

SOUTHWEST RESEARCH INSTITUTE®

6220 CULEBRA ROAD 78238-5166 • P.O. DRAWER 28510 78228-0510 • SAN ANTONIO, TEXAS, USA • (210) 684-5111 • WWW.SWRI.ORG

CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY



September 4, 2019

Healthy Babies Bright Futures/Virginia Organizing
703 Concord Avenue
Charlottesville, VA 22903-5208

Attn: Ms. Jane Houlihan

Subject:	SDG Number:	649954
	SwRI Project Number:	24099.02.014
	SwRI Task Order Number:	190723-8
	SwRI Sample Receipt Number:	63739, 63791
	Samples Received	07/23/2019, 08/05/2019
	Fraction:	LC/MS/MS Analysis for Perchlorate

Dear Ms. Houlihan,

Please find the enclosed results for the twenty-five (25) overall product samples, received on the above referenced date. Should you have any questions, please feel free to contact me directly at 210.522-5042, or by via email at alice.yau@swri.org.

Sincerely,

A handwritten signature in cursive script that reads 'Alice Yau'.

Alice Yau
Principal Scientist

APPROVED:

A handwritten signature in cursive script that reads 'Michael J. Dammann'.
Michael J. Dammann
Director

AY: mg



Benefiting government, industry and the public through innovative science and technology

SOUTHWEST RESEARCH INSTITUTE

CLIENT: Healthy Babies Bright Futures/Virginia
Organizing

SwRI PROJECT#: 24099.02.014

SwRI TASK ORDER: 190723-8

SwRI SRR: 63739, 63791

SDG: 649954

VTSR: 07/23/2019, 08/05/2019

**LC/MS/MS ANALYSIS
FOR
PERCHLORATE**

SOUTHWEST RESEARCH INSTITUTE

CLIENT: Healthy Babies Bright Futures/Virginia
Organizing

SwRI PROJECT#: 24099.02.014

SwRI TASK ORDER: 190723-8

SwRI SRR: 63739, 63791

SDG: 649954

VTSR: 07/23/2019, 08/05/2019

CASE NARRATIVE

Client: Healthy Babies Bright Futures/Virginia Organizing

SwRI Project Number: 24099.02.014

Sample Receipts: 63739 and 63791

SwRI Task Order Number: 190723-8

LC/MS/MS Determination of Perchlorate (CAS RN: 14797-73-0) in Food Samples

SwRI TAP 01-0408-102 *Analysis of Perchlorate in Water and Soil Samples by Tandem LC/MS* was used to determine perchlorate in the food samples in SRR 63739 & 63791. Extraction procedure of the food samples was modified but based on the FDA's method, "Rapid Determination of Perchlorate Anion in Foods by Ion Chromatography-Tandem Mass Spectrometry". (<https://www.fda.gov/food/chemicals/rapid-determination-perchlorate-anion-foods-ion-chromatography-tandem-mass-spectrometry>) A total of 25 samples were received by SwRI for the analysis. Below table is a cross reference of SwRI sample IDs and the client IDs.

SwRI ID	Client ID
649954	AK-007-PG
649955	AK-009-PT
649956	CA-99-015-PAM
649957	CO-001-PAM
649958	MD-030-PG
649959	ME-001-PAM
649960	ME-002-PAM
649961	ME-004-PAM
649962	ME-025-PWM
649963	MI-012-PBBB
649964	MI-013-PG
649965	MN-008-PAM
649966	MN-013-PAM
649967	NY-006-PAM
649968	OH-005-PG
649969	OH-024-PAM
649970	OH-027-PWM
649971	OL-AM-008-PAM
649972	OL-AM-010-PAM
649973	OR-004-PAM
649974	SC-003-PAM
649975	VA-010-PAM
649976	VA-028-PAM
649977	VIR-WM-P002
650539	NY-002-PAM

