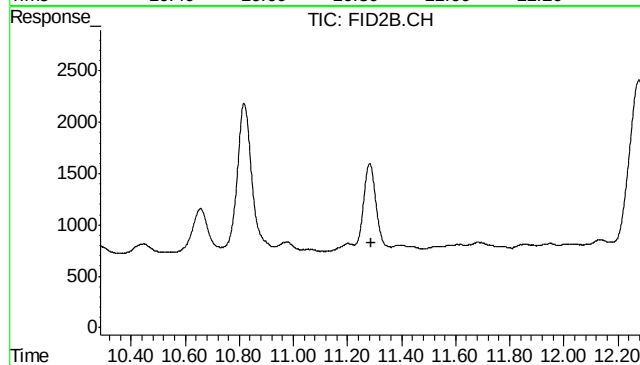
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.663 min
Response: 0
Conc: N.D.



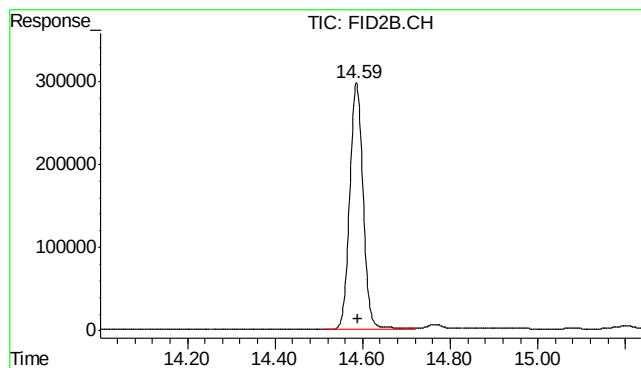
#8 m,p-Xylene

R.T.: 10.818 min
Delta R.T.: -0.009 min
Response: 50864
Conc: 0.24 ug/L



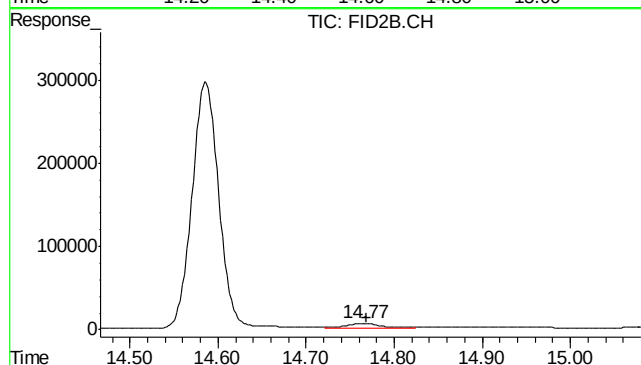
#9 o-Xylene

R.T.: 0.000 min
Exp R.T.: 11.286 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.586 min
Delta R.T.: -0.003 min
Response: 6284292
Conc: 99.00 %



#11 Naphthalene

R.T.: 14.766 min
Delta R.T.: -0.003 min
Response: 172120
Conc: 0.39 ug/L

8.2.1
8

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/13/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	5.9	7.1		
Antimony	30	3.1	3.1		
Arsenic	25	5.9	5.9		
Barium	10	1.1	1.1	0.0	<10
Beryllium	10	.44	1.8		
Boron	50	4.8	4.8		
Cadmium	10	.27	.62		
Calcium	400	9.6	28	2.5	<400
Chromium	10	.18	.42		
Cobalt	5.0	.35	.4		
Copper	10	.85	1.9		
Iron	70	3.4	5.5	-2.0	<70
Lead	50	1.6	1.8		
Lithium	2.0	.28	.46		
Magnesium	200	5.8	12	4.3	<200
Manganese	5.0	.053	.28	-0.10	<5.0
Molybdenum	10	.45	1.1		
Nickel	30	.43	.96		
Phosphorus	100	11	12		
Potassium	1000	55	130	35.8	<1000
Selenium	50	3.8	5.7		
Silicon	50	3.8	3.8		
Silver	30	.18	.56		
Sodium	400	110	110	55.8	<400
Strontium	5.0		.17	0.0	<5.0
Thallium	10	2.9	2.9		
Tin	50	5.5	15		
Titanium	10	.11	.17		
Uranium	50	1.5	1.9		
Vanadium	10	.16	.18		
Zinc	30	.28	1.4		

Associated samples MP4699: D23412-1F, D23412-2F, D23412-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/13/11

Metal	D23363-1 Original MS		SpikeLot MPICPALL % Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic				
Barium	6.2	1970	2000	98.2 70-130
Beryllium				
Boron				
Cadmium				
Calcium	28000	54100	25000	104.4 70-130
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	229	5100	5000	97.4 70-130
Lead	anr			
Lithium				
Magnesium	1090	27000	25000	103.6 70-130
Manganese	11.0	510	500	99.8 70-130
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	25600	52000	25000	105.6 70-130
Selenium	anr			
Silicon				
Silver				
Sodium	530000	541000	25000	44.0 (a) 70-130
Strontium	78.4	583	500	100.9 70-130
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP4699: D23412-1F, D23412-2F, D23412-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/13/11

Metal	D23363-1 Original	MSD	Spikelet MPICALL	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony						
Arsenic						
Barium	6.2	1980	2000	98.7	0.5	20
Beryllium						
Boron						
Cadmium						
Calcium	28000	54700	25000	106.8	1.1	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	229	5130	5000	98.0	0.6	20
Lead	anr					
Lithium						
Magnesium	1090	27200	25000	104.4	0.7	20
Manganese	11.0	515	500	100.8	1.0	20
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	25600	52600	25000	108.0	1.1	20
Selenium	anr					
Silicon						
Silver						
Sodium	530000	549000	25000	76.0	1.5	20
Strontium	78.4	586	500	101.5	0.5	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP4699: D23412-1F, D23412-2F, D23412-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/13/11

Metal	BSP Result	Spike lot MPICALL	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic				
Barium	1940	2000	97.0	85-115
Beryllium				
Boron				
Cadmium				
Calcium	26900	25000	107.6	85-115
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	4830	5000	96.6	85-115
Lead	anr			
Lithium				
Magnesium	25700	25000	102.8	85-115
Manganese	510	500	102.0	85-115
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	26500	25000	106.0	85-115
Selenium	anr			
Silicon				
Silver				
Sodium	26300	25000	105.2	85-115
Strontium	497	500	99.4	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP4699: D23412-1F, D23412-2F, D23412-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4699
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO ₃	GN9556	5.0	3.6	mg/l	100	102	101.5	90-110%
Bromide	GP4433/GN9526			mg/l	20	20.5	102.5	90-110%
Chloride	GP4433/GN9526	0.50	0.25	mg/l	20	19.4	97.0	90-110%
Hydrogen Sulfide	GN9528	0.50	<0.50	mg/l	2.74	2.7	98.5	60-120%
Iron, Ferrous	GN9531	0.10	0.0	mg/l	1.0	0.97	97.0	85-115%
Nitrogen, Ammonia	GP4451/GN9566	0.10	0.0	mg/l	20	18.3	91.3	90-110%
Nitrogen, Nitrate	GP4433/GN9526	0.045	0.0	mg/l	4.52	4.51	99.8	90-110%
Nitrogen, Nitrite	GP4433/GN9526	0.061	0.0	mg/l	6.09	5.97	98.0	90-110%
Solids, Total Dissolved	GN9551	10	0.0	mg/l	400	406	101.5	90-110%
Sulfate	GP4433/GN9526	0.50	0.0	mg/l	30	28.8	96.0	90-110%
pH	GN9534			su	8.00	7.97	99.6	99.3-100.7%
pH	GN9535			su	8.00	8.03	100.4	99.3-100.7%

Associated Samples:

Batch GN9528: D23412-1, D23412-2, D23412-3
Batch GN9531: D23412-1F, D23412-2F, D23412-3F
Batch GN9534: D23412-3
Batch GN9535: D23412-1, D23412-2
Batch GN9551: D23412-1, D23412-2, D23412-3
Batch GN9556: D23412-1, D23412-2, D23412-3
Batch GP4433: D23412-1, D23412-2, D23412-3
Batch GP4451: D23412-1, D23412-2, D23412-3
(*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN9556	D23440-1	mg/l	67.2	65.7	2.2	0-20%
Hydrogen Sulfide	GN9528	D23412-3	mg/l	<0.50	<0.50	0.0	0-20%
Iron, Ferrous	GN9531	D23412-2F	mg/l	0.40	0.40	0.0	0-20%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	0.64	4.8	0-20%
Solids, Total Dissolved	GN9551	D23412-1	mg/l	11200	11300	0.9	0-25%

Associated Samples:

Batch GN9528: D23412-1, D23412-2, D23412-3
Batch GN9531: D23412-1F, D23412-2F, D23412-3F
Batch GN9551: D23412-1, D23412-2, D23412-3
Batch GN9556: D23412-1, D23412-2, D23412-3
Batch GP4451: D23412-1, D23412-2, D23412-3
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN9556	D23440-1	mg/l	67.2	100	163	96.2	80-120%
Bromide	GP4433/GN9526	D23390-3	mg/l	0.0	2.5	2.6	104.0	80-120%
Chloride	GP4433/GN9526	D23390-3	mg/l	3.8	10	13.9	101.0	80-120%
Hydrogen Sulfide	GN9528	D23412-2	mg/l	<0.50	2.74	2.8	94.9	60-120%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	10	10.1	101.2	80-120%
Nitrogen, Nitrate	GP4433/GN9526	D23390-3	mg/l	0.54	0.565	1.1	99.1	80-120%
Nitrogen, Nitrite	GP4433/GN9526	D23390-3	mg/l	0.0	0.305	0.33	108.4	80-120%
Sulfate	GP4433/GN9526	D23390-3	mg/l	10.1	10	19.9	98.0	80-120%

Associated Samples:

Batch GN9528: D23412-1, D23412-2, D23412-3

Batch GN9556: D23412-1, D23412-2, D23412-3

Batch GP4433: D23412-1, D23412-2, D23412-3

Batch GP4451: D23412-1, D23412-2, D23412-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23412
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN9556	D23440-1	mg/l	67.2	100	164	0.4	20%
Bromide	GP4433/GN9526	D23390-3	mg/l	0.0	2.5	2.6	0.0	20%
Chloride	GP4433/GN9526	D23390-3	mg/l	3.8	10	14.0	0.7	20%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	10	10.5	3.7	
Nitrogen, Nitrate	GP4433/GN9526	D23390-3	mg/l	0.54	0.565	1.1	0.0	20%
Nitrogen, Nitrite	GP4433/GN9526	D23390-3	mg/l	0.0	0.305	0.33	0.0	20%
Sulfate	GP4433/GN9526	D23390-3	mg/l	10.1	10	20.0	0.5	20%

Associated Samples:

Batch GN9556: D23412-1, D23412-2, D23412-3

Batch GP4433: D23412-1, D23412-2, D23412-3

Batch GP4451: D23412-1, D23412-2, D23412-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



05/24/11

Technical Report for

TetraTech GEO

Garfield County

Mamm Creek

Accutest Job Number: D23440

Sampling Date: 05/12/11

Report to:

Geotrans, Inc.
363 Centennial Parkway, Suite 210
Louisville, CO 80027
brendan.shine@geotransinc.com; david.bohmann@geotransinc.com
ATTN: Brendan Shine

Total number of pages in report: **148**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'J. Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

TetraTech GEO

Job No: D23440

Garfield County
Project No: Mamm Creek

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D23440-1	05/12/11	10:55 KT	05/13/11	AQ	Ground Water	MW-2A_051211
D23440-1F	05/12/11	10:55 KT	05/13/11	AQ	Groundwater Filtered	MW-2A_051211
D23440-2	05/12/11	09:00 KT	05/13/11	AQ	Ground Water	MW-2B_051211
D23440-2F	05/12/11	09:00 KT	05/13/11	AQ	Groundwater Filtered	MW-2B_051211
D23440-3	05/12/11	12:55 KT	05/13/11	AQ	Ground Water	MW-1A_051211
D23440-3F	05/12/11	12:55 KT	05/13/11	AQ	Groundwater Filtered	MW-1A_051211

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: TetraTech GEO

Job No D23440

Site: Garfield County

Report Dat 5/24/2011 3:21:52 PM

On 05/13/2011, three (3) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 4.7°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D23440 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: V5V906

- All samples were analyzed within the recommended method holding time.
- Samples D23440-1MS and D23440-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of 2-Chloroethyl vinyl ether are outside control limits. Recovery of 2-chloroethyl vinyl ether is affected by sample preservation. Refer to the lab control or spike blank for recovery information.

Volatiles by GC By Method SW846 8015B

Matrix AQ	Batch ID: GGB622

- All samples were analyzed within the recommended method holding time.
- Samples D23440-1MS and D23440-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Metals By Method EPA 200.7

Matrix AQ	Batch ID: MP4730

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23462-1FMS and D23462-1FMSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery of Sodium is outside control limits. The spike amount is low relative to the sample amount. Refer to the lab control or spike blank for recovery information.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ	Batch ID: GP4445

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23434-1MS and D23434-1MSD were used as the QC samples for the anion analysis.
- Samples D23440-1, D23440-2, and D23440-3 for Nitrite-N: The reporting limits (RL) were raised due to matrix interference.
- Samples D23440-1 and D23440-2 for Nitrate-N: The reporting limits (RL) were raised due to matrix interference.

Wet Chemistry By Method HACH 8146

Matrix AQ

Batch ID: GN9544

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23440-1FMS, D23440-1FMSD, and D23440-1FDUP were used as the QC samples for the Ferrous Iron analysis.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of Ferrous Iron are outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.
- The duplicate RPD for Ferrous Iron are outside control limits for sample GN9544-D1. The RPD is acceptable due to low duplicate and sample concentrations.
- Sample D23440-2F and D23440-3F for Ferrous Iron: Sample dilution was required due to matrix interference.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ

Batch ID: R7513

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D23440-1F, D23440-2F, and D23440-3F.
- Ferric Iron: Calculated as: (Iron) - (Ferrous Iron)

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN9556

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23440-1DUP, D23440-1MS, and D23440-1MSD were used as the QC samples for the Total Alkalinity, as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN9584

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Sample D23440-1DUP was used as the QC sample for the Total Dissolved Solids analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ

Batch ID: GN9588

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ

Batch ID: GP4451

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23440-1DUP, D23440-1MS, and D23440-1MSD were used as the QC samples for the Ammonia-N analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

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Client Sample ID: MW-2A_051211

Lab Sample ID: D23440-1

Date Sampled: 05/12/11

Matrix: AQ - Ground Water

Date Received: 05/13/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V15455.D	1	05/20/11	DC	n/a	n/a	V5V906
Run #2	5V15506.D	1	05/23/11	DC	n/a	n/a	V5V910

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	J
71-43-2	Benzene	0.71	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	2.2	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2A_051211**Lab Sample ID:** D23440-1**Date Sampled:** 05/12/11**Matrix:** AQ - Ground Water**Date Received:** 05/13/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND ^a	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	1.0	4.0	1.0	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	73%	83%	63-130%
2037-26-5	Toluene-D8	82%	78%	68-130%
460-00-4	4-Bromofluorobenzene	84%	83%	61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	MW-2A_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-1	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB10709.D	1	05/18/11	BR	n/a	n/a	GGB622
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2A_051211	Date Sampled: 05/12/11
Lab Sample ID: D23440-1	Date Received: 05/13/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Garfield County	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	67.2	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	905	25	mg/l	50	05/13/11 19:01	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/18/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	0.61	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.23	0.23	mg/l	5	05/13/11 13:59	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 3.1	3.1	mg/l	50	05/13/11 19:01	JML	EPA 300/SW846 9056
Solids, Total Dissolved	1830	10	mg/l	1	05/18/11	JD	SM20 2540C
Sulfate	147	2.5	mg/l	5	05/13/11 13:59	JML	EPA 300/SW846 9056
pH	10.70		su	1	05/13/11 11:30	JD	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-2A_051211**Lab Sample ID:** D23440-1F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 05/12/11**Date Received:** 05/13/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	265	10	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Calcium	30400	400	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Iron	< 70	70	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	< 200	200	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 5.0	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Potassium	2050	1000	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Sodium	580000	400	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Strontium	853	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1535

(2) Prep QC Batch: MP4730

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-2A_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-1F	Date Received:	05/13/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.17	0.17	mg/l	1	05/18/11 18:04	JB	SM18 3500FED M
Iron, Ferrous	< 0.10	0.10	mg/l	1	05/13/11 10:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

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Client Sample ID: MW-2B_051211

Lab Sample ID: D23440-2

Date Sampled: 05/12/11

Matrix: AQ - Ground Water

Date Received: 05/13/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V15458.D	1	05/20/11	DC	n/a	n/a	V5V906
Run #2	5V15507.D	1	05/23/11	DC	n/a	n/a	V5V910

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	108	10	5.0	ug/l	
71-43-2	Benzene	1.4	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	11.0	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	18.6	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2B_051211

Lab Sample ID: D23440-2

Date Sampled: 05/12/11

Matrix: AQ - Ground Water

Date Received: 05/13/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND ^a	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	87%	96%	63-130%
2037-26-5	Toluene-D8	78%	82%	68-130%
460-00-4	4-Bromofluorobenzene	83%	89%	61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
115-11-7	1-Propene, 2-methyl-	5.56	5.1	ug/l	JN
	Total TIC, Volatile		5.1	ug/l	J

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	MW-2B_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-2	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB10712.D	1	05/18/11	BR	n/a	n/a	GGB622
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	89%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2B_051211
Lab Sample ID: D23440-2
Matrix: AQ - Ground Water
Project: Garfield County

Date Sampled: 05/12/11
Date Received: 05/13/11
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	1600	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	581	13	mg/l	25	05/13/11 19:16	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/18/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	5.5	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.45	0.45	mg/l	10	05/13/11 14:13	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.61	0.61	mg/l	10	05/13/11 14:13	JML	EPA 300/SW846 9056
Solids, Total Dissolved	3100	10	mg/l	1	05/18/11	JD	SM20 2540C
Sulfate	131	5.0	mg/l	10	05/13/11 14:13	JML	EPA 300/SW846 9056
pH	12.65		su	1	05/13/11 11:30	JD	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-2B_051211**Lab Sample ID:** D23440-2F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 05/12/11**Date Received:** 05/13/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	417	10	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Calcium	45300	400	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Iron	84.4	70	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	< 200	200	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 5.0	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Potassium	86700	1000	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Sodium	1080000	2000	ug/l	5	05/18/11	05/19/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Strontium	2590	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1535

(2) Prep QC Batch: MP4730

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-2B_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-2F	Date Received:	05/13/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.57	0.57	mg/l	1	05/18/11 18:14	JB	SM18 3500FED M
Iron, Ferrous ^b	< 0.50	0.50	mg/l	5	05/13/11 10:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Dilution required due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

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Client Sample ID:	MW-1A_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-3	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V15459.D	1	05/20/11	DC	n/a	n/a	V5V906
Run #2	5V15508.D	1	05/23/11	DC	n/a	n/a	V5V910

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	70.3	10	5.0	ug/l	
71-43-2	Benzene	0.79	1.0	0.25	ug/l	J
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	1.9	2.0	0.50	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	5.2	10	2.5	ug/l	J
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1A_051211

Lab Sample ID: D23440-3

Date Sampled: 05/12/11

Matrix: AQ - Ground Water

Date Received: 05/13/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND ^a	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	86%	85%	63-130%
2037-26-5	Toluene-D8	78%	73%	68-130%
460-00-4	4-Bromofluorobenzene	84%	79%	61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
115-11-7	1-Propene, 2-methyl-	5.56	7.9	ug/l	JN
	Total TIC, Volatile		7.9	ug/l	J

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-1A_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-3	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB10713.D	1	05/18/11	BR	n/a	n/a	GGB622
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1A_051211**Lab Sample ID:** D23440-3**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 05/12/11**Date Received:** 05/13/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	1490	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	467	13	mg/l	25	05/13/11 19:30	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/18/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	3.4	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate	0.71	0.45	mg/l	10	05/13/11 14:28	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.61	0.61	mg/l	10	05/13/11 14:28	JML	EPA 300/SW846 9056
Solids, Total Dissolved	3140	10	mg/l	1	05/18/11	JD	SM20 2540C
Sulfate	17.9	5.0	mg/l	10	05/13/11 14:28	JML	EPA 300/SW846 9056
pH	12.74		su	1	05/13/11 11:30	JD	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-1A_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-3F	Date Received:	05/13/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	597	10	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Calcium	108000	400	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Iron	155	70	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	< 200	200	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 5.0	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Potassium	101000	1000	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Sodium	658000	400	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Strontium	3990	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1535

(2) Prep QC Batch: MP4730

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-1A_051211	Date Sampled:	05/12/11
Lab Sample ID:	D23440-3F	Date Received:	05/13/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.57	0.57	mg/l	1	05/18/11 18:24	JB	SM18 3500FED M
Iron, Ferrous ^b	< 0.50	0.50	mg/l	5	05/13/11 10:30	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Dilution required due to matrix interference.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL. 303-425-6021 877-737-4521
FAX 303-425-6021

[illegible]

D23440: Chain of Custody

Page 1 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D23440

Client: GEOTRANS INC.

Immediate Client Services Action Required: No

Date / Time Received: 5/13/2011 8:30:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: GARFIELD COUNTY MAMM CREEK

Airbill #'s: Fedex

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☒		☐	3. COC Present:	☒		☐
2. Custody Seals Intact:	☒		☐	4. Smpl Dates/Time OK	☒		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☒		☐
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☒		☐	
4. VOCs headspace free:	☒		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☒		☐
2. Container labeling complete:	☒		☐
3. Sample container label / COC agree:	☒		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☒		☐
2. All containers accounted for:	☒		☐
3. Condition of sample:			Intact

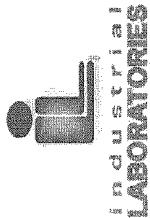
Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☒		☐	
2. Bottles received for unspecified tests	☐		☒	
3. Sufficient volume rec'd for analysis:	☒		☐	
4. Compositing instructions clear:	☐		☐	☒
5. Filtering instructions clear:	☐		☐	☒

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com



Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 5/13/2011

Date Reported: 5/16/2011

PO Number: D23440X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110513002-01A	D23440-1, 5/12/11, 10:55am	* Total Coliforms MPN SM 9221 B	<2 fecal; total	MPN/100mL		GH 5/13/2011
110513002-02A	D23440-2, 5/12/11, 9:00am	* Total Coliforms MPN SM 9221 B	<2 fecal; total	MPN/100mL		GH 5/13/2011
110513002-03A	D23440-3, 5/12/11, 12:55pm	* Total Coliforms MPN SM 9221 B	<2 fecal; total	MPN/100mL		GH 5/13/2011

* = Scope Analysis

= Subcontracted Analysis

MDL = Method Detection Limit

ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industrialabs.net

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D23440: Chain of Custody

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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 2

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V906-MB1	5V15453.D	1	05/20/11	DC	n/a	n/a	V5V906

The QC reported here applies to the following samples:

Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V906-MB1	5V15453.D	1	05/20/11	DC	n/a	n/a	V5V906

The QC reported here applies to the following samples:

Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Result	RL	MDL	Units	Q
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	87% 63-130%
2037-26-5	Toluene-D8	93% 68-130%
460-00-4	4-Bromofluorobenzene	93% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Page 1 of 1

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V910-MB1	5V15504.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples:**Method:** SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	94% 63-130%
2037-26-5	Toluene-D8	95% 68-130%
460-00-4	4-Bromofluorobenzene	99% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Page 1 of 2

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V906-BS1	5V15454.D	1	05/20/11	DC	n/a	n/a	V5V906

The QC reported here applies to the following samples:

Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	37.4	75	49-130
71-43-2	Benzene	50	46.1	92	70-130
75-27-4	Bromodichloromethane	50	49.7	99	70-130
75-25-2	Bromoform	50	50.7	101	48-138
108-90-7	Chlorobenzene	50	53.0	106	70-130
75-00-3	Chloroethane	50	34.6	69	61-130
67-66-3	Chloroform	50	48.8	98	70-130
110-75-8	2-Chloroethyl vinyl ether	50	32.8	66	22-185
75-15-0	Carbon disulfide	50	46.6	93	55-130
56-23-5	Carbon tetrachloride	50	57.0	114	70-130
75-34-3	1,1-Dichloroethane	50	46.2	92	70-130
75-35-4	1,1-Dichloroethylene	50	43.6	87	70-130
107-06-2	1,2-Dichloroethane	50	48.9	98	70-130
78-87-5	1,2-Dichloropropane	50	45.8	92	70-130
124-48-1	Dibromochloromethane	50	48.5	97	64-132
156-59-2	cis-1,2-Dichloroethylene	50	44.9	90	70-130
10061-01-5	cis-1,3-Dichloropropene	50	47.6	95	67-130
541-73-1	m-Dichlorobenzene	50	52.7	105	52-148
95-50-1	o-Dichlorobenzene	50	51.8	104	53-146
106-46-7	p-Dichlorobenzene	50	51.1	102	57-136
156-60-5	trans-1,2-Dichloroethylene	50	44.3	89	70-130
10061-02-6	trans-1,3-Dichloropropene	50	47.1	94	66-130
100-41-4	Ethylbenzene	50	54.9	110	70-130
591-78-6	2-Hexanone	50	45.4	91	38-130
108-10-1	4-Methyl-2-pentanone	50	43.7	87	68-130
74-83-9	Methyl bromide	50	32.0	64	35-151
74-87-3	Methyl chloride	50	28.9	58	46-138
75-09-2	Methylene chloride	50	43.8	88	70-130
78-93-3	Methyl ethyl ketone	50	42.3	85	37-130
100-42-5	Styrene	50	52.9	106	38-130
71-55-6	1,1,1-Trichloroethane	50	52.2	104	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	50.9	102	70-130
79-00-5	1,1,2-Trichloroethane	50	49.0	98	69-130
127-18-4	Tetrachloroethylene	50	55.0	110	66-134
108-88-3	Toluene	50	49.2	98	70-140
75-01-4	Vinyl chloride	50	30.6	61	58-135

Blank Spike Summary

Page 2 of 2

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V906-BS1	5V15454.D	1	05/20/11	DC	n/a	n/a	V5V906

The QC reported here applies to the following samples:

Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
108-05-4	Vinyl Acetate	50	60.5	121	50-130
1330-20-7	Xylene (total)	100	99.3	99	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	82%	63-130%
2037-26-5	Toluene-D8	88%	68-130%
460-00-4	4-Bromofluorobenzene	97%	61-130%

Blank Spike Summary

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V910-BS1	5V15505.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples: Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
79-01-6	Trichloroethylene	50	51.3	103	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	63-130%
2037-26-5	Toluene-D8	93%	68-130%
460-00-4	4-Bromofluorobenzene	108%	61-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23440-1MS	5V15456.D	1	05/20/11	DC	n/a	n/a	V5V906
D23440-1MSD	5V15457.D	1	05/20/11	DC	n/a	n/a	V5V906
D23440-1	5V15455.D	1	05/20/11	DC	n/a	n/a	V5V906

The QC reported here applies to the following samples:

Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	D23440-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		50	39.3	79	42.8	86	9	21-130/30
71-43-2	Benzene	0.71	J	50	45.2	89	46.6	92	3	59-132/30
75-27-4	Bromodichloromethane	ND		50	49.7	99	49.9	100	0	58-130/30
75-25-2	Bromoform	ND		50	53.1	106	51.9	104	2	45-140/30
108-90-7	Chlorobenzene	ND		50	52.7	105	53.6	107	2	70-130/30
75-00-3	Chloroethane	ND		50	32.6	65	33.0	66	1	61-130/30
67-66-3	Chloroform	2.2		50	49.9	95	51.4	98	3	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	ND	0* a	ND	0* a	nc	20-168/30
75-15-0	Carbon disulfide	ND		50	45.0	90	45.5	91	1	41-132/30
56-23-5	Carbon tetrachloride	ND		50	53.1	106	56.2	112	6	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	44.5	89	45.7	91	3	70-130/30
75-35-4	1,1-Dichloroethylene	ND		50	41.4	83	42.6	85	3	69-137/30
107-06-2	1,2-Dichloroethane	ND		50	50.9	102	50.8	102	0	62-130/30
78-87-5	1,2-Dichloropropane	ND		50	45.1	90	45.2	90	0	63-131/30
124-48-1	Dibromochloromethane	ND		50	49.7	99	49.2	98	1	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND		50	43.7	87	45.3	91	4	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	47.7	95	48.0	96	1	51-134/30
541-73-1	m-Dichlorobenzene	ND		50	51.9	104	54.3	109	5	38-148/30
95-50-1	o-Dichlorobenzene	ND		50	52.3	105	54.2	108	4	40-148/30
106-46-7	p-Dichlorobenzene	ND		50	50.5	101	52.1	104	3	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND		50	41.4	83	43.2	86	4	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	48.8	98	47.6	95	2	50-130/30
100-41-4	Ethylbenzene	ND		50	51.9	104	54.7	109	5	68-130/30
591-78-6	2-Hexanone	ND		50	49.9	100	47.5	95	5	29-130/30
108-10-1	4-Methyl-2-pentanone	ND		50	49.6	99	44.0	88	12	62-130/30
74-83-9	Methyl bromide	ND		50	32.3	65	31.8	64	2	20-171/30
74-87-3	Methyl chloride	ND		50	29.8	60	28.1	56	6	25-148/30
75-09-2	Methylene chloride	ND		50	45.1	90	44.4	89	2	58-139/30
78-93-3	Methyl ethyl ketone	ND		50	43.3	87	39.4	79	9	37-130/30
100-42-5	Styrene	ND		50	53.1	106	55.0	110	4	27-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	48.9	98	51.5	103	5	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	54.3	109	51.5	103	5	61-140/30
79-00-5	1,1,2-Trichloroethane	ND		50	50.1	100	49.2	98	2	52-135/30
127-18-4	Tetrachloroethylene	ND		50	50.3	101	55.2	110	9	61-134/30
108-88-3	Toluene	ND		50	47.2	94	49.0	98	4	56-142/30
75-01-4	Vinyl chloride	ND		50	30.2	60	30.2	60	0	54-148/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23440-1MS	5V15456.D	1	05/20/11	DC	n/a	n/a	V5V906
D23440-1MSD	5V15457.D	1	05/20/11	DC	n/a	n/a	V5V906
D23440-1	5V15455.D	1	05/20/11	DC	n/a	n/a	V5V906

The QC reported here applies to the following samples:

Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	D23440-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
108-05-4	Vinyl Acetate	ND		50	62.9	126	61.4	123	2	40-139/30
1330-20-7	Xylene (total)	1.0	J	100	95.9	95	101	100	5	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D23440-1	Limits
17060-07-0	1,2-Dichloroethane-D4	87%	79%	73%	63-130%
2037-26-5	Toluene-D8	84%	83%	82%	68-130%
460-00-4	4-Bromofluorobenzene	94%	94%	84%	61-130%

(a) Recovery of 2-chloroethyl vinyl ether is affected by sample preservation.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23440-3MS	5V15509.D	1	05/23/11	DC	n/a	n/a	V5V910
D23440-3MSD	5V15510.D	1	05/23/11	DC	n/a	n/a	V5V910
D23440-3	5V15508.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples:

Method: SW846 8260B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	D23440-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
79-01-6	Trichloroethylene	ND	50	95.3	191* a	107	214* a	12	61-132/30

CAS No.	Surrogate Recoveries	MS	MSD	D23440-3	Limits
17060-07-0	1,2-Dichloroethane-D4	87%	96%	85%	63-130%
2037-26-5	Toluene-D8	76%	81%	73%	68-130%
460-00-4	4-Bromofluorobenzene	83%	92%	79%	61-130%

(a) Outside control limits due to possible matrix interference.

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
 Data File : 5V15455.D
 Acq On : 20 May 2011 10:56 am
 Operator : DONC
 Sample : D23440-1
 Misc : MS2192,V5V906,,,,,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 23 10:00:41 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260
 QLast Update : Tue May 17 07:57:07 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	208993	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.447	114	247375	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	211914	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	122625	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.036	102	14460	36.62	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	73.24%	
55) Toluene-d8	13.851	98	351419	40.93	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	81.86%	
59) 4-Bromofluorobenzene	16.043	95	116778	41.91	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.82%	

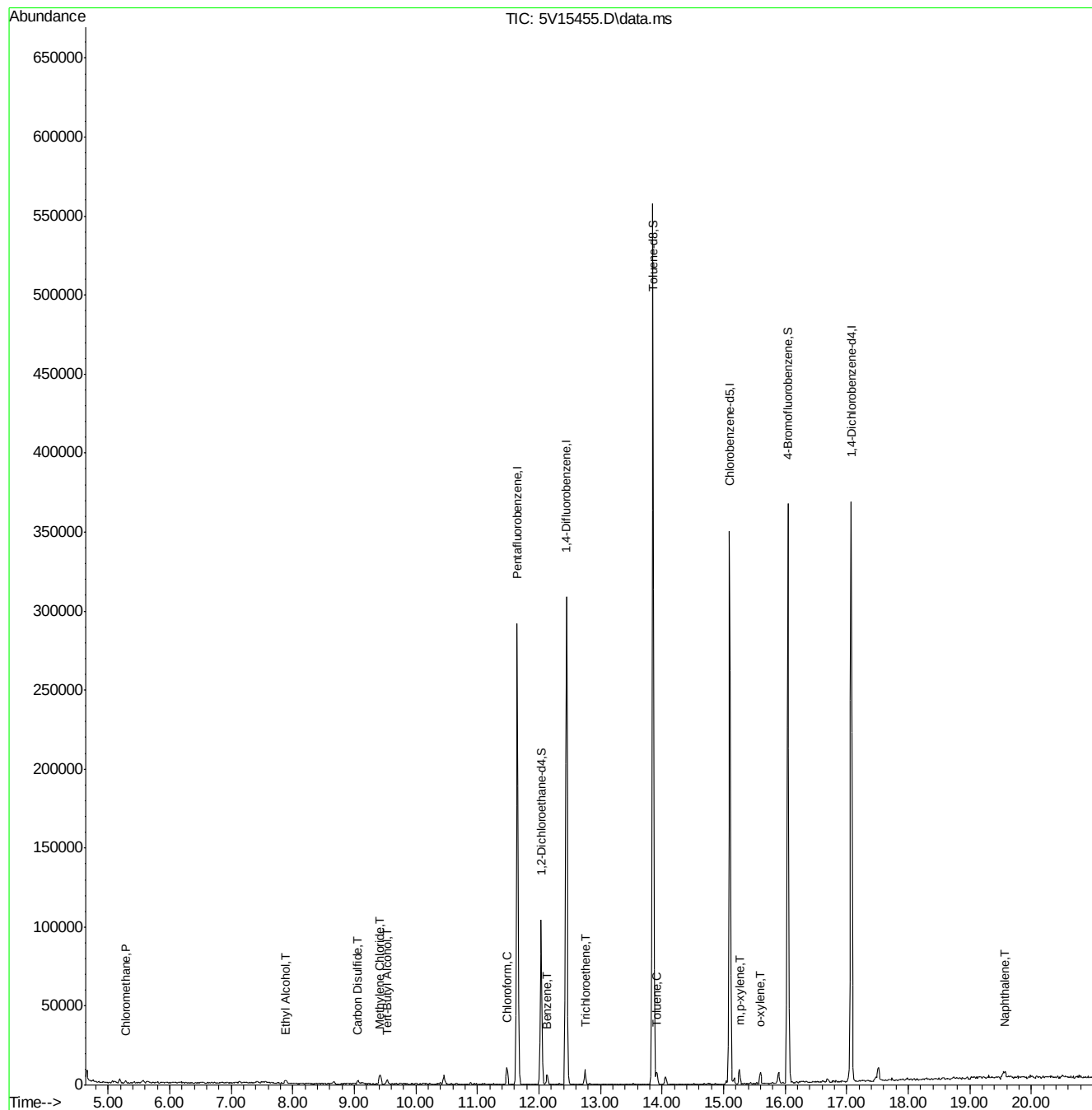
Target Compounds						Qvalue
4) Chloromethane	5.288	50	1828	0.46	ug/l	83
9) Ethyl Alcohol	7.880	45	2941	239.16	ug/l #	86
15) Methylene Chloride	9.421	84	3544	1.64	ug/l	99
17) Carbon Disulfide	9.056	76	4065	0.50	ug/l #	75
18) Tert-Butyl Alcohol	9.535	59	3413	34.03	ug/l #	87
25) Chloroform	11.476	83	8810	2.20	ug/l	95
43) Trichloroethene	12.755	95	3822	0.56	ug/l	92
45) Benzene	12.127	78	6750	0.71	ug/l	100
56) Toluene	13.908	92	4046	0.65	ug/l	97
61) m,p-xylene	15.255	106	3441	0.70	ug/l	88
62) o-xylene	15.598	106	1524	0.33	ug/l	82
72) Naphthalene	19.571	128	3915	0.96	ug/l	100

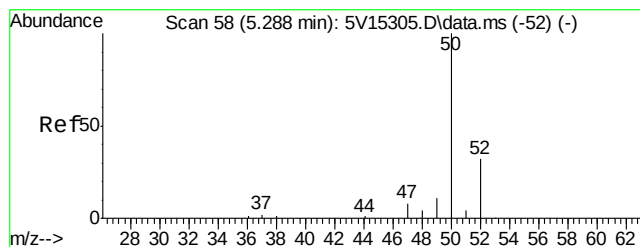
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15455.D
Acq On : 20 May 2011 10:56 am
Operator : DONC
Sample : D23440-1
Misc : MS2192,V5V906,,,,,1
ALS Vial : 5 Sample Multiplier: 1

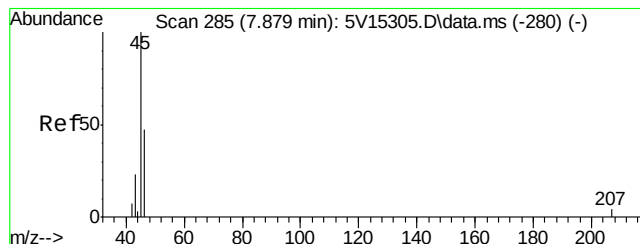
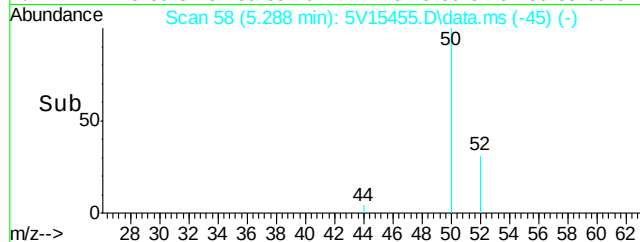
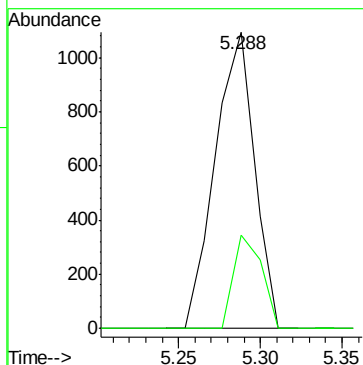
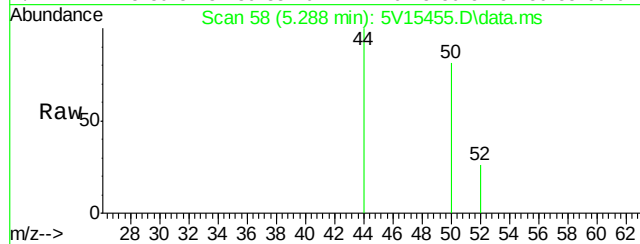
Quant Time: May 23 10:00:41 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





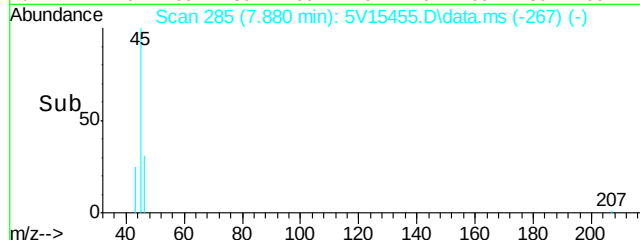
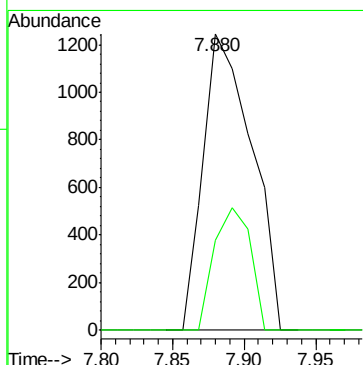
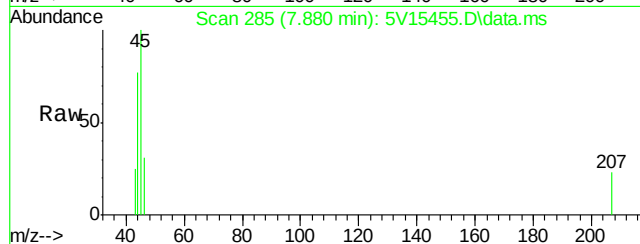
#4
Chloromethane
Concen: 0.46 ug/l
RT: 5.288 min Scan# 58
Delta R.T. 0.000 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

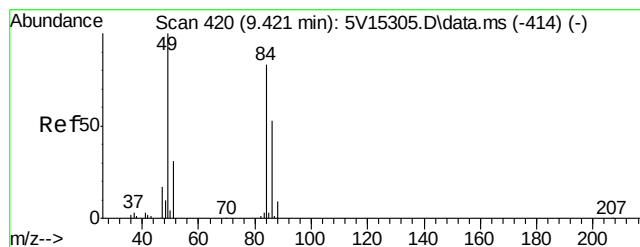
Tgt Ion	Ratio	Lower	Upper
50	100		
52	22.4	12.2	52.2



#9
Ethyl Alcohol
Concen: 239.16 ug/l
RT: 7.880 min Scan# 285
Delta R.T. 0.001 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

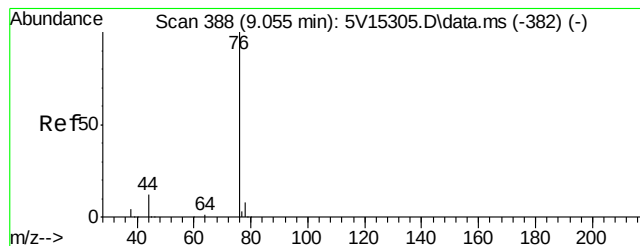
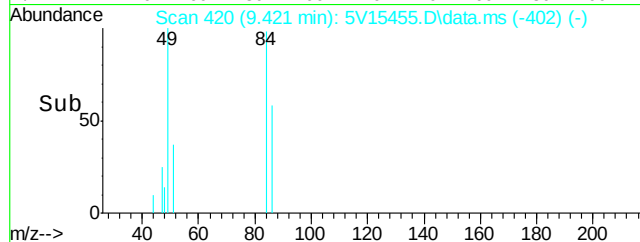
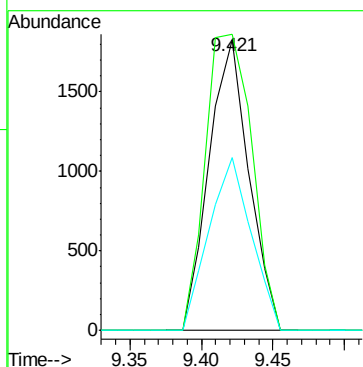
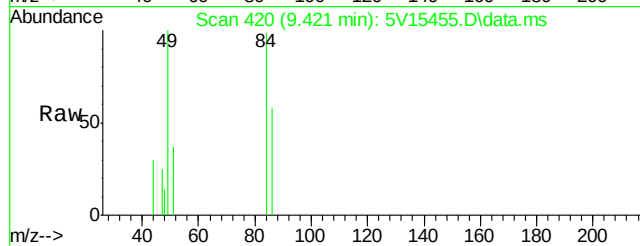
Tgt Ion	Ratio	Lower	Upper
45	100		
46	30.7	31.2	46.8#





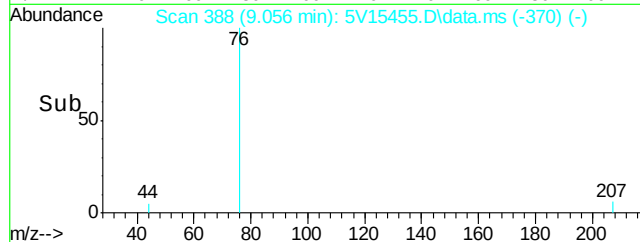
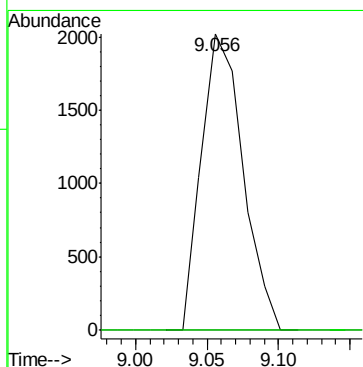
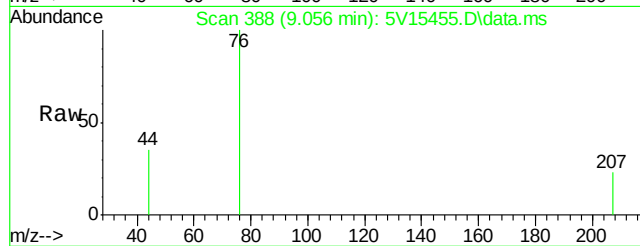
#15
Methylene Chloride
Concen: 1.64 ug/l
RT: 9.421 min Scan# 420
Delta R.T. 0.000 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

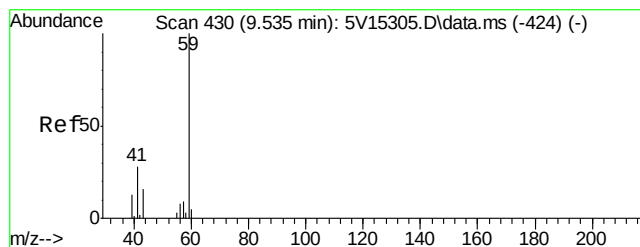
Tgt Ion	Ratio	Lower	Upper
84	100		
49	118.5	97.8	137.8
86	62.9	45.0	85.0



#17
Carbon Disulfide
Concen: 0.50 ug/l
RT: 9.056 min Scan# 388
Delta R.T. 0.000 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

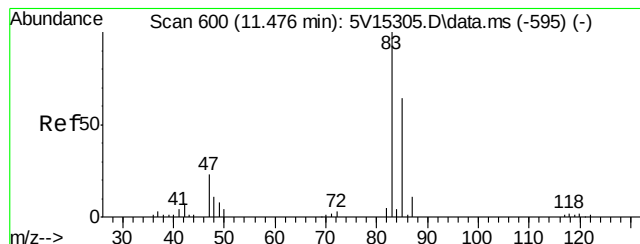
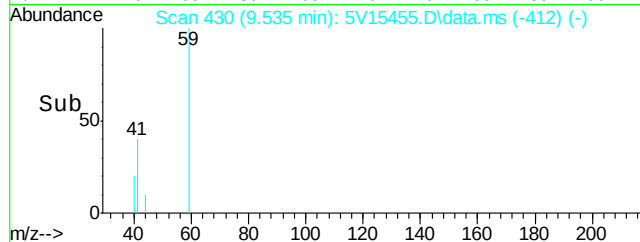
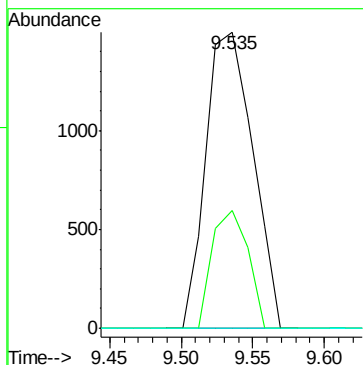
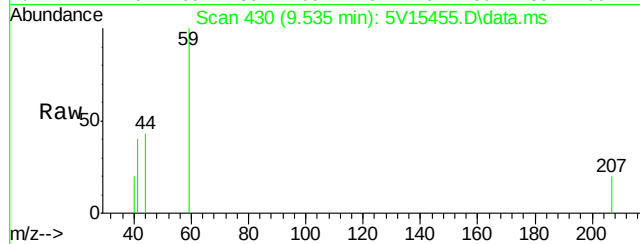
Tgt Ion	Ratio	Lower	Upper
76	100		
78	0.0	7.2	10.8#





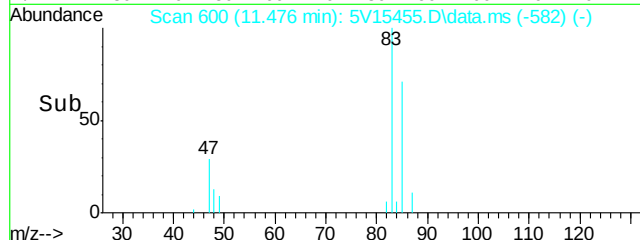
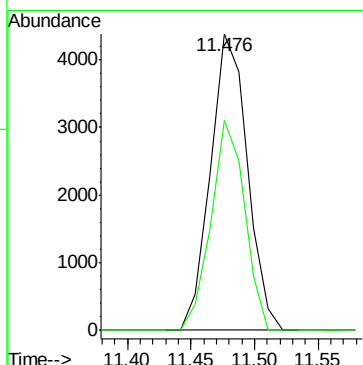
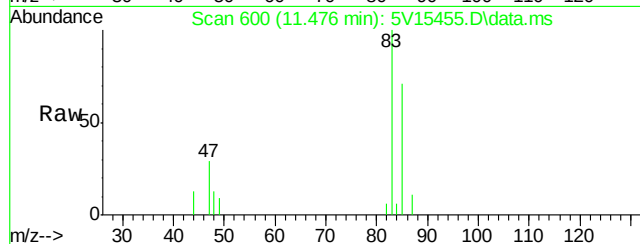
#18
Tert-Butyl Alcohol
Concen: 34.03 ug/l
RT: 9.535 min Scan# 430
Delta R.T. 0.001 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

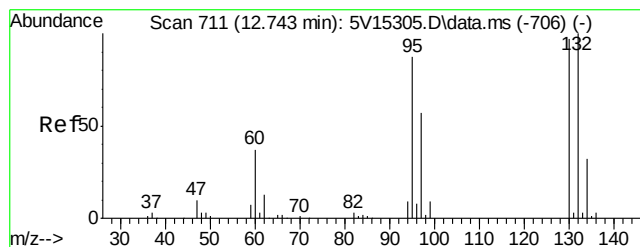
Tgt Ion:	59	Resp:	3413
Ion Ratio	Lower	Upper	
59	100		
41	30.3	27.5	41.3
57	0.0	9.0	13.6#



#25
Chloroform
Concen: 2.20 ug/l
RT: 11.476 min Scan# 600
Delta R.T. 0.000 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

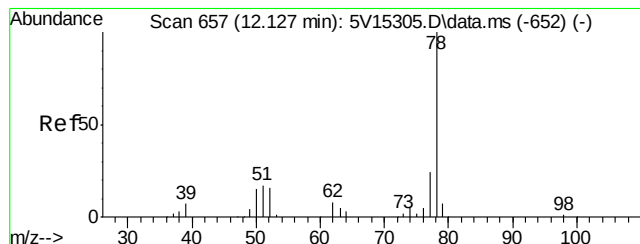
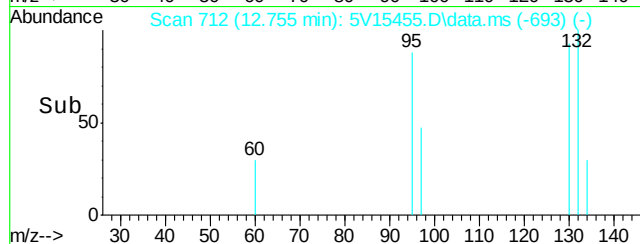
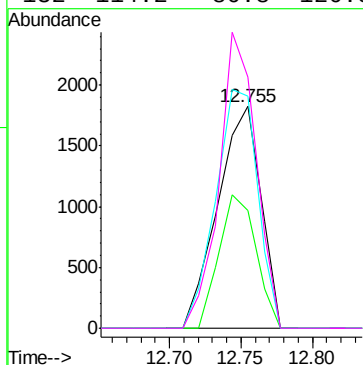
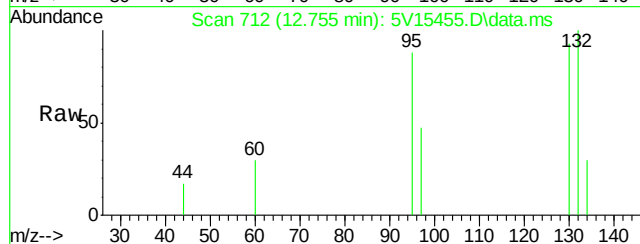
Tgt Ion:	83	Resp:	8810
Ion Ratio	Lower	Upper	
83	100		
85	64.4	48.2	88.2





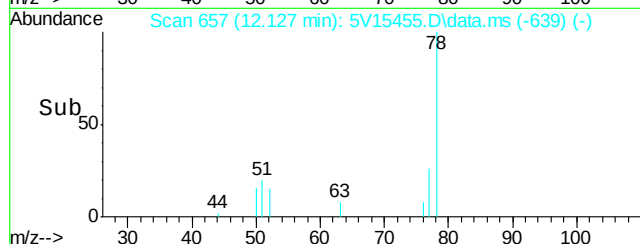
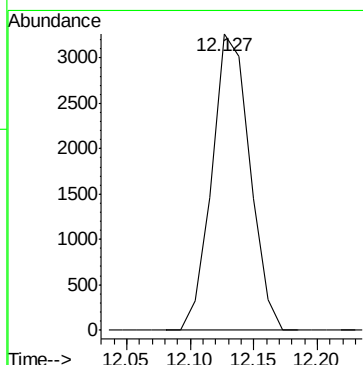
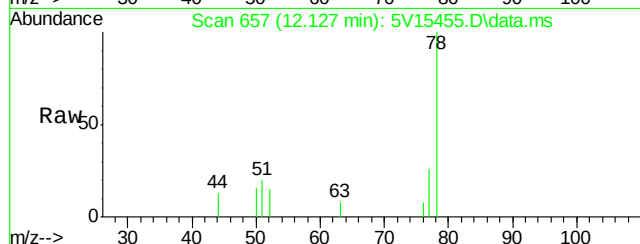
#43
Trichloroethene
Concen: 0.56 ug/l
RT: 12.755 min Scan# 712
Delta R.T. 0.012 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

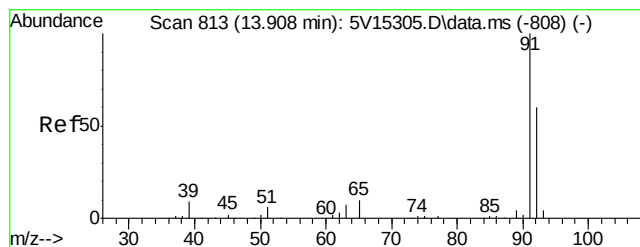
Tgt Ion	95	Resp	3822
Ion Ratio	Lower	Upper	
95	100		
97	51.8	45.2	85.2
130	105.2	89.7	129.7
132	114.2	86.8	126.8



#45
Benzene
Concen: 0.71 ug/l
RT: 12.127 min Scan# 657
Delta R.T. 0.000 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

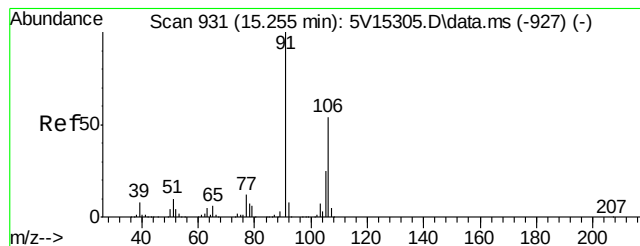
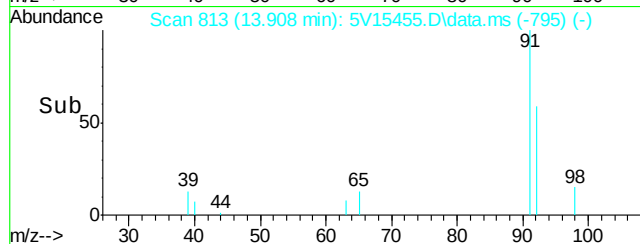
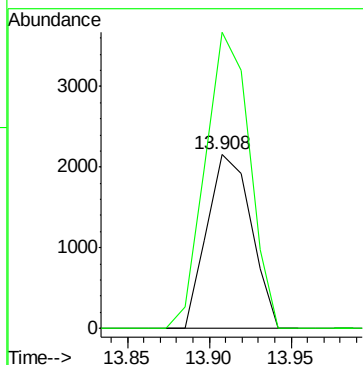
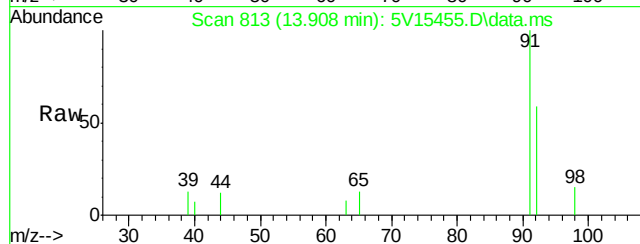
Tgt Ion: 78 Resp: 6750





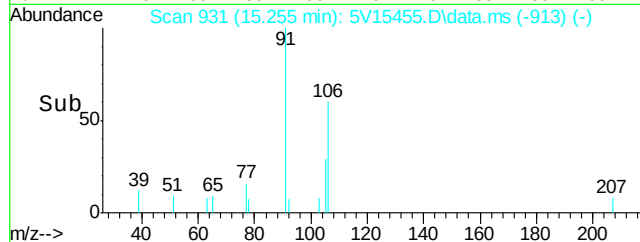
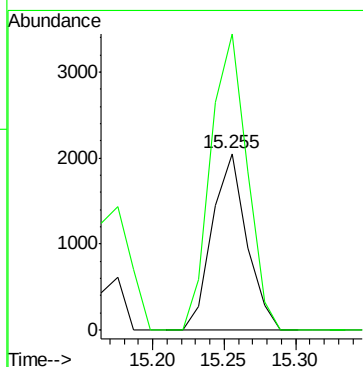
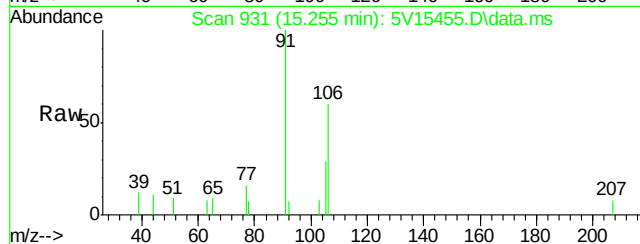
#56
Toluene
Concen: 0.65 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

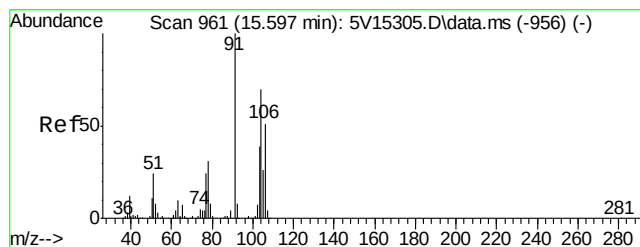
Tgt Ion	Ratio	Lower	Upper
92	100		
91	170.6	146.2	186.2



#61
m,p-xylene
Concen: 0.70 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

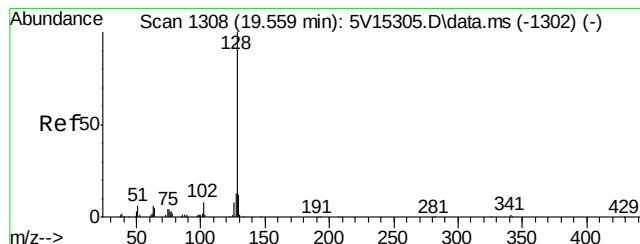
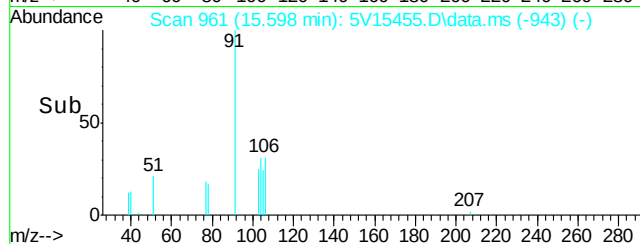
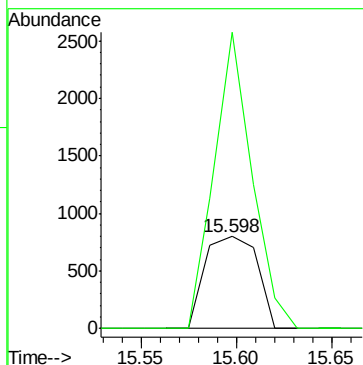
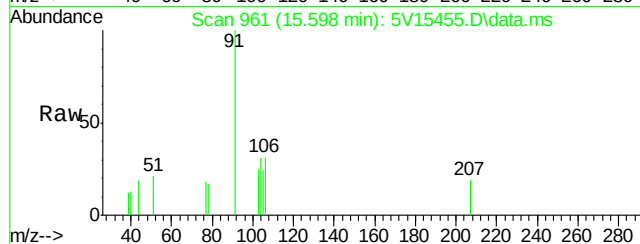
Tgt Ion	Ratio	Lower	Upper
106	100		
91	176.2	174.3	214.3





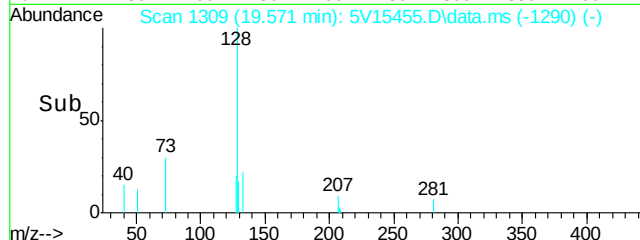
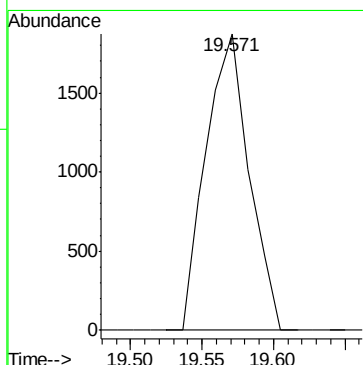
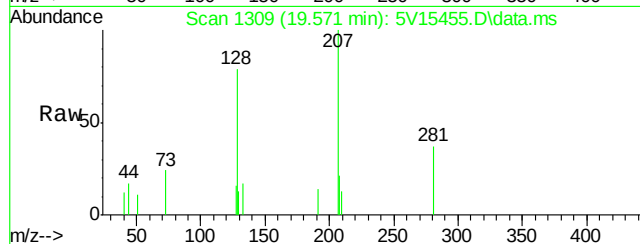
#62
o-xylene
Concen: 0.33 ug/l
RT: 15.598 min Scan# 961
Delta R.T. 0.001 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

Tgt Ion:106 Resp: 1524
Ion Ratio Lower Upper
106 100
91 234.8 165.9 248.9



#72
Naphthalene
Concen: 0.96 ug/l
RT: 19.571 min Scan# 1309
Delta R.T. 0.013 min
Lab File: 5V15455.D
Acq: 20 May 2011 10:56 am

Tgt Ion:128 Resp: 3915



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15455.D
Acq On : 20 May 2011 10:56 am
Operator : DONC
Sample : D23440-1
Misc : MS2192,V5V906,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: rteint.p

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Title : 8260

Signal : TIC: 5V15455.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	9.421	416	420	425	rVB	6049	13108	1.36%	0.305%
2	10.460	508	511	514	rBV	5523	10902	1.13%	0.254%
3	11.476	594	600	603	rBV	10970	20032	2.08%	0.466%
4	11.647	611	615	621	rVB	291452	521869	54.20%	12.138%
5	12.036	645	649	654	rBV	104020	197315	20.49%	4.589%
6	12.127	654	657	661	rBV	6256	12196	1.27%	0.284%
7	12.447	681	685	689	rBV	308644	546677	56.78%	12.716%
8	12.743	708	711	715	rBV	9701	18065	1.88%	0.420%
9	13.851	804	808	812	rBV	557424	962779	100.00%	22.394%
10	13.908	812	813	818	rVB	7902	12182	1.27%	0.283%
11	14.056	823	826	829	rVB	5117	9806	1.02%	0.228%
12	15.095	913	917	921	rBV	348986	597845	62.10%	13.906%
13	15.255	927	931	934	rVB	9386	16083	1.67%	0.374%
14	15.598	958	961	964	rBV	7538	12427	1.29%	0.289%
15	15.895	983	987	990	rBV	7436	14658	1.52%	0.341%
16	16.043	996	1000	1005	rBV	366861	624167	64.83%	14.518%
17	17.070	1086	1090	1095	rVB	366237	661371	68.69%	15.383%
18	17.516	1121	1129	1134	rBV4	8639	25990	2.70%	0.605%
19	19.548	1302	1307	1312	rBV5	5385	21818	2.27%	0.507%

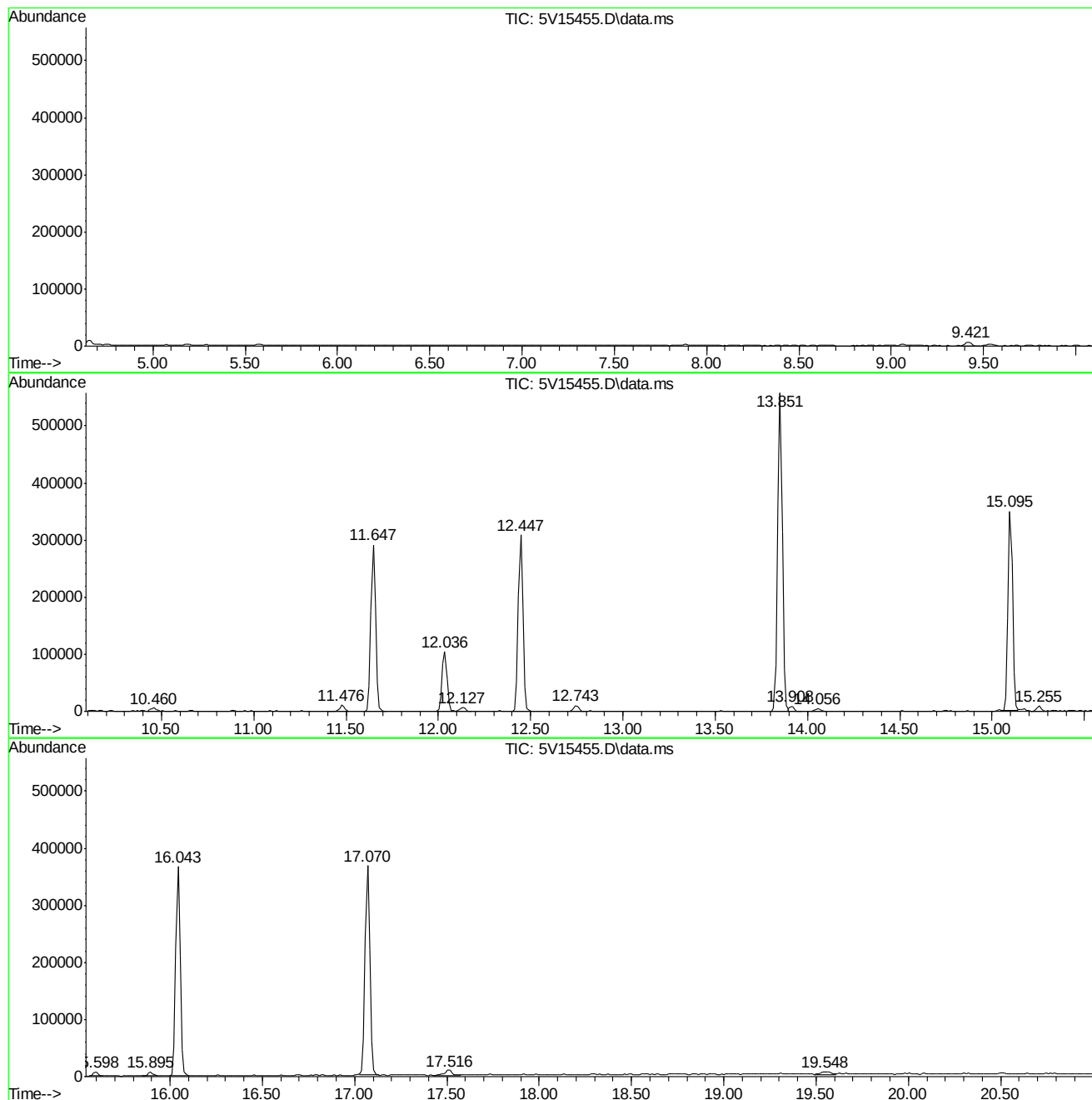
Sum of corrected areas: 4299290

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15455.D
Acq On : 20 May 2011 10:56 am
Operator : DONC
Sample : D23440-1
Misc : MS2192,V5V906,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound Report Summary

DaaaPathh::CC\msddbbbn\1\DATA\50020011SS\
DaaaFile::55555555DD
AaqQOn :200May2001 100566am
Opeaor :DDNC
Samp :D02340011
Misc :M02202Y55006,,,,11
ASSVal :55 SampMultiplier:11

QqantMebdd::CC\msddbbbn\1\MEBDDSV5558906tvh89066011MM
QqantTife ::88000

TICLibaay :CC\DATA\BASEN\5508LL
TICIntegratfonPraess:LSCNTP

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

No Library Search Compounds Detected

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15506.D
 Acq On : 23 May 2011 1:24 pm
 Operator : DONC
 Sample : D23440-1
 Misc : MS2192,V5V910,,,,,1
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 24 12:16:23 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260
 QLast Update : Tue May 17 07:57:07 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	179558	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.446	114	215537	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	190841	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	112280	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.035	102	14043	41.39	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	82.78%	
55) Toluene-d8	13.851	98	300315	38.84	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	77.68%	
59) 4-Bromofluorobenzene	16.043	95	104330	41.57	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.14%	

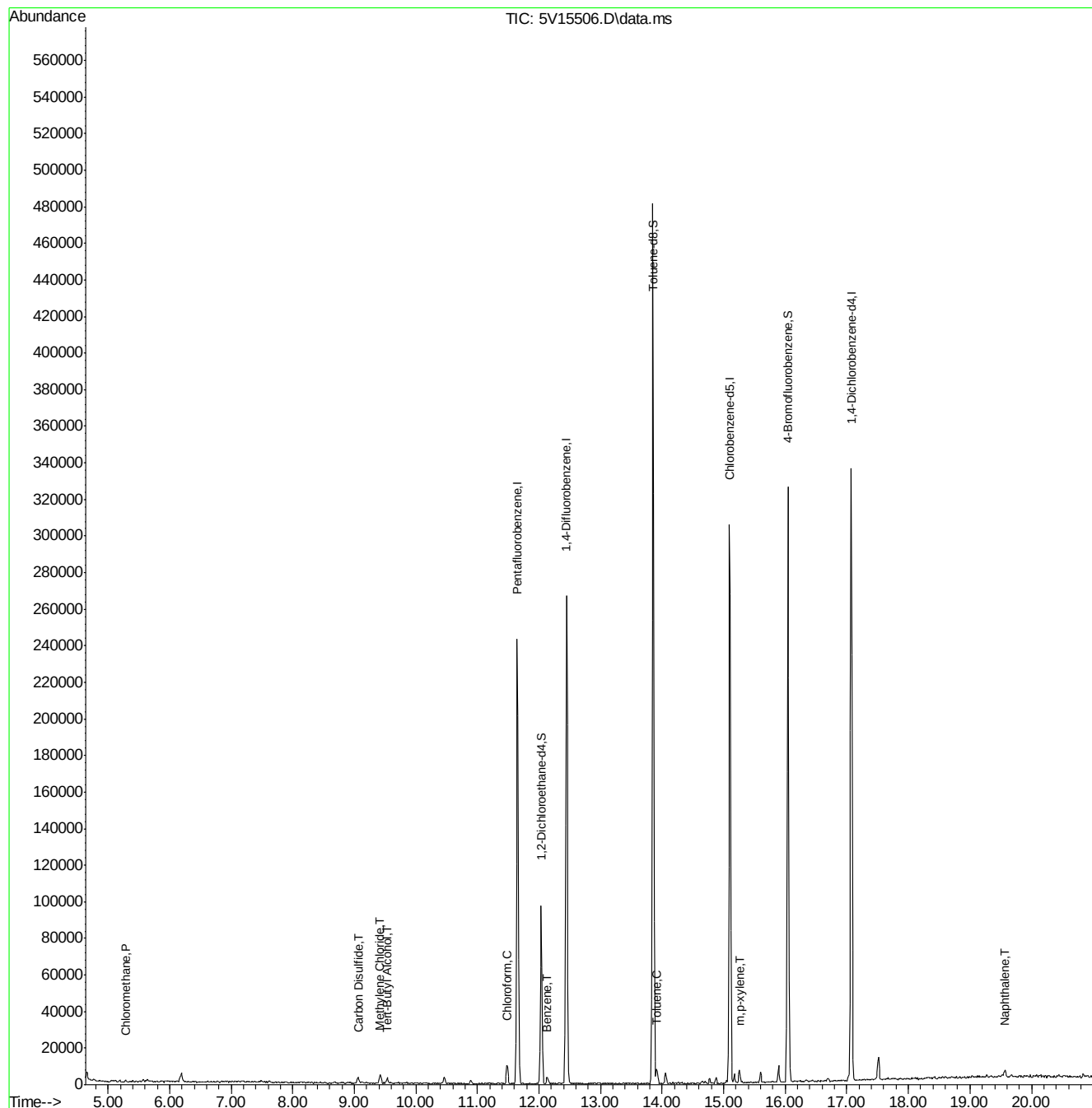
Target Compounds						Qvalue
4) Chloromethane	5.288	50	1455	0.43	ug/l	# 64
15) Methylene Chloride	9.421	84	2609	1.41	ug/l	94
17) Carbon Disulfide	9.067	76	5970	0.86	ug/l	96
18) Tert-Butyl Alcohol	9.535	59	3945	45.78	ug/l	# 80
25) Chloroform	11.476	83	9170	2.67	ug/l	91
45) Benzene	12.127	78	4016	0.48	ug/l	100
56) Toluene	13.908	92	3665	0.65	ug/l	94
61) m,p-xylene	15.255	106	2493	0.56	ug/l	89
72) Naphthalene	19.570	128	3892	1.04	ug/l	100

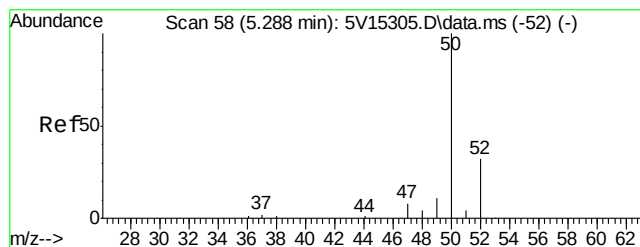
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15506.D
Acq On : 23 May 2011 1:24 pm
Operator : DONC
Sample : D23440-1
Misc : MS2192,V5V910,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 24 12:16:23 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





#4

Chloromethane

Concen: 0.43 ug/l

RT: 5.288 min Scan# 58

Delta R.T. 0.000 min

Lab File: 5V15506.D

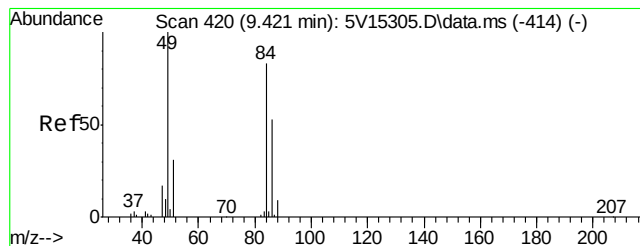
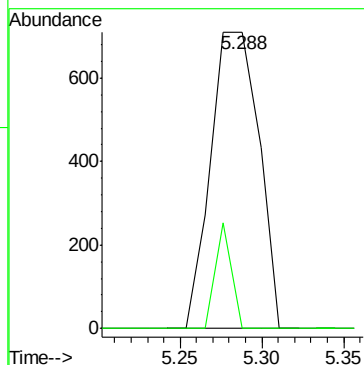
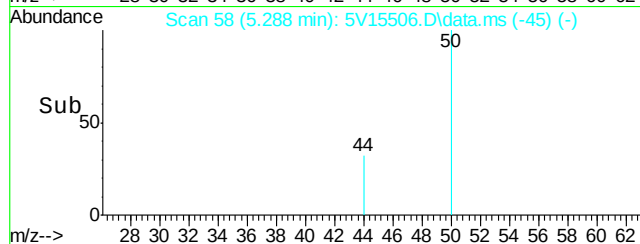
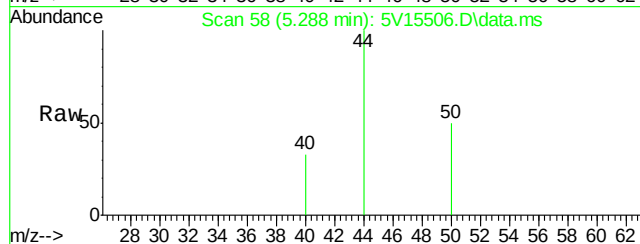
Acq: 23 May 2011 1:24 pm

Tgt Ion: 50 Resp: 1455

Ion Ratio Lower Upper

50 100

52 11.9 12.2 52.2#



#15

Methylene Chloride

Concen: 1.41 ug/l

RT: 9.421 min Scan# 420

Delta R.T. 0.000 min

Lab File: 5V15506.D

Acq: 23 May 2011 1:24 pm

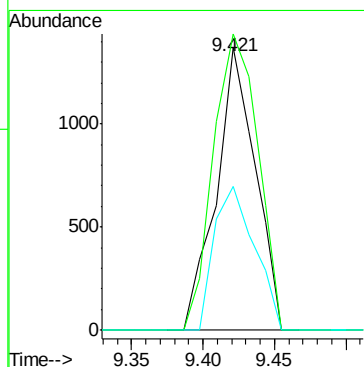
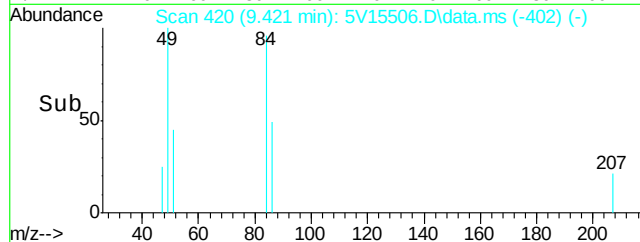
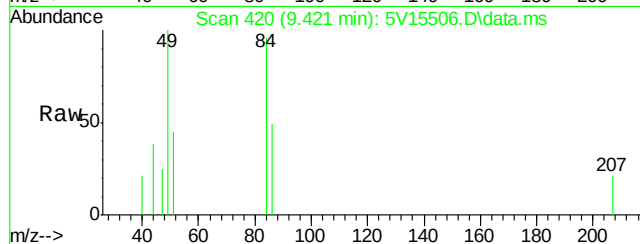
Tgt Ion: 84 Resp: 2609

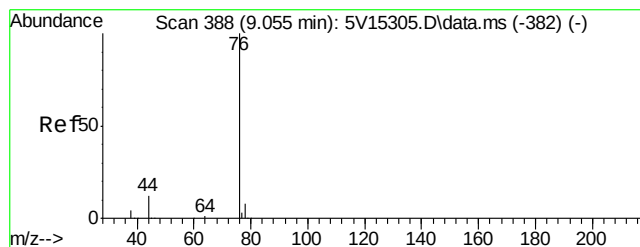
Ion Ratio Lower Upper

84 100

49 119.2 97.8 137.8

86 52.4 45.0 85.0





#17

Carbon Disulfide

Concen: 0.86 ug/l

RT: 9.067 min Scan# 389

Delta R.T. 0.011 min

Lab File: 5V15506.D

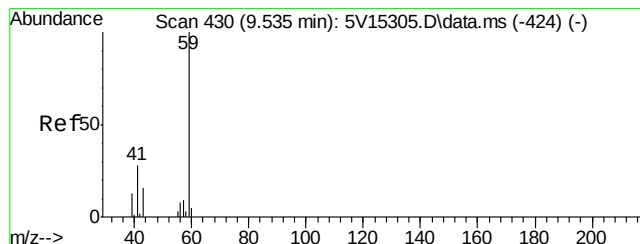
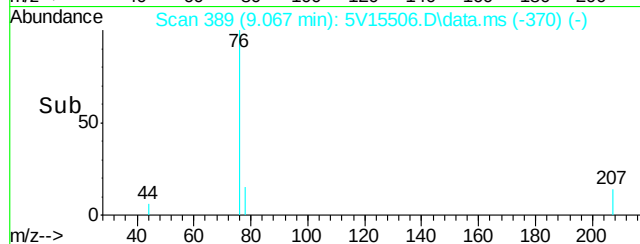
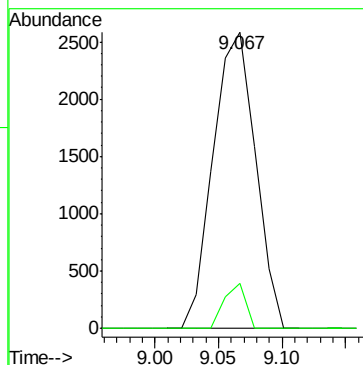
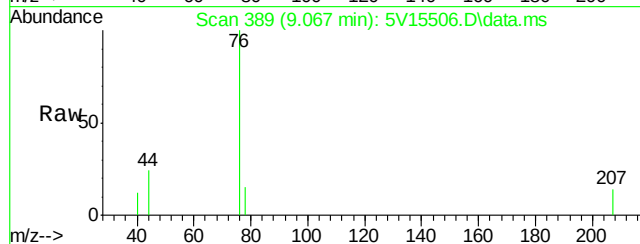
Acq: 23 May 2011 1:24 pm

Tgt Ion: 76 Resp: 5970

Ion Ratio Lower Upper

76 100

78 7.6 7.2 10.8



#18

Tert-Butyl Alcohol

Concen: 45.78 ug/l

RT: 9.535 min Scan# 430

Delta R.T. 0.001 min

Lab File: 5V15506.D

Acq: 23 May 2011 1:24 pm

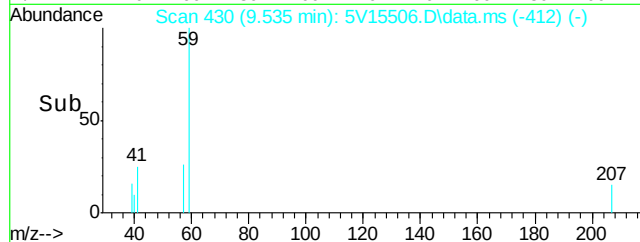
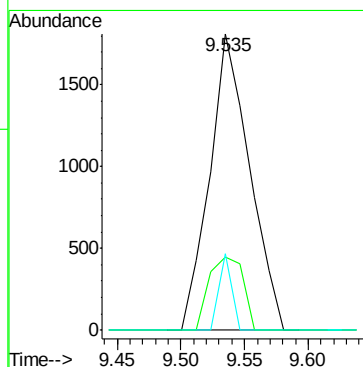
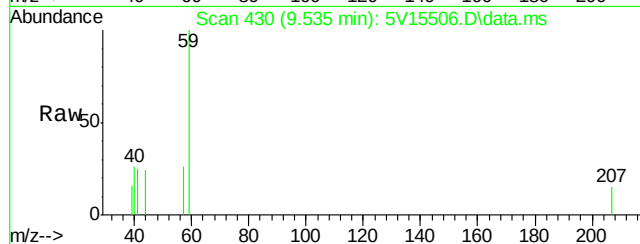
Tgt Ion: 59 Resp: 3945

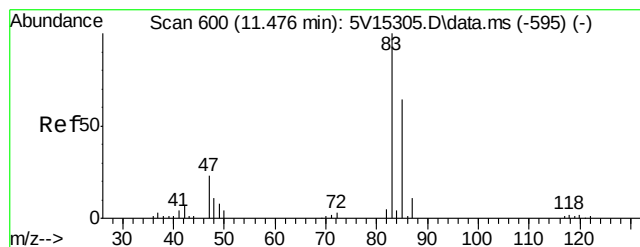
Ion Ratio Lower Upper

59 100

41 21.0 27.5 41.3#

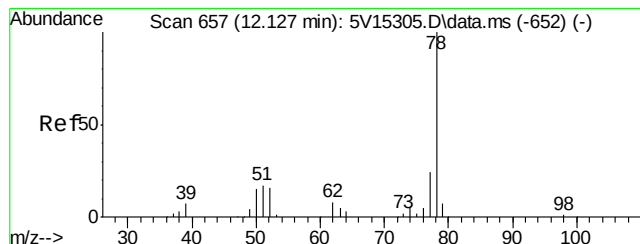
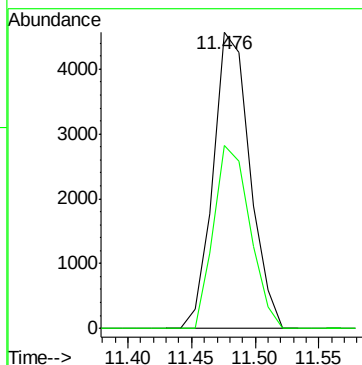
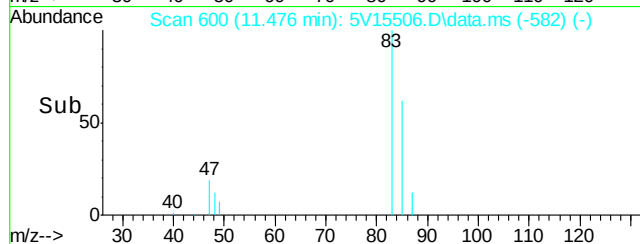
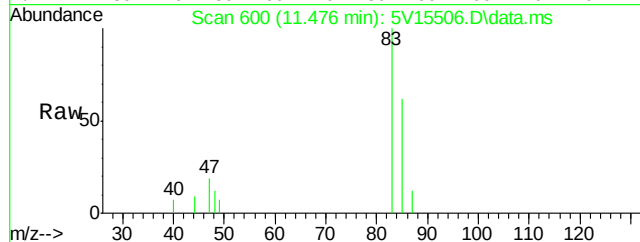
57 8.2 9.0 13.6#





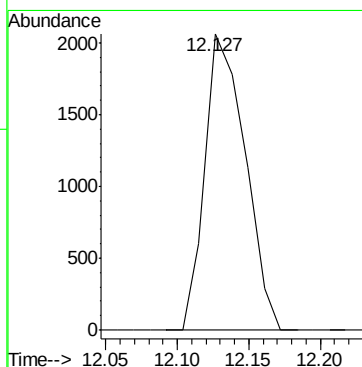
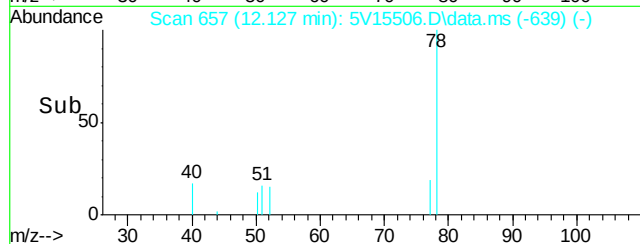
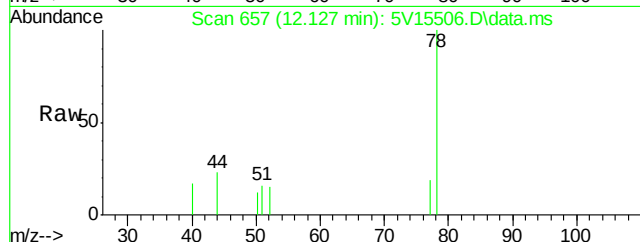
#25
Chloroform
Concen: 2.67 ug/l
RT: 11.476 min Scan# 600
Delta R.T. 0.000 min
Lab File: 5V15506.D
Acq: 23 May 2011 1:24 pm

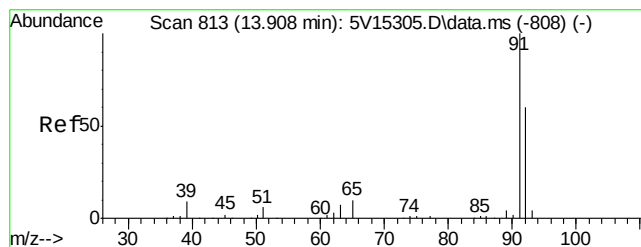
Tgt Ion: 83 Resp: 9170
Ion Ratio Lower Upper
83 100
85 61.0 48.2 88.2



#45
Benzene
Concen: 0.48 ug/l
RT: 12.127 min Scan# 657
Delta R.T. 0.000 min
Lab File: 5V15506.D
Acq: 23 May 2011 1:24 pm

Tgt Ion: 78 Resp: 4016





#56

Toluene

Concen: 0.65 ug/l

RT: 13.908 min Scan# 813

Delta R.T. 0.000 min

Lab File: 5V15506.D

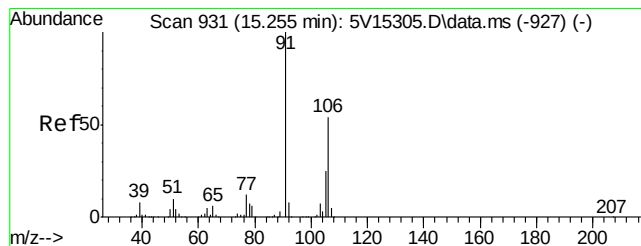
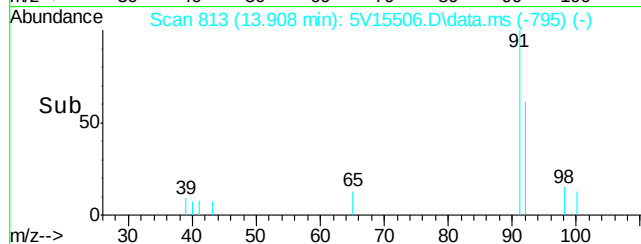
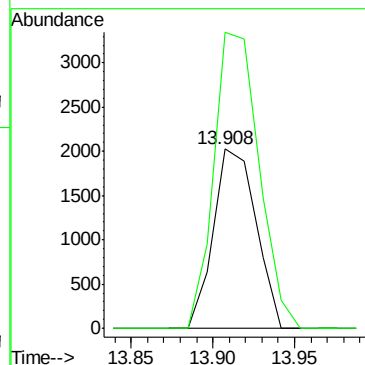
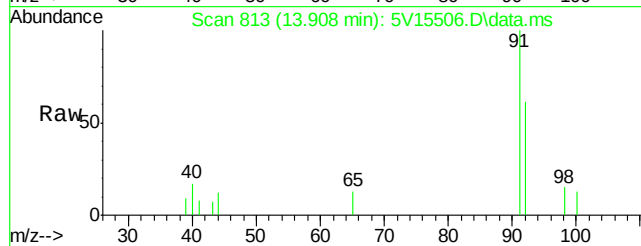
Acq: 23 May 2011 1:24 pm

Tgt Ion: 92 Resp: 3665

Ion Ratio Lower Upper

92 100

91 174.9 146.2 186.2



#61

m,p-xylene

Concen: 0.56 ug/l

RT: 15.255 min Scan# 931

Delta R.T. 0.001 min

Lab File: 5V15506.D

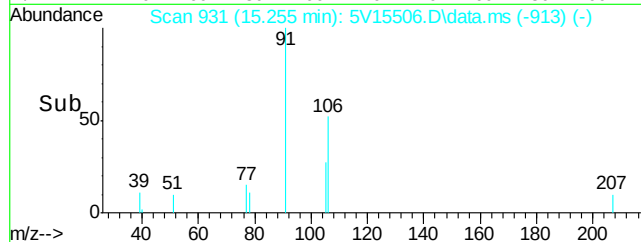
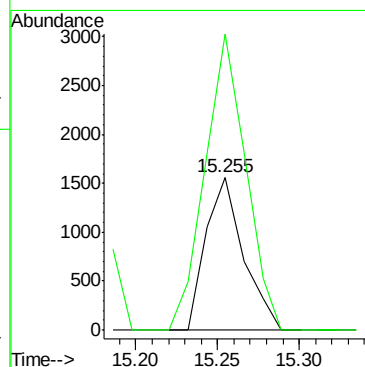
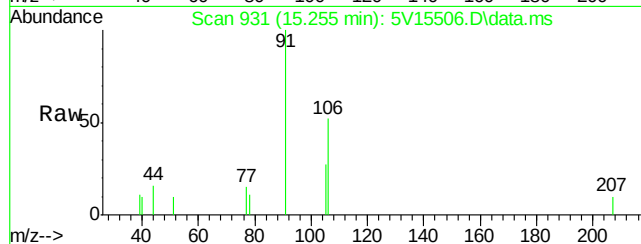
Acq: 23 May 2011 1:24 pm

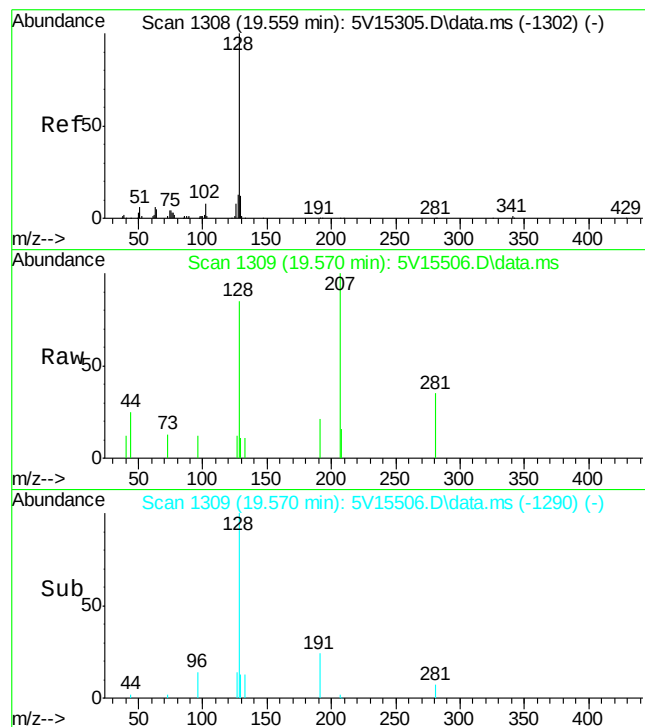
Tgt Ion: 106 Resp: 2493

Ion Ratio Lower Upper

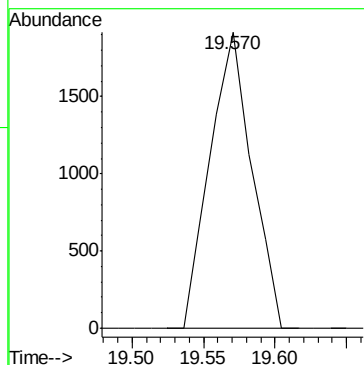
106 100

91 210.8 174.3 214.3





#72
 Naphthalene
 Concen: 1.04 ug/l
 RT: 19.570 min Scan# 1309
 Delta R.T. 0.012 min
 Lab File: 5V15506.D
 Acq: 23 May 2011 1:24 pm
 Tgt Ion:128 Resp: 3892



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
 Data File : 5V15458.D
 Acq On : 20 May 2011 12:57 pm
 Operator : DONC
 Sample : D23440-2
 Misc : MS2192,V5V906,,,,,1
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 23 10:03:28 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260
 QLast Update : Tue May 17 07:57:07 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	165971	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.447	114	199216	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	179699	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	101377	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.036	102	13625	43.45	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	86.90%	
55) Toluene-d8	13.851	98	284400	39.06	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	78.12%	
59) 4-Bromofluorobenzene	16.043	95	98515	41.69	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.38%	

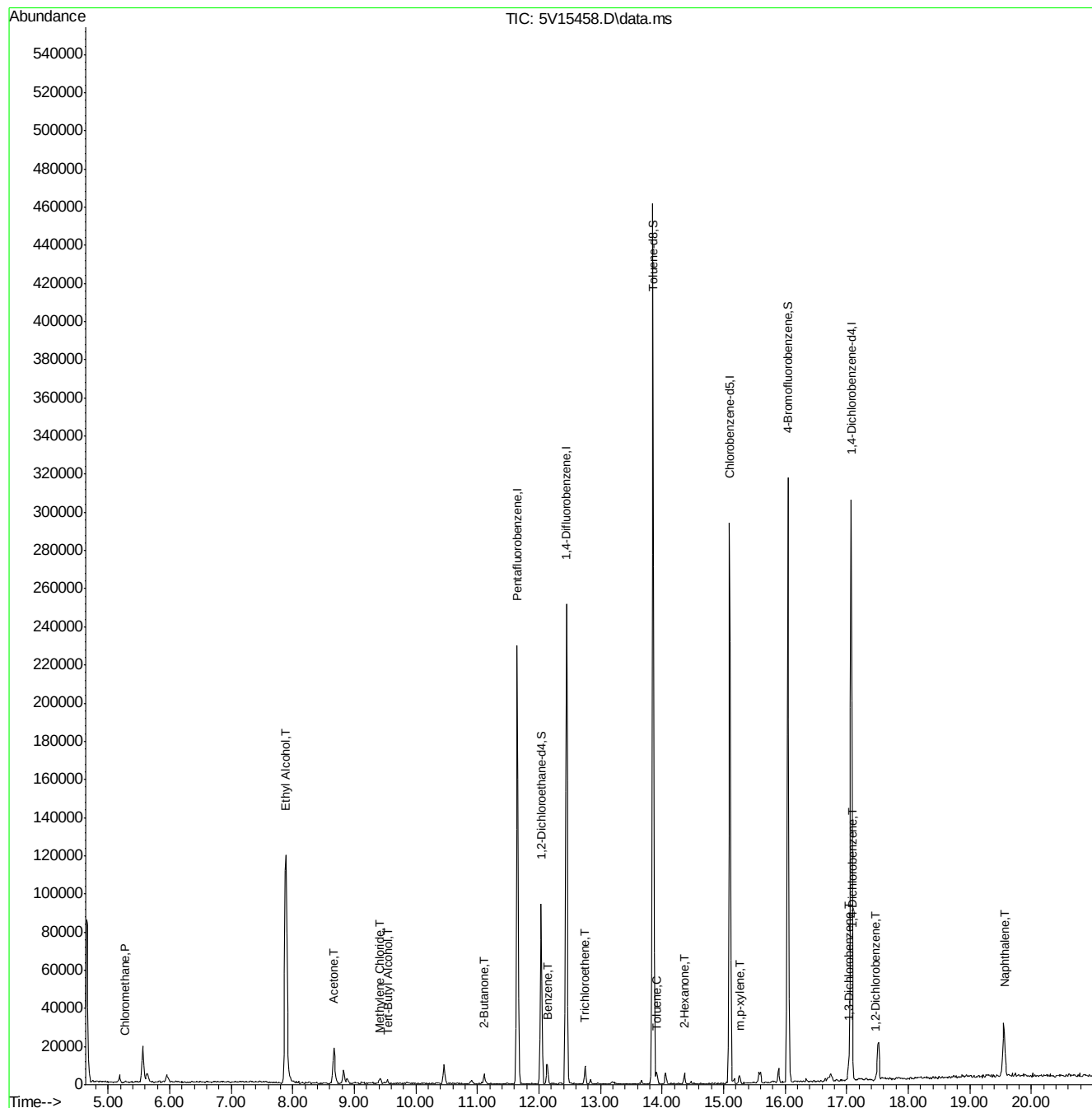
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
4) Chloromethane	5.277	50	1423	0.46	ug/l #	42
9) Ethyl Alcohol	7.891	45	171449	17556.08	ug/l	99
15) Methylene Chloride	9.421	84	1592	0.93	ug/l	95
16) Acetone	8.668	58	7734	107.79	ug/l	99
18) Tert-Butyl Alcohol	9.547	59	2487	31.23	ug/l #	73
32) 2-Butanone	11.111	72	1815	18.62	ug/l #	53
43) Trichloroethene	12.743	95	3563	0.78	ug/l	99
45) Benzene	12.138	78	10463	1.36	ug/l	100
50) 2-Hexanone	14.365	43	5028	10.96	ug/l	81
56) Toluene	13.919	92	2780	0.53	ug/l	87
61) m,p-xylene	15.255	106	1841	0.44	ug/l #	85
67) 1,3-Dichlorobenzene	17.025	146	1314	0.31	ug/l #	25
68) 1,4-Dichlorobenzene	17.093	146	2052	0.49	ug/l #	43
69) 1,2-Dichlorobenzene	17.470	146	1210	0.35	ug/l #	80
72) Naphthalene	19.559	128	5512	1.63	ug/l	100