Four samples (ME-025-PWM, MN-013-PAM, VA-028-PAM and VIR-WM-P002) were considered high moisture content. Sample weight of ~ 10 grams was used for these four samples and 20 mL of 1% acetic acid in water was used as the extraction solvent and the final volume of the extract

Client: Healthy Babies Bright Futures/Virginia Organizing

SwRI Project Number: 24099.02.014

Sample Receipts: 63739 and 63791

SwRI Task Order Number: 190723-8

was assumed to be 30 mL. For the remaining 21 samples, the sample preparation for low moisture foods (oats, corn meal and wheat flour) was followed. Sample weight of ~ 5 grams was aliquotted for extraction. The extraction solvent consisted of 20 mL 1% acetic acid in water and 20 mL acetonitrile.

The instrument used for the analysis included Agilent 1200 series HPLC with 6410 triple quadrupole (QQQ) mass spectrometer. The HPLC column used was Waters IC-Pak Anion HR column, 4.6 x 75 mm (Part number: WAT026765). Mobile phase consisted of 50% - 25 mM ammonium bicarbonate (NH_4HCO_3), adjusted to pH 10 with NH_4OH and 50% acetonitrile. Flow rate was maintained at 0.4 mL/min and the total analysis time was 20.0 minutes.

The following transitions were used to quantitate and confirm the presence of perchlorate.

Target	Quantitation	Confirmation
Perchlorate	99 → 83	101 → 85
Perchlorate- $^{18}\text{O}_4$ (internal standard)	107 → 89	109 → 91

The perchlorate calibration curve ranged from ~0.4 – 100 ng/mL. A first-order linear regression calibration model was used and correlation coefficients of 0.998 or higher was achieved. The 20 ng/mL standard was injected but omitted from the calibration curve because twice the amount of internal standard was spiked. Subsequent CCV was within 20% of the theoretical value.

Sample calculation example

Calibration curve for perchlorate:

$$0.884025 x + 0.0006872672 = y$$

LCMS File ID: B08221911.D

Sample ID: 649976 VA-028-PAM

Since: Perchlorate area = 70599.8

Perchlorate internal standard area = 119830.4

Area ratio = $70599.8 / 119830.4 = 0.589164$

Solve: $0.884025 x + 0.0006872672 = 0.589164$

Obtain: $x = 0.66568$ area ratio

$x = 0.66568$ = perchlorate conc / perchlorate IS concentration

Perchlorate conc = $0.66568 \times 10.0 \text{ ng/mL} = 6.6568 \text{ ng/mL}$

Client: Healthy Babies Bright Futures/Virginia Organizing

SwRI Project Number: 24099.02.014

Sample Receipts: 63739 and 63791

SwRI Task Order Number: 190723-8

Perchlorate concentration in sample:

$$6.6568 \text{ ng/mL} \times 30 \text{ mL} / 10.0685 \text{ g} = 19.8 \text{ ng/g (ppb)}$$

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature. This report shall not be reproduced except in full, without the written approval of SwRI."