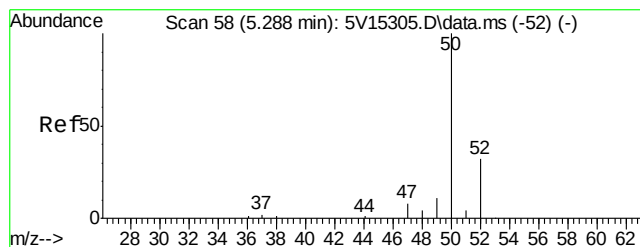
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15458.D
Acq On : 20 May 2011 12:57 pm
Operator : DONC
Sample : D23440-2
Misc : MS2192,V5V906,,,,,1
ALS Vial : 8 Sample Multiplier: 1

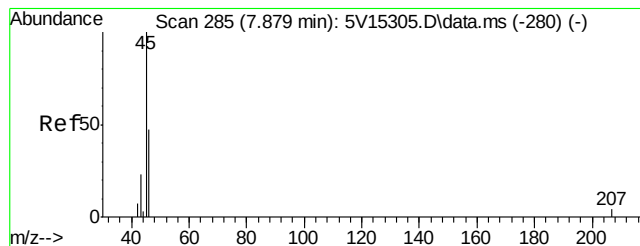
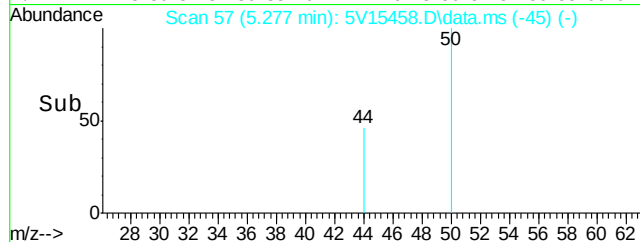
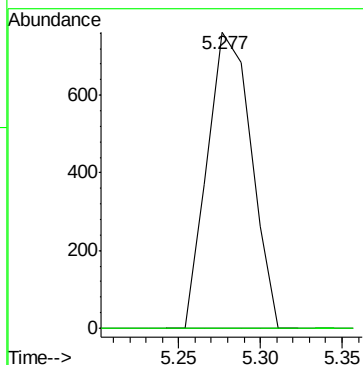
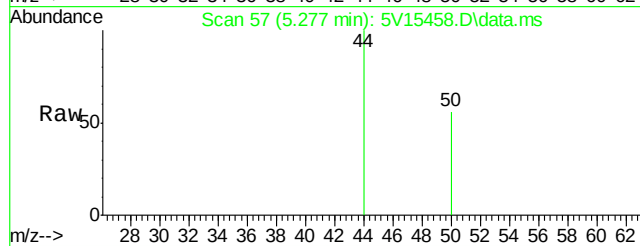
Quant Time: May 23 10:03:28 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





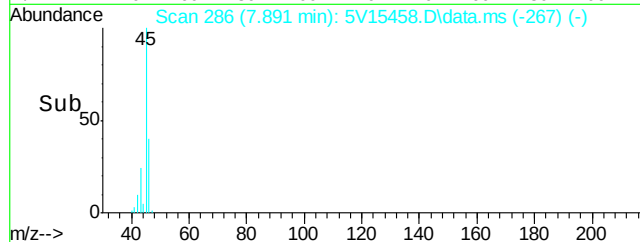
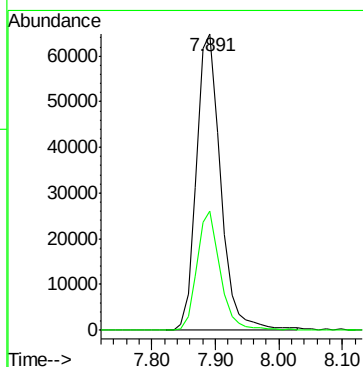
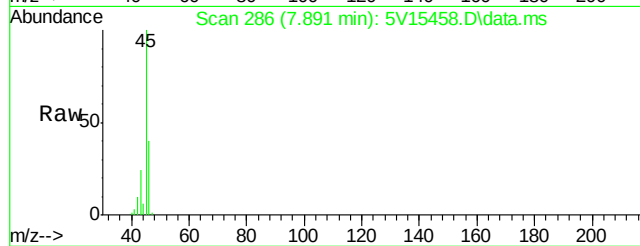
#4
Chloromethane
Concen: 0.46 ug/l
RT: 5.277 min Scan# 57
Delta R.T. -0.011 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

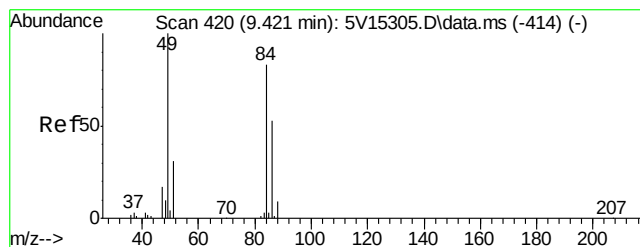
Tgt Ion	Ratio	Lower	Upper
50	100		
52	0.0	12.2	52.2#



#9
Ethyl Alcohol
Concen: 17556.08 ug/l
RT: 7.891 min Scan# 286
Delta R.T. 0.012 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

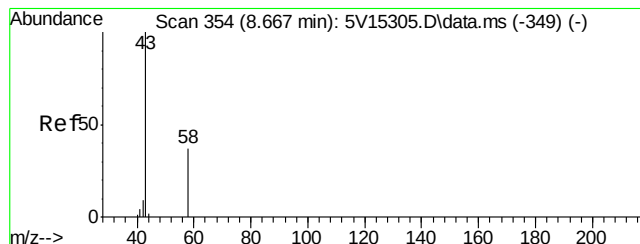
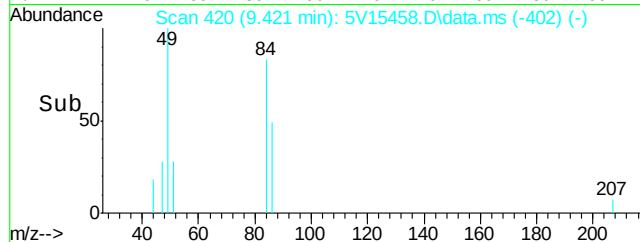
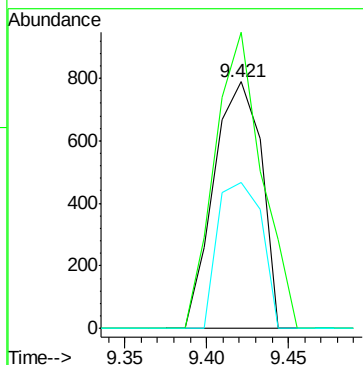
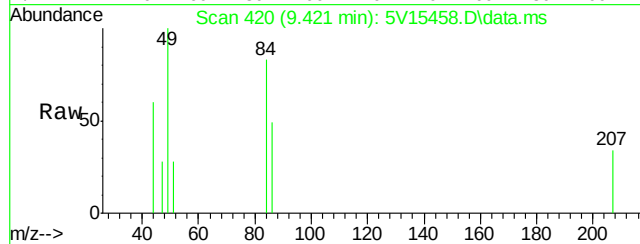
Tgt Ion	Ratio	Lower	Upper
45	100		
46	38.4	31.2	46.8





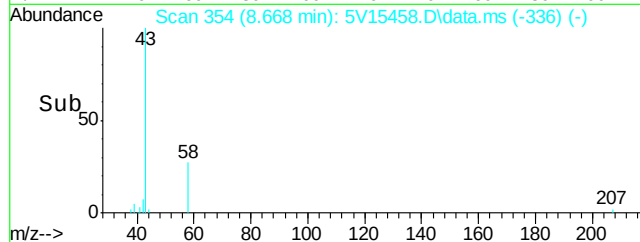
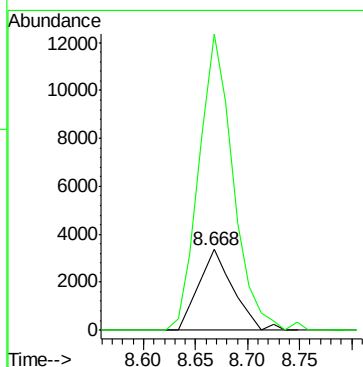
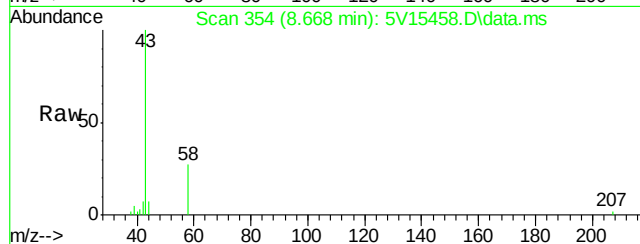
#15
Methylene Chloride
Concen: 0.93 ug/l
RT: 9.421 min Scan# 420
Delta R.T. 0.000 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

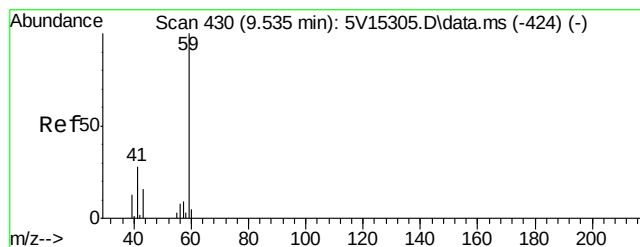
Tgt Ion:	84	Resp:	1592
Ion Ratio	Lower	Upper	
84	100		
49	118.9	97.8	137.8
86	55.2	45.0	85.0



#16
Acetone
Concen: 107.79 ug/l
RT: 8.668 min Scan# 354
Delta R.T. 0.001 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

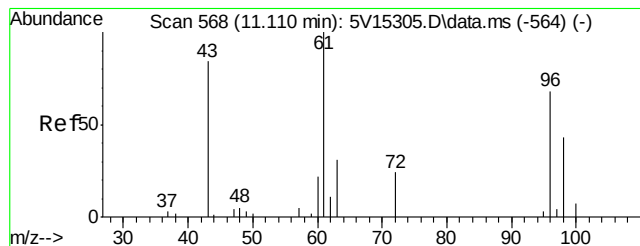
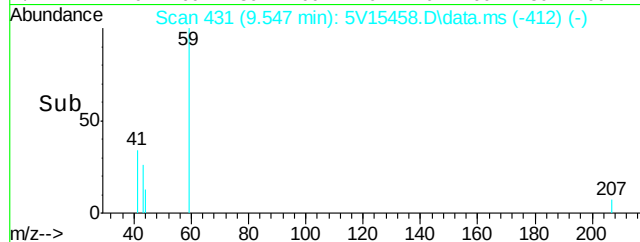
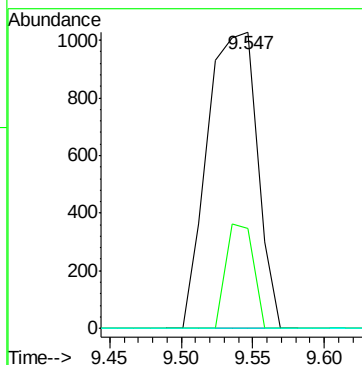
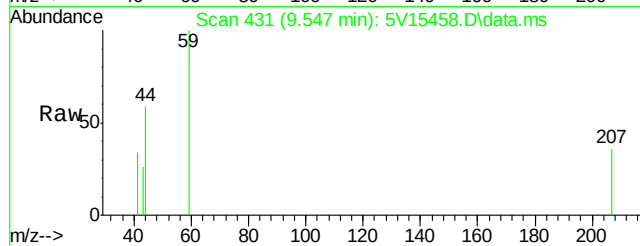
Tgt Ion:	58	Resp:	7734
Ion Ratio	Lower	Upper	
58	100		
43	366.9	344.6	384.6





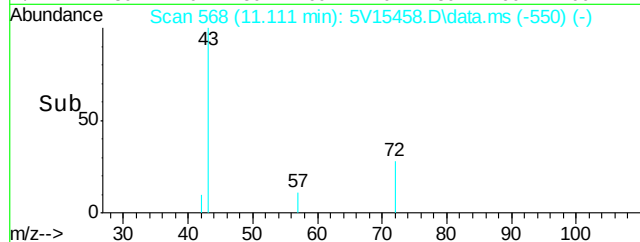
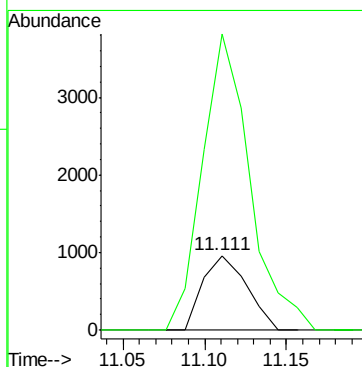
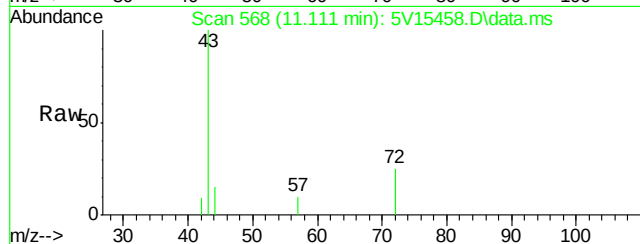
#18
Tert-Butyl Alcohol
Concen: 31.23 ug/l
RT: 9.547 min Scan# 431
Delta R.T. 0.013 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

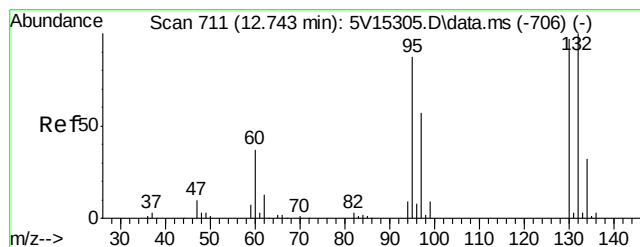
Tgt Ion	Ratio	Lower	Upper
59	100		
41	19.5	27.5	41.3#
57	0.0	9.0	13.6#



#32
2-Butanone
Concen: 18.62 ug/l
RT: 11.111 min Scan# 568
Delta R.T. 0.001 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

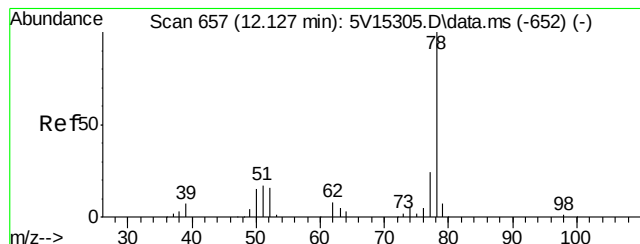
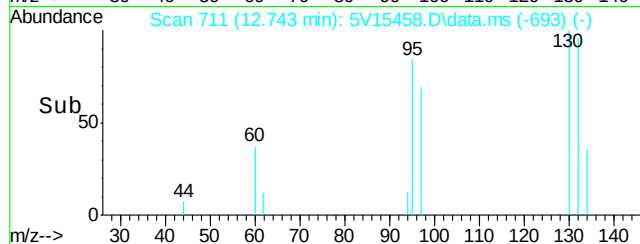
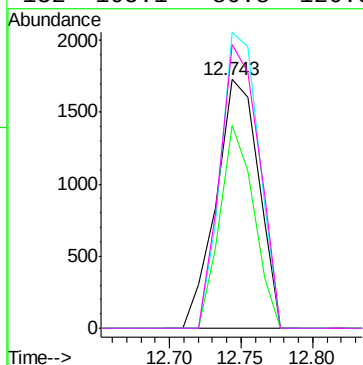
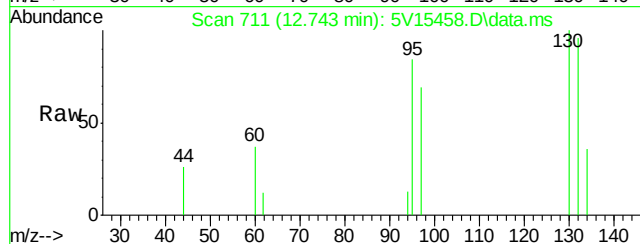
Tgt Ion	Ratio	Lower	Upper
72	100		
43	427.5	263.3	394.9#





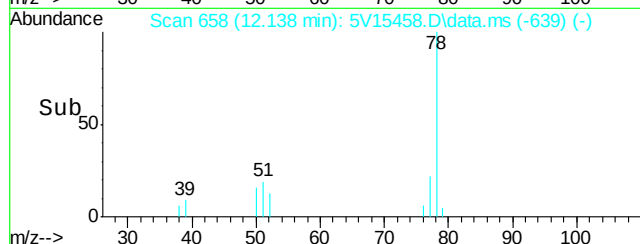
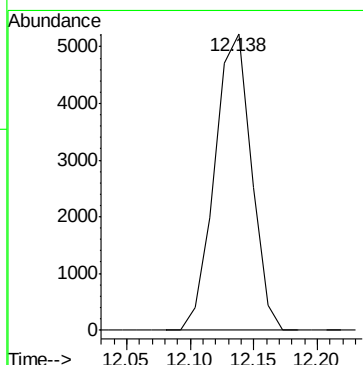
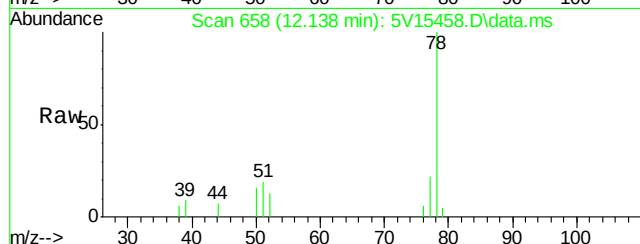
#43
Trichloroethene
Concen: 0.78 ug/l
RT: 12.743 min Scan# 711
Delta R.T. 0.000 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

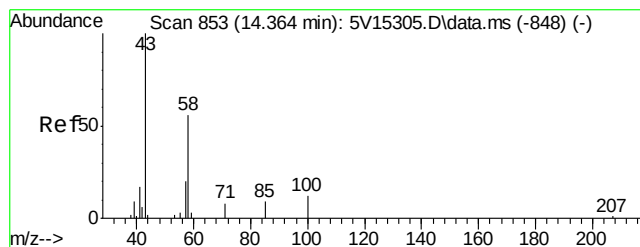
Tgt Ion:	95	Resp:	3563
Ion Ratio	Lower	Upper	
95	100		
97	65.5	45.2	85.2
130	107.6	89.7	129.7
132	105.1	86.8	126.8



#45
Benzene
Concen: 1.36 ug/l
RT: 12.138 min Scan# 658
Delta R.T. 0.012 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

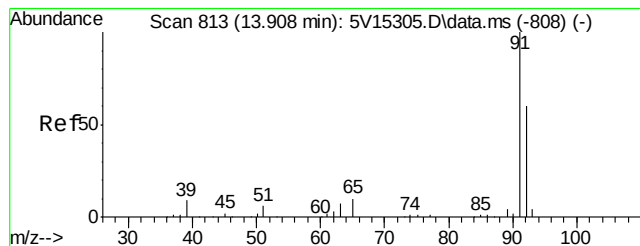
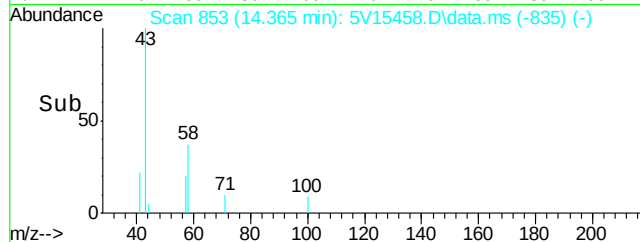
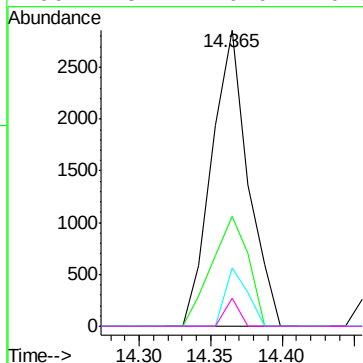
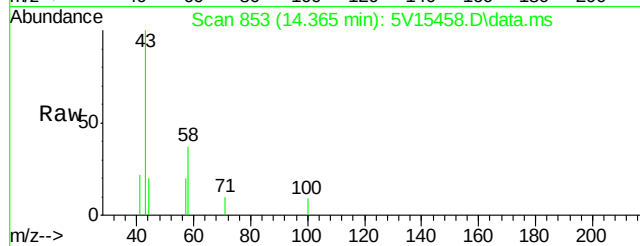
Tgt Ion: 78 Resp: 10463





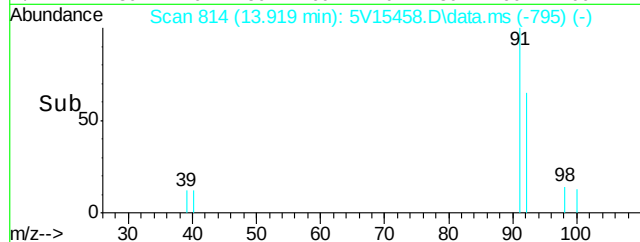
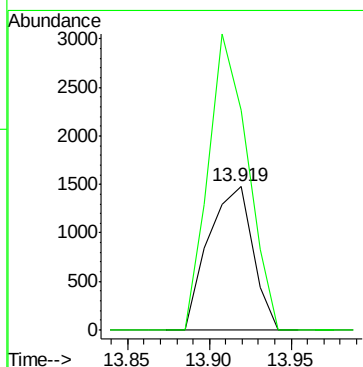
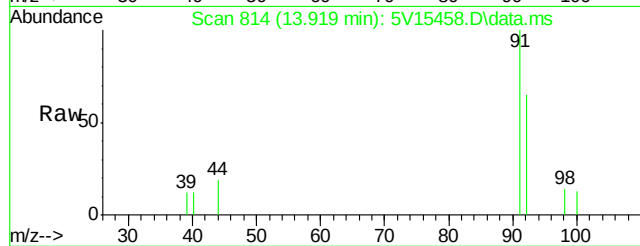
#50
2-Hexanone
Concen: 10.96 ug/l
RT: 14.365 min Scan# 853
Delta R.T. 0.000 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

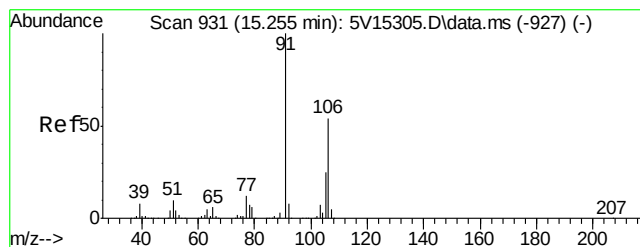
Tgt Ion:	43	Resp:	5028
Ion Ratio	Lower	Upper	
43	100		
58	37.3	32.6	72.6
57	12.1	0.0	37.5
100	3.7	0.0	29.5



#56
Toluene
Concen: 0.53 ug/l
RT: 13.919 min Scan# 814
Delta R.T. 0.012 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

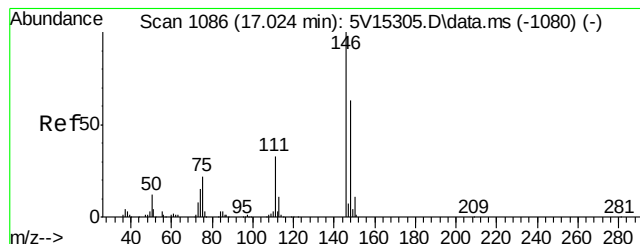
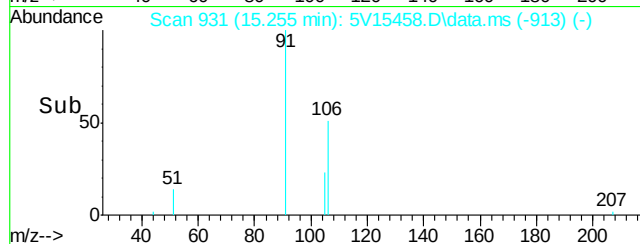
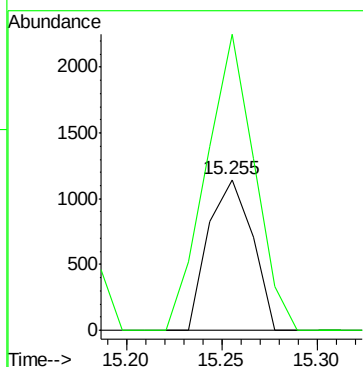
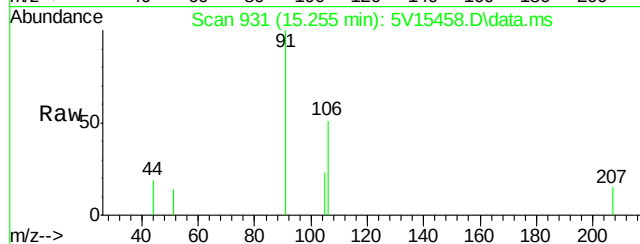
Tgt Ion:	92	Resp:	2780
Ion Ratio	Lower	Upper	
92	100		
91	183.3	146.2	186.2





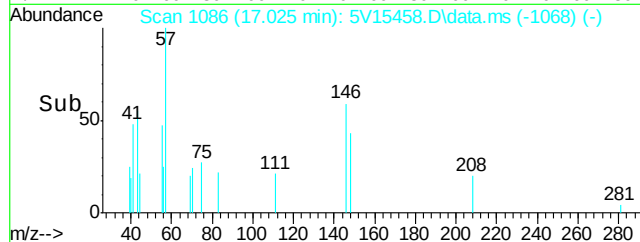
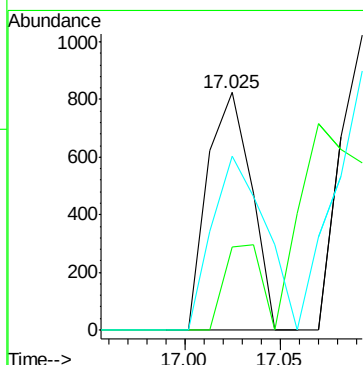
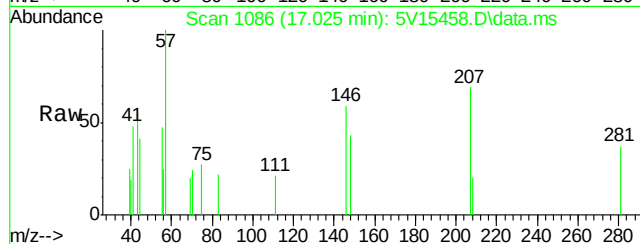
#61
m,p-xylene
Concen: 0.44 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

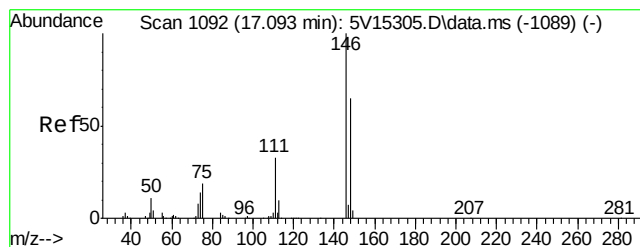
Tgt Ion	Ratio	Lower	Upper
106	100		
91	216.1	174.3	214.3#



#67
1,3-Dichlorobenzene
Concen: 0.31 ug/l
RT: 17.025 min Scan# 1086
Delta R.T. 0.000 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

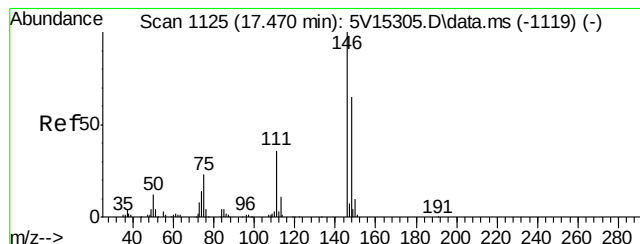
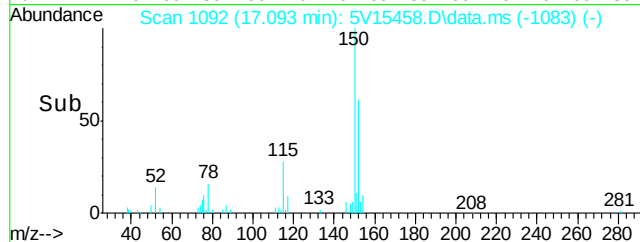
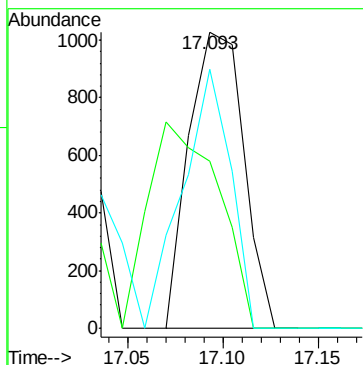
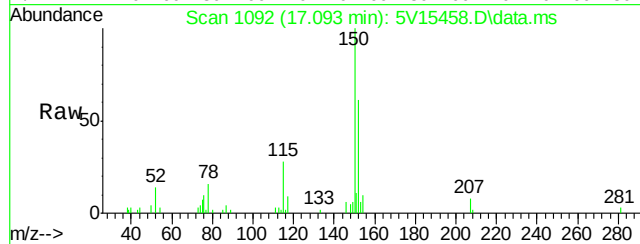
Tgt Ion	Ratio	Lower	Upper
146	100		
111	121.5	27.8	41.6#
148	89.0	50.4	75.6#





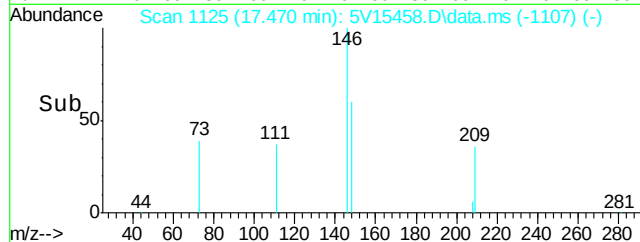
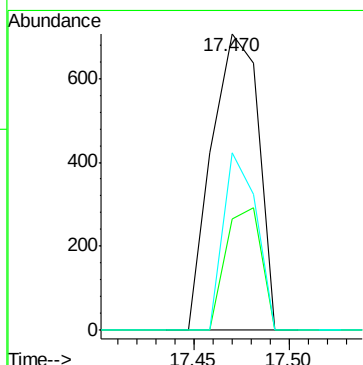
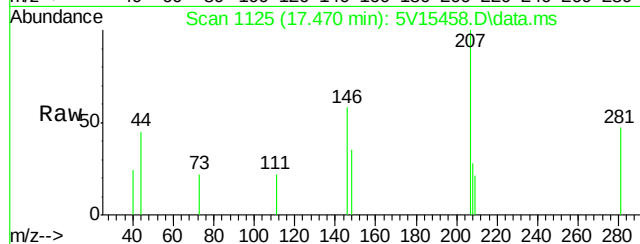
#68
1,4-Dichlorobenzene
Concen: 0.49 ug/l
RT: 17.093 min Scan# 1092
Delta R.T. 0.000 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

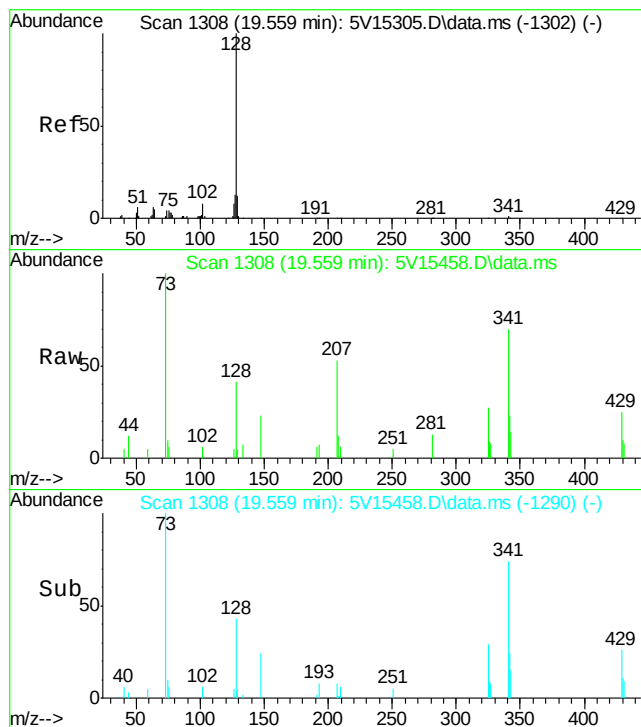
Tgt Ion	Ratio	Lower	Upper
146	100		
111	108.7	26.3	39.5#
148	76.7	50.7	76.1#



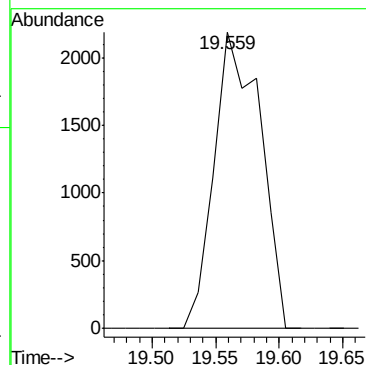
#69
1,2-Dichlorobenzene
Concen: 0.35 ug/l
RT: 17.470 min Scan# 1125
Delta R.T. 0.000 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm

Tgt Ion	Ratio	Lower	Upper
146	100		
111	31.6	28.8	43.2
148	42.2	50.9	76.3#





#72
Naphthalene
Concen: 1.63 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.001 min
Lab File: 5V15458.D
Acq: 20 May 2011 12:57 pm
Tgt Ion:128 Resp: 5512



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15458.D
Acq On : 20 May 2011 12:57 pm
Operator : DONC
Sample : D23440-2
Misc : MS2192,V5V906,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: rteint.p

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Title : 8260

Signal : TIC: 5V15458.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.562	79	82	86	rBV	18586	42479	5.37%	1.021%
2	5.642	86	89	94	rVB2	4665	11607	1.47%	0.279%
3	5.950	113	116	122	rBV	4024	9872	1.25%	0.237%
4	7.891	279	286	295	rBV	119895	315421	39.87%	7.578%
5	8.668	351	354	360	rVB	18521	41214	5.21%	0.990%
6	8.827	365	368	371	rVV	7335	15942	2.02%	0.383%
7	10.460	507	511	515	rVB	10314	22616	2.86%	0.543%
8	11.111	566	568	574	rVB	5628	11195	1.42%	0.269%
9	11.647	611	615	619	rBV	229940	415426	52.51%	9.981%
10	12.036	645	649	654	rBV	94469	183038	23.14%	4.398%
11	12.127	654	657	661	rVB	10506	21254	2.69%	0.511%
12	12.447	681	685	689	rBV	251311	442357	55.92%	10.628%
13	12.743	708	711	714	rBV	9393	17965	2.27%	0.432%
14	13.851	804	808	812	rBV	461420	791123	100.00%	19.007%
15	13.908	812	813	816	rVB	6507	9123	1.15%	0.219%
16	14.056	822	826	831	rBV	5888	11002	1.39%	0.264%
17	14.365	849	853	857	rVB	5911	10426	1.32%	0.250%
18	15.095	914	917	922	rBV	293486	512196	64.74%	12.306%
19	15.255	927	931	935	rVB2	4461	8349	1.06%	0.201%
20	15.575	955	959	960	rBV	5634	10822	1.37%	0.260%
21	15.894	983	987	990	rBV	7640	13803	1.74%	0.332%
22	16.043	996	1000	1004	rBV	316491	532111	67.26%	12.784%
23	16.739	1059	1061	1066	rVB3	3848	8664	1.10%	0.208%
24	17.070	1081	1090	1095	rBV	304834	581066	73.45%	13.960%
25	17.516	1122	1129	1132	rBV	20489	49737	6.29%	1.195%
26	19.548	1300	1307	1312	rBV2	27775	73469	9.29%	1.765%

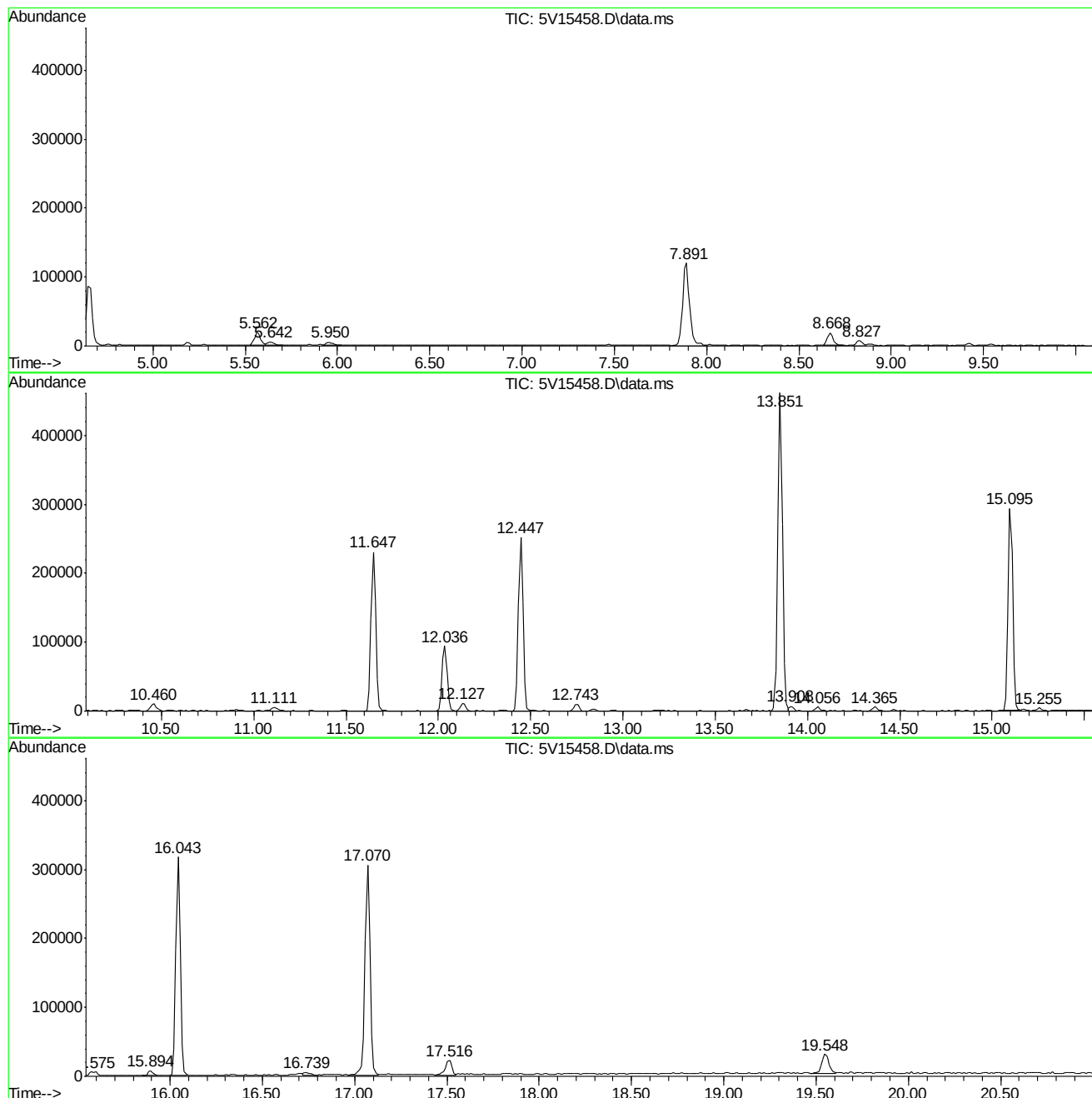
Sum of corrected areas: 4162277

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V5052011.S\
 Data File : 5V15458.D
 Acq On : 20 May 2011 12:57 pm
 Operator : DONC
 Sample : D23440-2
 Misc : MS2192,V5V906,,,,,1
 ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V5052011.S\
 Data File : 5V15458.D
 Acq On : 20 May 2011 12:57 pm
 Operator : DONC
 Sample : D23440-2
 Misc : MS2192,V5V906,,,,,1
 ALS Vial : 8 Sample Multiplier: 1

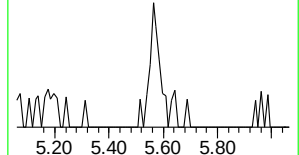
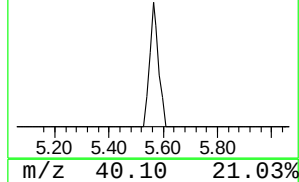
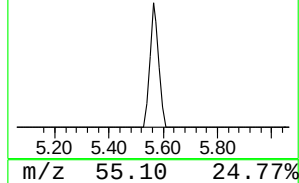
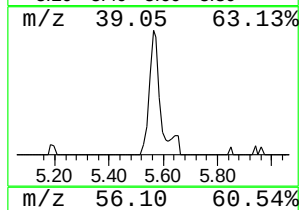
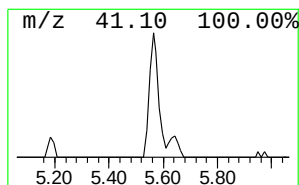
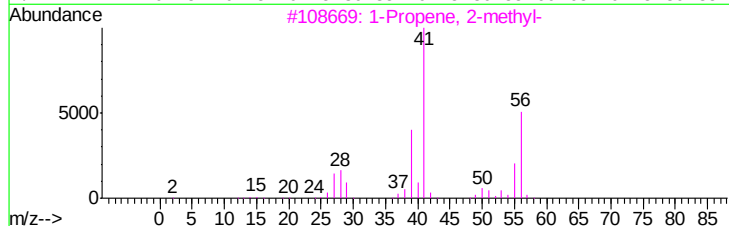
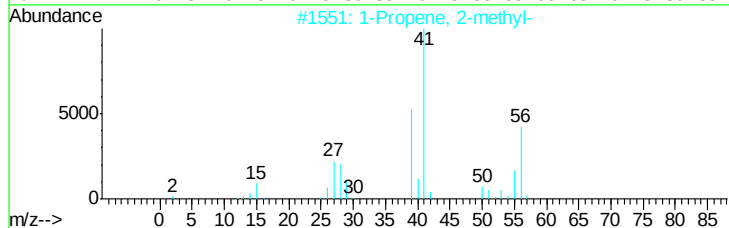
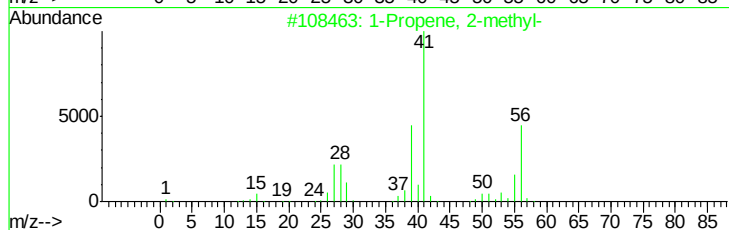
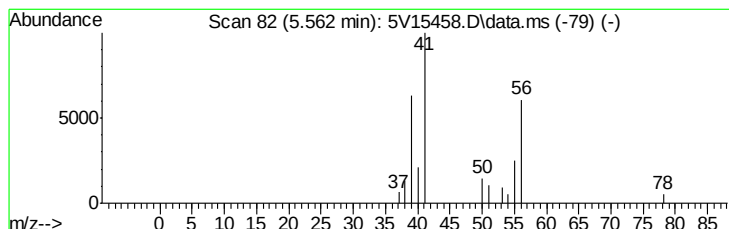
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 1-Propene, 2-methyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.562	5.11 ug/l	42479	Pentafluorobenzene	11.647

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propene, 2-methyl-	56	C4H8	000115-11-7	64
2	1-Propene, 2-methyl-	56	C4H8	000115-11-7	43
3	1-Propene, 2-methyl-	56	C4H8	000115-11-7	50
4	2-Butene	56	C4H8	000107-01-7	42
5	2-Butene, (Z)-	56	C4H8	000590-18-1	9



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15458.D
Acq On : 20 May 2011 12:57 pm
Operator : DONC
Sample : D23440-2
Misc : MS2192,V5V906,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
1-Propene, 2-me...	5.562	5.1	ug/l	42479	1	11.647	415426	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15507.D
 Acq On : 23 May 2011 1:56 pm
 Operator : DONC
 Sample : D23440-2
 Misc : MS2192,V5V910,,,,,1
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 24 12:18:06 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260
 QLast Update : Tue May 17 07:57:07 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	149413	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.446	114	182808	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	165502	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	97034	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.035	102	13492	47.79	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	95.58%	
55) Toluene-d8	13.850	98	273938	40.85	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	81.70%	
59) 4-Bromofluorobenzene	16.042	95	96753	44.46	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	88.92%	

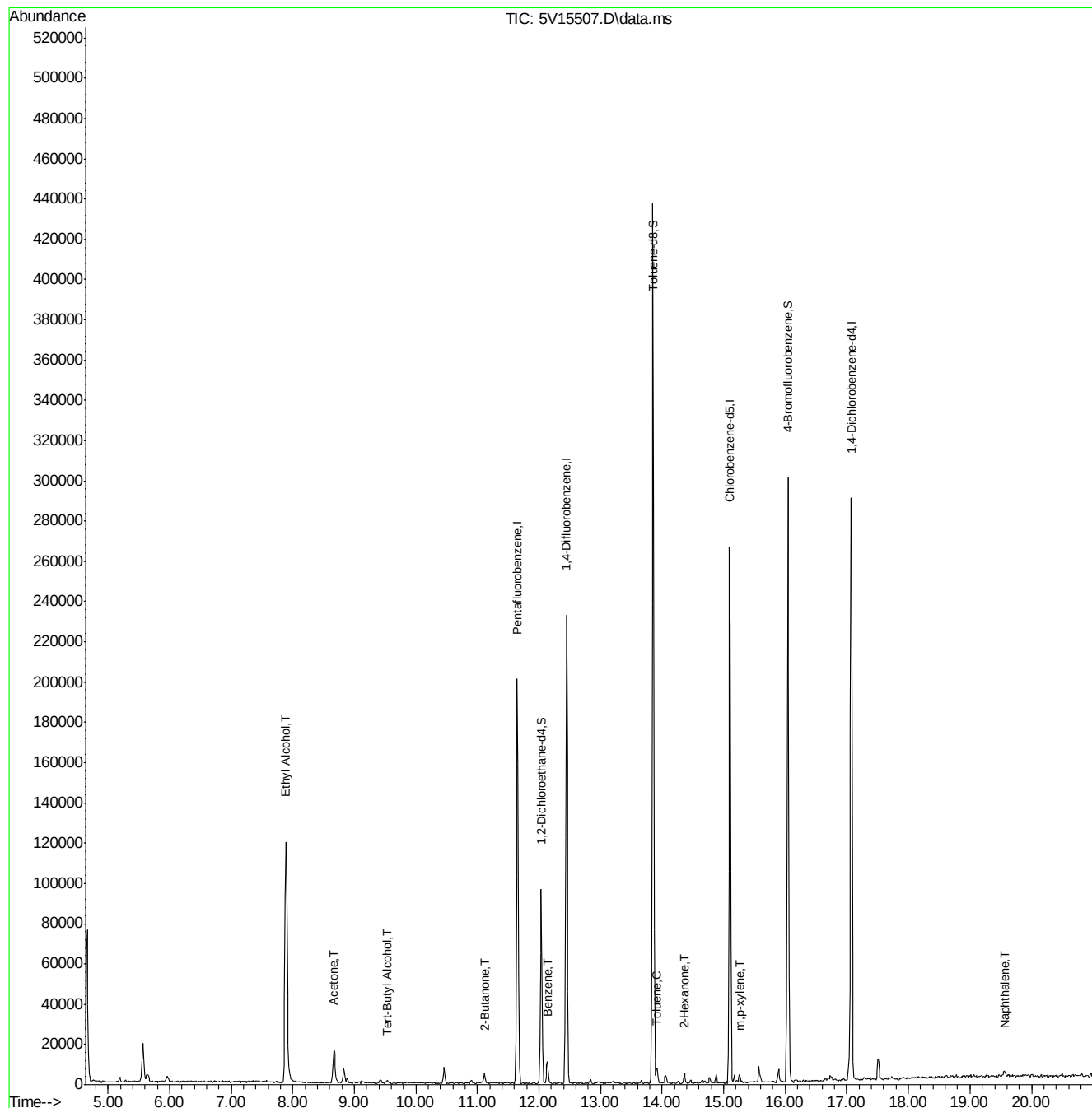
Target Compounds						Qvalue
9) Ethyl Alcohol	7.891	45	161805	18404.68	ug/l	100
16) Acetone	8.667	58	7137	110.49	ug/l	97
18) Tert-Butyl Alcohol	9.535	59	2845	39.68	ug/l #	56
32) 2-Butanone	11.122	72	1684	18.82	ug/l #	53
45) Benzene	12.138	78	10592	1.50	ug/l	100
50) 2-Hexanone	14.364	43	4401	10.41	ug/l	83
56) Toluene	13.908	92	3041	0.63	ug/l	99
61) m,p-xylene	15.255	106	1704	0.44	ug/l	99
72) Naphthalene	19.570	128	2504	0.77	ug/l	100

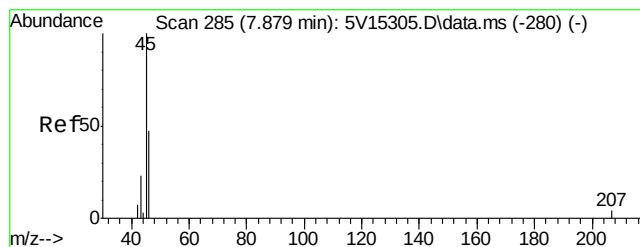
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15507.D
Acq On : 23 May 2011 1:56 pm
Operator : DONC
Sample : D23440-2
Misc : MS2192,V5V910,,,,,1
ALS Vial : 10 Sample Multiplier: 1

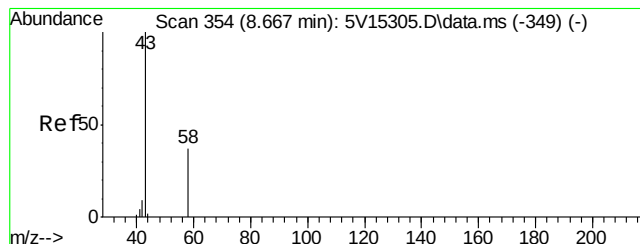
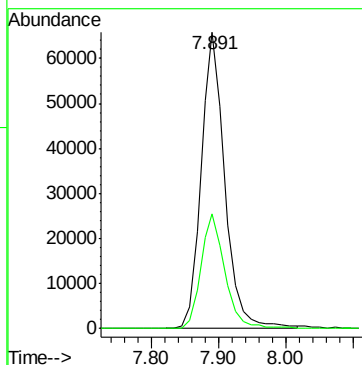
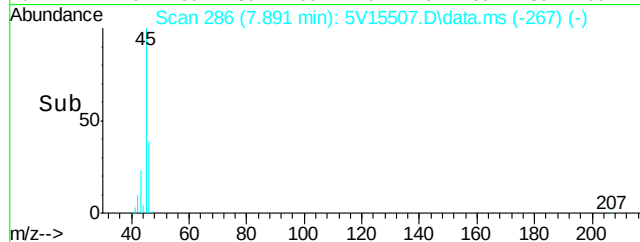
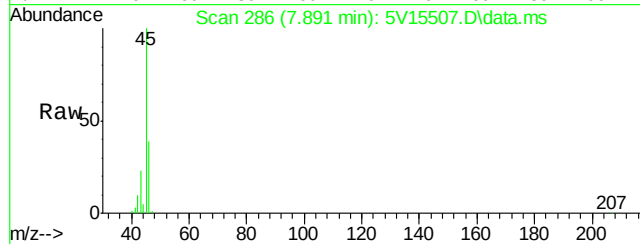
Quant Time: May 24 12:18:06 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





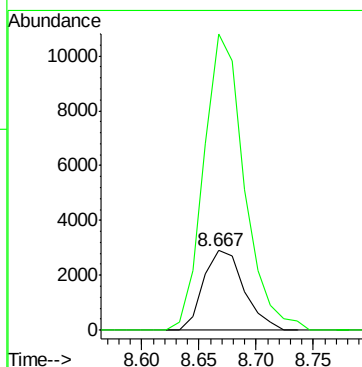
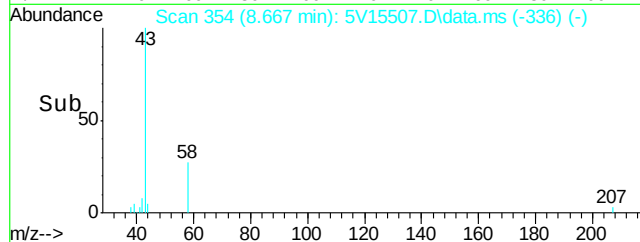
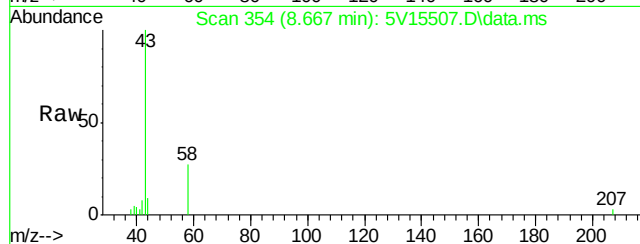
#9
Ethyl Alcohol
Concen: 18404.68 ug/l
RT: 7.891 min Scan# 286
Delta R.T. 0.012 min
Lab File: 5V15507.D
Acq: 23 May 2011 1:56 pm

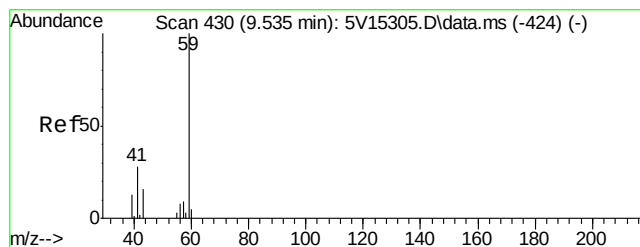
Tgt Ion:	45	Resp:	161805
Ion Ratio	Lower	Upper	
45	100		
46	38.9	31.2	46.8



#16
Acetone
Concen: 110.49 ug/l
RT: 8.667 min Scan# 354
Delta R.T. 0.000 min
Lab File: 5V15507.D
Acq: 23 May 2011 1:56 pm

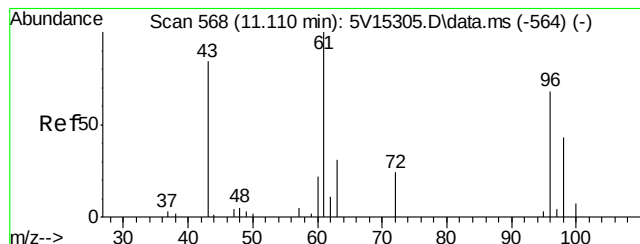
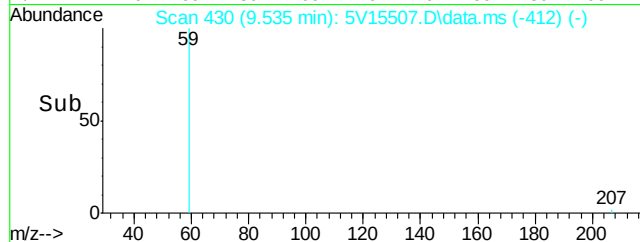
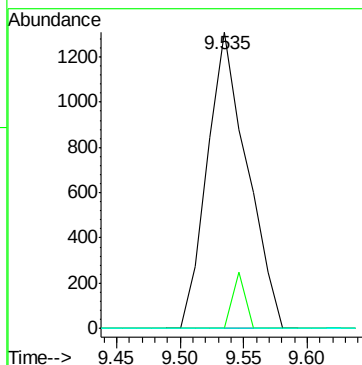
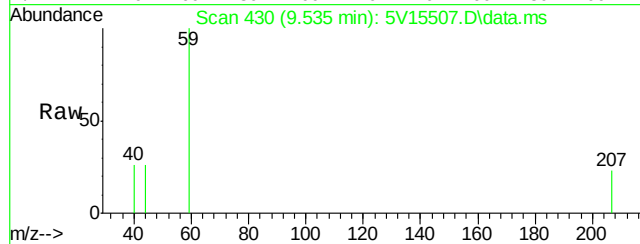
Tgt Ion:	58	Resp:	7137
Ion Ratio	Lower	Upper	
58	100		
43	372.0	344.6	384.6





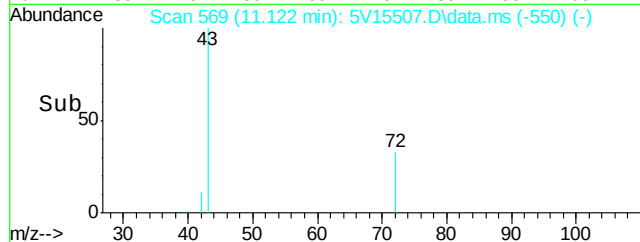
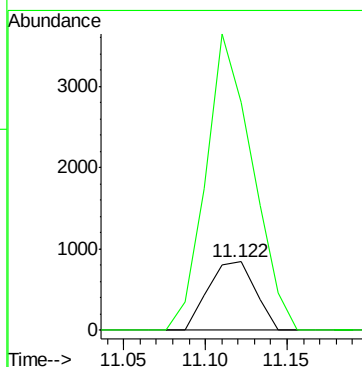
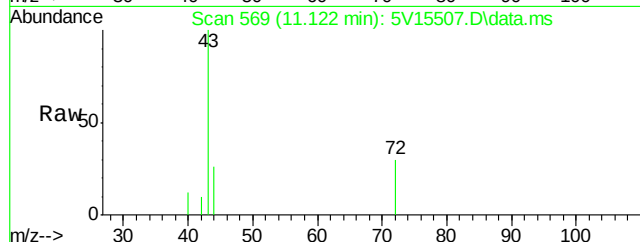
#18
Tert-Butyl Alcohol
Concen: 39.68 ug/l
RT: 9.535 min Scan# 430
Delta R.T. 0.001 min
Lab File: 5V15507.D
Acq: 23 May 2011 1:56 pm

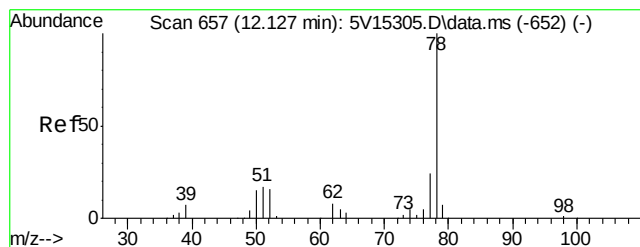
Tgt Ion	Ratio	Lower	Upper
59	100		
41	6.0	27.5	41.3#
57	0.0	9.0	13.6#



#32
2-Butanone
Concen: 18.82 ug/l
RT: 11.122 min Scan# 569
Delta R.T. 0.012 min
Lab File: 5V15507.D
Acq: 23 May 2011 1:56 pm

Tgt Ion	Ratio	Lower	Upper
72	100		
43	427.6	263.3	394.9#





#45

Benzene

Concen: 1.50 ug/l

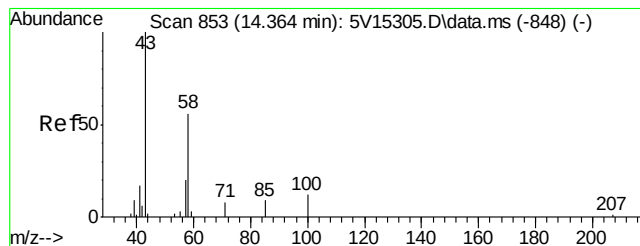
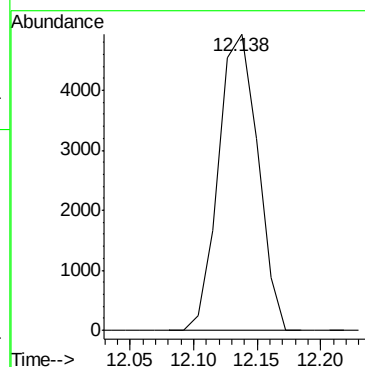
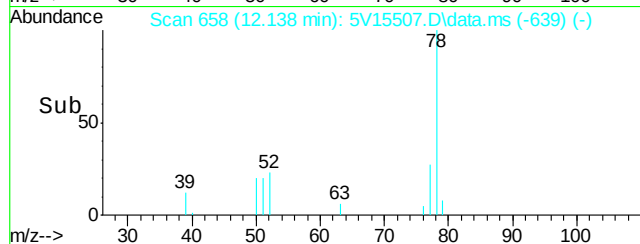
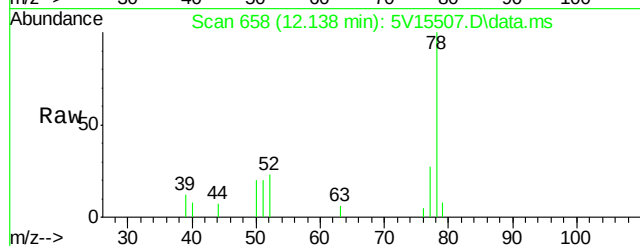
RT: 12.138 min Scan# 658

Delta R.T. 0.011 min

Lab File: 5V15507.D

Acq: 23 May 2011 1:56 pm

Tgt Ion: 78 Resp: 10592



#50

2-Hexanone

Concen: 10.41 ug/l

RT: 14.364 min Scan# 853

Delta R.T. -0.000 min

Lab File: 5V15507.D

Acq: 23 May 2011 1:56 pm

Tgt Ion: 43 Resp: 4401

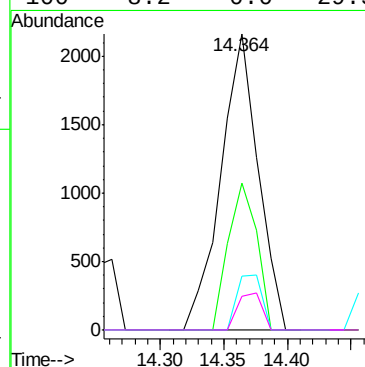
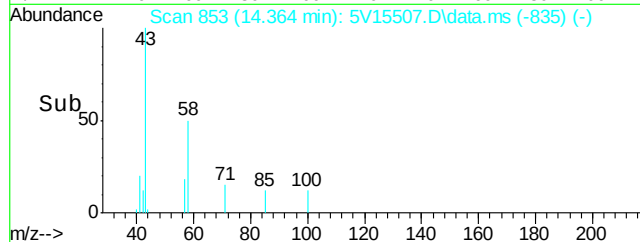
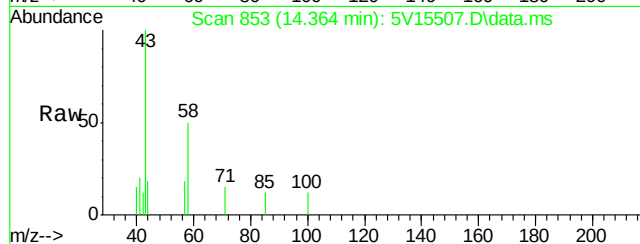
Ion Ratio Lower Upper

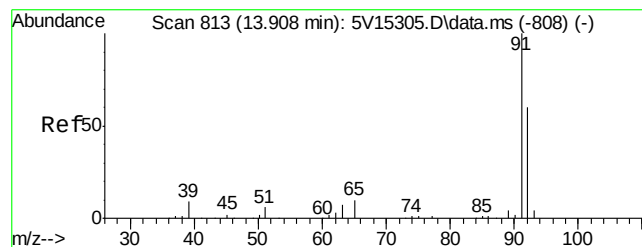
43 100

58 37.8 32.6 72.6

57 12.5 0.0 37.5

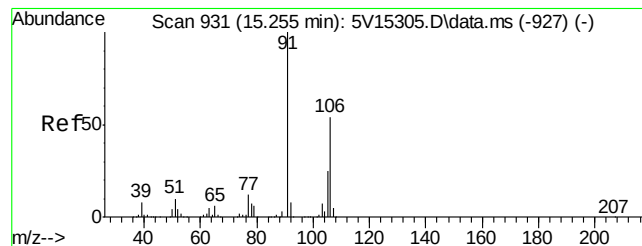
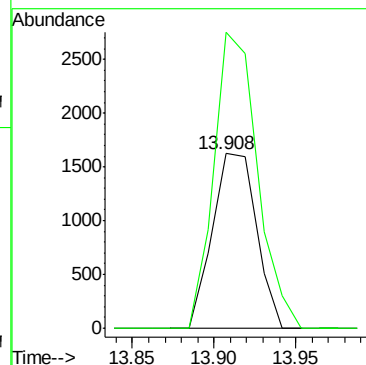
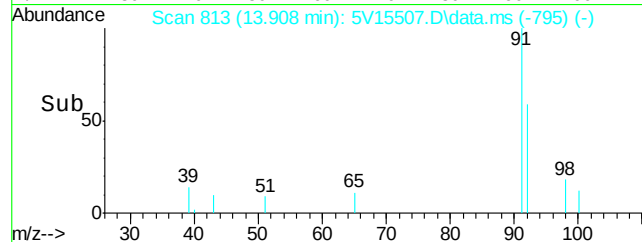
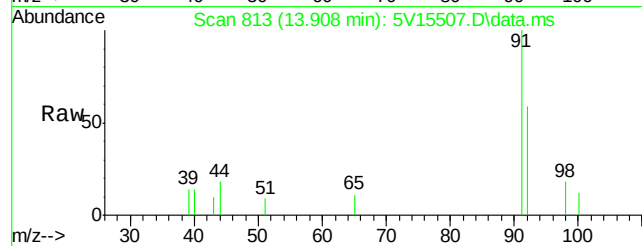
100 8.2 0.0 29.5





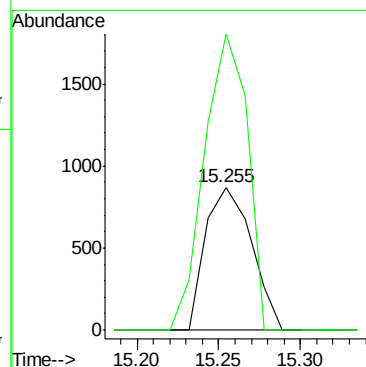
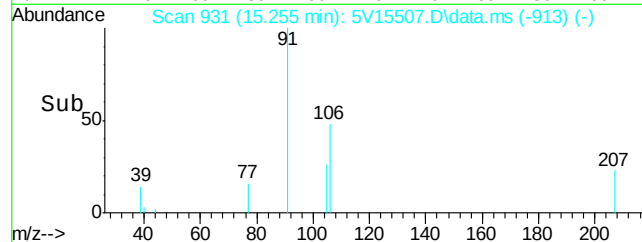
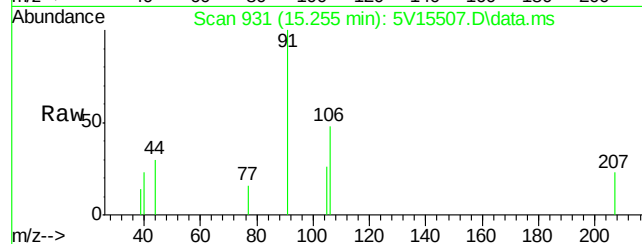
#56
Toluene
Concen: 0.63 ug/l
RT: 13.908 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V15507.D
Acq: 23 May 2011 1:56 pm

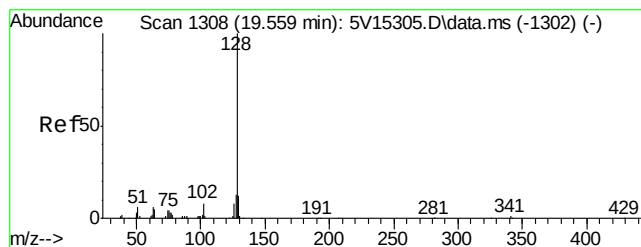
Tgt Ion: 92 Resp: 3041
Ion Ratio Lower Upper
92 100
91 167.3 146.2 186.2



#61
m,p-xylene
Concen: 0.44 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15507.D
Acq: 23 May 2011 1:56 pm

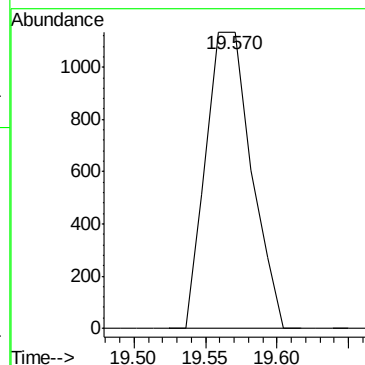
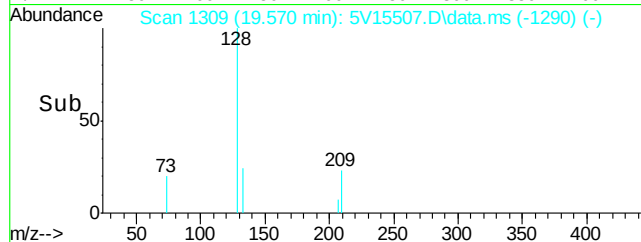
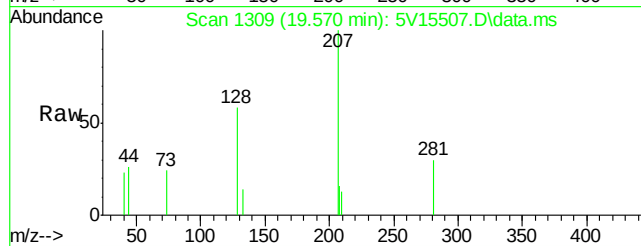
Tgt Ion: 106 Resp: 1704
Ion Ratio Lower Upper
106 100
91 193.4 174.3 214.3





#72
Naphthalene
Concen: 0.77 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.012 min
Lab File: 5V15507.D
Acq: 23 May 2011 1:56 pm

Tgt Ion:128 Resp: 2504



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15459.D
Acq On : 20 May 2011 1:30 pm
Operator : DONC
Sample : D23440-3
Misc : MS2192,V5V906,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 23 10:05:07 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	159751	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.447	114	197510	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	175087	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	104273	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.036	102	13019	43.13	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	86.26%	
55) Toluene-d8	13.851	98	277996	39.19	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	78.38%	
59) 4-Bromofluorobenzene	16.043	95	96381	41.86	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	83.72%	

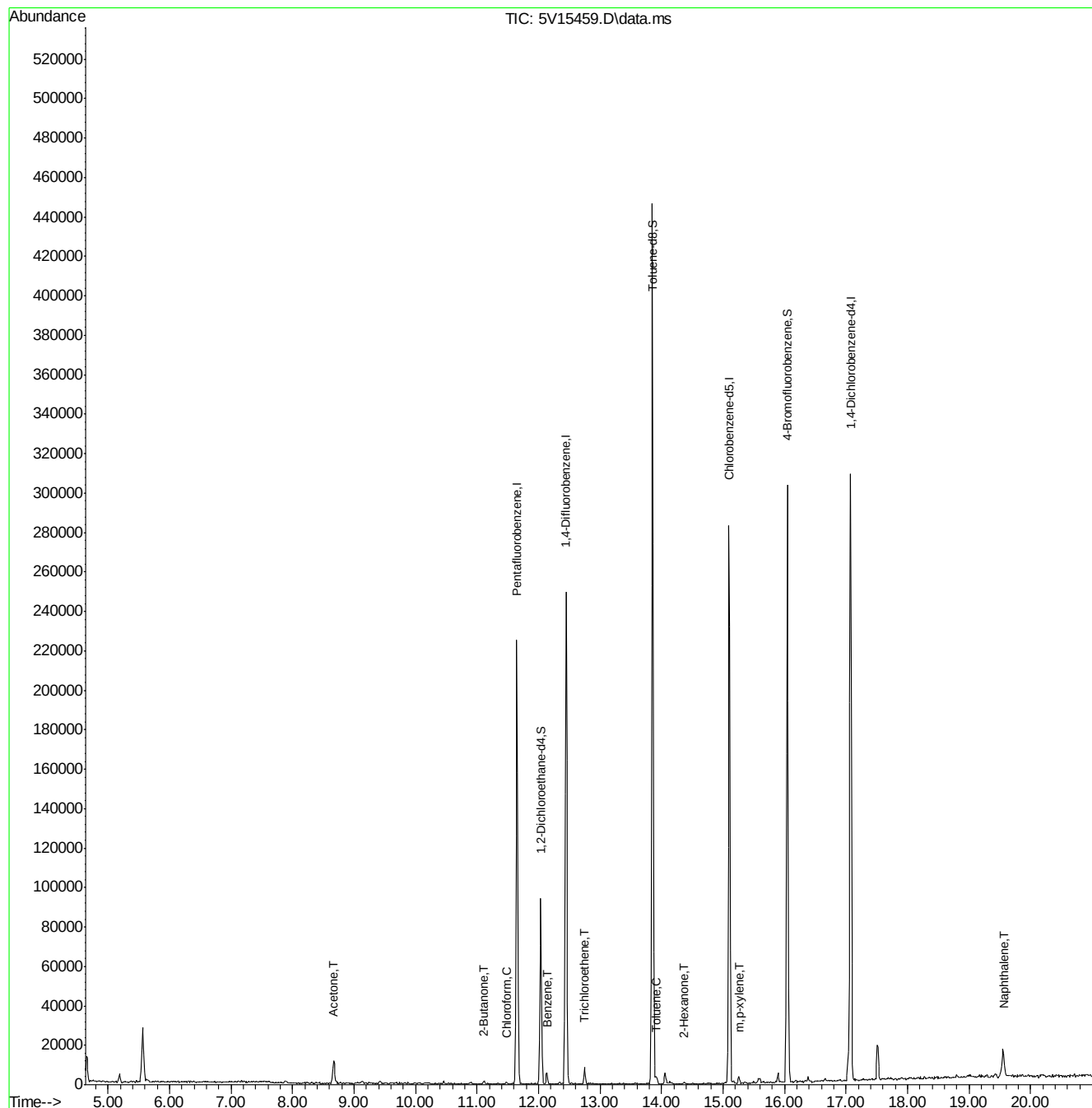
Target Compounds						Qvalue
16) Acetone	8.668	58	4852	70.25	ug/l	98
25) Chloroform	11.476	83	1154	0.38	ug/l	94
32) 2-Butanone	11.111	72	507	5.25	ug/l #	42
43) Trichloroethene	12.743	95	3354	0.70	ug/l	88
45) Benzene	12.138	78	6005	0.79	ug/l	100
50) 2-Hexanone	14.365	43	830	1.86	ug/l #	88
56) Toluene	13.908	92	1981	0.39	ug/l #	83
61) m,p-xylene	15.255	106	1432	0.35	ug/l	98
72) Naphthalene	19.559	128	2087	0.60	ug/l	100

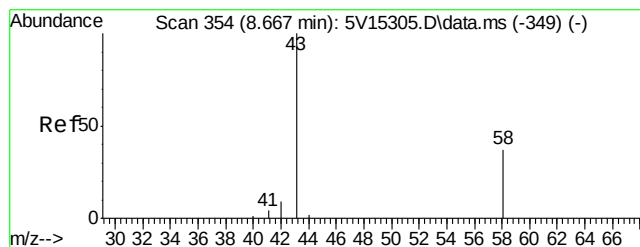
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15459.D
Acq On : 20 May 2011 1:30 pm
Operator : DONC
Sample : D23440-3
Misc : MS2192,V5V906,,,,,1
ALS Vial : 9 Sample Multiplier: 1

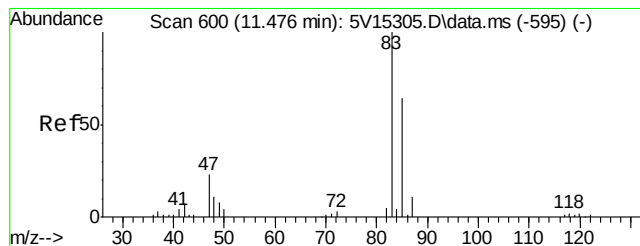
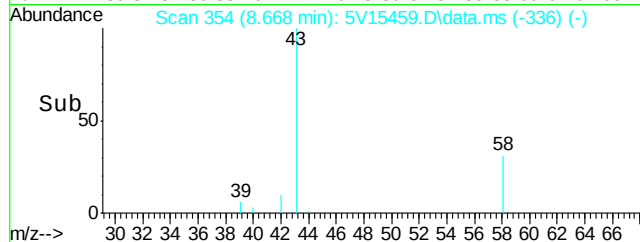
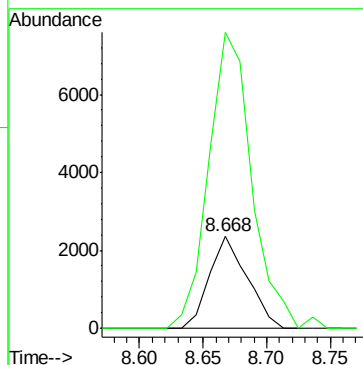
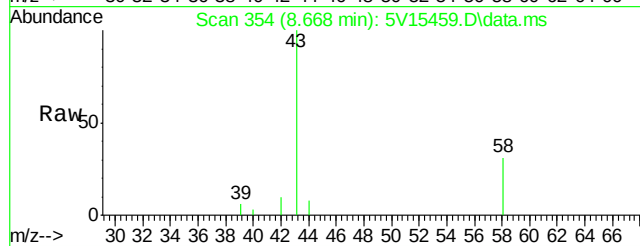
Quant Time: May 23 10:05:07 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





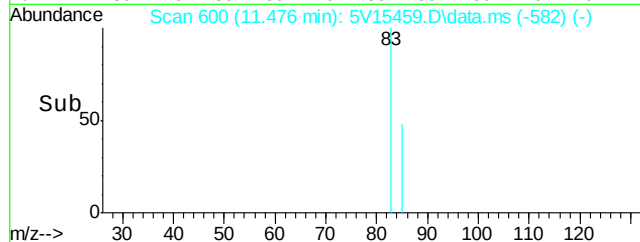
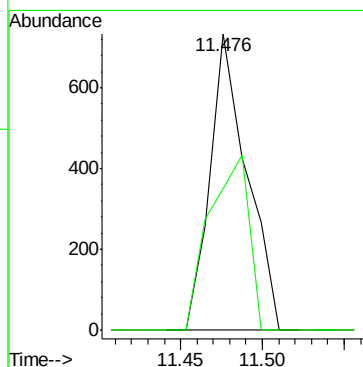
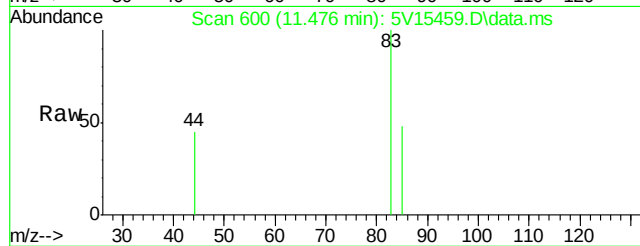
#16
Acetone
Concen: 70.25 ug/l
RT: 8.668 min Scan# 354
Delta R.T. 0.001 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm

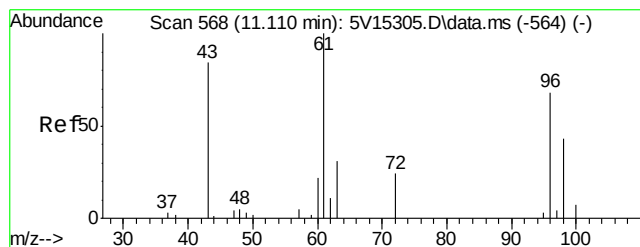
Tgt Ion	Ratio	Lower	Upper
58	100		
43	369.8	344.6	384.6



#25
Chloroform
Concen: 0.38 ug/l
RT: 11.476 min Scan# 600
Delta R.T. 0.000 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm

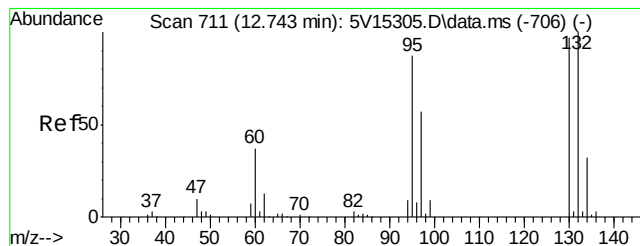
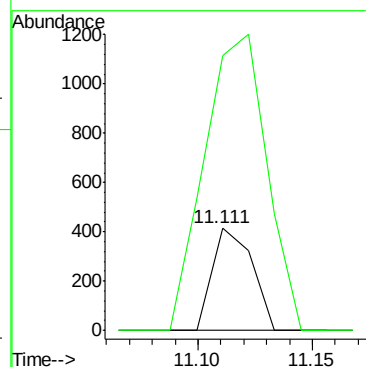
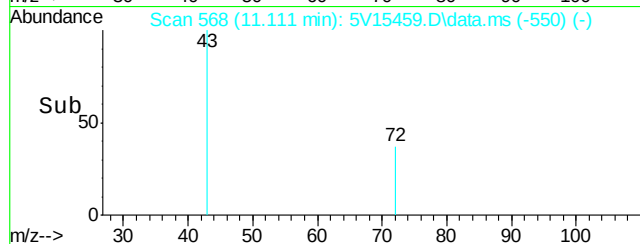
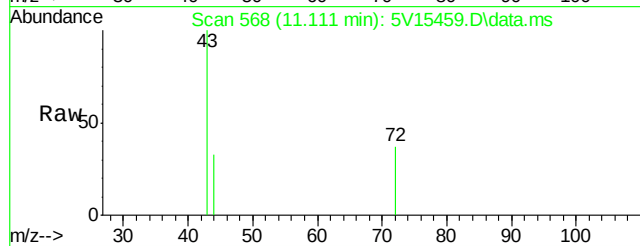
Tgt Ion	Ratio	Lower	Upper
83	100		
85	63.0	48.2	88.2





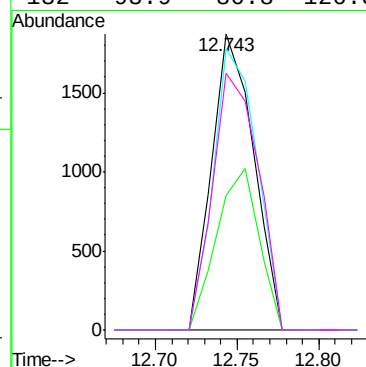
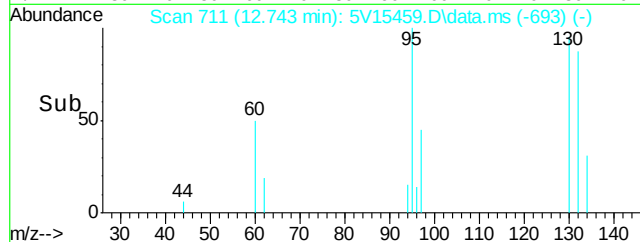
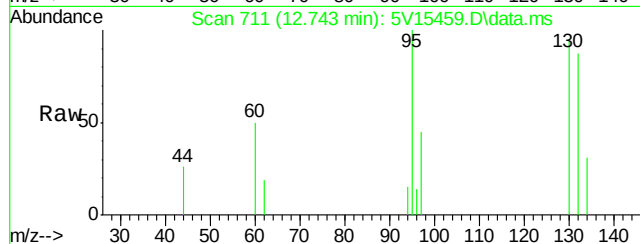
#32
2-Butanone
Concen: 5.25 ug/l
RT: 11.111 min Scan# 568
Delta R.T. 0.001 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm

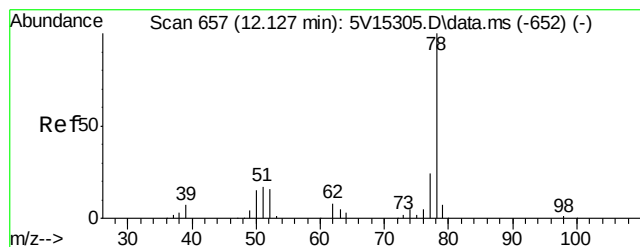
Tgt Ion: 72 Resp: 507
Ion Ratio Lower Upper
72 100
43 449.7 263.3 394.9#



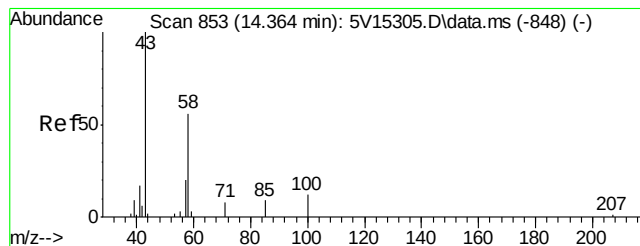
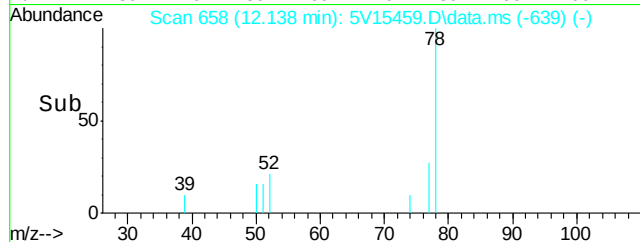
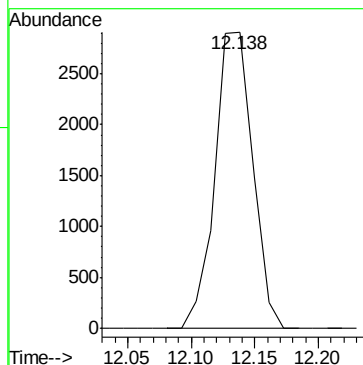
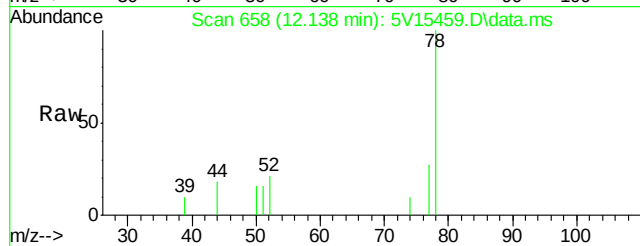
#43
Trichloroethene
Concen: 0.70 ug/l
RT: 12.743 min Scan# 711
Delta R.T. 0.000 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm

Tgt Ion: 95 Resp: 3354
Ion Ratio Lower Upper
95 100
97 54.8 45.2 85.2
130 98.3 89.7 129.7
132 93.9 86.8 126.8



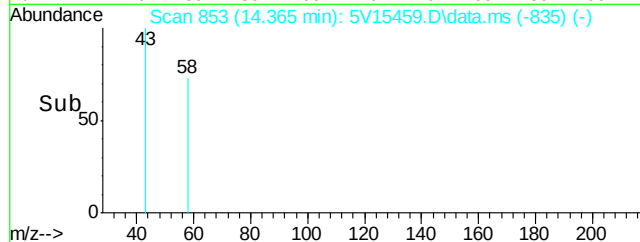
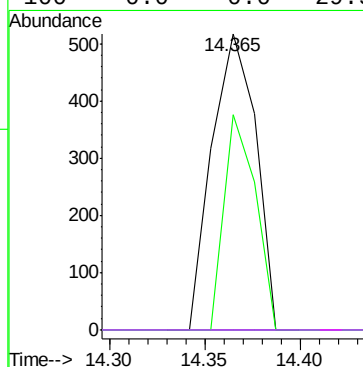
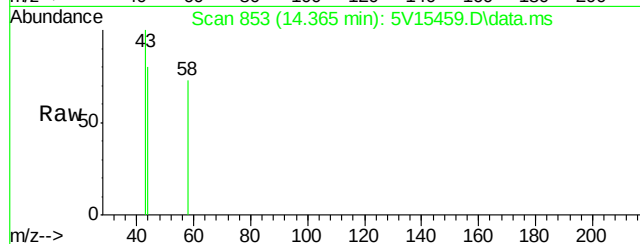


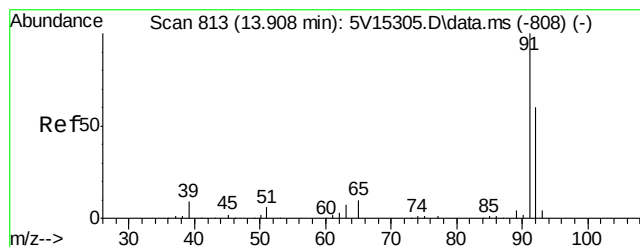
#45
Benzene
Concen: 0.79 ug/l
RT: 12.138 min Scan# 658
Delta R.T. 0.012 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm
Tgt Ion: 78 Resp: 6005



#50
2-Hexanone
Concen: 1.86 ug/l
RT: 14.365 min Scan# 853
Delta R.T. 0.000 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm

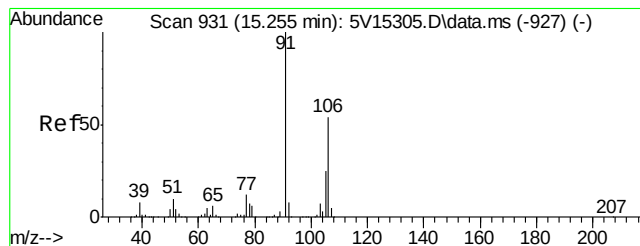
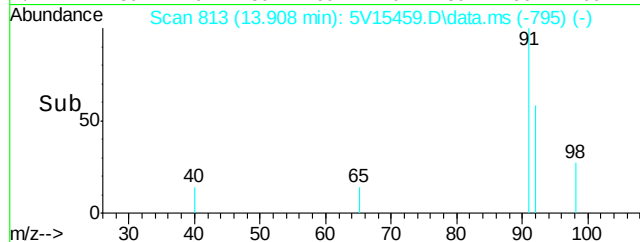
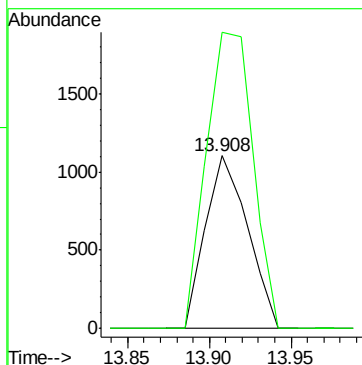
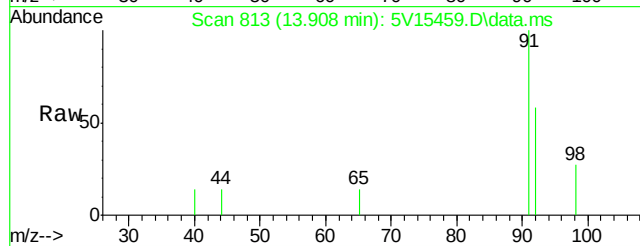
Tgt Ion: 43 Resp: 830
Ion Ratio Lower Upper
43 100
58 52.3 32.6 72.6
57 0.0 0.0 37.5
100 0.0 0.0 29.5





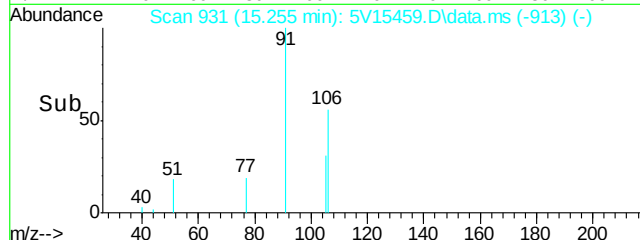
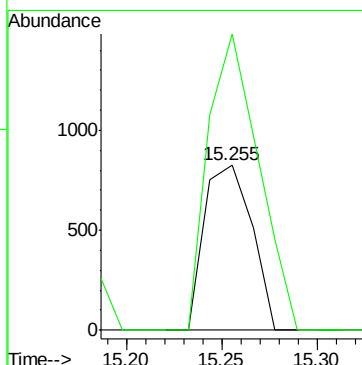
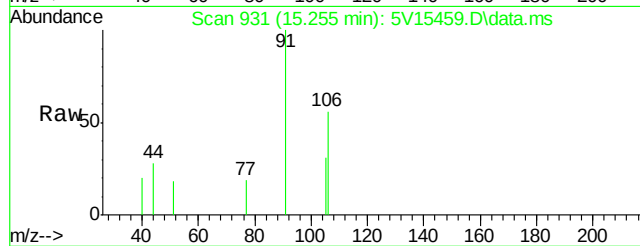
#56
Toluene
Concen: 0.39 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm

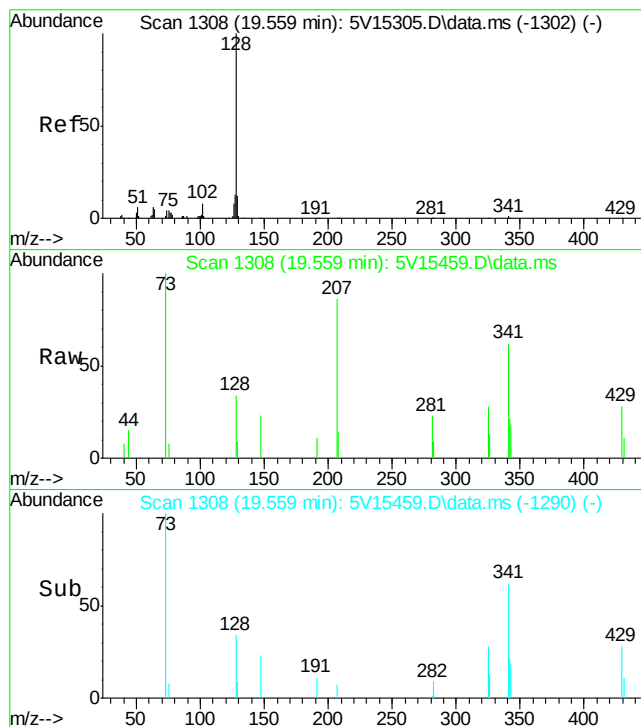
Tgt Ion	Ratio	Lower	Upper
92	100		
91	189.0	146.2	186.2#



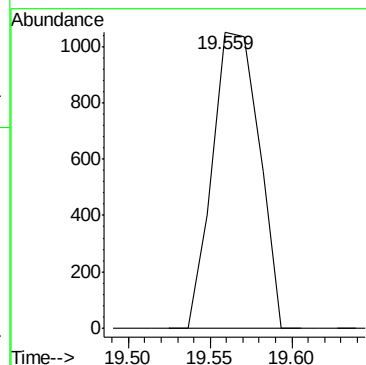
#61
m,p-xylene
Concen: 0.35 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15459.D
Acq: 20 May 2011 1:30 pm

Tgt Ion	Ratio	Lower	Upper
106	100		
91	190.9	174.3	214.3





#72
 Naphthalene
 Concen: 0.60 ug/l
 RT: 19.559 min Scan# 1308
 Delta R.T. 0.001 min
 Lab File: 5V15459.D
 Acq: 20 May 2011 1:30 pm
 Tgt Ion:128 Resp: 2087



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15459.D
Acq On : 20 May 2011 1:30 pm
Operator : DONC
Sample : D23440-3
Misc : MS2192,V5V906,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: rteint.p

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Title : 8260

Signal : TIC: 5V15459.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.185	46	49	53	rVB2	4861	9588	1.26%	0.267%
2	5.562	78	82	86	rBV	27487	63616	8.39%	1.772%
3	8.668	350	354	361	rVB	11575	28374	3.74%	0.790%
4	11.647	611	615	619	rBV	225148	404821	53.39%	11.276%
5	12.036	645	649	654	rVV	94045	176974	23.34%	4.929%
6	12.138	654	658	661	rVB	5888	10113	1.33%	0.282%
7	12.447	681	685	689	rBV	249353	438582	57.84%	12.216%
8	12.743	708	711	714	rBV	8613	14854	1.96%	0.414%
9	13.851	804	808	812	rBV	446563	758205	100.00%	21.118%
10	14.056	822	826	829	rBV	5591	9660	1.27%	0.269%
11	15.095	913	917	922	rBV	282612	496990	65.55%	13.843%
12	16.043	996	1000	1004	rBV	302732	515065	67.93%	14.346%
13	17.070	1084	1090	1095	rBV	307921	583697	76.98%	16.258%
14	17.504	1126	1128	1133	rVB	17461	35186	4.64%	0.980%
15	19.548	1300	1307	1313	rBV4	14720	44539	5.87%	1.241%

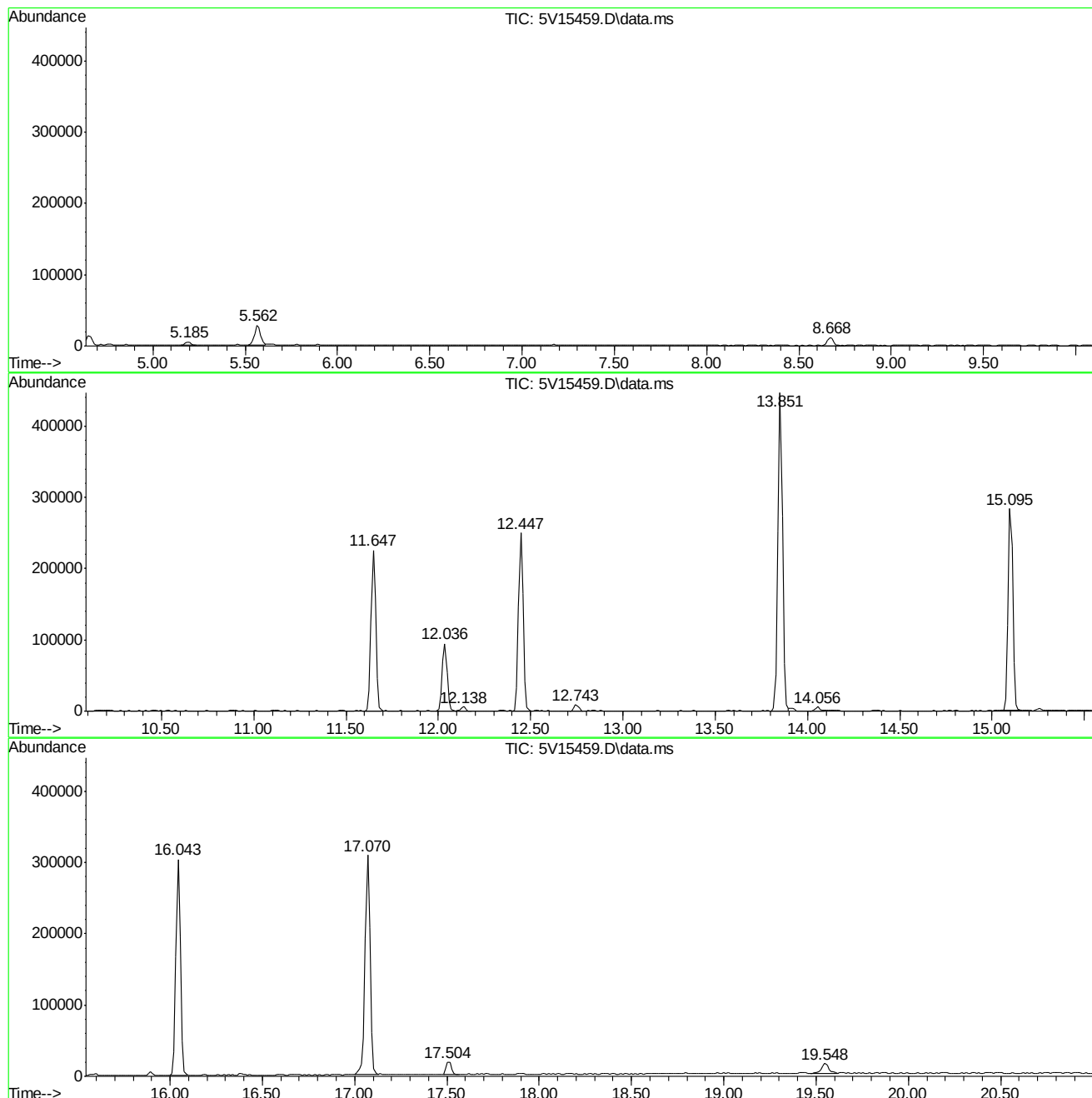
Sum of corrected areas: 3590264

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V5052011.S\
 Data File : 5V15459.D
 Acq On : 20 May 2011 1:30 pm
 Operator : DONC
 Sample : D23440-3
 Misc : MS2192,V5V906,,,,,1
 ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V5052011.S\
 Data File : 5V15459.D
 Acq On : 20 May 2011 1:30 pm
 Operator : DONC
 Sample : D23440-3
 Misc : MS2192,V5V906,,,,,1
 ALS Vial : 9 Sample Multiplier: 1

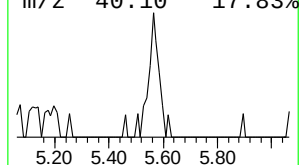
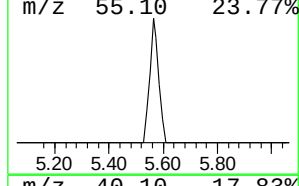
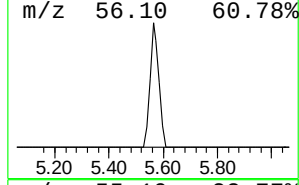
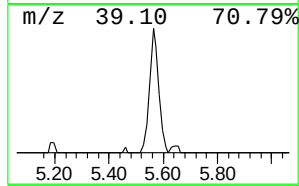
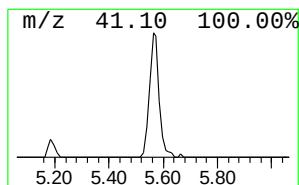
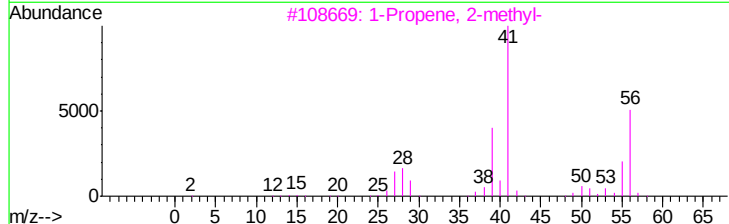
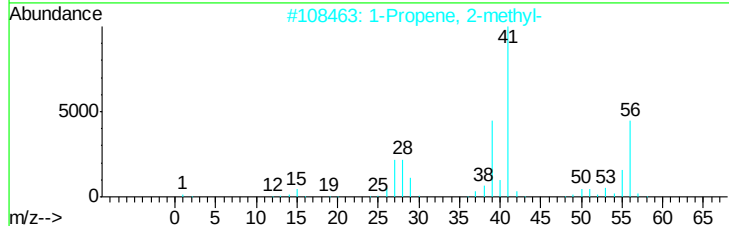
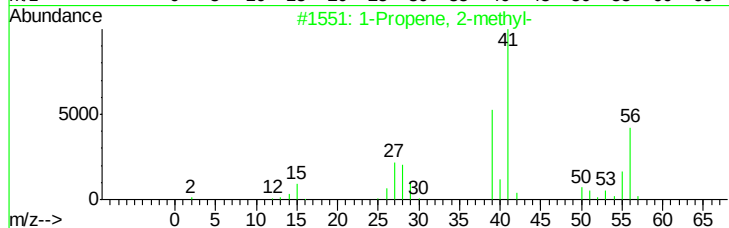
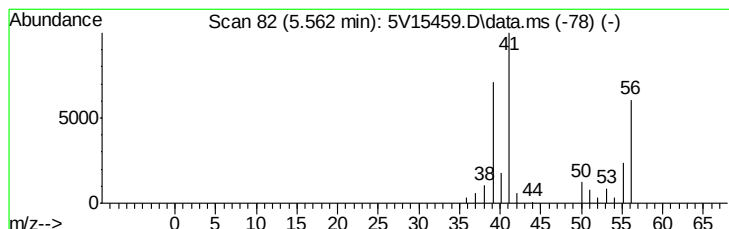
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 1-Propene, 2-methyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.562	7.86 ug/l	63616	Pentafluorobenzene	11.647

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Propene, 2-methyl-	56	C4H8	000115-11-7	72
2	1-Propene, 2-methyl-	56	C4H8	000115-11-7	59
3	1-Propene, 2-methyl-	56	C4H8	000115-11-7	86
4	2-Butene	56	C4H8	000107-01-7	9
5	1-Propene, 2-methyl-	56	C4H8	000115-11-7	43



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15459.D
Acq On : 20 May 2011 1:30 pm
Operator : DONC
Sample : D23440-3
Misc : MS2192,V5V906,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
1-Propene, 2-me...	5.562	7.9	ug/l	63616	1	11.647	404821	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15508.D
 Acq On : 23 May 2011 2:28 pm
 Operator : DONC
 Sample : D23440-3
 Misc : MS2192,V5V910,,,,,1
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 24 12:19:22 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260
 QLast Update : Tue May 17 07:57:07 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	150283	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.446	114	185784	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	168009	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	98776	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.035	102	12030	42.36	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	84.72%	
55) Toluene-d8	13.850	98	249343	36.63	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	73.26%	
59) 4-Bromofluorobenzene	16.042	95	87129	39.44	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	78.88%	

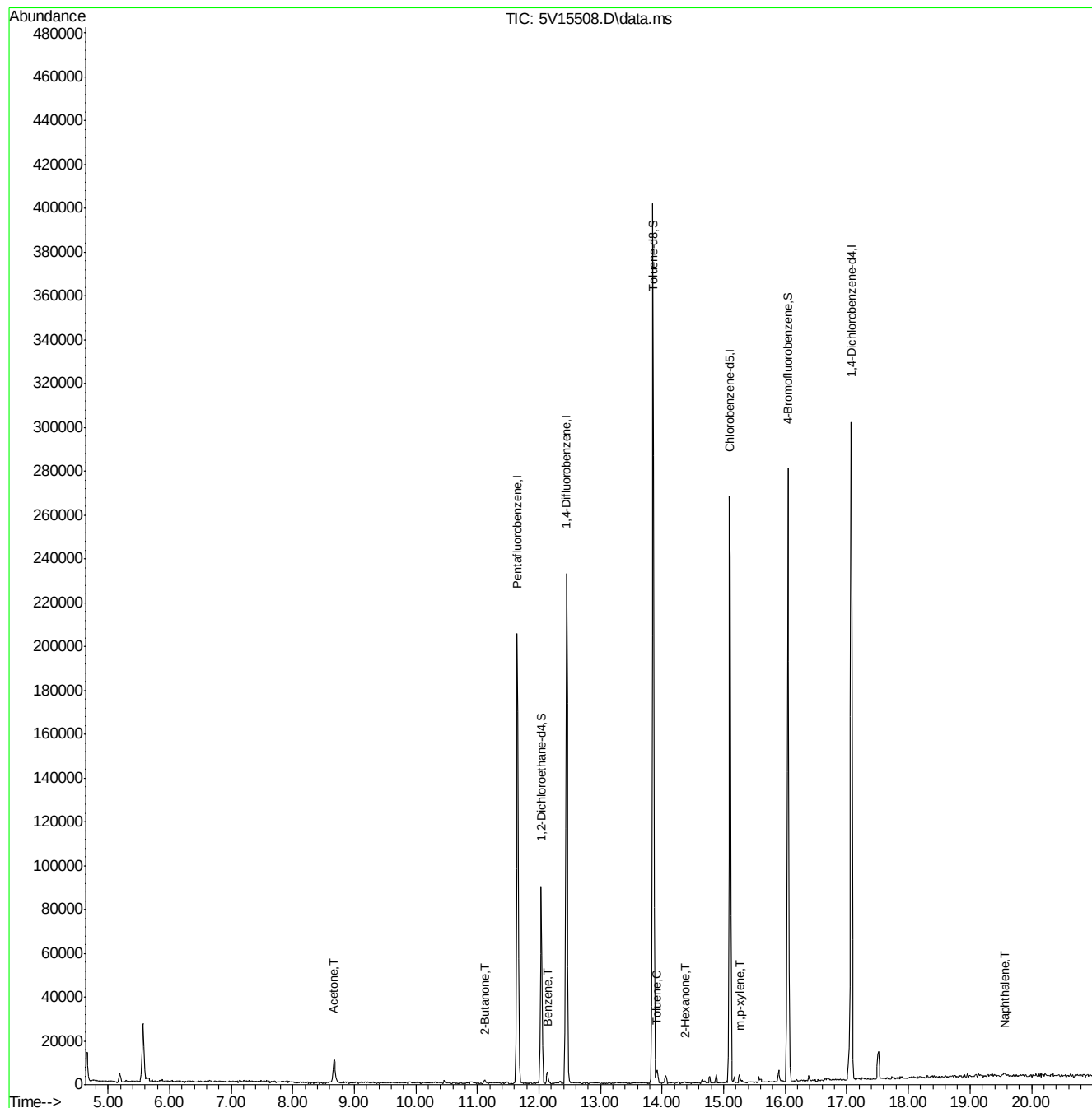
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
16) Acetone	8.667	58	4781	73.59	ug/l	100
32) 2-Butanone	11.122	72	412	4.53	ug/l #	1
45) Benzene	12.138	78	4885	0.68	ug/l	100
50) 2-Hexanone	14.376	43	891	2.08	ug/l #	59
56) Toluene	13.919	92	2320	0.47	ug/l #	71
61) m,p-xylene	15.255	106	1238	0.32	ug/l #	79
72) Naphthalene	19.570	128	1471	0.45	ug/l	100

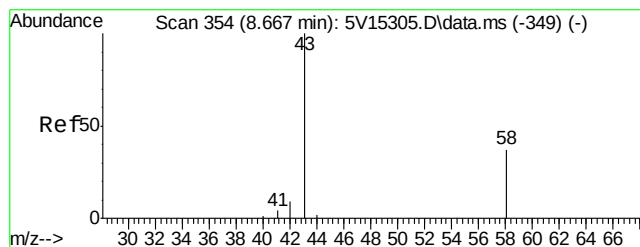
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15508.D
Acq On : 23 May 2011 2:28 pm
Operator : DONC
Sample : D23440-3
Misc : MS2192,V5V910,,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 24 12:19:22 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





#16

Acetone

Concen: 73.59 ug/l

RT: 8.667 min Scan# 354

Delta R.T. 0.000 min

Lab File: 5V15508.D

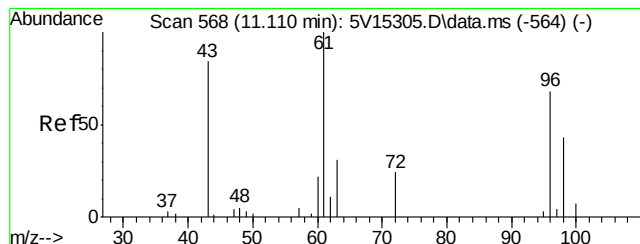
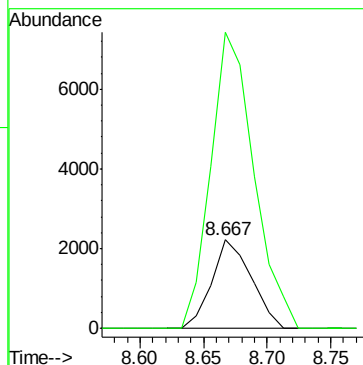
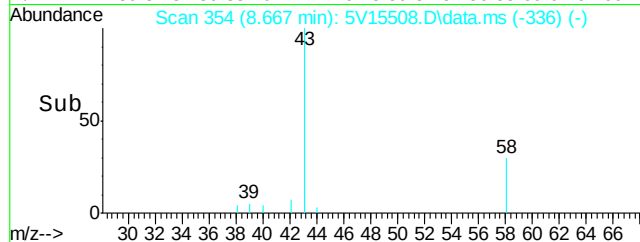
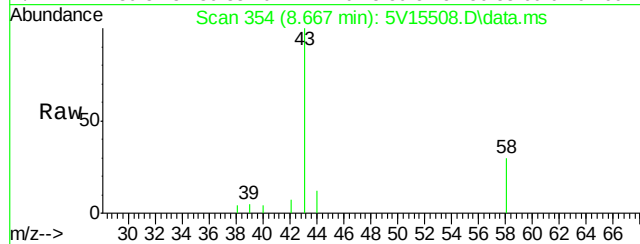
Acq: 23 May 2011 2:28 pm

Tgt Ion: 58 Resp: 4781

Ion Ratio Lower Upper

58 100

43 364.9 344.6 384.6



#32

2-Butanone

Concen: 4.53 ug/l

RT: 11.122 min Scan# 569

Delta R.T. 0.012 min

Lab File: 5V15508.D

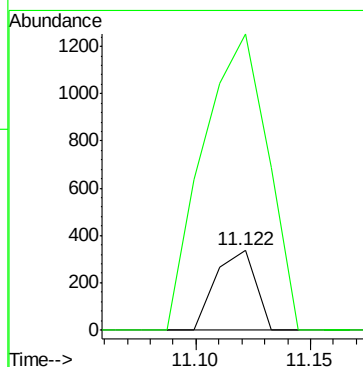
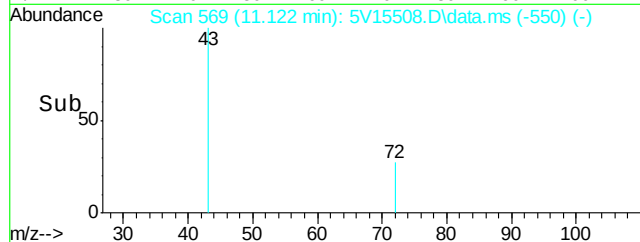
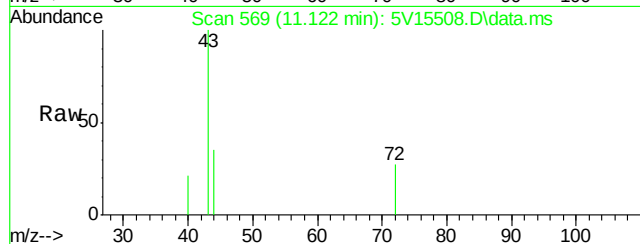
Acq: 23 May 2011 2:28 pm

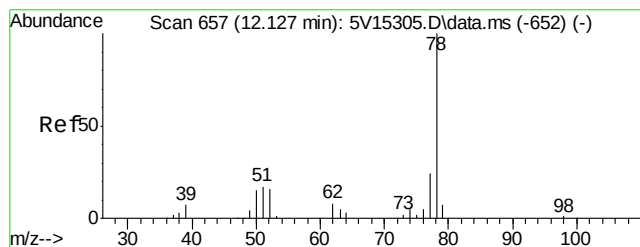
Tgt Ion: 72 Resp: 412

Ion Ratio Lower Upper

72 100

43 602.4 263.3 394.9#





#45

Benzene

Concen: 0.68 ug/l

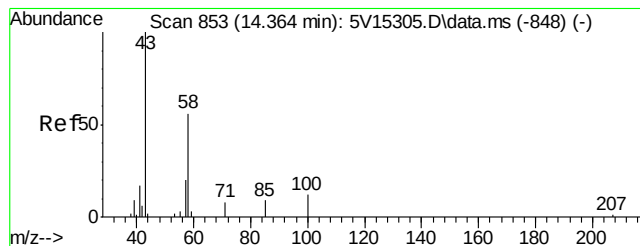
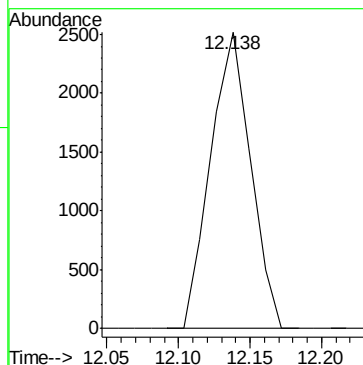
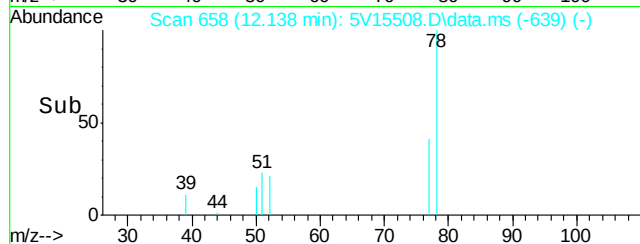
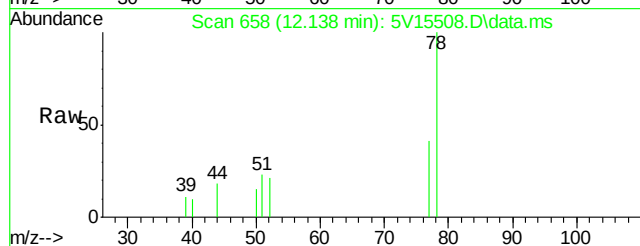
RT: 12.138 min Scan# 658

Delta R.T. 0.011 min

Lab File: 5V15508.D

Acq: 23 May 2011 2:28 pm

Tgt Ion: 78 Resp: 4885



#50

2-Hexanone

Concen: 2.08 ug/l

RT: 14.376 min Scan# 854

Delta R.T. 0.011 min

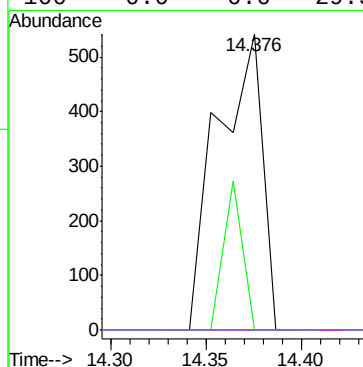
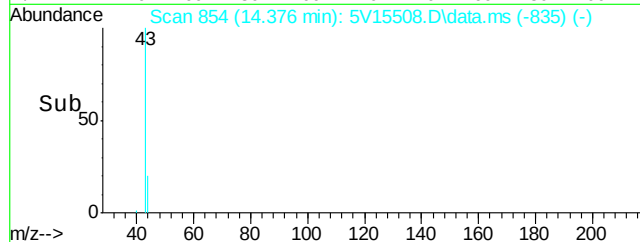
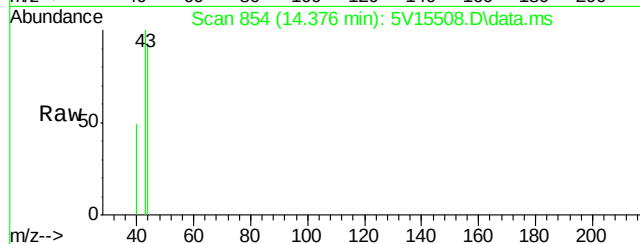
Lab File: 5V15508.D

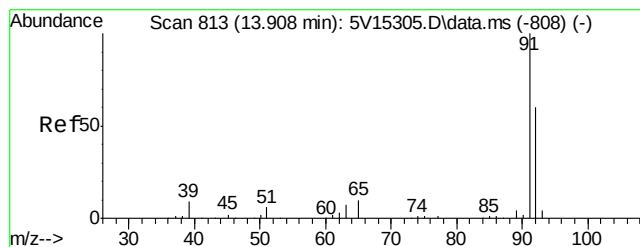
Acq: 23 May 2011 2:28 pm

Tgt Ion: 43 Resp: 891

Ion Ratio Lower Upper

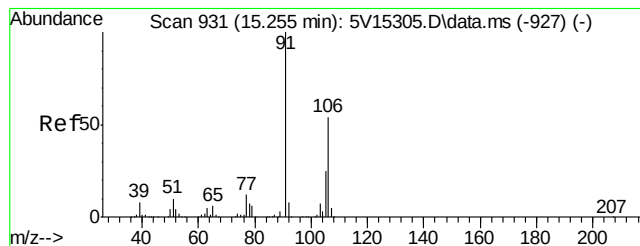
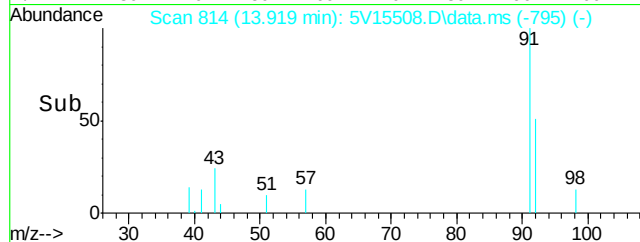
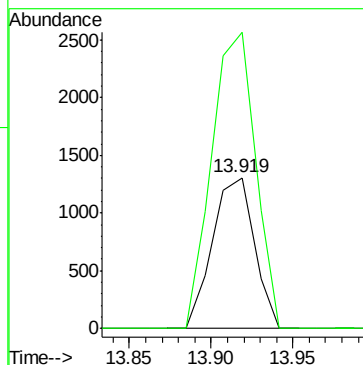
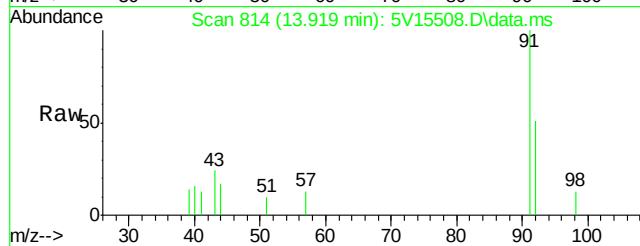
43	100		
58	21.1	32.6	72.6#
57	0.0	0.0	37.5
100	0.0	0.0	29.5





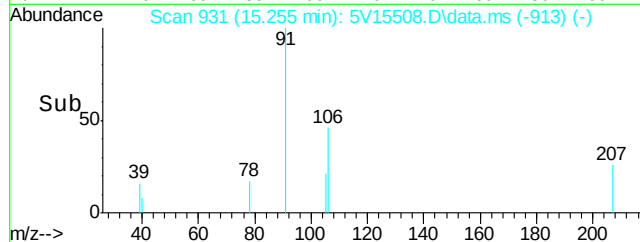
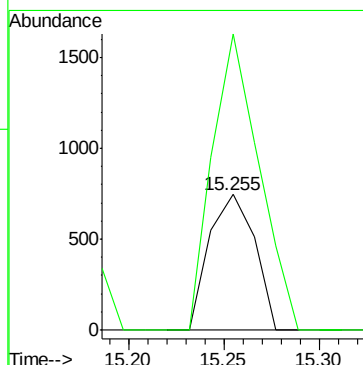
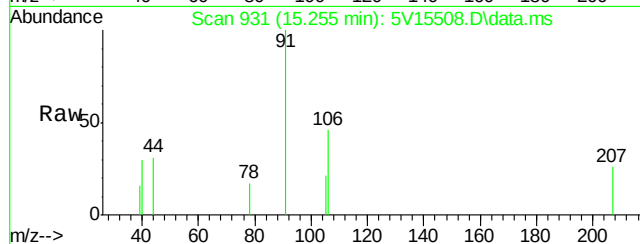
#56
Toluene
Concen: 0.47 ug/l
RT: 13.919 min Scan# 814
Delta R.T. 0.011 min
Lab File: 5V15508.D
Acq: 23 May 2011 2:28 pm

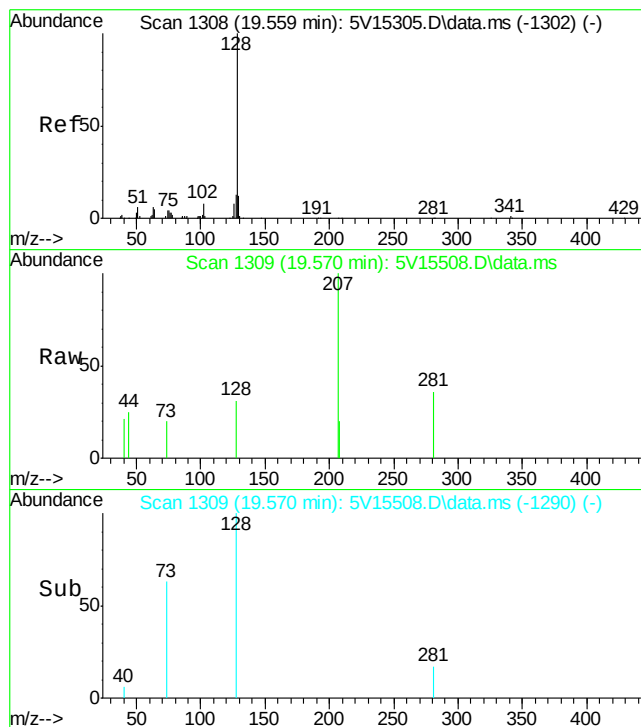
Tgt Ion: 92 Resp: 2320
Ion Ratio Lower Upper
92 100
91 205.9 146.2 186.2#



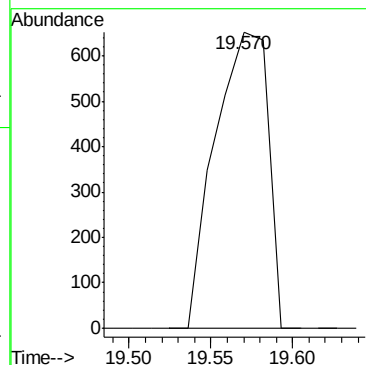
#61
m,p-xylene
Concen: 0.32 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15508.D
Acq: 23 May 2011 2:28 pm

Tgt Ion: 106 Resp: 1238
Ion Ratio Lower Upper
106 100
91 225.3 174.3 214.3#





#72
 Naphthalene
 Concen: 0.45 ug/l
 RT: 19.570 min Scan# 1309
 Delta R.T. 0.012 min
 Lab File: 5V15508.D
 Acq: 23 May 2011 2:28 pm
 Tgt Ion:128 Resp: 1471



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
 Data File : 5V15453.D
 Acq On : 20 May 2011 9:53 am
 Operator : DONC
 Sample : MB1
 Misc : MS2192,V5V906,,,,,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 23 09:57:52 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260
 QLast Update : Tue May 17 07:57:07 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	223339	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.447	114	269003	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	233163	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	134346	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.036	102	18288	43.34	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	86.68%	
55) Toluene-d8	13.851	98	440116	46.59	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.18%	
59) 4-Bromofluorobenzene	16.043	95	142341	46.43	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	92.86%	

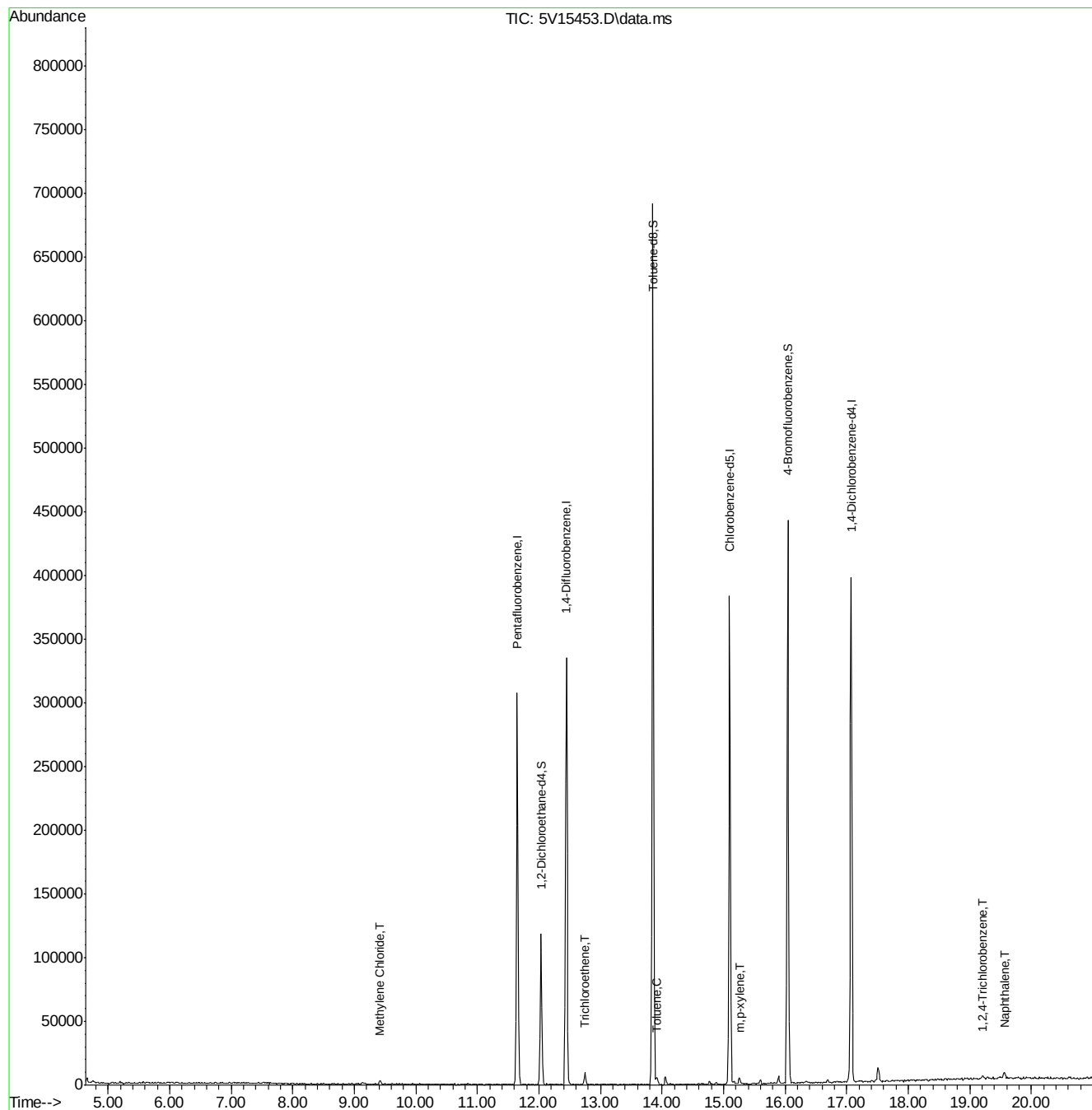
Target Compounds						Qvalue
15) Methylene Chloride	9.421	84	971	0.42	ug/l	# 75
43) Trichloroethene	12.743	95	3737	0.43	ug/l	97
56) Toluene	13.908	92	2218	0.32	ug/l	99
61) m,p-xylene	15.255	106	2276	0.42	ug/l	# 84
71) 1,2,4-Trichlorobenzene	19.205	180	1797	0.52	ug/l	# 90
72) Naphthalene	19.559	128	3876	0.86	ug/l	100

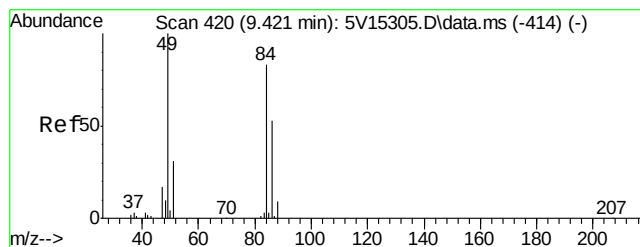
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15453.D
Acq On : 20 May 2011 9:53 am
Operator : DONC
Sample : MB1
Misc : MS2192,V5V906,,,,,1
ALS Vial : 3 Sample Multiplier: 1

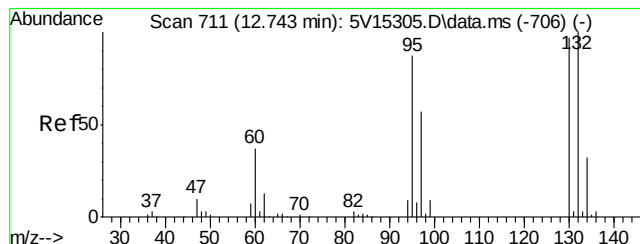
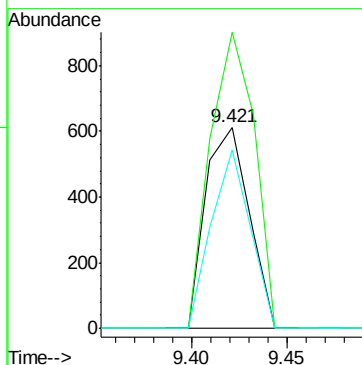
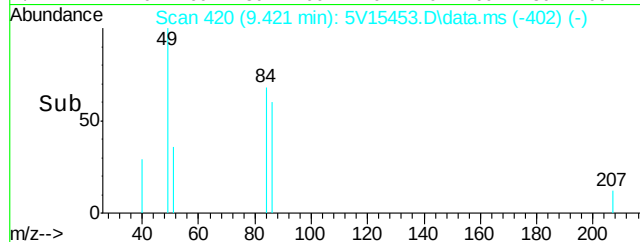
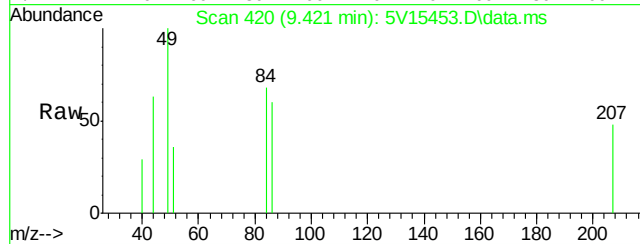
Quant Time: May 23 09:57:52 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





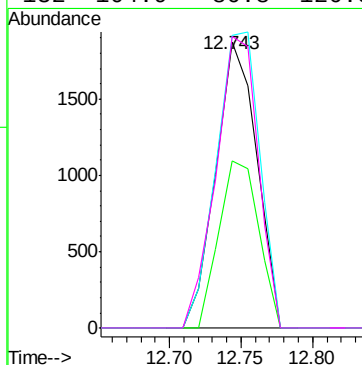
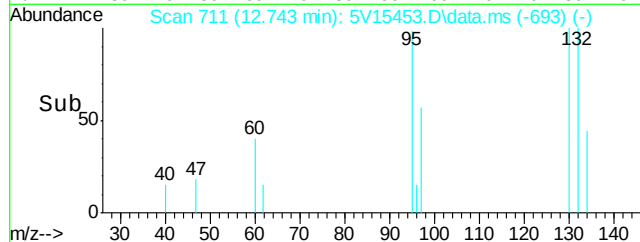
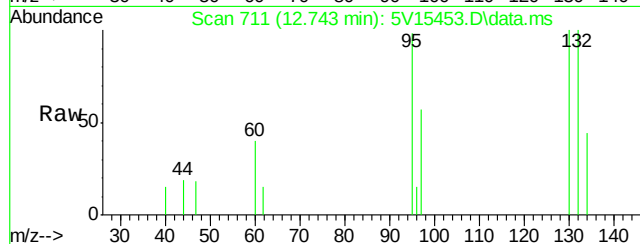
#15
Methylene Chloride
Concen: 0.42 ug/l
RT: 9.421 min Scan# 420
Delta R.T. 0.000 min
Lab File: 5V15453.D
Acq: 20 May 2011 9:53 am

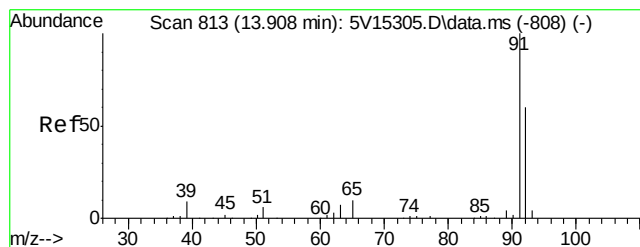
Tgt Ion:	84	Resp:	971
Ion Ratio	Lower	Upper	
84	100		
49	150.4	97.8	137.8#
86	79.0	45.0	85.0



#43
Trichloroethene
Concen: 0.43 ug/l
RT: 12.743 min Scan# 711
Delta R.T. 0.000 min
Lab File: 5V15453.D
Acq: 20 May 2011 9:53 am

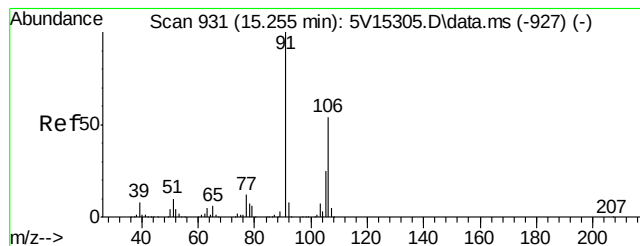
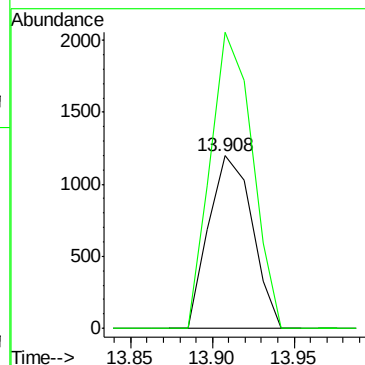
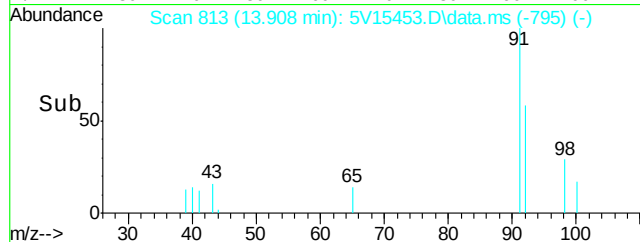
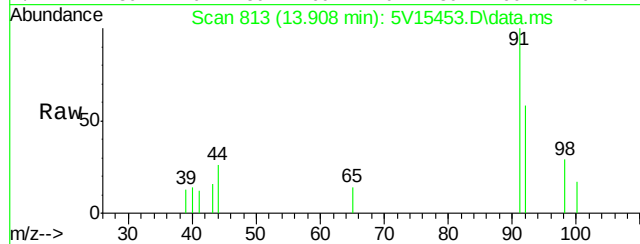
Tgt Ion:	95	Resp:	3737
Ion Ratio	Lower	Upper	
95	100		
97	56.8	45.2	85.2
130	109.3	89.7	129.7
132	104.9	86.8	126.8





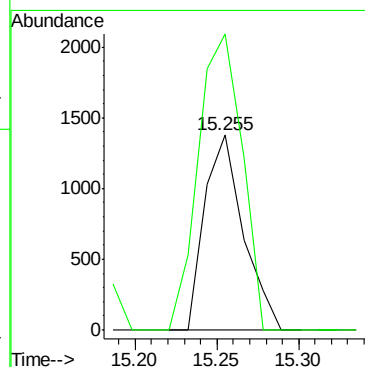
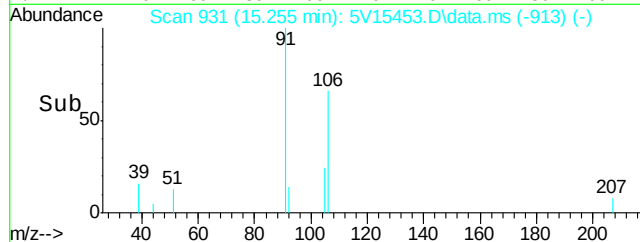
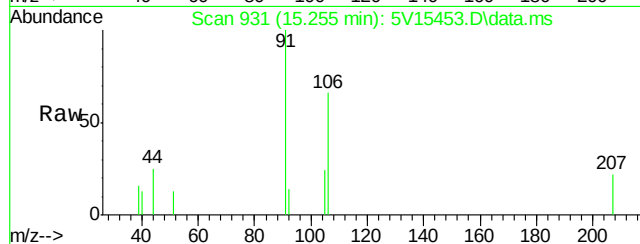
#56
Toluene
Concen: 0.32 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V15453.D
Acq: 20 May 2011 9:53 am

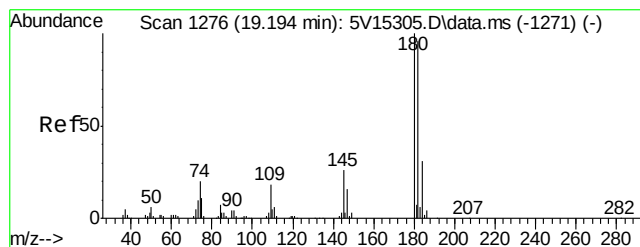
Tgt Ion: 92 Resp: 2218
Ion Ratio Lower Upper
92 100
91 165.4 146.2 186.2



#61
m,p-xylene
Concen: 0.42 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15453.D
Acq: 20 May 2011 9:53 am

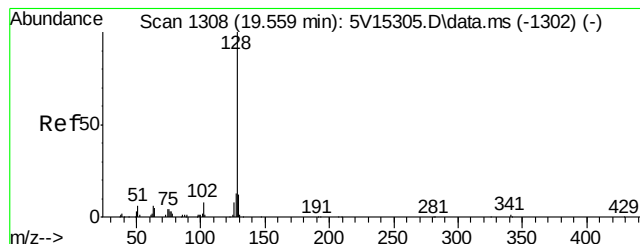
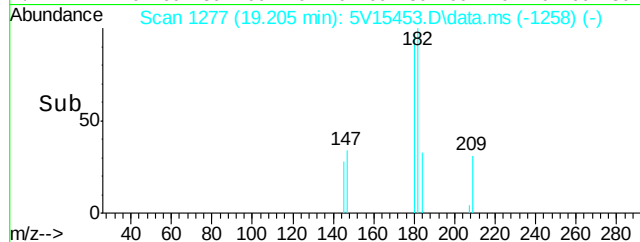
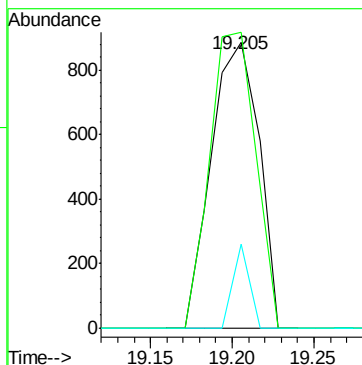
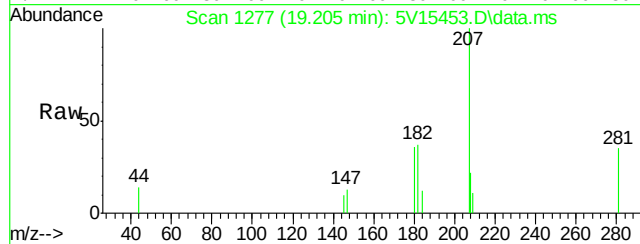
Tgt Ion: 106 Resp: 2276
Ion Ratio Lower Upper
106 100
91 170.8 174.3 214.3#





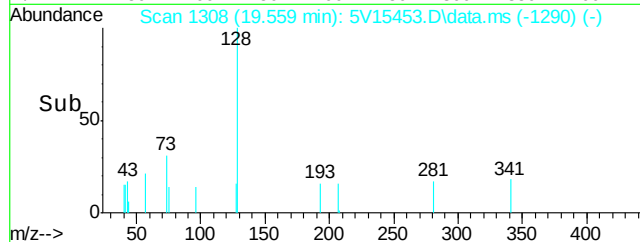
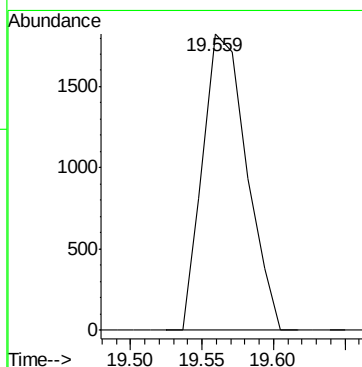
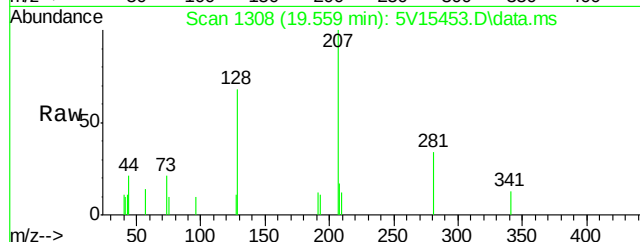
#71
1,2,4-Trichlorobenzene
Concen: 0.52 ug/l
RT: 19.205 min Scan# 1277
Delta R.T. 0.012 min
Lab File: 5V15453.D
Acq: 20 May 2011 9:53 am

Tgt Ion:	180	Resp:	1797
Ion Ratio	Lower	Upper	
180	100		
182	99.9	77.4	116.2
145	9.9	22.1	33.1#



#72
Naphthalene
Concen: 0.86 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.001 min
Lab File: 5V15453.D
Acq: 20 May 2011 9:53 am

Tgt Ion:	128	Resp:	3876



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15453.D
Acq On : 20 May 2011 9:53 am
Operator : DONC
Sample : MB1
Misc : MS2192,V5V906,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: rteint.p

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Title : 8260

Signal : TIC: 5V15453.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.647	611	615	619	rBV	307423	561473	46.87%	11.774%
2	12.036	645	649	656	rVB	118394	233727	19.51%	4.901%
3	12.447	681	685	689	rBV	334929	591969	49.41%	12.413%
4	12.743	707	711	715	rBV	9570	19160	1.60%	0.402%
5	13.851	804	808	812	rBV	691842	1197990	100.00%	25.121%
6	15.095	913	917	921	rBV	382863	658529	54.97%	13.809%
7	16.043	996	1000	1004	rBV	442094	762811	63.67%	15.996%
8	17.070	1086	1090	1095	rVB	395992	720199	60.12%	15.102%
9	17.504	1126	1128	1134	rVB	11072	22980	1.92%	0.482%

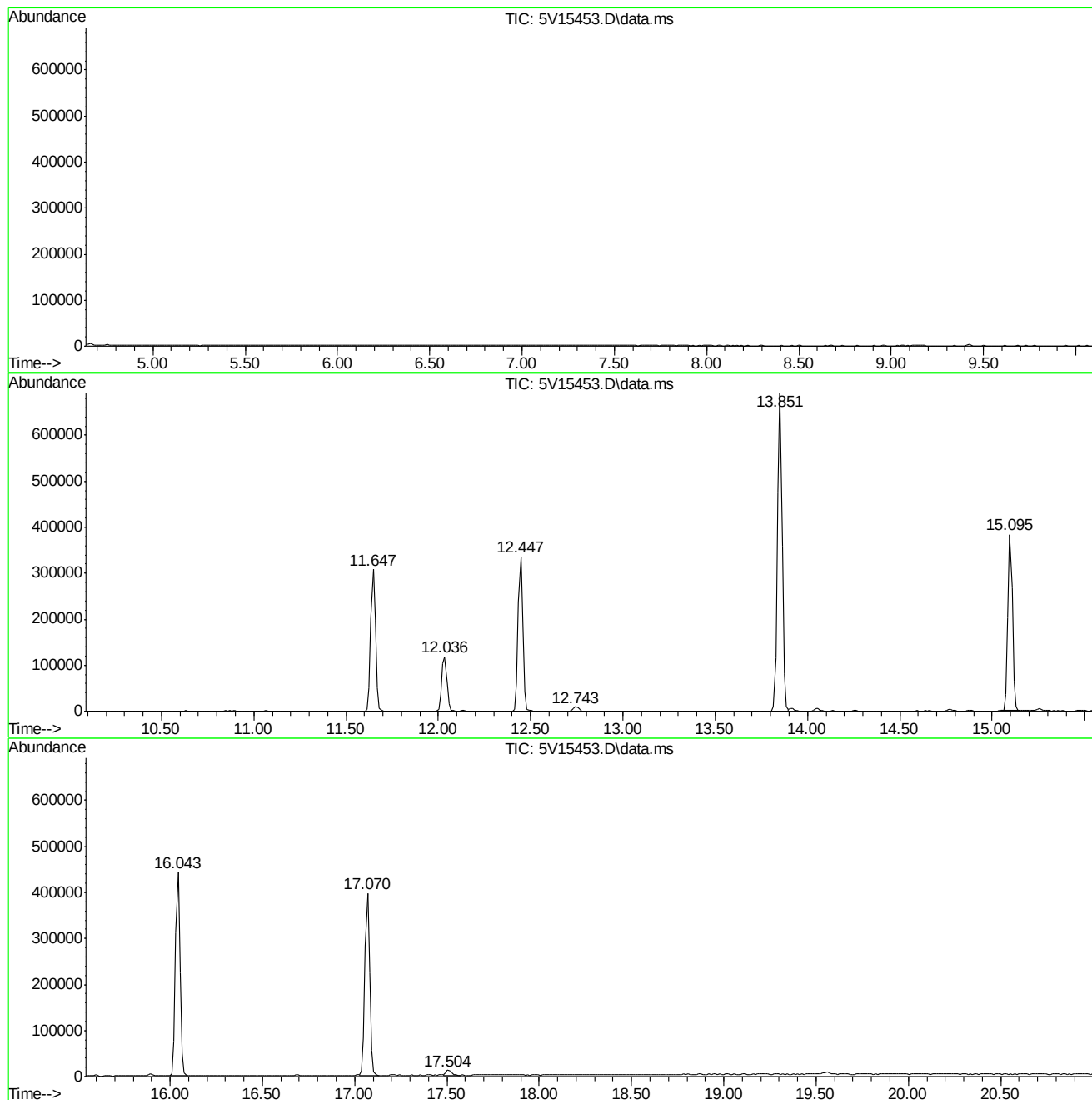
Sum of corrected areas: 4768838

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V5052011.S\
Data File : 5V15453.D
Acq On : 20 May 2011 9:53 am
Operator : DONC
Sample : MB1
Misc : MS2192,V5V906,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound Report Summary

DataPath: CC\msddbbbn\1\DATA\50020011SS\
DataFile: 5V50053DD
AcqQOn : 200May2001 9953am
Operator : DDC
Sample : MB1
Misc : MS2002V5006,,,,,11
ASSVal : 33 SampleMultiplier: 11

QuantMethod: CC\msddbbbn\1\METHODS\50538006\8006011MM
QuantFile : 88000

TICLibrary : CC\DATA\BASE\MS08LL
TICIntegrationParameters: LSCNTTP

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

No Library Search Compounds Detected

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15504.D
 Acq On : 23 May 2011 12:17 pm
 Operator : DONC
 Sample : MB1
 Misc : MS2199,V5V910,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 24 12:14:32 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260
 QLast Update : Tue May 17 07:57:07 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	174288	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.447	114	213039	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	191257	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	108151	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.036	102	15403	46.77	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.54%	
55) Toluene-d8	13.851	98	369853	47.73	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	95.46%	
59) 4-Bromofluorobenzene	16.043	95	124417	49.47	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	98.94%	

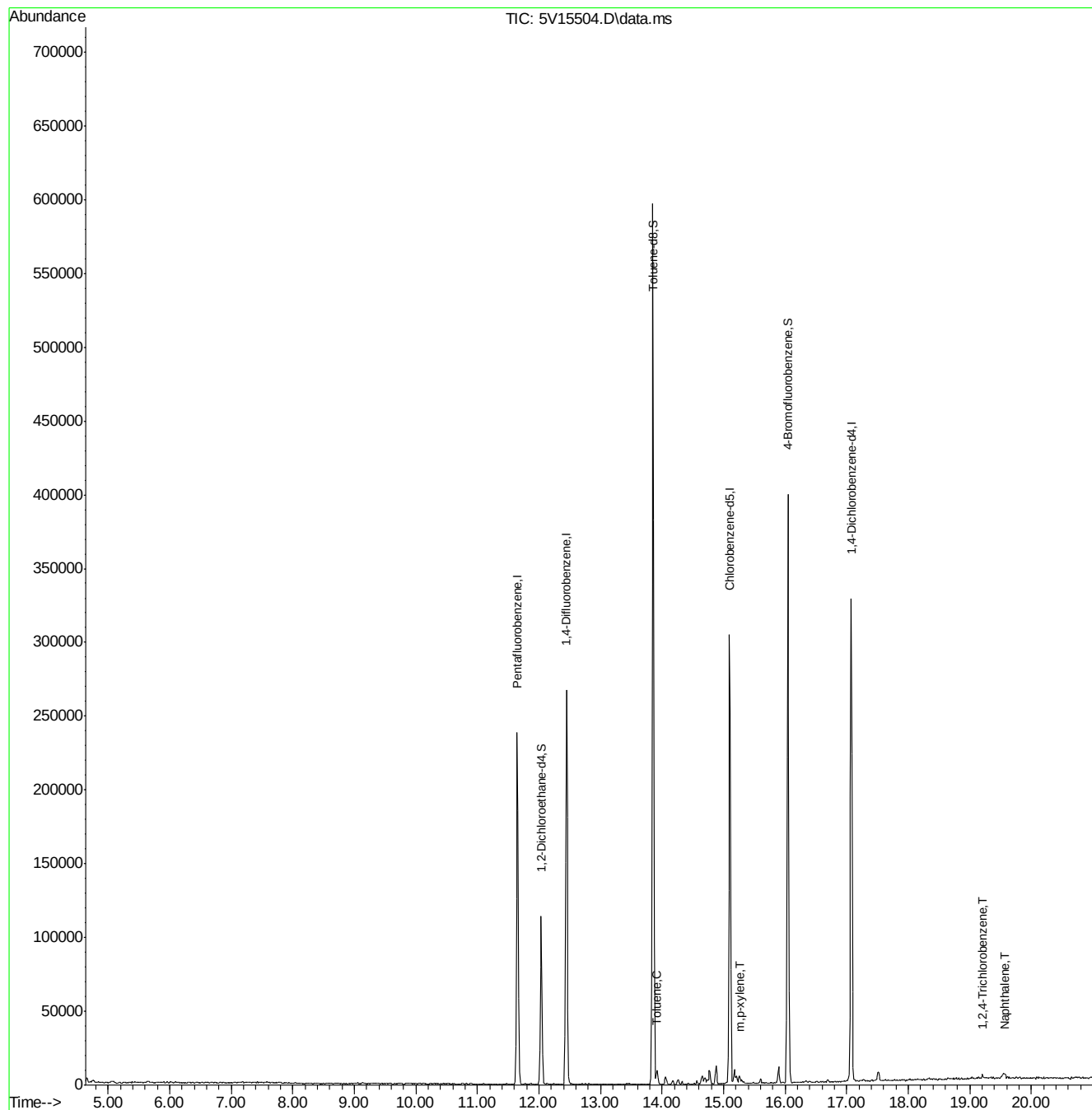
Target Compounds					Qvalue
56) Toluene	13.919	92	2617	0.47 ug/l	90
61) m,p-xylene	15.255	106	1999	0.45 ug/l #	83
71) 1,2,4-Trichlorobenzene	19.205	180	1660	0.60 ug/l #	70
72) Naphthalene	19.571	128	3394	0.94 ug/l	100

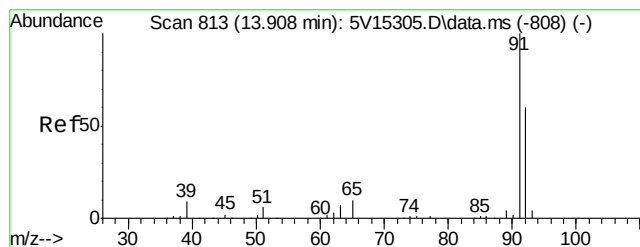
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15504.D
Acq On : 23 May 2011 12:17 pm
Operator : DONC
Sample : MB1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 7 Sample Multiplier: 1

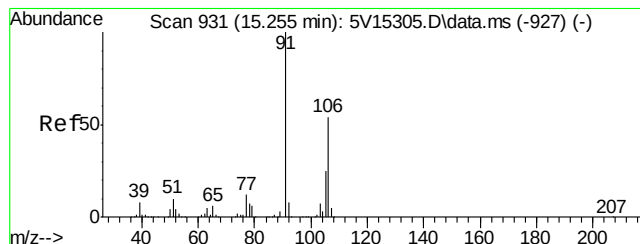
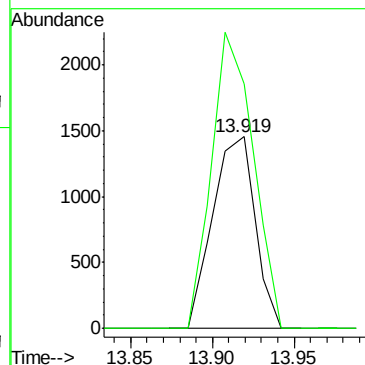
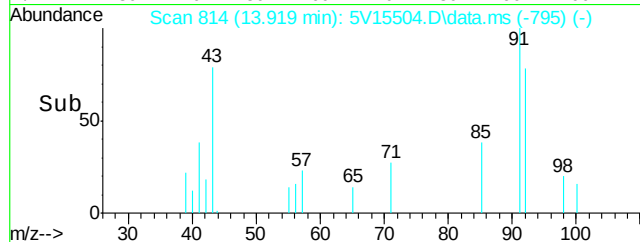
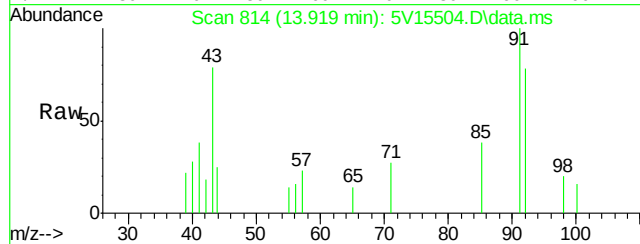
Quant Time: May 24 12:14:32 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





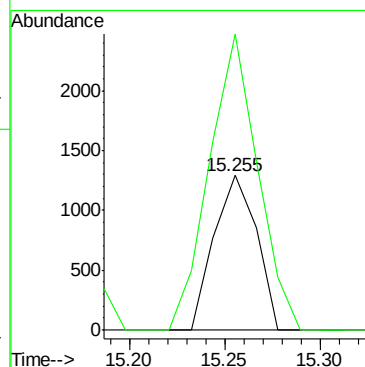
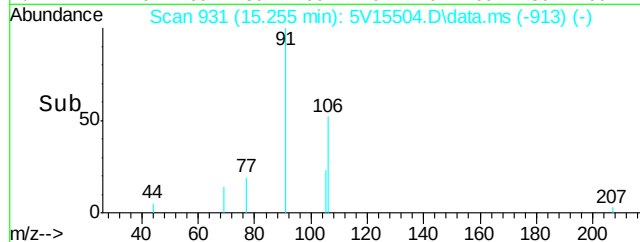
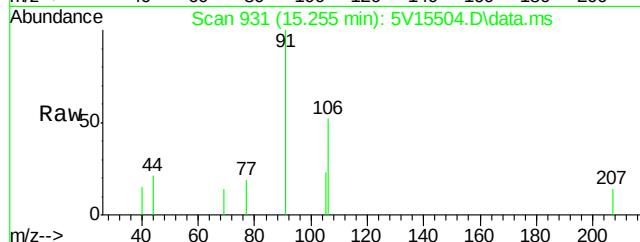
#56
Toluene
Concen: 0.47 ug/l
RT: 13.919 min Scan# 814
Delta R.T. 0.012 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

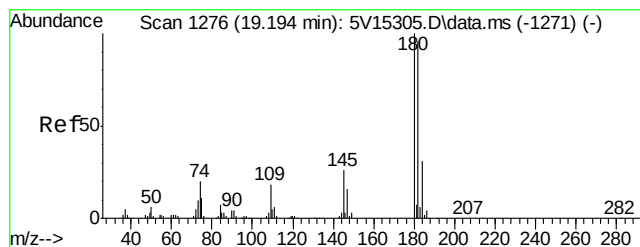
Tgt Ion: 92 Resp: 2617
Ion Ratio Lower Upper
92 100
91 152.2 146.2 186.2



#61
m,p-xylene
Concen: 0.45 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

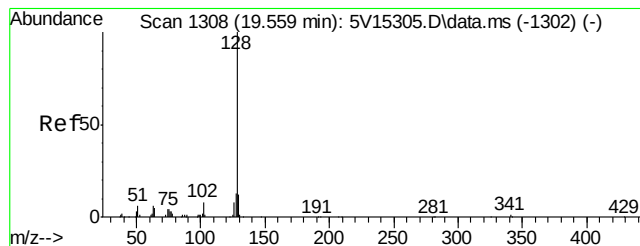
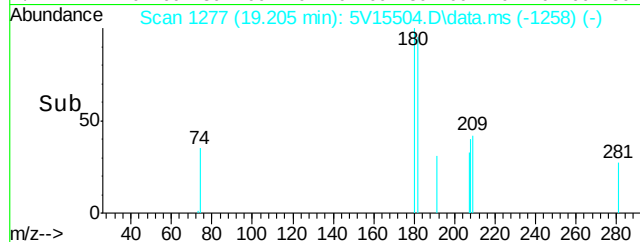
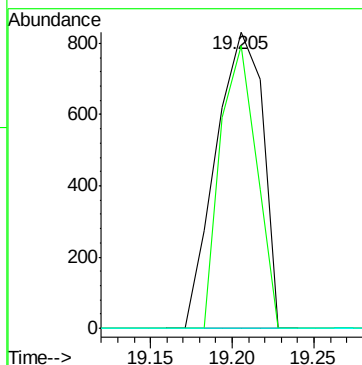
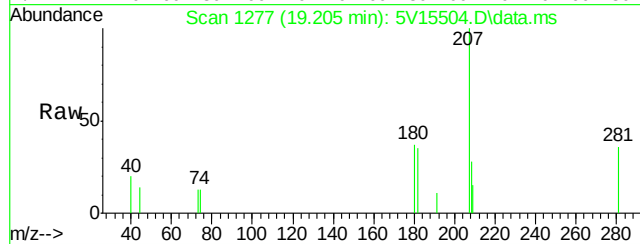
Tgt Ion: 106 Resp: 1999
Ion Ratio Lower Upper
106 100
91 219.4 174.3 214.3#





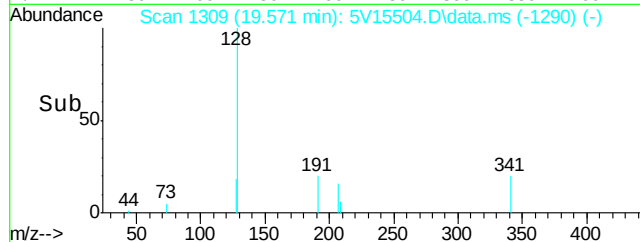
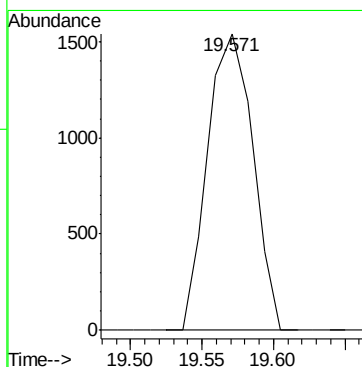
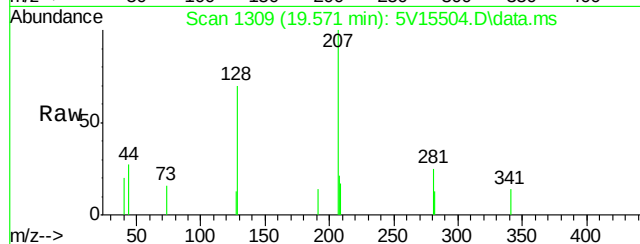
#71
1,2,4-Trichlorobenzene
Concen: 0.60 ug/l
RT: 19.205 min Scan# 1277
Delta R.T. 0.012 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

Tgt Ion:	180	Resp:	1660
Ion Ratio	Lower	Upper	
180	100		
182	73.3	77.4	116.2#
145	0.0	22.1	33.1#



#72
Naphthalene
Concen: 0.94 ug/l
RT: 19.571 min Scan# 1309
Delta R.T. 0.013 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

Tgt Ion:	128	Resp:	3394



GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB622-MB	GB10707.D	1	05/18/11	BR	n/a	n/a	GGB622

The QC reported here applies to the following samples:

Method: SW846 8015B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	104% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB622-BS	GB10708.D	1	05/18/11	BR	n/a	n/a	GGB622

The QC reported here applies to the following samples: Method: SW846 8015B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.24	102	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D23440
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23440-1MS	GB10710.D	1	05/18/11	BR	n/a	n/a	GGB622
D23440-1MSD	GB10711.D	1	05/18/11	BR	n/a	n/a	GGB622
D23440-1	GB10709.D	1	05/18/11	BR	n/a	n/a	GGB622

The QC reported here applies to the following samples: Method: SW846 8015B

D23440-1, D23440-2, D23440-3

CAS No.	Compound	D23440-1 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.29	104	2.17	99	5	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D23440-1	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	91%	97%	60-140%

7.3.1
7

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10709.D\FID1A.CH Vial: 20
Signal #2 : Y:\1\DATA\051711\GB10709.D\FID2B.CH
Acq On : 18 May 2011 2:47 am Operator: BrianR
Sample : D23440-1 Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 08:32:57 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.30	3354722	97.361	%
10) S	1,2,4-Trichlorobenzene (P)	14.30	30225713	98.282	%
Target Compounds					
1) H	TVH-Gasoline	7.21	1905714	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.08	734737	1.173	ug/L
6) T	Toluene	7.54	473246	0.791	ug/L
7) T	Ethylbenzene	10.18	90579	0.174	ug/L
8) T	m,p-Xylene	10.36	443216	0.707	ug/L
9) T	o-Xylene	10.89	312496	0.600	ug/L
11) T	Naphthalene	14.48	1263251	1.542	ug/L

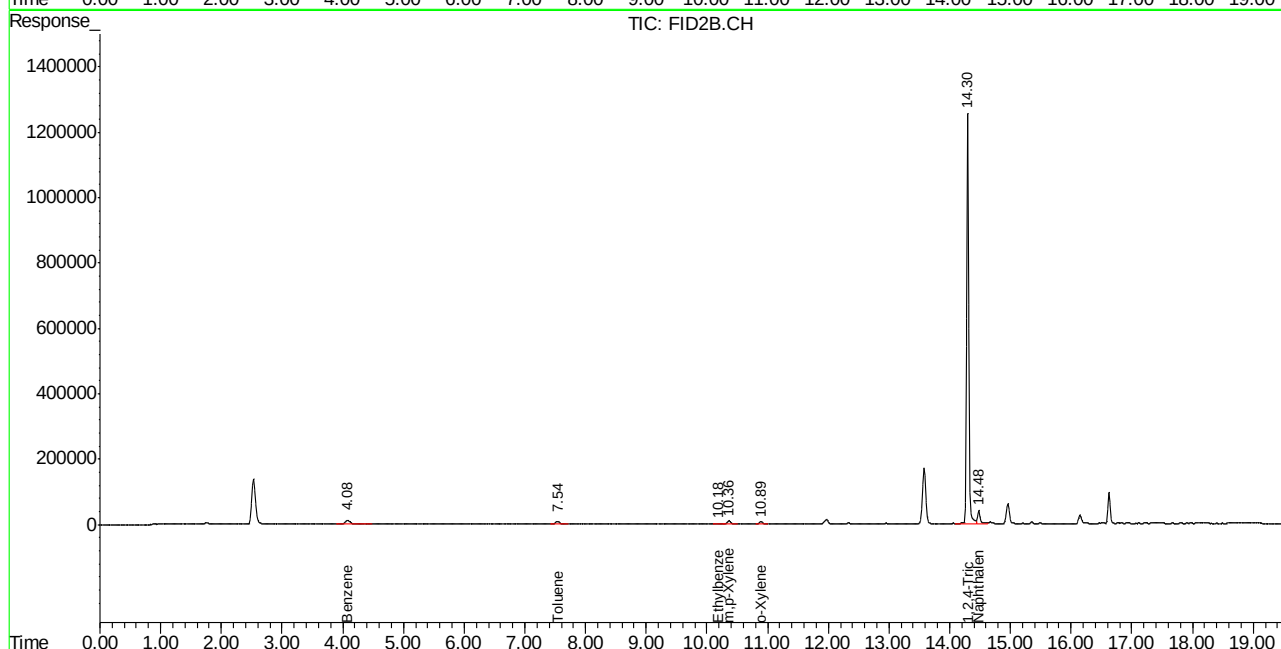
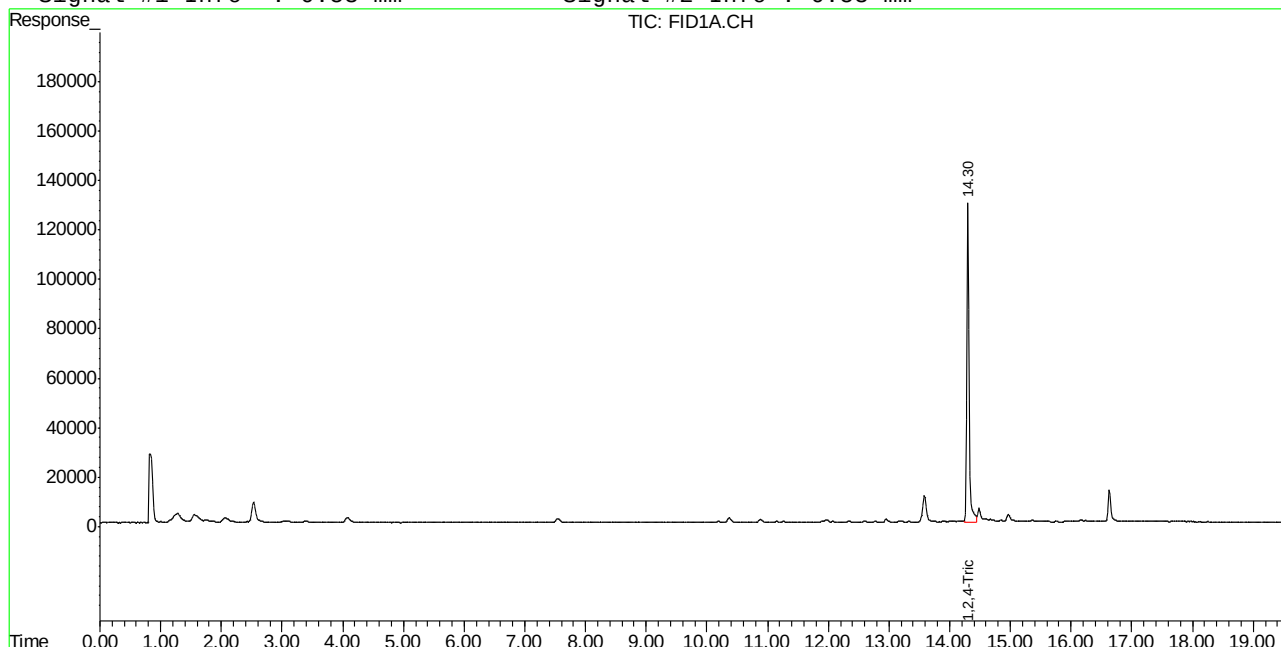
(f)=RT Delta > 1/2 Window (m)=manual int.
GB10709.D TB510GB510.M Thu May 19 08:45:47 2011 GC

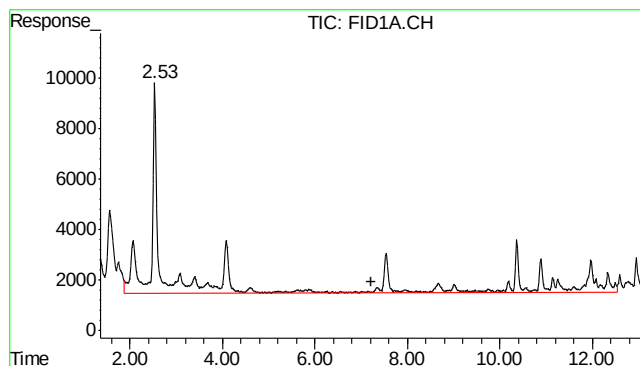
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10709.D\FID1A.CH Vial: 20
 Signal #2 : Y:\1\DATA\051711\GB10709.D\FID2B.CH
 Acq On : 18 May 2011 2:47 am Operator: BrianR
 Sample : D23440-1 Inst : GC/MS Ins
 Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 19 7:38 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed May 11 14:34:35 2011
 Response via : Single Level Calibration
 DataAcq Meth : TVB4.M

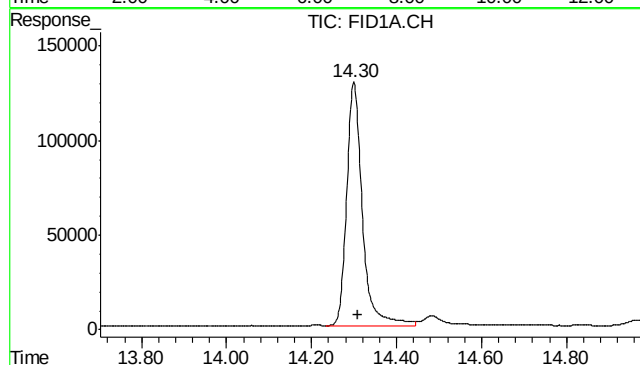
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





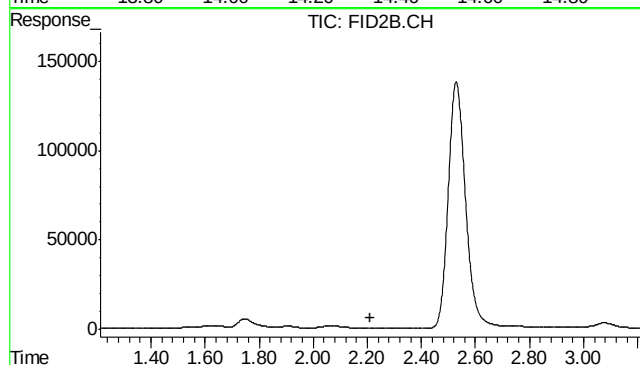
#1 TVH-Gasoline

R.T.: 7.205 min
Delta R.T.: 0.000 min
Response: 1905714
Conc: N.D.



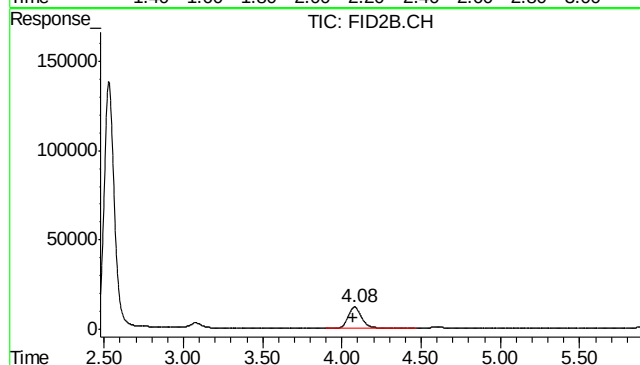
#2 1,2,4-Trichlorobenzene

R.T.: 14.300 min
Delta R.T.: -0.010 min
Response: 3354722
Conc: 97.36 %



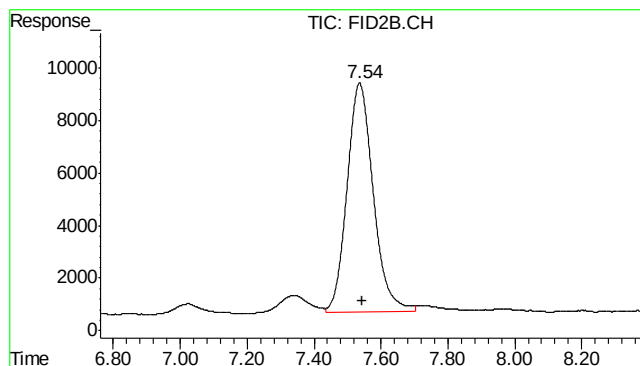
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.212 min
Response: 0
Conc: N.D.



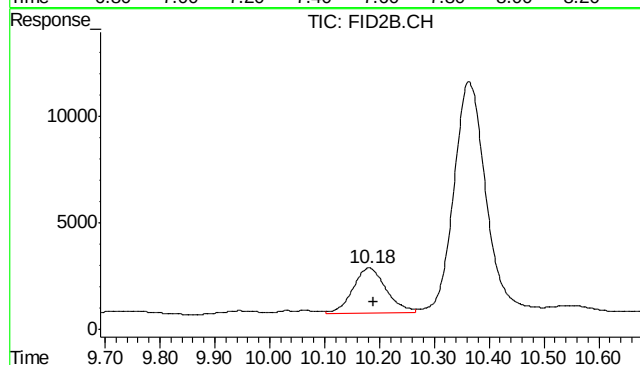
#5 Benzene

R.T.: 4.079 min
Delta R.T.: 0.005 min
Response: 734737
Conc: 1.17 ug/L



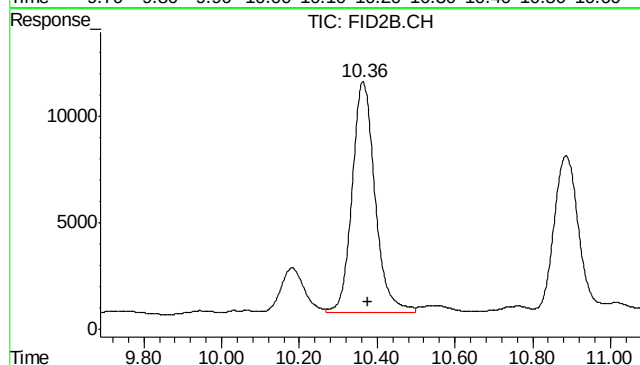
#6 Toluene

R.T.: 7.536 min
Delta R.T.: -0.009 min
Response: 473246
Conc: 0.79 ug/L



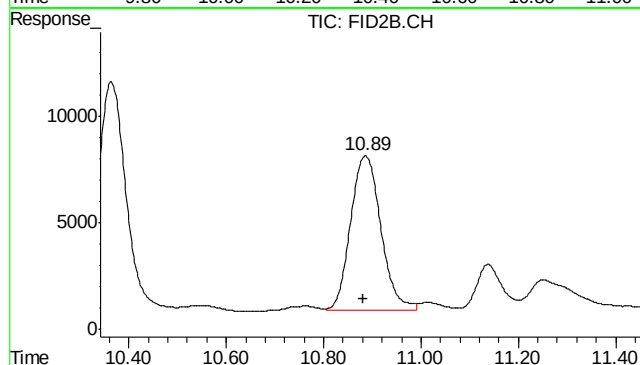
#7 Ethylbenzene

R.T.: 10.181 min
Delta R.T.: -0.008 min
Response: 90579
Conc: 0.17 ug/L



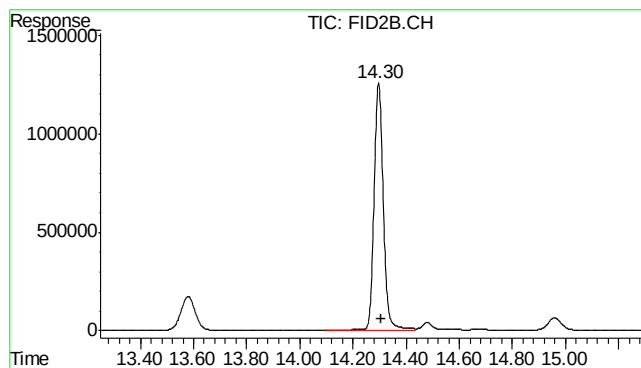
#8 m,p-Xylene

R.T.: 10.364 min
Delta R.T.: -0.011 min
Response: 443216
Conc: 0.71 ug/L



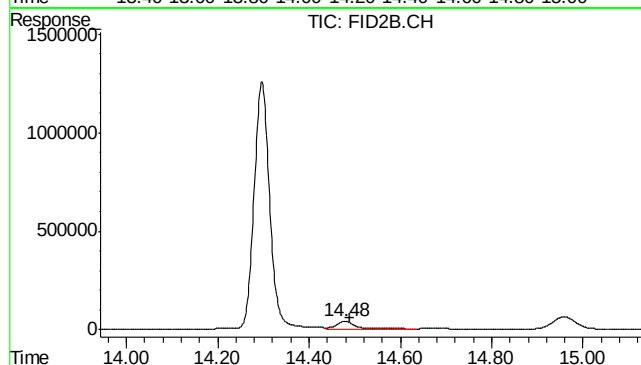
#9 o-Xylene

R.T.: 10.886 min
Delta R.T.: 0.005 min
Response: 312496
Conc: 0.60 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.297 min
 Delta R.T.: -0.010 min
 Response: 30225713
 Conc: 98.28 %



#11 Naphthalene

R.T.: 14.479 min
 Delta R.T.: -0.010 min
 Response: 1263251
 Conc: 1.54 ug/L

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10712.D\FID1A.CH Vial: 23
Signal #2 : Y:\1\DATA\051711\GB10712.D\FID2B.CH
Acq On : 18 May 2011 4:35 am Operator: BrianR
Sample : D23440-2 Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 08:33:09 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

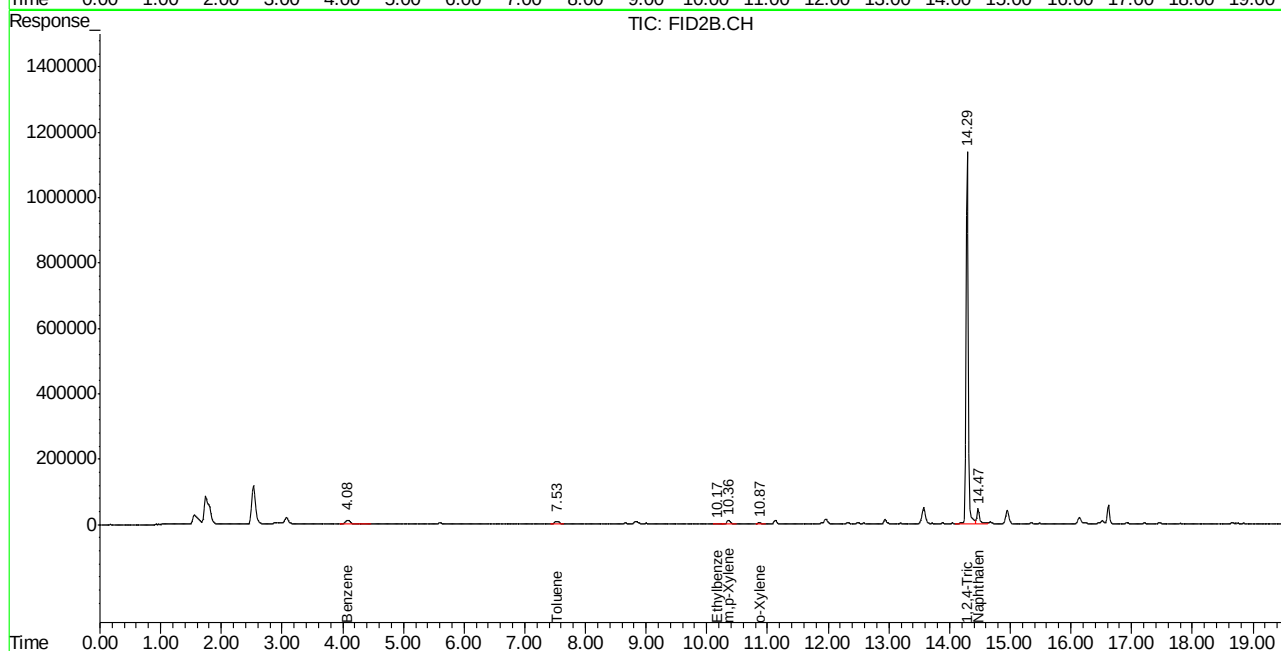
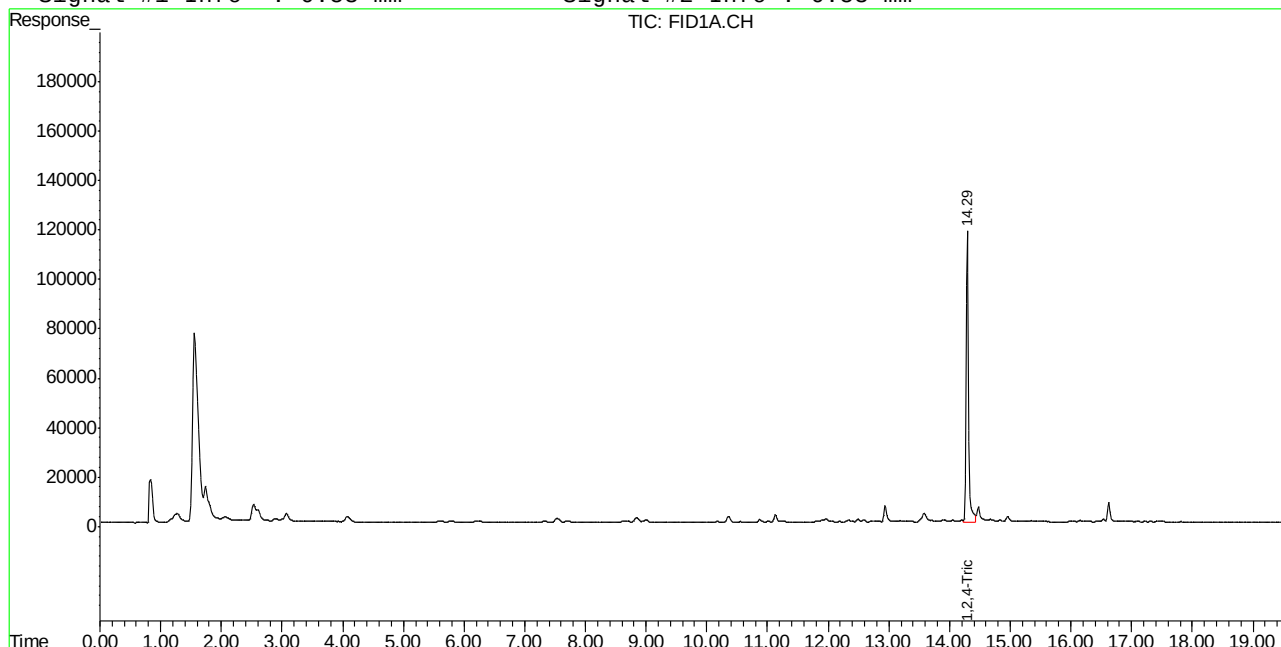
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.29	3062772	88.888	%
10) S	1,2,4-Trichlorobenzene (P)	14.29	27312889	88.811	%
Target Compounds					
1) H	TVH-Gasoline	7.21	3611071	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.08	784038	1.252	ug/L
6) T	Toluene	7.53	534200	0.893	ug/L
7) T	Ethylbenzene	10.17	95337	0.183	ug/L
8) T	m,p-Xylene	10.36	512508	0.817	ug/L
9) T	o-Xylene	10.87	224416	0.431	ug/L
11) T	Naphthalene	14.47	1417147	1.992	ug/L

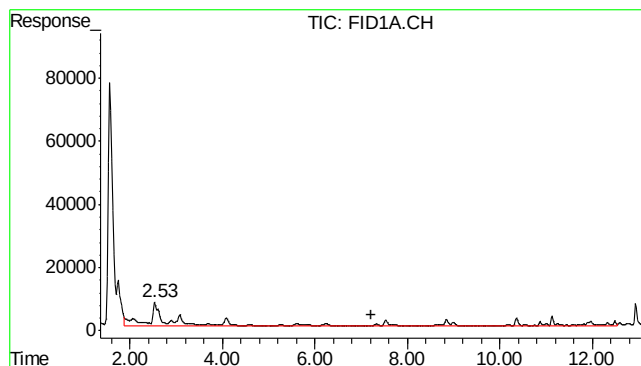
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10712.D\FID1A.CH Vial: 23
 Signal #2 : Y:\1\DATA\051711\GB10712.D\FID2B.CH
 Acq On : 18 May 2011 4:35 am Operator: BrianR
 Sample : D23440-2 Inst : GC/MS Ins
 Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 19 7:39 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed May 11 14:34:35 2011
 Response via : Single Level Calibration
 DataAcq Meth : TVB4.M

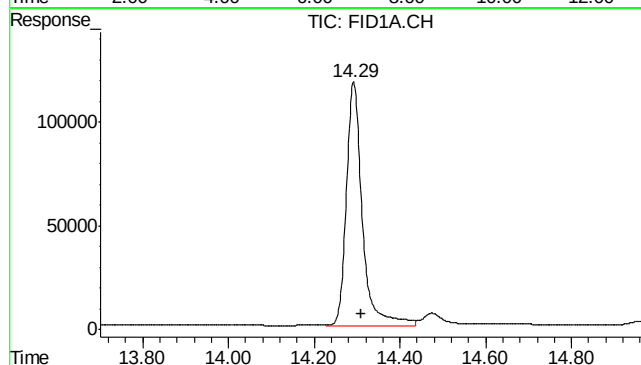
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





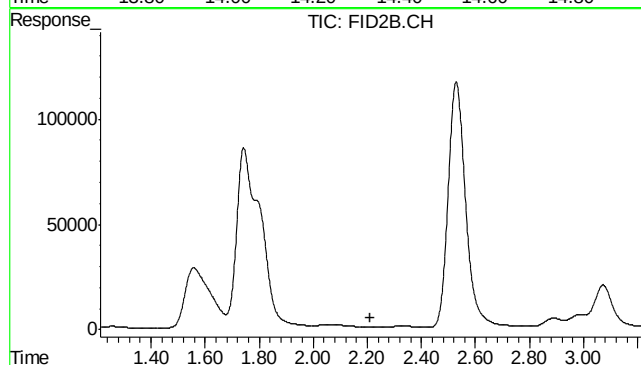
#1 TVH-Gasoline

R.T.: 7.205 min
Delta R.T.: 0.000 min
Response: 3611071
Conc: N.D.



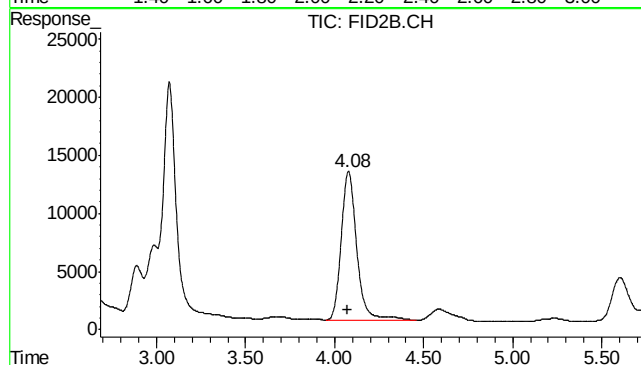
#2 1,2,4-Trichlorobenzene

R.T.: 14.292 min
Delta R.T.: -0.017 min
Response: 3062772
Conc: 88.89 %



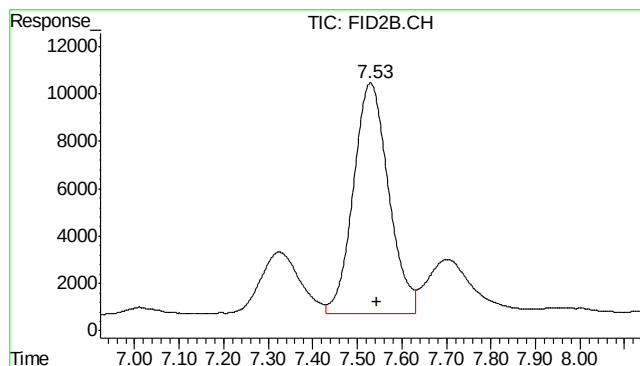
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.212 min
Response: 0
Conc: N.D.



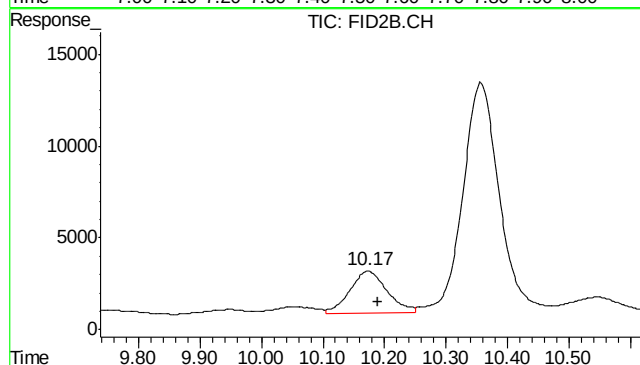
#5 Benzene

R.T.: 4.078 min
Delta R.T.: 0.003 min
Response: 784038
Conc: 1.25 ug/L



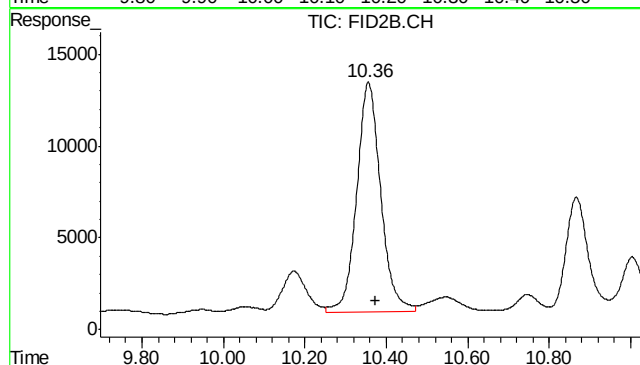
#6 Toluene

R.T.: 7.530 min
Delta R.T.: -0.015 min
Response: 534200
Conc: 0.89 ug/L



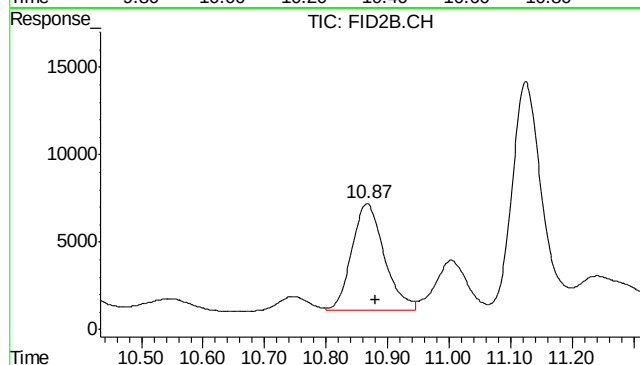
#7 Ethylbenzene

R.T.: 10.174 min
Delta R.T.: -0.016 min
Response: 95337
Conc: 0.18 ug/L



#8 m,p-Xylene

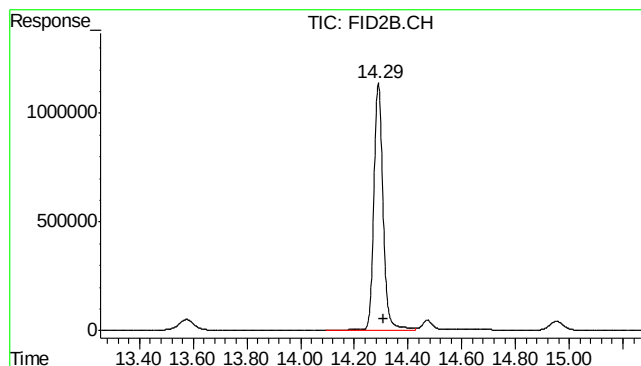
R.T.: 10.356 min
Delta R.T.: -0.018 min
Response: 512508
Conc: 0.82 ug/L



#9 o-Xylene

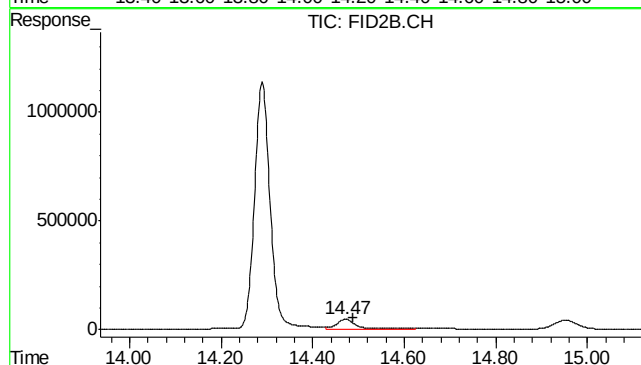
R.T.: 10.867 min
Delta R.T.: -0.014 min
Response: 224416
Conc: 0.43 ug/L

8.12
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.290 min
 Delta R.T.: -0.017 min
 Response: 27312889
 Conc: 88.81 %



#11 Naphthalene

R.T.: 14.472 min
 Delta R.T.: -0.018 min
 Response: 1417147
 Conc: 1.99 ug/L

8.1.2
8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10713.D\FID1A.CH Vial: 24
Signal #2 : Y:\1\DATA\051711\GB10713.D\FID2B.CH
Acq On : 18 May 2011 5:10 am Operator: BrianR
Sample : D23440-3 Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 08:33:13 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.29	2940656	85.344	%
10) S	1,2,4-Trichlorobenzene (P)	14.29	25746664	83.718	%
Target Compounds					
1) H	TVH-Gasoline	7.21	1699225	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.07	440782	0.704	ug/L
6) T	Toluene	7.53	366744	0.613	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	10.36	362730	0.579	ug/L
9) T	o-Xylene	10.87	161190	0.309	ug/L
11) T	Naphthalene	0.00	0	N.D.	ug/L d

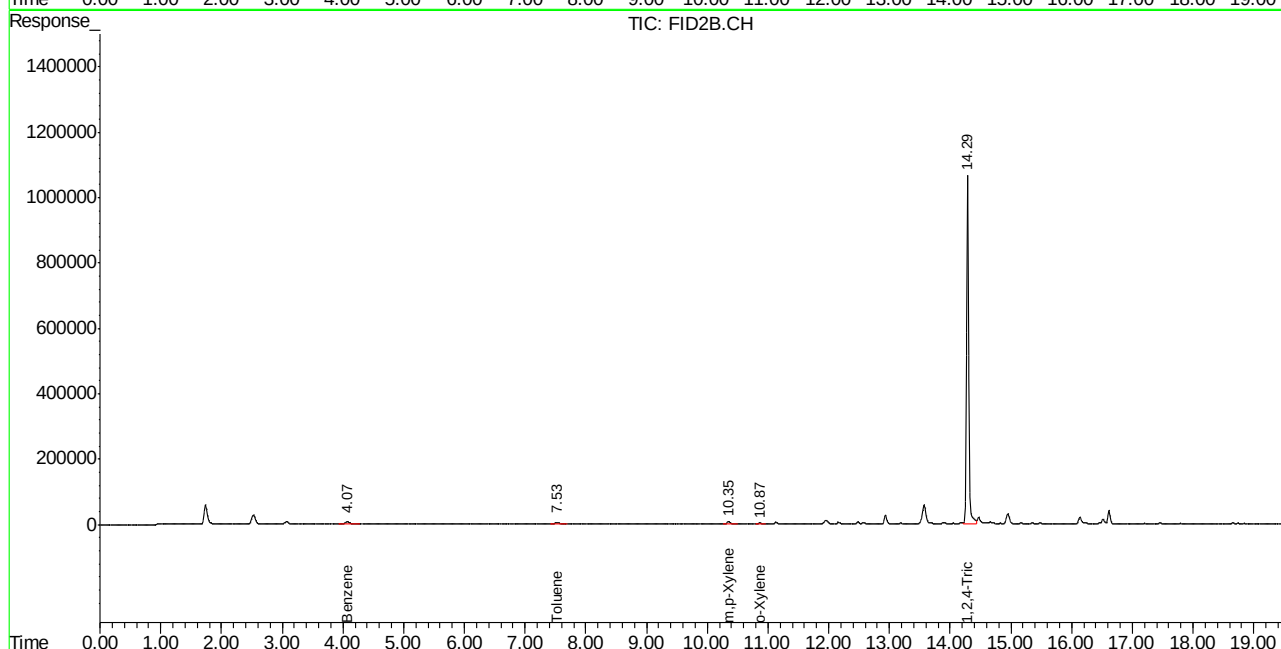
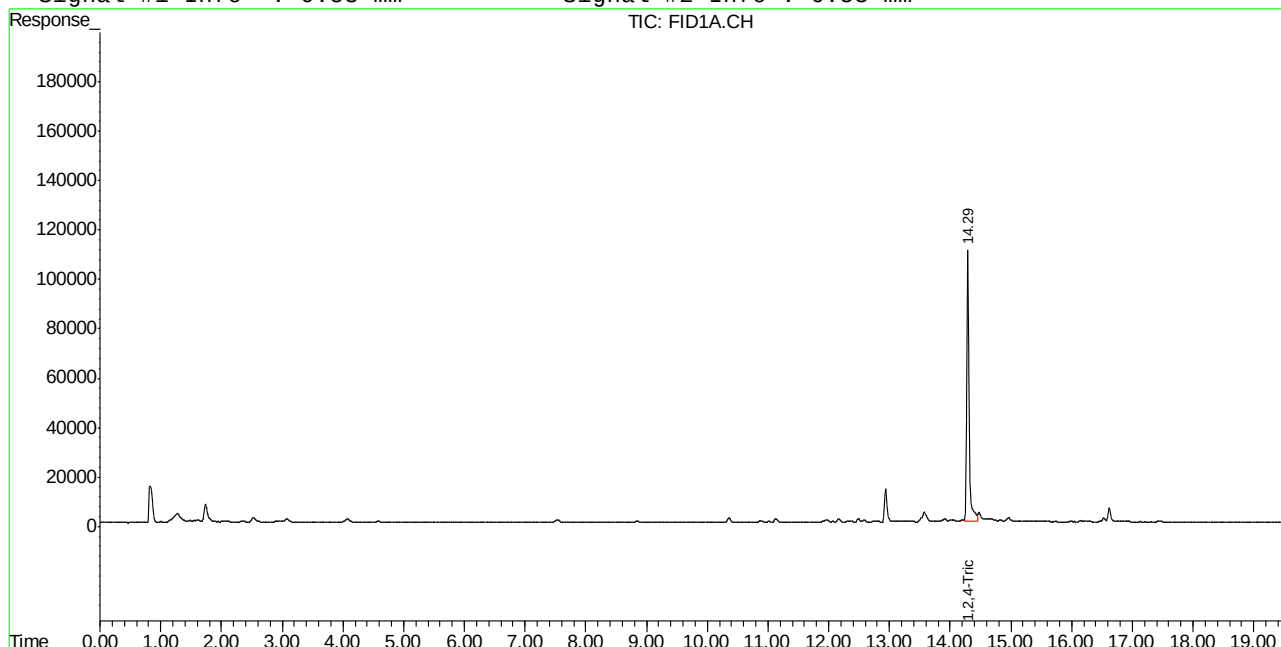
(f)=RT Delta > 1/2 Window (m)=manual int.
GB10713.D TB510GB510.M Thu May 19 08:46:00 2011 GC

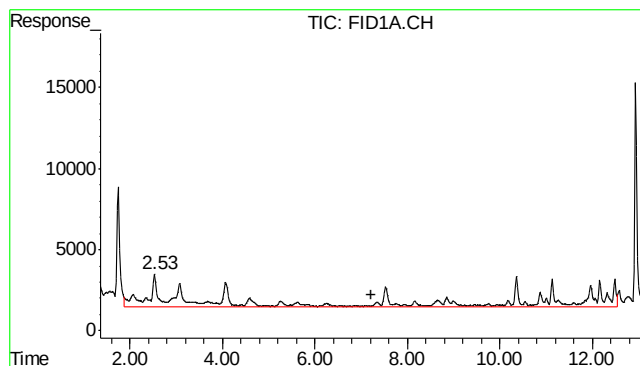
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10713.D\FID1A.CH Vial: 24
 Signal #2 : Y:\1\DATA\051711\GB10713.D\FID2B.CH
 Acq On : 18 May 2011 5:10 am Operator: BrianR
 Sample : D23440-3 Inst : GC/MS Ins
 Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 19 7:39 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed May 11 14:34:35 2011
 Response via : Single Level Calibration
 DataAcq Meth : TVB4.M

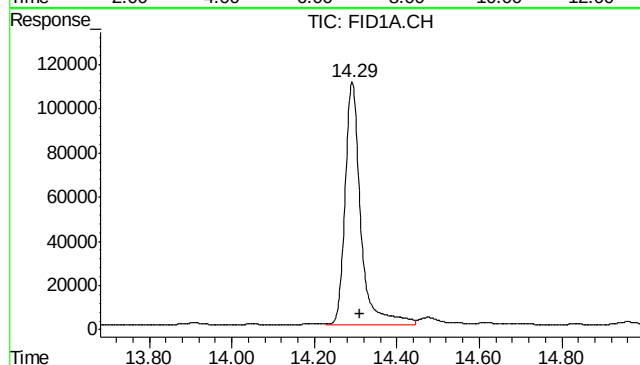
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





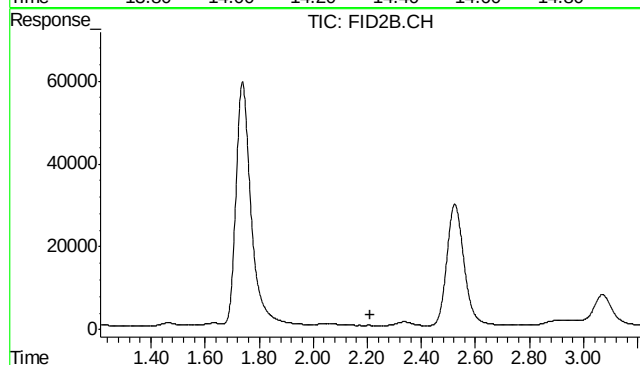
#1 TVH-Gasoline

R.T.: 7.205 min
Delta R.T.: 0.000 min
Response: 1699225
Conc: N.D.