Manager



Date

SOUTHWEST RESEARCH INSTITUTE

CLIENT: Healthy Babies Bright Futures/Virginia

Organizing

SwRI PROJECT#: 24099.02.014

SwRI TASK ORDER: 190723-8

SwRI SRR: 63739, 63791

SDG: 649954

VTSR: 07/23/2019, 08/05/2019

SAMPLE RESULTS

Client: Healthy Babies Bright Futures/Virginia Organizing

Project number: 24099.02.014

Task order: 190723-8

Sample receipts: 63739 & 63791

Extraction date: 08/15/2019

LC/MS analysis date: 08/22/2019



Determination of Perchlorate by LC/MS/MS Analysis in Food

SwRI ID	Client ID	Sample Wt (g)	Extract Vol (mL)	Perchlorate LCMS (ng/mL)	Perchlorate ng/g (ppb)	Qualifiers
649954	AK-007-PG	5.0608	40	0.588	4.6	
649955	AK-009-PT	5.0542	40	1.439	11.4	
649956	CA-99-015-PAM	5.0221	40	0.436	3.5	
649957	CO-001-PAM	5.0690	40	0.400	3.2	U
649958	MD-030-PG	5.0644	40	0.973	7.7	
649959	ME-001-PAM	5.0067	40	0.400	3.2	U
649960	ME-002-PAM	5.0370	40	0.339	2.7	J
649961	ME-004-PAM	5.0083	40	0.182	1.5	J
649962	ME-025-PWM	10.3970	30	1.271	3.7	
649963	MI-012-PBBB	5.0466	40	0.418	3.3	
649964	MI-013-PG	5.0902	40	1.111	8.7	
649965	MN-008-PAM	5.0164	40	0.305	2.4	J
649966	MN-013-PAM	10.1800	30	0.771	2.3	
649967	NY-006-PAM	5.0139	40	0.206	1.6	J
649968	OH-005-PG	5.0815	40	0.532	4.2	
649969	OH-024-PAM	5.1853	40	0.238	1.8	J
649970	OH-027-PWM	5.0832	40	0.587	4.6	
649971	OL-AM-008-PAM	5.0600	40	0.898	7.1	
649972	OL-AM-010-PAM	5.0126	40	0.400	3.2	U
649973	OR-004-PAM	5.0390	40	0.535	4.2	
649974	SC-003-PAM	5.0462	40	0.400	3.2	U
649975	VA-010-PAM	5.0442	40	0.400	3.2	U
649976	VA-028-PAM	10.0685	30	6.657	19.8	
649977	VIR-WM-P002	10.1752	30	0.218	0.64	J
650539	NY-002-PAM	5.0155	40	0.400	3.2	U

Matrix spike samples and recoveries

SwRI ID	Client ID	Sample Wt (g)	Extract Vol (mL)	Perchlorate LCMS (ng/mL)	Perchlorate ng/g (ppb)	Spike amt ng/g (ppb)	% Rec	% RPD
649962 MS	ME-025-PWM MS	10.0265	30	6.504	19.460	19.947	79%	2.1%
649962 MSD	ME-025-PWM MSD	10.0939	30	6.400	19.022	19.814	77%	
649954 MS	AK-007-PG MS	5.0142	40	5.220	41.640	39.887	93%	9.2%
649954 MSD	AK-007-PG MSD	5.0088	40	5.665	45.239	39.930	102%	

U: Indicates the compound was analyzed for but not detected at the reported concentration.

J: Indicates an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting identification criteria, but the result is less than the quantitation limit.