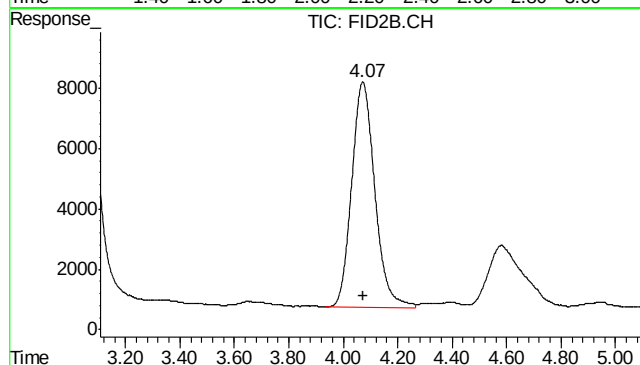
#2 1,2,4-Trichlorobenzene

R.T.: 14.292 min
Delta R.T.: -0.018 min
Response: 2940656
Conc: 85.34 %



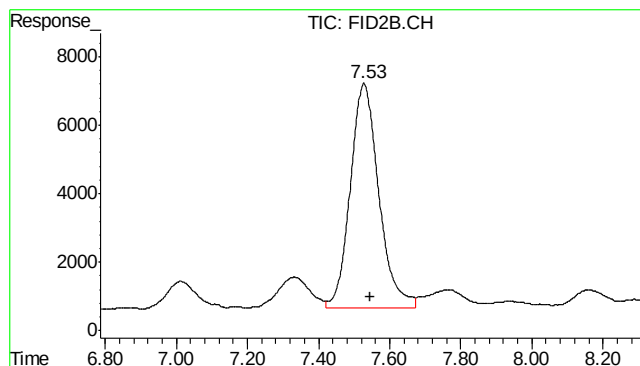
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.212 min
Response: 0
Conc: N.D.



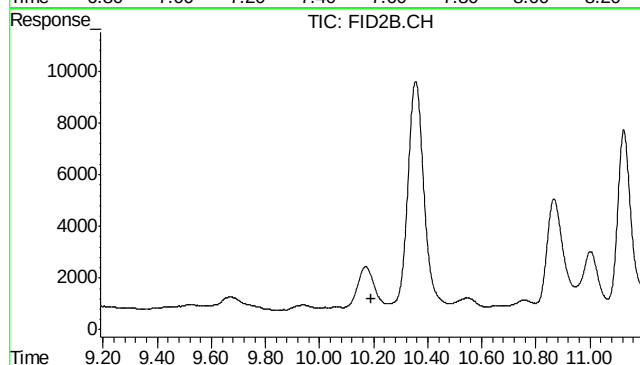
#5 Benzene

R.T.: 4.072 min
Delta R.T.: -0.002 min
Response: 440782
Conc: 0.70 ug/L



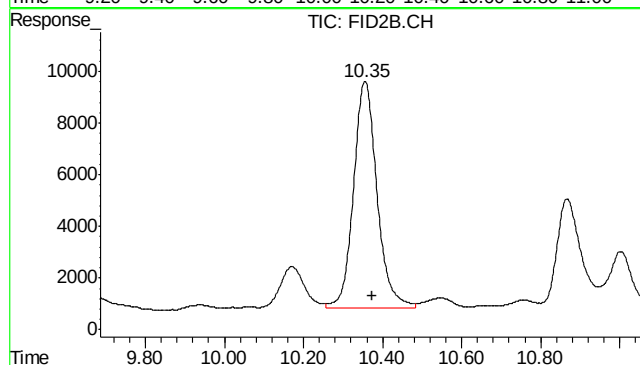
#6 Toluene

R.T.: 7.528 min
Delta R.T.: -0.017 min
Response: 366744
Conc: 0.61 ug/L



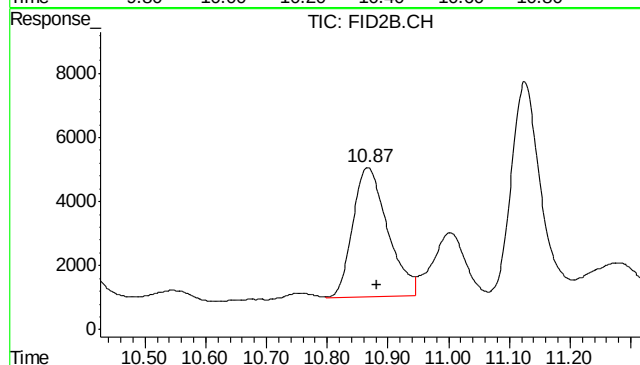
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.190 min
Response: 0
Conc: N.D.



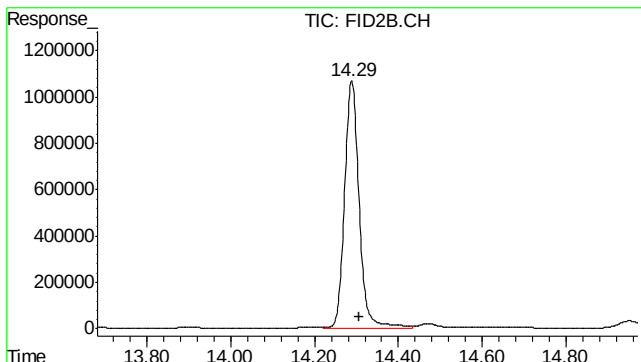
#8 m,p-Xylene

R.T.: 10.356 min
Delta R.T.: -0.019 min
Response: 362730
Conc: 0.58 ug/L

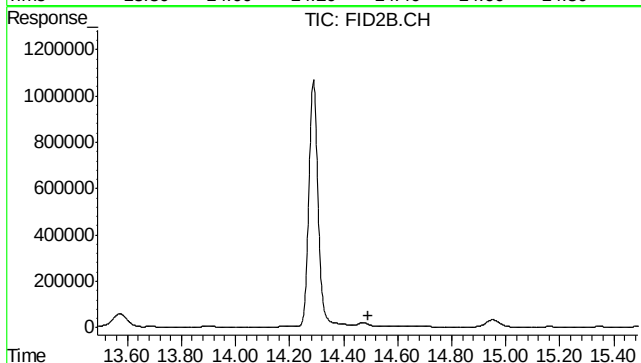


#9 o-Xylene

R.T.: 10.867 min
Delta R.T.: -0.014 min
Response: 161190
Conc: 0.31 ug/L



#10 1,2,4-Trichlorobenzene (P)
R.T.: 14.289 min
Delta R.T.: -0.018 min
Response: 25746664
Conc: 83.72 %



#11 Naphthalene
R.T.: 0.000 min
Exp R.T. : 14.490 min
Response: 0
Conc: N.D.

8.1.3
8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10707.D\FID1A.CH Vial: 18
 Signal #2 : Y:\1\DATA\051711\GB10707.D\FID2B.CH
 Acq On : 18 May 2011 1:35 am Operator: BrianR
 Sample : MB, W Inst : GC/MS Ins
 Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 19 08:32:49 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed May 11 14:34:35 2011
 Response via : Initial Calibration
 DataAcq Meth : TVB4.M

Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound	R.T.	Response	Conc	Units

System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.29	3580011	103.900	%
10) S 1,2,4-Trichlorobenzene (P)	14.29	32191996	104.676	%
Target Compounds				
1) H TVH-Gasoline	7.21	1035841	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.53	330243	0.552	ug/L
7) T Ethylbenzene	0.00	0	N.D.	ug/L d
8) T m,p-Xylene	10.36	298287	0.476	ug/L
9) T o-Xylene	10.87	122810	0.236	ug/L
11) T Naphthalene	0.00	0	N.D.	ug/L d

(f)=RT Delta > 1/2 Window
 GB10707.D TB510GB510.M

Thu May 19 08:45:41 2011

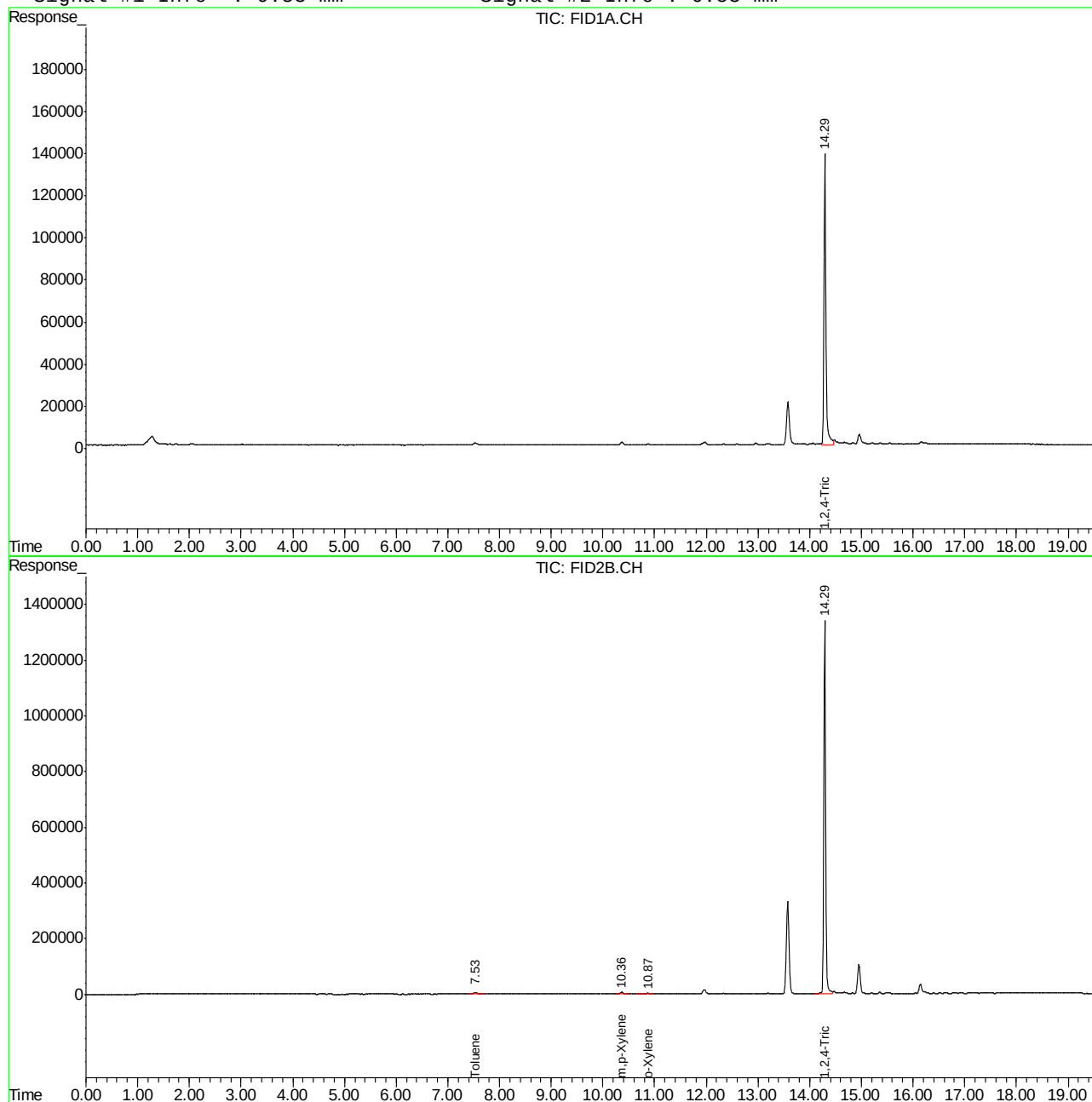
(m)=manual int.
 GC

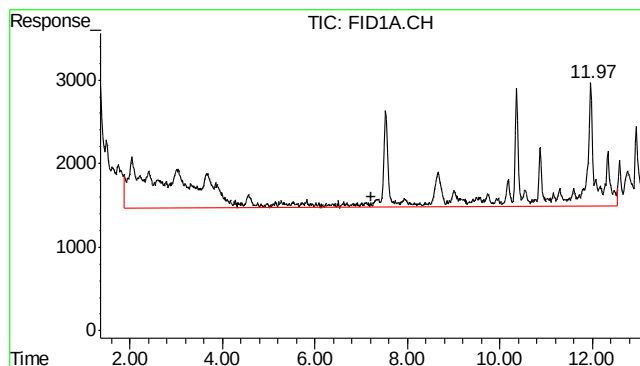
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10707.D\FID1A.CH Vial: 18
Signal #2 : Y:\1\DATA\051711\GB10707.D\FID2B.CH
Acq On : 18 May 2011 1:35 am Operator: BrianR
Sample : MB, W Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 7:37 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Single Level Calibration
DataAcq Meth : TVB4.M

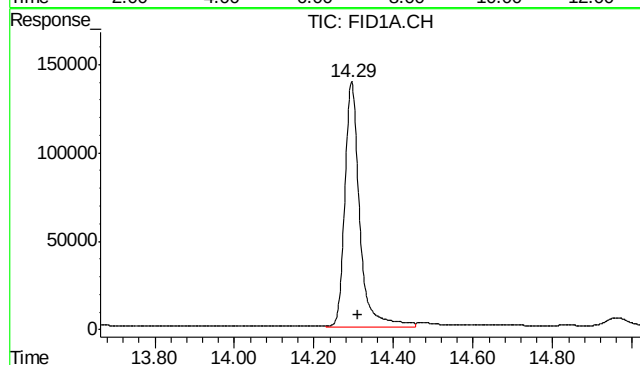
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





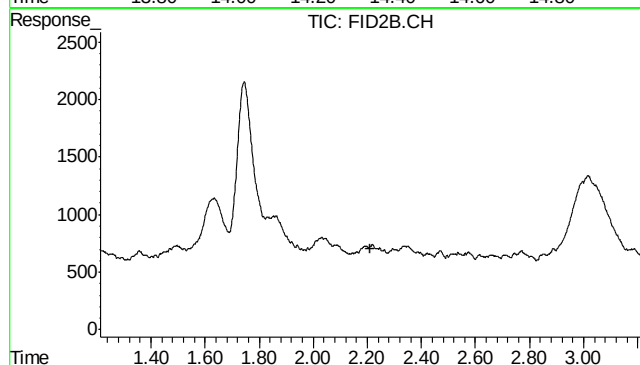
#1 TVH-Gasoline

R.T.: 7.205 min
Delta R.T.: 0.000 min
Response: 1035841
Conc: N.D.



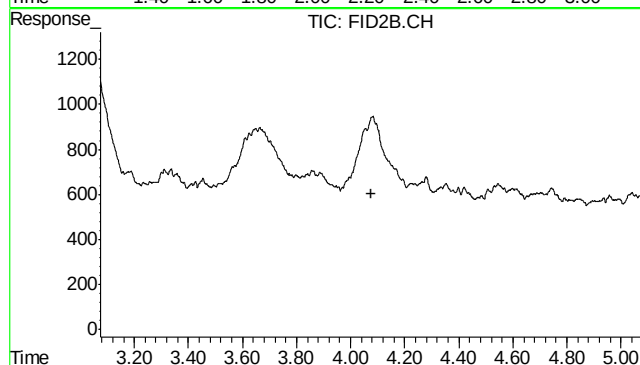
#2 1,2,4-Trichlorobenzene

R.T.: 14.295 min
Delta R.T.: -0.015 min
Response: 3580011
Conc: 103.90 %



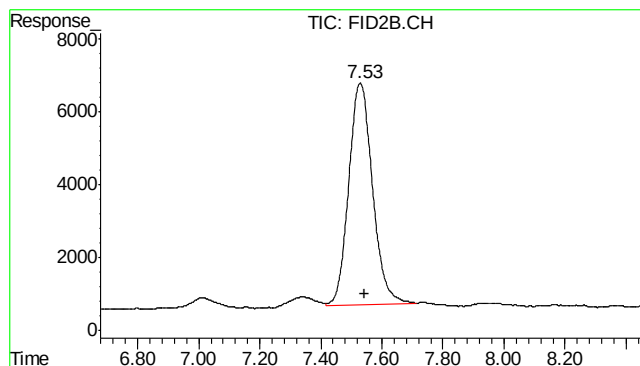
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.212 min
Response: 0
Conc: N.D.



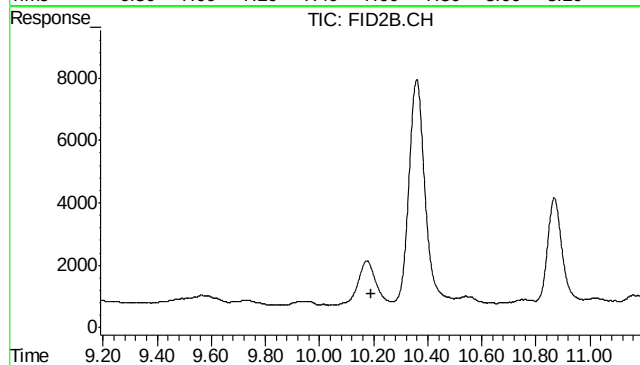
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.074 min
Response: 0
Conc: N.D.



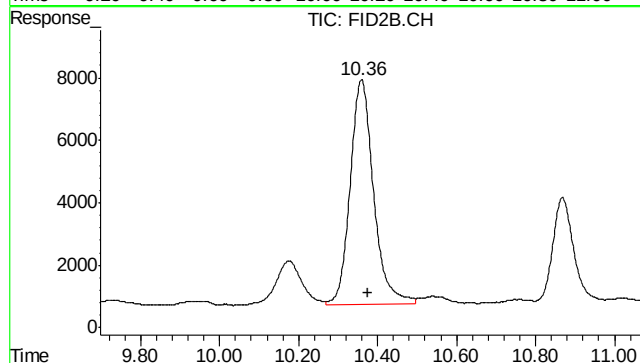
#6 Toluene

R.T.: 7.529 min
Delta R.T.: -0.016 min
Response: 330243
Conc: 0.55 ug/L



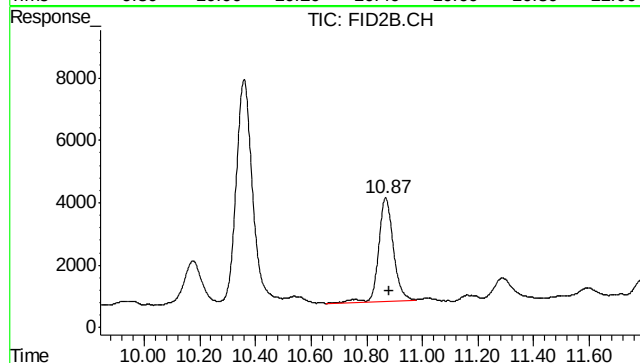
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.190 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

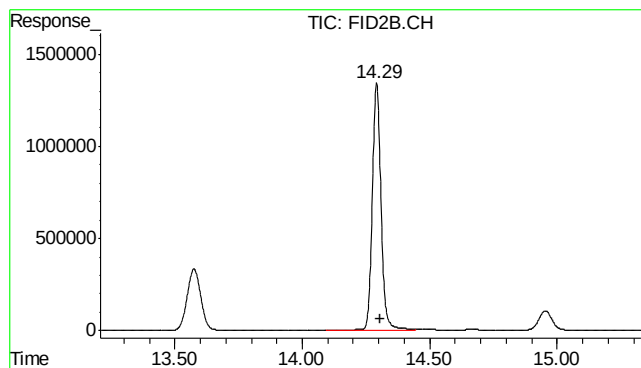
R.T.: 10.359 min
Delta R.T.: -0.015 min
Response: 298287
Conc: 0.48 ug/L



#9 o-Xylene

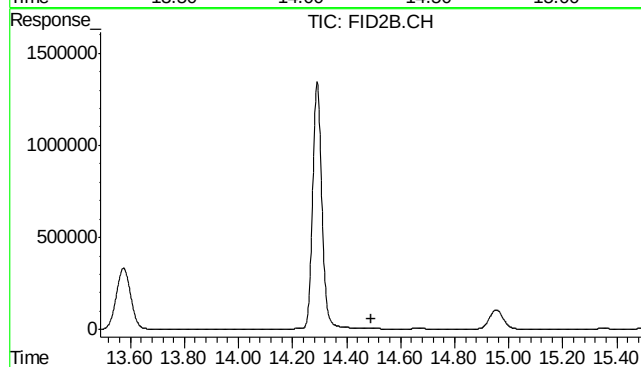
R.T.: 10.868 min
Delta R.T.: -0.013 min
Response: 122810
Conc: 0.24 ug/L

8.2.1
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.292 min
Delta R.T.: -0.015 min
Response: 32191996
Conc: 104.68 %



#11 Naphthalene

R.T.: 0.000 min
Exp R.T.: 14.490 min
Response: 0
Conc: N.D.

82.1
8

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	5.9	7.1		
Antimony	30	3.1	3.1		
Arsenic	25	5.9	5.9		
Barium	10	1.1	1.1	0.10	<10
Beryllium	10	.44	1.8		
Boron	50	4.8	4.8		
Cadmium	10	.27	.62		
Calcium	400	9.6	28	7.5	<400
Chromium	10	.18	.42		
Cobalt	5.0	.35	.4		
Copper	10	.85	1.9		
Iron	70	3.4	5.5	-0.50	<70
Lead	50	1.6	1.8		
Lithium	2.0	.28	.46		
Magnesium	200	5.8	12	-3.0	<200
Manganese	5.0	.053	.28	0.90	<5.0
Molybdenum	10	.45	1.1		
Nickel	30	.43	.96		
Phosphorus	100	11	12		
Potassium	1000	55	130	65.5	<1000
Selenium	50	3.8	5.7		
Silicon	50	3.8	3.8		
Silver	30	.18	.56		
Sodium	400	110	110	-0.30	<400
Strontium	5.0		.17	0.10	<5.0
Thallium	10	2.9	2.9		
Tin	50	5.5	15		
Titanium	10	.11	.17		
Uranium	50	1.5	1.9		
Vanadium	10	.16	.18		
Zinc	30	.28	1.4		

Associated samples MP4730: D23440-1F, D23440-2F, D23440-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.1.1

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	D23462-1F Original MS		SpikeLot MPICALL % Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	1380	3360	2000	99.0 70-130
Beryllium				
Boron				
Cadmium	anr			
Calcium	169000	191000	25000	88.0 70-130
Chromium				
Cobalt	anr			
Copper	anr			
Iron	36.8	4860	5000	96.5 70-130
Lead	anr			
Lithium				
Magnesium	0.0	24300	25000	97.2 70-130
Manganese	0.30	489	500	97.7 70-130
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	92300	119000	25000	106.8 70-130
Selenium	anr			
Silicon				
Silver				
Sodium	1280000	1290000	25000	40.0 (a) 70-130
Strontium	7090	7560	500	94.0 70-130
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP4730: D23440-1F, D23440-2F, D23440-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	D23462-1F Original MSD		Spikelet MPICPALL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	1380	3340	2000	98.0	0.6	20
Beryllium						
Boron						
Cadmium	anr					
Calcium	169000	190000	25000	84.0	0.5	20
Chromium						
Cobalt	anr					
Copper	anr					
Iron	36.8	4840	5000	96.1	0.4	20
Lead	anr					
Lithium						
Magnesium	0.0	24200	25000	96.8	0.4	20
Manganese	0.30	491	500	98.1	0.4	20
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	92300	118000	25000	102.8	0.8	20
Selenium	anr					
Silicon						
Silver						
Sodium	1280000	1300000	25000	80.0	0.8	20
Strontium	7090	7490	500	80.0	0.9	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP4730: D23440-1F, D23440-2F, D23440-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	BSP Result	SpikeLot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	1970	2000	98.5	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium	26000	25000	104.0	85-115
Chromium				
Cobalt	anr			
Copper	anr			
Iron	4930	5000	98.6	85-115
Lead	anr			
Lithium				
Magnesium	24700	25000	98.8	85-115
Manganese	509	500	101.8	85-115
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	25400	25000	101.6	85-115
Selenium	anr			
Silicon				
Silver				
Sodium	25400	25000	101.6	85-115
Strontium	504	500	100.8	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP4730: D23440-1F, D23440-2F, D23440-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN9556	5.0	3.6	mg/l	100	102	101.5	90-110%
Bromide	GP4445/GN9546	0.20	0.0	mg/l	20	20.5	102.5	90-110%
Chloride	GP4445/GN9546	0.50	0.25	mg/l	20	19.4	97.0	90-110%
Hydrogen Sulfide	GN9588	0.50	<0.50	mg/l	4.05	3.5	86.4	60-120%
Iron, Ferrous	GN9544	0.10	0.0	mg/l	1.0	0.98	98.0	85-115%
Nitrogen, Ammonia	GP4451/GN9566	0.10	0.0	mg/l	20	18.3	91.3	90-110%
Nitrogen, Nitrate	GP4445/GN9546	0.045	0.0	mg/l	4.52	4.51	99.8	90-110%
Nitrogen, Nitrite	GP4445/GN9546	0.061	0.0	mg/l	6.09	5.95	97.7	90-110%
Solids, Total Dissolved	GN9584	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP4445/GN9546	0.50	0.0	mg/l	30	28.9	96.3	90-110%
pH	GN9538			su	8.00	8.04	100.5	99.3-100.7%

Associated Samples:

Batch GN9538: D23440-1, D23440-2, D23440-3
Batch GN9544: D23440-1F, D23440-2F, D23440-3F
Batch GN9556: D23440-1, D23440-2, D23440-3
Batch GN9584: D23440-1, D23440-2, D23440-3
Batch GN9588: D23440-1, D23440-2, D23440-3
Batch GP4445: D23440-1, D23440-2, D23440-3
Batch GP4451: D23440-1, D23440-2, D23440-3
(*) Outside of QC limits

10.1
10

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN9556	D23440-1	mg/l	67.2	65.7	2.2	0-20%
Iron, Ferrous	GN9544	D23440-1F	mg/l	0.0	0.0	200.0(a)	0-20%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	0.64	4.8	0-20%
Solids, Total Dissolved	GN9584	D23440-1	mg/l	1830	1840	0.5	0-25%

Associated Samples:

Batch GN9544: D23440-1F, D23440-2F, D23440-3F

Batch GN9556: D23440-1, D23440-2, D23440-3

Batch GN9584: D23440-1, D23440-2, D23440-3

Batch GP4451: D23440-1, D23440-2, D23440-3

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN9556	D23440-1	mg/l	67.2	100	163	96.2	80-120%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.19	2.5	2.7	100.4	80-120%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.0	2.5	2.7	100.4	80-120%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.8	10	34.8	90.0	80-120%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.4	10	34.8	90.0	80-120%
Iron, Ferrous	GN9544	D23440-1F	mg/l	0.0	1.0	0.0	2.0*(a)	75-125%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	10	10.1	101.2	80-120%
Nitrogen, Nitrate	GP4445/GN9546	D23434-1	mg/l	2.8	2.83	5.9	109.7	80-120%
Nitrogen, Nitrite	GP4445/GN9546	D23434-1	mg/l	0.051	0.305	0.34	94.9	80-120%
Sulfate	GP4445/GN9546	D23434-1	mg/l	142	50	244	86.0	80-120%
Sulfate	GP4445/GN9546	D23434-1	mg/l	201	50	244	86.0	80-120%

Associated Samples:

Batch GN9544: D23440-1F, D23440-2F, D23440-3F

Batch GN9556: D23440-1, D23440-2, D23440-3

Batch GP4445: D23440-1, D23440-2, D23440-3

Batch GP4451: D23440-1, D23440-2, D23440-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23440
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN9556	D23440-1	mg/l	67.2	100	164	0.4	20%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.19	2.5	2.8	3.6	20%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.0	2.5	2.8	3.6	20%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.8	10	34.9	0.3	20%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.4	10	34.9	0.3	20%
Iron, Ferrous	GN9544	D23440-1F	mg/l	0.0	1.0	0.0200	0.0	20%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	10	10.5	3.7	
Nitrogen, Nitrate	GP4445/GN9546	D23434-1	mg/l	2.8	2.83	5.9	0.0	20%
Nitrogen, Nitrite	GP4445/GN9546	D23434-1	mg/l	0.051	0.305	0.35	2.9	20%
Sulfate	GP4445/GN9546	D23434-1	mg/l	142	50	243	0.4	20%
Sulfate	GP4445/GN9546	D23434-1	mg/l	201	50	243	0.4	20%

Associated Samples:

Batch GN9544: D23440-1F, D23440-2F, D23440-3F

Batch GN9556: D23440-1, D23440-2, D23440-3

Batch GP4445: D23440-1, D23440-2, D23440-3

Batch GP4451: D23440-1, D23440-2, D23440-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.4
10



05/24/11

Technical Report for

TetraTech GEO

Garfield County

Mamm Creek

Accutest Job Number: D23462

Sampling Date: 05/13/11

Report to:

Geotrans, Inc.
363 Centennial Parkway, Suite 210
Louisville, CO 80027
brendan.shine@geotransinc.com; david.bohmann@geotransinc.com
ATTN: Brendan Shine

Total number of pages in report: **95**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'John Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

TetraTech GEO

Job No: D23462

Garfield County
Project No: Mamm Creek

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D23462-1	05/13/11	09:10 KT	05/13/11	AQ	Ground Water	MW-1B-051311
D23462-1F	05/13/11	09:10 KT	05/13/11	AQ	Groundwater Filtered	MW-1B-051311
D23462-2	05/13/11	09:45 KT	05/13/11	AQ	Ground Water	MW-99A-051311
D23462-2F	05/13/11	09:45 KT	05/13/11	AQ	Groundwater Filtered	MW-99A-051311

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: TetraTech GEO

Job No D23462

Site: Garfield County

Report Dat 5/24/2011 4:23:56 PM

On 05/13/2011, two (2) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 5.3°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D23462 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: V5V910

- All samples were analyzed within the recommended method holding time.
- Samples D23440-3MS and D23440-3MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of a few analytes are outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.

Volatiles by GC By Method SW846 8015B

Matrix AQ

Batch ID: GGB622

- All samples were analyzed within the recommended method holding time.
- Samples D23440-1MS and D23440-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Metals By Method EPA 200.7

Matrix AQ

Batch ID: MP4730

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23462-1FMS and D23462-1FMSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery of Sodium is outside control limits. The spike amount is low relative to the sample amount. Refer to the lab control or spike blank for recovery information.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP4445

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23434-1MS and D23434-1MSD were used as the QC samples for the anion analysis.
- Samples D23462-1 and D23462-2 for Nitrate-N and Nitrite-N: The reporting limits (RL) were raised due to matrix interference.

Wet Chemistry By Method HACH 8146

Matrix AQ

Batch ID: GN9544

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23440-1FMS, D23440-1FMSD, and D23440-1FDUP were used as the QC samples for the Ferrous Iron analysis.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of Ferrous Iron are outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.
- The duplicate RPD for Ferrous Iron are outside control limits for sample GN9544-D1. The RPD is acceptable due to low duplicate and sample concentrations.
- Samples D23462-1F and D23462-2F for Ferrous Iron: Sample dilution was required due to matrix interference.

Wet Chemistry By Method SM18 3500FED M

Matrix AQ

Batch ID: R7512

- The data for SM18 3500FED M meets quality control requirements.
- The following samples were run outside of holding time for method SM18 3500FED M: D23462-1F and D23462-2F.
- Ferric Iron: Calculated as: (Iron) - (Ferrous Iron)

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN9556

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23440-1DUP, D23440-1MS, and D23440-1MSD were used as the QC samples for the Total Alkalinity, as CaCO₃ analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN9584

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Sample D23462-1DUP was used as the QC sample for the Total Dissolved Solids analysis.

Wet Chemistry By Method SM20 4500 S2 H

Matrix AQ

Batch ID: GN9588

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ

Batch ID: GP4451

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23440-1DUP, D23440-1MS, and D23440-1MSD were used as the QC samples for the Ammonia-N analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	MW-1B-051311	Date Sampled:	05/13/11
Lab Sample ID:	D23462-1	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V15513.D	1	05/23/11	DC	n/a	n/a	V5V910
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	23.7	10	5.0	ug/l	
71-43-2	Benzene	4.3	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	1.4	2.0	1.1	ug/l	J
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1B-051311**Lab Sample ID:** D23462-1**Date Sampled:** 05/13/11**Matrix:** AQ - Ground Water**Date Received:** 05/13/11**Method:** SW846 8260B**Percent Solids:** n/a**Project:** Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	84%		63-130%
2037-26-5	Toluene-D8	79%		68-130%
460-00-4	4-Bromofluorobenzene	85%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
75-28-5	Isobutane	5.19	25	ug/l	JN
106-97-8	Butane	5.64	6.9	ug/l	JN
	Total TIC, Volatile		31.9	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	MW-1B-051311	Date Sampled:	05/13/11
Lab Sample ID:	D23462-1	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB10717.D	1	05/18/11	BR	n/a	n/a	GGB622
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	93%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-1B-051311**Lab Sample ID:** D23462-1**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 05/13/11**Date Received:** 05/13/11**Percent Solids:** n/a**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	764	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	1780	50	mg/l	100	05/13/11 20:42	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/18/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	2.1	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.45	0.45	mg/l	10	05/13/11 16:08	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 6.1	6.1	mg/l	100	05/13/11 20:42	JML	EPA 300/SW846 9056
Solids, Total Dissolved	3890	10	mg/l	1	05/18/11	JD	SM20 2540C
Sulfate	55.0	5.0	mg/l	10	05/13/11 16:08	JML	EPA 300/SW846 9056
pH	12.13		su	1	05/13/11 16:05	CJ	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-1B-051311**Lab Sample ID:** D23462-1F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 05/13/11**Date Received:** 05/13/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1380	10	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Calcium	169000	400	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Iron	< 70	70	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	< 200	200	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 5.0	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Potassium	92300	1000	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Sodium	1280000	2000	ug/l	5	05/18/11	05/19/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Strontium	7090	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1535

(2) Prep QC Batch: MP4730

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-1B-051311	Date Sampled:	05/13/11
Lab Sample ID:	D23462-1F	Date Received:	05/13/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.57	0.57	mg/l	1	05/18/11 17:33	JB	SM18 3500FED M
Iron, Ferrous ^b	< 0.50	0.50	mg/l	5	05/13/11 15:00	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Dilution required due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	MW-99A-051311	Date Sampled:	05/13/11
Lab Sample ID:	D23462-2	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V15514.D	1	05/23/11	DC	n/a	n/a	V5V910
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	21.9	10	5.0	ug/l	
71-43-2	Benzene	5.9	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	1.8	2.0	1.1	ug/l	J
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-99A-051311

Lab Sample ID: D23462-2

Date Sampled: 05/13/11

Matrix: AQ - Ground Water

Date Received: 05/13/11

Method: SW846 8260B

Percent Solids: n/a

Project: Garfield County

VOA HSL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	87%		63-130%
2037-26-5	Toluene-D8	74%		68-130%
460-00-4	4-Bromofluorobenzene	79%		61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
75-28-5	Isobutane	5.19	48	ug/l	JN
106-97-8	Butane	5.64	11	ug/l	JN
	Total TIC, Volatile		59	ug/l	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MW-99A-051311	Date Sampled:	05/13/11
Lab Sample ID:	D23462-2	Date Received:	05/13/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Garfield County		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB10718.D	1	05/18/11	BR	n/a	n/a	GGB622
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	90%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-99A-051311**Lab Sample ID:** D23462-2**Matrix:** AQ - Ground Water**Project:** Garfield County**Date Sampled:** 05/13/11**Date Received:** 05/13/11**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	735	5.0	mg/l	1	05/16/11	CJ	SM20 2320B
Chloride	1780	50	mg/l	100	05/13/11 20:56	JML	EPA 300/SW846 9056
Hydrogen Sulfide	< 0.50	0.50	mg/l	1	05/18/11	JK	SM20 4500 S2 H
Nitrogen, Ammonia	2.1	0.10	mg/l	1	05/17/11	CJ	SM20 4500NH3 D
Nitrogen, Nitrate ^a	< 0.45	0.45	mg/l	10	05/13/11 16:23	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 6.1	6.1	mg/l	100	05/13/11 20:56	JML	EPA 300/SW846 9056
Solids, Total Dissolved	3880	10	mg/l	1	05/18/11	JD	SM20 2540C
Sulfate	69.1	5.0	mg/l	10	05/13/11 16:23	JML	EPA 300/SW846 9056
pH	11.89		su	1	05/13/11 16:05	CJ	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-99A-051311**Lab Sample ID:** D23462-2F**Matrix:** AQ - Groundwater Filtered**Project:** Garfield County**Date Sampled:** 05/13/11**Date Received:** 05/13/11**Percent Solids:** n/a**Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1390	10	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Calcium	168000	400	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Iron	< 70	70	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Magnesium	< 200	200	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 5.0	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Potassium	91800	1000	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Sodium	1290000	2000	ug/l	5	05/18/11	05/19/11 JB	EPA 200.7 ¹	EPA 200.7 ²
Strontium	7030	5.0	ug/l	1	05/18/11	05/18/11 JB	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1535

(2) Prep QC Batch: MP4730

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-99A-051311	Date Sampled:	05/13/11
Lab Sample ID:	D23462-2F	Date Received:	05/13/11
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Garfield County		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron, Ferric ^a	< 0.57	0.57	mg/l	1	05/18/11 18:34	JB	SM18 3500FED M
Iron, Ferrous ^b	< 0.50	0.50	mg/l	5	05/13/11 15:00	CJ	HACH 8146

(a) Calculated as: (Iron) - (Iron, Ferrous)
(b) Dilution required due to matrix interference.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL: 303-425-6021 877-737-4521
FAX: 303-425-6021

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D23462

Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)	Matrix Codes
Company Name Geo Trans Inc Street Address 363 Cantanival Hwy Ste 210 City Louisville CO 80027 Project Contact David Bohman Phone # 303-645-4390 Sampler(s) Name(s) K. Thompson	Project Name Garfield Cnty - Maum Creek Street City Company Name Street Address City State Zip Client PO# Project Manager David Bohman Attention: PO#	Requested Analysis (see TEST CODE sheet) MW-18-051311 MW-99A-05134 100% TDS, AM, P, L Dissolved Metals (see) CHL, NO3, NO2, SO4 XFE3 (FE, PB, FE3) Total Coliform V2005 GPO, V260 LSC + Hydrocarbons, Sulfates	Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	NO3	NO2	SO4	CHL	FE	PB	FE3	Coliform	TDS	AM	P	L	LAB USE ONLY
	MW-18-051311		5/13/11	0910	KT	GW	14	X	X	X	X	X	X	X	X	X	X	X	X	01
	MW-99A-05134		5/13/11	0945	KT	GW	14	X	X	X	X	X	X	X	X	X	X	X	X	02

Turnaround Time (Business days)	Approved By (Accutest PM): / Date:	Commercial "A" (Level 1)	Commercial "B" (Level 2)	Commercial "B" + Narrative	FULLT (Level 3-4)	State Forms	EDD Format	PDF	Comments / Special Instructions
☒ Std. 10 Business Days ☐ Std. 5 Business Days (By Contract only) ☐ 5 Day FV SH ☐ 3 Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 1 Day EMERGENCY		☐	☐	☐	☐	☐	☒	☐	Metals (200.7) Ba, Co, Mg, Mn, K, Na, Sr, Fe Sample has been held Eildrey email: bbohman@geotransinc.com dbohman@geotransinc.com

Relinquished by Sampler:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
1	5/13/11 1440	BOHMAN	5/13/11 1440	2	
3		3		4	
5		5		4	

Custody Seal #	Intact	Preserved where applicable	On Ice	Cooler Temp
HDA	X	X	X	5.3°C

D23462: Chain of Custody

Page 1 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D23462

Client: GEOTRANS INC

Immediate Client Services Action Required: No

Date / Time Received: 5/13/2011 2:40:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: GARFIELD COUNTY

Airbill #'s: HD

Cooler Security

Y or N

Y or N

1. Custody Seals Present:	☒	☐	3. COC Present:	☒	☐
2. Custody Seals Intact:	☒	☐	4. Smpl Dates/Time OK	☒	☐

Cooler Temperature

Y or N

1. Temp criteria achieved:	☒	☐
2. Cooler temp verification:	Infrared gun	
3. Cooler media:	Ice (bag)	

Quality Control Preservation

Y or N

N/A

1. Trip Blank present / cooler:	☐	☐	
2. Trip Blank listed on COC:	☐	☐	
3. Samples preserved properly:	☒	☐	
4. VOCs headspace free:	☒	☐	☐

Sample Integrity - Documentation

Y or N

1. Sample labels present on bottles:	☒	☐
2. Container labeling complete:	☒	☐
3. Sample container label / COC agree:	☒	☐

Sample Integrity - Condition

Y or N

1. Sample recvd within HT:	☒	☐
2. All containers accounted for:	☒	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions

Y or N N/A

1. Analysis requested is clear:	☒	☐	
2. Bottles received for unspecified tests	☐	☒	
3. Sufficient volume rec'd for analysis:	☒	☐	
4. Compositing instructions clear:	☐	☐	☒
5. Filtering instructions clear:	☐	☐	☒

Comments

Accutest Laboratories
V.(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

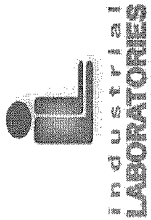
Wheat Ridge, CO
www.accutest.com



Accutest Job #:	D23462X
Accutest Quote #:	0
AMS P.O. #:	
Project No.:	

[illegible]

Page 3 of 4



Industrial Laboratories is your independent,
third-party analytical testing laboratory.

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Amanda Kissell

TEST REPORT

ACCUTEST - M

Date Received: 5/13/2011

Date Reported: 5/16/2011

PO Number: D23462X

Note: Sample test procedures conform to EPA 40CFR 136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
110513013-01A	D23462X-1, 5/13/11, 9:10am	* Total Coliforms MPN SM 9221 B	<2 fecal; total	MPN/100mL		GH 5/13/2011
110513013-02A	D23462X-2, 5/13/11, 8:45am	* Total Coliforms MPN SM 9221 B	<2 fecal; total	MPN/100mL		GH 5/13/2011

* = Scope Analysis
= Subcontracted Analysis
MDL = Method Detection Limit
ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager 

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-5691 • (303) 287-4964 FAX • www.industrialabs.net

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D23462: Chain of Custody
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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 2

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V910-MB1	5V15504.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples:

Method: SW846 8260B

D23462-1, D23462-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	1.0	0.25	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/l	
75-25-2	Bromoform	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	5.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.1	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.77	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.32	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.54	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.90	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.50	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.5	ug/l	
74-83-9	Methyl bromide	ND	5.0	2.9	ug/l	
74-87-3	Methyl chloride	ND	2.0	0.58	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.5	ug/l	
100-42-5	Styrene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V910-MB1	5V15504.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples:

Method: SW846 8260B

D23462-1, D23462-2

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	ND	2.0	0.75	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	2.5	ug/l	
1330-20-7	Xylene (total)	ND	4.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	94% 63-130%
2037-26-5	Toluene-D8	95% 68-130%
460-00-4	4-Bromofluorobenzene	99% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Page 1 of 2

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V910-BS1	5V15505.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples:

Method: SW846 8260B

D23462-1, D23462-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	39.3	79	49-130
71-43-2	Benzene	50	48.6	97	70-130
75-27-4	Bromodichloromethane	50	56.4	113	70-130
75-25-2	Bromoform	50	58.2	116	48-138
108-90-7	Chlorobenzene	50	55.4	111	70-130
75-00-3	Chloroethane	50	37.3	75	61-130
67-66-3	Chloroform	50	53.6	107	70-130
110-75-8	2-Chloroethyl vinyl ether	50	35.4	71	22-185
75-15-0	Carbon disulfide	50	50.5	101	55-130
56-23-5	Carbon tetrachloride	50	64.9	130	70-130
75-34-3	1,1-Dichloroethane	50	50.3	101	70-130
75-35-4	1,1-Dichloroethylene	50	47.5	95	70-130
107-06-2	1,2-Dichloroethane	50	56.1	112	70-130
78-87-5	1,2-Dichloropropane	50	47.8	96	70-130
124-48-1	Dibromochloromethane	50	56.3	113	64-132
156-59-2	cis-1,2-Dichloroethylene	50	47.7	95	70-130
10061-01-5	cis-1,3-Dichloropropene	50	52.8	106	67-130
541-73-1	m-Dichlorobenzene	50	55.6	111	52-148
95-50-1	o-Dichlorobenzene	50	55.6	111	53-146
106-46-7	p-Dichlorobenzene	50	53.9	108	57-136
156-60-5	trans-1,2-Dichloroethylene	50	47.2	94	70-130
10061-02-6	trans-1,3-Dichloropropene	50	53.0	106	66-130
100-41-4	Ethylbenzene	50	57.1	114	70-130
591-78-6	2-Hexanone	50	53.5	107	38-130
108-10-1	4-Methyl-2-pentanone	50	47.0	94	68-130
74-83-9	Methyl bromide	50	36.0	72	35-151
74-87-3	Methyl chloride	50	31.6	63	46-138
75-09-2	Methylene chloride	50	45.8	92	70-130
78-93-3	Methyl ethyl ketone	50	43.7	87	37-130
100-42-5	Styrene	50	55.9	112	38-130
71-55-6	1,1,1-Trichloroethane	50	58.3	117	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	55.5	111	70-130
79-00-5	1,1,2-Trichloroethane	50	53.1	106	69-130
127-18-4	Tetrachloroethylene	50	57.8	116	66-134
108-88-3	Toluene	50	50.0	100	70-140
79-01-6	Trichloroethylene	50	51.3	103	70-130

Blank Spike Summary

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V910-BS1	5V15505.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples: Method: SW846 8260B

D23462-1, D23462-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl chloride	50	33.2	66	58-135
108-05-4	Vinyl Acetate	50	61.5	123	50-130
1330-20-7	Xylene (total)	100	103	103	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	63-130%
2037-26-5	Toluene-D8	93%	68-130%
460-00-4	4-Bromofluorobenzene	108%	61-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23440-3MS	5V15509.D	1	05/23/11	DC	n/a	n/a	V5V910
D23440-3MSD	5V15510.D	1	05/23/11	DC	n/a	n/a	V5V910
D23440-3	5V15508.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples:

Method: SW846 8260B

D23462-1, D23462-2

CAS No.	Compound	D23440-3 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	73.6		50	117	87	123	99	5	21-130/30
71-43-2	Benzene	0.68	J	50	52.0	103	57.1	113	9	59-132/30
75-27-4	Bromodichloromethane	ND		50	54.7	109	59.8	120	9	58-130/30
75-25-2	Bromoform	ND		50	56.5	113	61.2	122	8	45-140/30
108-90-7	Chlorobenzene	ND		50	57.9	116	64.5	129	11	70-130/30
75-00-3	Chloroethane	ND		50	40.4	81	44.6	89	10	61-130/30
67-66-3	Chloroform	ND		50	60.2	120	67.5	135* a	11	69-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	38.2	76	42.4	85	10	20-168/30
75-15-0	Carbon disulfide	ND		50	51.5	103	56.7	113	10	41-132/30
56-23-5	Carbon tetrachloride	ND		50	71.3	143* a	78.4	157* a	9	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	54.1	108	61.4	123	13	70-130/30
75-35-4	1,1-Dichloroethylene	ND		50	61.7	123	69.8	140* a	12	69-137/30
107-06-2	1,2-Dichloroethane	ND		50	62.0	124	68.7	137* a	10	62-130/30
78-87-5	1,2-Dichloropropane	ND		50	50.7	101	56.6	113	11	63-131/30
124-48-1	Dibromochloromethane	ND		50	53.8	108	58.6	117	9	52-141/30
156-59-2	cis-1,2-Dichloroethylene	ND		50	51.7	103	58.6	117	13	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	52.5	105	58.7	117	11	51-134/30
541-73-1	m-Dichlorobenzene	ND		50	55.6	111	63.8	128	14	38-148/30
95-50-1	o-Dichlorobenzene	ND		50	55.1	110	62.9	126	13	40-148/30
106-46-7	p-Dichlorobenzene	ND		50	55.0	110	61.1	122	11	43-136/30
156-60-5	trans-1,2-Dichloroethylene	ND		50	52.1	104	56.4	113	8	69-134/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	54.8	110	59.7	119	9	50-130/30
100-41-4	Ethylbenzene	ND		50	58.9	118	66.5	133* a	12	68-130/30
591-78-6	2-Hexanone	2.1		50	51.5	99	56.2	108	9	29-130/30
108-10-1	4-Methyl-2-pentanone	ND		50	42.1	84	47.3	95	12	62-130/30
74-83-9	Methyl bromide	ND		50	38.6	77	42.6	85	10	20-171/30
74-87-3	Methyl chloride	ND		50	35.5	71	39.7	79	11	25-148/30
75-09-2	Methylene chloride	ND		50	49.5	99	55.4	111	11	58-139/30
78-93-3	Methyl ethyl ketone	4.5	J	50	49.1	89	59.4	110	19	37-130/30
100-42-5	Styrene	ND		50	57.8	116	64.0	128	10	27-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	63.7	127	71.0	142* a	11	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	ND	0* a	ND	0* a	nc	61-140/30
79-00-5	1,1,2-Trichloroethane	ND		50	39.9	80	40.2	80	1	52-135/30
127-18-4	Tetrachloroethylene	ND		50	59.8	120	67.0	134	11	61-134/30
108-88-3	Toluene	ND		50	53.0	106	58.1	116	9	56-142/30
79-01-6	Trichloroethylene	ND		50	95.3	191* a	107	214* a	12	61-132/30

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23440-3MS	5V15509.D	1	05/23/11	DC	n/a	n/a	V5V910
D23440-3MSD	5V15510.D	1	05/23/11	DC	n/a	n/a	V5V910
D23440-3	5V15508.D	1	05/23/11	DC	n/a	n/a	V5V910

The QC reported here applies to the following samples:

Method: SW846 8260B

D23462-1, D23462-2

CAS No.	Compound	D23440-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl chloride	ND	50	37.7	75	42.0	84	11	54-148/30
108-05-4	Vinyl Acetate	ND	50	95.2	190* a	117	234* a	21	40-139/30
1330-20-7	Xylene (total)	ND	100	107	107	120	120	11	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D23440-3	Limits
17060-07-0	1,2-Dichloroethane-D4	87%	96%	85%	63-130%
2037-26-5	Toluene-D8	76%	81%	73%	68-130%
460-00-4	4-Bromofluorobenzene	83%	92%	79%	61-130%

(a) Outside control limits due to possible matrix interference.

GC/MS Volatiles

Raw Data

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15513.D
Acq On : 23 May 2011 5:35 pm
Operator : DONC
Sample : D23462-1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 24 12:22:56 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	155409	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.446	114	191116	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	172932	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	101770	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.035	102	12373	42.14	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	84.28%	
55) Toluene-d8	13.851	98	277153	39.56	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	79.12%	
59) 4-Bromofluorobenzene	16.043	95	96301	42.35	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	84.70%	

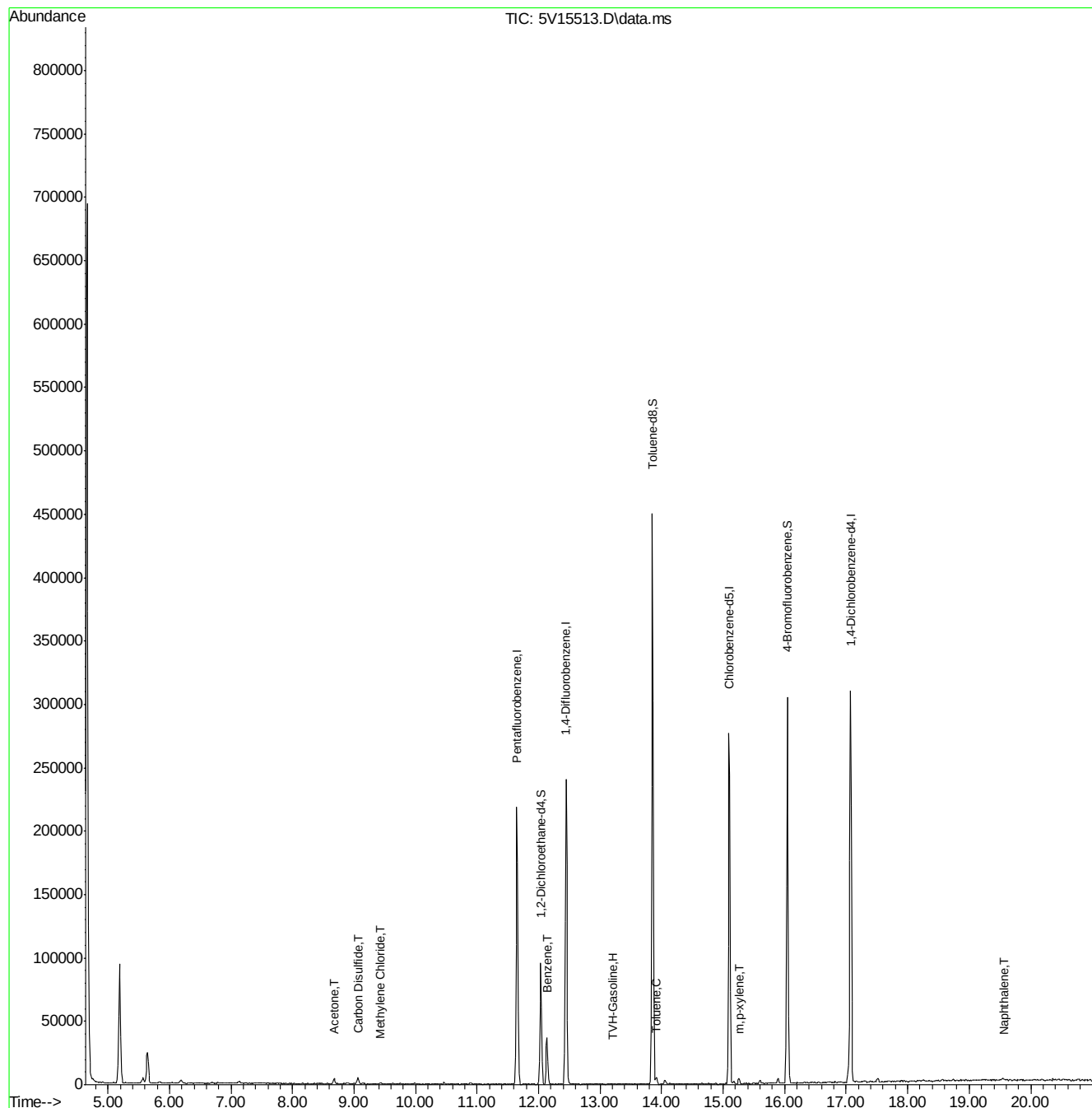
Target Compounds						Qvalue
1) TVH-Gasoline	13.210	TIC	55129m	3.31	ug/l	
15) Methylene Chloride	9.432	84	690	0.43	ug/l #	27
16) Acetone	8.679	58	1595	23.74	ug/l #	85
17) Carbon Disulfide	9.067	76	8582	1.43	ug/l	97
45) Benzene	12.138	78	31737	4.30	ug/l	100
56) Toluene	13.908	92	2208	0.44	ug/l #	79
61) m,p-xylene	15.255	106	1599	0.40	ug/l #	71
72) Naphthalene	19.570	128	1507	0.44	ug/l	100

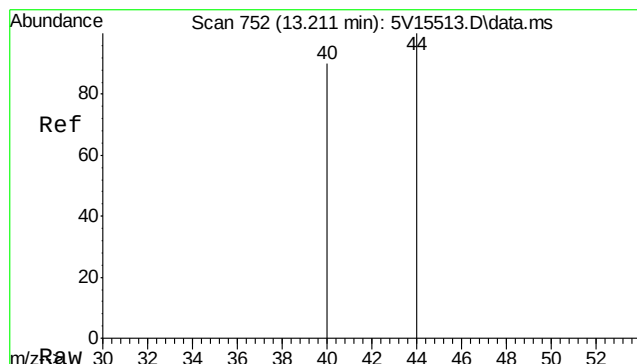
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

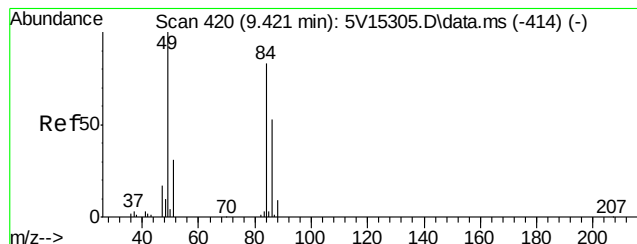
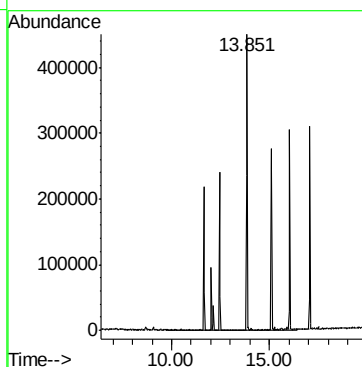
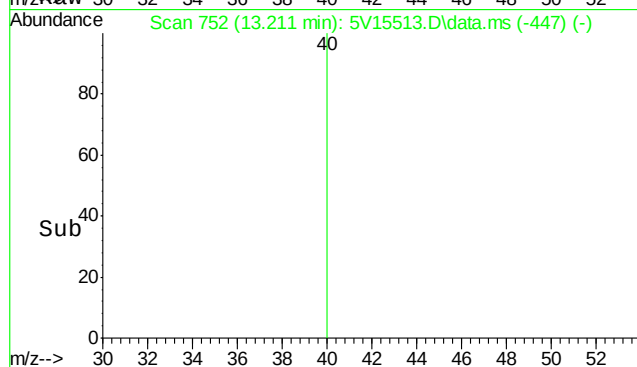
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Data File : 5V15513.D
Acq On : 23 May 2011 5:35 pm
Operator : DONC
Sample : D23462-1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 24 12:22:56 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration



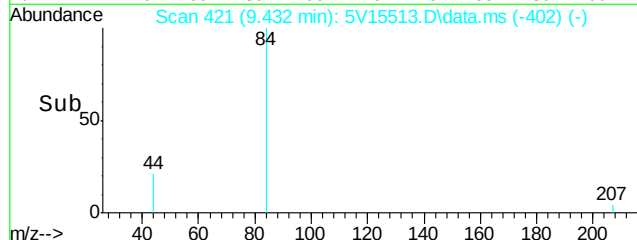
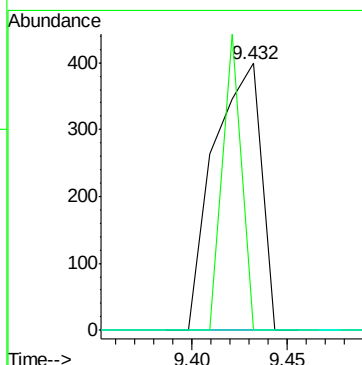
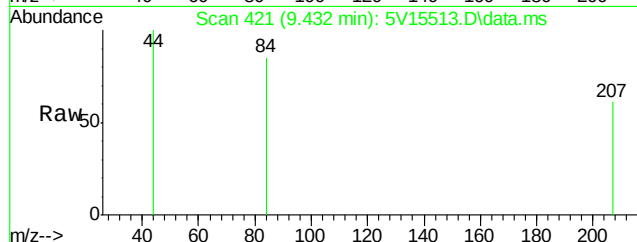


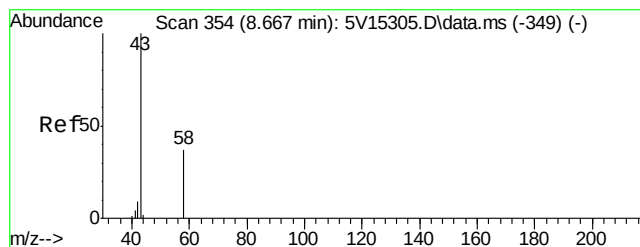
#1
TVH-Gasoline
Concen: 3.31 ug/l m
RT: 13.210 min Scan# 752
Delta R.T. 0.000 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm
Tgt Ion:TIC Resp: 55129



#15
Methylene Chloride
Concen: 0.43 ug/l
RT: 9.432 min Scan# 421
Delta R.T. 0.011 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm

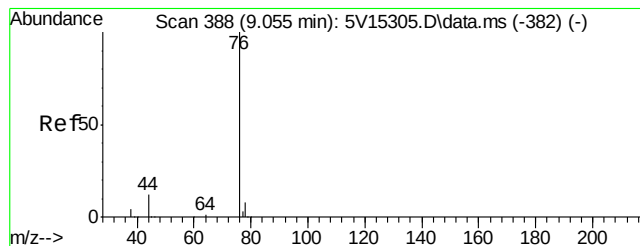
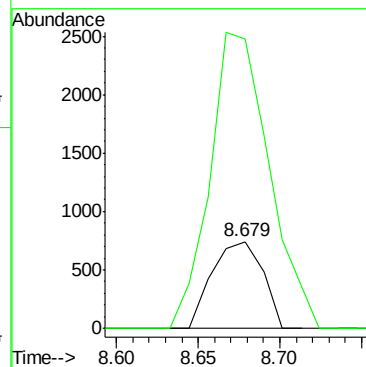
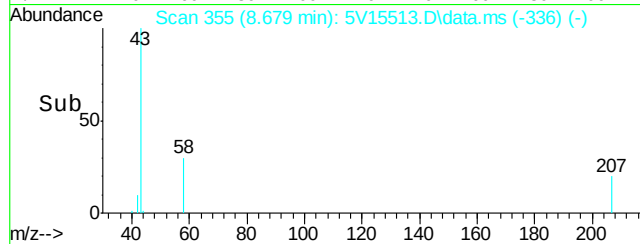
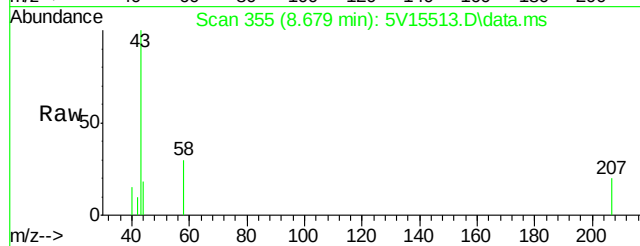
Tgt Ion: 84 Resp: 690
Ion Ratio Lower Upper
84 100
49 43.9 97.8 137.8#
86 0.0 45.0 85.0#





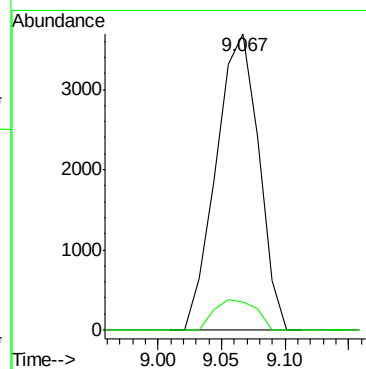
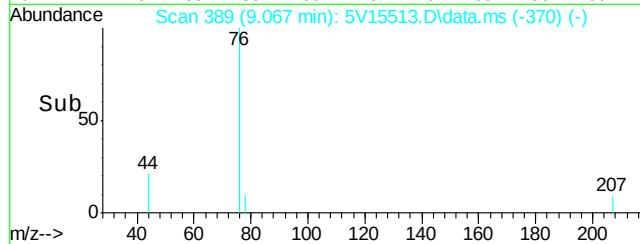
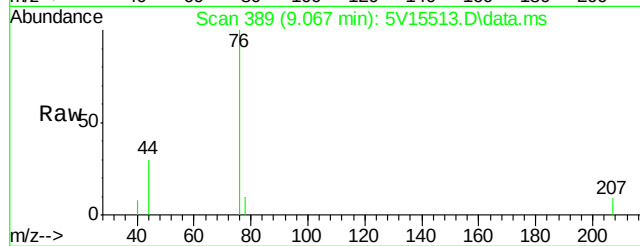
#16
Acetone
Concen: 23.74 ug/l
RT: 8.679 min Scan# 355
Delta R.T. 0.012 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm

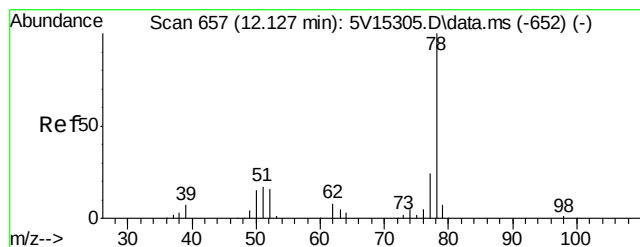
Tgt Ion: 58 Resp: 1595
Ion Ratio Lower Upper
58 100
43 398.9 344.6 384.6#



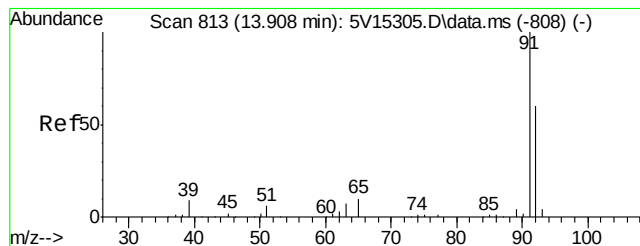
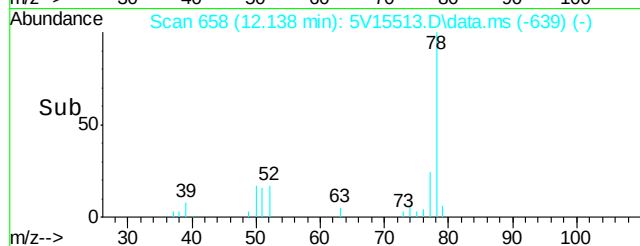
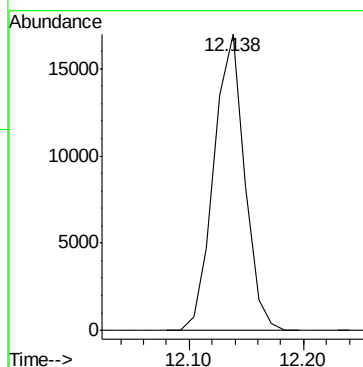
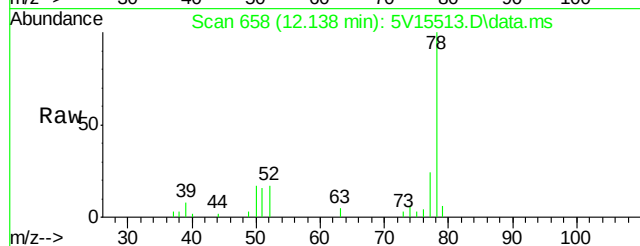
#17
Carbon Disulfide
Concen: 1.43 ug/l
RT: 9.067 min Scan# 389
Delta R.T. 0.011 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm

Tgt Ion: 76 Resp: 8582
Ion Ratio Lower Upper
76 100
78 10.0 7.2 10.8

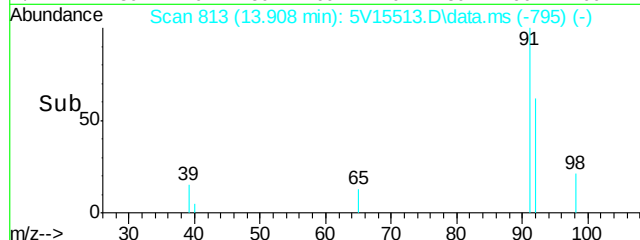
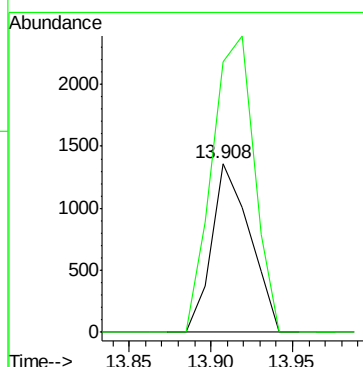
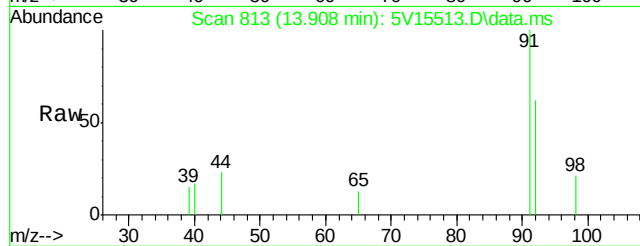


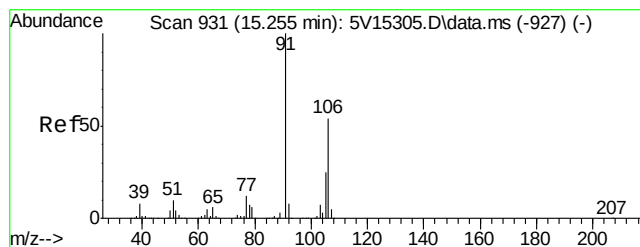


#45
Benzene
Concen: 4.30 ug/l
RT: 12.138 min Scan# 658
Delta R.T. 0.011 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm
Tgt Ion: 78 Resp: 31737



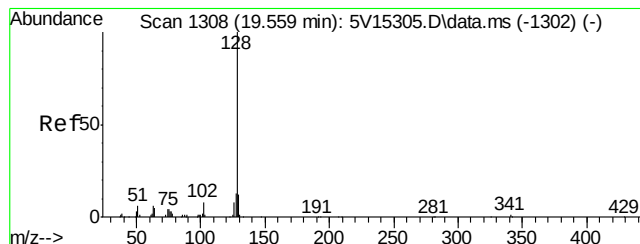
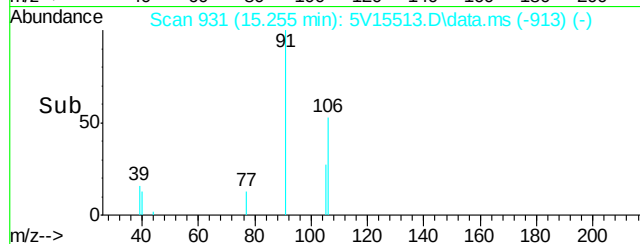
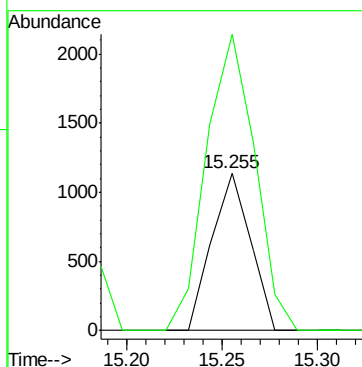
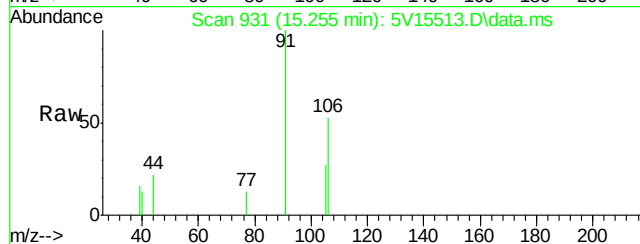
#56
Toluene
Concen: 0.44 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm
Tgt Ion: 92 Resp: 2208
Ion Ratio Lower Upper
92 100
91 194.1 146.2 186.2#





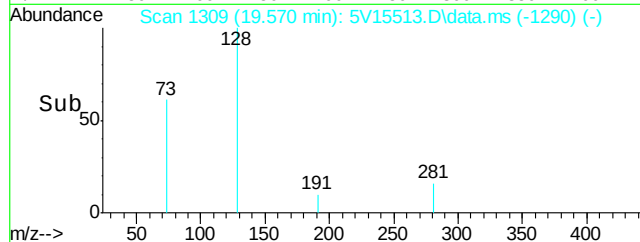
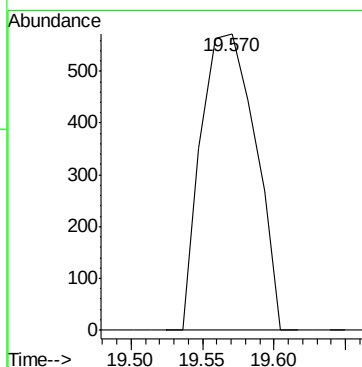
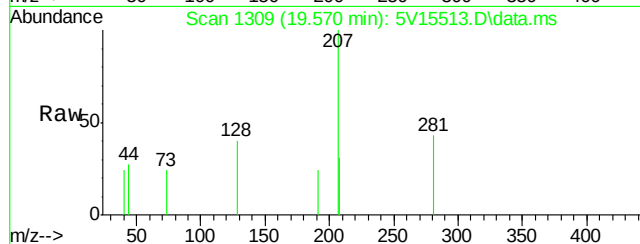
#61
m,p-xylene
Concen: 0.40 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm

Tgt Ion:106 Resp: 1599
Ion Ratio Lower Upper
106 100
91 237.8 174.3 214.3#



#72
Naphthalene
Concen: 0.44 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.012 min
Lab File: 5V15513.D
Acq: 23 May 2011 5:35 pm

Tgt Ion:128 Resp: 1507



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15513.D
Acq On : 23 May 2011 5:35 pm
Operator : DONC
Sample : D23462-1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: rteint.p

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0

Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Title : 8260

Signal : TIC: 5V15513.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.185	45	49	55	rVB	94274	201565	26.16%	5.374%
2	5.573	76	83	85	rBV2	4330	9980	1.30%	0.266%
3	5.642	85	89	94	rVB	24131	55945	7.26%	1.492%
4	8.679	349	355	358	rBV2	4024	9310	1.21%	0.248%
5	9.067	384	389	393	rBV	5052	11633	1.51%	0.310%
6	11.647	611	615	620	rVB	218915	407398	52.88%	10.862%
7	12.035	645	649	654	rVB	96072	180872	23.48%	4.822%
8	12.138	654	658	662	rBV	37131	69460	9.02%	1.852%
9	12.446	681	685	689	rBV	240107	426158	55.31%	11.362%
10	13.851	804	808	812	rBV	449971	770476	100.00%	20.542%
11	13.919	812	814	817	rVB2	5589	8852	1.15%	0.236%
12	15.095	914	917	922	rBV	276555	498401	64.69%	13.288%
13	16.043	996	1000	1004	rBV	304621	522095	67.76%	13.920%
14	17.070	1084	1090	1094	rBV	309077	578557	75.09%	15.425%

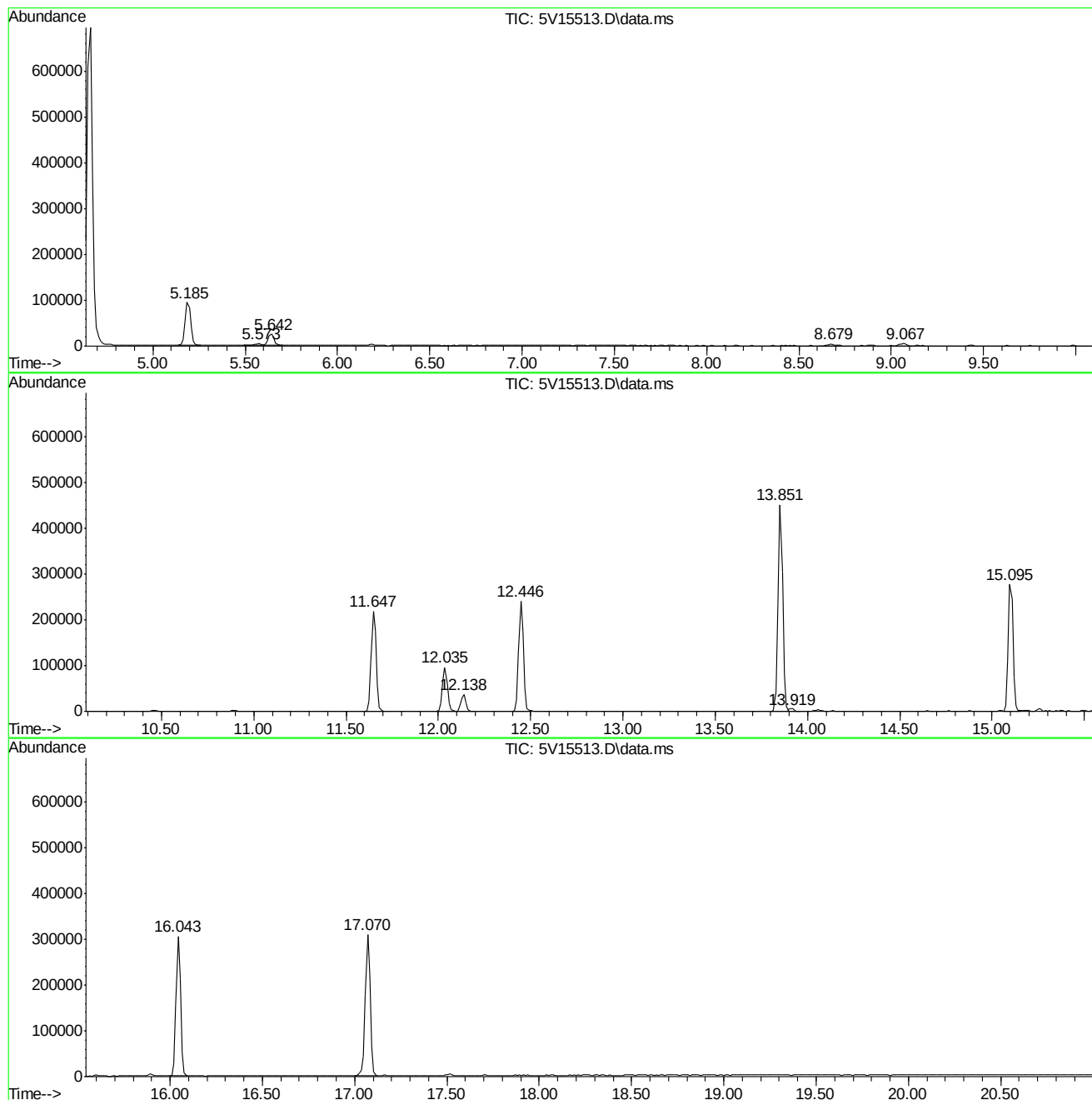
Sum of corrected areas: 3750702

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15513.D
Acq On : 23 May 2011 5:35 pm
Operator : DONC
Sample : D23462-1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15513.D
 Acq On : 23 May 2011 5:35 pm
 Operator : DONC
 Sample : D23462-1
 Misc : MS2199,V5V910,,,,,1
 ALS Vial : 16 Sample Multiplier: 1

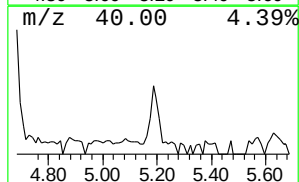
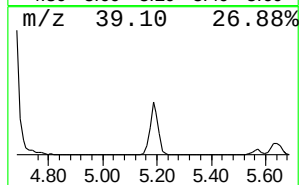
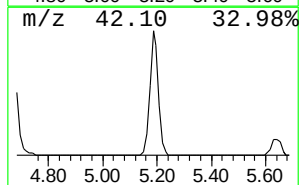
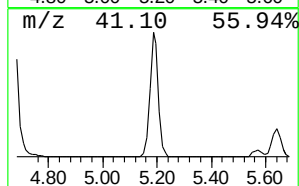
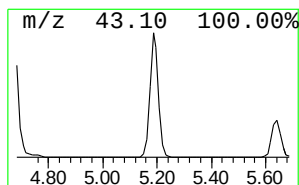
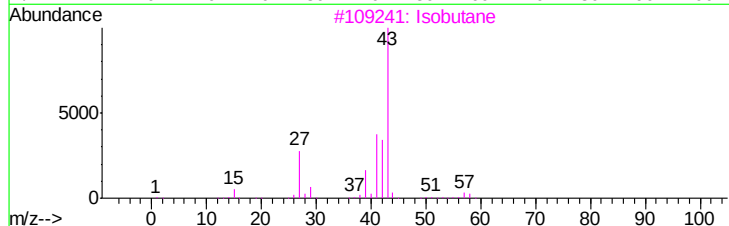
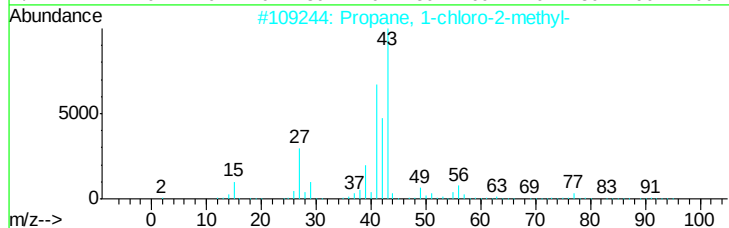
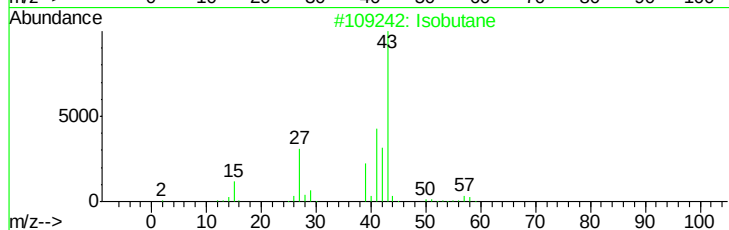
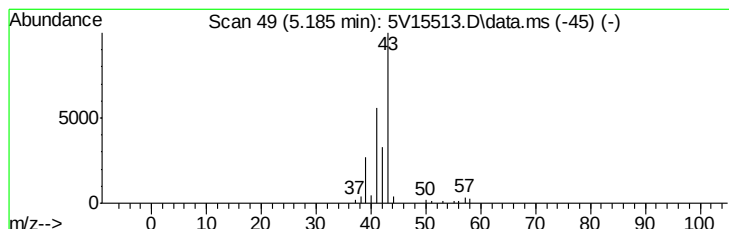
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 Isobutane Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.185	24.74 ug/l	201565	Pentafluorobenzene	11.647

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	72
2	Propane, 1-chloro-2-methyl-	92	C4H9Cl	000513-36-0	2
3	Isobutane	58	C4H10	000075-28-5	9
4	Propane, 1-chloro-2-methyl-	92	C4H9Cl	000513-36-0	2
5	Isobutane	58	C4H10	000075-28-5	5



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15513.D
 Acq On : 23 May 2011 5:35 pm
 Operator : DONC
 Sample : D23462-1
 Misc : MS2199,V5V910,,,,,1
 ALS Vial : 16 Sample Multiplier: 1

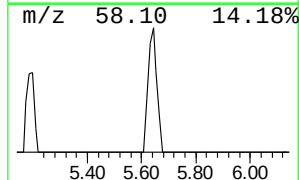
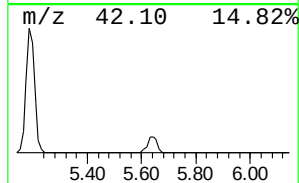
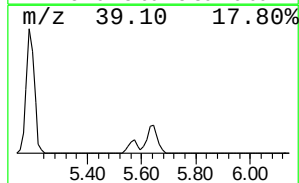
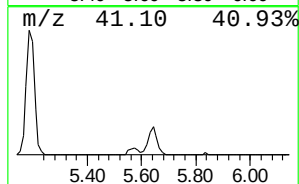
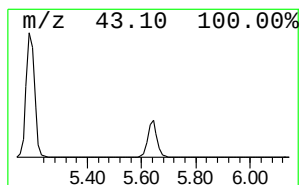
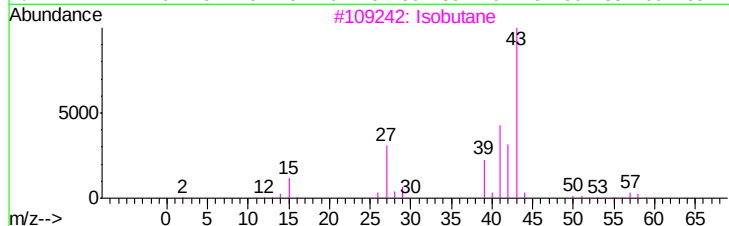
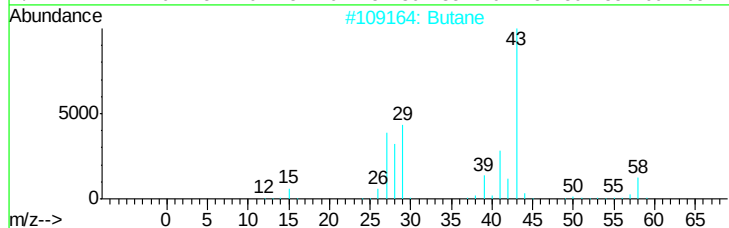
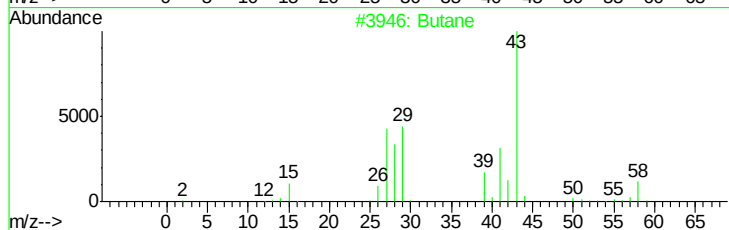
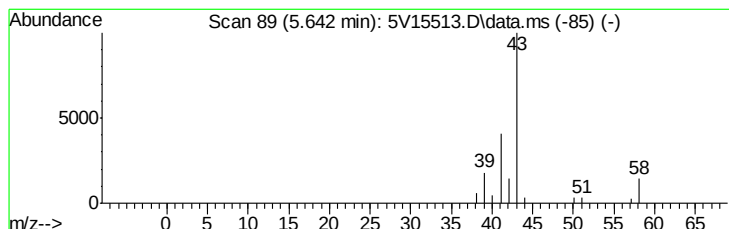
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Butane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.642	6.87 ug/l	55945	Pentafluorobenzene	11.647

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane	58	C4H10	000106-97-8	78
2	Butane	58	C4H10	000106-97-8	78
3	Isobutane	58	C4H10	000075-28-5	2
4	Isobutane	58	C4H10	000075-28-5	2
5	Propane, 2-nitro-	89	C3H7NO2	000079-46-9	2



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15513.D
Acq On : 23 May 2011 5:35 pm
Operator : DONC
Sample : D23462-1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Isobutane	5.185	24.7	ug/l	201565	1	11.647	407398	50.0
Butane	5.642	6.9	ug/l	55945	1	11.647	407398	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15514.D
Acq On : 23 May 2011 6:08 pm
Operator : DONC
Sample : D23462-2
Misc : MS2199,V5V910,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 24 12:23:55 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	149642	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.446	114	183503	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	165012	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	101894	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.035	102	12306	43.52	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	87.04%	
55) Toluene-d8	13.851	98	247779	37.06	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	74.12%	
59) 4-Bromofluorobenzene	16.043	95	85940	39.61	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	79.22%	

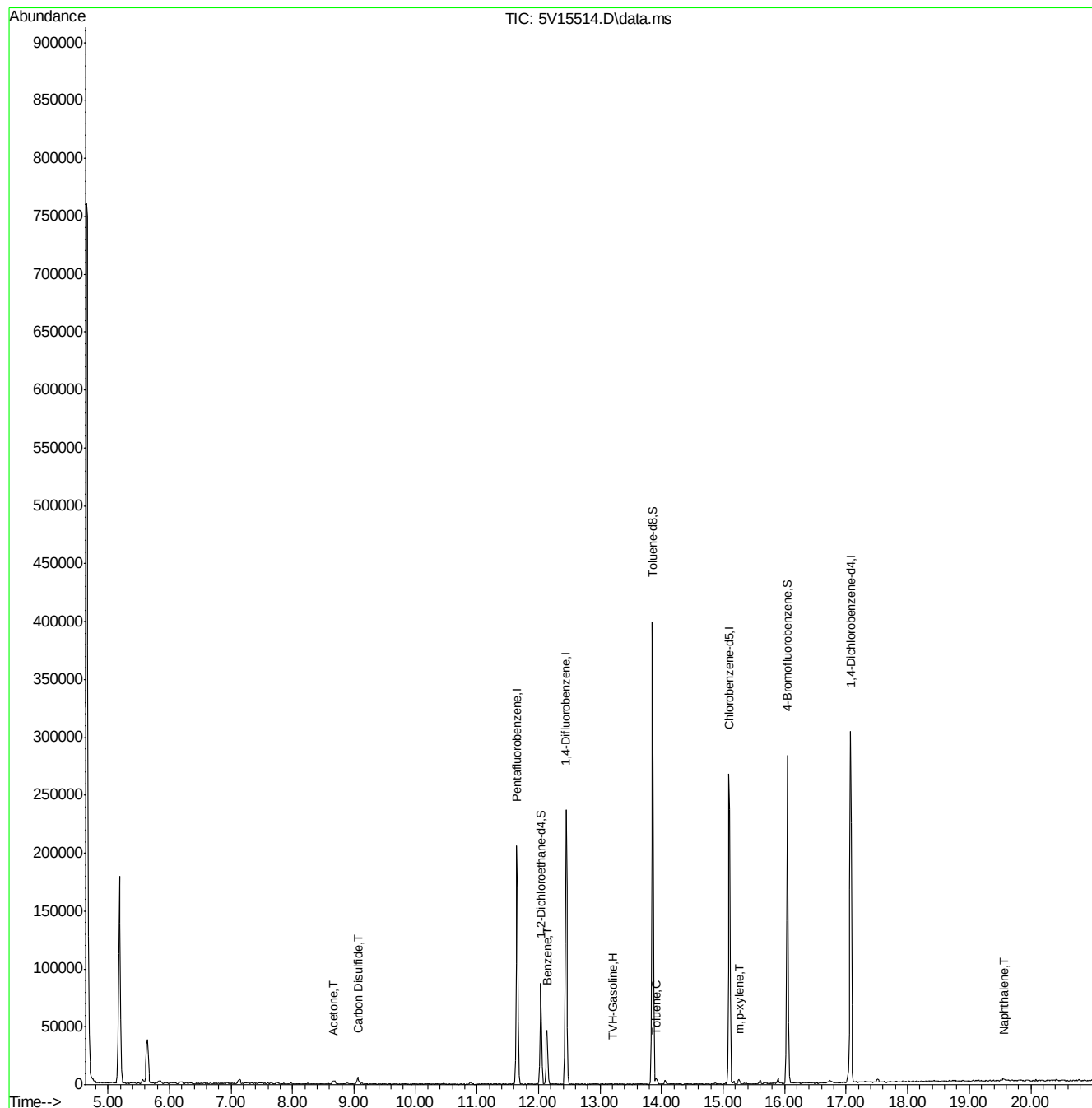
Target Compounds						Qvalue
1) TVH-Gasoline	13.210	TIC	78194m	4.70	ug/l	
16) Acetone	8.667	58	1419	21.93	ug/l	94
17) Carbon Disulfide	9.067	76	10407	1.80	ug/l #	91
45) Benzene	12.138	78	42012	5.92	ug/l	100
56) Toluene	13.919	92	2322	0.48	ug/l #	73
61) m,p-xylene	15.255	106	1794	0.47	ug/l #	83
72) Naphthalene	19.570	128	1395	0.41	ug/l	100

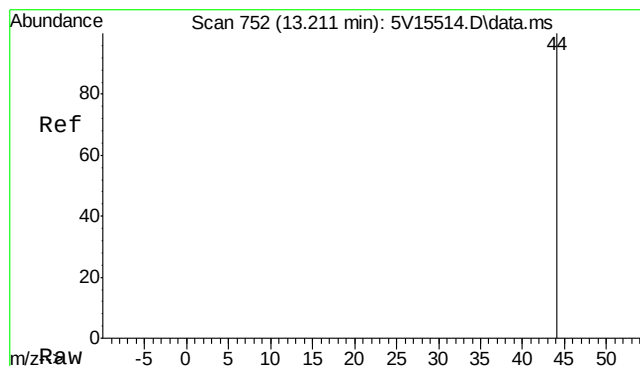
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

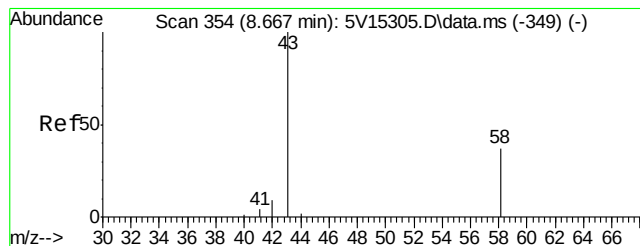
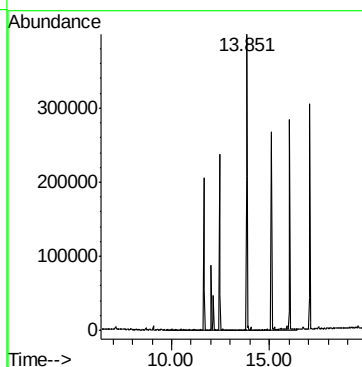
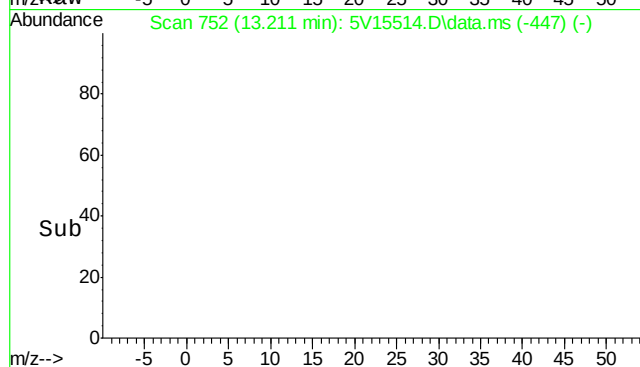
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Data File : 5V15514.D
Acq On : 23 May 2011 6:08 pm
Operator : DONC
Sample : D23462-2
Misc : MS2199,V5V910,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 24 12:23:55 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration



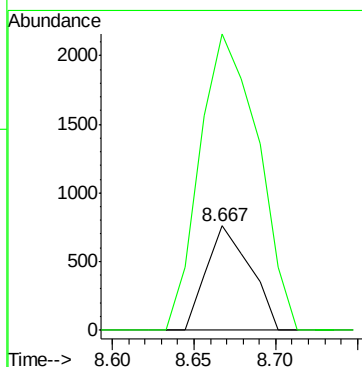
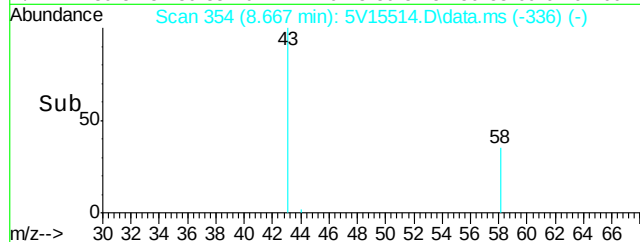
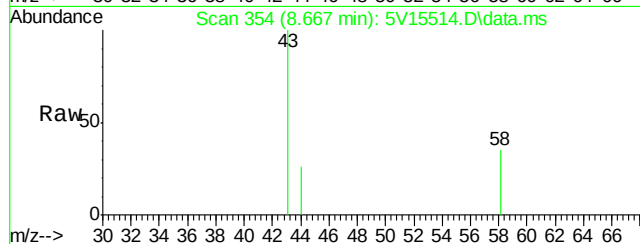


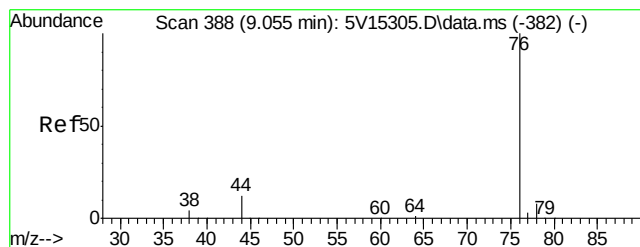
#1
TVH-Gasoline
Concen: 4.70 ug/l m
RT: 13.210 min Scan# 752
Delta R.T. 0.000 min
Lab File: 5V15514.D
Acq: 23 May 2011 6:08 pm
Tgt Ion:TIC Resp: 78194



#16
Acetone
Concen: 21.93 ug/l
RT: 8.667 min Scan# 354
Delta R.T. 0.000 min
Lab File: 5V15514.D
Acq: 23 May 2011 6:08 pm

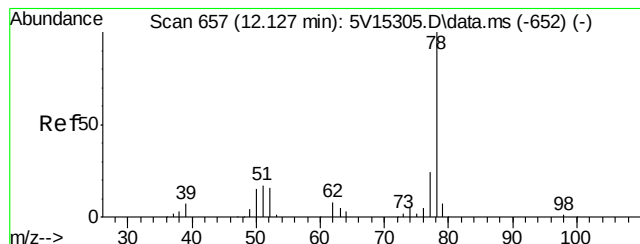
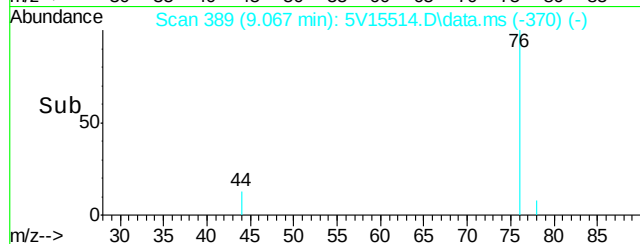
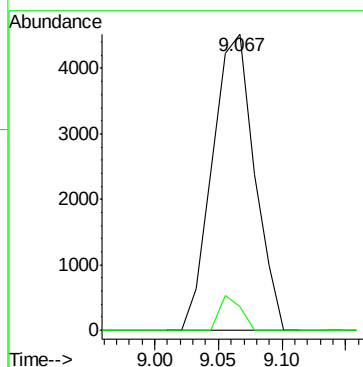
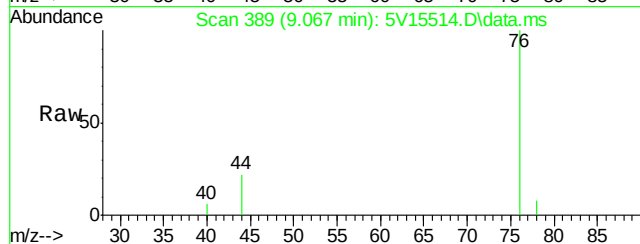
Tgt Ion: 58 Resp: 1419
Ion Ratio Lower Upper
58 100
43 377.7 344.6 384.6





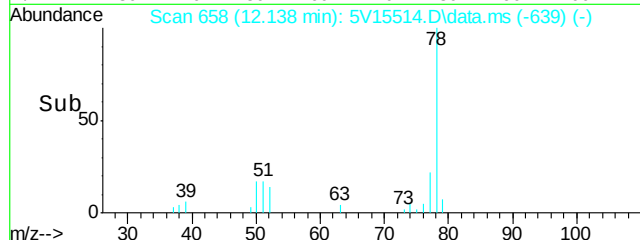
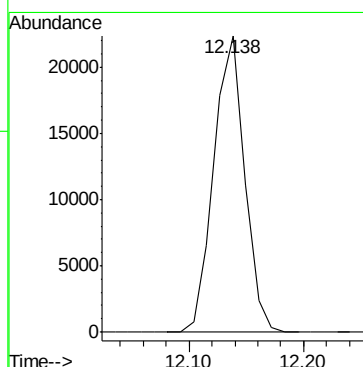
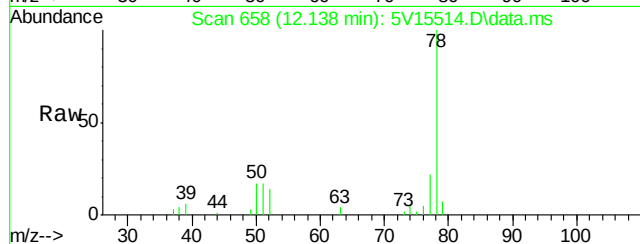
#17
Carbon Disulfide
Concen: 1.80 ug/l
RT: 9.067 min Scan# 389
Delta R.T. 0.012 min
Lab File: 5V15514.D
Acq: 23 May 2011 6:08 pm

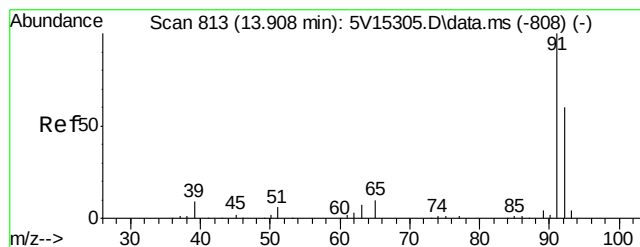
Tgt Ion: 76 Resp: 10407
Ion Ratio Lower Upper
76 100
78 5.8 7.2 10.8#



#45
Benzene
Concen: 5.92 ug/l
RT: 12.138 min Scan# 658
Delta R.T. 0.012 min
Lab File: 5V15514.D
Acq: 23 May 2011 6:08 pm

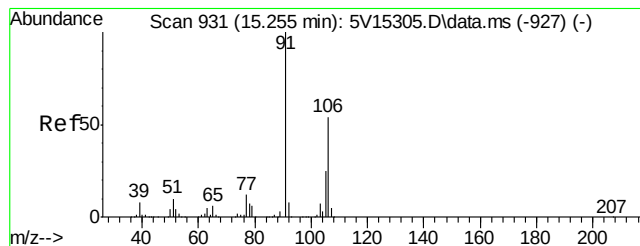
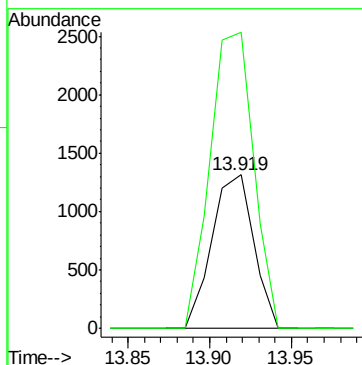
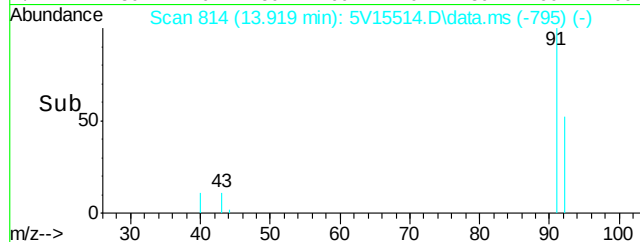
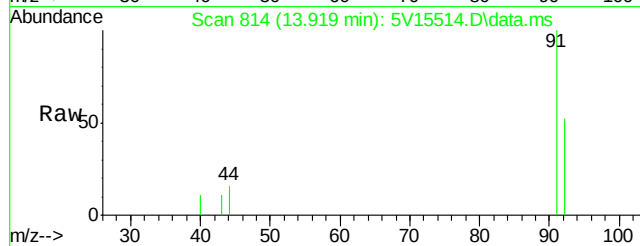
Tgt Ion: 78 Resp: 42012





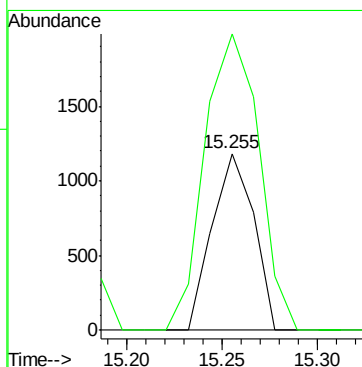
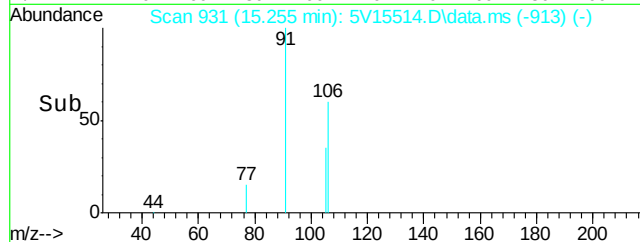
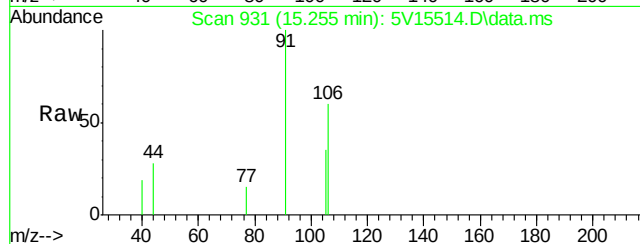
#56
Toluene
Concen: 0.48 ug/l
RT: 13.919 min Scan# 814
Delta R.T. 0.012 min
Lab File: 5V15514.D
Acq: 23 May 2011 6:08 pm

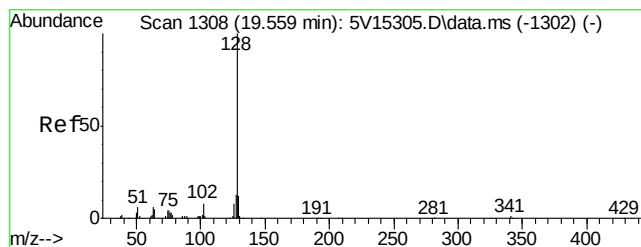
Tgt Ion	Ratio	Lower	Upper
92	100		
91	202.3	146.2	186.2#



#61
m,p-xylene
Concen: 0.47 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15514.D
Acq: 23 May 2011 6:08 pm

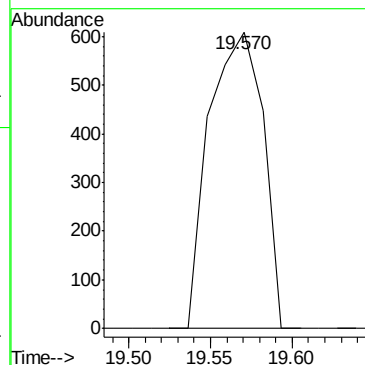
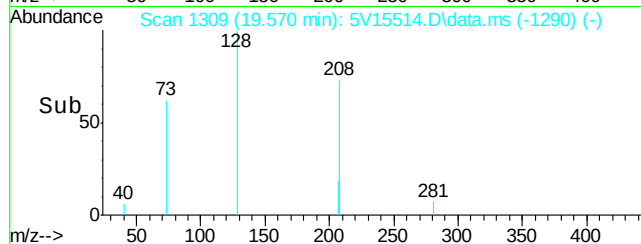
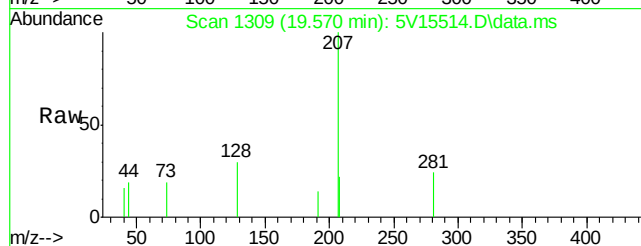
Tgt Ion	Ratio	Lower	Upper
106	100		
91	219.7	174.3	214.3#





#72
 Naphthalene
 Concen: 0.41 ug/l
 RT: 19.570 min Scan# 1309
 Delta R.T. 0.012 min
 Lab File: 5V15514.D
 Acq: 23 May 2011 6:08 pm

Tgt Ion:128 Resp: 1395



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15514.D
Acq On : 23 May 2011 6:08 pm
Operator : DONC
Sample : D23462-2
Misc : MS2199,V5V910,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Integration Parameters: rteint.p

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Title : 8260

Signal : TIC: 5V15514.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.185	44	49	55	rBV	178597	369537	53.71%	9.672%
2	5.562	79	82	85	rBV2	3425	8377	1.22%	0.219%
3	5.642	85	89	94	rVB	37808	86871	12.63%	2.274%
4	5.847	99	107	111	rBV2	2228	8659	1.26%	0.227%
5	7.137	215	220	223	rBV2	3564	9366	1.36%	0.245%
6	8.667	351	354	361	rBV2	2731	8083	1.17%	0.212%
7	9.067	384	389	392	rVB	5649	13701	1.99%	0.359%
8	11.647	611	615	620	rBV	205872	386208	56.14%	10.108%
9	12.035	645	649	654	rVV	87274	159334	23.16%	4.170%
10	12.138	654	658	663	rVB	47044	91424	13.29%	2.393%
11	12.446	681	685	690	rBV	236912	418520	60.83%	10.954%
12	13.851	804	808	812	rBV	398882	687976	100.00%	18.006%
13	13.908	812	813	817	rVB2	5245	8181	1.19%	0.214%
14	15.095	914	917	922	rBV	268154	483920	70.34%	12.665%
15	15.255	928	931	935	rVB2	4346	7508	1.09%	0.196%
16	15.894	983	987	990	rBV2	4983	9372	1.36%	0.245%
17	16.043	996	1000	1004	rBV	283090	481661	70.01%	12.606%
18	17.070	1083	1090	1095	rBV	303694	571937	83.13%	14.969%
19	19.548	1301	1307	1312	rBV5	3033	10232	1.49%	0.268%

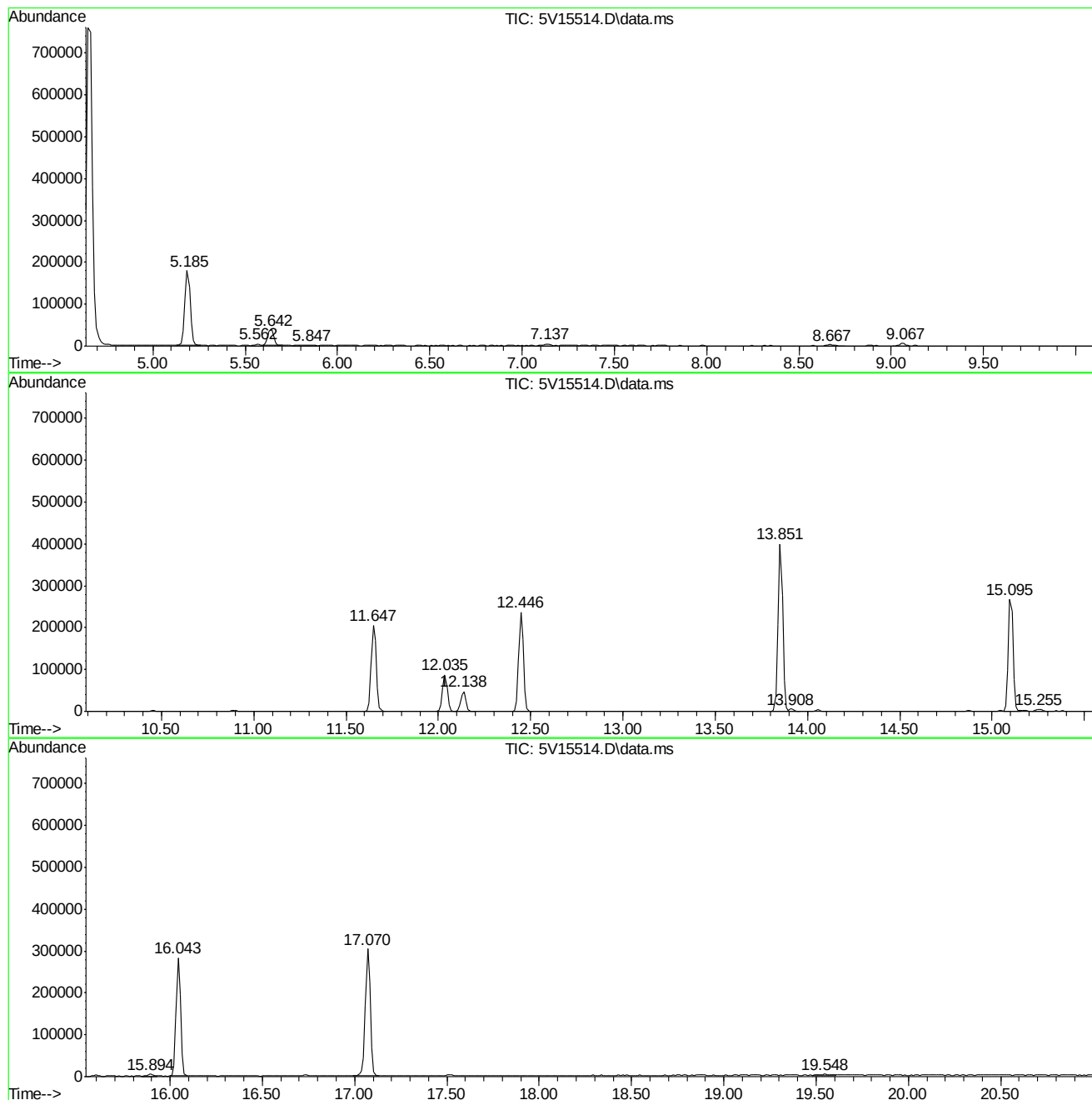
Sum of corrected areas: 3820867

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15514.D
Acq On : 23 May 2011 6:08 pm
Operator : DONC
Sample : D23462-2
Misc : MS2199,V5V910,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15514.D
 Acq On : 23 May 2011 6:08 pm
 Operator : DONC
 Sample : D23462-2
 Misc : MS2199,V5V910,,,,,1
 ALS Vial : 17 Sample Multiplier: 1

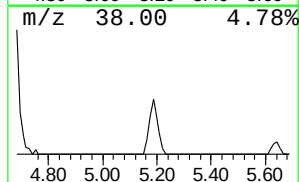
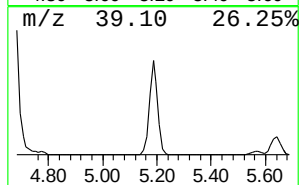
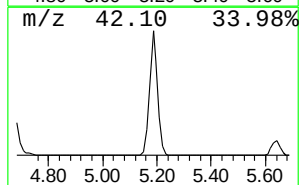
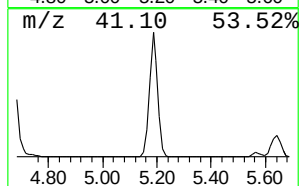
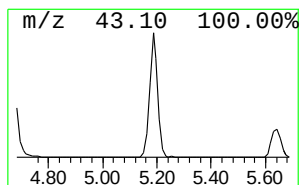
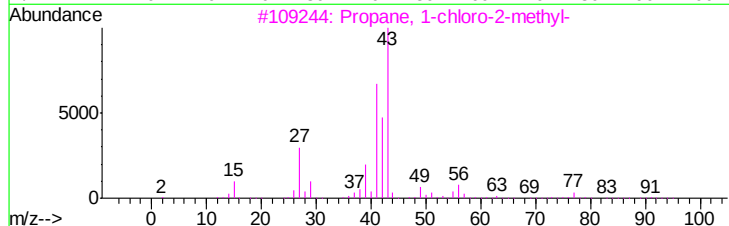
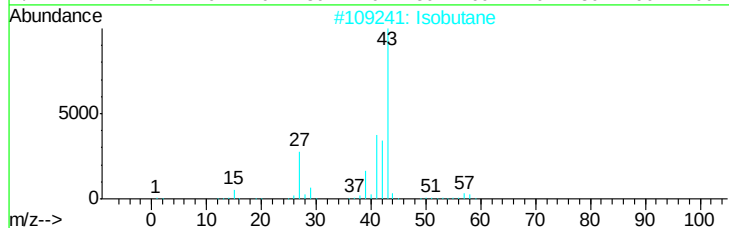
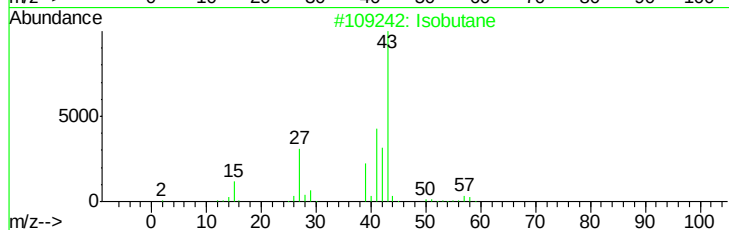
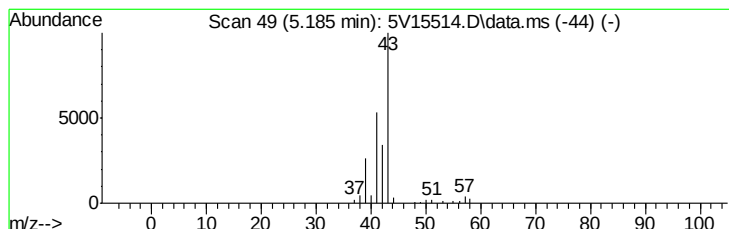
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 1 Isobutane Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.185	47.84 ug/l	369537	Pentafluorobenzene	11.647

Hit# of	5	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	64	
2	Isobutane	58	C4H10	000075-28-5	50	
3	Propane, 1-chloro-2-methyl-	92	C4H9Cl	000513-36-0	9	
4	Propane, 1-chloro-2-methyl-	92	C4H9Cl	000513-36-0	9	
5	Isobutane	58	C4H10	000075-28-5	9	



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\V5052311.S\
 Data File : 5V15514.D
 Acq On : 23 May 2011 6:08 pm
 Operator : DONC
 Sample : D23462-2
 Misc : MS2199,V5V910,,,,,1
 ALS Vial : 17 Sample Multiplier: 1

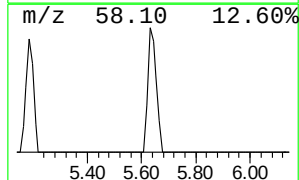
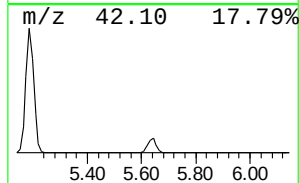
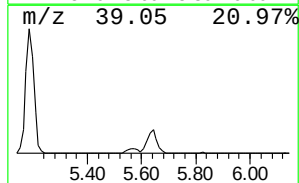
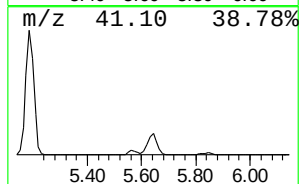
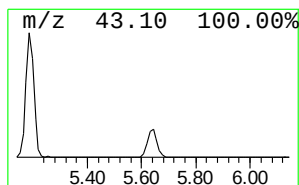
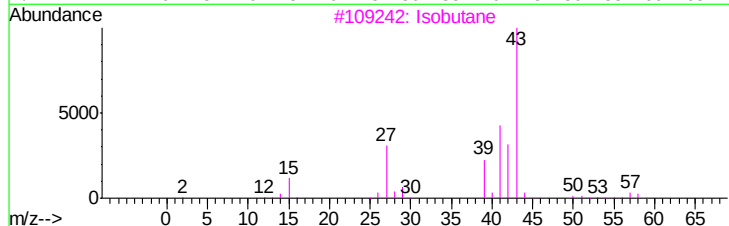
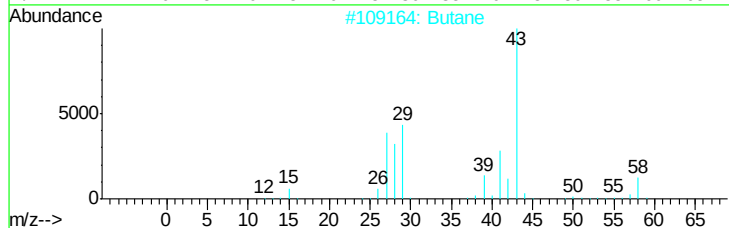
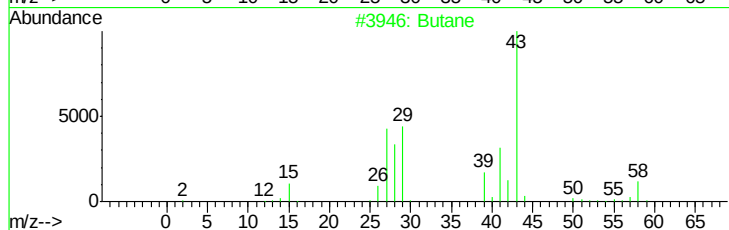
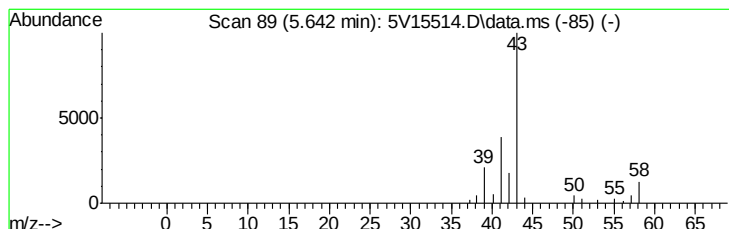
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
 Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
 TIC Integration Parameters: LSCINT.P

 Peak Number 2 Butane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
5.642	11.25 ug/l	86871	Pentafluorobenzene	11.647

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane	58	C4H10	000106-97-8	64
2	Butane	58	C4H10	000106-97-8	50
3	Isobutane	58	C4H10	000075-28-5	2
4	Isobutane	58	C4H10	000075-28-5	9
5	Acetic acid, 2-propenyl ester	100	C5H8O2	000591-87-7	4



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15514.D
Acq On : 23 May 2011 6:08 pm
Operator : DONC
Sample : D23462-2
Misc : MS2199,V5V910,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Isobutane	5.185	47.8	ug/l	369537	1	11.647	386208	50.0
Butane	5.642	11.2	ug/l	86871	1	11.647	386208	50.0

6.1.4
6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15504.D
Acq On : 23 May 2011 12:17 pm
Operator : DONC
Sample : MB1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 24 12:14:32 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	174288	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.447	114	213039	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	191257	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	108151	50.00	ug/l	0.00

System Monitoring Compounds						
30) 1,2-Dichloroethane-d4	12.036	102	15403	46.77	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	93.54%	
55) Toluene-d8	13.851	98	369853	47.73	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	95.46%	
59) 4-Bromofluorobenzene	16.043	95	124417	49.47	ug/l	0.00
Spiked Amount	50.000	Range 70 - 130	Recovery	=	98.94%	

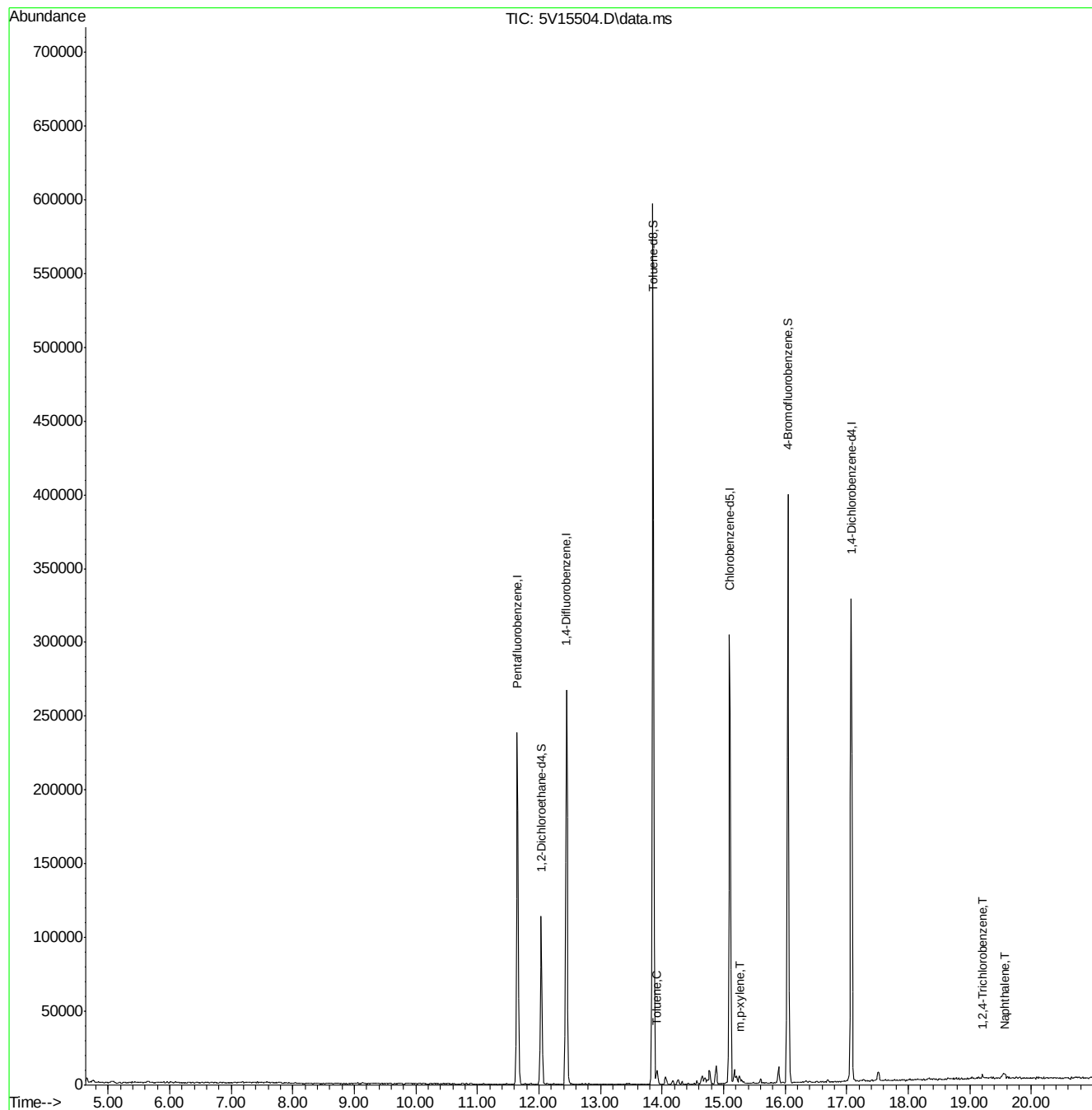
Target Compounds						Qvalue
56) Toluene	13.919	92	2617	0.47	ug/l	90
61) m,p-xylene	15.255	106	1999	0.45	ug/l #	83
71) 1,2,4-Trichlorobenzene	19.205	180	1660	0.60	ug/l #	70
72) Naphthalene	19.571	128	3394	0.94	ug/l	100

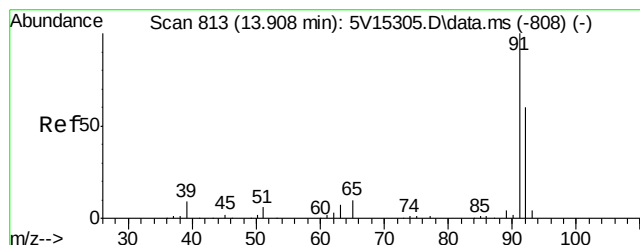
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15504.D
Acq On : 23 May 2011 12:17 pm
Operator : DONC
Sample : MB1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 7 Sample Multiplier: 1

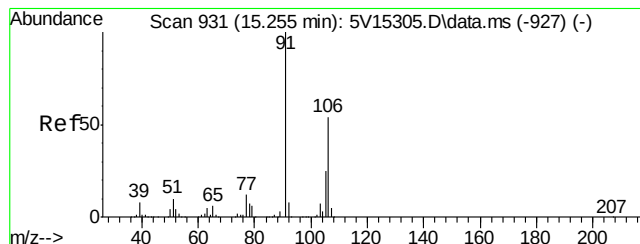
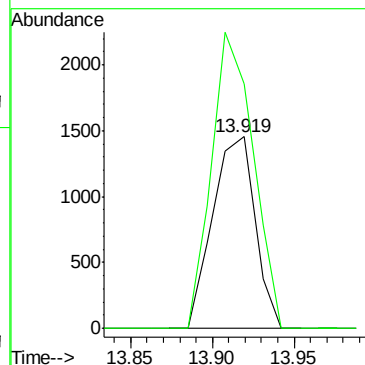
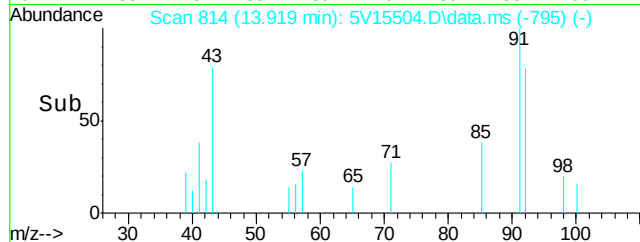
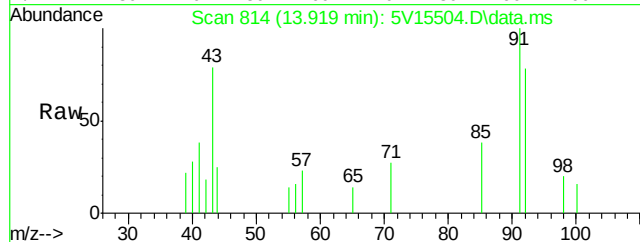
Quant Time: May 24 12:14:32 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260
QLast Update : Tue May 17 07:57:07 2011
Response via : Initial Calibration





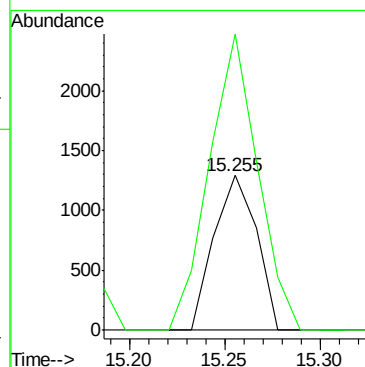
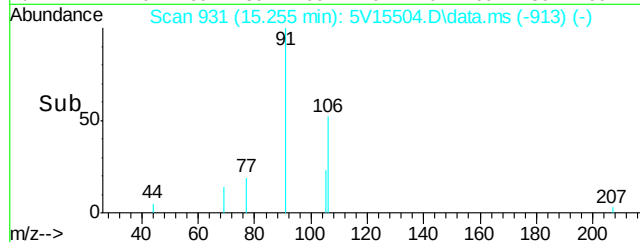
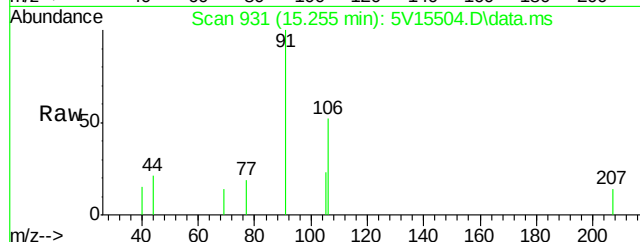
#56
Toluene
Concen: 0.47 ug/l
RT: 13.919 min Scan# 814
Delta R.T. 0.012 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

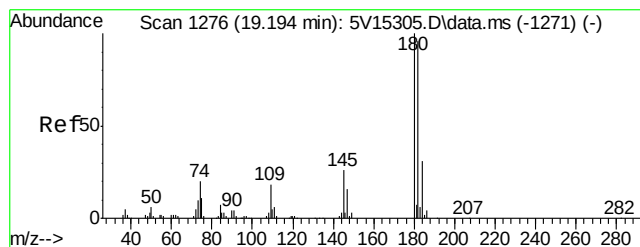
Tgt Ion: 92 Resp: 2617
Ion Ratio Lower Upper
92 100
91 152.2 146.2 186.2



#61
m,p-xylene
Concen: 0.45 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.001 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

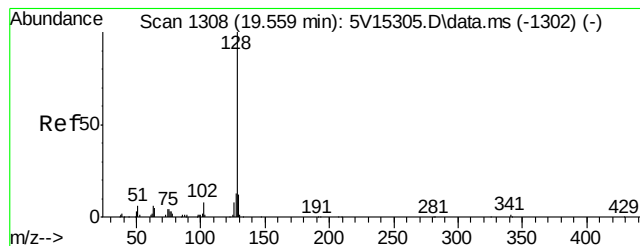
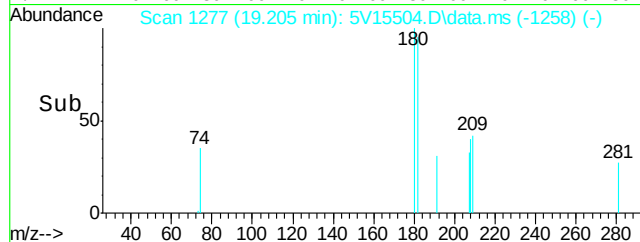
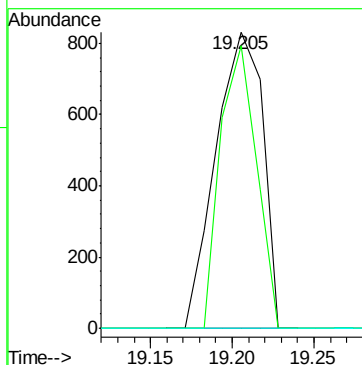
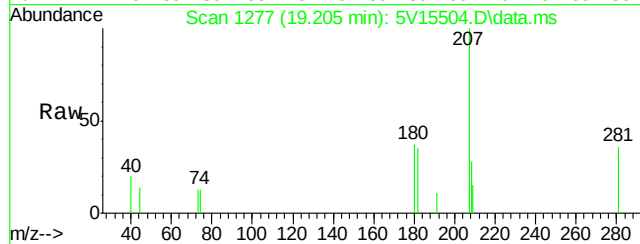
Tgt Ion: 106 Resp: 1999
Ion Ratio Lower Upper
106 100
91 219.4 174.3 214.3#





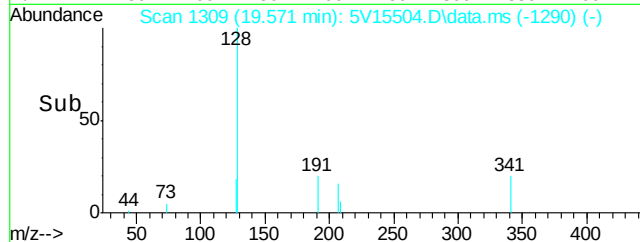
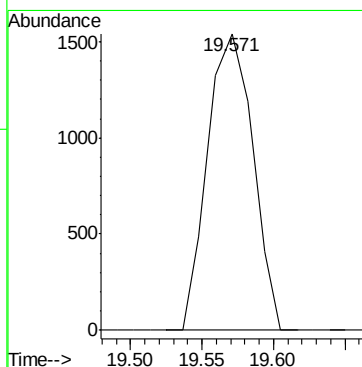
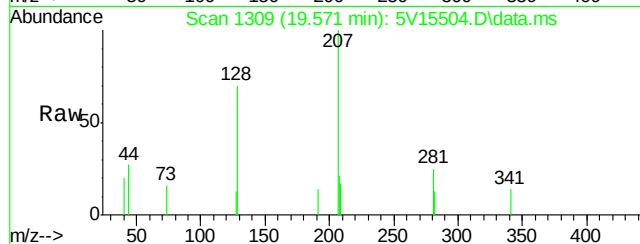
#71
1,2,4-Trichlorobenzene
Concen: 0.60 ug/l
RT: 19.205 min Scan# 1277
Delta R.T. 0.012 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

Tgt Ion:	180	Resp:	1660
Ion Ratio	Lower	Upper	
180	100		
182	73.3	77.4	116.2#
145	0.0	22.1	33.1#



#72
Naphthalene
Concen: 0.94 ug/l
RT: 19.571 min Scan# 1309
Delta R.T. 0.013 min
Lab File: 5V15504.D
Acq: 23 May 2011 12:17 pm

Tgt Ion:128 Resp: 3394



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15504.D
Acq On : 23 May 2011 12:17 pm
Operator : DONC
Sample : MB1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: rteint.p

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0
Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Title : 8260

Signal : TIC: 5V15504.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	11.647	611	615	620	rBV	238279	440759	42.88%	10.802%
2	12.036	645	649	653	rBV	113747	213715	20.79%	5.237%
3	12.447	681	685	689	rBV	267398	472703	45.99%	11.584%
4	13.851	804	808	812	rBV	596667	1027865	100.00%	25.190%
5	13.919	812	814	822	rVB2	9670	15707	1.53%	0.385%
6	14.650	875	878	880	rBV	5735	11175	1.09%	0.274%
7	14.764	886	888	891	rVB	9002	15877	1.54%	0.389%
8	14.878	895	898	901	rVB	12326	19366	1.88%	0.475%
9	15.095	914	917	921	rBV	303459	538519	52.39%	13.197%
10	15.175	921	924	926	rVV2	8573	14374	1.40%	0.352%
11	15.894	983	987	990	rVB	11299	19811	1.93%	0.486%
12	16.043	996	1000	1004	rBV	398472	677258	65.89%	16.597%
13	17.070	1086	1090	1094	rVB	325779	583419	56.76%	14.298%
14	17.516	1123	1129	1133	rBV3	6051	13890	1.35%	0.340%
15	19.548	1301	1307	1311	rBV5	4099	16046	1.56%	0.393%

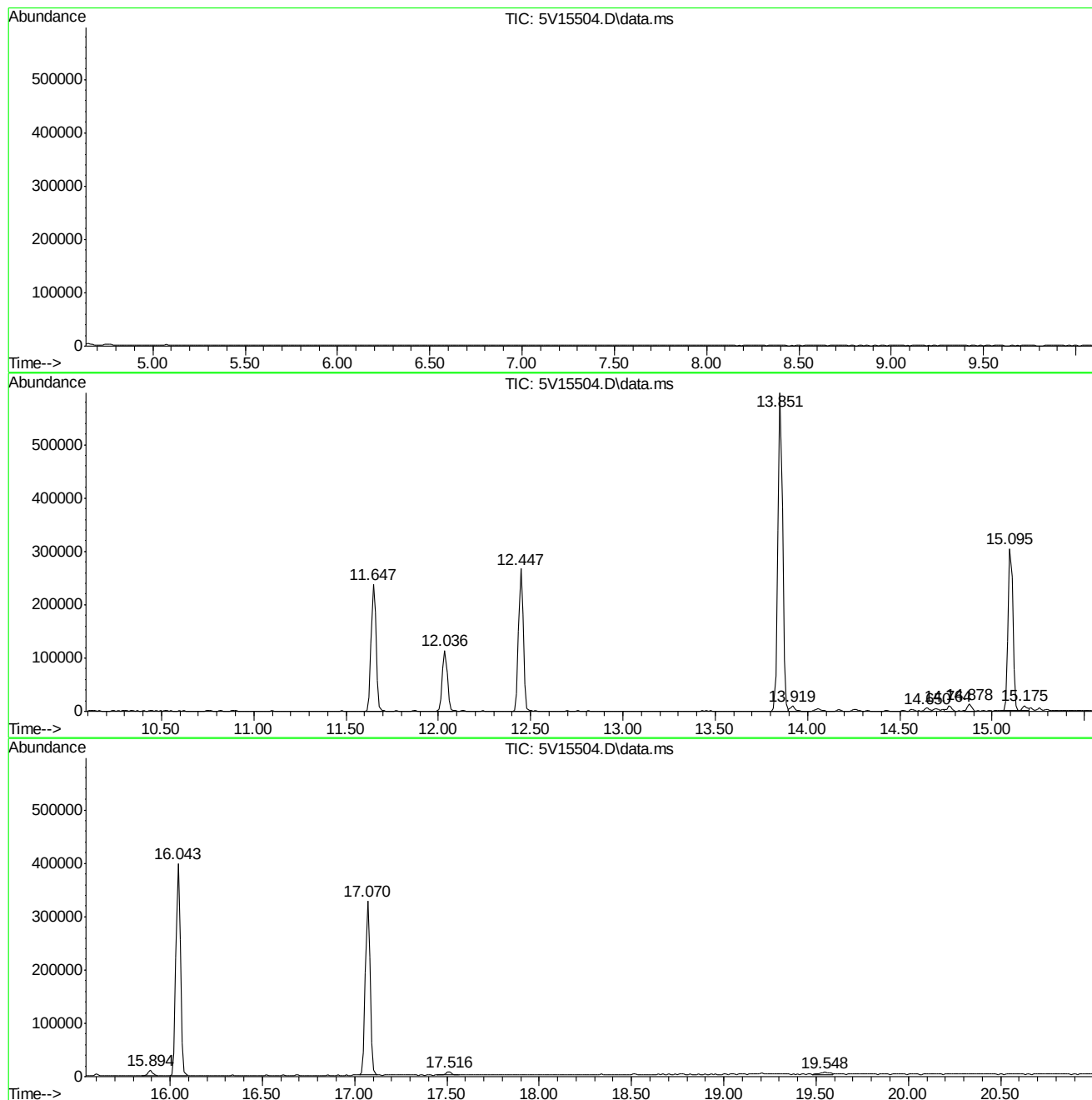
Sum of corrected areas: 4080484

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\V5052311.S\
Data File : 5V15504.D
Acq On : 23 May 2011 12:17 pm
Operator : DONC
Sample : MB1
Misc : MS2199,V5V910,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\V5hsl896tvh896Soil.M
Quant Title : 8260

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound Report Summary

DaaaPathh::CC\msddbbbn\1\DATA\50022311SS\
DaaaFile::5V5504DD
AaqQOn :223MHz20011 12217ppm
Opeaor::D00C
Sample::MB1
Misc::MS299Y55900,,,11
ASSVal::77 SampleMultiplier:11

QqantMebdd::CC\msddbbbn\1\MEB00SV5558906tvh8906601MM
QqantFile::88000

TICLibrary::CC\DATA\BASE\MS98LL
TICIntegrationParameters:LS60NTPP

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

No Library Search Compounds Detected

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB622-MB	GB10707.D	1	05/18/11	BR	n/a	n/a	GGB622

The QC reported here applies to the following samples:

Method: SW846 8015B

D23462-1, D23462-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	104% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB622-BS	GB10708.D	1	05/18/11	BR	n/a	n/a	GGB622

The QC reported here applies to the following samples: Method: SW846 8015B

D23462-1, D23462-2

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.24	102	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D23462
Account: GEOTCOL TetraTech GEO
Project: Garfield County

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D23440-1MS	GB10710.D	1	05/18/11	BR	n/a	n/a	GGB622
D23440-1MSD	GB10711.D	1	05/18/11	BR	n/a	n/a	GGB622
D23440-1	GB10709.D	1	05/18/11	BR	n/a	n/a	GGB622

The QC reported here applies to the following samples: Method: SW846 8015B

D23462-1, D23462-2

CAS No.	Compound	D23440-1 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.29	104	2.17	99	5	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D23440-1	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	91%	97%	60-140%

7.3.1
7

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10717.D\FID1A.CH Vial: 28
Signal #2 : Y:\1\DATA\051711\GB10717.D\FID2B.CH
Acq On : 18 May 2011 7:34 am Operator: BrianR
Sample : D23462-1 Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 08:33:29 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

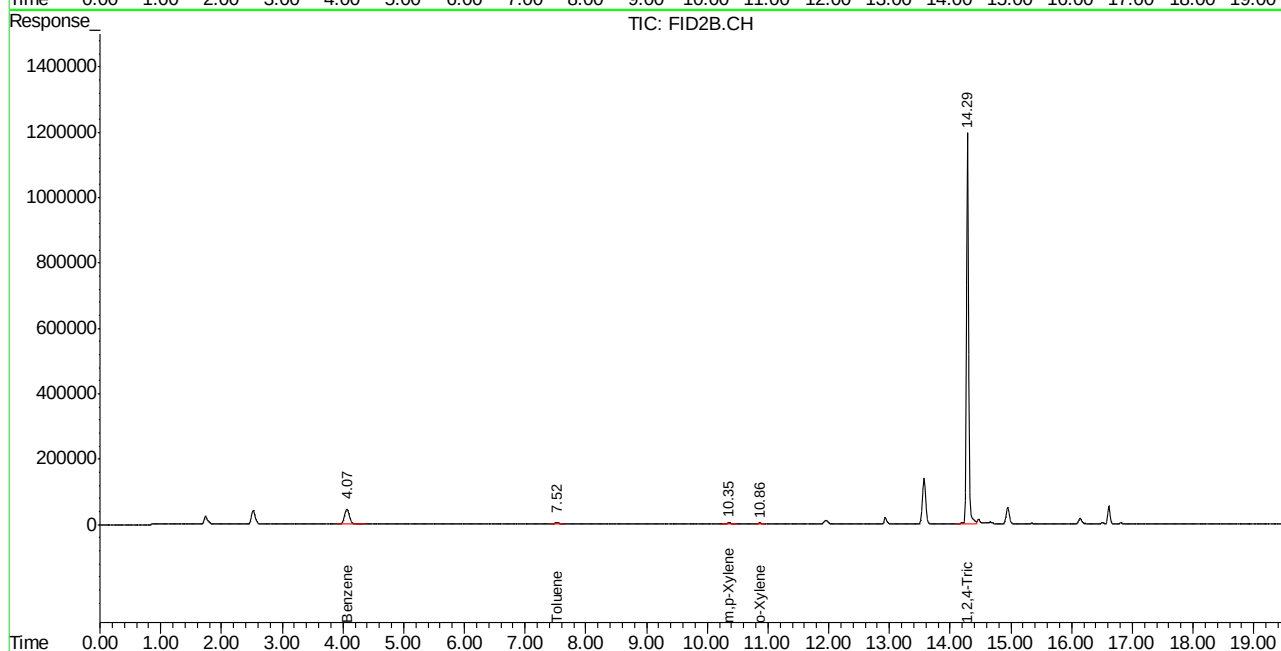
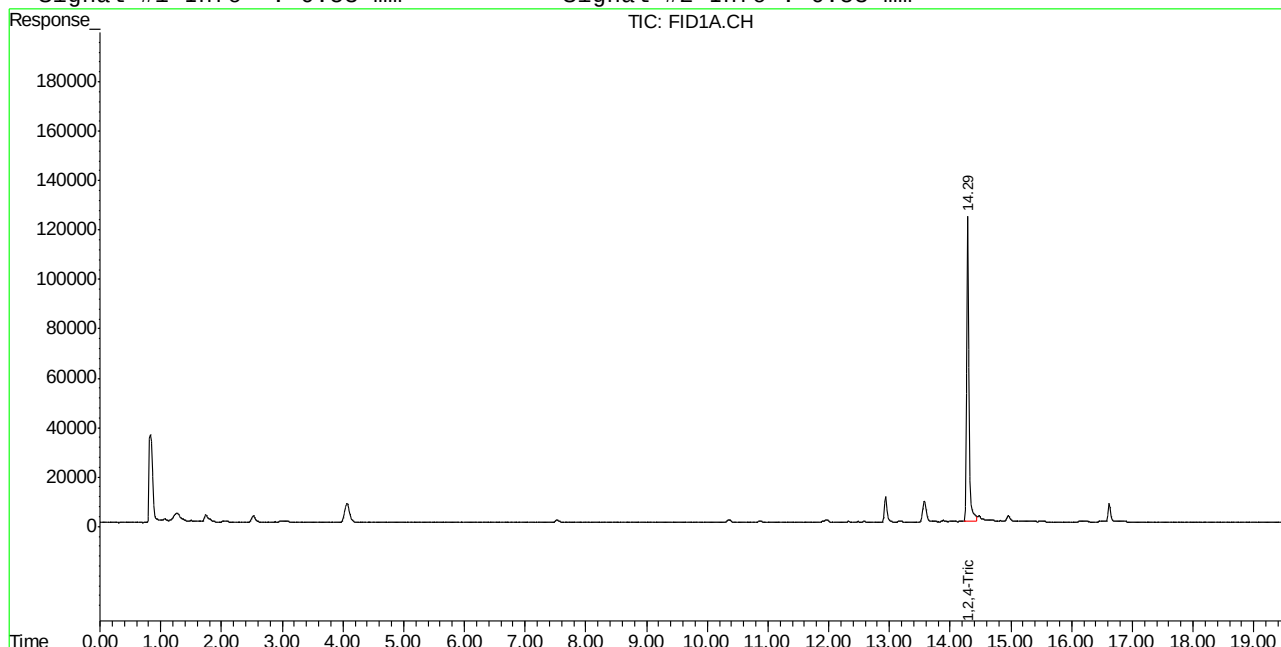
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.29	3218094	93.396	%
10) S	1,2,4-Trichlorobenzene (P)	14.29	28851922	93.815	%
Target Compounds					
1) H	TVH-Gasoline	7.21	1669556	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.07	2750920	4.392	ug/L
6) T	Toluene	7.52	293337	0.490	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	10.35	273614	0.436	ug/L
9) T	o-Xylene	10.86	156079	0.300	ug/L
11) T	Naphthalene	0.00	0	N.D.	ug/L d

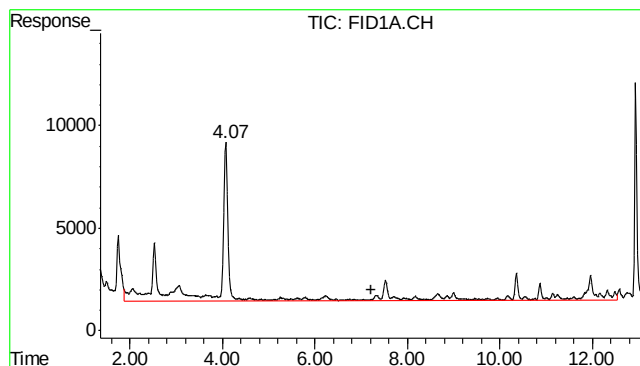
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10717.D\FID1A.CH Vial: 28
 Signal #2 : Y:\1\DATA\051711\GB10717.D\FID2B.CH
 Acq On : 18 May 2011 7:34 am Operator: BrianR
 Sample : D23462-1 Inst : GC/MS Ins
 Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 19 7:40 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed May 11 14:34:35 2011
 Response via : Single Level Calibration
 DataAcq Meth : TVB4.M

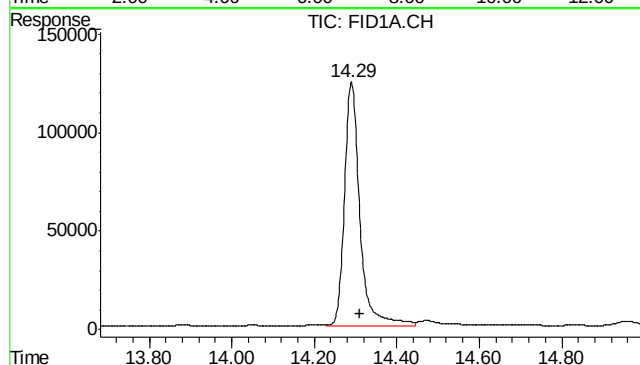
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





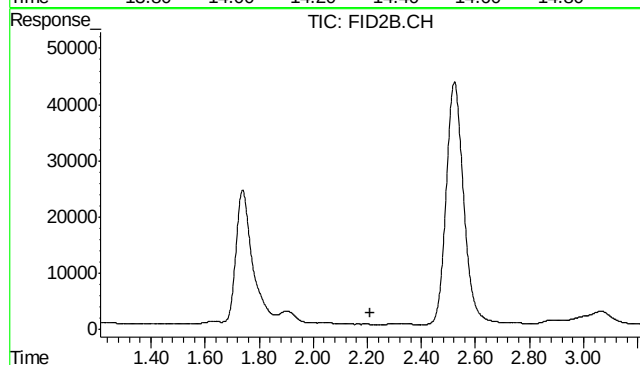
#1 TVH-Gasoline

R.T.: 7.205 min
Delta R.T.: 0.000 min
Response: 1669556
Conc: N.D.



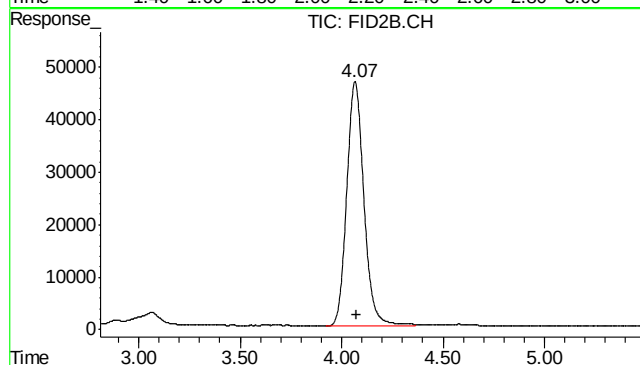
#2 1,2,4-Trichlorobenzene

R.T.: 14.290 min
Delta R.T.: -0.019 min
Response: 3218094
Conc: 93.40 %



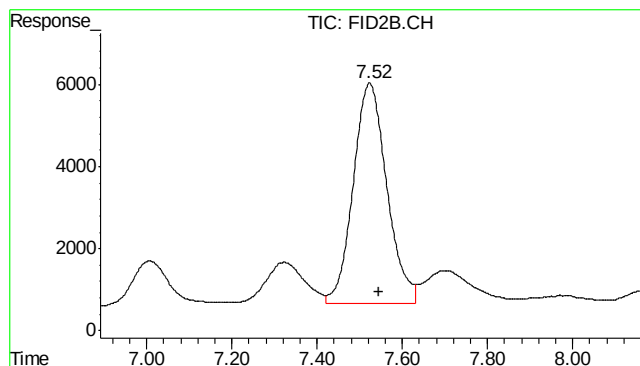
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.212 min
Response: 0
Conc: N.D.



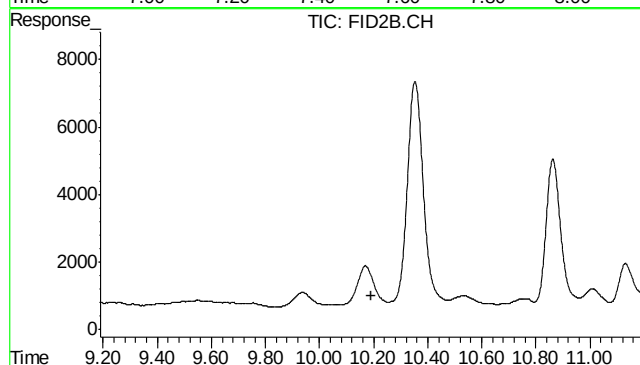
#5 Benzene

R.T.: 4.066 min
Delta R.T.: -0.008 min
Response: 2750920
Conc: 4.39 ug/L



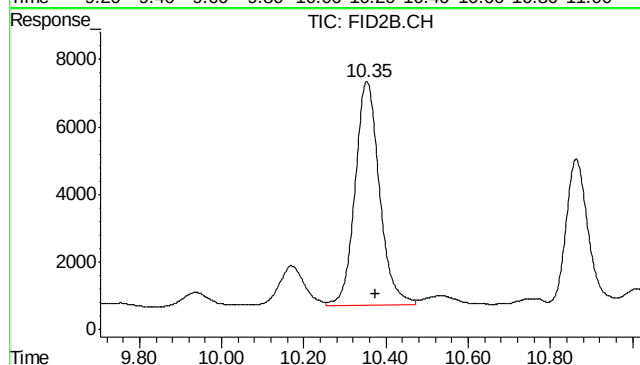
#6 Toluene

R.T.: 7.523 min
Delta R.T.: -0.021 min
Response: 293337
Conc: 0.49 ug/L



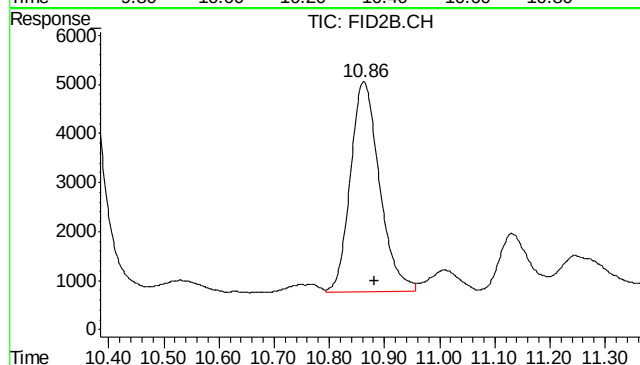
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.190 min
Response: 0
Conc: N.D.



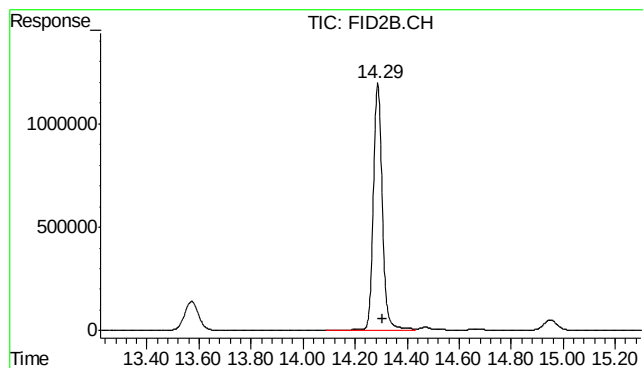
#8 m,p-Xylene

R.T.: 10.353 min
Delta R.T.: -0.022 min
Response: 273614
Conc: 0.44 ug/L



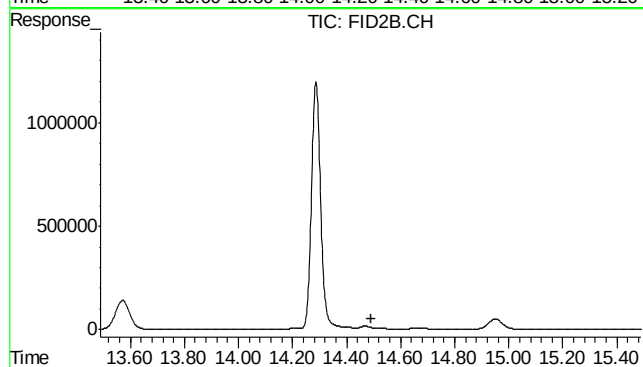
#9 o-Xylene

R.T.: 10.863 min
Delta R.T.: -0.018 min
Response: 156079
Conc: 0.30 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.287 min
 Delta R.T.: -0.020 min
 Response: 28851922
 Conc: 93.81 %



#11 Naphthalene

R.T.: 0.000 min
 Exp R.T. : 14.490 min
 Response: 0
 Conc: N.D.

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10718.D\FID1A.CH Vial: 29
Signal #2 : Y:\1\DATA\051711\GB10718.D\FID2B.CH
Acq On : 18 May 2011 8:10 am Operator: BrianR
Sample : D23462-2 Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 08:33:33 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

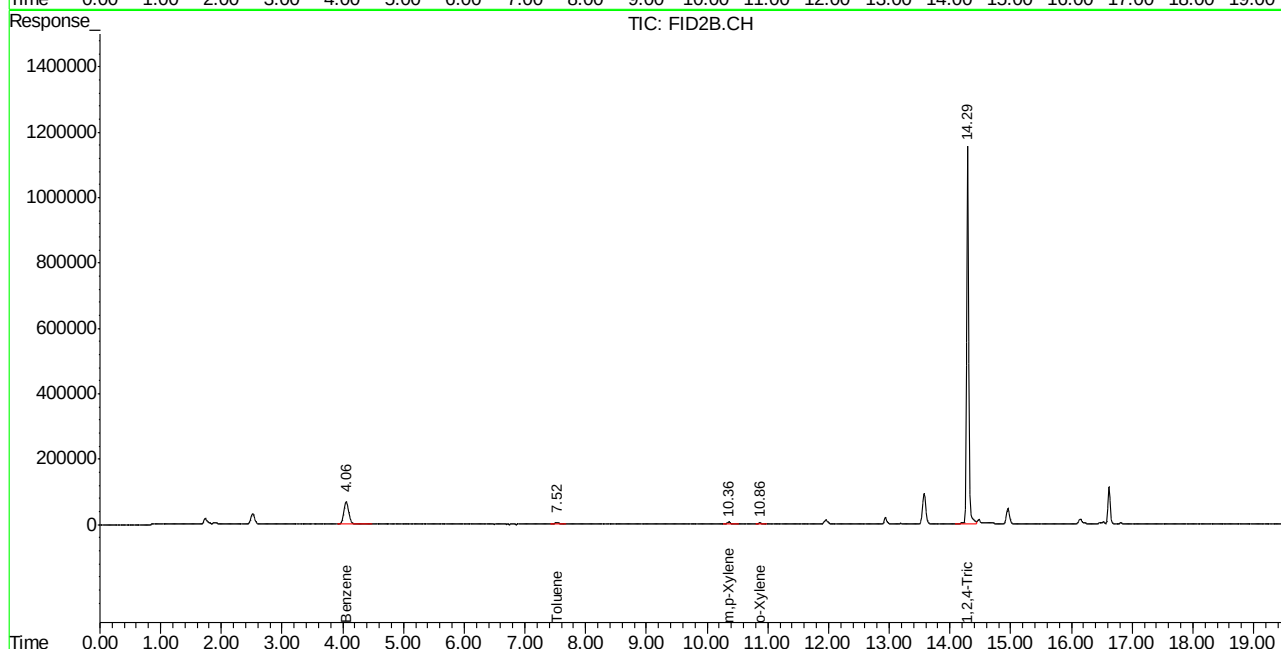
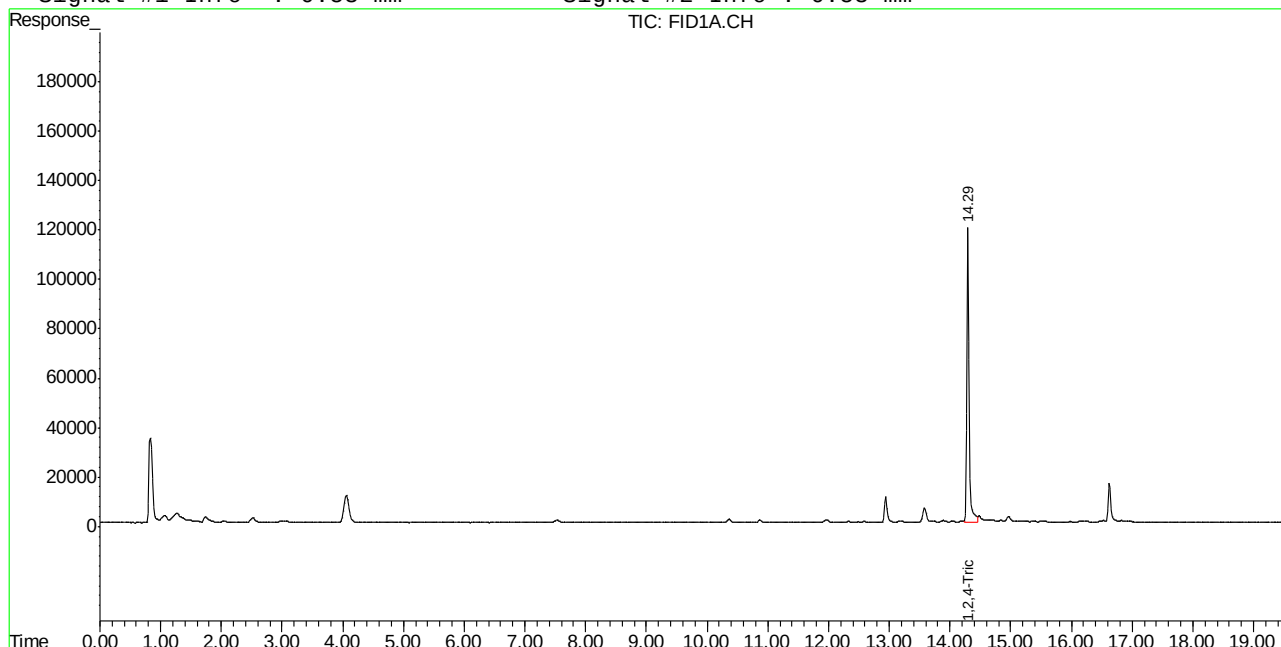
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.30	3098032	89.912	%
10) S	1,2,4-Trichlorobenzene (P)	14.29	27796189	90.382	%
Target Compounds					
1) H	TVH-Gasoline	7.21	1848840	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	4.06	4090366	6.531	ug/L
6) T	Toluene	7.52	344183	0.575	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	10.36	313663	0.500	ug/L
9) T	o-Xylene	10.87	179424	0.344	ug/L
11) T	Naphthalene	0.00	0	N.D.	ug/L d

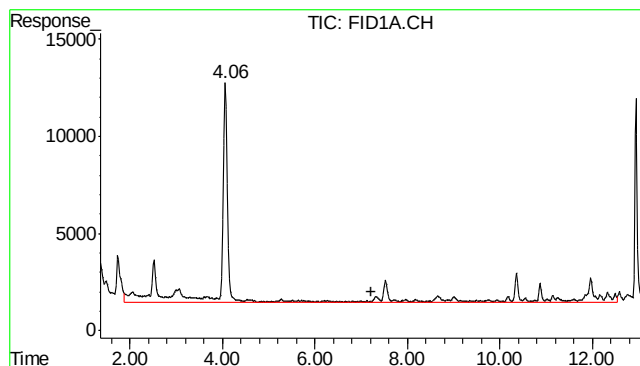
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10718.D\FID1A.CH Vial: 29
 Signal #2 : Y:\1\DATA\051711\GB10718.D\FID2B.CH
 Acq On : 18 May 2011 8:10 am Operator: BrianR
 Sample : D23462-2 Inst : GC/MS Ins
 Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: May 19 7:40 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Wed May 11 14:34:35 2011
 Response via : Single Level Calibration
 DataAcq Meth : TVB4.M

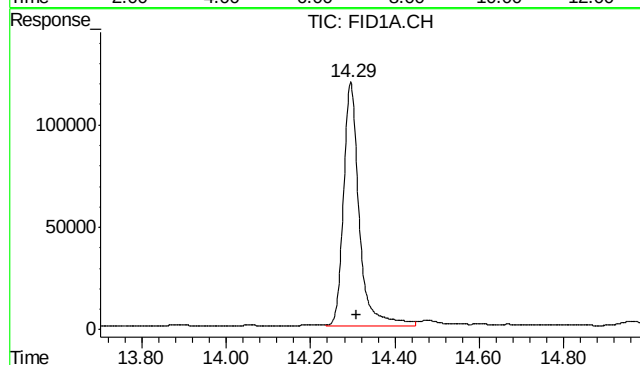
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





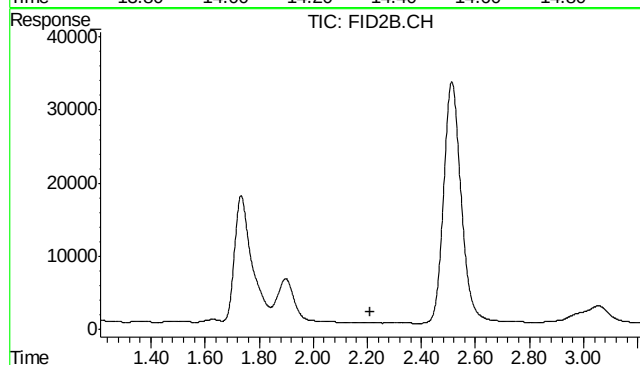
#1 TVH-Gasoline

R.T.: 7.205 min
Delta R.T.: 0.000 min
Response: 1848840
Conc: N.D.



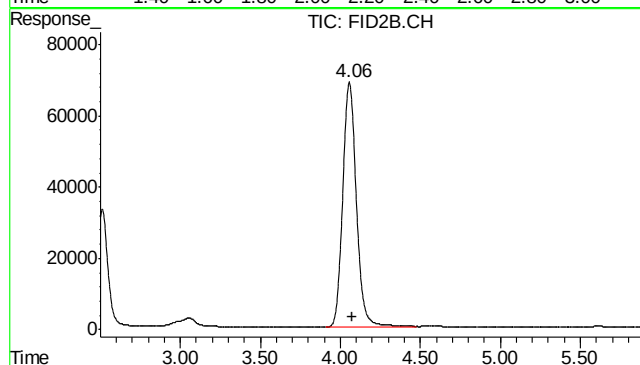
#2 1,2,4-Trichlorobenzene

R.T.: 14.295 min
Delta R.T.: -0.014 min
Response: 3098032
Conc: 89.91 %



#4 Methyl-t-butyl-ether

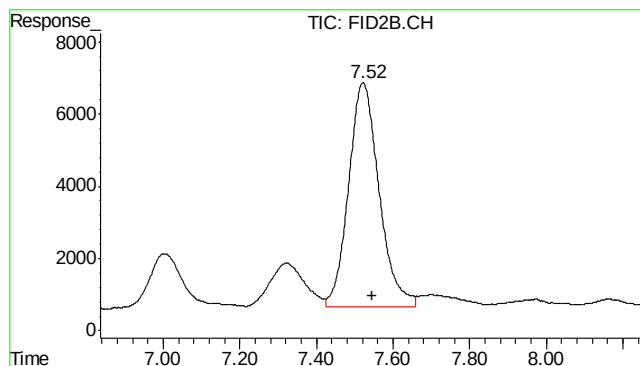
R.T.: 0.000 min
Exp R.T.: 2.212 min
Response: 0
Conc: N.D.



#5 Benzene

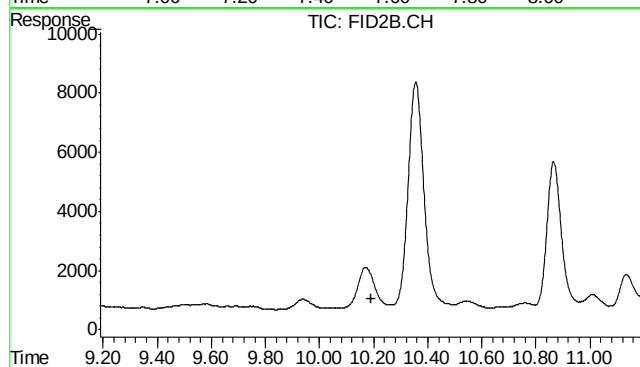
R.T.: 4.056 min
Delta R.T.: -0.018 min
Response: 4090366
Conc: 6.53 ug/L

8.12
8



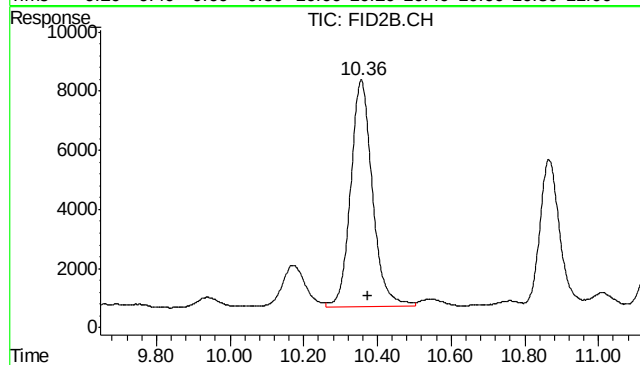
#6 Toluene

R.T.: 7.522 min
Delta R.T.: -0.023 min
Response: 344183
Conc: 0.58 ug/L



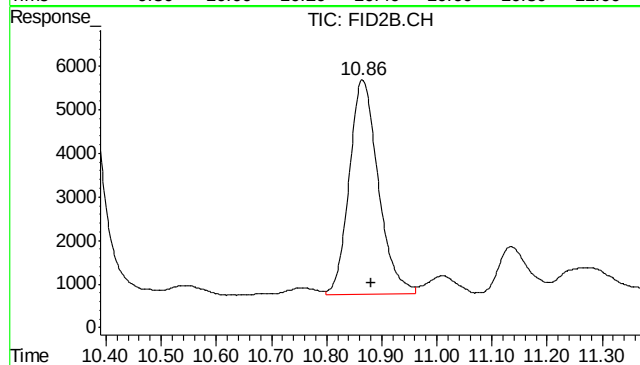
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.190 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

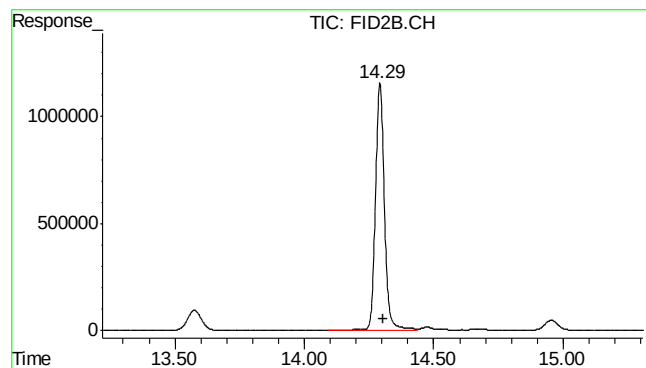
R.T.: 10.356 min
Delta R.T.: -0.019 min
Response: 313663
Conc: 0.50 ug/L



#9 o-Xylene

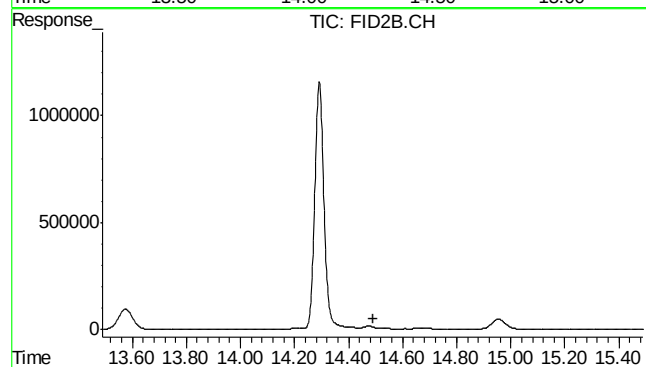
R.T.: 10.866 min
Delta R.T.: -0.016 min
Response: 179424
Conc: 0.34 ug/L

8.1.2
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.292 min
Delta R.T.: -0.015 min
Response: 27796189
Conc: 90.38 %



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.490 min
Response: 0
Conc: N.D.

8.1.2
8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10707.D\FID1A.CH Vial: 18
Signal #2 : Y:\1\DATA\051711\GB10707.D\FID2B.CH
Acq On : 18 May 2011 1:35 am Operator: BrianR
Sample : MB, W Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 08:32:49 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units

System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.29	3580011	103.900	%
10) S	1,2,4-Trichlorobenzene (P)	14.29	32191996	104.676	%
Target Compounds					
1) H	TVH-Gasoline	7.21	1035841	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	7.53	330243	0.552	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	10.36	298287	0.476	ug/L
9) T	o-Xylene	10.87	122810	0.236	ug/L
11) T	Naphthalene	0.00	0	N.D.	ug/L d

(f)=RT Delta > 1/2 Window

GB10707.D TB510GB510.M

Thu May 19 08:45:41 2011

(m)=manual int.

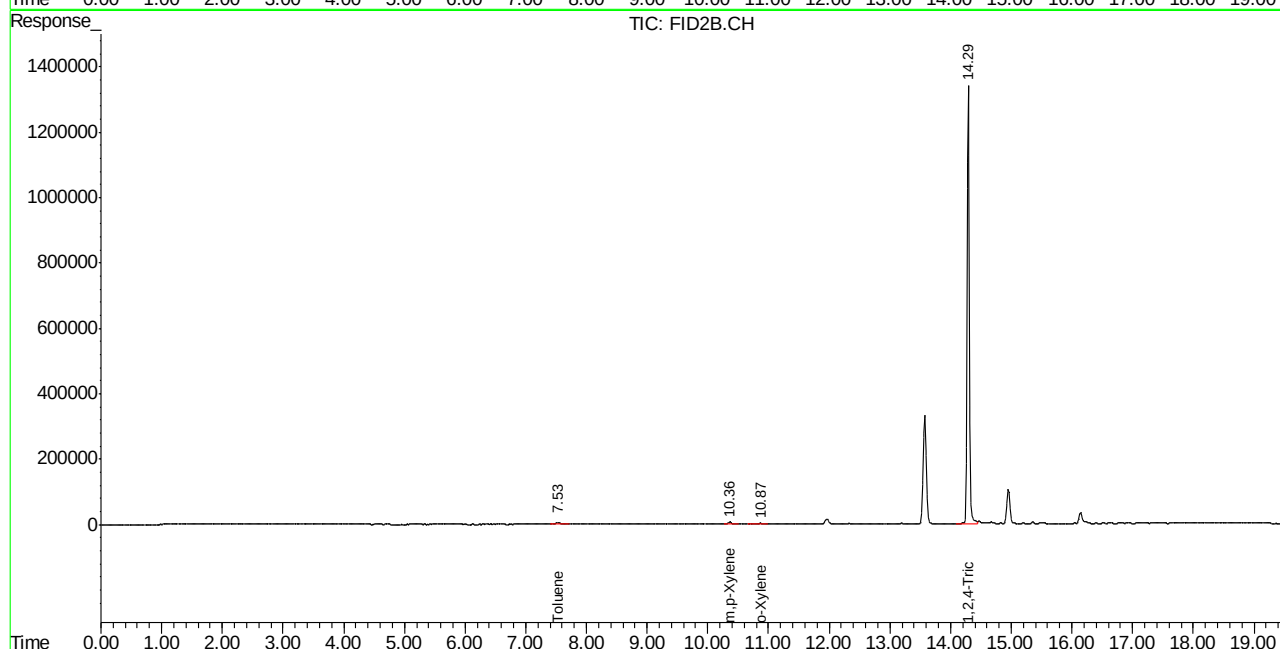
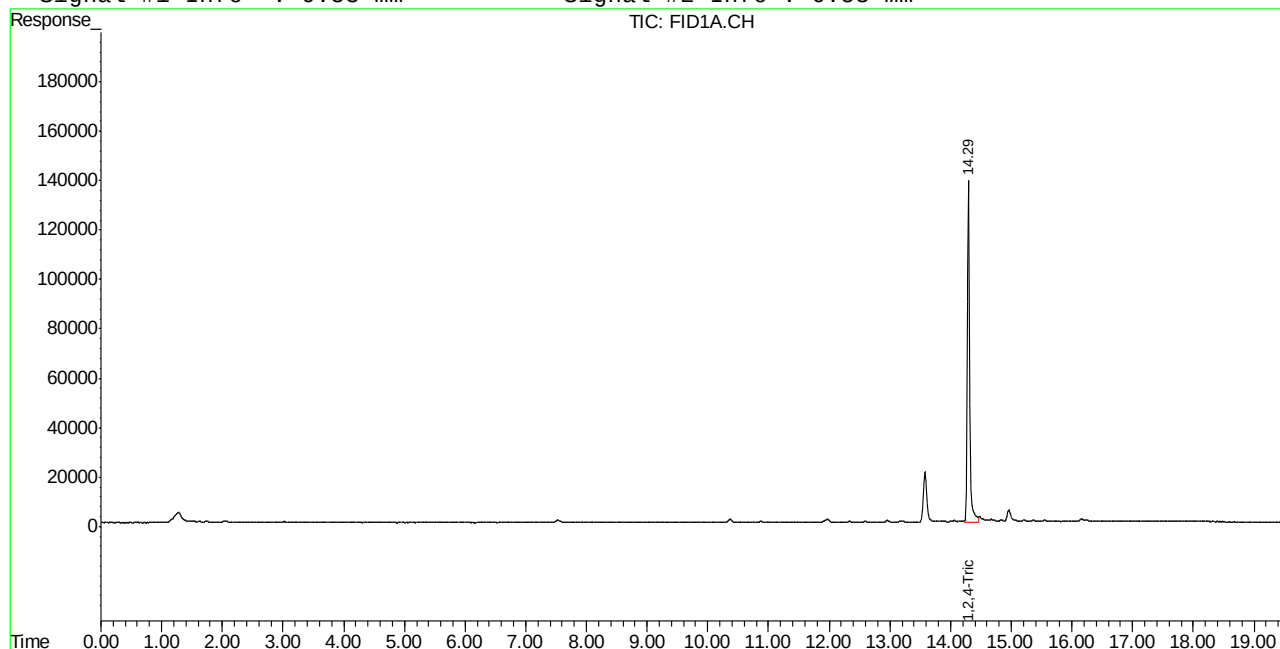
GC

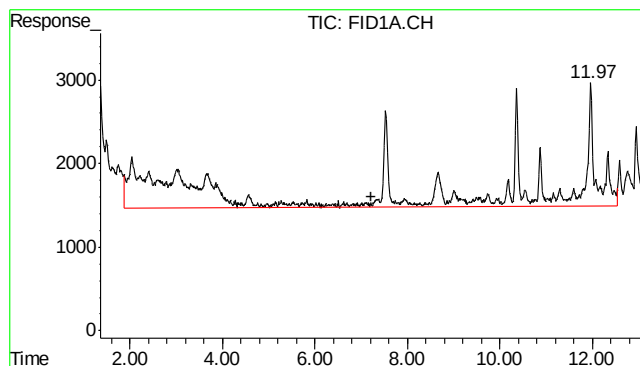
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\051711\GB10707.D\FID1A.CH Vial: 18
Signal #2 : Y:\1\DATA\051711\GB10707.D\FID2B.CH
Acq On : 18 May 2011 1:35 am Operator: BrianR
Sample : MB, W Inst : GC/MS Ins
Misc : GC1879,GGB622,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: May 19 7:37 2011 Quant Results File: TB510GB510.RES

Quant Method : C:\MSDCHEM\1\METHODS\TB510GB510.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed May 11 14:34:35 2011
Response via : Single Level Calibration
DataAcq Meth : TVB4.M

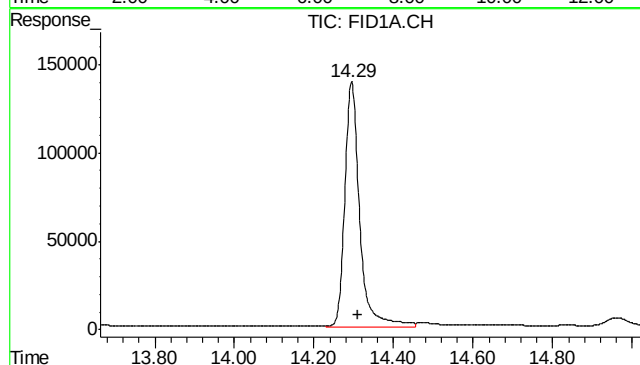
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





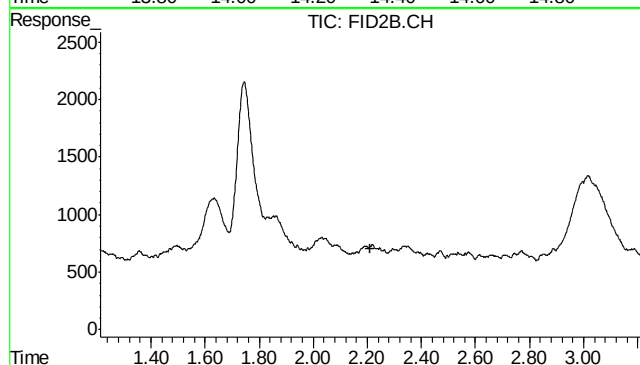
#1 TVH-Gasoline

R.T.: 7.205 min
Delta R.T.: 0.000 min
Response: 1035841
Conc: N.D.



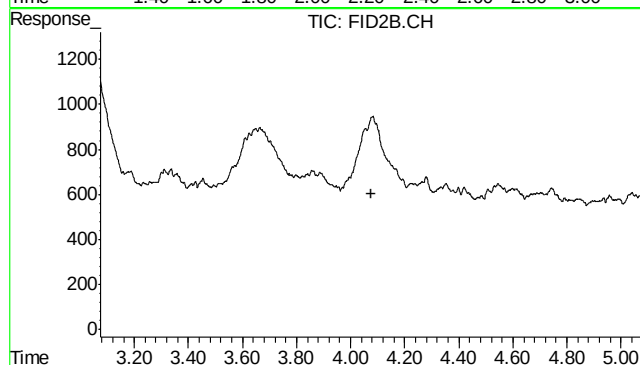
#2 1,2,4-Trichlorobenzene

R.T.: 14.295 min
Delta R.T.: -0.015 min
Response: 3580011
Conc: 103.90 %



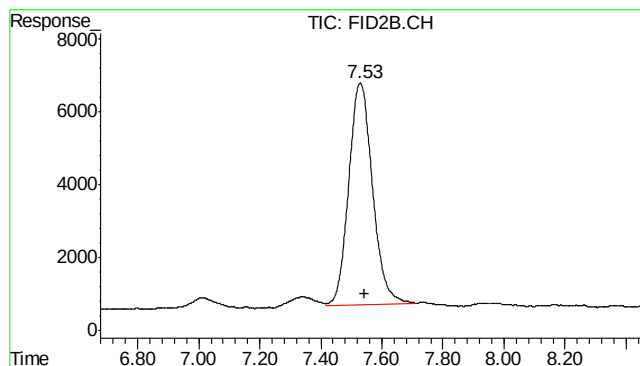
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.212 min
Response: 0
Conc: N.D.



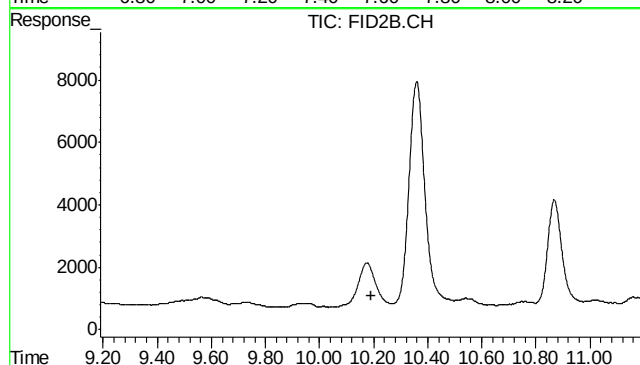
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.074 min
Response: 0
Conc: N.D.



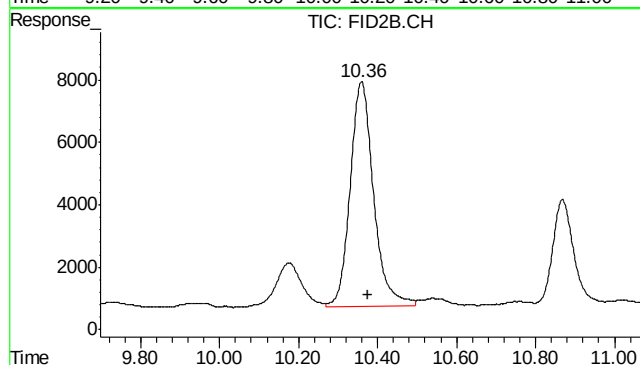
#6 Toluene

R.T.: 7.529 min
Delta R.T.: -0.016 min
Response: 330243
Conc: 0.55 ug/L



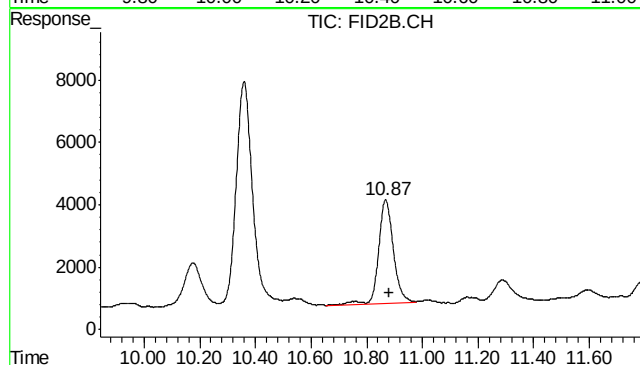
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.190 min
Response: 0
Conc: N.D.



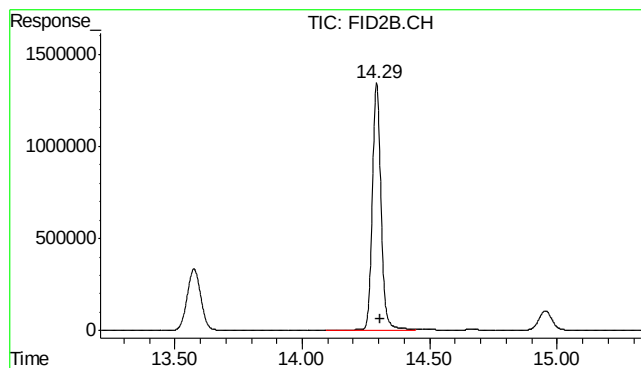
#8 m,p-Xylene

R.T.: 10.359 min
Delta R.T.: -0.015 min
Response: 298287
Conc: 0.48 ug/L



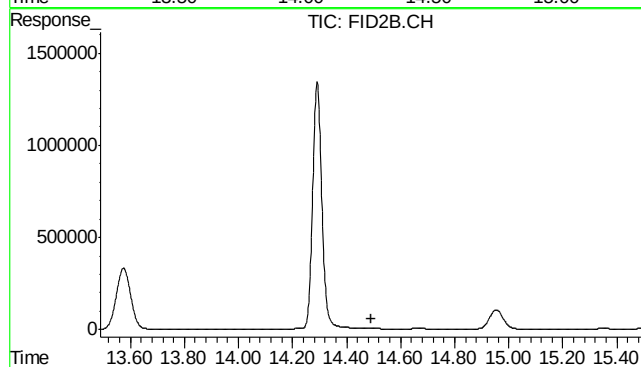
#9 o-Xylene

R.T.: 10.868 min
Delta R.T.: -0.013 min
Response: 122810
Conc: 0.24 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.292 min
Delta R.T.: -0.015 min
Response: 32191996
Conc: 104.68 %



#11 Naphthalene

R.T.: 0.000 min
Exp R.T.: 14.490 min
Response: 0
Conc: N.D.

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Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	5.9	7.1		
Antimony	30	3.1	3.1		
Arsenic	25	5.9	5.9		
Barium	10	1.1	1.1	0.10	<10
Beryllium	10	.44	1.8		
Boron	50	4.8	4.8		
Cadmium	10	.27	.62		
Calcium	400	9.6	28	7.5	<400
Chromium	10	.18	.42		
Cobalt	5.0	.35	.4		
Copper	10	.85	1.9		
Iron	70	3.4	5.5	-0.50	<70
Lead	50	1.6	1.8		
Lithium	2.0	.28	.46		
Magnesium	200	5.8	12	-3.0	<200
Manganese	5.0	.053	.28	0.90	<5.0
Molybdenum	10	.45	1.1		
Nickel	30	.43	.96		
Phosphorus	100	11	12		
Potassium	1000	55	130	65.5	<1000
Selenium	50	3.8	5.7		
Silicon	50	3.8	3.8		
Silver	30	.18	.56		
Sodium	400	110	110	-0.30	<400
Strontium	5.0		.17	0.10	<5.0
Thallium	10	2.9	2.9		
Tin	50	5.5	15		
Titanium	10	.11	.17		
Uranium	50	1.5	1.9		
Vanadium	10	.16	.18		
Zinc	30	.28	1.4		

Associated samples MP4730: D23462-1F, D23462-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.1.1

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	D23462-1F Original MS		SpikeLot MPICALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	1380	3360	2000	99.0	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium	169000	191000	25000	88.0	70-130
Chromium					
Cobalt	anr				
Copper	anr				
Iron	36.8	4860	5000	96.5	70-130
Lead	anr				
Lithium					
Magnesium	0.0	24300	25000	97.2	70-130
Manganese	0.30	489	500	97.7	70-130
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	92300	119000	25000	106.8	70-130
Selenium	anr				
Silicon					
Silver					
Sodium	1280000	1290000	25000	40.0 (a)	70-130
Strontium	7090	7560	500	94.0	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP4730: D23462-1F, D23462-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	D23462-1F Original MSD		Spikelet MPICPAL % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	1380	3340	2000	98.0	0.6	20
Beryllium						
Boron						
Cadmium	anr					
Calcium	169000	190000	25000	84.0	0.5	20
Chromium						
Cobalt	anr					
Copper	anr					
Iron	36.8	4840	5000	96.1	0.4	20
Lead	anr					
Lithium						
Magnesium	0.0	24200	25000	96.8	0.4	20
Manganese	0.30	491	500	98.1	0.4	20
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	92300	118000	25000	102.8	0.8	20
Selenium	anr					
Silicon						
Silver						
Sodium	1280000	1300000	25000	80.0	0.8	20
Strontium	7090	7490	500	80.0	0.9	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP4730: D23462-1F, D23462-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 05/18/11

Metal	BSP Result	Spike lot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	1970	2000	98.5	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium	26000	25000	104.0	85-115
Chromium				
Cobalt	anr			
Copper	anr			
Iron	4930	5000	98.6	85-115
Lead	anr			
Lithium				
Magnesium	24700	25000	98.8	85-115
Manganese	509	500	101.8	85-115
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	25400	25000	101.6	85-115
Selenium	anr			
Silicon				
Silver				
Sodium	25400	25000	101.6	85-115
Strontium	504	500	100.8	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP4730: D23462-1F, D23462-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

QC Batch ID: MP4730
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN9556	5.0	3.6	mg/l	100	102	101.5	90-110%
Bromide	GP4445/GN9546	0.20	0.0	mg/l	20	20.5	102.5	90-110%
Chloride	GP4445/GN9546	0.50	0.25	mg/l	20	19.4	97.0	90-110%
Hydrogen Sulfide	GN9588	0.50	<0.50	mg/l	4.05	3.5	86.4	60-120%
Iron, Ferrous	GN9544	0.10	0.0	mg/l	1.0	0.98	98.0	85-115%
Nitrogen, Ammonia	GP4451/GN9566	0.10	0.0	mg/l	20	18.3	91.3	90-110%
Nitrogen, Nitrate	GP4445/GN9546	0.045	0.0	mg/l	4.52	4.51	99.8	90-110%
Nitrogen, Nitrite	GP4445/GN9546	0.061	0.0	mg/l	6.09	5.95	97.7	90-110%
Solids, Total Dissolved	GN9584	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP4445/GN9546	0.50	0.0	mg/l	30	28.9	96.3	90-110%
pH	GN9545			su	8.00	8.04	100.5	99.3-100.7%

Associated Samples:

Batch GN9544: D23462-1F, D23462-2F

Batch GN9545: D23462-1, D23462-2

Batch GN9556: D23462-1, D23462-2

Batch GN9584: D23462-1, D23462-2

Batch GN9588: D23462-1, D23462-2

Batch GP4445: D23462-1, D23462-2

Batch GP4451: D23462-1, D23462-2

(*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN9556	D23440-1	mg/l	67.2	65.7	2.2	0-20%
Iron, Ferrous	GN9544	D23440-1F	mg/l	0.0	0.0	200.0(a)	0-20%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	0.64	4.8	0-20%
Solids, Total Dissolved	GN9584	D23462-1	mg/l	3890	3890	0.0	0-25%

Associated Samples:

Batch GN9544: D23462-1F, D23462-2F

Batch GN9556: D23462-1, D23462-2

Batch GN9584: D23462-1, D23462-2

Batch GP4451: D23462-1, D23462-2

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN9556	D23440-1	mg/l	67.2	100	163	96.2	80-120%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.19	2.5	2.7	100.4	80-120%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.0	2.5	2.7	100.4	80-120%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.8	10	34.8	90.0	80-120%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.4	10	34.8	90.0	80-120%
Iron, Ferrous	GN9544	D23440-1F	mg/l	0.0	1.0	0.0	2.0*(a)	75-125%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	10	10.1	101.2	80-120%
Nitrogen, Nitrate	GP4445/GN9546	D23434-1	mg/l	2.8	2.83	5.9	109.7	80-120%
Nitrogen, Nitrite	GP4445/GN9546	D23434-1	mg/l	0.051	0.305	0.34	94.9	80-120%
Sulfate	GP4445/GN9546	D23434-1	mg/l	142	50	244	86.0	80-120%
Sulfate	GP4445/GN9546	D23434-1	mg/l	201	50	244	86.0	80-120%

Associated Samples:

Batch GN9544: D23462-1F, D23462-2F

Batch GN9556: D23462-1, D23462-2

Batch GP4445: D23462-1, D23462-2

Batch GP4451: D23462-1, D23462-2

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D23462
Account: GEOTCOL - TetraTech GEO
Project: Garfield County

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN9556	D23440-1	mg/l	67.2	100	164	0.4	20%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.19	2.5	2.8	3.6	20%
Bromide	GP4445/GN9546	D23434-1	mg/l	0.0	2.5	2.8	3.6	20%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.8	10	34.9	0.3	20%
Chloride	GP4445/GN9546	D23434-1	mg/l	25.4	10	34.9	0.3	20%
Iron, Ferrous	GN9544	D23440-1F	mg/l	0.0	1.0	0.0200	0.0	20%
Nitrogen, Ammonia	GP4451/GN9566	D23440-1	mg/l	0.61	10	10.5	3.7	
Nitrogen, Nitrate	GP4445/GN9546	D23434-1	mg/l	2.8	2.83	5.9	0.0	20%
Nitrogen, Nitrite	GP4445/GN9546	D23434-1	mg/l	0.051	0.305	0.35	2.9	20%
Sulfate	GP4445/GN9546	D23434-1	mg/l	142	50	243	0.4	20%
Sulfate	GP4445/GN9546	D23434-1	mg/l	201	50	243	0.4	20%

Associated Samples:

Batch GN9544: D23462-1F, D23462-2F

Batch GN9556: D23462-1, D23462-2

Batch GP4445: D23462-1, D23462-2

Batch GP4451: D23462-1, D23462-2

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.4
10

Lab #: 211443 Job #: 15303
 Sample Name/Number: MW-1A_051211
 Company: GeoTrans, Inc.
 Date Sampled: 5/12/2011
 Container: IsoBag
 Field/Site Name: Garfield County - Mamm Creek
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 5/18/2011 Date Reported: 6/02/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.060			
Hydrogen Sulfide -----	nd			
Helium -----	na			
Hydrogen -----	na			
Argon -----	0.863			
Oxygen -----	10.94			
Nitrogen -----	62.24			
Carbon Dioxide -----	0.006			
Methane -----	25.81	-55.87	-189.2	
Ethane -----	0.0771			
Ethylene -----	0.0033			
Propane -----	0.0025			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 263

Specific gravity, calculated: 0.879

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.18

Concentration of methane in water = 20 cc/L ; 13 ppm

*Addition of helium negates the ability to detect native helium or hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 211444 Job #: 15303
 Sample Name/Number: MW-1B_051311
 Company: GeoTrans, Inc.
 Date Sampled: 5/13/2011
 Container: IsoBag
 Field/Site Name: Garfield County - Mamm Creek
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 5/18/2011 Date Reported: 6/02/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.017			
Hydrogen Sulfide -----	nd			
Helium -----	0.0145			
Hydrogen -----	nd			
Argon -----	0.371			
Oxygen -----	9.68			
Nitrogen -----	22.13			
Carbon Dioxide -----	0.007			
Methane -----	66.26	-37.21	-177.3	
Ethane -----	1.41			
Ethylene -----	0.0010			
Propane -----	0.108			
Iso-butane -----	0.0034			
N-butane -----	0.0019			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 699

Specific gravity, calculated: 0.710

Remarks:

Concentration of methane in water = 54 cc/L ; 36 ppm

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 211445 Job #: 15303
 Sample Name/Number: MW-2A_051211
 Company: GeoTrans, Inc.
 Date Sampled: 5/12/2011
 Container: IsoBag
 Field/Site Name: Garfield County - Mamm Creek
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 5/18/2011 Date Reported: 6/02/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.025			
Hydrogen Sulfide -----	nd			
Helium -----	0.0150			
Hydrogen -----	nd			
Argon -----	0.509			
Oxygen -----	8.24			
Nitrogen -----	28.91			
Carbon Dioxide -----	0.006			
Methane -----	62.17	-58.72	-208.6	
Ethane -----	0.121			
Ethylene -----	0.0055			
Propane -----	0.0013			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 632

Specific gravity, calculated: 0.724

Remarks:

Concentration of methane in water = 99 cc/L ; 66 ppm

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 211446 Job #: 15303
 Sample Name/Number: MW-2B_051211
 Company: GeoTrans, Inc.
 Date Sampled: 5/12/2011
 Container: IsoBag
 Field/Site Name: Garfield County - Mamm Creek
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 5/18/2011 Date Reported: 6/02/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.12			
Hydrogen Sulfide -----	nd			
Helium -----	na			
Hydrogen -----	na			
Argon -----	0.752			
Oxygen -----	18.06			
Nitrogen -----	33.94			
Carbon Dioxide -----	0.013			
Methane -----	46.22	-42.92	-196.1	
Ethane -----	0.874			
Ethylene -----	nd			
Propane -----	0.0217			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 485

Specific gravity, calculated: 0.805

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.79

Concentration of methane in water = 18 cc/L ; 12 ppm

*Addition of helium negates the ability to detect native helium or hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 211447 Job #: 15303
 Sample Name/Number: MW-3A_051111
 Company: GeoTrans, Inc.
 Date Sampled: 5/11/2011
 Container: IsoBag
 Field/Site Name: Garfield County - Mamm Creek
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 5/18/2011 Date Reported: 6/02/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.61			
Hydrogen Sulfide -----	nd			
Helium -----	na			
Hydrogen -----	na			
Argon -----	0.881			
Oxygen -----	4.53			
Nitrogen -----	55.64			
Carbon Dioxide -----	0.007			
Methane -----	38.27	-68.36	-203.4	
Ethane -----	0.0578			
Ethylene -----	0.0035			
Propane -----	0.0029			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 391

Specific gravity, calculated: 0.819

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.48

Concentration of methane in water = 18 cc/L ; 12 ppm

*Addition of helium negates the ability to detect native helium or hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 211448 Job #: 15303
 Sample Name/Number: MW-3B_051111
 Company: GeoTrans, Inc.
 Date Sampled: 5/11/2011
 Container: IsoBag
 Field/Site Name: Garfield County - Mamm Creek
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 5/18/2011 Date Reported: 6/02/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.12			
Hydrogen Sulfide -----	nd			
Helium -----	na			
Hydrogen -----	na			
Argon -----	1.06			
Oxygen -----	20.61			
Nitrogen -----	76.01			
Carbon Dioxide -----	0.007			
Methane -----	2.18	-63.26	-204.8	
Ethane -----	0.0112			
Ethylene -----	nd			
Propane -----	0.0011			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 23

Specific gravity, calculated: 0.991

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.45

Concentration of methane in water = 1.2 cc/L ; 0.81 ppm

*Addition of helium negates the ability to detect native helium or hydrogen.

** Methane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 211449 Job #: 15303
 Sample Name/Number: MW_Currie_051111
 Company: GeoTrans, Inc.
 Date Sampled: 5/11/2011
 Container: IsoBag
 Field/Site Name: Garfield County - Mamm Creek
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 5/18/2011 Date Reported: 6/02/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	nd			
Helium -----	na			
Hydrogen -----	na			
Argon -----	1.29			
Oxygen -----	1.08			
Nitrogen -----	79.30			
Carbon Dioxide -----	0.54			
Methane -----	17.78	-80.19	-199.9	
Ethane -----	0.0149			
Ethylene -----	nd			
Propane -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 180

Specific gravity, calculated: 0.904

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.60

Concentration of methane in water = 6.3 cc/L ; 4.2 ppm

*Addition of helium negates the ability to detect native helium or hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Redevelopment Water Sample

May 3, 2012 – May 6, 2012

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-28592-1

Client Project/Site: Garfield County

For:

Tetra Tech GEO

363 Centennial Parkway

Suite 210

Louisville, Colorado 80027

Attn: David Bohmann



Authorized for release by:

5/22/2012 3:53:13 PM

DiLea Griego

Project Manager I

dilea.griego@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Job ID: 280-28592-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Tetra Tech GEO

Project: Garfield County Silt Co.

Report Number: 280-28592-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 05/07/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.9 C.

The laboratory received a trip blank sample not listed on the Chain of Custody. The trip blank was logged for method 8260B per pre-determined scope of project.

No other issues were noted.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - METHOD 8260B

No difficulties were encountered.

GAS RANGE ORGANICS - METHOD 8015B

No difficulties were encountered.

DIESEL RANGE ORGANICS - METHOD 8015B

Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-119122. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other difficulties were encountered.

TOTAL METALS - METHOD 6010B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-119635 were performed on a sample from another job and the MSD exhibited recoveries outside control limits for Potassium due to elevated levels of target compound. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The instrument blank for analytical batch 280-119361 contained Sodium greater than the reporting limit (RL). The data have been qualified and reported. All samples were greater than 10X the amount found in the Continuing Calibration Blank (CCB).

Continuing Calibration Verification (CCV) standards associated with samples in analysis batch 280-119361 exhibited %D values out of range, biased high, for Sodium. This is an indicator that data may be biased high. As no detectable concentrations of Sodium are present in the associated samples, corrective action is deemed unnecessary.

Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Job ID: 280-28592-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

No other difficulties were encountered.

GENERAL CHEMISTRY

Samples SILT DISPENSARY 1 (280-28592-1)[5X] and SILT CITY DISPENSARY SOURCE (280-28592-2)[5X] required dilution prior to analysis for Chloride and Sulfate. The reporting limits have been adjusted accordingly.

No other difficulties were encountered.

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Qualifiers

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Client Sample ID: SILT DISPENSARY 1

Lab Sample ID: 280-28592-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	54000		200		ug/L	1		6010B	Total/NA
Magnesium	12000		200		ug/L	1		6010B	Total/NA
Manganese	11		10		ug/L	1		6010B	Total/NA
Potassium	3200		3000		ug/L	1		6010B	Total/NA
Sodium	95000	^	1000		ug/L	1		6010B	Total/NA
Chloride	140		15		mg/L	5		300.0	Total/NA
Sulfate	78		25		mg/L	5		300.0	Total/NA
Alkalinity	120		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	440		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: SILT CITY DISPENSARY SOURCE

Lab Sample ID: 280-28592-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	51000		200		ug/L	1		6010B	Total/NA
Magnesium	11000		200		ug/L	1		6010B	Total/NA
Sodium	74000	^	1000		ug/L	1		6010B	Total/NA
Chloride	100		15		mg/L	5		300.0	Total/NA
Sulfate	64		25		mg/L	5		300.0	Total/NA
Alkalinity	120		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	370		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-28592-3

No Detections

Method Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Metals (ICP)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-28592-1	SILT DISPENSARY 1	Water	05/03/12 19:20	05/07/12 15:46
280-28592-2	SILT CITY DISPENSARY SOURCE	Water	05/06/12 07:45	05/07/12 15:46
280-28592-3	TRIP BLANK	Water	05/03/12 19:20	05/07/12 15:46

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: SILT DISPENSARY 1

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/14/12 12:02	1
Ethylbenzene	ND		1.0		ug/L			05/14/12 12:02	1
Toluene	ND		1.0		ug/L			05/14/12 12:02	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/14/12 12:02	1
o-Xylene	ND		1.0		ug/L			05/14/12 12:02	1
Xylenes, Total	ND		2.0		ug/L			05/14/12 12:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 127		05/14/12 12:02	1
Toluene-d8 (Surr)	101		80 - 125		05/14/12 12:02	1
4-Bromofluorobenzene (Surr)	97		78 - 120		05/14/12 12:02	1
Dibromofluoromethane (Surr)	94		77 - 120		05/14/12 12:02	1

Client Sample ID: SILT CITY DISPENSARY SOURCE

Date Collected: 05/06/12 07:45

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/14/12 12:21	1
Ethylbenzene	ND		1.0		ug/L			05/14/12 12:21	1
Toluene	ND		1.0		ug/L			05/14/12 12:21	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/14/12 12:21	1
o-Xylene	ND		1.0		ug/L			05/14/12 12:21	1
Xylenes, Total	ND		2.0		ug/L			05/14/12 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 127		05/14/12 12:21	1
Toluene-d8 (Surr)	104		80 - 125		05/14/12 12:21	1
4-Bromofluorobenzene (Surr)	100		78 - 120		05/14/12 12:21	1
Dibromofluoromethane (Surr)	97		77 - 120		05/14/12 12:21	1

Client Sample ID: TRIP BLANK

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/14/12 12:41	1
Ethylbenzene	ND		1.0		ug/L			05/14/12 12:41	1
Toluene	ND		1.0		ug/L			05/14/12 12:41	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/14/12 12:41	1
o-Xylene	ND		1.0		ug/L			05/14/12 12:41	1
Xylenes, Total	ND		2.0		ug/L			05/14/12 12:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 127		05/14/12 12:41	1
Toluene-d8 (Surr)	103		80 - 125		05/14/12 12:41	1
4-Bromofluorobenzene (Surr)	97		78 - 120		05/14/12 12:41	1
Dibromofluoromethane (Surr)	94		77 - 120		05/14/12 12:41	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: SILT DISPENSARY 1

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L	-		05/10/12 18:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	90		82 - 110					05/10/12 18:48	1

Client Sample ID: SILT CITY DISPENSARY SOURCE

Date Collected: 05/06/12 07:45

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L	-		05/10/12 19:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	94		82 - 110					05/10/12 19:31	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: SILT DISPENSARY 1

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		240		ug/L	-	05/09/12 18:16	05/11/12 23:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 115				05/09/12 18:16	05/11/12 23:14	1

Client Sample ID: SILT CITY DISPENSARY SOURCE

Date Collected: 05/06/12 07:45

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		240		ug/L	-	05/09/12 18:16	05/11/12 23:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	102		50 - 115				05/09/12 18:16	05/11/12 23:42	1

Method: 6010B - Metals (ICP)

Client Sample ID: SILT DISPENSARY 1

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	54000		200		ug/L	-	05/10/12 14:00	05/11/12 00:06	1
Iron	ND		100		ug/L	-	05/10/12 14:00	05/11/12 00:06	1
Magnesium	12000		200		ug/L	-	05/10/12 14:00	05/11/12 00:06	1
Manganese	11		10		ug/L	-	05/10/12 14:00	05/11/12 00:06	1
Potassium	3200		3000		ug/L	-	05/10/12 14:00	05/11/12 00:06	1
Sodium	95000 ^		1000		ug/L	-	05/10/12 14:00	05/11/12 00:06	1

Client Sample ID: SILT CITY DISPENSARY SOURCE

Date Collected: 05/06/12 07:45

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	51000		200		ug/L	-	05/10/12 14:00	05/11/12 00:09	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 6010B - Metals (ICP) (Continued)

Client Sample ID: SILT CITY DISPENSARY SOURCE

Date Collected: 05/06/12 07:45

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		100		ug/L		05/10/12 14:00	05/11/12 00:09	1
Magnesium	11000		200		ug/L		05/10/12 14:00	05/11/12 00:09	1
Manganese	ND		10		ug/L		05/10/12 14:00	05/11/12 00:09	1
Potassium	ND		3000		ug/L		05/10/12 14:00	05/11/12 00:09	1
Sodium	74000	^	1000		ug/L		05/10/12 14:00	05/11/12 00:09	1

General Chemistry

Client Sample ID: SILT DISPENSARY 1

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140		15		mg/L			05/12/12 17:58	5
Sulfate	78		25		mg/L			05/12/12 17:58	5
Alkalinity	120		5.0		mg/L			05/08/12 20:38	1
Total Dissolved Solids	440		10		mg/L			05/11/12 10:16	1

Client Sample ID: SILT CITY DISPENSARY SOURCE

Date Collected: 05/06/12 07:45

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	100		15		mg/L			05/12/12 18:14	5
Sulfate	64		25		mg/L			05/12/12 18:14	5
Alkalinity	120		5.0		mg/L			05/08/12 20:47	1
Total Dissolved Solids	370		10		mg/L			05/11/12 10:16	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-119708/6

Matrix: Water

Analysis Batch: 119708

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/14/12 08:27	1
Ethylbenzene	ND		1.0		ug/L			05/14/12 08:27	1
Toluene	ND		1.0		ug/L			05/14/12 08:27	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/14/12 08:27	1
o-Xylene	ND		1.0		ug/L			05/14/12 08:27	1
Xylenes, Total	ND		2.0		ug/L			05/14/12 08:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 127		05/14/12 08:27	1
Toluene-d8 (Surr)	102		80 - 125		05/14/12 08:27	1
4-Bromofluorobenzene (Surr)	99		78 - 120		05/14/12 08:27	1
Dibromofluoromethane (Surr)	96		77 - 120		05/14/12 08:27	1

Lab Sample ID: LCS 280-119708/4

Matrix: Water

Analysis Batch: 119708

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	4.91		ug/L		98	74 - 135
Ethylbenzene	5.00	5.10		ug/L		102	72 - 120
Toluene	5.00	4.81		ug/L		96	73 - 120
m-Xylene & p-Xylene	10.0	10.5		ug/L		105	74 - 135
o-Xylene	5.00	5.11		ug/L		102	73 - 135
Xylenes, Total	15.0	15.6		ug/L		104	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		70 - 127
Toluene-d8 (Surr)	103		80 - 125
4-Bromofluorobenzene (Surr)	100		78 - 120
Dibromofluoromethane (Surr)	97		77 - 120

Lab Sample ID: LCSD 280-119708/5

Matrix: Water

Analysis Batch: 119708

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	5.00	4.90		ug/L		98	74 - 135	0	20
Ethylbenzene	5.00	5.06		ug/L		101	72 - 120	1	26
Toluene	5.00	4.86		ug/L		97	73 - 120	1	20
m-Xylene & p-Xylene	10.0	10.5		ug/L		105	74 - 135	0	20
o-Xylene	5.00	5.03		ug/L		101	73 - 135	2	20
Xylenes, Total	15.0	15.5		ug/L		103	75 - 135	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		70 - 127
Toluene-d8 (Surr)	104		80 - 125
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	95		77 - 120

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-28635-D-2 MS

Matrix: Water

Analysis Batch: 119708

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		5.00	4.82		ug/L		96	74 - 135
Ethylbenzene	ND		5.00	4.99		ug/L		100	72 - 120
Toluene	ND		5.00	4.71		ug/L		94	73 - 120
m-Xylene & p-Xylene	ND		10.0	10.3		ug/L		103	74 - 135
o-Xylene	ND		5.00	5.00		ug/L		100	73 - 135
Xylenes, Total	ND		15.0	15.3		ug/L		102	75 - 135
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	92		70 - 127						
Toluene-d8 (Surr)	103		80 - 125						
4-Bromofluorobenzene (Surr)	97		78 - 120						
Dibromofluoromethane (Surr)	96		77 - 120						

Lab Sample ID: 280-28635-D-2 MSD

Matrix: Water

Analysis Batch: 119708

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		5.00	4.96		ug/L		99	74 - 135	3	20
Ethylbenzene	ND		5.00	5.12		ug/L		102	72 - 120	3	26
Toluene	ND		5.00	4.92		ug/L		98	73 - 120	4	20
m-Xylene & p-Xylene	ND		10.0	10.6		ug/L		106	74 - 135	3	20
o-Xylene	ND		5.00	5.15		ug/L		103	73 - 135	3	20
Xylenes, Total	ND		15.0	15.7		ug/L		105	75 - 135	3	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		70 - 127								
Toluene-d8 (Surr)	106		80 - 125								
4-Bromofluorobenzene (Surr)	98		78 - 120								
Dibromofluoromethane (Surr)	98		77 - 120								

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-119402/5

Matrix: Water

Analysis Batch: 119402

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	ND		25		ug/L			05/10/12 15:16	1
-C6-C10									
MB MB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	95		82 - 110					05/10/12 15:16	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 280-119402/3

Matrix: Water

Analysis Batch: 119402

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)			101	108		ug/L		107	79 - 149		
-C6-C10											
Surrogate		LCS %Recovery	LCS Qualifier	Limits							
a,a,a-Trifluorotoluene		110		82 - 110							

Lab Sample ID: LCSD 280-119402/4

Matrix: Water

Analysis Batch: 119402

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)			101	104		ug/L		103	79 - 149	4	27
-C6-C10											
Surrogate		LCSD %Recovery	LCSD Qualifier	Limits							
a,a,a-Trifluorotoluene		108		82 - 110							

Lab Sample ID: 280-28530-O-1 MS

Matrix: Water

Analysis Batch: 119402

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)	ND		101	101		ug/L		100	79 - 149		
-C6-C10											
Surrogate		MS %Recovery	MS Qualifier	Limits							
a,a,a-Trifluorotoluene		106		82 - 110							

Lab Sample ID: 280-28530-O-1 MSD

Matrix: Water

Analysis Batch: 119402

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	ND		101	98.3		ug/L		97	79 - 149	3	27
-C6-C10											
Surrogate		MSD %Recovery	MSD Qualifier	Limits							
a,a,a-Trifluorotoluene		103		82 - 110							

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-119122/1-A

Matrix: Water

Analysis Batch: 119715

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 119122

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		250		ug/L		05/09/12 18:16	05/11/12 21:49	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 280-119122/1-A
Matrix: Water
Analysis Batch: 119715

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119122

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 115	05/09/12 18:16	05/11/12 21:49	1

Lab Sample ID: LCS 280-119122/2-A
Matrix: Water
Analysis Batch: 119715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119122

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	2000	2050		ug/L		102	54 - 115
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
o-Terphenyl	113		50 - 115				

Lab Sample ID: LCSD 280-119122/3-A
Matrix: Water
Analysis Batch: 119715

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119122

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2000	1970		ug/L		99	54 - 115	4	31
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	111		50 - 115						

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 280-119061/1-A
Matrix: Water
Analysis Batch: 119361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119061

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		200		ug/L		05/10/12 14:00	05/11/12 00:01	1
Iron	ND		100		ug/L		05/10/12 14:00	05/11/12 00:01	1
Magnesium	ND		200		ug/L		05/10/12 14:00	05/11/12 00:01	1
Manganese	ND		10		ug/L		05/10/12 14:00	05/11/12 00:01	1
Potassium	ND		3000		ug/L		05/10/12 14:00	05/11/12 00:01	1
Sodium	ND	^	1000		ug/L		05/10/12 14:00	05/11/12 00:01	1

Lab Sample ID: LCS 280-119061/2-A
Matrix: Water
Analysis Batch: 119361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119061

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	47900		ug/L		96	90 - 111
Iron	1000	992		ug/L		99	89 - 115
Magnesium	50000	50000		ug/L		100	90 - 113
Manganese	500	498		ug/L		100	90 - 110
Potassium	50000	51700		ug/L		103	89 - 114
Sodium	50000	52400		ug/L		105	90 - 115

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 280-28641-J-1-B MS

Matrix: Water

Analysis Batch: 119361

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 119061

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	180000		50000	229000		ug/L		95	48 - 153
Iron	2700		1000	3640		ug/L		89	52 - 155
Magnesium	110000		50000	154000		ug/L		97	62 - 146
Manganese	860		500	1360		ug/L		99	79 - 121
Sodium	1600000	^	50000	1610000	4	ug/L		117	70 - 203

Lab Sample ID: 280-28641-J-1-B MS ^10

Matrix: Water

Analysis Batch: 119635

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 119061

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	780000		50000	835000	4	ug/L		112	76 - 132

Lab Sample ID: 280-28641-J-1-C MSD

Matrix: Water

Analysis Batch: 119361

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 119061

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	180000		50000	227000		ug/L		92	48 - 153	1	20
Iron	2700		1000	3670		ug/L		92	52 - 155	1	20
Magnesium	110000		50000	154000		ug/L		98	62 - 146	0	20
Manganese	860		500	1360		ug/L		99	79 - 121	0	20
Sodium	1600000	^	50000	1600000	4	ug/L		91	70 - 203	1	20

Lab Sample ID: 280-28641-J-1-C MSD ^10

Matrix: Water

Analysis Batch: 119635

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 119061

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Potassium	780000		50000	923000	4	ug/L		287	76 - 132	10	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-119646/6

Matrix: Water

Analysis Batch: 119646

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/L			05/12/12 10:32	1
Sulfate	ND		5.0		mg/L			05/12/12 10:32	1

Lab Sample ID: LCS 280-119646/4

Matrix: Water

Analysis Batch: 119646

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.5		mg/L		98	90 - 110
Sulfate	25.0	24.6		mg/L		98	90 - 110

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-119646/5

Matrix: Water

Analysis Batch: 119646

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	24.7		mg/L		99	90 - 110	1	10
Sulfate	25.0	24.7		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-119646/3 MRL

Matrix: Water

Analysis Batch: 119646

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1.00	ND		mg/L		98	50 - 150		
Sulfate	1.00	ND		mg/L		94	50 - 150		

Lab Sample ID: 280-28575-A-1 MS

Matrix: Water

Analysis Batch: 119646

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	31		25.0	58.3	E	mg/L		109	80 - 120		
Sulfate	8.3		25.0	34.4		mg/L		104	80 - 120		

Lab Sample ID: 280-28575-A-1 MSD

Matrix: Water

Analysis Batch: 119646

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	31		25.0	58.4	E	mg/L		109	80 - 120	0	20
Sulfate	8.3		25.0	34.6		mg/L		105	80 - 120	1	20

Lab Sample ID: 280-28575-A-1 DU

Matrix: Water

Analysis Batch: 119646

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	31		31.8		mg/L				2	15
Sulfate	8.3		8.44		mg/L				1	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-118974/63

Matrix: Water

Analysis Batch: 118974

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			05/08/12 20:34	1

Lab Sample ID: LCS 280-118974/61

Matrix: Water

Analysis Batch: 118974

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	202		mg/L		101	90 - 110		

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 280-118974/62

Matrix: Water

Analysis Batch: 118974

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	202		mg/L		101	90 - 110	0	10

Lab Sample ID: 280-28592-1 DU

Matrix: Water

Analysis Batch: 118974

Client Sample ID: SILT DISPENSARY 1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	120		120		mg/L		0.4	10

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-119414/1

Matrix: Water

Analysis Batch: 119414

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			05/11/12 10:16	1

Lab Sample ID: LCS 280-119414/2

Matrix: Water

Analysis Batch: 119414

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	501	484		mg/L		97	86 - 110

Lab Sample ID: LCSD 280-119414/3

Matrix: Water

Analysis Batch: 119414

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	501	487		mg/L		97	86 - 110	1	20

Lab Sample ID: 280-28560-A-2 DU

Matrix: Water

Analysis Batch: 119414

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	420		416		mg/L		0.2	10

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

GC/MS VOA

Analysis Batch: 119708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	8260B	
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	8260B	
280-28592-3	TRIP BLANK	Total/NA	Water	8260B	
280-28635-D-2 MS	Matrix Spike	Total/NA	Water	8260B	
280-28635-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 280-119708/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 280-119708/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 280-119708/6	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 119402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28530-O-1 MS	Matrix Spike	Total/NA	Water	8015B	
280-28530-O-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	8015B	
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	8015B	
LCS 280-119402/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-119402/4	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-119402/5	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 119122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	3510C	
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	3510C	
LCS 280-119122/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-119122/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 280-119122/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 119715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	8015B	119122
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	8015B	119122
LCS 280-119122/2-A	Lab Control Sample	Total/NA	Water	8015B	119122
LCSD 280-119122/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	119122
MB 280-119122/1-A	Method Blank	Total/NA	Water	8015B	119122

Metals

Prep Batch: 119061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	3010A	
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	3010A	
280-28641-J-1-B MS	Matrix Spike	Total/NA	Water	3010A	
280-28641-J-1-B MS ^10	Matrix Spike	Total/NA	Water	3010A	
280-28641-J-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
280-28641-J-1-C MSD ^10	Matrix Spike Duplicate	Total/NA	Water	3010A	
LCS 280-119061/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 280-119061/1-A	Method Blank	Total/NA	Water	3010A	

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Metals (Continued)

Analysis Batch: 119361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	6010B	119061
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	6010B	119061
280-28641-J-1-B MS	Matrix Spike	Total/NA	Water	6010B	119061
280-28641-J-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	6010B	119061
LCS 280-119061/2-A	Lab Control Sample	Total/NA	Water	6010B	119061
MB 280-119061/1-A	Method Blank	Total/NA	Water	6010B	119061

Analysis Batch: 119635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28641-J-1-B MS ^10	Matrix Spike	Total/NA	Water	6010B	119061
280-28641-J-1-C MSD ^10	Matrix Spike Duplicate	Total/NA	Water	6010B	119061

General Chemistry

Analysis Batch: 118974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	SM 2320B	
280-28592-1 DU	SILT DISPENSARY 1	Total/NA	Water	SM 2320B	
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	SM 2320B	
LCS 280-118974/61	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-118974/62	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-118974/63	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 119414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28560-A-2 DU	Duplicate	Total/NA	Water	SM 2540C	
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	SM 2540C	
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	SM 2540C	
LCS 280-119414/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-119414/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-119414/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 119646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-28575-A-1 DU	Duplicate	Total/NA	Water	300.0	
280-28575-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-28575-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-28592-1	SILT DISPENSARY 1	Total/NA	Water	300.0	
280-28592-2	SILT CITY DISPENSARY SOURCE	Total/NA	Water	300.0	
LCS 280-119646/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-119646/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-119646/6	Method Blank	Total/NA	Water	300.0	
MRL 280-119646/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-28592-1

Client Sample ID: SILT DISPENSARY 1

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	119708	05/14/12 12:02	MD	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	119402	05/10/12 18:48	AMB	TAL DEN
Total/NA	Prep	3510C			1050.2 mL	1000 uL	119122	05/09/12 18:16	SPF	TAL DEN
Total/NA	Analysis	8015B		1			119715	05/11/12 23:14	AMP	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	119061	05/10/12 14:00	JM	TAL DEN
Total/NA	Analysis	6010B		1			119361	05/11/12 00:06	HEB	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	118974	05/08/12 20:38	JMH	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	119414	05/11/12 10:16	BJD	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	119646	05/12/12 17:58	EK	TAL DEN

Client Sample ID: SILT CITY DISPENSARY SOURCE

Date Collected: 05/06/12 07:45

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	119708	05/14/12 12:21	MD	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	119402	05/10/12 19:31	AMB	TAL DEN
Total/NA	Prep	3510C			1053.4 mL	1000 uL	119122	05/09/12 18:16	SPF	TAL DEN
Total/NA	Analysis	8015B		1			119715	05/11/12 23:42	AMP	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	119061	05/10/12 14:00	JM	TAL DEN
Total/NA	Analysis	6010B		1			119361	05/11/12 00:09	HEB	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	118974	05/08/12 20:47	JMH	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	119414	05/11/12 10:16	BJD	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	119646	05/12/12 18:14	EK	TAL DEN

Client Sample ID: TRIP BLANK

Date Collected: 05/03/12 19:20

Date Received: 05/07/12 15:46

Lab Sample ID: 280-28592-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	119708	05/14/12 12:41	MD	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-28592-1

Login Number: 28592

List Source: TestAmerica Denver

List Number: 1

Creator: Cofoid, Stephen T

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Round 4 Sampling Event
August 14, 2012 – August 16, 2012

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-32125-1

Client Project/Site: Garfield County

For:

Tetra Tech GEO

363 Centennial Parkway

Suite 210

Louisville, Colorado 80027

Attn: David Bohmann



Authorized for release by:

8/28/2012 5:24:25 PM

DiLea Griego

Project Manager I

dilea.griego@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Job ID: 280-32125-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Tetra Tech GEO
Project: Garfield County
Report Number: 280-32125-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/15/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.9 C.

The following sample requesting Dissolved Metals analysis was received at the laboratory with a pH of 12: MW-3A_081412. The laboratory will adjust the pH of the sample, and proceed with the requested analyses. The sample was filtered and preserved in the field. The client was notified on 08/15/12.

The Iodide analysis by method 300.0 was subcontracted to the TestAmerica St. Louis laboratory at 13715 Rider Trail North, Earth City, MO 63045.

No other issues were noted.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - METHOD 8260B

No difficulties were encountered.

GAS RANGE ORGANICS - METHOD 8015B

The pH for all aqueous volatile organic samples is verified prior to analysis. The sample containers for sample MW-3A_081412 (280-32125-1) were preserved with hydrochloric (HCL) acid. However, the pH was recorded as three, greater than the required pH of less than two. The method requires that samples be preserved to a pH <2.

Surrogate a,a,a-Trifluorotoluene was recovered above the QC control limits in sample MW-3A_081412 (280-32125-1). This anomaly is due to obvious matrix interferences; therefore, corrective action is deemed unnecessary. The Recovery for unreported surrogate Chlorobenzene, which is added using the same surrogate mix, ranged from 100-108%, indicating a good addition of standard and a successful purge. Sample data should be considered biased high.

Surrogate a,a,a-Trifluorotoluene was recovered above the QC control limits (82-110%) in the LCSD (LCSD 280-133785/4) at 117%. The recovery for unreported surrogate Chlorobenzene was 108%, indicating a good addition of standard and a successful purge. The analyst noted that on the particular instrument the sample was analyzed on, the spike standard interferes with the TFT peak, resulting in high surrogate recoveries. Therefore, re-analysis was not performed.

No other difficulties were encountered.

DIESEL RANGE ORGANICS - METHOD 8015B

Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-132902. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Job ID: 280-32125-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

No other difficulties were encountered.

DISSOLVED METALS - METHOD 6010B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-133016 were performed on MW-3A_081412 (280-32125-1) and exhibited recoveries outside control limits for Strontium. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

GENERAL CHEMISTRY

The following samples in Iodide analysis batch 160-9550 were reported non-detect at dilution, due to matrix interference at the Iodide retention time in the undiluted analyses: MW-3A_081412 (280-32125-1), 280-32125-1 DU and 280-32125-1MS. Elevated reporting limits (RLs) are provided.

Sample MW-3A_081412 (280-32125-1)[5X] required dilution prior to analysis for Bromide, Nitrate as N, Nitrite as N, Fluoride and Sulfate due to high conductivity. The reporting limits have been adjusted accordingly.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-133439 were performed on MW-3A_081412 (280-32125-1) and exhibited recoveries outside control limits for Ammonia. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 160-9550 were performed on MW-3A_081412 (280-32125-1) and the MS exhibited recoveries outside control limits for Iodide. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-132657 were performed on MW-3A_081412 (280-32125-1) and exhibited recoveries outside control limits for Ferrous Iron. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with Sulfide in analysis batch 280-133621. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

No other difficulties were encountered.

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes
F	MS or MSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Client Sample ID: MW-3A_081412

Lab Sample ID: 280-32125-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.44				SU	1		Field Sampling	Total/NA
Field Conductivity	7413				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	16.69				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO)	33		25		ug/L	1		8015B	Total/NA
-C6-C10									
Diesel Range Organics [C10-C28]	0.49		0.24		mg/L	1		8015B	Total/NA
Barium	1600		10		ug/L	1		6010B	Dissolved
Calcium	340000		200		ug/L	1		6010B	Dissolved
Potassium	35000		3000		ug/L	1		6010B	Dissolved
Sodium	940000		1000		ug/L	1		6010B	Dissolved
Strontium	8600		10		ug/L	1		6010B	Dissolved
Bromide	8.3		1.0		mg/L	5		300.0	Total/NA
Chloride	780		60		mg/L	20		300.0	Total/NA
Sulfate	140		25		mg/L	5		300.0	Total/NA
Ammonia	1.9		0.10		mg/L	1		350.1	Total/NA
Alkalinity	1500		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	4000		100		mg/L	1		SM 2540C	Total/NA

Client Sample ID: TB-01_081412

Lab Sample ID: 280-32125-2

No Detections

Method Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Dissolved Metals	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
3500 FE D_ASP	Iron, Ferrous	SM	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 3500	Iron, Ferric	SM	TAL DEN
SM4500 S2 H	Unionized Hydrogen Sulfide	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-32125-1	MW-3A_081412	Water	08/14/12 14:31	08/15/12 09:30
280-32125-2	TB-01_081412	Water	08/14/12 14:31	08/15/12 09:30

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Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/18/12 15:28	1
Ethylbenzene	ND		1.0		ug/L			08/18/12 15:28	1
Toluene	ND		1.0		ug/L			08/18/12 15:28	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/18/12 15:28	1
o-Xylene	ND		1.0		ug/L			08/18/12 15:28	1
Xylenes, Total	ND		2.0		ug/L			08/18/12 15:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 127		08/18/12 15:28	1
Toluene-d8 (Surr)	90		80 - 125		08/18/12 15:28	1
4-Bromofluorobenzene (Surr)	85		78 - 120		08/18/12 15:28	1
Dibromofluoromethane (Surr)	101		77 - 120		08/18/12 15:28	1

Client Sample ID: TB-01_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/18/12 15:47	1
Ethylbenzene	ND		1.0		ug/L			08/18/12 15:47	1
Toluene	ND		1.0		ug/L			08/18/12 15:47	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/18/12 15:47	1
o-Xylene	ND		1.0		ug/L			08/18/12 15:47	1
Xylenes, Total	ND		2.0		ug/L			08/18/12 15:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 127		08/18/12 15:47	1
Toluene-d8 (Surr)	91		80 - 125		08/18/12 15:47	1
4-Bromofluorobenzene (Surr)	94		78 - 120		08/18/12 15:47	1
Dibromofluoromethane (Surr)	103		77 - 120		08/18/12 15:47	1

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	33		25		ug/L	-		08/21/12 16:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	112	X	82 - 110					08/21/12 16:42	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.49		0.24		mg/L		08/16/12 16:07	08/21/12 04:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 115				08/16/12 16:07	08/21/12 04:20	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	1600		10		ug/L		08/16/12 14:00	08/17/12 01:21	1
Calcium	340000		200		ug/L		08/16/12 14:00	08/17/12 01:21	1
Iron	ND		100		ug/L		08/16/12 14:00	08/17/12 01:21	1
Magnesium	ND		200		ug/L		08/16/12 14:00	08/17/12 01:21	1
Manganese	ND		10		ug/L		08/16/12 14:00	08/17/12 01:21	1
Potassium	35000		3000		ug/L		08/16/12 14:00	08/17/12 01:21	1
Sodium	940000		1000		ug/L		08/16/12 14:00	08/17/12 01:21	1
Strontium	8600		10		ug/L		08/16/12 14:00	08/17/12 01:21	1

General Chemistry

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	8.3		1.0		mg/L			08/15/12 18:27	5
Nitrate as N	ND		2.5		mg/L			08/15/12 18:27	5
Chloride	780		60		mg/L			08/15/12 21:40	20
Nitrite as N	ND		2.5		mg/L			08/15/12 18:27	5
Fluoride	ND		2.5		mg/L			08/15/12 18:27	5
Sulfate	140		25		mg/L			08/15/12 18:27	5
Ammonia	1.9		0.10		mg/L			08/20/12 14:33	1
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1
Alkalinity	1500		5.0		mg/L			08/21/12 14:42	1
Total Dissolved Solids	4000		100		mg/L			08/16/12 08:49	1
Ferric Iron	ND		0.20		mg/L			08/23/12 10:47	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/24/12 09:48	1

General Chemistry - DL

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		10		mg/L			08/21/12 04:21	10

General Chemistry - Dissolved

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			08/15/12 13:46	1

Method: Field Sampling - Field Sampling

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.44				SU			08/14/12 14:31	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: Field Sampling - Field Sampling (Continued)

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field Conductivity	7413				umhos/cm			08/14/12 14:31	1
Field Temperature	16.69				Degrees C			08/14/12 14:31	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-133222/5

Matrix: Water

Analysis Batch: 133222

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/18/12 09:18	1
Ethylbenzene	ND		1.0		ug/L			08/18/12 09:18	1
Toluene	ND		1.0		ug/L			08/18/12 09:18	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/18/12 09:18	1
o-Xylene	ND		1.0		ug/L			08/18/12 09:18	1
Xylenes, Total	ND		2.0		ug/L			08/18/12 09:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 127		08/18/12 09:18	1
Toluene-d8 (Surr)	91		80 - 125		08/18/12 09:18	1
4-Bromofluorobenzene (Surr)	94		78 - 120		08/18/12 09:18	1
Dibromofluoromethane (Surr)	98		77 - 120		08/18/12 09:18	1

Lab Sample ID: LCS 280-133222/4

Matrix: Water

Analysis Batch: 133222

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	4.80		ug/L		96	74 - 135
Ethylbenzene	5.00	4.69		ug/L		94	72 - 120
Toluene	5.00	4.99		ug/L		100	73 - 120
m-Xylene & p-Xylene	10.0	9.64		ug/L		96	74 - 135
o-Xylene	5.00	4.70		ug/L		94	73 - 135
Xylenes, Total	15.0	14.3		ug/L		96	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		70 - 127
Toluene-d8 (Surr)	92		80 - 125
4-Bromofluorobenzene (Surr)	90		78 - 120
Dibromofluoromethane (Surr)	96		77 - 120

Lab Sample ID: 280-32060-D-1 MS

Matrix: Water

Analysis Batch: 133222

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		5.00	4.96		ug/L		99	74 - 135
Ethylbenzene	ND		5.00	4.89		ug/L		98	72 - 120
Toluene	ND		5.00	5.08		ug/L		102	73 - 120
m-Xylene & p-Xylene	ND		10.0	10.1		ug/L		101	74 - 135
o-Xylene	ND		5.00	4.84		ug/L		97	73 - 135
Xylenes, Total	ND		15.0	15.0		ug/L		100	75 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		70 - 127
Toluene-d8 (Surr)	95		80 - 125
4-Bromofluorobenzene (Surr)	92		78 - 120
Dibromofluoromethane (Surr)	92		77 - 120

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-32060-D-1 MSD

Matrix: Water

Analysis Batch: 133222

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		5.00	4.93		ug/L		99	74 - 135	1	20
Ethylbenzene	ND		5.00	4.71		ug/L		94	72 - 120	4	26
Toluene	ND		5.00	5.03		ug/L		101	73 - 120	1	20
m-Xylene & p-Xylene	ND		10.0	9.53		ug/L		95	74 - 135	6	20
o-Xylene	ND		5.00	4.69		ug/L		94	73 - 135	3	20
Xylenes, Total	ND		15.0	14.2		ug/L		95	75 - 135	5	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	87		70 - 127								
Toluene-d8 (Surr)	92		80 - 125								
4-Bromofluorobenzene (Surr)	93		78 - 120								
Dibromofluoromethane (Surr)	94		77 - 120								

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-133785/5

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			08/21/12 15:07	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	110		82 - 110					08/21/12 15:07	1

Lab Sample ID: LCS 280-133785/3

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10	101	122		ug/L		121	79 - 149		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
a,a,a-Trifluorotoluene	110		82 - 110						

Lab Sample ID: LCSD 280-133785/4

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	101	117		ug/L		116	79 - 149	5	27
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
a,a,a-Trifluorotoluene	117	X	82 - 110						

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: 280-32325-G-1 MS

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1200		504	1770		ug/L		119	79 - 149
Surrogate	MS %Recovery	MS Qualifier	Limits						
a,a,a-Trifluorotoluene	106		82 - 110						

Lab Sample ID: 280-32325-G-1 MSD

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1200		504	1820		ug/L	-	129	79 - 149	3	27
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
a,a,a-Trifluorotoluene	109		82 - 110								

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-132902/1-A

Matrix: Water

Analysis Batch: 133645

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 132902

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics [C10-C28]	ND		0.25		mg/L		08/16/12 16:07	08/21/12 03:08	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
o-Terphenyl	73		50 - 115				08/16/12 16:07	08/21/12 03:08	1

Lab Sample ID: LCS 280-132902/2-A

Matrix: Water

Analysis Batch: 133645

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 132902

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Diesel Range Organics			2.00	2.07		mg/L		103	54 - 115		
[C10-C28]											
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	87		50 - 115								

Lab Sample ID: LCSD 280-132902/3-A

Matrix: Water

Analysis Batch: 133645

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 132902

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2.00	1.82		mg/L		91	54 - 115	13	31

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 280-132902/3-A

Matrix: Water

Analysis Batch: 133645

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 132902

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 115

Method: 6010B - Dissolved Metals

Lab Sample ID: MB 280-132766/1-A

Matrix: Water

Analysis Batch: 133016

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 132766

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		10		ug/L		08/16/12 14:00	08/17/12 01:17	1
Calcium	ND		200		ug/L		08/16/12 14:00	08/17/12 01:17	1
Iron	ND		100		ug/L		08/16/12 14:00	08/17/12 01:17	1
Magnesium	ND		200		ug/L		08/16/12 14:00	08/17/12 01:17	1
Manganese	ND		10		ug/L		08/16/12 14:00	08/17/12 01:17	1
Potassium	ND		3000		ug/L		08/16/12 14:00	08/17/12 01:17	1
Sodium	ND		1000		ug/L		08/16/12 14:00	08/17/12 01:17	1
Strontium	ND		10		ug/L		08/16/12 14:00	08/17/12 01:17	1

Lab Sample ID: LCS 280-132766/2-A

Matrix: Water

Analysis Batch: 133016

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 132766

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	2000	2060		ug/L		103	90 - 112
Calcium	50000	51100		ug/L		102	90 - 111
Iron	1000	1020		ug/L		102	89 - 115
Magnesium	50000	50800		ug/L		102	90 - 113
Manganese	500	511		ug/L		102	90 - 110
Potassium	50000	52400		ug/L		105	89 - 114
Sodium	50000	54600		ug/L		109	90 - 115
Strontium	1000	1080		ug/L		108	90 - 111

Lab Sample ID: 280-32125-1 MS

Matrix: Water

Analysis Batch: 133016

Client Sample ID: MW-3A_081412

Prep Type: Dissolved

Prep Batch: 132766

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	1600		2000	3740		ug/L		107	85 - 120
Calcium	340000		50000	394000	4	ug/L		101	48 - 153
Iron	ND		1000	1030		ug/L		101	52 - 155
Magnesium	ND		50000	47600		ug/L		95	62 - 146
Manganese	ND		500	521		ug/L		103	79 - 121
Potassium	35000		50000	90400		ug/L		111	76 - 132
Sodium	940000		50000	1020000	4	ug/L		157	70 - 203
Strontium	8600		1000	9860	4	ug/L		130	81 - 125

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 6010B - Dissolved Metals (Continued)

Lab Sample ID: 280-32125-1 MSD

Matrix: Water

Analysis Batch: 133016

Client Sample ID: MW-3A_081412

Prep Type: Dissolved

Prep Batch: 132766

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	1600		2000	3720		ug/L		106	85 - 120	1	20
Calcium	340000		50000	395000	4	ug/L		104	48 - 153	0	20
Iron	ND		1000	1010		ug/L		99	52 - 155	2	20
Magnesium	ND		50000	47600		ug/L		95	62 - 146	0	20
Manganese	ND		500	522		ug/L		103	79 - 121	0	20
Potassium	35000		50000	90200		ug/L		110	76 - 132	0	20
Sodium	940000		50000	1010000	4	ug/L		148	70 - 203	0	20
Strontium	8600		1000	9910	4	ug/L		135	81 - 125	0	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-132982/14

Matrix: Water

Analysis Batch: 132982

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50		mg/L			08/15/12 12:23	1
Nitrite as N	ND		0.50		mg/L			08/15/12 12:23	1

Lab Sample ID: LCS 280-132982/12

Matrix: Water

Analysis Batch: 132982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	4.95		mg/L		99	90 - 110
Nitrite as N	5.00	5.05		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-132982/13

Matrix: Water

Analysis Batch: 132982

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	4.94		mg/L		99	90 - 110	0	10
Nitrite as N	5.00	5.06		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-132982/11 MRL

Matrix: Water

Analysis Batch: 132982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	ND		mg/L		104	50 - 150
Nitrite as N	0.200	ND		mg/L		98	50 - 150

Lab Sample ID: 280-32126-A-1 MS

Matrix: Water

Analysis Batch: 132982

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		5.00	5.06		mg/L		101	80 - 120
Nitrite as N	ND		5.00	5.14		mg/L		103	80 - 120

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-32126-A-1 MSD

Matrix: Water

Analysis Batch: 132982

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		5.00	5.15		mg/L		103	80 - 120	2	20
Nitrite as N	ND		5.00	5.22		mg/L		104	80 - 120	2	20

Lab Sample ID: MB 280-132983/14

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20		mg/L			08/15/12 12:23	1
Chloride	ND		3.0		mg/L			08/15/12 12:23	1
Fluoride	ND		0.50		mg/L			08/15/12 12:23	1
Sulfate	ND		5.0		mg/L			08/15/12 12:23	1

Lab Sample ID: LCS 280-132983/12

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	4.91		mg/L		98	90 - 110
Chloride	25.0	24.5		mg/L		98	90 - 110
Fluoride	5.00	5.04		mg/L		101	90 - 110
Sulfate	25.0	24.7		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-132983/13

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	5.00	4.91		mg/L		98	90 - 110	0	10
Chloride	25.0	24.6		mg/L		98	90 - 110	0	10
Fluoride	5.00	5.03		mg/L		101	90 - 110	0	10
Sulfate	25.0	24.7		mg/L		99	90 - 110	0	10

Lab Sample ID: MRL 280-132983/11 MRL

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	0.200	0.230		mg/L		115	50 - 150
Chloride	1.00	ND		mg/L		101	50 - 150
Fluoride	0.200	ND		mg/L		102	50 - 150
Sulfate	1.00	ND		mg/L		103	50 - 150

Lab Sample ID: 280-32126-A-1 MS

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		5.00	5.14		mg/L		103	80 - 120
Chloride	11		25.0	36.2		mg/L		101	80 - 120
Fluoride	ND		5.00	5.01		mg/L		100	80 - 120

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-32126-A-1 MS

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	ND		25.0	25.5		mg/L		100	80 - 120

Lab Sample ID: 280-32126-A-1 MSD

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	5.22		mg/L		104	80 - 120	2	20
Chloride	11		25.0	36.6		mg/L		103	80 - 120	1	20
Fluoride	ND		5.00	5.10		mg/L		102	80 - 120	2	20
Sulfate	ND		25.0	25.9		mg/L		101	80 - 120	1	20

Lab Sample ID: 280-32126-A-1 DU

Matrix: Water

Analysis Batch: 132983

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bromide	ND		ND		mg/L		NC	15
Chloride	11		10.9		mg/L		0.009	15
Fluoride	ND		ND		mg/L		NC	15
Sulfate	ND		ND		mg/L		NC	15

Lab Sample ID: MB 160-9550/52

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		1.0		mg/L			08/21/12 03:40	1

Lab Sample ID: LCS 160-9550/53

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	4.00	3.92		mg/L		98	90 - 110

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 280-32125-1 MS

Matrix: Water

Analysis Batch: 9550

Client Sample ID: MW-3A_081412

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide - DL	ND		40.0	44.7	F	mg/L		112	90 - 110

Lab Sample ID: 280-32125-1 DU

Matrix: Water

Analysis Batch: 9550

Client Sample ID: MW-3A_081412

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iodide - DL	ND		ND		mg/L		NC	20

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-133439/56

Matrix: Water

Analysis Batch: 133439

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.10		mg/L			08/20/12 13:49	1

Lab Sample ID: LCS 280-133439/57

Matrix: Water

Analysis Batch: 133439

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	5.00	5.06		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-133439/58

Matrix: Water

Analysis Batch: 133439

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	5.00	5.03		mg/L		101	90 - 110	1	10

Lab Sample ID: 280-32125-1 MS

Matrix: Water

Analysis Batch: 133439

Client Sample ID: MW-3A_081412

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.9		4.00	4.66	F	mg/L		70	90 - 110

Lab Sample ID: 280-32125-1 MSD

Matrix: Water

Analysis Batch: 133439

Client Sample ID: MW-3A_081412

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.9		4.00	4.62	F	mg/L		69	90 - 110	1	20

Method: 3500 FE D_ASP - Iron, Ferrous

Lab Sample ID: MB 280-132657/11

Matrix: Water

Analysis Batch: 132657

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.20		mg/L			08/15/12 13:46	1

Lab Sample ID: LCS 280-132657/9

Matrix: Water

Analysis Batch: 132657

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	2.00	1.86		mg/L		93	85 - 113

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: 3500 FE D_ASP - Iron, Ferrous (Continued)

Lab Sample ID: LCSD 280-132657/10

Matrix: Water

Analysis Batch: 132657

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	2.00	1.79		mg/L		89	85 - 113	4	10

Lab Sample ID: 280-32125-1 MS

Matrix: Water

Analysis Batch: 132657

Client Sample ID: MW-3A_081412

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND	HF	2.00	0.303	F	mg/L		11	85 - 113		

Lab Sample ID: 280-32125-1 MSD

Matrix: Water

Analysis Batch: 132657

Client Sample ID: MW-3A_081412

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND	HF	2.00	0.303	F	mg/L		11	85 - 113	0	10

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-133467/3-A

Matrix: Water

Analysis Batch: 133621

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 133467

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1

Lab Sample ID: LCS 280-133467/1-A

Matrix: Water

Analysis Batch: 133621

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 133467

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	18.2	11.7		mg/L		64	48 - 100		

Lab Sample ID: LCSD 280-133467/2-A

Matrix: Water

Analysis Batch: 133621

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 133467

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	18.2	11.2		mg/L		62	48 - 100	4	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-133702/6

Matrix: Water

Analysis Batch: 133702

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			08/21/12 12:56	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-133702/4

Matrix: Water

Analysis Batch: 133702

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	209		mg/L		105	90 - 110

Lab Sample ID: LCSD 280-133702/5

Matrix: Water

Analysis Batch: 133702

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	209		mg/L		105	90 - 110	0	10

Lab Sample ID: 280-32130-I-1 DU

Matrix: Water

Analysis Batch: 133702

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	280		286		mg/L		0.6	10

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-132805/1

Matrix: Water

Analysis Batch: 132805

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			08/16/12 08:49	1

Lab Sample ID: LCS 280-132805/2

Matrix: Water

Analysis Batch: 132805

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	481		mg/L		96	86 - 110

Lab Sample ID: LCSD 280-132805/3

Matrix: Water

Analysis Batch: 132805

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	484		mg/L		97	86 - 110	1	20

Lab Sample ID: 280-32130-I-3 DU

Matrix: Water

Analysis Batch: 132805

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2000		1950		mg/L		3	10

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Method: SM 3500 - Iron, Ferric

Lab Sample ID: MB 280-133994/1

Matrix: Water

Analysis Batch: 133994

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.20		mg/L			08/23/12 10:47	1

Method: SM4500 S2 H - Unionized Hydrogen Sulfide

Lab Sample ID: MB 280-134168/1

Matrix: Water

Analysis Batch: 134168

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/24/12 09:48	1

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

GC/MS VOA

Analysis Batch: 133222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32060-D-1 MS	Matrix Spike	Total/NA	Water	8260B	
280-32060-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
280-32125-1	MW-3A_081412	Total/NA	Water	8260B	
280-32125-2	TB-01_081412	Total/NA	Water	8260B	
LCS 280-133222/4	Lab Control Sample	Total/NA	Water	8260B	
MB 280-133222/5	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 133785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	8015B	
280-32325-G-1 MS	Matrix Spike	Total/NA	Water	8015B	
280-32325-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 280-133785/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-133785/4	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-133785/5	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 132902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	3510C	
LCS 280-132902/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-132902/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 280-132902/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 133645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	8015B	132902
LCS 280-132902/2-A	Lab Control Sample	Total/NA	Water	8015B	132902
LCSD 280-132902/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	132902
MB 280-132902/1-A	Method Blank	Total/NA	Water	8015B	132902

Metals

Prep Batch: 132766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Dissolved	Water	3005A	
280-32125-1 MS	MW-3A_081412	Dissolved	Water	3005A	
280-32125-1 MSD	MW-3A_081412	Dissolved	Water	3005A	
LCS 280-132766/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 280-132766/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 133016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Dissolved	Water	6010B	132766
280-32125-1 MS	MW-3A_081412	Dissolved	Water	6010B	132766
280-32125-1 MSD	MW-3A_081412	Dissolved	Water	6010B	132766
LCS 280-132766/2-A	Lab Control Sample	Total Recoverable	Water	6010B	132766
MB 280-132766/1-A	Method Blank	Total Recoverable	Water	6010B	132766

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

General Chemistry

Analysis Batch: 9550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1 - DL	MW-3A_081412	Total/NA	Water	300.0	
280-32125-1 DU - DL	MW-3A_081412	Total/NA	Water	300.0	
280-32125-1 MS - DL	MW-3A_081412	Total/NA	Water	300.0	
LCS 160-9550/53	Lab Control Sample	Total/NA	Water	300.0	
MB 160-9550/52	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 132657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Dissolved	Water	3500 FE D_ASP	
280-32125-1 MS	MW-3A_081412	Dissolved	Water	3500 FE D_ASP	
280-32125-1 MSD	MW-3A_081412	Dissolved	Water	3500 FE D_ASP	
LCS 280-132657/9	Lab Control Sample	Total/NA	Water	3500 FE D_ASP	
LCSD 280-132657/10	Lab Control Sample Dup	Total/NA	Water	3500 FE D_ASP	
MB 280-132657/11	Method Blank	Total/NA	Water	3500 FE D_ASP	

Analysis Batch: 132805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	SM 2540C	
280-32130-I-3 DU	Duplicate	Total/NA	Water	SM 2540C	
LCS 280-132805/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-132805/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-132805/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 132982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	300.0	
280-32126-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-32126-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 280-132982/12	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-132982/13	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-132982/14	Method Blank	Total/NA	Water	300.0	
MRL 280-132982/11 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 132983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	300.0	
280-32125-1	MW-3A_081412	Total/NA	Water	300.0	
280-32126-A-1 DU	Duplicate	Total/NA	Water	300.0	
280-32126-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-32126-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 280-132983/12	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-132983/13	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-132983/14	Method Blank	Total/NA	Water	300.0	
MRL 280-132983/11 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 133439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	350.1	
280-32125-1 MS	MW-3A_081412	Total/NA	Water	350.1	
280-32125-1 MSD	MW-3A_081412	Total/NA	Water	350.1	
LCS 280-133439/57	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-133439/58	Lab Control Sample Dup	Total/NA	Water	350.1	

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

General Chemistry (Continued)

Analysis Batch: 133439 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-133439/56	Method Blank	Total/NA	Water	350.1	

Prep Batch: 133467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	9030B	
LCS 280-133467/1-A	Lab Control Sample	Total/NA	Water	9030B	
LCSD 280-133467/2-A	Lab Control Sample Dup	Total/NA	Water	9030B	
MB 280-133467/3-A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 133621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	9034	133467
LCS 280-133467/1-A	Lab Control Sample	Total/NA	Water	9034	133467
LCSD 280-133467/2-A	Lab Control Sample Dup	Total/NA	Water	9034	133467
MB 280-133467/3-A	Method Blank	Total/NA	Water	9034	133467

Analysis Batch: 133702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	SM 2320B	
280-32130-I-1 DU	Duplicate	Total/NA	Water	SM 2320B	
LCS 280-133702/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-133702/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-133702/6	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 133994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	SM 3500	
MB 280-133994/1	Method Blank	Total/NA	Water	SM 3500	

Analysis Batch: 134168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	SM4500 S2 H	
MB 280-134168/1	Method Blank	Total/NA	Water	SM4500 S2 H	

Field Service / Mobile Lab

Analysis Batch: 133575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-1	MW-3A_081412	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32125-1

Client Sample ID: MW-3A_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133222	08/18/12 15:28	DPI	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	133785	08/21/12 16:42	AMB	TAL DEN
Total/NA	Prep	3510C			1056.6 mL	1000 uL	132902	08/16/12 16:07	CDC	TAL DEN
Total/NA	Analysis	8015B		1			133645	08/21/12 04:20	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	132766	08/16/12 14:00	JM	TAL DEN
Dissolved	Analysis	6010B		1			133016	08/17/12 01:21	JKH	TAL DEN
Total/NA	Analysis	300.0	DL	10	5 mL	5 mL	9550	08/21/12 04:21	JB	TAL SL
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	132657	08/15/12 13:46	DA	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	132805	08/16/12 08:49	TDTM	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	132982	08/15/12 18:27	TLP	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	132983	08/15/12 18:27	TLP	TAL DEN
Total/NA	Analysis	300.0		20	1.0 mL	1.0 mL	132983	08/15/12 21:40	TLP	TAL DEN
Total/NA	Analysis	350.1		1	1.0 mL	1.0 mL	133439	08/20/12 14:33	SJS	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	133467	08/21/12 07:11	BMG	TAL DEN
Total/NA	Analysis	9034		1			133621	08/21/12 13:46	BMG	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	133702	08/21/12 14:42	BMG	TAL DEN
Total/NA	Analysis	SM 3500		1			133994	08/23/12 10:47	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			134168	08/24/12 09:48	DFB	TAL DEN
Total/NA	Analysis	Field Sampling		1			133575	08/14/12 14:31	FS	TAL DEN

Client Sample ID: TB-01_081412

Date Collected: 08/14/12 14:31

Date Received: 08/15/12 09:30

Lab Sample ID: 280-32125-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133222	08/18/12 15:47	DPI	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-32125-1

Login Number: 32125

List Source: TestAmerica Denver

List Number: 1

Creator: Bindel, Aaron M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	RCVD MTLS VOLUME AT A PH OF ABOUT 12!
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-32125-1

Login Number: 32125

List Source: TestAmerica St. Louis

List Number: 1

List Creation: 08/16/12 12:59 PM

Creator: Wilson, Sue

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Chain of Custody Record

Client Information Client Contact: Kimberly O'Day / David Bohmann Ms. Kimberly O'Day / David Bohmann Tetra Tech GEO Address: 363 Centennial Parkway City: Louisville State: CO, Zip: 80027 Phone: 303-665-4390 Email: Kimberly.O'Day@tetratech.com Project Name: Garfield County Site:		Sampler: B. Dai / K O'Day Lab Plot: Griego, DiLea E-Mail: dilea.griego@testamericainc.com Phone: 970-222-7807 Due Date Requested: 303-665-4390 TAT Requested (days): Standard 10 Business Days PO #: WO #: Project #: 28008100 SSOW#:	Carrier Tracking No(s): COC No: 280-18652-8597.1 Page: Page 1 of 1 Job #:
Analysis Requested 8034 - Sulfide (Req. for Unionized Hydrogen Sulfide CALC) 8015B - DRO - (MOD) 8015B - GRO - (MOD) 8260B - (MOD) BTEX 350.1 - Ammonia 6010B - (MOD) DISSOLVED (Field Filtered) Perform MS/MSD (Yes or No) <i>detected methanol</i> Field Filtered Sample (Yes or No) <i>detected methanol</i> Total Number of Containers: 13		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	Special Instructions/Note: Unionized Hydrogen Sulfide requires Field pH, Field Temp and Field Conductivity. pH = 12.44, T = 16.69 Cond. = 7.413 mS/cm 1 env m line Co.
Sample Identification MW-3A-081412 Trip Blank TB-01-081412	Sample Date: 8-14-12 Sample Time: 1431 Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=soil, BT=Tissue, A=air): Water	Field Filtered Sample (Yes or No) <i>detected methanol</i> Perform MS/MSD (Yes or No) <i>detected methanol</i> 8034 - Sulfide (Req. for Unionized Hydrogen Sulfide CALC) 8015B - DRO - (MOD) 8015B - GRO - (MOD) 8260B - (MOD) BTEX 350.1 - Ammonia 6010B - (MOD) DISSOLVED (Field Filtered) Perform MS/MSD (Yes or No) <i>detected methanol</i> Field Filtered Sample (Yes or No) <i>detected methanol</i> Total Number of Containers: 13	Special Instructions/Note: Unionized Hydrogen Sulfide requires Field pH, Field Temp and Field Conductivity. pH = 12.44, T = 16.69 Cond. = 7.413 mS/cm 1 env m line Co.
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months Special Instructions/QC Requirements:	
Empty Kit Relinquished by: Relinquished by: Kim O'Day Relinquished by: Relinquished by:		Method of Shipment: Received by: Kim O'Day Date/Time: 8-14-12 / 1431 Relinquished by: Date/Time: Relinquished by: Date/Time:	
Custody Seals Intact: ☒ Yes ☐ No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 1.9 (A) 5C 8/15	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-32208-1

Client Project/Site: Garfield County

For:

Tetra Tech GEO

363 Centennial Parkway

Suite 210

Louisville, Colorado 80027

Attn: David Bohmann



Authorized for release by:

8/28/2012 5:20:30 PM

DiLea Griego

Project Manager I

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Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Job ID: 280-32208-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Tetra Tech GEO

Project: Garfield County

Report Number: 280-32208-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/16/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 4.3 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - METHOD 8260B

No difficulties were encountered.

GAS RANGE ORGANICS - METHOD 8015B

Surrogate a,a,a-Trifluorotoluene was recovered above the QC control limits in sample MW-1A_081512 (280-32208-1). This anomaly is due to obvious matrix interferences; therefore, corrective action is deemed unnecessary. The recovery for unreported surrogate Chlorobenzene, which is added using the same surrogate mix, ranged from 100-108%, indicating a good addition of standard and a successful purge. Sample data should be considered biased high.

Surrogate a,a,a-Trifluorotoluene was recovered above the QC control limits (82-110%) in the LCSD (LCSD 280-133785/4) at 117%. The recovery for unreported surrogate Chlorobenzene was 108%, indicating a good addition of standard and a successful purge. The analyst noted that on the particular instrument the sample was analyzed on, the spike standard interferes with the TFT peak, resulting in high surrogate recoveries. Therefore, re-analysis was not performed.

No other difficulties were encountered.

DIESEL RANGE ORGANICS - METHOD 8015B

Surrogate o-Terphenyl was recovered above the QC control limits in sample MW-2A_081512 (280-32208-4). This anomaly is due to obvious matrix interferences; therefore, corrective action is deemed unnecessary. Sample data should be considered biased high. Prior to extraction, the sample pH was recorded at the bench as twelve, which is greater than the required pH of seven.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-134540 were performed on a sample from another job and exhibited spike and surrogate recoveries outside control limits for DRO. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

DISSOLVED METALS - METHOD 6010B

Ferric iron is obtained by subtracting the ferrous result from the total iron result. The ferrous iron results obtained for the following

Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Job ID: 280-32208-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

samples were higher than the total iron results: MW-2A_081512 (280-32208-4). Ferrous iron samples are analyzed calorimetrically using an unpreserved sample; while, total iron samples are analyzed using a nitric acid preserved sample. Interferences that may cause a positive bias in the ferrous iron result include strong oxidizing agents, cyanide, nitrite, phosphates (polyphosphates more so than orthophosphate), chromium, zinc in concentrations exceeding 10 times that of iron, cobalt and copper in excess of 5mg/L, nickel in excess of 2 mg/L, bismuth, cadmium, mercury, molybdate, and silver precipitate phenanthroline, which is the color reagent used for ferrous iron.

Ferrous samples should be analyzed as soon as possible after collection and preferably in the field due to the possibility of oxidation altering the ratio of ferrous iron to ferric iron as time passes. Some of the unpreserved samples were initially cloudy and rusty brownish-orange in color from the "suspended" iron in the sample. The samples are now clear, but the plastic bottles which hold the samples are stained a rusty brownish-orange color suggesting that some of the iron adhered to the plastic bottles. As a result of these issues, reanalysis for ferrous may not be accurate and might yield bias low results.

Continuing Calibration Verification (CCV) standards associated with samples associated with analysis batch 280-134181 exhibited %D values out of range, biased high, for Sodium. This is an indicator that data may be biased high. As no detectable concentrations of Sodium are present in the associated samples, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-134181 were performed on a sample from another job and the MSD exhibited recoveries outside control limits for Magnesium. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

GENERAL CHEMISTRY

Samples MW-1A_081512 (280-32208-1)[10X], MW-1A_081512 (280-32208-1)[2X], MW-99A_081512 (280-32208-2)[2X], MW-99A_081512 (280-32208-2)[5X], CUNNIE WELL_081512 (280-32208-3)[2X], CUNNIE WELL_081512 (280-32208-3)[20X], MW-2A_081512 (280-32208-4)[2X] and MW-2A_081512 (280-32208-4)[50X] required dilution prior to analysis for Bromide, Chloride, Nitrate as N, Nitrite as N, and Fluoride. The reporting limits have been adjusted accordingly.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 160-9550 were performed on a sample from another job and the MS exhibited recoveries outside control limits for Iodide. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 160-9550 were performed on a sample from another job and the MS exhibited recoveries outside control limits for Iodide. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Two pairs of matrix spike / matrix spike duplicate (MS/MSD) samples were performed for analysis batch 280-133853. The first pair was performed on CUNNIE WELL_081512 (280-32208-3) and exhibited recoveries outside control limits for Ammonia. The second pair was performed on a sample from another job and also exhibited recoveries outside control limits for Ammonia. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with Sulfide in analysis batch 280-133621. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

No other difficulties were encountered.

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

General Chemistry

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
E	Result exceeded calibration range.
HF	Field parameter with a holding time of 15 minutes

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Client Sample ID: MW-1A_081512

Lab Sample ID: 280-32208-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.63				SU	1		Field Sampling	Total/NA
Field Conductivity	5042				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	13.12				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	0.26		0.25		mg/L	1		8015B	Total/NA
Barium	580		10		ug/L	1		6010B	Dissolved
Calcium	120000		200		ug/L	1		6010B	Dissolved
Potassium	110000		3000		ug/L	1		6010B	Dissolved
Sodium	450000		1000		ug/L	1		6010B	Dissolved
Strontium	4700		10		ug/L	1		6010B	Dissolved
Bromide	0.70		0.40		mg/L	2		300.0	Total/NA
Chloride	240		30		mg/L	10		300.0	Total/NA
Fluoride	1.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	25		10		mg/L	2		300.0	Total/NA
Ammonia	0.74		0.10		mg/L	1		350.1	Total/NA
Alkalinity	1100		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1600		40		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-99A_081512

Lab Sample ID: 280-32208-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.63				SU	1		Field Sampling	Total/NA
Field Conductivity	5042				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	13.12				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	0.27		0.27		mg/L	1		8015B	Total/NA
Barium	580		10		ug/L	1		6010B	Dissolved
Calcium	120000		200		ug/L	1		6010B	Dissolved
Potassium	110000		3000		ug/L	1		6010B	Dissolved
Sodium	450000		1000		ug/L	1		6010B	Dissolved
Strontium	4700		10		ug/L	1		6010B	Dissolved
Bromide	0.60		0.40		mg/L	2		300.0	Total/NA
Chloride	200		15		mg/L	5		300.0	Total/NA
Fluoride	1.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	25		10		mg/L	2		300.0	Total/NA
Ammonia	0.91		0.10		mg/L	1		350.1	Total/NA
Alkalinity	1100		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1500		40		mg/L	1		SM 2540C	Total/NA

Client Sample ID: CUNNIE WELL_081512

Lab Sample ID: 280-32208-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	7.97				SU	1		Field Sampling	Total/NA
Field Conductivity	2722				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	12.67				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.3		1.0		ug/L	1		8260B	Total/NA
Barium	64		10		ug/L	1		6010B	Dissolved
Calcium	48000		200		ug/L	1		6010B	Dissolved
Magnesium	2300		200		ug/L	1		6010B	Dissolved
Manganese	25		10		ug/L	1		6010B	Dissolved
Sodium	710000		1000		ug/L	1		6010B	Dissolved
Strontium	1600		10		ug/L	1		6010B	Dissolved

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Client Sample ID: CUNNIE WELL_081512 (Continued)

Lab Sample ID: 280-32208-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromide	2.2		0.40		mg/L	2		300.0	Total/NA
Chloride	420		60		mg/L	20		300.0	Total/NA
Fluoride	1.4		1.0		mg/L	2		300.0	Total/NA
Sulfate	560		100		mg/L	20		300.0	Total/NA
Ammonia	0.44		0.10		mg/L	1		350.1	Total/NA
Sulfide	8.0		4.0		mg/L	1		9034	Total/NA
Alkalinity	410		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1900		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2A_081512

Lab Sample ID: 280-32208-4

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	8.63				SU	1		Field Sampling	Total/NA
Field Conductivity	3849				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	15.54				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	0.36		0.24		mg/L	1		8015B	Total/NA
Barium	110		10		ug/L	1		6010B	Dissolved
Calcium	49000		200		ug/L	1		6010B	Dissolved
Magnesium	1500		200		ug/L	1		6010B	Dissolved
Manganese	32		10		ug/L	1		6010B	Dissolved
Potassium	3100		3000		ug/L	1		6010B	Dissolved
Sodium	880000		1000		ug/L	1		6010B	Dissolved
Strontium	1600		10		ug/L	1		6010B	Dissolved
Bromide	4.9		0.40		mg/L	2		300.0	Total/NA
Iodide	1.6		1.0		mg/L	1		300.0	Total/NA
Chloride	950		150		mg/L	50		300.0	Total/NA
Fluoride	3.6		1.0		mg/L	2		300.0	Total/NA
Sulfate	510		250		mg/L	50		300.0	Total/NA
Ammonia	0.11		0.10		mg/L	1		350.1	Total/NA
Alkalinity	110		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	2500		20		mg/L	1		SM 2540C	Total/NA
Ferrous Iron	0.33	HF	0.20		mg/L	1		3500 FE D_ASP	Dissolved

Method Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Dissolved Metals	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
3500 FE D_ASP	Iron, Ferrous	SM	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 3500	Iron, Ferric	SM	TAL DEN
SM4500 S2 H	Unionized Hydrogen Sulfide	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-32208-1	MW-1A_081512	Water	08/15/12 08:57	08/16/12 09:00
280-32208-2	MW-99A_081512	Water	08/15/12 08:57	08/16/12 09:00
280-32208-3	CUNNIE WELL_081512	Water	08/15/12 13:45	08/16/12 09:00
280-32208-4	MW-2A_081512	Water	08/15/12 15:17	08/16/12 09:00

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/22/12 10:39	1
Ethylbenzene	ND		1.0		ug/L			08/22/12 10:39	1
Toluene	ND		1.0		ug/L			08/22/12 10:39	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 10:39	1
o-Xylene	ND		1.0		ug/L			08/22/12 10:39	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 10:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		70 - 127		08/22/12 10:39	1
Toluene-d8 (Surr)	101		80 - 125		08/22/12 10:39	1
4-Bromofluorobenzene (Surr)	94		78 - 120		08/22/12 10:39	1
Dibromofluoromethane (Surr)	103		77 - 120		08/22/12 10:39	1

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/22/12 10:59	1
Ethylbenzene	ND		1.0		ug/L			08/22/12 10:59	1
Toluene	ND		1.0		ug/L			08/22/12 10:59	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 10:59	1
o-Xylene	ND		1.0		ug/L			08/22/12 10:59	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 10:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		70 - 127		08/22/12 10:59	1
Toluene-d8 (Surr)	97		80 - 125		08/22/12 10:59	1
4-Bromofluorobenzene (Surr)	96		78 - 120		08/22/12 10:59	1
Dibromofluoromethane (Surr)	105		77 - 120		08/22/12 10:59	1

Client Sample ID: CUNNIE WELL_081512

Date Collected: 08/15/12 13:45

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.3		1.0		ug/L			08/22/12 11:19	1
Ethylbenzene	ND		1.0		ug/L			08/22/12 11:19	1
Toluene	ND		1.0		ug/L			08/22/12 11:19	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 11:19	1
o-Xylene	ND		1.0		ug/L			08/22/12 11:19	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 11:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 127		08/22/12 11:19	1
Toluene-d8 (Surr)	104		80 - 125		08/22/12 11:19	1
4-Bromofluorobenzene (Surr)	102		78 - 120		08/22/12 11:19	1
Dibromofluoromethane (Surr)	101		77 - 120		08/22/12 11:19	1

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/22/12 11:39	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0		ug/L			08/22/12 11:39	1
Toluene	ND		1.0		ug/L			08/22/12 11:39	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 11:39	1
o-Xylene	ND		1.0		ug/L			08/22/12 11:39	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 11:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		70 - 127		08/22/12 11:39	1
Toluene-d8 (Surr)	99		80 - 125		08/22/12 11:39	1
4-Bromofluorobenzene (Surr)	104		78 - 120		08/22/12 11:39	1
Dibromofluoromethane (Surr)	104		77 - 120		08/22/12 11:39	1

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	ND		25		ug/L			08/21/12 18:07	1
-C6-C10									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	113	X	82 - 110		08/21/12 18:07	1

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	ND		25		ug/L			08/21/12 18:49	1
-C6-C10									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	110		82 - 110		08/21/12 18:49	1

Client Sample ID: CUNNIE WELL_081512

Date Collected: 08/15/12 13:45

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	ND		25		ug/L			08/21/12 19:31	1
-C6-C10									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	95		82 - 110		08/21/12 19:31	1

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	ND		25		ug/L			08/21/12 20:13	1
-C6-C10									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	99		82 - 110		08/21/12 20:13	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.26		0.25		mg/L		08/17/12 16:30	08/23/12 08:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 115				08/17/12 16:30	08/23/12 08:55	1

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.27		0.27		mg/L		08/17/12 16:30	08/23/12 09:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 115				08/17/12 16:30	08/23/12 09:19	1

Client Sample ID: CUNNIE WELL_081512

Date Collected: 08/15/12 13:45

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.25		mg/L		08/17/12 16:30	08/23/12 09:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 115				08/17/12 16:30	08/23/12 09:43	1

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.36		0.24		mg/L		08/17/12 16:30	08/23/12 10:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	129	X	50 - 115				08/17/12 16:30	08/23/12 10:07	1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	580		10		ug/L		08/20/12 09:15	08/23/12 22:21	1
Calcium	120000		200		ug/L		08/20/12 09:15	08/23/12 22:21	1
Iron	ND		100		ug/L		08/20/12 09:15	08/23/12 22:21	1
Magnesium	ND		200		ug/L		08/20/12 09:15	08/23/12 22:21	1
Manganese	ND		10		ug/L		08/20/12 09:15	08/23/12 22:21	1
Potassium	110000		3000		ug/L		08/20/12 09:15	08/23/12 22:21	1
Sodium	450000		1000		ug/L		08/20/12 09:15	08/23/12 22:21	1
Strontium	4700		10		ug/L		08/20/12 09:15	08/23/12 22:21	1

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	580		10		ug/L		08/20/12 09:15	08/23/12 22:23	1
Calcium	120000		200		ug/L		08/20/12 09:15	08/23/12 22:23	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 6010B - Dissolved Metals - Dissolved (Continued)

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		100		ug/L		08/20/12 09:15	08/23/12 22:23	1
Magnesium	ND		200		ug/L		08/20/12 09:15	08/23/12 22:23	1
Manganese	ND		10		ug/L		08/20/12 09:15	08/23/12 22:23	1
Potassium	110000		3000		ug/L		08/20/12 09:15	08/23/12 22:23	1
Sodium	450000		1000		ug/L		08/20/12 09:15	08/23/12 22:23	1
Strontium	4700		10		ug/L		08/20/12 09:15	08/23/12 22:23	1

Client Sample ID: CUNNIE WELL_081512

Date Collected: 08/15/12 13:45

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	64		10		ug/L		08/20/12 09:15	08/23/12 22:26	1
Calcium	48000		200		ug/L		08/20/12 09:15	08/23/12 22:26	1
Iron	ND		100		ug/L		08/20/12 09:15	08/23/12 22:26	1
Magnesium	2300		200		ug/L		08/20/12 09:15	08/23/12 22:26	1
Manganese	25		10		ug/L		08/20/12 09:15	08/23/12 22:26	1
Potassium	ND		3000		ug/L		08/20/12 09:15	08/23/12 22:26	1
Sodium	710000		1000		ug/L		08/20/12 09:15	08/23/12 22:26	1
Strontium	1600		10		ug/L		08/20/12 09:15	08/23/12 22:26	1

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	110		10		ug/L		08/20/12 09:15	08/23/12 22:29	1
Calcium	49000		200		ug/L		08/20/12 09:15	08/23/12 22:29	1
Iron	ND		100		ug/L		08/20/12 09:15	08/23/12 22:29	1
Magnesium	1500		200		ug/L		08/20/12 09:15	08/23/12 22:29	1
Manganese	32		10		ug/L		08/20/12 09:15	08/23/12 22:29	1
Potassium	3100		3000		ug/L		08/20/12 09:15	08/23/12 22:29	1
Sodium	880000		1000		ug/L		08/20/12 09:15	08/23/12 22:29	1
Strontium	1600		10		ug/L		08/20/12 09:15	08/23/12 22:29	1

General Chemistry

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.70		0.40		mg/L			08/16/12 18:20	2
Iodide	ND		1.0		mg/L			08/21/12 05:28	1
Nitrate as N	ND		1.0		mg/L			08/16/12 18:20	2
Chloride	240		30		mg/L			08/17/12 10:29	10
Nitrite as N	ND		1.0		mg/L			08/16/12 18:20	2
Fluoride	1.0		1.0		mg/L			08/16/12 18:20	2
Sulfate	25		10		mg/L			08/16/12 18:20	2
Ammonia	0.74		0.10		mg/L			08/22/12 13:36	1
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1
Alkalinity	1100		5.0		mg/L			08/21/12 16:07	1
Total Dissolved Solids	1600		40		mg/L			08/17/12 08:52	1
Ferric Iron	ND		0.20		mg/L			08/25/12 13:59	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/27/12 08:04	1

Client Sample ID: MW-99A_081512

Lab Sample ID: 280-32208-2

Date Collected: 08/15/12 08:57

Matrix: Water

Date Received: 08/16/12 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.60		0.40		mg/L			08/16/12 18:37	2
Iodide	ND		1.0		mg/L			08/21/12 06:21	1
Nitrate as N	ND		1.0		mg/L			08/16/12 18:37	2
Chloride	200		15		mg/L			08/17/12 10:46	5
Nitrite as N	ND		1.0		mg/L			08/16/12 18:37	2
Fluoride	1.0		1.0		mg/L			08/16/12 18:37	2
Sulfate	25		10		mg/L			08/16/12 18:37	2
Ammonia	0.91		0.10		mg/L			08/22/12 13:38	1
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1
Alkalinity	1100		5.0		mg/L			08/21/12 16:15	1
Total Dissolved Solids	1500		40		mg/L			08/17/12 08:52	1
Ferric Iron	ND		0.20		mg/L			08/25/12 13:59	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/27/12 08:04	1

Client Sample ID: CUNNIE WELL_081512

Lab Sample ID: 280-32208-3

Date Collected: 08/15/12 13:45

Matrix: Water

Date Received: 08/16/12 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	2.2		0.40		mg/L			08/16/12 18:54	2
Iodide	ND		1.0		mg/L			08/21/12 06:48	1
Nitrate as N	ND		1.0		mg/L			08/16/12 18:54	2
Chloride	420		60		mg/L			08/17/12 11:02	20
Nitrite as N	ND		1.0		mg/L			08/16/12 18:54	2
Fluoride	1.4		1.0		mg/L			08/16/12 18:54	2
Sulfate	560		100		mg/L			08/17/12 11:02	20
Ammonia	0.44		0.10		mg/L			08/22/12 13:50	1
Sulfide	8.0		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1
Alkalinity	410		5.0		mg/L			08/21/12 16:20	1
Total Dissolved Solids	1900		20		mg/L			08/17/12 08:52	1
Ferric Iron	ND		0.20		mg/L			08/25/12 13:59	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/27/12 08:04	1

Client Sample ID: MW-2A_081512

Lab Sample ID: 280-32208-4

Date Collected: 08/15/12 15:17

Matrix: Water

Date Received: 08/16/12 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	4.9		0.40		mg/L			08/16/12 19:44	2
Iodide	1.6		1.0		mg/L			08/21/12 07:15	1
Nitrate as N	ND		1.0		mg/L			08/16/12 19:44	2
Chloride	950		150		mg/L			08/17/12 11:19	50
Nitrite as N	ND		1.0		mg/L			08/16/12 19:44	2
Fluoride	3.6		1.0		mg/L			08/16/12 19:44	2
Sulfate	510		250		mg/L			08/17/12 11:19	50
Ammonia	0.11		0.10		mg/L			08/22/12 13:54	1
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1
Alkalinity	110		5.0		mg/L			08/21/12 16:25	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

General Chemistry (Continued)

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2500		20		mg/L			08/17/12 08:52	1
Ferric Iron	ND		0.20		mg/L			08/25/12 13:59	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/27/12 08:05	1

General Chemistry - Dissolved

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			08/17/12 14:10	1

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			08/17/12 14:10	1

Client Sample ID: CUNNIE WELL_081512

Date Collected: 08/15/12 13:45

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			08/17/12 14:10	1

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	0.33	HF	0.20		mg/L			08/17/12 14:10	1

Method: Field Sampling - Field Sampling

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.63				SU			08/15/12 08:57	1
Field Conductivity	5042				umhos/cm			08/15/12 08:57	1
Field Temperature	13.12				Degrees C			08/15/12 08:57	1

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.63				SU			08/15/12 08:57	1
Field Conductivity	5042				umhos/cm			08/15/12 08:57	1
Field Temperature	13.12				Degrees C			08/15/12 08:57	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: Field Sampling - Field Sampling

Client Sample ID: CUNNIE WELL_081512

Date Collected: 08/15/12 13:45

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-3

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.97				SU			08/15/12 13:45	1
Field Conductivity	2722				umhos/cm			08/15/12 13:45	1
Field Temperature	12.67				Degrees C			08/15/12 13:45	1

Client Sample ID: MW-2A_081512

Date Collected: 08/15/12 15:17

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-4

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.63				SU			08/15/12 15:17	1
Field Conductivity	3849				umhos/cm			08/15/12 15:17	1
Field Temperature	15.54				Degrees C			08/15/12 15:17	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-133908/5

Matrix: Water

Analysis Batch: 133908

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/22/12 09:54	1
Ethylbenzene	ND		1.0		ug/L			08/22/12 09:54	1
Toluene	ND		1.0		ug/L			08/22/12 09:54	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 09:54	1
o-Xylene	ND		1.0		ug/L			08/22/12 09:54	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 09:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 127		08/22/12 09:54	1
Toluene-d8 (Surr)	104		80 - 125		08/22/12 09:54	1
4-Bromofluorobenzene (Surr)	101		78 - 120		08/22/12 09:54	1
Dibromofluoromethane (Surr)	101		77 - 120		08/22/12 09:54	1

Lab Sample ID: LCS 280-133908/4

Matrix: Water

Analysis Batch: 133908

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	5.01		ug/L		100	74 - 135
Ethylbenzene	5.00	4.98		ug/L		100	72 - 120
Toluene	5.00	5.01		ug/L		100	73 - 120
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	74 - 135
o-Xylene	5.00	4.88		ug/L		98	73 - 135
Xylenes, Total	15.0	14.9		ug/L		100	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 127
Toluene-d8 (Surr)	105		80 - 125
4-Bromofluorobenzene (Surr)	103		78 - 120
Dibromofluoromethane (Surr)	98		77 - 120

Lab Sample ID: 280-32208-1 MS

Matrix: Water

Analysis Batch: 133908

Client Sample ID: MW-1A_081512

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		5.00	5.09		ug/L		102	74 - 135
Ethylbenzene	ND		5.00	4.59		ug/L		92	72 - 120
Toluene	ND		5.00	4.93		ug/L		99	73 - 120
m-Xylene & p-Xylene	ND		10.0	9.28		ug/L		93	74 - 135
o-Xylene	ND		5.00	4.43		ug/L		89	73 - 135
Xylenes, Total	ND		15.0	13.7		ug/L		91	75 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 127
Toluene-d8 (Surr)	101		80 - 125
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	103		77 - 120

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-32208-1 MSD

Matrix: Water

Analysis Batch: 133908

Client Sample ID: MW-1A_081512

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		5.00	5.01		ug/L		100	74 - 135	2	20
Ethylbenzene	ND		5.00	4.46		ug/L		89	72 - 120	3	26
Toluene	ND		5.00	4.93		ug/L		99	73 - 120	0	20
m-Xylene & p-Xylene	ND		10.0	9.04		ug/L		90	74 - 135	3	20
o-Xylene	ND		5.00	4.36		ug/L		87	73 - 135	2	20
Xylenes, Total	ND		15.0	13.4		ug/L		89	75 - 135	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 127
Toluene-d8 (Surr)	99		80 - 125
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	102		77 - 120

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-133785/5

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			08/21/12 15:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	110		82 - 110		08/21/12 15:07	1

Lab Sample ID: LCS 280-133785/3

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	101	122		ug/L		121	79 - 149

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	110		82 - 110

Lab Sample ID: LCSD 280-133785/4

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	101	117		ug/L		116	79 - 149	5	27

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	117	X	82 - 110

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: 280-32325-G-1 MS

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10	1200		504	1770		ug/L		119	79 - 149		
Surrogate	MS %Recovery	MS Qualifier	Limits								
a,a,a-Trifluorotoluene	106		82 - 110								

Lab Sample ID: 280-32325-G-1 MSD

Matrix: Water

Analysis Batch: 133785

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1200		504	1820		ug/L	-	129	79 - 149	3	27
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
a,a,a-Trifluorotoluene	109		82 - 110								

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-133157/1-A

Matrix: Water

Analysis Batch: 134536

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 133157

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics [C10-C28]	ND		0.25		mg/L		08/17/12 16:30	08/23/12 05:42	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
o-Terphenyl	80		50 - 115				08/17/12 16:30	08/23/12 05:42	1

Lab Sample ID: LCS 280-133157/2-A

Matrix: Water

Analysis Batch: 134536

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 133157

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Diesel Range Organics			2.00	1.69		mg/L		84	54 - 115		
[C10-C28]											
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	75		50 - 115								

Lab Sample ID: 280-32168-B-2-A MS

Matrix: Water

Analysis Batch: 134540

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 133157

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	42		1.92	31.0	4 D	mg/L		-551	50 - 115

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 280-32168-B-2-A MS

Matrix: Water

Analysis Batch: 134540

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 133157

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	0	D	50 - 115

Lab Sample ID: 280-32168-C-2-A MSD

Matrix: Water

Analysis Batch: 134540

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 133157

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	42		1.99	33.4	4 D	mg/L		-412	50 - 115	7	31

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	0	D	50 - 115

Method: 6010B - Dissolved Metals

Lab Sample ID: MB 280-133003/1-A

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 133003

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		10		ug/L		08/20/12 09:15	08/23/12 21:39	1
Calcium	ND		200		ug/L		08/20/12 09:15	08/23/12 21:39	1
Iron	ND		100		ug/L		08/20/12 09:15	08/23/12 21:39	1
Magnesium	ND		200		ug/L		08/20/12 09:15	08/23/12 21:39	1
Manganese	ND		10		ug/L		08/20/12 09:15	08/23/12 21:39	1
Potassium	ND		3000		ug/L		08/20/12 09:15	08/23/12 21:39	1
Sodium	ND	^	1000		ug/L		08/20/12 09:15	08/23/12 21:39	1
Strontium	ND		10		ug/L		08/20/12 09:15	08/23/12 21:39	1

Lab Sample ID: LCS 280-133003/2-A

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 133003

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	2000	2000		ug/L		100	90 - 112
Calcium	50000	48100		ug/L		96	90 - 111
Iron	1000	962		ug/L		96	89 - 115
Magnesium	50000	49400		ug/L		99	90 - 113
Manganese	500	498		ug/L		100	90 - 110
Potassium	50000	48800		ug/L		98	89 - 114
Sodium	50000	52500		ug/L		105	90 - 115
Strontium	1000	981		ug/L		98	90 - 111

Lab Sample ID: 280-32226-B-1-B MS

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 133003

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	13		2000	2010		ug/L		100	85 - 120
Calcium	180000		50000	221000		ug/L		86	48 - 153

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 6010B - Dissolved Metals (Continued)

Lab Sample ID: 280-32226-B-1-B MS

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 133003

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	2300		1000	3200		ug/L		90	52 - 155
Magnesium	620000		50000	657000	4	ug/L		79	62 - 146
Manganese	140		500	622		ug/L		97	79 - 121
Potassium	25000		50000	78500		ug/L		108	76 - 132
Sodium	950000		50000	986000	4	ug/L		70	70 - 203
Strontium	1100		1000	2080		ug/L		97	81 - 125

Lab Sample ID: 280-32226-B-1-C MSD

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 133003

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	13		2000	2020		ug/L		100	85 - 120	1	20
Calcium	180000		50000	222000		ug/L		88	48 - 153	0	20
Iron	2300		1000	3210		ug/L		91	52 - 155	0	20
Magnesium	620000		50000	645000	4	ug/L		55	62 - 146	2	20
Manganese	140		500	624		ug/L		97	79 - 121	0	20
Potassium	25000		50000	78900		ug/L		109	76 - 132	1	20
Sodium	950000		50000	990000	4	ug/L		78	70 - 203	0	20
Strontium	1100		1000	2090		ug/L		97	81 - 125	0	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-133200/15

Matrix: Water

Analysis Batch: 133200

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50		mg/L			08/16/12 11:50	1
Nitrite as N	ND		0.50		mg/L			08/16/12 11:50	1

Lab Sample ID: LCS 280-133200/13

Matrix: Water

Analysis Batch: 133200

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	5.04		mg/L		101	90 - 110
Nitrite as N	5.00	5.02		mg/L		100	90 - 110

Lab Sample ID: LCSD 280-133200/14

Matrix: Water

Analysis Batch: 133200

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	5.06		mg/L		101	90 - 110	0	10
Nitrite as N	5.00	5.02		mg/L		100	90 - 110	0	10

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-133200/12 MRL

Matrix: Water

Analysis Batch: 133200

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	ND		mg/L		105	50 - 150
Nitrite as N	0.200	ND		mg/L		102	50 - 150

Lab Sample ID: 280-32187-C-2 MS

Matrix: Water

Analysis Batch: 133200

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		5.00	4.98		mg/L		99	80 - 120
Nitrite as N	ND		5.00	5.10		mg/L		102	80 - 120

Lab Sample ID: 280-32187-C-2 MSD

Matrix: Water

Analysis Batch: 133200

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		5.00	5.11		mg/L		101	80 - 120	3	20
Nitrite as N	ND		5.00	5.23		mg/L		105	80 - 120	3	20

Lab Sample ID: 280-32187-C-2 DU

Matrix: Water

Analysis Batch: 133200

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	ND		ND		mg/L		NC	15
Nitrite as N	ND		ND		mg/L		NC	15

Lab Sample ID: MB 280-133202/15

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20		mg/L			08/16/12 11:50	1
Chloride	ND		3.0		mg/L			08/16/12 11:50	1
Fluoride	ND		0.50		mg/L			08/16/12 11:50	1
Sulfate	ND		5.0		mg/L			08/16/12 11:50	1

Lab Sample ID: LCS 280-133202/13

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	4.98		mg/L		100	90 - 110
Chloride	25.0	25.1		mg/L		101	90 - 110
Fluoride	5.00	5.12		mg/L		102	90 - 110
Sulfate	25.0	24.7		mg/L		99	90 - 110

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-133202/14

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	5.00	4.98		mg/L		100	90 - 110	0	10
Chloride	25.0	25.2		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.17		mg/L		103	90 - 110	1	10
Sulfate	25.0	24.9		mg/L		100	90 - 110	1	10

Lab Sample ID: MRL 280-133202/12 MRL

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	0.200	0.217		mg/L		109	50 - 150		
Chloride	1.00	ND		mg/L		101	50 - 150		
Fluoride	0.200	ND		mg/L		96	50 - 150		
Sulfate	1.00	ND		mg/L		97	50 - 150		

Lab Sample ID: 280-32187-C-2 MS

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	4.97		mg/L		99	80 - 120		
Chloride	ND		25.0	26.0		mg/L		99	80 - 120		
Fluoride	0.95		5.00	5.71		mg/L		95	80 - 120		
Sulfate	38		25.0	63.3	E	mg/L		100	80 - 120		

Lab Sample ID: 280-32187-C-2 MSD

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	5.10		mg/L		102	80 - 120	3	20
Chloride	ND		25.0	26.7		mg/L		102	80 - 120	3	20
Fluoride	0.95		5.00	5.86		mg/L		98	80 - 120	3	20
Sulfate	38		25.0	63.9	E	mg/L		102	80 - 120	1	20

Lab Sample ID: 280-32187-C-2 DU

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bromide	ND		ND		mg/L		NC	15
Chloride	ND		ND		mg/L		NC	15
Fluoride	0.95		1.01		mg/L		6	15
Sulfate	38		38.4		mg/L		0.06	15

Lab Sample ID: 280-32190-A-5 DU

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bromide	ND		ND		mg/L		NC	15

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-32190-A-5 DU

Matrix: Water

Analysis Batch: 133202

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Chloride	26		26.4		mg/L		2	15
Fluoride	ND		ND		mg/L		NC	15
Sulfate	34		34.8		mg/L		2	15

Lab Sample ID: MB 160-9550/52

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		1.0		mg/L			08/21/12 03:40	1

Lab Sample ID: LCS 160-9550/53

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	4.00	3.92		mg/L		98	90 - 110

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 280-32125-F-1 MS ^10

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide - DL	ND		40.0	44.7	F	mg/L		112	90 - 110

Lab Sample ID: 280-32125-F-1 DU ^10

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Iodide - DL	ND		ND		mg/L		NC	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: 280-32208-3 MS

Matrix: Water

Analysis Batch: 133853

Client Sample ID: CUNNIE WELL_081512

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.44		4.00	3.56	F	mg/L		78	90 - 110

Lab Sample ID: 280-32208-3 MSD

Matrix: Water

Analysis Batch: 133853

Client Sample ID: CUNNIE WELL_081512

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia	0.44		4.00	3.51	F	mg/L		77	90 - 110	1	20