SOUTHWEST RESEARCH INSTITUTE

CLIENT: Healthy Babies Bright Futures/Virginia
Organizing

SwRI PROJECT#: 24099.02.014

SwRI TASK ORDER: 190723-8

SwRI SRR: 63739, 63791

SDG: 649954

VTSR: 07/23/2019, 08/05/2019

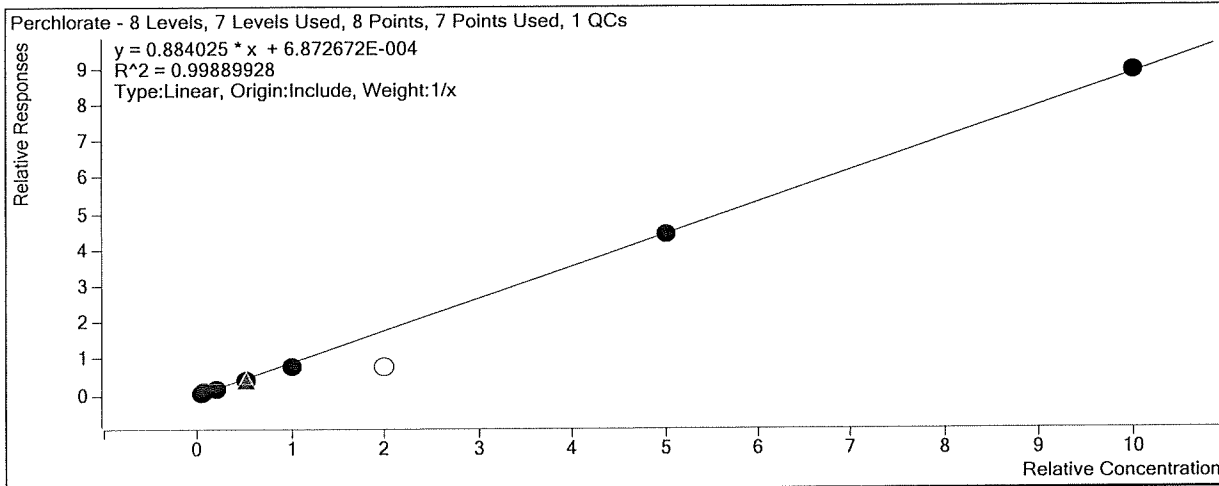
QC RAW DATA

Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM **Analyst Name** SWRI01\AYY
Report Time 8/23/2019 1:25 PM **Reporter Name** AYY
Last Calib Update 8/23/2019 1:24 PM **Batch State** Processed

Agan
08/23/19

Calibration Info

Target Compound Perchlorate



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc	RF
D:\MassHunter\Data\082219_Perchlorate\B08221908.d	Calibration	1	☒	3874.9	0.4000	0.9771
D:\MassHunter\Data\082219_Perchlorate\B08221907.d	Calibration	2	☒	8019.7	0.8000	1.0146
D:\MassHunter\Data\082219_Perchlorate\B08221906.d	Calibration	3	☒	16088.6	2.0000	0.8433
D:\MassHunter\Data\082219_Perchlorate\B08221905.d	Calibration	4	☒	37549.0	5.0000	0.8024
D:\MassHunter\Data\082219_Perchlorate\B08221941.d	QC	4	☒	47403.5	5.0000	0.7535
D:\MassHunter\Data\082219_Perchlorate\B08221904.d	Calibration	5	☒	73183.0	10.0000	0.8008
D:\MassHunter\Data\082219_Perchlorate\B08221903.d	Calibration	6	☐	138243.5	20.0000	0.3791
D:\MassHunter\Data\082219_Perchlorate\B08221902.d	Calibration	7	☒	353374.9	50.0000	0.8861
D:\MassHunter\Data\082219_Perchlorate\B08221901.d	Calibration	8	☒	684475.6	100.0000	0.8953

ISTD Compound Perchlorate-18O4

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc	RF
D:\MassHunter\Data\082219_Perchlorate\B08221908.d	Calibration	1	☒	99136.8	10.0000	9913.6775
D:\MassHunter\Data\082219_Perchlorate\B08221907.d	Calibration	2	☒	98801.4	10.0000	9880.1421
D:\MassHunter\Data\082219_Perchlorate\B08221906.d	Calibration	3	☒	95390.7	10.0000	9539.0683
D:\MassHunter\Data\082219_Perchlorate\B08221905.d	Calibration	4	☒	93592.2	10.0000	9359.2197
D:\MassHunter\Data\082219_Perchlorate\B08221941.d	QC	4	☒	125814.7	10.0000	12581.4659
D:\MassHunter\Data\082219_Perchlorate\B08221904.d	Calibration	5	☒	91386.6	10.0000	9138.6623
D:\MassHunter\Data\082219_Perchlorate\B08221903.d	Calibration	6	☒	182336.0	10.0000	18233.6029
D:\MassHunter\Data\082219_Perchlorate\B08221902.d	Calibration	7	☒	79758.7	10.0000	7975.8655
D:\MassHunter\Data\082219_Perchlorate\B08221901.d	Calibration	8	☒	76455.1	10.0000	7645.5136