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 280-32216-B-1 MS

Matrix: Water

Analysis Batch: 133853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	ND		4.00	3.04	F	mg/L		76	90 - 110

Lab Sample ID: 280-32216-B-1 MSD

Matrix: Water

Analysis Batch: 133853

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	ND		4.00	3.03	F	mg/L		76	90 - 110	0	20

Method: 3500 FE D_ASP - Iron, Ferrous

Lab Sample ID: MB 280-133127/11

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.20		mg/L			08/17/12 14:10	1

Lab Sample ID: LCS 280-133127/9

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	2.00	1.94		mg/L		97	85 - 113

Lab Sample ID: LCSD 280-133127/10

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	2.00	2.09		mg/L		105	85 - 113	8	10

Lab Sample ID: 280-32240-C-1 MS

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	ND		2.00	2.09		mg/L		99	85 - 113

Lab Sample ID: 280-32240-C-1 MSD

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND		2.00	2.10		mg/L		99	85 - 113	1	10

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-133467/3-A
Matrix: Water
Analysis Batch: 133621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 133467

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1

Lab Sample ID: LCS 280-133467/1-A
Matrix: Water
Analysis Batch: 133621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 133467

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	18.2	11.7		mg/L		64	48 - 100

Lab Sample ID: LCSD 280-133467/2-A
Matrix: Water
Analysis Batch: 133621

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 133467

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	18.2	11.2		mg/L		62	48 - 100	4	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-133702/33
Matrix: Water
Analysis Batch: 133702

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			08/21/12 15:07	1

Lab Sample ID: LCS 280-133702/31
Matrix: Water
Analysis Batch: 133702

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	210		mg/L		105	90 - 110

Lab Sample ID: LCSD 280-133702/32
Matrix: Water
Analysis Batch: 133702

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	209		mg/L		105	90 - 110	0	10

Lab Sample ID: 280-32183-A-10 DU
Matrix: Water
Analysis Batch: 133702

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	890		890		mg/L		0.1	10

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-133047/1

Matrix: Water

Analysis Batch: 133047

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			08/17/12 08:52	1

Lab Sample ID: LCS 280-133047/2

Matrix: Water

Analysis Batch: 133047

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	491		mg/L		98	86 - 110

Lab Sample ID: LCSD 280-133047/3

Matrix: Water

Analysis Batch: 133047

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	491		mg/L		98	86 - 110	0	20

Lab Sample ID: 280-32183-A-13 DU

Matrix: Water

Analysis Batch: 133047

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	6000		6060		mg/L		0.9	10

Method: SM 3500 - Iron, Ferric

Lab Sample ID: MB 280-134378/1

Matrix: Water

Analysis Batch: 134378

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.20		mg/L			08/25/12 13:59	1

Method: SM4500 S2 H - Unionized Hydrogen Sulfide

Lab Sample ID: MB 280-134410/1

Matrix: Water

Analysis Batch: 134410

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/27/12 08:04	1

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

GC/MS VOA

Analysis Batch: 133908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	8260B	
280-32208-1 MS	MW-1A_081512	Total/NA	Water	8260B	
280-32208-1 MSD	MW-1A_081512	Total/NA	Water	8260B	
280-32208-2	MW-99A_081512	Total/NA	Water	8260B	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	8260B	
280-32208-4	MW-2A_081512	Total/NA	Water	8260B	
LCS 280-133908/4	Lab Control Sample	Total/NA	Water	8260B	
MB 280-133908/5	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 133785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	8015B	
280-32208-2	MW-99A_081512	Total/NA	Water	8015B	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	8015B	
280-32208-4	MW-2A_081512	Total/NA	Water	8015B	
280-32325-G-1 MS	Matrix Spike	Total/NA	Water	8015B	
280-32325-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 280-133785/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-133785/4	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-133785/5	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 133157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32168-B-2-A MS	Matrix Spike	Total/NA	Water	3510C	
280-32168-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	
280-32208-1	MW-1A_081512	Total/NA	Water	3510C	
280-32208-2	MW-99A_081512	Total/NA	Water	3510C	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	3510C	
280-32208-4	MW-2A_081512	Total/NA	Water	3510C	
LCS 280-133157/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 280-133157/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 134536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	8015B	133157
280-32208-2	MW-99A_081512	Total/NA	Water	8015B	133157
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	8015B	133157
280-32208-4	MW-2A_081512	Total/NA	Water	8015B	133157
LCS 280-133157/2-A	Lab Control Sample	Total/NA	Water	8015B	133157
MB 280-133157/1-A	Method Blank	Total/NA	Water	8015B	133157

Analysis Batch: 134540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32168-B-2-A MS	Matrix Spike	Total/NA	Water	8015B	133157
280-32168-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	133157

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Metals

Prep Batch: 133003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Dissolved	Water	3005A	
280-32208-2	MW-99A_081512	Dissolved	Water	3005A	
280-32208-3	CUNNIE WELL_081512	Dissolved	Water	3005A	
280-32208-4	MW-2A_081512	Dissolved	Water	3005A	
280-32226-B-1-B MS	Matrix Spike	Dissolved	Water	3005A	
280-32226-B-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	
LCS 280-133003/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 280-133003/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 134181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Dissolved	Water	6010B	133003
280-32208-2	MW-99A_081512	Dissolved	Water	6010B	133003
280-32208-3	CUNNIE WELL_081512	Dissolved	Water	6010B	133003
280-32208-4	MW-2A_081512	Dissolved	Water	6010B	133003
280-32226-B-1-B MS	Matrix Spike	Dissolved	Water	6010B	133003
280-32226-B-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	133003
LCS 280-133003/2-A	Lab Control Sample	Total Recoverable	Water	6010B	133003
MB 280-133003/1-A	Method Blank	Total Recoverable	Water	6010B	133003

General Chemistry

Analysis Batch: 9550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-F-1 DU ^10 - DL	Duplicate	Total/NA	Water	300.0	
280-32125-F-1 MS ^10 - DL	Matrix Spike	Total/NA	Water	300.0	
280-32208-1	MW-1A_081512	Total/NA	Water	300.0	
280-32208-2	MW-99A_081512	Total/NA	Water	300.0	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	300.0	
280-32208-4	MW-2A_081512	Total/NA	Water	300.0	
LCS 160-9550/53	Lab Control Sample	Total/NA	Water	300.0	
MB 160-9550/52	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 133047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32183-A-13 DU	Duplicate	Total/NA	Water	SM 2540C	
280-32208-1	MW-1A_081512	Total/NA	Water	SM 2540C	
280-32208-2	MW-99A_081512	Total/NA	Water	SM 2540C	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	SM 2540C	
280-32208-4	MW-2A_081512	Total/NA	Water	SM 2540C	
LCS 280-133047/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-133047/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-133047/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 133127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Dissolved	Water	3500 FE D_ASP	
280-32208-2	MW-99A_081512	Dissolved	Water	3500 FE D_ASP	
280-32208-3	CUNNIE WELL_081512	Dissolved	Water	3500 FE D_ASP	
280-32208-4	MW-2A_081512	Dissolved	Water	3500 FE D_ASP	
280-32240-C-1 MS	Matrix Spike	Dissolved	Water	3500 FE D_ASP	
280-32240-C-1 MSD	Matrix Spike Duplicate	Dissolved	Water	3500 FE D_ASP	

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

General Chemistry (Continued)

Analysis Batch: 133127 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-133127/9	Lab Control Sample	Total/NA	Water	3500 FE D_ASP	
LCSD 280-133127/10	Lab Control Sample Dup	Total/NA	Water	3500 FE D_ASP	
MB 280-133127/11	Method Blank	Total/NA	Water	3500 FE D_ASP	

Analysis Batch: 133200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32187-C-2 DU	Duplicate	Total/NA	Water	300.0	
280-32187-C-2 MS	Matrix Spike	Total/NA	Water	300.0	
280-32187-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-32208-1	MW-1A_081512	Total/NA	Water	300.0	
280-32208-2	MW-99A_081512	Total/NA	Water	300.0	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	300.0	
280-32208-4	MW-2A_081512	Total/NA	Water	300.0	
LCS 280-133200/13	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-133200/14	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-133200/15	Method Blank	Total/NA	Water	300.0	
MRL 280-133200/12 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 133202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32187-C-2 DU	Duplicate	Total/NA	Water	300.0	
280-32187-C-2 MS	Matrix Spike	Total/NA	Water	300.0	
280-32187-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-32190-A-5 DU	Duplicate	Total/NA	Water	300.0	
280-32208-1	MW-1A_081512	Total/NA	Water	300.0	
280-32208-1	MW-1A_081512	Total/NA	Water	300.0	
280-32208-2	MW-99A_081512	Total/NA	Water	300.0	
280-32208-2	MW-99A_081512	Total/NA	Water	300.0	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	300.0	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	300.0	
280-32208-4	MW-2A_081512	Total/NA	Water	300.0	
280-32208-4	MW-2A_081512	Total/NA	Water	300.0	
LCS 280-133202/13	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-133202/14	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-133202/15	Method Blank	Total/NA	Water	300.0	
MRL 280-133202/12 MRL	Lab Control Sample	Total/NA	Water	300.0	

Prep Batch: 133467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	9030B	
280-32208-2	MW-99A_081512	Total/NA	Water	9030B	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	9030B	
280-32208-4	MW-2A_081512	Total/NA	Water	9030B	
LCS 280-133467/1-A	Lab Control Sample	Total/NA	Water	9030B	
LCSD 280-133467/2-A	Lab Control Sample Dup	Total/NA	Water	9030B	
MB 280-133467/3-A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 133621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	9034	133467
280-32208-2	MW-99A_081512	Total/NA	Water	9034	133467
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	9034	133467

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

General Chemistry (Continued)

Analysis Batch: 133621 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-4	MW-2A_081512	Total/NA	Water	9034	133467
LCS 280-133467/1-A	Lab Control Sample	Total/NA	Water	9034	133467
LCSD 280-133467/2-A	Lab Control Sample Dup	Total/NA	Water	9034	133467
MB 280-133467/3-A	Method Blank	Total/NA	Water	9034	133467

Analysis Batch: 133702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32183-A-10 DU	Duplicate	Total/NA	Water	SM 2320B	
280-32208-1	MW-1A_081512	Total/NA	Water	SM 2320B	
280-32208-2	MW-99A_081512	Total/NA	Water	SM 2320B	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	SM 2320B	
280-32208-4	MW-2A_081512	Total/NA	Water	SM 2320B	
LCS 280-133702/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-133702/32	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-133702/33	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 133853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	350.1	
280-32208-2	MW-99A_081512	Total/NA	Water	350.1	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	350.1	
280-32208-3 MS	CUNNIE WELL_081512	Total/NA	Water	350.1	
280-32208-3 MSD	CUNNIE WELL_081512	Total/NA	Water	350.1	
280-32208-4	MW-2A_081512	Total/NA	Water	350.1	
280-32216-B-1 MS	Matrix Spike	Total/NA	Water	350.1	
280-32216-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

Analysis Batch: 134378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	SM 3500	
280-32208-2	MW-99A_081512	Total/NA	Water	SM 3500	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	SM 3500	
280-32208-4	MW-2A_081512	Total/NA	Water	SM 3500	
MB 280-134378/1	Method Blank	Total/NA	Water	SM 3500	

Analysis Batch: 134410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	SM4500 S2 H	
280-32208-2	MW-99A_081512	Total/NA	Water	SM4500 S2 H	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	SM4500 S2 H	
280-32208-4	MW-2A_081512	Total/NA	Water	SM4500 S2 H	
MB 280-134410/1	Method Blank	Total/NA	Water	SM4500 S2 H	

Field Service / Mobile Lab

Analysis Batch: 133568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-1	MW-1A_081512	Total/NA	Water	Field Sampling	
280-32208-2	MW-99A_081512	Total/NA	Water	Field Sampling	
280-32208-3	CUNNIE WELL_081512	Total/NA	Water	Field Sampling	
280-32208-4	MW-2A_081512	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Client Sample ID: MW-1A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133908	08/22/12 10:39	TW	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	133785	08/21/12 18:07	AMB	TAL DEN
Total/NA	Prep	3510C			983.3 mL	1000 uL	133157	08/17/12 16:30	SHO	TAL DEN
Total/NA	Analysis	8015B		1			134536	08/23/12 08:55	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	133003	08/20/12 09:15	NF	TAL DEN
Dissolved	Analysis	6010B		1			134181	08/23/12 22:21	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	9550	08/21/12 05:28	JB	TAL SL
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	133047	08/17/12 08:52	TDTM	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	133127	08/17/12 14:10	DA	TAL DEN
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133200	08/16/12 18:20	TLP	TAL DEN
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133202	08/16/12 18:20	TLP	TAL DEN
Total/NA	Analysis	300.0		10	1.0 mL	1.0 mL	133202	08/17/12 10:29	TLP	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	133467	08/21/12 07:11	BMG	TAL DEN
Total/NA	Analysis	9034		1			133621	08/21/12 13:46	BMG	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	133702	08/21/12 16:07	BMG	TAL DEN
Total/NA	Analysis	350.1		1	1.0 mL	1.0 mL	133853	08/22/12 13:36	SJS	TAL DEN
Total/NA	Analysis	SM 3500		1			134378	08/25/12 13:59	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			134410	08/27/12 08:04	RS	TAL DEN
Total/NA	Analysis	Field Sampling		1			133568	08/15/12 08:57	FS	TAL DEN

Client Sample ID: MW-99A_081512

Date Collected: 08/15/12 08:57

Date Received: 08/16/12 09:00

Lab Sample ID: 280-32208-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133908	08/22/12 10:59	TW	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	133785	08/21/12 18:49	AMB	TAL DEN
Total/NA	Prep	3510C			916.8 mL	1000 uL	133157	08/17/12 16:30	SHO	TAL DEN
Total/NA	Analysis	8015B		1			134536	08/23/12 09:19	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	133003	08/20/12 09:15	NF	TAL DEN
Dissolved	Analysis	6010B		1			134181	08/23/12 22:23	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	9550	08/21/12 06:21	JB	TAL SL
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	133047	08/17/12 08:52	TDTM	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	133127	08/17/12 14:10	DA	TAL DEN
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133200	08/16/12 18:37	TLP	TAL DEN
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133202	08/16/12 18:37	TLP	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	133202	08/17/12 10:46	TLP	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	133467	08/21/12 07:11	BMG	TAL DEN
Total/NA	Analysis	9034		1			133621	08/21/12 13:46	BMG	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	133702	08/21/12 16:15	BMG	TAL DEN
Total/NA	Analysis	350.1		1	1.0 mL	1.0 mL	133853	08/22/12 13:38	SJS	TAL DEN
Total/NA	Analysis	SM 3500		1			134378	08/25/12 13:59	DG	TAL DEN

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Client Sample ID: MW-99A_081512

Lab Sample ID: 280-32208-2

Date Collected: 08/15/12 08:57

Matrix: Water

Date Received: 08/16/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM4500 S2 H		1			134410	08/27/12 08:04	RS	TAL DEN
Total/NA	Analysis	Field Sampling		1			133568	08/15/12 08:57	FS	TAL DEN

Client Sample ID: CUNNIE WELL_081512

Lab Sample ID: 280-32208-3

Date Collected: 08/15/12 13:45

Matrix: Water

Date Received: 08/16/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133908	08/22/12 11:19	TW	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	133785	08/21/12 19:31	AMB	TAL DEN
Total/NA	Prep	3510C			988.4 mL	1000 uL	133157	08/17/12 16:30	SHO	TAL DEN
Total/NA	Analysis	8015B		1			134536	08/23/12 09:43	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	133003	08/20/12 09:15	NF	TAL DEN
Dissolved	Analysis	6010B		1			134181	08/23/12 22:26	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	9550	08/21/12 06:48	JB	TAL SL
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	133047	08/17/12 08:52	TDTM	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	133127	08/17/12 14:10	DA	TAL DEN
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133200	08/16/12 18:54	TLP	TAL DEN
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133202	08/16/12 18:54	TLP	TAL DEN
Total/NA	Analysis	300.0		20	1.0 mL	1.0 mL	133202	08/17/12 11:02	TLP	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	133467	08/21/12 07:11	BMG	TAL DEN
Total/NA	Analysis	9034		1			133621	08/21/12 13:46	BMG	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	133702	08/21/12 16:20	BMG	TAL DEN
Total/NA	Analysis	350.1		1	1.0 mL	1.0 mL	133853	08/22/12 13:50	SJS	TAL DEN
Total/NA	Analysis	SM 3500		1			134378	08/25/12 13:59	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			134410	08/27/12 08:04	RS	TAL DEN
Total/NA	Analysis	Field Sampling		1			133568	08/15/12 13:45	FS	TAL DEN

Client Sample ID: MW-2A_081512

Lab Sample ID: 280-32208-4

Date Collected: 08/15/12 15:17

Matrix: Water

Date Received: 08/16/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133908	08/22/12 11:39	TW	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	133785	08/21/12 20:13	AMB	TAL DEN
Total/NA	Prep	3510C			1024.3 mL	1000 uL	133157	08/17/12 16:30	SHO	TAL DEN
Total/NA	Analysis	8015B		1			134536	08/23/12 10:07	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	133003	08/20/12 09:15	NF	TAL DEN
Dissolved	Analysis	6010B		1			134181	08/23/12 22:29	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	9550	08/21/12 07:15	JB	TAL SL
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	133047	08/17/12 08:52	TDTM	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	133127	08/17/12 14:10	DA	TAL DEN

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32208-1

Client Sample ID: MW-2A_081512

Lab Sample ID: 280-32208-4

Date Collected: 08/15/12 15:17

Matrix: Water

Date Received: 08/16/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133200	08/16/12 19:44	TLP	TAL DEN
Total/NA	Analysis	300.0		2	1.0 mL	1.0 mL	133202	08/16/12 19:44	TLP	TAL DEN
Total/NA	Analysis	300.0		50	1.0 mL	1.0 mL	133202	08/17/12 11:19	TLP	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	133467	08/21/12 07:11	BMG	TAL DEN
Total/NA	Analysis	9034		1			133621	08/21/12 13:46	BMG	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	133702	08/21/12 16:25	BMG	TAL DEN
Total/NA	Analysis	350.1		1	1.0 mL	1.0 mL	133853	08/22/12 13:54	SJS	TAL DEN
Total/NA	Analysis	SM 3500		1			134378	08/25/12 13:59	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			134410	08/27/12 08:05	RS	TAL DEN
Total/NA	Analysis	Field Sampling		1			133568	08/15/12 15:17	FS	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-32208-1

Login Number: 32208

List Source: TestAmerica Denver

List Number: 1

Creator: Cofoid, Stephen T

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-32208-1

Login Number: 32208

List Source: TestAmerica St. Louis

List Number: 1

List Creation: 08/17/12 11:33 AM

Creator: Wilson, Sue

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Chain of Custody Record

Client Information Client Contact: Ms. Kimberly O'Day Company: David Bohmann Tetra Tech GEO Address: 363 Centennial Parkway City: Louisville State: CO, Zip: 80027 Phone: 303-665-4390 Email: Kimberly.O'Day@tetratech.com / dbohmann@tetratech.com Project Name: Garfield County Site:		Sampler: B. B-L / K O'Day Lab P.M.: Griego, Dilea Phone: 303-665-4390 E-Mail: dilea.griego@testamericainc.com		COC No: 280-18652-8597.1 Page: 1 of 1 Job #: 1		Carrier Tracking No(s):							
Due Date Requested: Standard TAT Requested (days): Standard 10 Business Days PO #: 303-665-4390 WO #: 28008100 Project #: 28008100 SOW#:		Analysis Requested SM4500 Un-ionized Hydrogen Sulfide (CALC) ☒ 9034 - Sulfide (Req. for Un-ionized Hydrogen Sulfide CALC) ☒ 8015B_DRO - (MOD) ☒ 8015B_GRO - (MOD) ☒ 8260B - (MOD) BTEX ☒ 3501 - Ammonia ☒ 6010B - (MOD) DISSOLVED (Field Filtered) ☒ Perform MS/MSD (Yes or No) ☒ Field Filtered Sample (Yes or No) ☒ Matrix (Water, Seawater, Oil, Other) ☒											
Sample Identification MW-1A-OP1512 MW-99A-OP1512 Brown well-OP1512 MW-2A-OP1512		Sample Date 8-15-12 8-15-12 8-15-12 8-15-12		Sample Time 0857 0857 1345 1517		Sample Type (C=Comp, G=grab) G G G G		Preservation Code: Water Water Water Water		Total Number of Containers 13.63/13.12/5.042 ml/cm 12.63/13.12/5.042 ml/cm 7.97/12.67/2.722 ml/cm 8.63/15.54/3.849 ml/cm		Special Instructions/Note: Unionized Hydrogen Sulfide requires Field pH, Field Temp and Field Conductivity. pH Temp Conduct 13.63/13.12/5.042 ml/cm 12.63/13.12/5.042 ml/cm 7.97/12.67/2.722 ml/cm 8.63/15.54/3.849 ml/cm	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months											
Empty Kit Relinquished by:		Special Instructions/QC Requirements:											
Relinquished by: Kim O'Day		Date: 8-15-12/1800											
Relinquished by:		Date: 8-16-12/900											
Relinquished by:		Date:											
Custody Seals Intact: ☒ Yes ☐ No		Custody Seal No.: 8/16/12 3.9											

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-32240-1

Client Project/Site: Garfield County

For:

Tetra Tech GEO

363 Centennial Parkway

Suite 210

Louisville, Colorado 80027

Attn: David Bohmann



Authorized for release by:

8/28/2012 5:52:39 PM

DiLea Griego

Project Manager I

dilea.griego@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Job ID: 280-32240-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Tetra Tech GEO

Project: Garfield County

Report Number: 280-32240-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/16/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.3° C.

The following sample was received at a pH of 9-10: MW_1B_081612. The laboratory will adjust the pH of the sample and proceed with the analysis. The client was notified on 08/17/2012.

No other issues were noted.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - METHOD 8260B

No difficulties were encountered.

GAS RANGE ORGANICS - METHOD 8015B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-134176 were performed on a sample from another job and exhibited recoveries outside control limits for a,a,a-Trifluorotoluene, biased high. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

DIESEL RANGE ORGANICS - METHOD 8015B

Prior to extraction, the pH for the following samples were recorded at the bench as twelve, which is greater than the required pH of seven: MW_1B_081612 (280-32240-1) and MW_3B_081612 (280-32240-2).

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-134540 were performed on a sample from another job and exhibited spike and surrogate recoveries outside control limits for DRO. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

DISSOLVED METALS - METHOD 6010B

Continuing Calibration Verification (CCV) standards associated with samples associated with analysis batch 280-134181 exhibited %D values out of range, biased high, for Sodium. This is an indicator that data may be biased high. As no detectable concentrations of

Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Job ID: 280-32240-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

Sodium are present in the associated samples, corrective action is deemed unnecessary.

No other difficulties were encountered.

GENERAL CHEMISTRY

Samples MW_1B_081612 (280-32240-1)[5X], MW_1B_081612 (280-32240-1)[50X], MW_3B_081612 (280-32240-2)[10X], MW_3B_081612 (280-32240-2)[5X] and MW_3B_081612 (280-32240-2)[50X] required dilution prior to analysis for Bromide, Nitrate as N, Nitrite as N, Fluoride and Sulfate due to high conductivity. The reporting limits have been adjusted accordingly.

Constant weight was not achieved after 3 drying cycles for the following TDS samples: MW_3B_081612 (280-32240-2) and 280-32240-1 DU.

The following sample in Iodide analysis batch 160-9550 were reported non-detect at dilution, due to matrix interference at the Iodide retention time in the undiluted analyses: MW_3B_081612 (280-32240-2). Elevated reporting limits (RLs) are provided.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 160-9550 were performed on a sample from another job and the MS exhibited recoveries outside control limits for Iodide. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 160-9550 were performed on a sample from another job and the MS exhibited recoveries outside control limits for Iodide. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-133853 were performed on a sample from another job and exhibited recoveries outside control limits for Ammonia. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with Sulfide in analysis batch 280-133621. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

No other difficulties were encountered.

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

GC Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

General Chemistry

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
HF	Field parameter with a holding time of 15 minutes

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Client Sample ID: MW_1B_081612

Lab Sample ID: 280-32240-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.42				SU	1		Field Sampling	Total/NA
Field Conductivity	5267				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	13.23				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	0.33		0.25		mg/L	1		8015B	Total/NA
Barium	950		10		ug/L	1		6010B	Dissolved
Calcium	88000		200		ug/L	1		6010B	Dissolved
Potassium	73000		3000		ug/L	1		6010B	Dissolved
Sodium	1000000		1000		ug/L	1		6010B	Dissolved
Strontium	5400		10		ug/L	1		6010B	Dissolved
Bromide	4.5		1.0		mg/L	5		300.0	Total/NA
Iodide	1.4		1.0		mg/L	1		300.0	Total/NA
Chloride	1300		150		mg/L	50		300.0	Total/NA
Fluoride	3.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	100		25		mg/L	5		300.0	Total/NA
Ammonia	1.2		0.10		mg/L	1		350.1	Total/NA
Alkalinity	470		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	2800		40		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW_3B_081612

Lab Sample ID: 280-32240-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.81				SU	1		Field Sampling	Total/NA
Field Conductivity	9736				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	15.34				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO)	99		25		ug/L	1		8015B	Total/NA
-C6-C10									
Diesel Range Organics [C10-C28]	1.1		0.25		mg/L	1		8015B	Total/NA
Barium	840		10		ug/L	1		6010B	Dissolved
Calcium	150000		200		ug/L	1		6010B	Dissolved
Potassium	98000		3000		ug/L	1		6010B	Dissolved
Sodium	1600000		1000		ug/L	1		6010B	Dissolved
Strontium	7100		10		ug/L	1		6010B	Dissolved
Bromide	6.9		1.0		mg/L	5		300.0	Total/NA
Chloride	1500		150		mg/L	50		300.0	Total/NA
Sulfate	120		25		mg/L	5		300.0	Total/NA
Ammonia	3.7		0.10		mg/L	1		350.1	Total/NA
Alkalinity	1400		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	4500		100		mg/L	1		SM 2540C	Total/NA

Method Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Dissolved Metals	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
3500 FE D_ASP	Iron, Ferrous	SM	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 3500	Iron, Ferric	SM	TAL DEN
SM4500 S2 H	Unionized Hydrogen Sulfide	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-32240-1	MW_1B_081612	Water	08/16/12 09:15	08/16/12 17:55
280-32240-2	MW_3B_081612	Water	08/16/12 11:35	08/16/12 17:55

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/22/12 14:59	1
Ethylbenzene	ND		1.0		ug/L			08/22/12 14:59	1
Toluene	ND		1.0		ug/L			08/22/12 14:59	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 14:59	1
o-Xylene	ND		1.0		ug/L			08/22/12 14:59	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 14:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		70 - 127		08/22/12 14:59	1
Toluene-d8 (Surr)	105		80 - 125		08/22/12 14:59	1
4-Bromofluorobenzene (Surr)	94		78 - 120		08/22/12 14:59	1
Dibromofluoromethane (Surr)	104		77 - 120		08/22/12 14:59	1

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/22/12 15:19	1
Ethylbenzene	ND		1.0		ug/L			08/22/12 15:19	1
Toluene	ND		1.0		ug/L			08/22/12 15:19	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 15:19	1
o-Xylene	ND		1.0		ug/L			08/22/12 15:19	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 15:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		70 - 127		08/22/12 15:19	1
Toluene-d8 (Surr)	102		80 - 125		08/22/12 15:19	1
4-Bromofluorobenzene (Surr)	93		78 - 120		08/22/12 15:19	1
Dibromofluoromethane (Surr)	101		77 - 120		08/22/12 15:19	1

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	ND		25		ug/L			08/23/12 20:24	1
-C6-C10									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	97		82 - 110		08/23/12 20:24	1

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	99		25		ug/L			08/23/12 20:56	1
-C6-C10									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	87		82 - 110		08/23/12 20:56	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.33		0.25		mg/L		08/17/12 16:30	08/23/12 10:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 115				08/17/12 16:30	08/23/12 10:31	1

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.1		0.25		mg/L		08/17/12 16:30	08/23/12 10:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 115				08/17/12 16:30	08/23/12 10:55	1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	950		10		ug/L		08/21/12 14:00	08/23/12 22:47	1
Calcium	88000		200		ug/L		08/21/12 14:00	08/23/12 22:47	1
Iron	ND		100		ug/L		08/21/12 14:00	08/23/12 22:47	1
Magnesium	ND		200		ug/L		08/21/12 14:00	08/23/12 22:47	1
Manganese	ND		10		ug/L		08/21/12 14:00	08/23/12 22:47	1
Potassium	73000		3000		ug/L		08/21/12 14:00	08/23/12 22:47	1
Sodium	1000000		1000		ug/L		08/21/12 14:00	08/23/12 22:47	1
Strontium	5400		10		ug/L		08/21/12 14:00	08/23/12 22:47	1

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	840		10		ug/L		08/21/12 14:00	08/23/12 22:51	1
Calcium	150000		200		ug/L		08/21/12 14:00	08/23/12 22:51	1
Iron	ND		100		ug/L		08/21/12 14:00	08/23/12 22:51	1
Magnesium	ND		200		ug/L		08/21/12 14:00	08/23/12 22:51	1
Manganese	ND		10		ug/L		08/21/12 14:00	08/23/12 22:51	1
Potassium	98000		3000		ug/L		08/21/12 14:00	08/23/12 22:51	1
Sodium	1600000		1000		ug/L		08/21/12 14:00	08/23/12 22:51	1
Strontium	7100		10		ug/L		08/21/12 14:00	08/23/12 22:51	1

General Chemistry

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	4.5		1.0		mg/L			08/16/12 19:54	5
Iodide	1.4		1.0		mg/L			08/21/12 07:42	1
Nitrate as N	ND		2.5		mg/L			08/16/12 19:54	5
Chloride	1300		150		mg/L			08/16/12 23:35	50

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

General Chemistry (Continued)

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		2.5		mg/L			08/16/12 19:54	5
Fluoride	3.1		2.5		mg/L			08/16/12 19:54	5
Sulfate	100		25		mg/L			08/16/12 19:54	5
Ammonia	1.2		0.10		mg/L			08/22/12 14:40	1
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1
Alkalinity	470		5.0		mg/L			08/20/12 17:16	1
Total Dissolved Solids	2800		40		mg/L			08/20/12 08:53	1
Ferric Iron	ND		0.20		mg/L			08/25/12 14:11	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/23/12 11:25	1

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	6.9		1.0		mg/L			08/16/12 20:10	5
Nitrate as N	ND		2.5		mg/L			08/16/12 20:10	5
Chloride	1500		150		mg/L			08/16/12 23:51	50
Nitrite as N	ND		2.5		mg/L			08/16/12 20:10	5
Fluoride	ND		2.5		mg/L			08/16/12 20:10	5
Sulfate	120		25		mg/L			08/16/12 20:10	5
Ammonia	3.7		0.10		mg/L			08/22/12 14:41	1
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1
Alkalinity	1400		5.0		mg/L			08/20/12 17:09	1
Total Dissolved Solids	4500		100		mg/L			08/20/12 08:53	1
Ferric Iron	ND		0.20		mg/L			08/25/12 14:11	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/23/12 11:25	1

General Chemistry - DL

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		10		mg/L			08/21/12 08:22	10

General Chemistry - Dissolved

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			08/17/12 14:10	1

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			08/17/12 14:10	1

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: Field Sampling - Field Sampling

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.42				SU			08/16/12 09:15	1
Field Conductivity	5267				umhos/cm			08/16/12 09:15	1
Field Temperature	13.23				Degrees C			08/16/12 09:15	1

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.81				SU			08/16/12 11:35	1
Field Conductivity	9736				umhos/cm			08/16/12 11:35	1
Field Temperature	15.34				Degrees C			08/16/12 11:35	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-133908/5

Matrix: Water

Analysis Batch: 133908

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/22/12 09:54	1
Ethylbenzene	ND		1.0		ug/L			08/22/12 09:54	1
Toluene	ND		1.0		ug/L			08/22/12 09:54	1
m-Xylene & p-Xylene	ND		2.0		ug/L			08/22/12 09:54	1
o-Xylene	ND		1.0		ug/L			08/22/12 09:54	1
Xylenes, Total	ND		2.0		ug/L			08/22/12 09:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 127		08/22/12 09:54	1
Toluene-d8 (Surr)	104		80 - 125		08/22/12 09:54	1
4-Bromofluorobenzene (Surr)	101		78 - 120		08/22/12 09:54	1
Dibromofluoromethane (Surr)	101		77 - 120		08/22/12 09:54	1

Lab Sample ID: LCS 280-133908/4

Matrix: Water

Analysis Batch: 133908

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	5.01		ug/L		100	74 - 135
Ethylbenzene	5.00	4.98		ug/L		100	72 - 120
Toluene	5.00	5.01		ug/L		100	73 - 120
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	74 - 135
o-Xylene	5.00	4.88		ug/L		98	73 - 135
Xylenes, Total	15.0	14.9		ug/L		100	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 127
Toluene-d8 (Surr)	105		80 - 125
4-Bromofluorobenzene (Surr)	103		78 - 120
Dibromofluoromethane (Surr)	98		77 - 120

Lab Sample ID: 280-32208-H-1 MS

Matrix: Water

Analysis Batch: 133908

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		5.00	5.09		ug/L		102	74 - 135
Ethylbenzene	ND		5.00	4.59		ug/L		92	72 - 120
Toluene	ND		5.00	4.93		ug/L		99	73 - 120
m-Xylene & p-Xylene	ND		10.0	9.28		ug/L		93	74 - 135
o-Xylene	ND		5.00	4.43		ug/L		89	73 - 135
Xylenes, Total	ND		15.0	13.7		ug/L		91	75 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 127
Toluene-d8 (Surr)	101		80 - 125
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	103		77 - 120

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-32208-H-1 MSD

Matrix: Water

Analysis Batch: 133908

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		5.00	5.01		ug/L		100	74 - 135	2	20
Ethylbenzene	ND		5.00	4.46		ug/L		89	72 - 120	3	26
Toluene	ND		5.00	4.93		ug/L		99	73 - 120	0	20
m-Xylene & p-Xylene	ND		10.0	9.04		ug/L		90	74 - 135	3	20
o-Xylene	ND		5.00	4.36		ug/L		87	73 - 135	2	20
Xylenes, Total	ND		15.0	13.4		ug/L		89	75 - 135	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	118		70 - 127								
Toluene-d8 (Surr)	99		80 - 125								
4-Bromofluorobenzene (Surr)	96		78 - 120								
Dibromofluoromethane (Surr)	102		77 - 120								

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-134176/5

Matrix: Water

Analysis Batch: 134176

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			08/23/12 14:45	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	91		82 - 110					08/23/12 14:45	1

Lab Sample ID: LCS 280-134176/3

Matrix: Water

Analysis Batch: 134176

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10	101	106		ug/L		105	79 - 149		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
a,a,a-Trifluorotoluene	93		82 - 110						

Lab Sample ID: LCSD 280-134176/4

Matrix: Water

Analysis Batch: 134176

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	101	103		ug/L		102	79 - 149	2	27
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
a,a,a-Trifluorotoluene	88		82 - 110						

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: 280-32268-H-1 MS

Matrix: Water

Analysis Batch: 134176

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10	1100		202	1370	4	ug/L		117	79 - 149		
Surrogate	MS %Recovery	MS Qualifier	Limits								
a,a,a-Trifluorotoluene	199	X	82 - 110								

Lab Sample ID: 280-32268-H-1 MSD

Matrix: Water

Analysis Batch: 134176

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1100		202	1300	4	ug/L	-	82	79 - 149	5	27
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
a,a,a-Trifluorotoluene	193	X	82 - 110								

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-133157/1-A

Matrix: Water

Analysis Batch: 134536

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 133157

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics [C10-C28]	ND		0.25		mg/L		08/17/12 16:30	08/23/12 05:42	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
o-Terphenyl	80		50 - 115				08/17/12 16:30	08/23/12 05:42	1

Lab Sample ID: LCS 280-133157/2-A

Matrix: Water

Analysis Batch: 134536

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 133157

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Diesel Range Organics			2.00	1.69		mg/L		84	54 - 115		
[C10-C28]											
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	75		50 - 115								

Lab Sample ID: 280-32168-B-2-A MS

Matrix: Water

Analysis Batch: 134540

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 133157

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	42		1.92	31.0	4 D	mg/L		-551	50 - 115

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 280-32168-B-2-A MS

Matrix: Water

Analysis Batch: 134540

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 133157

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	0	D	50 - 115

Lab Sample ID: 280-32168-C-2-A MSD

Matrix: Water

Analysis Batch: 134540

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 133157

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	42		1.99	33.4	4 D	mg/L		-412	50 - 115	7	31

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	0	D	50 - 115

Method: 6010B - Dissolved Metals

Lab Sample ID: MB 280-133361/1-A

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 133361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		10		ug/L		08/21/12 14:00	08/23/12 22:42	1
Calcium	ND		200		ug/L		08/21/12 14:00	08/23/12 22:42	1
Iron	ND		100		ug/L		08/21/12 14:00	08/23/12 22:42	1
Magnesium	ND		200		ug/L		08/21/12 14:00	08/23/12 22:42	1
Manganese	ND		10		ug/L		08/21/12 14:00	08/23/12 22:42	1
Potassium	ND		3000		ug/L		08/21/12 14:00	08/23/12 22:42	1
Sodium	ND	^	1000		ug/L		08/21/12 14:00	08/23/12 22:42	1
Strontium	ND		10		ug/L		08/21/12 14:00	08/23/12 22:42	1

Lab Sample ID: LCS 280-133361/2-A

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 133361

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	2000	2010		ug/L		100	90 - 112
Calcium	50000	48300		ug/L		97	90 - 111
Iron	1000	1020		ug/L		102	89 - 115
Magnesium	50000	49700		ug/L		99	90 - 113
Manganese	500	497		ug/L		99	90 - 110
Potassium	50000	50100		ug/L		100	89 - 114
Sodium	50000	53900		ug/L		108	90 - 115
Strontium	1000	993		ug/L		99	90 - 111

Lab Sample ID: 280-32263-F-1-C MS

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 133361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	110		2000	2190		ug/L		104	85 - 120
Calcium	48000		50000	99100		ug/L		103	48 - 153

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 6010B - Dissolved Metals (Continued)

Lab Sample ID: 280-32263-F-1-C MS

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 133361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	ND		1000	1020		ug/L		102	52 - 155
Magnesium	40000		50000	91800		ug/L		104	62 - 146
Manganese	11		500	520		ug/L		102	79 - 121
Potassium	13000		50000	66200		ug/L		106	76 - 132
Strontium	640		1000	1690		ug/L		104	81 - 125

Lab Sample ID: 280-32263-F-1-C MS

Matrix: Water

Analysis Batch: 134427

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 133361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	38000		50000	89600		ug/L		104	70 - 203

Lab Sample ID: 280-32263-F-1-D MSD

Matrix: Water

Analysis Batch: 134181

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 133361

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	110		2000	2160		ug/L		102	85 - 120	1	20
Calcium	48000		50000	97900		ug/L		100	48 - 153	1	20
Iron	ND		1000	1000		ug/L		100	52 - 155	2	20
Magnesium	40000		50000	92500		ug/L		105	62 - 146	1	20
Manganese	11		500	523		ug/L		102	79 - 121	1	20
Potassium	13000		50000	65300		ug/L		104	76 - 132	1	20
Strontium	640		1000	1670		ug/L		102	81 - 125	1	20

Lab Sample ID: 280-32263-F-1-D MSD

Matrix: Water

Analysis Batch: 134427

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 133361

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Sodium	38000		50000	88700		ug/L		102	70 - 203	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-133065/6

Matrix: Water

Analysis Batch: 133065

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50		mg/L			08/16/12 09:32	1
Nitrite as N	ND		0.50		mg/L			08/16/12 09:32	1

Lab Sample ID: LCS 280-133065/4

Matrix: Water

Analysis Batch: 133065

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	5.12		mg/L		102	90 - 110
Nitrite as N	5.00	4.91		mg/L		98	90 - 110

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-133065/5

Matrix: Water

Analysis Batch: 133065

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	5.12		mg/L		102	90 - 110	0	10
Nitrite as N	5.00	4.92		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-133065/3 MRL

Matrix: Water

Analysis Batch: 133065

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.200	ND		mg/L		114	50 - 150		
Nitrite as N	0.200	ND		mg/L		104	50 - 150		

Lab Sample ID: 280-32181-C-4 MS

Matrix: Water

Analysis Batch: 133065

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		5.00	4.87		mg/L		96	80 - 120		
Nitrite as N	ND		5.00	4.89		mg/L		98	80 - 120		

Lab Sample ID: 280-32181-C-4 MSD

Matrix: Water

Analysis Batch: 133065

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		5.00	4.98		mg/L		98	80 - 120	2	20
Nitrite as N	ND		5.00	5.02		mg/L		100	80 - 120	3	20

Lab Sample ID: 280-32182-A-6 DU

Matrix: Water

Analysis Batch: 133065

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		ND		mg/L				1
Nitrite as N	ND		ND		mg/L				1

Lab Sample ID: MB 280-133066/6

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20		mg/L			08/16/12 09:32	1
Chloride	ND		3.0		mg/L			08/16/12 09:32	1
Fluoride	ND		0.50		mg/L			08/16/12 09:32	1
Sulfate	ND		5.0		mg/L			08/16/12 09:32	1

Lab Sample ID: LCS 280-133066/4

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	5.00	5.11		mg/L		102	90 - 110		

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-133066/4

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.4		mg/L		102	90 - 110
Fluoride	5.00	5.18		mg/L		104	90 - 110
Sulfate	25.0	25.3		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-133066/5

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	5.00	5.11		mg/L		102	90 - 110	0	10
Chloride	25.0	25.3		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.19		mg/L		104	90 - 110	0	10
Sulfate	25.0	25.2		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-133066/3 MRL

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	0.200	0.243		mg/L		122	50 - 150
Chloride	1.00	ND		mg/L		102	50 - 150
Fluoride	0.200	ND		mg/L		92	50 - 150
Sulfate	1.00	ND		mg/L		89	50 - 150

Lab Sample ID: 280-32181-C-4 MS

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		5.00	4.99		mg/L		97	80 - 120
Chloride	11		25.0	36.4		mg/L		100	80 - 120
Fluoride	ND		5.00	5.05		mg/L		101	80 - 120
Sulfate	ND		25.0	25.4		mg/L		100	80 - 120

Lab Sample ID: 280-32181-C-4 MSD

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	5.12		mg/L		100	80 - 120	3	20
Chloride	11		25.0	36.9		mg/L		102	80 - 120	1	20
Fluoride	ND		5.00	5.21		mg/L		104	80 - 120	3	20
Sulfate	ND		25.0	25.9		mg/L		103	80 - 120	2	20

Lab Sample ID: 280-32182-A-6 DU

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bromide	0.22		0.220		mg/L		0	15
Chloride	14		14.4		mg/L		0.1	15

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-32182-A-6 DU

Matrix: Water

Analysis Batch: 133066

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	ND		ND		mg/L		NC	15
Sulfate	44		45.2		mg/L		3	15

Lab Sample ID: MB 160-9550/52

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		1.0		mg/L			08/21/12 03:40	1

Lab Sample ID: LCS 160-9550/53

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	4.00	3.92		mg/L		98	90 - 110

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 280-32125-F-1 MS ^10

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide - DL	ND		40.0	44.7	F	mg/L		112	90 - 110

Lab Sample ID: 280-32125-F-1 DU ^10

Matrix: Water

Analysis Batch: 9550

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iodide - DL	ND		ND		mg/L		NC	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: 280-32216-B-1 MS

Matrix: Water

Analysis Batch: 133853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	ND		4.00	3.04	F	mg/L		76	90 - 110

Lab Sample ID: 280-32216-B-1 MSD

Matrix: Water

Analysis Batch: 133853

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	ND		4.00	3.03	F	mg/L		76	90 - 110	0	20

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 3500 FE D_ASP - Iron, Ferrous

Lab Sample ID: MB 280-133127/11

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.20		mg/L			08/17/12 14:10	1

Lab Sample ID: LCS 280-133127/9

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	2.00	1.94		mg/L		97	85 - 113

Lab Sample ID: LCSD 280-133127/10

Matrix: Water

Analysis Batch: 133127

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	2.00	2.09		mg/L		105	85 - 113	8	10

Lab Sample ID: 280-32240-1 MS

Matrix: Water

Analysis Batch: 133127

Client Sample ID: MW_1B_081612

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	ND	HF	2.00	2.09		mg/L		99	85 - 113

Lab Sample ID: 280-32240-1 MSD

Matrix: Water

Analysis Batch: 133127

Client Sample ID: MW_1B_081612

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND	HF	2.00	2.10		mg/L		99	85 - 113	1	10

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-133467/3-A

Matrix: Water

Analysis Batch: 133621

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 133467

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		4.0		mg/L		08/21/12 07:11	08/21/12 13:46	1

Lab Sample ID: LCS 280-133467/1-A

Matrix: Water

Analysis Batch: 133621

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 133467

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	18.2	11.7		mg/L		64	48 - 100

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCSD 280-133467/2-A

Matrix: Water

Analysis Batch: 133621

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 133467

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	18.2	11.2		mg/L		62	48 - 100	4	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-133459/63

Matrix: Water

Analysis Batch: 133459

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			08/20/12 16:37	1

Lab Sample ID: LCS 280-133459/61

Matrix: Water

Analysis Batch: 133459

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity	200	209		mg/L		104	90 - 110		

Lab Sample ID: LCSD 280-133459/62

Matrix: Water

Analysis Batch: 133459

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	210		mg/L		105	90 - 110	1	10

Lab Sample ID: 280-32226-A-1 DU

Matrix: Water

Analysis Batch: 133459

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D		RPD	RPD Limit
Alkalinity	620		623		mg/L			0.4	10

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-133296/1

Matrix: Water

Analysis Batch: 133296

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			08/20/12 08:53	1

Lab Sample ID: LCS 280-133296/2

Matrix: Water

Analysis Batch: 133296

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids	500	493		mg/L		99	86 - 110		

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 280-133296/3

Matrix: Water

Analysis Batch: 133296

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	494		mg/L		99	86 - 110	0	20

Lab Sample ID: 280-32240-1 DU

Matrix: Water

Analysis Batch: 133296

Client Sample ID: MW_1B_081612

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2800		2810		mg/L		2	10

Method: SM 3500 - Iron, Ferric

Lab Sample ID: MB 280-134382/1

Matrix: Water

Analysis Batch: 134382

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.20		mg/L			08/25/12 14:11	1

Method: SM4500 S2 H - Unionized Hydrogen Sulfide

Lab Sample ID: MB 280-134006/1

Matrix: Water

Analysis Batch: 134006

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			08/23/12 11:25	1

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

GC/MS VOA

Analysis Batch: 133908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32208-H-1 MS	Matrix Spike	Total/NA	Water	8260B	
280-32208-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
280-32240-1	MW_1B_081612	Total/NA	Water	8260B	
280-32240-2	MW_3B_081612	Total/NA	Water	8260B	
LCS 280-133908/4	Lab Control Sample	Total/NA	Water	8260B	
MB 280-133908/5	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 134176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	8015B	
280-32240-2	MW_3B_081612	Total/NA	Water	8015B	
280-32268-H-1 MS	Matrix Spike	Total/NA	Water	8015B	
280-32268-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 280-134176/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-134176/4	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-134176/5	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 133157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32168-B-2-A MS	Matrix Spike	Total/NA	Water	3510C	
280-32168-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	
280-32240-1	MW_1B_081612	Total/NA	Water	3510C	
280-32240-2	MW_3B_081612	Total/NA	Water	3510C	
LCS 280-133157/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 280-133157/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 134536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	8015B	133157
280-32240-2	MW_3B_081612	Total/NA	Water	8015B	133157
LCS 280-133157/2-A	Lab Control Sample	Total/NA	Water	8015B	133157
MB 280-133157/1-A	Method Blank	Total/NA	Water	8015B	133157

Analysis Batch: 134540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32168-B-2-A MS	Matrix Spike	Total/NA	Water	8015B	133157
280-32168-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	133157

Metals

Prep Batch: 133361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Dissolved	Water	3005A	
280-32240-2	MW_3B_081612	Dissolved	Water	3005A	
280-32263-F-1-C MS	Matrix Spike	Dissolved	Water	3005A	
280-32263-F-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	
LCS 280-133361/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Metals (Continued)

Prep Batch: 133361 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-133361/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 134181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Dissolved	Water	6010B	133361
280-32240-2	MW_3B_081612	Dissolved	Water	6010B	133361
280-32263-F-1-C MS	Matrix Spike	Dissolved	Water	6010B	133361
280-32263-F-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	133361
LCS 280-133361/2-A	Lab Control Sample	Total Recoverable	Water	6010B	133361
MB 280-133361/1-A	Method Blank	Total Recoverable	Water	6010B	133361

Analysis Batch: 134427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32263-F-1-C MS	Matrix Spike	Dissolved	Water	6010B	133361
280-32263-F-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	133361

General Chemistry

Analysis Batch: 9550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32125-F-1 DU ^10 - DL	Duplicate	Total/NA	Water	300.0	
280-32125-F-1 MS ^10 - DL	Matrix Spike	Total/NA	Water	300.0	
280-32240-1	MW_1B_081612	Total/NA	Water	300.0	
280-32240-2 - DL	MW_3B_081612	Total/NA	Water	300.0	
LCS 160-9550/53	Lab Control Sample	Total/NA	Water	300.0	
MB 160-9550/52	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 133065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32181-C-4 MS	Matrix Spike	Total/NA	Water	300.0	
280-32181-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-32182-A-6 DU	Duplicate	Total/NA	Water	300.0	
280-32240-1	MW_1B_081612	Total/NA	Water	300.0	
280-32240-2	MW_3B_081612	Total/NA	Water	300.0	
LCS 280-133065/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-133065/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-133065/6	Method Blank	Total/NA	Water	300.0	
MRL 280-133065/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 133066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32181-C-4 MS	Matrix Spike	Total/NA	Water	300.0	
280-32181-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-32182-A-6 DU	Duplicate	Total/NA	Water	300.0	
280-32240-1	MW_1B_081612	Total/NA	Water	300.0	
280-32240-1	MW_1B_081612	Total/NA	Water	300.0	
280-32240-2	MW_3B_081612	Total/NA	Water	300.0	
280-32240-2	MW_3B_081612	Total/NA	Water	300.0	
LCS 280-133066/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-133066/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-133066/6	Method Blank	Total/NA	Water	300.0	
MRL 280-133066/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

General Chemistry (Continued)

Analysis Batch: 133127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Dissolved	Water	3500 FE D_ASP	
280-32240-1 MS	MW_1B_081612	Dissolved	Water	3500 FE D_ASP	
280-32240-1 MSD	MW_1B_081612	Dissolved	Water	3500 FE D_ASP	
280-32240-2	MW_3B_081612	Dissolved	Water	3500 FE D_ASP	
LCS 280-133127/9	Lab Control Sample	Total/NA	Water	3500 FE D_ASP	
LCSD 280-133127/10	Lab Control Sample Dup	Total/NA	Water	3500 FE D_ASP	
MB 280-133127/11	Method Blank	Total/NA	Water	3500 FE D_ASP	

Analysis Batch: 133296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	SM 2540C	
280-32240-1 DU	MW_1B_081612	Total/NA	Water	SM 2540C	
280-32240-2	MW_3B_081612	Total/NA	Water	SM 2540C	
LCS 280-133296/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-133296/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-133296/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 133459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32226-A-1 DU	Duplicate	Total/NA	Water	SM 2320B	
280-32240-1	MW_1B_081612	Total/NA	Water	SM 2320B	
280-32240-2	MW_3B_081612	Total/NA	Water	SM 2320B	
LCS 280-133459/61	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-133459/62	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-133459/63	Method Blank	Total/NA	Water	SM 2320B	

Prep Batch: 133467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	9030B	
280-32240-2	MW_3B_081612	Total/NA	Water	9030B	
LCS 280-133467/1-A	Lab Control Sample	Total/NA	Water	9030B	
LCSD 280-133467/2-A	Lab Control Sample Dup	Total/NA	Water	9030B	
MB 280-133467/3-A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 133621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	9034	133467
280-32240-2	MW_3B_081612	Total/NA	Water	9034	133467
LCS 280-133467/1-A	Lab Control Sample	Total/NA	Water	9034	133467
LCSD 280-133467/2-A	Lab Control Sample Dup	Total/NA	Water	9034	133467
MB 280-133467/3-A	Method Blank	Total/NA	Water	9034	133467

Analysis Batch: 133853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32216-B-1 MS	Matrix Spike	Total/NA	Water	350.1	
280-32216-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	
280-32240-1	MW_1B_081612	Total/NA	Water	350.1	
280-32240-2	MW_3B_081612	Total/NA	Water	350.1	

Analysis Batch: 134006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	SM4500 S2 H	

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

General Chemistry (Continued)

Analysis Batch: 134006 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-2	MW_3B_081612	Total/NA	Water	SM4500 S2 H	
MB 280-134006/1	Method Blank	Total/NA	Water	SM4500 S2 H	

Analysis Batch: 134382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	SM 3500	
280-32240-2	MW_3B_081612	Total/NA	Water	SM 3500	
MB 280-134382/1	Method Blank	Total/NA	Water	SM 3500	

Field Service / Mobile Lab

Analysis Batch: 133563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-32240-1	MW_1B_081612	Total/NA	Water	Field Sampling	
280-32240-2	MW_3B_081612	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Client Sample ID: MW_1B_081612

Date Collected: 08/16/12 09:15

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133908	08/22/12 14:59	TW	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	134176	08/23/12 20:24	AMB	TAL DEN
Total/NA	Prep	3510C			1013.2 mL	1000 uL	133157	08/17/12 16:30	SHO	TAL DEN
Total/NA	Analysis	8015B		1			134536	08/23/12 10:31	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	133361	08/21/12 14:00	JM	TAL DEN
Dissolved	Analysis	6010B		1			134181	08/23/12 22:47	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	9550	08/21/12 07:42	JB	TAL SL
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	133065	08/16/12 19:54	EK	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	133066	08/16/12 19:54	EK	TAL DEN
Total/NA	Analysis	300.0		50	1.0 mL	1.0 mL	133066	08/16/12 23:35	EK	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	133127	08/17/12 14:10	DA	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	133296	08/20/12 08:53	TDTM	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	133459	08/20/12 17:16	BMG	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	133467	08/21/12 07:11	BMG	TAL DEN
Total/NA	Analysis	9034		1			133621	08/21/12 13:46	BMG	TAL DEN
Total/NA	Analysis	350.1		1	1.0 mL	1.0 mL	133853	08/22/12 14:40	SJS	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			134006	08/23/12 11:25	RS	TAL DEN
Total/NA	Analysis	SM 3500		1			134382	08/25/12 14:11	DG	TAL DEN
Total/NA	Analysis	Field Sampling		1			133563	08/16/12 09:15	FS	TAL DEN

Client Sample ID: MW_3B_081612

Date Collected: 08/16/12 11:35

Date Received: 08/16/12 17:55

Lab Sample ID: 280-32240-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	133908	08/22/12 15:19	TW	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	134176	08/23/12 20:56	AMB	TAL DEN
Total/NA	Prep	3510C			1001.7 mL	1000 uL	133157	08/17/12 16:30	SHO	TAL DEN
Total/NA	Analysis	8015B		1			134536	08/23/12 10:55	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	133361	08/21/12 14:00	JM	TAL DEN
Dissolved	Analysis	6010B		1			134181	08/23/12 22:51	HEB	TAL DEN
Total/NA	Analysis	300.0	DL	10	5 mL	5 mL	9550	08/21/12 08:22	JB	TAL SL
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	133065	08/16/12 20:10	EK	TAL DEN
Total/NA	Analysis	300.0		5	1.0 mL	1.0 mL	133066	08/16/12 20:10	EK	TAL DEN
Total/NA	Analysis	300.0		50	1.0 mL	1.0 mL	133066	08/16/12 23:51	EK	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	133127	08/17/12 14:10	DA	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	133296	08/20/12 08:53	TDTM	TAL DEN
Total/NA	Analysis	SM 2320B		1	1.0 mL	1.0 mL	133459	08/20/12 17:09	BMG	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	133467	08/21/12 07:11	BMG	TAL DEN
Total/NA	Analysis	9034		1			133621	08/21/12 13:46	BMG	TAL DEN
Total/NA	Analysis	350.1		1	1.0 mL	1.0 mL	133853	08/22/12 14:41	SJS	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			134006	08/23/12 11:25	RS	TAL DEN

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-32240-1

Client Sample ID: MW_3B_081612

Lab Sample ID: 280-32240-2

Date Collected: 08/16/12 11:35

Matrix: Water

Date Received: 08/16/12 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 3500		1			134382	08/25/12 14:11	DG	TAL DEN
Total/NA	Analysis	Field Sampling		1			133563	08/16/12 11:35	FS	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-32240-1

Login Number: 32240

List Source: TestAmerica Denver

List Number: 1

Creator: Bindel, Aaron M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	MTLS VOLUME ON SAMPLE -001 NEUTRAL
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-32240-1

Login Number: 32240

List Source: TestAmerica St. Louis

List Number: 1

List Creation: 08/18/12 11:52 AM

Creator: Daniels, Brian

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Chain of Custody Record

TestAmerica

Client Information Client Contact: Ms. Kimberly O'Day / David Bohmann Company: Tetra Tech GEO Address: 363 Centennial Parkway City: Louisville State, Zip: CO, 80027 Phone: _____ Email: Kimberly.O'Day@tetratech.com / dbohmann@tetratech.com Project Name: Garfield County Site: Mamm Creek		Lab P/N: Griego, DiLea E-Mail: dleag.griego@testamericainc.com Carrier Tracking No(s): _____ COC No: 280-18652-3597.1 Page: Page 1 of 1 Job #: _____	
Analysis Requested Due Date Requested: _____ TAT Requested (days): Standard 10 Business Days PO #: _____ WO #: _____ Project #: 28008100 SOW #: _____		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: _____ M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Sample Identification Sample Date: 8-16-12 Sample Time: 0915 Sample Type: G (C=Comp, G=grab) Matrix: (W=water, S=solid, O=organic, BT=Tissue, AS=Asp)		Special Instructions/Note: Unionized Hydrogen Sulfide requires Field pH, Field Temp and Field Conductivity.	
mw-1B_081612 mw-3B_081612		Total Number of containers: 13 pH / Temp / Cond: 12.43 / 12.33 / 5.367 mV/cm 12.81 / 11.34 / 9.736 mV/cm	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months	
Empty Kit Relinquished by: Relinquished by: [Signature] Relinquished by: _____ Relinquished by: _____		Method of Shipment: Date/Time: 8/16/12 17:55 Date/Time: _____ Date/Time: _____	
Custody Seals Intact: Δ Yes Δ No Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks: 3.3 @ 12.1 8/16/12	

Lab #: 260585 Job #: 18997
 Sample Name/Number: MW-3A_081412
 Company: GeoTrans, Inc.
 Date Sampled: 8/14/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle, Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 8/20/2012 Date Reported: 9/06/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.029			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.877			
Oxygen -----	17.18			
Nitrogen -----	72.76			
Carbon Dioxide -----	nd			
Methane -----	9.13	-70.95	-194.1	
Ethane -----	0.0241			
Ethylene -----	0.0022			
Propane -----	0.0007			
Propylene -----	nd			
Iso-butane -----	0.0005			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0007			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 93

Specific gravity, calculated: 0.957

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.59

Concentration of methane in water = 9.0 cc/L ; 6.0 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 260586 Job #: 18997
 Sample Name/Number: MW-1A_081512
 Company: GeoTrans, Inc.
 Date Sampled: 8/15/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle, Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 8/20/2012 Date Reported: 9/06/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.923			
Oxygen -----	16.90			
Nitrogen -----	75.04			
Carbon Dioxide -----	nd			
Methane -----	7.12	-57.63	-180.0	
Ethane -----	0.0148			
Ethylene -----	0.0012			
Propane -----	0.0004			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 72

Specific gravity, calculated: 0.965

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.00

Concentration of methane in water = 8.5 cc/L ; 5.7 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 260587 Job #: 18997
 Sample Name/Number: MW-2A_081512
 Company: GeoTrans, Inc.
 Date Sampled: 8/15/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle, Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 8/20/2012 Date Reported: 9/06/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.222			
Oxygen -----	3.91			
Nitrogen -----	11.19			
Carbon Dioxide -----	0.011			
Methane -----	84.58	-59.54	-208.8	
Ethane -----	0.0884			
Ethylene -----	0.0013			
Propane -----	0.0003			
Propylene -----	nd			
Iso-butane -----	0.0001			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 859

Specific gravity, calculated: 0.624

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.00

Concentration of methane in water = 220 cc/L ; 140 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 260588 Job #: 18997
 Sample Name/Number: MW-1B_081612
 Company: GeoTrans, Inc.
 Date Sampled: 8/16/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle, Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 8/20/2012 Date Reported: 9/06/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.492			
Oxygen -----	15.50			
Nitrogen -----	82.64			
Carbon Dioxide -----	nd			
Methane -----	1.33			
Ethane -----	0.0301			
Ethylene -----	0.0006			
Propane -----	0.0025			
Propylene -----	nd			
Iso-butane -----	0.0006			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0019			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 14

Specific gravity, calculated: 0.985

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.84

Concentration of methane in water = 4.5 cc/L ; 3.0 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 260589 Job #: 18997
 Sample Name/Number: MW-3B_081612
 Company: GeoTrans, Inc.
 Date Sampled: 8/16/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle, Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 8/20/2012 Date Reported: 9/06/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.853			
Oxygen -----	17.92			
Nitrogen -----	79.93			
Carbon Dioxide -----	nd			
Methane -----	1.25	-53.9	-195	
Ethane -----	0.0361			
Ethylene -----	0.0021			
Propane -----	0.0035			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0007			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 13

Specific gravity, calculated: 0.990

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.57

Concentration of methane in water = 0.79 cc/L ; 0.53 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Isotopes obtained online via GC-C/P-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 260590 Job #: 18997
 Sample Name/Number: Currie Well_081512
 Company: GeoTrans, Inc.
 Date Sampled: 8/15/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle, Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 8/20/2012 Date Reported: 9/06/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.04			
Oxygen -----	12.21			
Nitrogen -----	74.29			
Carbon Dioxide -----	0.97			
Methane -----	11.48	-81.10	-184.8	
Ethane -----	0.0101			
Ethylene -----	nd			
Propane -----	0.0005			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 116

Specific gravity, calculated: 0.946

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.60

Concentration of methane in water = 6.1 cc/L ; 4.1 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Round 4 Sampling Event

December 18, 2012 – August 21, 2012

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-37208-1

Client Project/Site: Garfield County

For:

Tetra Tech GEO

363 Centennial Parkway

Suite 210

Louisville, Colorado 80027

Attn: David Bohmann



Authorized for release by:

1/7/2013 8:36:42 AM

DiLea Griego

Project Manager I

dilea.griego@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Job ID: 280-37208-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Tetra Tech GEO

Project: Garfield County

Report Number: 280-37208-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/19/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.2 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - METHOD 8260B

No difficulties were encountered.

GAS RANGE ORGANICS - METHOD 8015B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-153400 were performed on a sample from another job and exhibited surrogate recoveries outside control limits for a,a,a-Trifluorotoluene due to matrix interference. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

DIESEL RANGE ORGANICS - METHOD 8015B

Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-153111. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other difficulties were encountered.

DISSOLVED METALS - METHOD 6010B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-153695 were performed on MW-3A-121812 (280-37208-1) and the MSD exhibited recoveries outside control limits for Strontium. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Continuing Calibration Verification (CCV) standards associated with samples in analysis batch 280-153695 exhibited %D values out of range, biased high, for Sodium. This is an indicator that data may be biased high. As no detectable concentrations of Sodium are present in the associated samples, corrective action is deemed unnecessary.

No other difficulties were encountered.

GENERAL CHEMISTRY

Samples MW-3A-121812 (280-37208-1)[5X], MW-3A-121812 (280-37208-1)[50X], MW-3B-121812 (280-37208-3)[5X] and MW-3B-121812 (280-37208-3)[50X] required dilution prior to analysis for Bromide, Chloride, Fluoride and Sulfate due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

Samples MW-3A-121812 (280-37208-1)[5X] and MW-3B-121812 (280-37208-3)[5X] required dilution prior to analysis for Nitrate as N and Nitrite

Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Job ID: 280-37208-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

as N due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

Sample MW-3B-121812 (280-37208-3)[2X] required dilution prior to analysis for Ammonia due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

Ferric iron is obtained by subtracting the ferrous result from the total iron result. The ferrous iron results obtained for the following samples were higher than the total iron results: MW-3A-121812 (280-37208-1). Ferrous iron samples are analyzed calorimetrically using an unpreserved sample; while, total iron samples are analyzed using a nitric acid preserved sample. Interferences that may cause a positive bias in the ferrous result include strong oxidizing agents i.e.: cyanide, nitrite, phosphates (polyphosphates more so than orthophosphate), chromium, zinc in concentrations exceeding 10 times that of iron, cobalt and copper in excess of 5mg/L, nickel in excess of 2 mg/L, bismuth, cadmium, mercury, molybdate and silver precipitate phenanthroline (color reagent used for ferrous iron).

Ferrous samples should be analyzed as soon as possible after collection and preferably in the field due to the possibility of oxidation altering the ratio of ferrous iron to ferric iron as time passes. Some of the unpreserved samples were initially cloudy and rusty brownish-orange in color from the "suspended" iron in the sample. The samples are now clear, but the plastic bottles which hold the samples are stained a rusty brownish-orange color suggesting that some of the iron adhered to the plastic bottles. As a result, sample results may yield a low bias.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-154186 were performed on a sample from another job and exhibited recoveries outside control limits for Ferrous Iron. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-153549 for Sulfide. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other difficulties were encountered.

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
HF	Field parameter with a holding time of 15 minutes
F	MS or MSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Client Sample ID: MW-3A-121812

Lab Sample ID: 280-37208-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.31				SU	1		Field Sampling	Total/NA
Field Conductivity	6681				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.31				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO)	51		25		ug/L	1		8015B	Total/NA
-C6-C10									
Diesel Range Organics [C10-C28]	0.50		0.25		mg/L	1		8015B	Total/NA
Barium	1100		10		ug/L	1		6010B	Dissolved
Calcium	330000		200		ug/L	1		6010B	Dissolved
Potassium	23000		3000		ug/L	1		6010B	Dissolved
Sodium	990000		1000		ug/L	1		6010B	Dissolved
Strontium	7500		10		ug/L	1		6010B	Dissolved
Bromide	15		1.0		mg/L	5		300.0	Total/NA
Iodide	8.4		1.0		mg/L	1		300.0	Total/NA
Chloride	1200		150		mg/L	50		300.0	Total/NA
Sulfate	180		25		mg/L	5		300.0	Total/NA
Ammonia	3.6		0.10		mg/L	1		350.1	Total/NA
Alkalinity	900		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5000		100		mg/L	1		SM 2540C	Total/NA
Ferrous Iron	0.82	HF	0.20		mg/L	1		3500 FE D_ASP	Dissolved

Client Sample ID: TB-121812

Lab Sample ID: 280-37208-2

No Detections

Client Sample ID: MW-3B-121812

Lab Sample ID: 280-37208-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.66				SU	1		Field Sampling	Total/NA
Field Conductivity	7622				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.33				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.5		1.0		ug/L	1		8260B	Total/NA
Gasoline Range Organics (GRO)	88		25		ug/L	1		8015B	Total/NA
-C6-C10									
Diesel Range Organics [C10-C28]	0.97		0.25		mg/L	1		8015B	Total/NA
Barium	970		10		ug/L	1		6010B	Dissolved
Calcium	150000		200		ug/L	1		6010B	Dissolved
Iron	340		100		ug/L	1		6010B	Dissolved
Potassium	75000		3000		ug/L	1		6010B	Dissolved
Sodium	1400000		1000		ug/L	1		6010B	Dissolved
Strontium	6900		10		ug/L	1		6010B	Dissolved
Bromide	6.3		1.0		mg/L	5		300.0	Total/NA
Iodide	3.4		1.0		mg/L	1		300.0	Total/NA
Chloride	1500		150		mg/L	50		300.0	Total/NA
Fluoride	3.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	72		25		mg/L	5		300.0	Total/NA
Ammonia	5.6		0.20		mg/L	2		350.1	Total/NA
Alkalinity	1300		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	4200		100		mg/L	1		SM 2540C	Total/NA
Ferric Iron	0.34		0.20		mg/L	1		SM 3500	Total/NA

TestAmerica Denver

Method Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Dissolved Metals	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
3500 FE D_ASP	Iron, Ferrous	SM	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 3500	Iron, Ferric	SM	TAL DEN
SM4500 S2 H	Unionized Hydrogen Sulfide	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-37208-1	MW-3A-121812	Water	12/18/12 10:18	12/19/12 10:30
280-37208-2	TB-121812	Water	12/18/12 10:18	12/19/12 10:30
280-37208-3	MW-3B-121812	Water	12/18/12 13:43	12/19/12 10:30

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/21/12 03:33	1
Ethylbenzene	ND		1.0		ug/L			12/21/12 03:33	1
Toluene	ND		1.0		ug/L			12/21/12 03:33	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/21/12 03:33	1
o-Xylene	ND		1.0		ug/L			12/21/12 03:33	1
Xylenes, Total	ND		2.0		ug/L			12/21/12 03:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		70 - 127		12/21/12 03:33	1
Toluene-d8 (Surr)	98		80 - 125		12/21/12 03:33	1
4-Bromofluorobenzene (Surr)	91		78 - 120		12/21/12 03:33	1
Dibromofluoromethane (Surr)	116		77 - 120		12/21/12 03:33	1

Client Sample ID: TB-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/21/12 04:12	1
Ethylbenzene	ND		1.0		ug/L			12/21/12 04:12	1
Toluene	ND		1.0		ug/L			12/21/12 04:12	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/21/12 04:12	1
o-Xylene	ND		1.0		ug/L			12/21/12 04:12	1
Xylenes, Total	ND		2.0		ug/L			12/21/12 04:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 127		12/21/12 04:12	1
Toluene-d8 (Surr)	99		80 - 125		12/21/12 04:12	1
4-Bromofluorobenzene (Surr)	96		78 - 120		12/21/12 04:12	1
Dibromofluoromethane (Surr)	114		77 - 120		12/21/12 04:12	1

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.5		1.0		ug/L			12/22/12 01:24	1
Ethylbenzene	ND		1.0		ug/L			12/22/12 01:24	1
Toluene	ND		1.0		ug/L			12/22/12 01:24	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/22/12 01:24	1
o-Xylene	ND		1.0		ug/L			12/22/12 01:24	1
Xylenes, Total	ND		2.0		ug/L			12/22/12 01:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		70 - 127		12/22/12 01:24	1
Toluene-d8 (Surr)	104		80 - 125		12/22/12 01:24	1
4-Bromofluorobenzene (Surr)	97		78 - 120		12/22/12 01:24	1
Dibromofluoromethane (Surr)	106		77 - 120		12/22/12 01:24	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	51		25		ug/L			12/21/12 19:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	102		82 - 110					12/21/12 19:21	1

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	88		25		ug/L			12/21/12 19:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	103		82 - 110					12/21/12 19:50	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.50		0.25		mg/L		12/20/12 08:50	12/24/12 17:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 115				12/20/12 08:50	12/24/12 17:06	1

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.97		0.25		mg/L		12/20/12 08:50	12/24/12 17:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 115				12/20/12 08:50	12/24/12 17:31	1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	1100		10		ug/L		12/21/12 13:00	12/24/12 13:32	1
Calcium	330000		200		ug/L		12/21/12 13:00	12/24/12 13:32	1
Iron	ND		100		ug/L		12/21/12 13:00	12/24/12 13:32	1
Magnesium	ND		200		ug/L		12/21/12 13:00	12/24/12 13:32	1
Manganese	ND		10		ug/L		12/21/12 13:00	12/24/12 13:32	1
Potassium	23000		3000		ug/L		12/21/12 13:00	12/24/12 13:32	1
Sodium	990000		1000		ug/L		12/21/12 13:00	12/24/12 13:32	1
Strontium	7500		10		ug/L		12/21/12 13:00	12/24/12 13:32	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	970		10		ug/L		12/21/12 13:00	12/24/12 13:42	1
Calcium	150000		200		ug/L		12/21/12 13:00	12/24/12 13:42	1
Iron	340		100		ug/L		12/21/12 13:00	12/24/12 13:42	1
Magnesium	ND		200		ug/L		12/21/12 13:00	12/24/12 13:42	1
Manganese	ND		10		ug/L		12/21/12 13:00	12/24/12 13:42	1
Potassium	75000		3000		ug/L		12/21/12 13:00	12/24/12 13:42	1
Sodium	1400000		1000		ug/L		12/21/12 13:00	12/24/12 13:42	1
Strontium	6900		10		ug/L		12/21/12 13:00	12/24/12 13:42	1

General Chemistry

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	15		1.0		mg/L			12/19/12 20:41	5
Iodide	8.4		1.0		mg/L			01/03/13 19:35	1
Nitrate as N	ND		2.5		mg/L			12/19/12 20:41	5
Chloride	1200		150		mg/L			12/20/12 03:19	50
Nitrite as N	ND		2.5		mg/L			12/19/12 20:41	5
Fluoride	ND		2.5		mg/L			12/19/12 20:41	5
Sulfate	180		25		mg/L			12/19/12 20:41	5
Ammonia	3.6		0.10		mg/L			12/26/12 10:42	1
Sulfide	ND		4.0		mg/L		12/20/12 11:50	12/22/12 14:56	1
Alkalinity	900		5.0		mg/L			12/29/12 15:46	1
Total Dissolved Solids	5000		100		mg/L			12/24/12 09:24	1
Ferric Iron	ND		0.20		mg/L			12/31/12 07:53	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/22/12 14:56	1

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	6.3		1.0		mg/L			12/19/12 20:59	5
Iodide	3.4		1.0		mg/L			01/03/13 21:54	1
Nitrate as N	ND		2.5		mg/L			12/19/12 20:59	5
Chloride	1500		150		mg/L			12/20/12 03:37	50
Nitrite as N	ND		2.5		mg/L			12/19/12 20:59	5
Fluoride	3.3		2.5		mg/L			12/19/12 20:59	5
Sulfate	72		25		mg/L			12/19/12 20:59	5
Ammonia	5.6		0.20		mg/L			12/26/12 11:52	2
Sulfide	ND		4.0		mg/L		12/20/12 11:50	12/22/12 14:56	1
Alkalinity	1300		5.0		mg/L			12/29/12 15:54	1
Total Dissolved Solids	4200		100		mg/L			12/24/12 09:21	1
Ferric Iron	0.34		0.20		mg/L			12/31/12 07:53	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/22/12 14:56	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

General Chemistry - Dissolved

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	0.82	HF	0.20		mg/L			12/29/12 16:22	1

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			12/29/12 16:22	1

Method: Field Sampling - Field Sampling

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.31				SU			12/18/12 10:18	1
Field Conductivity	6681				umhos/cm			12/18/12 10:18	1
Field Temperature	10.31				Degrees C			12/18/12 10:18	1

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.66				SU			12/18/12 13:43	1
Field Conductivity	7622				umhos/cm			12/18/12 13:43	1
Field Temperature	10.33				Degrees C			12/18/12 13:43	1

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-153276/5

Matrix: Water

Analysis Batch: 153276

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/20/12 21:48	1
Ethylbenzene	ND		1.0		ug/L			12/20/12 21:48	1
Toluene	ND		1.0		ug/L			12/20/12 21:48	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/20/12 21:48	1
o-Xylene	ND		1.0		ug/L			12/20/12 21:48	1
Xylenes, Total	ND		2.0		ug/L			12/20/12 21:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 127		12/20/12 21:48	1
Toluene-d8 (Surr)	98		80 - 125		12/20/12 21:48	1
4-Bromofluorobenzene (Surr)	93		78 - 120		12/20/12 21:48	1
Dibromofluoromethane (Surr)	108		77 - 120		12/20/12 21:48	1

Lab Sample ID: LCS 280-153276/4

Matrix: Water

Analysis Batch: 153276

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	5.08		ug/L		102	74 - 135
Ethylbenzene	5.00	4.93		ug/L		99	72 - 120
Toluene	5.00	5.27		ug/L		105	73 - 120
m-Xylene & p-Xylene	10.0	9.66		ug/L		97	74 - 135
o-Xylene	5.00	4.57		ug/L		91	73 - 135
Xylenes, Total	15.0	14.2		ug/L		95	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		70 - 127
Toluene-d8 (Surr)	100		80 - 125
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120

Lab Sample ID: 280-37133-AJ-1 MS

Matrix: Water

Analysis Batch: 153276

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		10.0	9.17		ug/L		92	74 - 135
Ethylbenzene	ND		10.0	8.30		ug/L		83	72 - 120
Toluene	ND		10.0	9.72		ug/L		97	73 - 120
m-Xylene & p-Xylene	ND		20.0	16.5		ug/L		83	74 - 135
o-Xylene	ND		10.0	7.84		ug/L		78	73 - 135
Xylenes, Total	ND		30.0	24.4		ug/L		81	75 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 127
Toluene-d8 (Surr)	95		80 - 125
4-Bromofluorobenzene (Surr)	96		78 - 120

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-37133-AJ-1 MS

Matrix: Water

Analysis Batch: 153276

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	108		77 - 120

Lab Sample ID: 280-37133-AJ-1 MSD

Matrix: Water

Analysis Batch: 153276

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		10.0	9.52		ug/L		95	74 - 135	4	20
Ethylbenzene	ND		10.0	8.66		ug/L		87	72 - 120	4	26
Toluene	ND		10.0	9.77		ug/L		98	73 - 120	1	20
m-Xylene & p-Xylene	ND		20.0	17.2		ug/L		86	74 - 135	4	20
o-Xylene	ND		10.0	8.30		ug/L		83	73 - 135	6	20
Xylenes, Total	ND		30.0	25.5		ug/L		85	75 - 135	5	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 127
Toluene-d8 (Surr)	99		80 - 125
4-Bromofluorobenzene (Surr)	97		78 - 120
Dibromofluoromethane (Surr)	112		77 - 120

Lab Sample ID: MB 280-153485/6

Matrix: Water

Analysis Batch: 153485

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/21/12 21:33	1
Ethylbenzene	ND		1.0		ug/L			12/21/12 21:33	1
Toluene	ND		1.0		ug/L			12/21/12 21:33	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/21/12 21:33	1
o-Xylene	ND		1.0		ug/L			12/21/12 21:33	1
Xylenes, Total	ND		2.0		ug/L			12/21/12 21:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 127		12/21/12 21:33	1
Toluene-d8 (Surr)	92		80 - 125		12/21/12 21:33	1
4-Bromofluorobenzene (Surr)	83		78 - 120		12/21/12 21:33	1
Dibromofluoromethane (Surr)	90		77 - 120		12/21/12 21:33	1

Lab Sample ID: LCS 280-153485/4

Matrix: Water

Analysis Batch: 153485

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	4.87		ug/L		97	74 - 135
Ethylbenzene	5.00	4.80		ug/L		96	72 - 120
Toluene	5.00	4.71		ug/L		94	73 - 120
m-Xylene & p-Xylene	10.0	9.44		ug/L		94	74 - 135

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-153485/4

Matrix: Water

Analysis Batch: 153485

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
o-Xylene	5.00	4.83		ug/L		97	73 - 135
Xylenes, Total	15.0	14.3		ug/L		95	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 127
Toluene-d8 (Surr)	93		80 - 125
4-Bromofluorobenzene (Surr)	83		78 - 120
Dibromofluoromethane (Surr)	89		77 - 120

Lab Sample ID: LCSD 280-153485/5

Matrix: Water

Analysis Batch: 153485

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	5.00	4.88		ug/L		98	74 - 135	0	20
Ethylbenzene	5.00	4.83		ug/L		97	72 - 120	1	26
Toluene	5.00	4.81		ug/L		96	73 - 120	2	20
m-Xylene & p-Xylene	10.0	9.70		ug/L		97	74 - 135	3	20
o-Xylene	5.00	4.77		ug/L		95	73 - 135	1	20
Xylenes, Total	15.0	14.5		ug/L		96	75 - 135	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		70 - 127
Toluene-d8 (Surr)	96		80 - 125
4-Bromofluorobenzene (Surr)	84		78 - 120
Dibromofluoromethane (Surr)	90		77 - 120

Lab Sample ID: 280-37169-I-5 MS

Matrix: Water

Analysis Batch: 153485

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		5.00	5.11		ug/L		102	74 - 135
Ethylbenzene	3.3		5.00	8.73		ug/L		109	72 - 120
Toluene	ND		5.00	4.88		ug/L		98	73 - 120
m-Xylene & p-Xylene	9.2		10.0	20.5		ug/L		113	74 - 135
o-Xylene	ND		5.00	5.95		ug/L		105	73 - 135
Xylenes, Total	9.9		15.0	26.5		ug/L		110	75 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	119		70 - 127
Toluene-d8 (Surr)	104		80 - 125
4-Bromofluorobenzene (Surr)	114		78 - 120
Dibromofluoromethane (Surr)	93		77 - 120

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-37169-I-5 MSD

Matrix: Water

Analysis Batch: 153485

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		5.00	4.97		ug/L		99	74 - 135	3	20
Ethylbenzene	3.3		5.00	8.18		ug/L		98	72 - 120	6	26
Toluene	ND		5.00	4.70		ug/L		94	73 - 120	4	20
m-Xylene & p-Xylene	9.2		10.0	19.0		ug/L		98	74 - 135	8	20
o-Xylene	ND		5.00	5.68		ug/L		99	73 - 135	5	20
Xylenes, Total	9.9		15.0	24.7		ug/L		99	75 - 135	7	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	115		70 - 127								
Toluene-d8 (Surr)	101		80 - 125								
4-Bromofluorobenzene (Surr)	114		78 - 120								
Dibromofluoromethane (Surr)	92		77 - 120								

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-153400/6

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			12/21/12 14:25	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	107		82 - 110					12/21/12 14:25	1

Lab Sample ID: LCS 280-153400/4

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	101	115		ug/L		114	79 - 149		
LCS LCS									
Surrogate	%Recovery	Qualifier	Limits						
a,a,a-Trifluorotoluene	107		82 - 110						

Lab Sample ID: LCSD 280-153400/5

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	101	111		ug/L		110	79 - 149	3	27
LCSD LCSD									
Surrogate	%Recovery	Qualifier	Limits						
a,a,a-Trifluorotoluene	107		82 - 110						

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: 280-37272-R-3 MS

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.		
	Result	Qualifier	Added	Result	Qualifier				Limits		
Gasoline Range Organics (GRO) -C6-C10	ND		101	110		ug/L		109	79 - 149		
Surrogate	MS	MS									
	%Recovery	Qualifier	Limits								
a,a,a-Trifluorotoluene	125	X	82 - 110								

Lab Sample ID: 280-37272-R-3 MSD

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	ND		101	112		ug/L	-	111	79 - 149	2	27
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
a,a,a-Trifluorotoluene	122	X	82 - 110								

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-153111/1-A

Matrix: Water

Analysis Batch: 153759

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 153111

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics [C10-C28]	ND		0.25		mg/L		12/20/12 08:50	12/24/12 15:54	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
o-Terphenyl	78		50 - 115	12/20/12 08:50	12/24/12 15:54	1			

Lab Sample ID: LCS 280-153111/2-A

Matrix: Water

Analysis Batch: 153759

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153111

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Diesel Range Organics [C10-C28]			2.00	1.77		mg/L		88	54 - 115		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	75		50 - 115								

Lab Sample ID: LCSD 280-153111/3-A

Matrix: Water

Analysis Batch: 153759

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 153111

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2.00	2.02		mg/L		101	54 - 115	13	31

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 280-153111/3-A

Matrix: Water

Analysis Batch: 153759

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 153111

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	81		50 - 115

Method: 6010B - Dissolved Metals

Lab Sample ID: MB 280-153240/1-A

Matrix: Water

Analysis Batch: 153695

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 153240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		10		ug/L		12/21/12 13:00	12/24/12 13:28	1
Calcium	ND		200		ug/L		12/21/12 13:00	12/24/12 13:28	1
Iron	ND		100		ug/L		12/21/12 13:00	12/24/12 13:28	1
Magnesium	ND		200		ug/L		12/21/12 13:00	12/24/12 13:28	1
Manganese	ND		10		ug/L		12/21/12 13:00	12/24/12 13:28	1
Potassium	ND		3000		ug/L		12/21/12 13:00	12/24/12 13:28	1
Sodium	ND	^	1000		ug/L		12/21/12 13:00	12/24/12 13:28	1
Strontium	ND		10		ug/L		12/21/12 13:00	12/24/12 13:28	1

Lab Sample ID: LCS 280-153240/2-A

Matrix: Water

Analysis Batch: 153695

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 153240

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	2000	1950		ug/L		98	90 - 112
Calcium	50000	47800		ug/L		96	90 - 111
Iron	1000	945		ug/L		94	89 - 115
Magnesium	50000	48300		ug/L		97	90 - 113
Manganese	500	502		ug/L		100	90 - 110
Potassium	50000	50100		ug/L		100	89 - 114
Sodium	50000	51000		ug/L		102	90 - 115
Strontium	1000	984		ug/L		98	90 - 111

Lab Sample ID: 280-37208-1 MS

Matrix: Water

Analysis Batch: 153695

Client Sample ID: MW-3A-121812

Prep Type: Dissolved

Prep Batch: 153240

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	1100		2000	2970		ug/L		92	85 - 120
Calcium	330000		50000	380000	4	ug/L		107	48 - 153
Iron	ND		1000	876		ug/L		85	52 - 155
Magnesium	ND		50000	41500		ug/L		83	62 - 146
Manganese	ND		500	465		ug/L		93	79 - 121
Potassium	23000		50000	72300		ug/L		99	76 - 132
Sodium	990000		50000	1060000	4	ug/L		139	70 - 203
Strontium	7500		1000	8710	4	ug/L		122	81 - 125

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 6010B - Dissolved Metals (Continued)

Lab Sample ID: 280-37208-1 MSD

Matrix: Water

Analysis Batch: 153695

Client Sample ID: MW-3A-121812

Prep Type: Dissolved

Prep Batch: 153240

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	1100		2000	3000		ug/L		93	85 - 120	1	20
Calcium	330000		50000	379000	4	ug/L		105	48 - 153	0	20
Iron	ND		1000	882		ug/L		86	52 - 155	1	20
Magnesium	ND		50000	41900		ug/L		84	62 - 146	1	20
Manganese	ND		500	469		ug/L		94	79 - 121	1	20
Potassium	23000		50000	72700		ug/L		100	76 - 132	1	20
Sodium	990000		50000	1070000	4	ug/L		163	70 - 203	1	20
Strontium	7500		1000	8810	4	ug/L		132	81 - 125	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-153446/6

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50		mg/L			12/19/12 10:41	1
Nitrite as N	ND		0.50		mg/L			12/19/12 10:41	1

Lab Sample ID: LCS 280-153446/4

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	5.00		mg/L		100	90 - 110
Nitrite as N	5.00	5.10		mg/L		102	90 - 110

Lab Sample ID: LCSD 280-153446/5

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	5.01		mg/L		100	90 - 110	0	10
Nitrite as N	5.00	5.11		mg/L		102	90 - 110	0	10

Lab Sample ID: MRL 280-153446/3 MRL

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	ND		mg/L		128	50 - 150
Nitrite as N	0.200	ND		mg/L		122	50 - 150

Lab Sample ID: 280-37200-I-12 MS

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		5.00	4.54		mg/L		90	80 - 120

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-37200-I-12 MS

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	ND		5.00	5.52		mg/L		110	80 - 120

Lab Sample ID: 280-37200-J-12 MSD

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		5.00	4.37		mg/L		86	80 - 120	4	20
Nitrite as N	ND		5.00	5.37		mg/L		107	80 - 120	3	20

Lab Sample ID: 280-37200-H-12 DU

Matrix: Water

Analysis Batch: 153446

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	ND		ND		mg/L		NC	15
Nitrite as N	ND		ND		mg/L		NC	15

Lab Sample ID: MB 280-153447/6

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20		mg/L			12/19/12 10:41	1
Chloride	ND		3.0		mg/L			12/19/12 10:41	1
Fluoride	ND		0.50		mg/L			12/19/12 10:41	1
Sulfate	ND		5.0		mg/L			12/19/12 10:41	1

Lab Sample ID: LCS 280-153447/4

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	4.98		mg/L		100	90 - 110
Chloride	25.0	25.1		mg/L		100	90 - 110
Fluoride	5.00	5.06		mg/L		101	90 - 110
Sulfate	25.0	24.9		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-153447/5

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	5.00	4.98		mg/L		100	90 - 110	0	10
Chloride	25.0	25.2		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.09		mg/L		102	90 - 110	1	10
Sulfate	25.0	24.8		mg/L		99	90 - 110	0	10

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-153447/3 MRL

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	0.200	0.269		mg/L		135	50 - 150
Chloride	1.00	ND		mg/L		126	50 - 150
Fluoride	0.200	ND		mg/L		131	50 - 150
Sulfate	1.00	ND		mg/L		122	50 - 150

Lab Sample ID: 280-37200-B-14 MS

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	660		500	1180	E	mg/L		105	80 - 120

Lab Sample ID: 280-37200-C-14 MSD

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	660		500	1180	E	mg/L		105	80 - 120	0	20

Lab Sample ID: 280-37200-I-12 MS

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	0.33		5.00	4.76		mg/L		89	80 - 120
Fluoride	ND		5.00	4.51		mg/L		87	80 - 120
Sulfate	48		25.0	70.6	E	mg/L		90	80 - 120

Lab Sample ID: 280-37200-J-12 MSD

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	0.33		5.00	4.58		mg/L		85	80 - 120	4	20
Fluoride	ND		5.00	4.37		mg/L		84	80 - 120	3	20
Sulfate	48		25.0	69.6	E	mg/L		87	80 - 120	1	20

Lab Sample ID: 280-37200-A-14 DU

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	660		656		mg/L		0.01	15

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-37200-H-12 DU

Matrix: Water

Analysis Batch: 153447

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Bromide	0.33		0.254		mg/L		25	15
Fluoride	ND		ND		mg/L		NC	15
Sulfate	48		48.1		mg/L		0.2	15

Lab Sample ID: MB 160-24940/9

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		1.0		mg/L			01/03/13 17:13	1

Lab Sample ID: LCS 160-24940/10

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	4.00	4.15		mg/L		104	90 - 110

Lab Sample ID: 280-37208-1 MS

Matrix: Water

Analysis Batch: 24940

Client Sample ID: MW-3A-121812

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	8.4		4.00	12.0		mg/L		90	90 - 110

Lab Sample ID: 280-37208-1 DU

Matrix: Water

Analysis Batch: 24940

Client Sample ID: MW-3A-121812

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Iodide	8.4		8.59		mg/L		2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-153797/76

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.10		mg/L			12/26/12 10:17	1

Lab Sample ID: LCS 280-153797/74

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.63		mg/L		105	90 - 110

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCSD 280-153797/75

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	2.50	2.64		mg/L		105	90 - 110	0	10

Lab Sample ID: 280-37206-B-10 MS

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	ND		1.00	1.11		mg/L		102	90 - 110		

Lab Sample ID: 280-37206-B-10 MSD

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	ND		1.00	1.11		mg/L		103	90 - 110	0	10

Lab Sample ID: 280-37308-D-1 MS

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.9		1.00	2.96		mg/L		107	90 - 110		

Lab Sample ID: 280-37308-D-1 MSD

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.9		1.00	2.91		mg/L		103	90 - 110	1	10

Method: 3500 FE D_ASP - Iron, Ferrous

Lab Sample ID: MB 280-154186/11

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.20		mg/L			12/29/12 16:22	1

Lab Sample ID: LCS 280-154186/9

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	2.00	1.95		mg/L		98	85 - 113		

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: 3500 FE D_ASP - Iron, Ferrous (Continued)

Lab Sample ID: LCSD 280-154186/10

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	2.00	1.97		mg/L		99	85 - 113	1	10

Lab Sample ID: 280-37250-C-3 MS

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND		2.00	1.47	F	mg/L		73	85 - 113		

Lab Sample ID: 280-37250-C-3 MSD

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND		2.00	1.47	F	mg/L		73	85 - 113	0	10

Lab Sample ID: 280-37250-C-3 DU

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Duplicate

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND		ND		mg/L				NC	10

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-153185/1-A

Matrix: Water

Analysis Batch: 153549

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 153185

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		4.0		mg/L		12/20/12 11:50	12/22/12 14:56	1

Lab Sample ID: LCS 280-153185/2-A

Matrix: Water

Analysis Batch: 153549

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153185

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	20.2	15.2		mg/L		75	48 - 100		

Lab Sample ID: LCSD 280-153185/3-A

Matrix: Water

Analysis Batch: 153549

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 153185

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	20.2	15.0		mg/L		75	48 - 100	1	20

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-154185/33

Matrix: Water

Analysis Batch: 154185

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			12/29/12 14:35	1

Lab Sample ID: LCS 280-154185/31

Matrix: Water

Analysis Batch: 154185

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	205		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-154185/32

Matrix: Water

Analysis Batch: 154185

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	208		mg/L		104	90 - 110	2	10

Lab Sample ID: 280-37206-C-4 DU

Matrix: Water

Analysis Batch: 154185

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	140		153		mg/L		6	10

Lab Sample ID: MB 280-154245/6

Matrix: Water

Analysis Batch: 154245

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			12/29/12 18:21	1

Lab Sample ID: LCS 280-154245/4

Matrix: Water

Analysis Batch: 154245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	212		mg/L		106	90 - 110

Lab Sample ID: LCSD 280-154245/5

Matrix: Water

Analysis Batch: 154245

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	209		mg/L		105	90 - 110	1	10

Lab Sample ID: 280-37208-1 DU

Matrix: Water

Analysis Batch: 154245

Client Sample ID: MW-3A-121812

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	930		935		mg/L		0.4	10

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-153614/1

Matrix: Water

Analysis Batch: 153614

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			12/24/12 09:21	1

Lab Sample ID: LCS 280-153614/2

Matrix: Water

Analysis Batch: 153614

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	495		mg/L		99	86 - 110

Lab Sample ID: LCSD 280-153614/3

Matrix: Water

Analysis Batch: 153614

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	493		mg/L		99	86 - 110	0	20

Lab Sample ID: 280-37211-C-1 DU

Matrix: Water

Analysis Batch: 153614

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	430		424		mg/L		1	10

Method: SM 3500 - Iron, Ferric

Lab Sample ID: MB 280-154213/1

Matrix: Water

Analysis Batch: 154213

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.20		mg/L			12/31/12 07:53	1

Method: SM4500 S2 H - Unionized Hydrogen Sulfide

Lab Sample ID: MB 280-154368/1

Matrix: Water

Analysis Batch: 154368

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/22/12 14:56	1

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

GC/MS VOA

Analysis Batch: 153276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	8260B	
280-37208-2	TB-121812	Total/NA	Water	8260B	
280-37133-AJ-1 MS	Matrix Spike	Total/NA	Water	8260B	
280-37133-AJ-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 280-153276/4	Lab Control Sample	Total/NA	Water	8260B	
MB 280-153276/5	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 153485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37169-I-5 MS	Matrix Spike	Total/NA	Water	8260B	
280-37169-I-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
280-37208-3	MW-3B-121812	Total/NA	Water	8260B	
LCS 280-153485/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 280-153485/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 280-153485/6	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 153400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	8015B	
280-37208-3	MW-3B-121812	Total/NA	Water	8015B	
280-37272-R-3 MS	Matrix Spike	Total/NA	Water	8015B	
280-37272-R-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 280-153400/4	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-153400/5	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-153400/6	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 153111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	3510C	
280-37208-3	MW-3B-121812	Total/NA	Water	3510C	
LCS 280-153111/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-153111/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 280-153111/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 153759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	8015B	153111
280-37208-3	MW-3B-121812	Total/NA	Water	8015B	153111
LCS 280-153111/2-A	Lab Control Sample	Total/NA	Water	8015B	153111
LCSD 280-153111/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	153111
MB 280-153111/1-A	Method Blank	Total/NA	Water	8015B	153111

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Metals

Prep Batch: 153240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Dissolved	Water	3005A	
280-37208-1 MS	MW-3A-121812	Dissolved	Water	3005A	
280-37208-1 MSD	MW-3A-121812	Dissolved	Water	3005A	
280-37208-3	MW-3B-121812	Dissolved	Water	3005A	
LCS 280-153240/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 280-153240/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 153695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Dissolved	Water	6010B	153240
280-37208-1 MS	MW-3A-121812	Dissolved	Water	6010B	153240
280-37208-1 MSD	MW-3A-121812	Dissolved	Water	6010B	153240
280-37208-3	MW-3B-121812	Dissolved	Water	6010B	153240
LCS 280-153240/2-A	Lab Control Sample	Total Recoverable	Water	6010B	153240
MB 280-153240/1-A	Method Blank	Total Recoverable	Water	6010B	153240

General Chemistry

Analysis Batch: 24940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	300.0	
280-37208-1 DU	MW-3A-121812	Total/NA	Water	300.0	
280-37208-1 MS	MW-3A-121812	Total/NA	Water	300.0	
280-37208-3	MW-3B-121812	Total/NA	Water	300.0	
LCS 160-24940/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-24940/9	Method Blank	Total/NA	Water	300.0	

Prep Batch: 153185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	9030B	
280-37208-3	MW-3B-121812	Total/NA	Water	9030B	
LCS 280-153185/2-A	Lab Control Sample	Total/NA	Water	9030B	
LCSD 280-153185/3-A	Lab Control Sample Dup	Total/NA	Water	9030B	
MB 280-153185/1-A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 153446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37200-H-12 DU	Duplicate	Total/NA	Water	300.0	
280-37200-I-12 MS	Matrix Spike	Total/NA	Water	300.0	
280-37200-J-12 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37208-1	MW-3A-121812	Total/NA	Water	300.0	
280-37208-3	MW-3B-121812	Total/NA	Water	300.0	
LCS 280-153446/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-153446/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-153446/6	Method Blank	Total/NA	Water	300.0	
MRL 280-153446/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 153447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37200-A-14 DU	Duplicate	Total/NA	Water	300.0	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

General Chemistry (Continued)

Analysis Batch: 153447 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37200-B-14 MS	Matrix Spike	Total/NA	Water	300.0	
280-37200-C-14 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37200-H-12 DU	Duplicate	Total/NA	Water	300.0	
280-37200-I-12 MS	Matrix Spike	Total/NA	Water	300.0	
280-37200-J-12 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37208-1	MW-3A-121812	Total/NA	Water	300.0	
280-37208-1	MW-3A-121812	Total/NA	Water	300.0	
280-37208-3	MW-3B-121812	Total/NA	Water	300.0	
280-37208-3	MW-3B-121812	Total/NA	Water	300.0	
LCS 280-153447/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-153447/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-153447/6	Method Blank	Total/NA	Water	300.0	
MRL 280-153447/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 153549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	9034	153185
280-37208-3	MW-3B-121812	Total/NA	Water	9034	153185
LCS 280-153185/2-A	Lab Control Sample	Total/NA	Water	9034	153185
LCSD 280-153185/3-A	Lab Control Sample Dup	Total/NA	Water	9034	153185
MB 280-153185/1-A	Method Blank	Total/NA	Water	9034	153185

Analysis Batch: 153614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	SM 2540C	
280-37208-3	MW-3B-121812	Total/NA	Water	SM 2540C	
280-37211-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
LCS 280-153614/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-153614/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-153614/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 153797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37206-B-10 MS	Matrix Spike	Total/NA	Water	350.1	
280-37206-B-10 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	
280-37208-1	MW-3A-121812	Total/NA	Water	350.1	
280-37208-3	MW-3B-121812	Total/NA	Water	350.1	
280-37308-D-1 MS	Matrix Spike	Total/NA	Water	350.1	
280-37308-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	
LCS 280-153797/74	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-153797/75	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 280-153797/76	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 154185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37206-C-4 DU	Duplicate	Total/NA	Water	SM 2320B	
280-37208-1	MW-3A-121812	Total/NA	Water	SM 2320B	
280-37208-3	MW-3B-121812	Total/NA	Water	SM 2320B	
LCS 280-154185/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-154185/32	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-154185/33	Method Blank	Total/NA	Water	SM 2320B	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

General Chemistry (Continued)

Analysis Batch: 154186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Dissolved	Water	3500 FE D_ASP	
280-37208-3	MW-3B-121812	Dissolved	Water	3500 FE D_ASP	
280-37250-C-3 DU	Duplicate	Dissolved	Water	3500 FE D_ASP	
280-37250-C-3 MS	Matrix Spike	Dissolved	Water	3500 FE D_ASP	
280-37250-C-3 MSD	Matrix Spike Duplicate	Dissolved	Water	3500 FE D_ASP	
LCS 280-154186/9	Lab Control Sample	Total/NA	Water	3500 FE D_ASP	
LCSD 280-154186/10	Lab Control Sample Dup	Total/NA	Water	3500 FE D_ASP	
MB 280-154186/11	Method Blank	Total/NA	Water	3500 FE D_ASP	

Analysis Batch: 154213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	SM 3500	
280-37208-3	MW-3B-121812	Total/NA	Water	SM 3500	
MB 280-154213/1	Method Blank	Total/NA	Water	SM 3500	

Analysis Batch: 154245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1 DU	MW-3A-121812	Total/NA	Water	SM 2320B	
LCS 280-154245/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-154245/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-154245/6	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 154368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	SM4500 S2 H	
280-37208-3	MW-3B-121812	Total/NA	Water	SM4500 S2 H	
MB 280-154368/1	Method Blank	Total/NA	Water	SM4500 S2 H	

Field Service / Mobile Lab

Analysis Batch: 153008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-1	MW-3A-121812	Total/NA	Water	Field Sampling	
280-37208-3	MW-3B-121812	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Client Sample ID: MW-3A-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153276	12/21/12 03:33	BB	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	153400	12/21/12 19:21	TEM	TAL DEN
Total/NA	Prep	3510C			1016.6 mL	1000 uL	153111	12/20/12 08:50	EEG	TAL DEN
Total/NA	Analysis	8015B		1			153759	12/24/12 17:06	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	153240	12/21/12 13:00	RC	TAL DEN
Dissolved	Analysis	6010B		1			153695	12/24/12 13:32	LT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	24940	01/03/13 19:35	JB	TAL SL
Total/NA	Analysis	300.0		5			153446	12/19/12 20:41	TLP	TAL DEN
Total/NA	Analysis	300.0		5			153447	12/19/12 20:41	TLP	TAL DEN
Total/NA	Analysis	300.0		50			153447	12/20/12 03:19	TLP	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	153185	12/20/12 11:50	SG	TAL DEN
Total/NA	Analysis	9034		1			153549	12/22/12 14:56	SG	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	153614	12/24/12 09:24	MRM	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	153797	12/26/12 10:42	BMG	TAL DEN
Total/NA	Analysis	SM 2320B		1			154185	12/29/12 15:46	DA	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	154186	12/29/12 16:22	DA	TAL DEN
Total/NA	Analysis	SM 3500		1			154213	12/31/12 07:53	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			154368	12/22/12 14:56	DFB	TAL DEN
Total/NA	Analysis	Field Sampling		1			153008	12/18/12 10:18	FS	TAL DEN

Client Sample ID: TB-121812

Date Collected: 12/18/12 10:18

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153276	12/21/12 04:12	BB	TAL DEN

Client Sample ID: MW-3B-121812

Date Collected: 12/18/12 13:43

Date Received: 12/19/12 10:30

Lab Sample ID: 280-37208-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153485	12/22/12 01:24	BB	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	153400	12/21/12 19:50	TEM	TAL DEN
Total/NA	Prep	3510C			1003.5 mL	1000 uL	153111	12/20/12 08:50	EEG	TAL DEN
Total/NA	Analysis	8015B		1			153759	12/24/12 17:31	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	153240	12/21/12 13:00	RC	TAL DEN
Dissolved	Analysis	6010B		1			153695	12/24/12 13:42	LT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	24940	01/03/13 21:54	JB	TAL SL
Total/NA	Analysis	300.0		5			153446	12/19/12 20:59	TLP	TAL DEN
Total/NA	Analysis	300.0		5			153447	12/19/12 20:59	TLP	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37208-1

Client Sample ID: MW-3B-121812

Lab Sample ID: 280-37208-3

Date Collected: 12/18/12 13:43

Matrix: Water

Date Received: 12/19/12 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50			153447	12/20/12 03:37	TLP	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	153185	12/20/12 11:50	SG	TAL DEN
Total/NA	Analysis	9034		1			153549	12/22/12 14:56	SG	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	153614	12/24/12 09:21	MRM	TAL DEN
Total/NA	Analysis	350.1		2	10 mL	10 mL	153797	12/26/12 11:52	BMG	TAL DEN
Total/NA	Analysis	SM 2320B		1			154185	12/29/12 15:54	DA	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	154186	12/29/12 16:22	DA	TAL DEN
Total/NA	Analysis	SM 3500		1			154213	12/31/12 07:53	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			154368	12/22/12 14:56	DFB	TAL DEN
Total/NA	Analysis	Field Sampling		1			153008	12/18/12 13:43	FS	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-37208-1

Login Number: 37208

List Source: TestAmerica Denver

List Number: 1

Creator: Bindel, Aaron M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-37208-1

Login Number: 37208

List Number: 1

Creator: Daniels, Brian

List Source: TestAmerica St. Louis

List Creation: 12/21/12 02:00 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-37250-1

Client Project/Site: Garfield County

For:

Tetra Tech GEO

363 Centennial Parkway

Suite 210

Louisville, Colorado 80027

Attn: David Bohmann



Authorized for release by:

1/7/2013 8:45:12 AM

DiLea Griego

Project Manager I

dilea.griego@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Job ID: 280-37250-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Tetra Tech GEO

Project: Garfield County

Report Number: 280-37250-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/20/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.4 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - METHOD 8260B

No difficulties were encountered.