Quantitative Analysis Calibration Report

010010

Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
 Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
 Report Time 8/23/2019 1:25 PM Reporter Name AYY
 Last Calib Update 8/23/2019 1:24 PM Batch State Processed

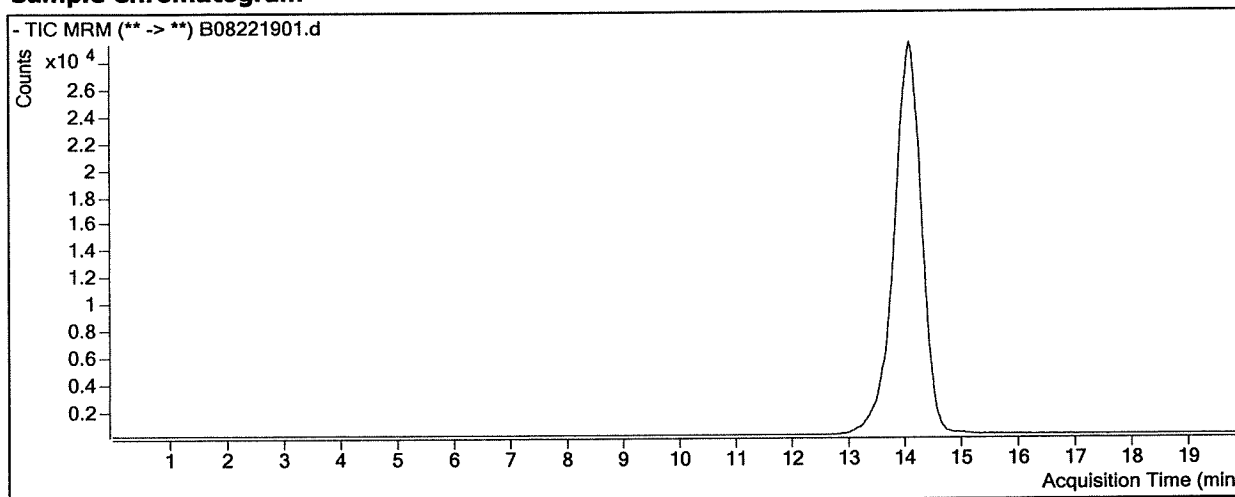
Agar
 08/23/19

Analysis Info

Acq Time 2019-08-22 17:52
 Position P1-A1
 Dilution 1
 Inj Vol 20
 Sample Type Calibration

Data File B08221901.d
 Sample Name Perchlorate 100 ng/mL
 Sample Info 11-STD8-Lab102_2019
 Acq Method File Perchlorate.m
 Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

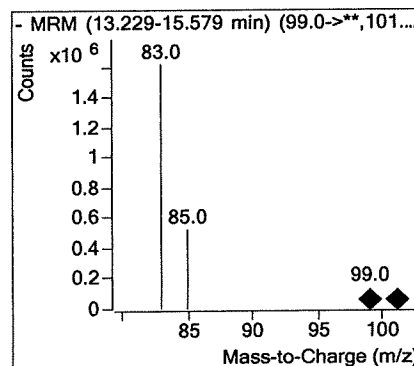
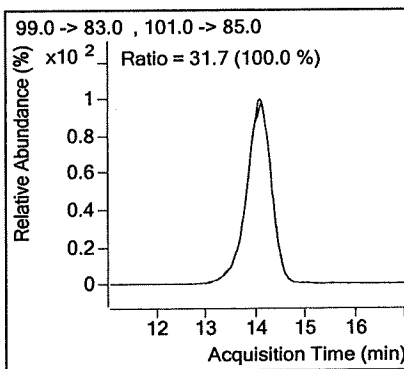
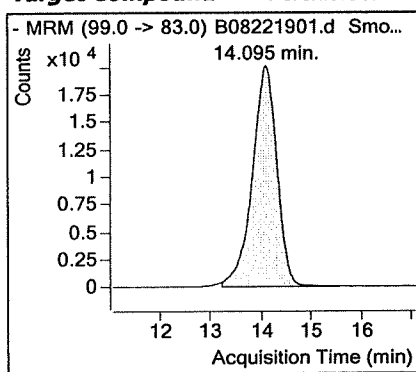


Quantitation Results

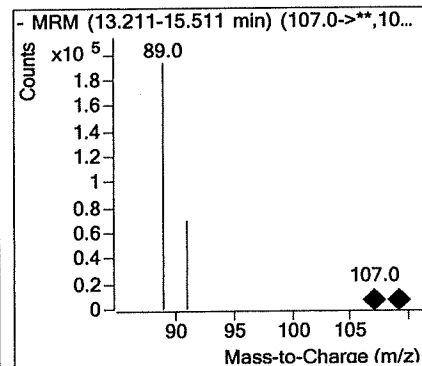
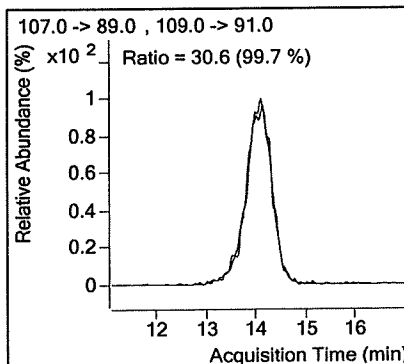
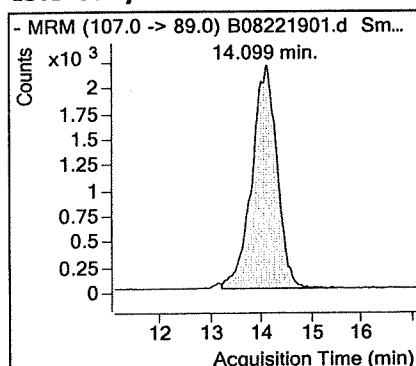
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-18O4	14.095	684475.6	76455.1	8.9526	101.2636	101.26

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



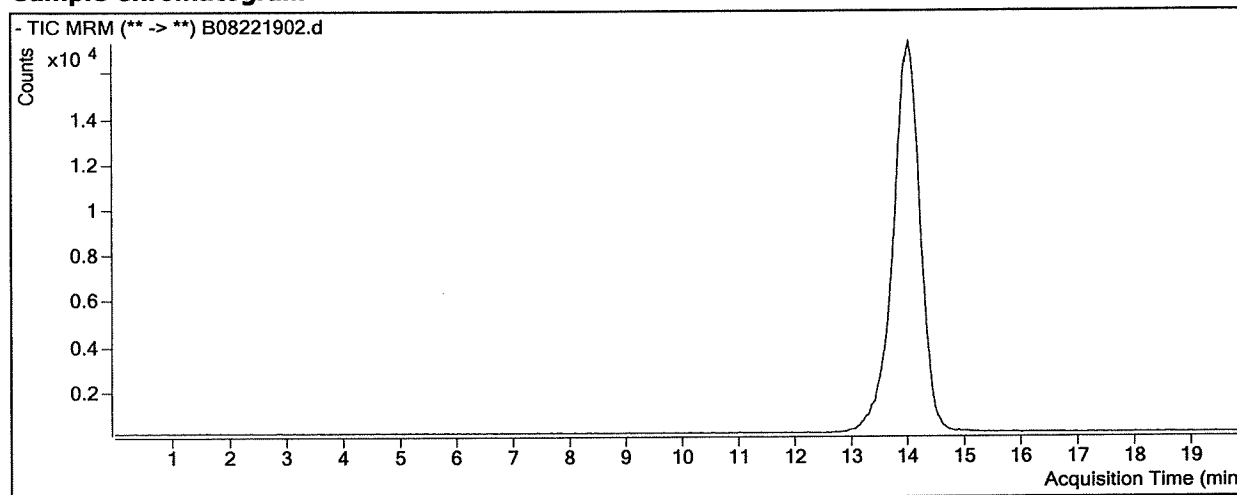
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 18:13
Position P1-A2
Dilution 1
Inj Vol 20
Sample Type Calibration