GAS RANGE ORGANICS - METHOD 8015B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-153400 were performed on a sample from another job and exhibited surrogate recoveries outside control limits for a,a,a-Trifluorotoluene due to matrix interference. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

DIESEL RANGE ORGANICS - METHOD 8015B

No other difficulties were encountered.

DISSOLVED METALS - METHOD 6010B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-153695 were performed on a sample from another job and the MSD exhibited recoveries outside control limits for Strontium. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Continuing Calibration Verification (CCV) standards associated with samples in analysis batch 280-153695 exhibited %D values out of range, biased high, for Sodium. This is an indicator that data may be biased high. As no detectable concentrations of Sodium are present in the associated samples, corrective action is deemed unnecessary.

No other difficulties were encountered.

GENERAL CHEMISTRY

Samples MW-2A-121912 (280-37250-2)[10X], MW-2A-121912 (280-37250-2)[2X], MW-2A-121912 (280-37250-2)[50X], CURRIE WELL-121912 (280-37250-3)[2X] and CURRIE WELL-121912 (280-37250-3)[20X] required dilution prior to analysis for Bromide, Chloride, Fluoride and Sulfate due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

Samples MW-2A-121912 (280-37250-2)[2X] and CURRIE WELL-121912 (280-37250-3)[2X] required dilution prior to analysis for Nitrate as N and Nitrite as N due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-153524 were performed on a sample from

Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Job ID: 280-37250-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

another job and exhibited recoveries outside control limits for Nitrite as N. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-154186 were performed on CURRIE WELL-121912 (280-37250-3) and exhibited recoveries outside control limits for Ferrous Iron. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-153668 were performed on a sample from another job and exhibited recoveries outside control limits for Sulfide. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

General Chemistry

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
E	Result exceeded calibration range.
HF	Field parameter with a holding time of 15 minutes

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Client Sample ID: TB-121912

Lab Sample ID: 280-37250-1

No Detections

Client Sample ID: MW-2A-121912

Lab Sample ID: 280-37250-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil	Fac	D	Method	Prep Type
Field pH	8.49				SU	1			Field Sampling	Total/NA
Field Conductivity	2673				umhos/cm	1			Field Sampling	Total/NA
Field Temperature	9.01				Degrees C	1			Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Barium	100		10		ug/L	1			6010B	Dissolved
Calcium	35000		200		ug/L	1			6010B	Dissolved
Magnesium	1100		200		ug/L	1			6010B	Dissolved
Manganese	37		10		ug/L	1			6010B	Dissolved
Sodium	690000		1000		ug/L	1			6010B	Dissolved
Strontium	1200		10		ug/L	1			6010B	Dissolved
Bromide	4.5		0.40		mg/L	2			300.0	Total/NA
Iodide	1.9		1.0		mg/L	1			300.0	Total/NA
Chloride	950		150		mg/L	50			300.0	Total/NA
Fluoride	4.7		1.0		mg/L	2			300.0	Total/NA
Sulfate	270		50		mg/L	10			300.0	Total/NA
Sulfide	6.6		4.0		mg/L	1			9034	Total/NA
Alkalinity	150		5.0		mg/L	1			SM 2320B	Total/NA
Total Dissolved Solids	2100		20		mg/L	1			SM 2540C	Total/NA

Client Sample ID: CURRIE WELL-121912

Lab Sample ID: 280-37250-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil	Fac	D	Method	Prep Type
Field pH	8.02				SU	1			Field Sampling	Total/NA
Field Conductivity	2215				umhos/cm	1			Field Sampling	Total/NA
Field Temperature	9.53				Degrees C	1			Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Benzene	1.4		1.0		ug/L	1			8260B	Total/NA
Barium	70		10		ug/L	1			6010B	Dissolved
Calcium	53000		200		ug/L	1			6010B	Dissolved
Magnesium	2400		200		ug/L	1			6010B	Dissolved
Manganese	28		10		ug/L	1			6010B	Dissolved
Sodium	760000		1000		ug/L	1			6010B	Dissolved
Strontium	1800		10		ug/L	1			6010B	Dissolved
Bromide	2.2		0.40		mg/L	2			300.0	Total/NA
Chloride	450		60		mg/L	20			300.0	Total/NA
Fluoride	1.4		1.0		mg/L	2			300.0	Total/NA
Sulfate	560		100		mg/L	20			300.0	Total/NA
Ammonia	0.78		0.10		mg/L	1			350.1	Total/NA
Sulfide	8.8		4.0		mg/L	1			9034	Total/NA
Alkalinity	410		5.0		mg/L	1			SM 2320B	Total/NA
Total Dissolved Solids	1900		20		mg/L	1			SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil	Fac	D	Method	Prep Type
Un-ionized Hydrogen Sulfide	1.0		1.0		mg/L	1			SM4500 S2 H	Total/NA

TestAmerica Denver

Method Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Dissolved Metals	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
3500 FE D_ASP	Iron, Ferrous	SM	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 3500	Iron, Ferric	SM	TAL DEN
SM4500 S2 H	Unionized Hydrogen Sulfide	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-37250-1	TB-121912	Water	12/19/12 10:39	12/20/12 11:30
280-37250-2	MW-2A-121912	Water	12/19/12 10:39	12/20/12 11:30
280-37250-3	CURRIE WELL-121912	Water	12/19/12 14:55	12/20/12 11:30

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/24/12 20:19	1
Ethylbenzene	ND		1.0		ug/L			12/24/12 20:19	1
Toluene	ND		1.0		ug/L			12/24/12 20:19	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/24/12 20:19	1
o-Xylene	ND		1.0		ug/L			12/24/12 20:19	1
Xylenes, Total	ND		2.0		ug/L			12/24/12 20:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 127		12/24/12 20:19	1
Toluene-d8 (Surr)	100		80 - 125		12/24/12 20:19	1
4-Bromofluorobenzene (Surr)	101		78 - 120		12/24/12 20:19	1
Dibromofluoromethane (Surr)	104		77 - 120		12/24/12 20:19	1

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/24/12 20:38	1
Ethylbenzene	ND		1.0		ug/L			12/24/12 20:38	1
Toluene	ND		1.0		ug/L			12/24/12 20:38	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/24/12 20:38	1
o-Xylene	ND		1.0		ug/L			12/24/12 20:38	1
Xylenes, Total	ND		2.0		ug/L			12/24/12 20:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		70 - 127		12/24/12 20:38	1
Toluene-d8 (Surr)	96		80 - 125		12/24/12 20:38	1
4-Bromofluorobenzene (Surr)	102		78 - 120		12/24/12 20:38	1
Dibromofluoromethane (Surr)	107		77 - 120		12/24/12 20:38	1

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.4		1.0		ug/L			12/24/12 20:58	1
Ethylbenzene	ND		1.0		ug/L			12/24/12 20:58	1
Toluene	ND		1.0		ug/L			12/24/12 20:58	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/24/12 20:58	1
o-Xylene	ND		1.0		ug/L			12/24/12 20:58	1
Xylenes, Total	ND		2.0		ug/L			12/24/12 20:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 127		12/24/12 20:58	1
Toluene-d8 (Surr)	99		80 - 125		12/24/12 20:58	1
4-Bromofluorobenzene (Surr)	100		78 - 120		12/24/12 20:58	1
Dibromofluoromethane (Surr)	107		77 - 120		12/24/12 20:58	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			12/21/12 20:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		82 - 110					12/21/12 20:20	1

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			12/21/12 20:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	102		82 - 110					12/21/12 20:49	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.24		mg/L		12/24/12 10:40	12/27/12 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 115				12/24/12 10:40	12/27/12 21:47	1

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.24		mg/L		12/24/12 10:40	12/27/12 22:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	108		50 - 115				12/24/12 10:40	12/27/12 22:16	1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	100		10		ug/L		12/21/12 13:00	12/24/12 13:46	1
Calcium	35000		200		ug/L		12/21/12 13:00	12/24/12 13:46	1
Iron	ND		100		ug/L		12/21/12 13:00	12/24/12 13:46	1
Magnesium	1100		200		ug/L		12/21/12 13:00	12/24/12 13:46	1
Manganese	37		10		ug/L		12/21/12 13:00	12/24/12 13:46	1
Potassium	ND		3000		ug/L		12/21/12 13:00	12/24/12 13:46	1
Sodium	690000		1000		ug/L		12/21/12 13:00	12/24/12 13:46	1
Strontium	1200		10		ug/L		12/21/12 13:00	12/24/12 13:46	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	70		10		ug/L		12/21/12 13:00	12/24/12 13:48	1
Calcium	53000		200		ug/L		12/21/12 13:00	12/24/12 13:48	1
Iron	ND		100		ug/L		12/21/12 13:00	12/24/12 13:48	1
Magnesium	2400		200		ug/L		12/21/12 13:00	12/24/12 13:48	1
Manganese	28		10		ug/L		12/21/12 13:00	12/24/12 13:48	1
Potassium	ND		3000		ug/L		12/21/12 13:00	12/24/12 13:48	1
Sodium	760000		1000		ug/L		12/21/12 13:00	12/24/12 13:48	1
Strontium	1800		10		ug/L		12/21/12 13:00	12/24/12 13:48	1

General Chemistry

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	4.5		0.40		mg/L			12/20/12 19:39	2
Iodide	1.9		1.0		mg/L			01/03/13 22:29	1
Nitrate as N	ND		1.0		mg/L			12/20/12 19:39	2
Chloride	950		150		mg/L			12/21/12 03:43	50
Nitrite as N	ND		1.0		mg/L			12/20/12 19:39	2
Fluoride	4.7		1.0		mg/L			12/20/12 19:39	2
Sulfate	270		50		mg/L			12/21/12 03:26	10
Ammonia	ND		0.10		mg/L			12/26/12 10:49	1
Sulfide	6.6		4.0		mg/L		12/24/12 08:16	12/24/12 08:16	1
Alkalinity	150		5.0		mg/L			01/02/13 11:43	1
Total Dissolved Solids	2100		20		mg/L			12/21/12 10:16	1
Ferric Iron	ND		0.20		mg/L			12/31/12 08:13	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/24/12 08:16	1

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	2.2		0.40		mg/L			12/20/12 19:56	2
Iodide	ND		1.0		mg/L			01/03/13 23:04	1
Nitrate as N	ND		1.0		mg/L			12/20/12 19:56	2
Chloride	450		60		mg/L			12/21/12 04:00	20
Nitrite as N	ND		1.0		mg/L			12/20/12 19:56	2
Fluoride	1.4		1.0		mg/L			12/20/12 19:56	2
Sulfate	560		100		mg/L			12/21/12 04:00	20
Ammonia	0.78		0.10		mg/L			12/26/12 10:47	1
Sulfide	8.8		4.0		mg/L		12/24/12 08:16	12/24/12 08:16	1
Alkalinity	410		5.0		mg/L			12/31/12 15:56	1
Total Dissolved Solids	1900		20		mg/L			12/21/12 10:16	1
Ferric Iron	ND		0.20		mg/L			12/31/12 08:13	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	1.0		1.0		mg/L			12/24/12 08:16	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

General Chemistry - Dissolved

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			12/29/12 16:22	1

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			12/29/12 16:22	1

Method: Field Sampling - Field Sampling

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.49				SU			12/19/12 10:39	1
Field Conductivity	2673				umhos/cm			12/19/12 10:39	1
Field Temperature	9.01				Degrees C			12/19/12 10:39	1

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.02				SU			12/19/12 14:55	1
Field Conductivity	2215				umhos/cm			12/19/12 14:55	1
Field Temperature	9.53				Degrees C			12/19/12 14:55	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-153658/5

Matrix: Water

Analysis Batch: 153658

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/24/12 13:21	1
Ethylbenzene	ND		1.0		ug/L			12/24/12 13:21	1
Toluene	ND		1.0		ug/L			12/24/12 13:21	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/24/12 13:21	1
o-Xylene	ND		1.0		ug/L			12/24/12 13:21	1
Xylenes, Total	ND		2.0		ug/L			12/24/12 13:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 127		12/24/12 13:21	1
Toluene-d8 (Surr)	97		80 - 125		12/24/12 13:21	1
4-Bromofluorobenzene (Surr)	99		78 - 120		12/24/12 13:21	1
Dibromofluoromethane (Surr)	98		77 - 120		12/24/12 13:21	1

Lab Sample ID: LCS 280-153658/4

Matrix: Water

Analysis Batch: 153658

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	4.36		ug/L		87	74 - 135
Ethylbenzene	5.00	4.34		ug/L		87	72 - 120
Toluene	5.00	4.43		ug/L		89	73 - 120
m-Xylene & p-Xylene	10.0	8.83		ug/L		88	74 - 135
o-Xylene	5.00	4.28		ug/L		86	73 - 135
Xylenes, Total	15.0	13.1		ug/L		87	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 127
Toluene-d8 (Surr)	104		80 - 125
4-Bromofluorobenzene (Surr)	105		78 - 120
Dibromofluoromethane (Surr)	102		77 - 120

Lab Sample ID: 280-37234-P-1 MS

Matrix: Water

Analysis Batch: 153658

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		5.00	4.21		ug/L		84	74 - 135
Ethylbenzene	ND		5.00	4.18		ug/L		84	72 - 120
Toluene	ND		5.00	4.36		ug/L		87	73 - 120
m-Xylene & p-Xylene	ND		10.0	8.71		ug/L		87	74 - 135
o-Xylene	ND		5.00	3.99		ug/L		80	73 - 135
Xylenes, Total	ND		15.0	12.7		ug/L		85	75 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		70 - 127
Toluene-d8 (Surr)	99		80 - 125
4-Bromofluorobenzene (Surr)	98		78 - 120

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-37234-P-1 MS

Matrix: Water

Analysis Batch: 153658

Client Sample ID: Matrix Spike

Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	97		77 - 120

Lab Sample ID: 280-37234-P-1 MSD

Matrix: Water

Analysis Batch: 153658

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		5.00	4.04		ug/L		81	74 - 135	4	20
Ethylbenzene	ND		5.00	4.09		ug/L		82	72 - 120	2	26
Toluene	ND		5.00	4.39		ug/L		88	73 - 120	1	20
m-Xylene & p-Xylene	ND		10.0	8.14		ug/L		81	74 - 135	7	20
o-Xylene	ND		5.00	3.87		ug/L		77	73 - 135	3	20
Xylenes, Total	ND		15.0	12.0		ug/L		80	75 - 135	6	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		70 - 127
Toluene-d8 (Surr)	98		80 - 125
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	99		77 - 120

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-153400/6

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			12/21/12 14:25	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
a,a,a-Trifluorotoluene	107		82 - 110		12/21/12 14:25	1			

Lab Sample ID: LCS 280-153400/4

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	101	115		ug/L		114	79 - 149

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
a,a,a-Trifluorotoluene	107		82 - 110

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCSD 280-153400/5

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline Range Organics (GRO) -C6-C10			101	111		ug/L		110	79 - 149	3	27
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
a,a,a-Trifluorotoluene	107		82 - 110								

Lab Sample ID: 280-37272-R-3 MS

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline Range Organics (GRO) -C6-C10	ND		101	110		ug/L		109	79 - 149		
Surrogate	MS %Recovery	MS Qualifier	Limits								
a,a,a-Trifluorotoluene	125	X	82 - 110								

Lab Sample ID: 280-37272-R-3 MSD

Matrix: Water

Analysis Batch: 153400

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline Range Organics (GRO) -C6-C10	ND		101	112		ug/L		111	79 - 149	2	27
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
a,a,a-Trifluorotoluene	122	X	82 - 110								

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-153610/1-A

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 153610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.25		mg/L		12/24/12 10:40	12/27/12 20:49	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	104		50 - 115				12/24/12 10:40	12/27/12 20:49	1

Lab Sample ID: LCS 280-153610/2-A

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Diesel Range Organics [C10-C28]	2.00	2.00		mg/L		100	54 - 115		

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 280-153610/2-A

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153610

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	105		50 - 115

Lab Sample ID: 280-37299-D-3-A MSD

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 153610

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	ND		2.33	1.92		mg/L		77	50 - 115	9	31
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
o-Terphenyl	78		50 - 115								

Lab Sample ID: 280-37299-O-3-A MS

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 153610

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	ND		2.13	1.76		mg/L		77	50 - 115
Surrogate	MS %Recovery	MS Qualifier	Limits						
o-Terphenyl	80		50 - 115						

Method: 6010B - Dissolved Metals

Lab Sample ID: MB 280-153240/1-A

Matrix: Water

Analysis Batch: 153695

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 153240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		10		ug/L		12/21/12 13:00	12/24/12 13:28	1
Calcium	ND		200		ug/L		12/21/12 13:00	12/24/12 13:28	1
Iron	ND		100		ug/L		12/21/12 13:00	12/24/12 13:28	1
Magnesium	ND		200		ug/L		12/21/12 13:00	12/24/12 13:28	1
Manganese	ND		10		ug/L		12/21/12 13:00	12/24/12 13:28	1
Potassium	ND		3000		ug/L		12/21/12 13:00	12/24/12 13:28	1
Sodium	ND	^	1000		ug/L		12/21/12 13:00	12/24/12 13:28	1
Strontium	ND		10		ug/L		12/21/12 13:00	12/24/12 13:28	1

Lab Sample ID: LCS 280-153240/2-A

Matrix: Water

Analysis Batch: 153695

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 153240

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	2000	1950		ug/L		98	90 - 112
Calcium	50000	47800		ug/L		96	90 - 111
Iron	1000	945		ug/L		94	89 - 115
Magnesium	50000	48300		ug/L		97	90 - 113

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 6010B - Dissolved Metals (Continued)

Lab Sample ID: LCS 280-153240/2-A

Matrix: Water

Analysis Batch: 153695

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 153240

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	500	502		ug/L		100	90 - 110
Potassium	50000	50100		ug/L		100	89 - 114
Sodium	50000	51000		ug/L		102	90 - 115
Strontium	1000	984		ug/L		98	90 - 111

Lab Sample ID: 280-37208-G-1-B MS

Matrix: Water

Analysis Batch: 153695

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 153240

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	1100		2000	2970		ug/L		92	85 - 120
Calcium	330000		50000	380000	4	ug/L		107	48 - 153
Iron	ND		1000	876		ug/L		85	52 - 155
Magnesium	ND		50000	41500		ug/L		83	62 - 146
Manganese	ND		500	465		ug/L		93	79 - 121
Potassium	23000		50000	72300		ug/L		99	76 - 132
Sodium	990000		50000	1060000	4	ug/L		139	70 - 203
Strontium	7500		1000	8710	4	ug/L		122	81 - 125

Lab Sample ID: 280-37208-G-1-C MSD

Matrix: Water

Analysis Batch: 153695

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 153240

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	1100		2000	3000		ug/L		93	85 - 120	1	20
Calcium	330000		50000	379000	4	ug/L		105	48 - 153	0	20
Iron	ND		1000	882		ug/L		86	52 - 155	1	20
Magnesium	ND		50000	41900		ug/L		84	62 - 146	1	20
Manganese	ND		500	469		ug/L		94	79 - 121	1	20
Potassium	23000		50000	72700		ug/L		100	76 - 132	1	20
Sodium	990000		50000	1070000	4	ug/L		163	70 - 203	1	20
Strontium	7500		1000	8810	4	ug/L		132	81 - 125	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-153524/6

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50		mg/L			12/20/12 11:05	1
Nitrite as N	ND		0.50		mg/L			12/20/12 11:05	1

Lab Sample ID: LCS 280-153524/4

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	4.97		mg/L		99	90 - 110

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-153524/4

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	5.00	5.15		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-153524/5

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Nitrate as N	5.00	4.98		mg/L		100	90 - 110	0	10
Nitrite as N	5.00	5.16		mg/L		103	90 - 110	0	10

Lab Sample ID: MRL 280-153524/14 MRL

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	ND		mg/L		93	50 - 150
Nitrite as N	0.500	0.504		mg/L		101	50 - 150

Lab Sample ID: 280-37248-A-2 MS

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		5.00	5.01		mg/L		100	80 - 120
Nitrite as N	ND		5.00	6.23	F	mg/L		125	80 - 120

Lab Sample ID: 280-37248-A-2 MSD

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Nitrate as N	ND		5.00	5.04		mg/L		101	80 - 120	0	20
Nitrite as N	ND		5.00	6.26	F	mg/L		125	80 - 120	1	20

Lab Sample ID: 280-37248-A-2 DU

Matrix: Water

Analysis Batch: 153524

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nitrate as N	ND		ND		mg/L		NC	15
Nitrite as N	ND		ND		mg/L		NC	15

Lab Sample ID: MB 280-153525/6

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20		mg/L			12/20/12 11:05	1
Chloride	ND		3.0		mg/L			12/20/12 11:05	1
Fluoride	ND		0.50		mg/L			12/20/12 11:05	1

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-153525/6

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0		mg/L			12/20/12 11:05	1

Lab Sample ID: LCS 280-153525/4

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	4.94		mg/L		99	90 - 110
Chloride	25.0	25.8		mg/L		103	90 - 110
Fluoride	5.00	5.38		mg/L		108	90 - 110
Sulfate	25.0	25.5		mg/L		102	90 - 110

Lab Sample ID: LCSD 280-153525/5

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	5.00	4.94		mg/L		99	90 - 110	0	10
Chloride	25.0	25.4		mg/L		102	90 - 110	2	10
Fluoride	5.00	5.26		mg/L		105	90 - 110	2	10
Sulfate	25.0	25.5		mg/L		102	90 - 110	0	10

Lab Sample ID: MRL 280-153525/3 MRL

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	0.200	0.225		mg/L		113	50 - 150
Chloride	1.00	ND		mg/L		100	50 - 150
Fluoride	0.200	ND		mg/L		103	50 - 150
Sulfate	1.00	ND		mg/L		105	50 - 150

Lab Sample ID: 280-37248-A-2 MS

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	0.21		5.00	5.18		mg/L		99	80 - 120
Fluoride	ND		5.00	5.02		mg/L		95	80 - 120
Sulfate	32		25.0	57.4	E	mg/L		100	80 - 120

Lab Sample ID: 280-37248-A-2 MS

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	240		250	498		mg/L		102	80 - 120

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-37248-A-2 MSD

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	0.21		5.00	5.23		mg/L		100	80 - 120	1	20
Fluoride	ND		5.00	5.05		mg/L		96	80 - 120	0	20
Sulfate	32		25.0	57.4	E	mg/L		100	80 - 120	0	20

Lab Sample ID: 280-37248-A-2 MSD

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	240		250	500		mg/L		102	80 - 120	0	20

Lab Sample ID: 280-37248-A-2 DU

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bromide	0.21		0.218		mg/L		2	15
Fluoride	ND		ND		mg/L		NC	15
Sulfate	32		32.4		mg/L		0.2	15

Lab Sample ID: 280-37248-A-2 DU

Matrix: Water

Analysis Batch: 153525

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	240		244		mg/L		0.2	15

Lab Sample ID: MB 160-24940/9

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		1.0		mg/L			01/03/13 17:13	1

Lab Sample ID: LCS 160-24940/10

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	4.00	4.15		mg/L		104	90 - 110

Lab Sample ID: 280-37208-F-1 MS

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	8.4		4.00	12.0		mg/L		90	90 - 110

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-37208-F-1 DU

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Iodide	8.4		8.59		mg/L		2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-153797/76

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.10		mg/L			12/26/12 10:17	1

Lab Sample ID: LCS 280-153797/74

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.63		mg/L		105	90 - 110

Lab Sample ID: LCSD 280-153797/75

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia	2.50	2.64		mg/L		105	90 - 110	0	10

Lab Sample ID: 280-37206-B-10 MS

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	ND		1.00	1.11		mg/L		102	90 - 110

Lab Sample ID: 280-37206-B-10 MSD

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia	ND		1.00	1.11		mg/L		103	90 - 110	0	10

Method: 3500 FE D_ASP - Iron, Ferrous

Lab Sample ID: MB 280-154186/11

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.20		mg/L			12/29/12 16:22	1

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 3500 FE D_ASP - Iron, Ferrous (Continued)

Lab Sample ID: LCS 280-154186/9

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	2.00	1.95		mg/L		98	85 - 113

Lab Sample ID: LCSD 280-154186/10

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	2.00	1.97		mg/L		99	85 - 113	1	10

Lab Sample ID: 280-37250-3 MS

Matrix: Water

Analysis Batch: 154186

Client Sample ID: CURRIE WELL-121912

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	ND	HF	2.00	1.47	F	mg/L		73	85 - 113

Lab Sample ID: 280-37250-3 MSD

Matrix: Water

Analysis Batch: 154186

Client Sample ID: CURRIE WELL-121912

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND	HF	2.00	1.47	F	mg/L		73	85 - 113	0	10

Lab Sample ID: 280-37250-3 DU

Matrix: Water

Analysis Batch: 154186

Client Sample ID: CURRIE WELL-121912

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND	HF		ND		mg/L				NC	10

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-153589/1-A

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 153589

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		4.0		mg/L		12/24/12 08:16	12/24/12 08:16	1

Lab Sample ID: LCS 280-153589/2-A

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	18.8	14.6		mg/L		77	48 - 100

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCSD 280-153589/3-A

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	18.8	15.4		mg/L		82	48 - 100	5	20

Lab Sample ID: 280-37252-K-1-A MS

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND		18.8	7.04	F	mg/L		37	48 - 100		

Lab Sample ID: 280-37252-L-1-A MSD

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND		18.8	8.32	F	mg/L		44	48 - 100	17	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-154373/6

Matrix: Water

Analysis Batch: 154373

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			12/31/12 14:08	1

Lab Sample ID: LCS 280-154373/4

Matrix: Water

Analysis Batch: 154373

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	206		mg/L		103	90 - 110		

Lab Sample ID: LCSD 280-154373/5

Matrix: Water

Analysis Batch: 154373

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	205		mg/L		103	90 - 110	0	10

Lab Sample ID: 280-37200-C-14 DU

Matrix: Water

Analysis Batch: 154373

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	380		386		mg/L		0.8	10

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-154393/6

Matrix: Water

Analysis Batch: 154393

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			01/02/13 11:38	1

Lab Sample ID: LCS 280-154393/4

Matrix: Water

Analysis Batch: 154393

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	208		mg/L		104	90 - 110

Lab Sample ID: LCSD 280-154393/5

Matrix: Water

Analysis Batch: 154393

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	207		mg/L		103	90 - 110	1	10

Lab Sample ID: 280-37250-2 DU

Matrix: Water

Analysis Batch: 154393

Client Sample ID: MW-2A-121912

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	150		151		mg/L		0.8	10

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-153365/1

Matrix: Water

Analysis Batch: 153365

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			12/21/12 10:16	1

Lab Sample ID: LCS 280-153365/2

Matrix: Water

Analysis Batch: 153365

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	491		mg/L		98	86 - 110

Lab Sample ID: LCSD 280-153365/3

Matrix: Water

Analysis Batch: 153365

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	492		mg/L		98	86 - 110	0	20

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 280-37193-B-2 DU

Matrix: Water

Analysis Batch: 153365

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	84		81.0		mg/L		4	10

Method: SM 3500 - Iron, Ferric

Lab Sample ID: MB 280-154216/1

Matrix: Water

Analysis Batch: 154216

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.20		mg/L			12/31/12 08:13	1

Method: SM4500 S2 H - Unionized Hydrogen Sulfide

Lab Sample ID: MB 280-154368/1

Matrix: Water

Analysis Batch: 154368

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/22/12 14:56	1

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

GC/MS VOA

Analysis Batch: 153658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37234-P-1 MS	Matrix Spike	Total/NA	Water	8260B	
280-37234-P-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
280-37250-1	TB-121912	Total/NA	Water	8260B	
280-37250-2	MW-2A-121912	Total/NA	Water	8260B	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	8260B	
LCS 280-153658/4	Lab Control Sample	Total/NA	Water	8260B	
MB 280-153658/5	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 153400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	8015B	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	8015B	
280-37272-R-3 MS	Matrix Spike	Total/NA	Water	8015B	
280-37272-R-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 280-153400/4	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-153400/5	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-153400/6	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 153610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	3510C	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	3510C	
280-37299-D-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	
280-37299-O-3-A MS	Matrix Spike	Total/NA	Water	3510C	
LCS 280-153610/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 280-153610/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 153902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	8015B	153610
280-37250-3	CURRIE WELL-121912	Total/NA	Water	8015B	153610
280-37299-D-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	153610
280-37299-O-3-A MS	Matrix Spike	Total/NA	Water	8015B	153610
LCS 280-153610/2-A	Lab Control Sample	Total/NA	Water	8015B	153610
MB 280-153610/1-A	Method Blank	Total/NA	Water	8015B	153610

Metals

Prep Batch: 153240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-G-1-B MS	Matrix Spike	Dissolved	Water	3005A	
280-37208-G-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	
280-37250-2	MW-2A-121912	Dissolved	Water	3005A	
280-37250-3	CURRIE WELL-121912	Dissolved	Water	3005A	
LCS 280-153240/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 280-153240/1-A	Method Blank	Total Recoverable	Water	3005A	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Metals (Continued)

Analysis Batch: 153695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-G-1-B MS	Matrix Spike	Dissolved	Water	6010B	153240
280-37208-G-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	153240
280-37250-2	MW-2A-121912	Dissolved	Water	6010B	153240
280-37250-3	CURRIE WELL-121912	Dissolved	Water	6010B	153240
LCS 280-153240/2-A	Lab Control Sample	Total Recoverable	Water	6010B	153240
MB 280-153240/1-A	Method Blank	Total Recoverable	Water	6010B	153240

General Chemistry

Analysis Batch: 24940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-F-1 DU	Duplicate	Total/NA	Water	300.0	
280-37208-F-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-37250-2	MW-2A-121912	Total/NA	Water	300.0	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	300.0	
LCS 160-24940/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-24940/9	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 153365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37193-B-2 DU	Duplicate	Total/NA	Water	SM 2540C	
280-37250-2	MW-2A-121912	Total/NA	Water	SM 2540C	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	SM 2540C	
LCS 280-153365/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-153365/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-153365/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 153524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37248-A-2 DU	Duplicate	Total/NA	Water	300.0	
280-37248-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
280-37248-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37250-2	MW-2A-121912	Total/NA	Water	300.0	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	300.0	
LCS 280-153524/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-153524/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-153524/6	Method Blank	Total/NA	Water	300.0	
MRL 280-153524/14 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 153525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37248-A-2 DU	Duplicate	Total/NA	Water	300.0	
280-37248-A-2 DU	Duplicate	Total/NA	Water	300.0	
280-37248-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
280-37248-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
280-37248-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37248-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37250-2	MW-2A-121912	Total/NA	Water	300.0	
280-37250-2	MW-2A-121912	Total/NA	Water	300.0	
280-37250-2	MW-2A-121912	Total/NA	Water	300.0	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

General Chemistry (Continued)

Analysis Batch: 153525 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-3	CURRIE WELL-121912	Total/NA	Water	300.0	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	300.0	
LCS 280-153525/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-153525/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-153525/6	Method Blank	Total/NA	Water	300.0	
MRL 280-153525/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

Prep Batch: 153589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	9030B	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	9030B	
280-37252-K-1-A MS	Matrix Spike	Total/NA	Water	9030B	
280-37252-L-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	9030B	
LCS 280-153589/2-A	Lab Control Sample	Total/NA	Water	9030B	
LCSD 280-153589/3-A	Lab Control Sample Dup	Total/NA	Water	9030B	
MB 280-153589/1-A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 153668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	9034	153589
280-37250-3	CURRIE WELL-121912	Total/NA	Water	9034	153589
280-37252-K-1-A MS	Matrix Spike	Total/NA	Water	9034	153589
280-37252-L-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	9034	153589
LCS 280-153589/2-A	Lab Control Sample	Total/NA	Water	9034	153589
LCSD 280-153589/3-A	Lab Control Sample Dup	Total/NA	Water	9034	153589
MB 280-153589/1-A	Method Blank	Total/NA	Water	9034	153589

Analysis Batch: 153797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37206-B-10 MS	Matrix Spike	Total/NA	Water	350.1	
280-37206-B-10 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	
280-37250-2	MW-2A-121912	Total/NA	Water	350.1	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	350.1	
LCS 280-153797/74	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-153797/75	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 280-153797/76	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 154186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Dissolved	Water	3500 FE D_ASP	
280-37250-3	CURRIE WELL-121912	Dissolved	Water	3500 FE D_ASP	
280-37250-3 DU	CURRIE WELL-121912	Dissolved	Water	3500 FE D_ASP	
280-37250-3 MS	CURRIE WELL-121912	Dissolved	Water	3500 FE D_ASP	
280-37250-3 MSD	CURRIE WELL-121912	Dissolved	Water	3500 FE D_ASP	
LCS 280-154186/9	Lab Control Sample	Total/NA	Water	3500 FE D_ASP	
LCSD 280-154186/10	Lab Control Sample Dup	Total/NA	Water	3500 FE D_ASP	
MB 280-154186/11	Method Blank	Total/NA	Water	3500 FE D_ASP	

Analysis Batch: 154216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	SM 3500	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

General Chemistry (Continued)

Analysis Batch: 154216 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-3	CURRIE WELL-121912	Total/NA	Water	SM 3500	
MB 280-154216/1	Method Blank	Total/NA	Water	SM 3500	

Analysis Batch: 154368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	SM4500 S2 H	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	SM4500 S2 H	
MB 280-154368/1	Method Blank	Total/NA	Water	SM4500 S2 H	

Analysis Batch: 154373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37200-C-14 DU	Duplicate	Total/NA	Water	SM 2320B	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	SM 2320B	
LCS 280-154373/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-154373/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-154373/6	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 154393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	SM 2320B	
280-37250-2 DU	MW-2A-121912	Total/NA	Water	SM 2320B	
LCS 280-154393/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-154393/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-154393/6	Method Blank	Total/NA	Water	SM 2320B	

Field Service / Mobile Lab

Analysis Batch: 153223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-2	MW-2A-121912	Total/NA	Water	Field Sampling	
280-37250-3	CURRIE WELL-121912	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Client Sample ID: TB-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153658	12/24/12 20:19	BB	TAL DEN

Client Sample ID: MW-2A-121912

Date Collected: 12/19/12 10:39

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153658	12/24/12 20:38	BB	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	153400	12/21/12 20:20	TEM	TAL DEN
Total/NA	Prep	3510C			1030.6 mL	1000 uL	153610	12/24/12 10:40	NC	TAL DEN
Total/NA	Analysis	8015B		1			153902	12/27/12 21:47	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	153240	12/21/12 13:00	RC	TAL DEN
Dissolved	Analysis	6010B		1			153695	12/24/12 13:46	LT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	24940	01/03/13 22:29	JB	TAL SL
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	153365	12/21/12 10:16	MRM	TAL DEN
Total/NA	Analysis	300.0		2			153524	12/20/12 19:39	TLP	TAL DEN
Total/NA	Analysis	300.0		2			153525	12/20/12 19:39	TLP	TAL DEN
Total/NA	Analysis	300.0		10			153525	12/21/12 03:26	TLP	TAL DEN
Total/NA	Analysis	300.0		50			153525	12/21/12 03:43	TLP	TAL DEN
Total/NA	Analysis	9034		1			153668	12/24/12 08:16	DE	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	153589	12/24/12 08:16	DE	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	153797	12/26/12 10:49	BMG	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	154186	12/29/12 16:22	DA	TAL DEN
Total/NA	Analysis	SM 3500		1			154216	12/31/12 08:13	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			154368	12/24/12 08:16	DFB	TAL DEN
Total/NA	Analysis	SM 2320B		1			154393	01/02/13 11:43	DA	TAL DEN
Total/NA	Analysis	Field Sampling		1			153223	12/19/12 10:39	FS	TAL DEN

Client Sample ID: CURRIE WELL-121912

Date Collected: 12/19/12 14:55

Date Received: 12/20/12 11:30

Lab Sample ID: 280-37250-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153658	12/24/12 20:58	BB	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	153400	12/21/12 20:49	TEM	TAL DEN
Total/NA	Prep	3510C			1031.6 mL	1000 uL	153610	12/24/12 10:40	NC	TAL DEN
Total/NA	Analysis	8015B		1			153902	12/27/12 22:16	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	153240	12/21/12 13:00	RC	TAL DEN
Dissolved	Analysis	6010B		1			153695	12/24/12 13:48	LT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	24940	01/03/13 23:04	JB	TAL SL
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	153365	12/21/12 10:16	MRM	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37250-1

Client Sample ID: CURRIE WELL-121912

Lab Sample ID: 280-37250-3

Date Collected: 12/19/12 14:55

Matrix: Water

Date Received: 12/20/12 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2			153524	12/20/12 19:56	TLP	TAL DEN
Total/NA	Analysis	300.0		2			153525	12/20/12 19:56	TLP	TAL DEN
Total/NA	Analysis	300.0		20			153525	12/21/12 04:00	TLP	TAL DEN
Total/NA	Analysis	9034		1			153668	12/24/12 08:16	DE	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	153589	12/24/12 08:16	DE	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	153797	12/26/12 10:47	BMG	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	154186	12/29/12 16:22	DA	TAL DEN
Total/NA	Analysis	SM 3500		1			154216	12/31/12 08:13	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			154368	12/24/12 08:16	DFB	TAL DEN
Total/NA	Analysis	SM 2320B		1			154373	12/31/12 15:56	DA	TAL DEN
Total/NA	Analysis	Field Sampling		1			153223	12/19/12 14:55	FS	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-37250-1

Login Number: 37250

List Source: TestAmerica Denver

List Number: 1

Creator: Laspe, Laura

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-37250-1

Login Number: 37250

List Source: TestAmerica St. Louis

List Number: 1

List Creation: 12/21/12 02:00 PM

Creator: Daniels, Brian

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-37308-1

Client Project/Site: Garfield County

For:

Tetra Tech GEO

363 Centennial Parkway

Louisville, Colorado 80027

Attn: David Bohmann



Authorized for release by:

1/7/2013 9:13:19 AM

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Project Manager I

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Job ID: 280-37308-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE
Client: Tetra Tech GEO
Project: Garfield County
Report Number: 280-37308-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/21/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 4.0 C.

Sample MW-99A-122012 did not list a collection date and was logged as 00:00 by default. Client was notified 12/24/12.

No other issues were noted.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - METHOD 8260B

No difficulties were encountered.

GAS RANGE ORGANICS - METHOD 8015B

No difficulties were encountered.

DIESEL RANGE ORGANICS - METHOD 8015B

The following samples were received with an initial pH of 12: MW-1A-122012 (280-37308-1), MW-99A-122012 (280-37308-2) and MW-1B-122012 (280-37308-3). The samples were extracted as received per the SOP.

Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-153757. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other difficulties were encountered.

DISSOLVED METALS - METHOD 6010B

No difficulties were encountered.

GENERAL CHEMISTRY

Samples MW-1A-122012 (280-37308-1), MW-99A-122012 (280-37308-2) and MW-1B-122012 (280-37308-3) required dilution prior to analysis for Bromide, Chloride, Fluoride and Sulfate. The reporting limits have been adjusted accordingly.

Samples MW-1A-122012 (280-37308-1)[2X], MW-99A-122012 (280-37308-2)[2X] and MW-1B-122012 (280-37308-3)[5X] required dilution prior to analysis for Nitrate as N and Nitrite as N. The reporting limits have been adjusted accordingly.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-154186 were performed on a sample from another job and exhibited recoveries outside control limits for Ferrous Iron. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 280-153668 were performed on a sample from another job and exhibited recoveries outside control limits for Sulfide. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
E	Result exceeded calibration range.
HF	Field parameter with a holding time of 15 minutes

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Client Sample ID: MW-1A-122012

Lab Sample ID: 280-37308-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.72				SU	1		Field Sampling	Total/NA
Field Conductivity	3837				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.31				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	0.41		0.24		mg/L	1		8015B	Total/NA
Barium	510		10		ug/L	1		6010B	Dissolved
Calcium	91000		200		ug/L	1		6010B	Dissolved
Iron	110		100		ug/L	1		6010B	Dissolved
Potassium	84000		3000		ug/L	1		6010B	Dissolved
Sodium	470000		1000		ug/L	1		6010B	Dissolved
Strontium	3700		10		ug/L	1		6010B	Dissolved
Bromide	0.61		0.40		mg/L	2		300.0	Total/NA
Iodide	2.2		1.0		mg/L	1		300.0	Total/NA
Chloride	190		15		mg/L	5		300.0	Total/NA
Sulfate	29		10		mg/L	2		300.0	Total/NA
Ammonia	1.9		0.10		mg/L	1		350.1	Total/NA
Alkalinity	1100		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1600		40		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-99A-122012

Lab Sample ID: 280-37308-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.72				SU	1		Field Sampling	Total/NA
Field Conductivity	3837				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.31				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO)	28		25		ug/L	1		8015B	Total/NA
-C6-C10									
Diesel Range Organics [C10-C28]	0.40		0.24		mg/L	1		8015B	Total/NA
Barium	450		10		ug/L	1		6010B	Dissolved
Calcium	81000		200		ug/L	1		6010B	Dissolved
Iron	120		100		ug/L	1		6010B	Dissolved
Potassium	70000		3000		ug/L	1		6010B	Dissolved
Sodium	460000		1000		ug/L	1		6010B	Dissolved
Strontium	3200		10		ug/L	1		6010B	Dissolved
Bromide	0.68		0.40		mg/L	2		300.0	Total/NA
Iodide	2.3		1.0		mg/L	1		300.0	Total/NA
Chloride	230		15		mg/L	5		300.0	Total/NA
Sulfate	33		10		mg/L	2		300.0	Total/NA
Ammonia	2.2		0.10		mg/L	1		350.1	Total/NA
Alkalinity	950		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1600		40		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-1B-122012

Lab Sample ID: 280-37308-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	12.35				SU	1		Field Sampling	Total/NA
Field Conductivity	4590				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.90				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.3		1.0		ug/L	1		8260B	Total/NA
Diesel Range Organics [C10-C28]	0.36		0.24		mg/L	1		8015B	Total/NA

TestAmerica Denver

Detection Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Client Sample ID: MW-1B-122012 (Continued)

Lab Sample ID: 280-37308-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	790		10		ug/L	1		6010B	Dissolved
Calcium	100000		200		ug/L	1		6010B	Dissolved
Potassium	49000		3000		ug/L	1		6010B	Dissolved
Sodium	1000000		1000		ug/L	1		6010B	Dissolved
Strontium	5700		10		ug/L	1		6010B	Dissolved
Bromide	4.6		1.0		mg/L	5		300.0	Total/NA
Iodide	1.9		1.0		mg/L	1		300.0	Total/NA
Chloride	1300		150		mg/L	50		300.0	Total/NA
Sulfate	100		25		mg/L	5		300.0	Total/NA
Ammonia	2.2		0.10		mg/L	1		350.1	Total/NA
Alkalinity	550		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1900		40		mg/L	1		SM 2540C	Total/NA

Client Sample ID: TB-122012

Lab Sample ID: 280-37308-4

No Detections

Method Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015B	Gasoline Range Organics - (GC)	SW846	TAL DEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL DEN
6010B	Dissolved Metals	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
3500 FE D_ASP	Iron, Ferrous	SM	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 3500	Iron, Ferric	SM	TAL DEN
SM4500 S2 H	Unionized Hydrogen Sulfide	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-37308-1	MW-1A-122012	Water	12/20/12 10:43	12/21/12 15:20
280-37308-2	MW-99A-122012	Water	12/20/12 00:00	12/21/12 15:20
280-37308-3	MW-1B-122012	Water	12/20/12 14:18	12/21/12 15:20
280-37308-4	TB-122012	Water	12/20/12 00:00	12/21/12 15:20

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-1A-122012

Date Collected: 12/20/12 10:43

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/26/12 11:39	1
Ethylbenzene	ND		1.0		ug/L			12/26/12 11:39	1
Toluene	ND		1.0		ug/L			12/26/12 11:39	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/26/12 11:39	1
o-Xylene	ND		1.0		ug/L			12/26/12 11:39	1
Xylenes, Total	ND		2.0		ug/L			12/26/12 11:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 127		12/26/12 11:39	1
Toluene-d8 (Surr)	96		80 - 125		12/26/12 11:39	1
4-Bromofluorobenzene (Surr)	92		78 - 120		12/26/12 11:39	1
Dibromofluoromethane (Surr)	102		77 - 120		12/26/12 11:39	1

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/26/12 12:39	1
Ethylbenzene	ND		1.0		ug/L			12/26/12 12:39	1
Toluene	ND		1.0		ug/L			12/26/12 12:39	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/26/12 12:39	1
o-Xylene	ND		1.0		ug/L			12/26/12 12:39	1
Xylenes, Total	ND		2.0		ug/L			12/26/12 12:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 127		12/26/12 12:39	1
Toluene-d8 (Surr)	92		80 - 125		12/26/12 12:39	1
4-Bromofluorobenzene (Surr)	88		78 - 120		12/26/12 12:39	1
Dibromofluoromethane (Surr)	102		77 - 120		12/26/12 12:39	1

Client Sample ID: MW-1B-122012

Date Collected: 12/20/12 14:18

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.3		1.0		ug/L			12/26/12 12:59	1
Ethylbenzene	ND		1.0		ug/L			12/26/12 12:59	1
Toluene	ND		1.0		ug/L			12/26/12 12:59	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/26/12 12:59	1
o-Xylene	ND		1.0		ug/L			12/26/12 12:59	1
Xylenes, Total	ND		2.0		ug/L			12/26/12 12:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 127		12/26/12 12:59	1
Toluene-d8 (Surr)	94		80 - 125		12/26/12 12:59	1
4-Bromofluorobenzene (Surr)	90		78 - 120		12/26/12 12:59	1
Dibromofluoromethane (Surr)	100		77 - 120		12/26/12 12:59	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-122012
Date Collected: 12/20/12 00:00
Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/26/12 13:19	1
Ethylbenzene	ND		1.0		ug/L			12/26/12 13:19	1
Toluene	ND		1.0		ug/L			12/26/12 13:19	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/26/12 13:19	1
o-Xylene	ND		1.0		ug/L			12/26/12 13:19	1
Xylenes, Total	ND		2.0		ug/L			12/26/12 13:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 127		12/26/12 13:19	1
Toluene-d8 (Surr)	95		80 - 125		12/26/12 13:19	1
4-Bromofluorobenzene (Surr)	95		78 - 120		12/26/12 13:19	1
Dibromofluoromethane (Surr)	99		77 - 120		12/26/12 13:19	1

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: MW-1A-122012
Date Collected: 12/20/12 10:43
Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			12/26/12 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		82 - 110		12/26/12 17:02	1

Client Sample ID: MW-99A-122012
Date Collected: 12/20/12 00:00
Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	28		25		ug/L			12/26/12 17:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		82 - 110		12/26/12 17:31	1

Client Sample ID: MW-1B-122012
Date Collected: 12/20/12 14:18
Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			12/26/12 18:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	102		82 - 110		12/26/12 18:01	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: MW-1A-122012
Date Collected: 12/20/12 10:43
Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.41		0.24		mg/L		12/26/12 11:37	12/27/12 16:27	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	93		50 - 115	12/26/12 11:37	12/27/12 16:27	1

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.40		0.24		mg/L		12/26/12 11:37	12/27/12 16:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	90		50 - 115	12/26/12 11:37	12/27/12 16:56	1

Client Sample ID: MW-1B-122012

Date Collected: 12/20/12 14:18

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.36		0.24		mg/L		12/26/12 11:37	12/27/12 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	96		50 - 115	12/26/12 11:37	12/27/12 17:25	1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW-1A-122012

Date Collected: 12/20/12 10:43

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	510		10		ug/L		12/28/12 12:00	12/31/12 20:45	1
Calcium	91000		200		ug/L		12/28/12 12:00	12/31/12 20:45	1
Iron	110		100		ug/L		12/28/12 12:00	12/31/12 20:45	1
Magnesium	ND		200		ug/L		12/28/12 12:00	12/31/12 20:45	1
Manganese	ND		10		ug/L		12/28/12 12:00	12/31/12 20:45	1
Potassium	84000		3000		ug/L		12/28/12 12:00	12/31/12 20:45	1
Sodium	470000		1000		ug/L		12/28/12 12:00	12/31/12 20:45	1
Strontium	3700		10		ug/L		12/28/12 12:00	12/31/12 20:45	1

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	450		10		ug/L		12/28/12 12:00	12/31/12 20:47	1
Calcium	81000		200		ug/L		12/28/12 12:00	12/31/12 20:47	1
Iron	120		100		ug/L		12/28/12 12:00	12/31/12 20:47	1
Magnesium	ND		200		ug/L		12/28/12 12:00	12/31/12 20:47	1
Manganese	ND		10		ug/L		12/28/12 12:00	12/31/12 20:47	1
Potassium	70000		3000		ug/L		12/28/12 12:00	12/31/12 20:47	1
Sodium	460000		1000		ug/L		12/28/12 12:00	12/31/12 20:47	1
Strontium	3200		10		ug/L		12/28/12 12:00	12/31/12 20:47	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 6010B - Dissolved Metals - Dissolved

Client Sample ID: MW-1B-122012

Date Collected: 12/20/12 14:18

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	790		10		ug/L		12/28/12 12:00	12/31/12 20:50	1
Calcium	100000		200		ug/L		12/28/12 12:00	12/31/12 20:50	1
Iron	ND		100		ug/L		12/28/12 12:00	12/31/12 20:50	1
Magnesium	ND		200		ug/L		12/28/12 12:00	12/31/12 20:50	1
Manganese	ND		10		ug/L		12/28/12 12:00	12/31/12 20:50	1
Potassium	49000		3000		ug/L		12/28/12 12:00	12/31/12 20:50	1
Sodium	1000000		1000		ug/L		12/28/12 12:00	12/31/12 20:50	1
Strontium	5700		10		ug/L		12/28/12 12:00	12/31/12 20:50	1

General Chemistry

Client Sample ID: MW-1A-122012

Date Collected: 12/20/12 10:43

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.61		0.40		mg/L			12/21/12 21:52	2
Iodide	2.2		1.0		mg/L			01/04/13 00:14	1
Nitrate as N	ND		1.0		mg/L			12/21/12 21:52	2
Chloride	190		15		mg/L			12/22/12 04:47	5
Nitrite as N	ND		1.0		mg/L			12/21/12 21:52	2
Fluoride	ND		1.0		mg/L			12/21/12 21:52	2
Sulfate	29		10		mg/L			12/21/12 21:52	2
Ammonia	1.9		0.10		mg/L			12/26/12 10:52	1
Sulfide	ND		4.0		mg/L		12/24/12 08:16	12/24/12 08:16	1
Alkalinity	1100		5.0		mg/L			01/02/13 15:34	1
Total Dissolved Solids	1600		40		mg/L			12/26/12 10:28	1
Ferric Iron	ND		0.20		mg/L			01/03/13 08:03	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/24/12 08:16	1

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.68		0.40		mg/L			12/21/12 22:09	2
Iodide	2.3		1.0		mg/L			01/04/13 00:48	1
Nitrate as N	ND		1.0		mg/L			12/21/12 22:09	2
Chloride	230		15		mg/L			12/22/12 05:04	5
Nitrite as N	ND		1.0		mg/L			12/21/12 22:09	2
Fluoride	ND		1.0		mg/L			12/21/12 22:09	2
Sulfate	33		10		mg/L			12/21/12 22:09	2
Ammonia	2.2		0.10		mg/L			12/26/12 10:59	1
Sulfide	ND		4.0		mg/L		12/24/12 08:16	12/24/12 08:16	1
Alkalinity	950		5.0		mg/L			01/02/13 16:03	1
Total Dissolved Solids	1600		40		mg/L			12/26/12 10:28	1
Ferric Iron	ND		0.20		mg/L			01/03/13 08:03	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/24/12 08:16	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

General Chemistry

Client Sample ID: MW-1B-122012

Date Collected: 12/20/12 14:18

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	4.6		1.0		mg/L			12/21/12 22:26	5
Iodide	1.9		1.0		mg/L			01/04/13 01:23	1
Nitrate as N	ND		2.5		mg/L			12/21/12 22:26	5
Chloride	1300		150		mg/L			12/22/12 05:22	50
Nitrite as N	ND		2.5		mg/L			12/21/12 22:26	5
Fluoride	ND		2.5		mg/L			12/21/12 22:26	5
Sulfate	100		25		mg/L			12/21/12 22:26	5
Ammonia	2.2		0.10		mg/L			12/26/12 11:01	1
Sulfide	ND		4.0		mg/L		12/24/12 08:16	12/24/12 08:16	1
Alkalinity	550		5.0		mg/L			01/02/13 14:20	1
Total Dissolved Solids	1900		40		mg/L			12/26/12 10:28	1
Ferric Iron	ND		0.20		mg/L			01/03/13 08:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/24/12 08:16	1

General Chemistry - Dissolved

Client Sample ID: MW-1A-122012

Date Collected: 12/20/12 10:43

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			12/29/12 16:22	1

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			12/29/12 16:22	1

Client Sample ID: MW-1B-122012

Date Collected: 12/20/12 14:18

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND	HF	0.20		mg/L			12/29/12 16:22	1

Method: Field Sampling - Field Sampling

Client Sample ID: MW-1A-122012

Date Collected: 12/20/12 10:43

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.72				SU			12/20/12 10:43	1
Field Conductivity	3837				umhos/cm			12/20/12 10:43	1
Field Temperature	10.31				Degrees C			12/20/12 10:43	1

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.72				SU			12/20/12 00:00	1

TestAmerica Denver

Client Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: Field Sampling - Field Sampling (Continued)

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field Conductivity	3837				umhos/cm			12/20/12 00:00	1
Field Temperature	10.31				Degrees C			12/20/12 00:00	1

Client Sample ID: MW-1B-122012

Date Collected: 12/20/12 14:18

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3

Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	12.35				SU			12/20/12 14:18	1
Field Conductivity	4590				umhos/cm			12/20/12 14:18	1
Field Temperature	10.90				Degrees C			12/20/12 14:18	1

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-153692/7

Matrix: Water

Analysis Batch: 153692

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			12/26/12 10:01	1
Ethylbenzene	ND		1.0		ug/L			12/26/12 10:01	1
Toluene	ND		1.0		ug/L			12/26/12 10:01	1
m-Xylene & p-Xylene	ND		2.0		ug/L			12/26/12 10:01	1
o-Xylene	ND		1.0		ug/L			12/26/12 10:01	1
Xylenes, Total	ND		2.0		ug/L			12/26/12 10:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 127		12/26/12 10:01	1
Toluene-d8 (Surr)	95		80 - 125		12/26/12 10:01	1
4-Bromofluorobenzene (Surr)	94		78 - 120		12/26/12 10:01	1
Dibromofluoromethane (Surr)	99		77 - 120		12/26/12 10:01	1

Lab Sample ID: LCS 280-153692/6

Matrix: Water

Analysis Batch: 153692

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	4.79		ug/L		96	74 - 135
Ethylbenzene	5.00	4.57		ug/L		91	72 - 120
Toluene	5.00	4.81		ug/L		96	73 - 120
m-Xylene & p-Xylene	10.0	9.24		ug/L		92	74 - 135
o-Xylene	5.00	4.52		ug/L		90	73 - 135
Xylenes, Total	15.0	13.8		ug/L		92	75 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		70 - 127
Toluene-d8 (Surr)	93		80 - 125
4-Bromofluorobenzene (Surr)	90		78 - 120
Dibromofluoromethane (Surr)	98		77 - 120

Lab Sample ID: 280-37308-1 MS

Matrix: Water

Analysis Batch: 153692

Client Sample ID: MW-1A-122012

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		5.00	5.31		ug/L		96	74 - 135
Ethylbenzene	ND		5.00	4.46		ug/L		89	72 - 120
Toluene	ND		5.00	4.90		ug/L		98	73 - 120
m-Xylene & p-Xylene	ND		10.0	9.12		ug/L		91	74 - 135
o-Xylene	ND		5.00	4.46		ug/L		89	73 - 135
Xylenes, Total	ND		15.0	13.6		ug/L		90	75 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		70 - 127
Toluene-d8 (Surr)	92		80 - 125
4-Bromofluorobenzene (Surr)	88		78 - 120

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-37308-1 MS

Matrix: Water

Analysis Batch: 153692

Client Sample ID: MW-1A-122012

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	103		77 - 120

Lab Sample ID: 280-37308-1 MSD

Matrix: Water

Analysis Batch: 153692

Client Sample ID: MW-1A-122012

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		5.00	5.04		ug/L		91	74 - 135	5	20
Ethylbenzene	ND		5.00	4.04		ug/L		81	72 - 120	10	26
Toluene	ND		5.00	4.63		ug/L		93	73 - 120	6	20
m-Xylene & p-Xylene	ND		10.0	8.25		ug/L		83	74 - 135	10	20
o-Xylene	ND		5.00	4.00		ug/L		80	73 - 135	11	20
Xylenes, Total	ND		15.0	12.3		ug/L		82	75 - 135	10	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 127
Toluene-d8 (Surr)	91		80 - 125
4-Bromofluorobenzene (Surr)	89		78 - 120
Dibromofluoromethane (Surr)	102		77 - 120

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 280-153761/6

Matrix: Water

Analysis Batch: 153761

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		25		ug/L			12/26/12 12:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	105		82 - 110		12/26/12 12:03	1

Lab Sample ID: LCS 280-153761/4

Matrix: Water

Analysis Batch: 153761

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	101	118		ug/L		117	79 - 149

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	103		82 - 110

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCSD 280-153761/5

Matrix: Water

Analysis Batch: 153761

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			101	112		ug/L		111	79 - 149	5	27
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
a,a,a-Trifluorotoluene	105		82 - 110								

Lab Sample ID: 280-37349-Q-4 MS

Matrix: Water

Analysis Batch: 153761

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	ND		101	114		ug/L		113	79 - 149		
Surrogate	MS %Recovery	MS Qualifier	Limits								
a,a,a-Trifluorotoluene	104		82 - 110								

Lab Sample ID: 280-37349-Q-4 MSD

Matrix: Water

Analysis Batch: 153761

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	ND		101	118		ug/L		117	79 - 149	3	27
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
a,a,a-Trifluorotoluene	104		82 - 110								

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 280-153757/1-A

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 153757

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.25		mg/L		12/26/12 11:37	12/27/12 13:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	110		50 - 115				12/26/12 11:37	12/27/12 13:03	1

Lab Sample ID: LCS 280-153757/2-A

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153757

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2.00	1.87		mg/L		93	54 - 115		

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 280-153757/2-A

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153757

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	103		50 - 115

Lab Sample ID: LCSD 280-153757/3-A

Matrix: Water

Analysis Batch: 153902

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 153757

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2.00	1.67		mg/L		84	54 - 115	11	31

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	100		50 - 115

Method: 6010B - Dissolved Metals

Lab Sample ID: MB 280-153635/1-A

Matrix: Water

Analysis Batch: 154339

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 153635

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		10		ug/L		12/28/12 12:00	12/31/12 20:30	1
Calcium	ND		200		ug/L		12/28/12 12:00	12/31/12 20:30	1
Iron	ND		100		ug/L		12/28/12 12:00	12/31/12 20:30	1
Magnesium	ND		200		ug/L		12/28/12 12:00	12/31/12 20:30	1
Manganese	ND		10		ug/L		12/28/12 12:00	12/31/12 20:30	1
Potassium	ND		3000		ug/L		12/28/12 12:00	12/31/12 20:30	1
Sodium	ND		1000		ug/L		12/28/12 12:00	12/31/12 20:30	1
Strontium	ND		10		ug/L		12/28/12 12:00	12/31/12 20:30	1

Lab Sample ID: LCS 280-153635/2-A

Matrix: Water

Analysis Batch: 154339

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 153635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	2000	2080		ug/L		104	90 - 112
Calcium	50000	50800		ug/L		102	90 - 111
Iron	1000	1010		ug/L		101	89 - 115
Magnesium	50000	52300		ug/L		105	90 - 113
Manganese	500	527		ug/L		105	90 - 110
Potassium	50000	52500		ug/L		105	89 - 114
Sodium	50000	52500		ug/L		105	90 - 115
Strontium	1000	1040		ug/L		104	90 - 111

Lab Sample ID: 280-37307-D-4-C MS

Matrix: Water

Analysis Batch: 154339

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 153635

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	170		2000	2250		ug/L		104	85 - 120

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 6010B - Dissolved Metals (Continued)

Lab Sample ID: 280-37307-D-4-C MS

Matrix: Water

Analysis Batch: 154339

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 153635

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	140000		50000	193000		ug/L		103	48 - 153
Iron	ND		1000	1060		ug/L		99	52 - 155
Magnesium	23000		50000	73900		ug/L		102	62 - 146
Manganese	89		500	609		ug/L		104	79 - 121
Potassium	8700		50000	61400		ug/L		105	76 - 132
Sodium	97000		50000	149000		ug/L		104	70 - 203
Strontium	1100		1000	2140		ug/L		106	81 - 125

Lab Sample ID: 280-37307-D-4-D MSD

Matrix: Water

Analysis Batch: 154339

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 153635

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	170		2000	2230		ug/L		103	85 - 120	1	20
Calcium	140000		50000	190000		ug/L		98	48 - 153	1	20
Iron	ND		1000	1050		ug/L		98	52 - 155	1	20
Magnesium	23000		50000	73300		ug/L		100	62 - 146	1	20
Manganese	89		500	605		ug/L		103	79 - 121	1	20
Potassium	8700		50000	61000		ug/L		105	76 - 132	1	20
Sodium	97000		50000	148000		ug/L		102	70 - 203	1	20
Strontium	1100		1000	2110		ug/L		103	81 - 125	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-153528/7

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.20		mg/L			12/21/12 11:04	1
Chloride	ND		3.0		mg/L			12/21/12 11:04	1
Fluoride	ND		0.50		mg/L			12/21/12 11:04	1
Sulfate	ND		5.0		mg/L			12/21/12 11:04	1

Lab Sample ID: LCS 280-153528/5

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	4.95		mg/L		99	90 - 110
Chloride	25.0	25.4		mg/L		102	90 - 110
Fluoride	5.00	5.18		mg/L		104	90 - 110
Sulfate	25.0	25.8		mg/L		103	90 - 110

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 280-153528/6

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	5.00	4.92		mg/L		98	90 - 110	1	10
Chloride	25.0	25.2		mg/L		101	90 - 110	1	10
Fluoride	5.00	5.16		mg/L		103	90 - 110	0	10
Sulfate	25.0	25.6		mg/L		102	90 - 110	1	10

Lab Sample ID: MRL 280-153528/4 MRL

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	0.200	0.228		mg/L		114	50 - 150		
Chloride	1.00	ND		mg/L		102	50 - 150		
Fluoride	0.200	ND		mg/L		99	50 - 150		
Sulfate	1.00	ND		mg/L		114	50 - 150		

Lab Sample ID: 280-37294-G-5 MS

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	5.00		mg/L		100	80 - 120		
Chloride	ND		25.0	28.6		mg/L		103	80 - 120		
Fluoride	ND		5.00	4.82		mg/L		96	80 - 120		
Sulfate	9.1		25.0	34.0		mg/L		100	80 - 120		

Lab Sample ID: 280-37294-G-5 MSD

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	4.93		mg/L		99	80 - 120	1	20
Chloride	ND		25.0	28.4		mg/L		102	80 - 120	1	20
Fluoride	ND		5.00	4.75		mg/L		95	80 - 120	1	20
Sulfate	9.1		25.0	33.7		mg/L		98	80 - 120	1	20

Lab Sample ID: 280-37305-B-2 MS

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	170		125	290	E	mg/L		100	80 - 120		
Sulfate	77		125	200		mg/L		98	80 - 120		

Lab Sample ID: 280-37305-C-2 MSD

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	170		125	287	E	mg/L		97	80 - 120	1	20

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-37305-C-2 MSD

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	77		125	197		mg/L		96	80 - 120	2	20

Lab Sample ID: 280-37294-G-5 DU

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bromide	ND		ND		mg/L		NC	15
Chloride	ND		ND		mg/L		NC	15
Fluoride	ND		ND		mg/L		NC	15
Sulfate	9.1		8.79		mg/L		4	15

Lab Sample ID: 280-37305-A-2 DU

Matrix: Water

Analysis Batch: 153528

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	170		165		mg/L		0.4	15
Sulfate	77		76.6		mg/L		0.5	15

Lab Sample ID: MB 280-153529/7

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50		mg/L			12/21/12 11:04	1
Nitrite as N	ND		0.50		mg/L			12/21/12 11:04	1

Lab Sample ID: LCS 280-153529/5

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	5.00		mg/L		100	90 - 110
Nitrite as N	5.00	5.16		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-153529/6

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	4.98		mg/L		100	90 - 110	1	10
Nitrite as N	5.00	5.15		mg/L		103	90 - 110	0	10

Lab Sample ID: MRL 280-153529/4 MRL

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	ND		mg/L		110	50 - 150

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-153529/4 MRL

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.200	ND		mg/L		96	50 - 150

Lab Sample ID: 280-37305-B-2 MS

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.3		5.00	6.24		mg/L		99	80 - 120
Nitrite as N	ND		5.00	5.94		mg/L		119	80 - 120

Lab Sample ID: 280-37305-C-2 MSD

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	1.3		5.00	6.31		mg/L		101	80 - 120	1	20
Nitrite as N	ND		5.00	6.02		mg/L		120	80 - 120	1	20

Lab Sample ID: 280-37305-A-2 DU

Matrix: Water

Analysis Batch: 153529

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	1.3		1.25		mg/L		1	15
Nitrite as N	ND		ND		mg/L		NC	15

Lab Sample ID: MB 160-24940/9

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		1.0		mg/L			01/03/13 17:13	1

Lab Sample ID: LCS 160-24940/10

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	4.00	4.15		mg/L		104	90 - 110

Lab Sample ID: 280-37208-F-1 MS

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	8.4		4.00	12.0		mg/L		90	90 - 110

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-37208-F-1 DU

Matrix: Water

Analysis Batch: 24940

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Iodide	8.4		8.59		mg/L		2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-153797/76

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.10		mg/L			12/26/12 10:17	1

Lab Sample ID: LCS 280-153797/74

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.63		mg/L		105	90 - 110

Lab Sample ID: LCSD 280-153797/75

Matrix: Water

Analysis Batch: 153797

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia	2.50	2.64		mg/L		105	90 - 110	0	10

Lab Sample ID: 280-37308-1 MS

Matrix: Water

Analysis Batch: 153797

Client Sample ID: MW-1A-122012

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.9		1.00	2.96		mg/L		107	90 - 110

Lab Sample ID: 280-37308-1 MSD

Matrix: Water

Analysis Batch: 153797

Client Sample ID: MW-1A-122012

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia	1.9		1.00	2.91		mg/L		103	90 - 110	1	10

Method: 3500 FE D_ASP - Iron, Ferrous

Lab Sample ID: MB 280-154186/11

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.20		mg/L			12/29/12 16:22	1

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 3500 FE D_ASP - Iron, Ferrous (Continued)

Lab Sample ID: LCS 280-154186/9

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	2.00	1.95		mg/L		98	85 - 113

Lab Sample ID: LCSD 280-154186/10

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	2.00	1.97		mg/L		99	85 - 113	1	10

Lab Sample ID: 280-37250-C-3 MS

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	ND		2.00	1.47	F	mg/L		73	85 - 113

Lab Sample ID: 280-37250-C-3 MSD

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND		2.00	1.47	F	mg/L		73	85 - 113	0	10

Lab Sample ID: 280-37250-C-3 DU

Matrix: Water

Analysis Batch: 154186

Client Sample ID: Duplicate

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ferrous Iron	ND		ND		mg/L		NC	10

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-153589/1-A

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 153589

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		4.0		mg/L		12/24/12 08:16	12/24/12 08:16	1

Lab Sample ID: LCS 280-153589/2-A

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	18.8	14.6		mg/L		77	48 - 100

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCSD 280-153589/3-A

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	18.8	15.4		mg/L		82	48 - 100	5	20

Lab Sample ID: 280-37252-K-1-A MS

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND		18.8	7.04	F	mg/L		37	48 - 100		

Lab Sample ID: 280-37252-L-1-A MSD

Matrix: Water

Analysis Batch: 153668

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 153589

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND		18.8	8.32	F	mg/L		44	48 - 100	17	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-154417/33

Matrix: Water

Analysis Batch: 154417

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			01/02/13 15:56	1

Lab Sample ID: MB 280-154417/6

Matrix: Water

Analysis Batch: 154417

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.0		mg/L			01/02/13 13:40	1

Lab Sample ID: LCS 280-154417/31

Matrix: Water

Analysis Batch: 154417

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	219		mg/L		109	90 - 110		

Lab Sample ID: LCS 280-154417/4

Matrix: Water

Analysis Batch: 154417

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	207		mg/L		104	90 - 110		

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 280-154417/32

Matrix: Water

Analysis Batch: 154417

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	217		mg/L		108	90 - 110	1	10

Lab Sample ID: LCSD 280-154417/5

Matrix: Water

Analysis Batch: 154417

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	207		mg/L		103	90 - 110	0	10

Lab Sample ID: 280-37308-2 DU

Matrix: Water

Analysis Batch: 154417

Client Sample ID: MW-99A-122012

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	950		962		mg/L		1	10

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-153747/1

Matrix: Water

Analysis Batch: 153747

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			12/26/12 10:28	1

Lab Sample ID: LCS 280-153747/2

Matrix: Water

Analysis Batch: 153747

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	488		mg/L		98	86 - 110		

Lab Sample ID: LCSD 280-153747/3

Matrix: Water

Analysis Batch: 153747

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	489		mg/L		98	86 - 110	0	20

Lab Sample ID: 280-37290-C-2 DU

Matrix: Water

Analysis Batch: 153747

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1300		1280		mg/L		0.3	10

TestAmerica Denver

QC Sample Results

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Method: SM 3500 - Iron, Ferric

Lab Sample ID: MB 280-154452/1
Matrix: Water
Analysis Batch: 154452

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.20		mg/L			01/03/13 08:03	1

Method: SM4500 S2 H - Unionized Hydrogen Sulfide

Lab Sample ID: MB 280-154472/1
Matrix: Water
Analysis Batch: 154472

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Un-ionized Hydrogen Sulfide	ND		1.0		mg/L			12/24/12 08:16	1

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

GC/MS VOA

Analysis Batch: 153692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	8260B	
280-37308-1 MS	MW-1A-122012	Total/NA	Water	8260B	
280-37308-1 MSD	MW-1A-122012	Total/NA	Water	8260B	
280-37308-2	MW-99A-122012	Total/NA	Water	8260B	
280-37308-3	MW-1B-122012	Total/NA	Water	8260B	
280-37308-4	TB-122012	Total/NA	Water	8260B	
LCS 280-153692/6	Lab Control Sample	Total/NA	Water	8260B	
MB 280-153692/7	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 153761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	8015B	
280-37308-2	MW-99A-122012	Total/NA	Water	8015B	
280-37308-3	MW-1B-122012	Total/NA	Water	8015B	
280-37349-Q-4 MS	Matrix Spike	Total/NA	Water	8015B	
280-37349-Q-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 280-153761/4	Lab Control Sample	Total/NA	Water	8015B	
LCSD 280-153761/5	Lab Control Sample Dup	Total/NA	Water	8015B	
MB 280-153761/6	Method Blank	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 153757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	3510C	
280-37308-2	MW-99A-122012	Total/NA	Water	3510C	
280-37308-3	MW-1B-122012	Total/NA	Water	3510C	
LCS 280-153757/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-153757/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 280-153757/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 153902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	8015B	153757
280-37308-2	MW-99A-122012	Total/NA	Water	8015B	153757
280-37308-3	MW-1B-122012	Total/NA	Water	8015B	153757
LCS 280-153757/2-A	Lab Control Sample	Total/NA	Water	8015B	153757
LCSD 280-153757/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	153757
MB 280-153757/1-A	Method Blank	Total/NA	Water	8015B	153757

Metals

Prep Batch: 153635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37307-D-4-C MS	Matrix Spike	Dissolved	Water	3005A	
280-37307-D-4-D MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	
280-37308-1	MW-1A-122012	Dissolved	Water	3005A	
280-37308-2	MW-99A-122012	Dissolved	Water	3005A	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Metals (Continued)

Prep Batch: 153635 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-3	MW-1B-122012	Dissolved	Water	3005A	
LCS 280-153635/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 280-153635/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 154339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37307-D-4-C MS	Matrix Spike	Dissolved	Water	6010B	153635
280-37307-D-4-D MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	153635
280-37308-1	MW-1A-122012	Dissolved	Water	6010B	153635
280-37308-2	MW-99A-122012	Dissolved	Water	6010B	153635
280-37308-3	MW-1B-122012	Dissolved	Water	6010B	153635
LCS 280-153635/2-A	Lab Control Sample	Total Recoverable	Water	6010B	153635
MB 280-153635/1-A	Method Blank	Total Recoverable	Water	6010B	153635

General Chemistry

Analysis Batch: 24940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37208-F-1 DU	Duplicate	Total/NA	Water	300.0	
280-37208-F-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-37308-1	MW-1A-122012	Total/NA	Water	300.0	
280-37308-2	MW-99A-122012	Total/NA	Water	300.0	
280-37308-3	MW-1B-122012	Total/NA	Water	300.0	
LCS 160-24940/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-24940/9	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 153528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37294-G-5 DU	Duplicate	Total/NA	Water	300.0	
280-37294-G-5 MS	Matrix Spike	Total/NA	Water	300.0	
280-37294-G-5 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37305-A-2 DU	Duplicate	Total/NA	Water	300.0	
280-37305-B-2 MS	Matrix Spike	Total/NA	Water	300.0	
280-37305-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37308-1	MW-1A-122012	Total/NA	Water	300.0	
280-37308-1	MW-1A-122012	Total/NA	Water	300.0	
280-37308-2	MW-99A-122012	Total/NA	Water	300.0	
280-37308-2	MW-99A-122012	Total/NA	Water	300.0	
280-37308-3	MW-1B-122012	Total/NA	Water	300.0	
280-37308-3	MW-1B-122012	Total/NA	Water	300.0	
LCS 280-153528/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-153528/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-153528/7	Method Blank	Total/NA	Water	300.0	
MRL 280-153528/4 MRL	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 153529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37305-A-2 DU	Duplicate	Total/NA	Water	300.0	
280-37305-B-2 MS	Matrix Spike	Total/NA	Water	300.0	
280-37305-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

General Chemistry (Continued)

Analysis Batch: 153529 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	300.0	
280-37308-2	MW-99A-122012	Total/NA	Water	300.0	
280-37308-3	MW-1B-122012	Total/NA	Water	300.0	
LCS 280-153529/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-153529/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-153529/7	Method Blank	Total/NA	Water	300.0	
MRL 280-153529/4 MRL	Lab Control Sample	Total/NA	Water	300.0	

Prep Batch: 153589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37252-K-1-A MS	Matrix Spike	Total/NA	Water	9030B	
280-37252-L-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	9030B	
280-37308-1	MW-1A-122012	Total/NA	Water	9030B	
280-37308-2	MW-99A-122012	Total/NA	Water	9030B	
280-37308-3	MW-1B-122012	Total/NA	Water	9030B	
LCS 280-153589/2-A	Lab Control Sample	Total/NA	Water	9030B	
LCSD 280-153589/3-A	Lab Control Sample Dup	Total/NA	Water	9030B	
MB 280-153589/1-A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 153668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37252-K-1-A MS	Matrix Spike	Total/NA	Water	9034	153589
280-37252-L-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	9034	153589
280-37308-1	MW-1A-122012	Total/NA	Water	9034	153589
280-37308-2	MW-99A-122012	Total/NA	Water	9034	153589
280-37308-3	MW-1B-122012	Total/NA	Water	9034	153589
LCS 280-153589/2-A	Lab Control Sample	Total/NA	Water	9034	153589
LCSD 280-153589/3-A	Lab Control Sample Dup	Total/NA	Water	9034	153589
MB 280-153589/1-A	Method Blank	Total/NA	Water	9034	153589

Analysis Batch: 153747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37290-C-2 DU	Duplicate	Total/NA	Water	SM 2540C	
280-37308-1	MW-1A-122012	Total/NA	Water	SM 2540C	
280-37308-2	MW-99A-122012	Total/NA	Water	SM 2540C	
280-37308-3	MW-1B-122012	Total/NA	Water	SM 2540C	
LCS 280-153747/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-153747/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-153747/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 153797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	350.1	
280-37308-1 MS	MW-1A-122012	Total/NA	Water	350.1	
280-37308-1 MSD	MW-1A-122012	Total/NA	Water	350.1	
280-37308-2	MW-99A-122012	Total/NA	Water	350.1	
280-37308-3	MW-1B-122012	Total/NA	Water	350.1	
LCS 280-153797/74	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-153797/75	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 280-153797/76	Method Blank	Total/NA	Water	350.1	

TestAmerica Denver

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

General Chemistry (Continued)

Analysis Batch: 154186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37250-C-3 DU	Duplicate	Dissolved	Water	3500 FE D_ASP	
280-37250-C-3 MS	Matrix Spike	Dissolved	Water	3500 FE D_ASP	
280-37250-C-3 MSD	Matrix Spike Duplicate	Dissolved	Water	3500 FE D_ASP	
280-37308-1	MW-1A-122012	Dissolved	Water	3500 FE D_ASP	
280-37308-2	MW-99A-122012	Dissolved	Water	3500 FE D_ASP	
280-37308-3	MW-1B-122012	Dissolved	Water	3500 FE D_ASP	
LCS 280-154186/9	Lab Control Sample	Total/NA	Water	3500 FE D_ASP	
LCSD 280-154186/10	Lab Control Sample Dup	Total/NA	Water	3500 FE D_ASP	
MB 280-154186/11	Method Blank	Total/NA	Water	3500 FE D_ASP	

Analysis Batch: 154417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	SM 2320B	
280-37308-2	MW-99A-122012	Total/NA	Water	SM 2320B	
280-37308-2 DU	MW-99A-122012	Total/NA	Water	SM 2320B	
280-37308-3	MW-1B-122012	Total/NA	Water	SM 2320B	
LCS 280-154417/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-154417/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-154417/32	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LCSD 280-154417/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-154417/33	Method Blank	Total/NA	Water	SM 2320B	
MB 280-154417/6	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 154452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	SM 3500	
280-37308-2	MW-99A-122012	Total/NA	Water	SM 3500	
280-37308-3	MW-1B-122012	Total/NA	Water	SM 3500	
MB 280-154452/1	Method Blank	Total/NA	Water	SM 3500	

Analysis Batch: 154472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	SM4500 S2 H	
280-37308-2	MW-99A-122012	Total/NA	Water	SM4500 S2 H	
280-37308-3	MW-1B-122012	Total/NA	Water	SM4500 S2 H	
MB 280-154472/1	Method Blank	Total/NA	Water	SM4500 S2 H	

Field Service / Mobile Lab

Analysis Batch: 153486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37308-1	MW-1A-122012	Total/NA	Water	Field Sampling	
280-37308-2	MW-99A-122012	Total/NA	Water	Field Sampling	
280-37308-3	MW-1B-122012	Total/NA	Water	Field Sampling	

TestAmerica Denver

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Client Sample ID: MW-1A-122012

Date Collected: 12/20/12 10:43

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153692	12/26/12 11:39	JS	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	153761	12/26/12 17:02	TEM	TAL DEN
Total/NA	Prep	3510C			1055.1 mL	1000 uL	153757	12/26/12 11:37	SHO	TAL DEN
Total/NA	Analysis	8015B		1			153902	12/27/12 16:27	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	153635	12/28/12 12:00	RC	TAL DEN
Dissolved	Analysis	6010B		1			154339	12/31/12 20:45	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	24940	01/04/13 00:14	JB	TAL SL
Total/NA	Analysis	300.0		2			153528	12/21/12 21:52	TLP	TAL DEN
Total/NA	Analysis	300.0		5			153528	12/22/12 04:47	TLP	TAL DEN
Total/NA	Analysis	300.0		2			153529	12/21/12 21:52	TLP	TAL DEN
Total/NA	Analysis	9034		1			153668	12/24/12 08:16	DE	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	153589	12/24/12 08:16	DE	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	153747	12/26/12 10:28	MRM	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	153797	12/26/12 10:52	BMG	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	154186	12/29/12 16:22	DA	TAL DEN
Total/NA	Analysis	SM 2320B		1			154417	01/02/13 15:34	DA	TAL DEN
Total/NA	Analysis	SM 3500		1			154452	01/03/13 08:03	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			154472	12/24/12 08:16	DFB	TAL DEN
Total/NA	Analysis	Field Sampling		1			153486	12/20/12 10:43	FS	TAL DEN

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153692	12/26/12 12:39	JS	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	153761	12/26/12 17:31	TEM	TAL DEN
Total/NA	Prep	3510C			1055.8 mL	1000 uL	153757	12/26/12 11:37	SHO	TAL DEN
Total/NA	Analysis	8015B		1			153902	12/27/12 16:56	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	153635	12/28/12 12:00	RC	TAL DEN
Dissolved	Analysis	6010B		1			154339	12/31/12 20:47	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	24940	01/04/13 00:48	JB	TAL SL
Total/NA	Analysis	300.0		2			153528	12/21/12 22:09	TLP	TAL DEN
Total/NA	Analysis	300.0		5			153528	12/22/12 05:04	TLP	TAL DEN
Total/NA	Analysis	300.0		2			153529	12/21/12 22:09	TLP	TAL DEN
Total/NA	Analysis	9034		1			153668	12/24/12 08:16	DE	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	153589	12/24/12 08:16	DE	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	153747	12/26/12 10:28	MRM	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	153797	12/26/12 10:59	BMG	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	154186	12/29/12 16:22	DA	TAL DEN
Total/NA	Analysis	SM 2320B		1			154417	01/02/13 16:03	DA	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Garfield County

TestAmerica Job ID: 280-37308-1

Client Sample ID: MW-99A-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 3500		1			154452	01/03/13 08:03	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			154472	12/24/12 08:16	DFB	TAL DEN
Total/NA	Analysis	Field Sampling		1			153486	12/20/12 00:00	FS	TAL DEN

Client Sample ID: MW-1B-122012

Date Collected: 12/20/12 14:18

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153692	12/26/12 12:59	JS	TAL DEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	153761	12/26/12 18:01	TEM	TAL DEN
Total/NA	Prep	3510C			1056.9 mL	1000 uL	153757	12/26/12 11:37	SHO	TAL DEN
Total/NA	Analysis	8015B		1			153902	12/27/12 17:25	MRB	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	153635	12/28/12 12:00	RC	TAL DEN
Dissolved	Analysis	6010B		1			154339	12/31/12 20:50	HEB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	24940	01/04/13 01:23	JB	TAL SL
Total/NA	Analysis	300.0		5			153528	12/21/12 22:26	TLP	TAL DEN
Total/NA	Analysis	300.0		50			153528	12/22/12 05:22	TLP	TAL DEN
Total/NA	Analysis	300.0		5			153529	12/21/12 22:26	TLP	TAL DEN
Total/NA	Analysis	9034		1			153668	12/24/12 08:16	DE	TAL DEN
Total/NA	Prep	9030B			250 mL	250 mL	153589	12/24/12 08:16	DE	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	153747	12/26/12 10:28	MRM	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	153797	12/26/12 11:01	BMG	TAL DEN
Dissolved	Analysis	3500 FE D_ASP		1	10 mL	10 mL	154186	12/29/12 16:22	DA	TAL DEN
Total/NA	Analysis	SM 2320B		1			154417	01/02/13 14:20	DA	TAL DEN
Total/NA	Analysis	SM 3500		1			154452	01/03/13 08:03	DG	TAL DEN
Total/NA	Analysis	SM4500 S2 H		1			154472	12/24/12 08:16	DFB	TAL DEN
Total/NA	Analysis	Field Sampling		1			153486	12/20/12 14:18	FS	TAL DEN

Client Sample ID: TB-122012

Date Collected: 12/20/12 00:00

Date Received: 12/21/12 15:20

Lab Sample ID: 280-37308-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	153692	12/26/12 13:19	JS	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

TestAmerica Denver

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-37308-1

Login Number: 37308

List Source: TestAmerica Denver

List Number: 1

Creator: Underwood, Tim

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 280-37308-1

Login Number: 37308

List Number: 1

Creator: Wilson, Sue

List Source: TestAmerica St. Louis

List Creation: 12/27/12 02:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	20,20,4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Chain of Custody Record

Client Information Client Contact: Ms. Kimberly O'Day / David Bohmann Company: Tetra Tech GEO Address: 363 Centennial Parkway City: Louisville State, Zip: CO, 80027 Phone: [blank] Email: Kimberly.O'Day@tetratech.com / david.bohmann@tetratech.com Project Name: Garfield County Site: Mamm Creek - Bayville Country		Lab P/N: Griego, DiLea E-Mail: dilea.griego@testamericainc.com Sampler: K. O'Day Phone: 303-665-4390		Carrier Tracking No(s): GOC No: 280-18652-8597.1 Page: Page 1 of 1 Job #:																																																																																																																																																																																												
Due Date Requested: Standard TAT Requested (days): Standard 10 Business Days PO #: [blank] WO #: [blank] Project #: 28008100 SOW#: [blank]		Analysis Requested <table border="1"> <tr> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (Water, Seawater, Other)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>6010B - (MOD) DISSOLVED (Field Filtered)</th> <th>350.1 - Ammonia</th> <th>8260B - (MOD) BTEX</th> <th>8015B - GRO - (MOD)</th> <th>8015B - DRO - (MOD)</th> <th>9034 - Sulfide (Req. for Un-ionized Hydrogen Sulfide (CALC))</th> <th>SM4500 Un-ionized Hydrogen Sulfide (CALC)</th> <th>8056A - Iodide (Subcontract)</th> <th>Wet Chemistry: Alk/TDS/Alions/Ferrous Fe</th> <th>826.06 (mol) Volu meth</th> <th>Total Number of Containers</th> </tr> <tr> <td>12-20-12</td> <td>1043</td> <td>G</td> <td>Water</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>13</td> <td>12.72, 10.31, 3.837 mg/L</td> </tr> <tr> <td>12-20-12</td> <td>-</td> <td>G</td> <td>Water</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>13</td> <td></td> </tr> <tr> <td>12-20-12</td> <td>1418</td> <td>G</td> <td>Water</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>1</td> <td>12.35, 10.90, 4.590 mg/L</td> </tr> <tr> <td>12-20-12</td> <td>-</td> <td>-</td> <td>Water</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>12-20-12</td> <td></td> <td></td> <td>Water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12-20-12</td> <td></td> <td></td> <td>Water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12-20-12</td> <td></td> <td></td> <td>Water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12-20-12</td> <td></td> <td></td> <td>Water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12-20-12</td> <td></td> <td></td> <td>Water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12-20-12</td> <td></td> <td></td> <td>Water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010B - (MOD) DISSOLVED (Field Filtered)	350.1 - Ammonia	8260B - (MOD) BTEX	8015B - GRO - (MOD)	8015B - DRO - (MOD)	9034 - Sulfide (Req. for Un-ionized Hydrogen Sulfide (CALC))	SM4500 Un-ionized Hydrogen Sulfide (CALC)	8056A - Iodide (Subcontract)	Wet Chemistry: Alk/TDS/Alions/Ferrous Fe	826.06 (mol) Volu meth	Total Number of Containers	12-20-12	1043	G	Water	X	X	X	X	X	X	X	X	X	X	X	13	12.72, 10.31, 3.837 mg/L	12-20-12	-	G	Water	X	X	X	X	X	X	X	X	X	X	X	13		12-20-12	1418	G	Water	X	X	X	X	X	X	X	X	X	X	X	1	12.35, 10.90, 4.590 mg/L	12-20-12	-	-	Water	X	X	X	X	X	X	X	X	X	X	X			12-20-12			Water														12-20-12			Water														12-20-12			Water														12-20-12			Water														12-20-12			Water														12-20-12			Water													
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Sample Identification mw-1A-122012 mw-99A-122012 mw-1B-122012 TB-122012		Special Instructions/Note: Un-ionized Hydrogen Sulfide requires Field pH, Field Temp and Field Conductivity.																																																																																																																																																																																														
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months																																																																																																																																																																																														
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:																																																																																																																																																																																														
Empty Kit Relinquished by:		Method of Shipment:																																																																																																																																																																																														
Relinquished by: Kimberly O'Day		Date/Time: 12-21-12 1100		Company: TT Geo		Relinquished by: David Bohmann		Date/Time: 12-21-12 1100		Company: TB GEO		Relinquished by: [Signature]		Date/Time: 12-21-12 1520		Company: TAD																																																																																																																																																																																
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Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 11.0 in 12/12/12																																																																																																																																																																																												

Lab #: 324306 Job #: 20210
 Sample Name/Number: MW-3B-121812
 Company: Tetra Tech
 Date Sampled: 12/18/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 12/26/2012 Date Reported: 1/02/2013

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	0.0125			
Hydrogen -----	nd			
Argon -----	0.978			
Oxygen -----	16.08			
Nitrogen -----	79.62			
Carbon Dioxide -----	nd			
Methane -----	3.21	-52.32	-197.3	
Ethane -----	0.0827			
Ethylene -----	0.0020			
Propane -----	0.0116			
Propylene -----	nd			
Iso-butane -----	0.0004			
N-butane -----	0.0003			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0003			

Remarks:
 Concentration of methane in water = 3.4 cc/L ; 2.3 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 324307 Job #: 20210
 Sample Name/Number: MW-2A-121912
 Company: Tetra Tech
 Date Sampled: 12/19/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 12/26/2012 Date Reported: 1/02/2013

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	0.0086			
Hydrogen -----	nd			
Argon -----	0.275			
Oxygen -----	0.82			
Nitrogen -----	19.86			
Carbon Dioxide -----	0.026			
Methane -----	78.93	-59.79	-208.0	
Ethane -----	0.0770			
Ethylene -----	0.0021			
Propane -----	0.0002			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0002			

Remarks:
 Concentration of methane in water = 190 cc/L ; 130 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 324308 Job #: 20210
 Sample Name/Number: Currie Well-121912
 Company: Tetra Tech
 Date Sampled: 12/19/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 12/26/2012 Date Reported: 1/02/2013

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.25			
Oxygen -----	0.44			
Nitrogen -----	76.20			
Carbon Dioxide -----	0.79			
Methane -----	21.30	-80.09	-191.2	
Ethane -----	0.0178			
Ethylene -----	nd			
Propane -----	0.0008			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.64

Concentration of methane in water = 7.6 cc/L ; 5.1 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 324309 Job #: 20210
 Sample Name/Number: MW-1B-122012
 Company: Tetra Tech
 Date Sampled: 12/20/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 12/26/2012 Date Reported: 1/02/2013

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.01			
Oxygen -----	7.07			
Nitrogen -----	70.32			
Carbon Dioxide -----	nd			
Methane -----	21.20	-37.17	-160.6	
Ethane -----	0.360			
Ethylene -----	0.0059			
Propane -----	0.0312			
Propylene -----	nd			
Iso-butane -----	0.0054			
N-butane -----	0.0010			
Iso-pentane -----	0.0002			
N-pentane -----	nd			
Hexanes + -----	0.0003			

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.41

Concentration of methane in water = 13 cc/L ; 8.7 ppm

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 324310 Job #: 20210
 Sample Name/Number: MW-1A-122012
 Company: Tetra Tech
 Date Sampled: 12/20/2012
 Container: IsoBag
 Field/Site Name: Garfield County-Mamm Creek
 Location: Rifle Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 12/26/2012 Date Reported: 1/02/2013

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	0.0088			
Hydrogen -----	nd			
Argon -----	0.880			
Oxygen -----	13.80			
Nitrogen -----	74.04			
Carbon Dioxide -----	nd			
Methane -----	11.24	-56.86	-181.9	
Ethane -----	0.0245			
Ethylene -----	0.0021			
Propane -----	0.0013			
Propylene -----	nd			
Iso-butane -----	0.0002			
N-butane -----	0.0002			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0002			

Remarks:
 Concentration of methane in water = 13 cc/L ; 8.9 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 331410 Job #: 20531 IS-62083
 Sample Name/Number: MW-3A-012313
 Company: Tetra Tech
 Date Sampled: 1/23/2013
 Container: IsoBag
 Field/Site Name: Garfield County
 Location: Silt Co.
 Formation/Depth:
 Sampling Point:
 Date Received: 1/29/2013 Date Reported: 2/04/2013

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.014			
Hydrogen Sulfide -----	na			
Helium -----	0.0040			
Hydrogen -----	nd			
Argon -----	0.838			
Oxygen -----	13.60			
Nitrogen -----	71.39			
Carbon Dioxide -----	nd			
Methane -----	14.12	-73.32	-199.7	
Ethane -----	0.0305			
Ethylene -----	0.0024			
Propane -----	0.0007			
Propylene -----	nd			
Iso-butane -----	0.0006			
N-butane -----	0.0002			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0002			

Remarks:
 Concentration of methane in water = 19 cc/L ; 13 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.