Data File B08221902.d
Sample Name Perchlorate 50 ng/mL
Sample Info 11-STD7-Lab102_2019
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

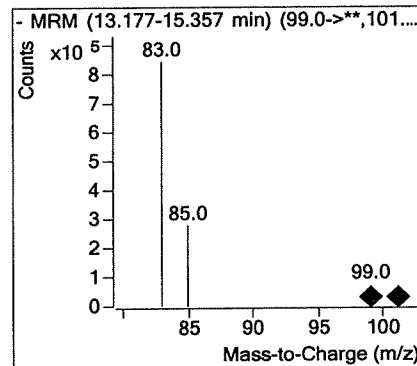
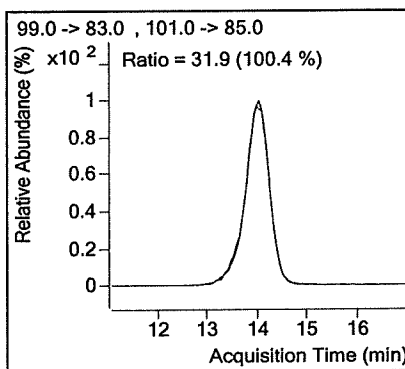
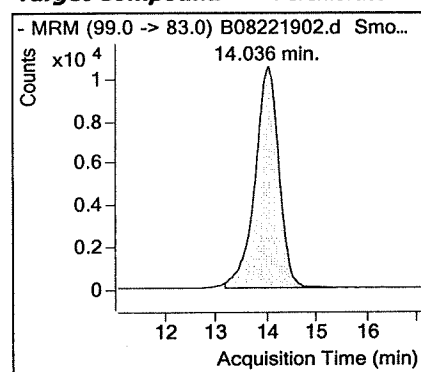


Quantitation Results

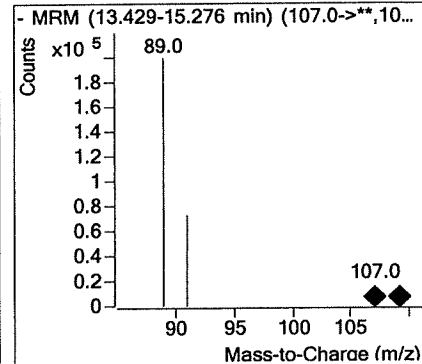
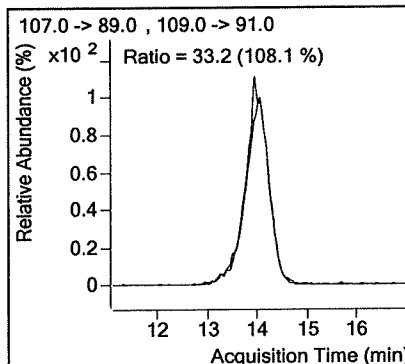
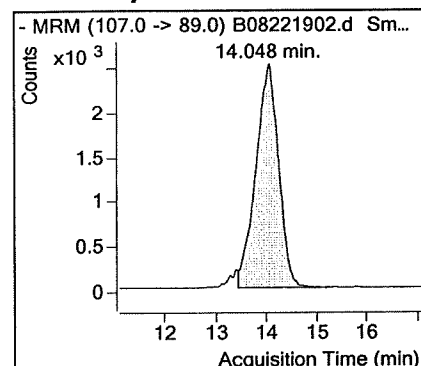
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-18O4	14.036	353374.9	79758.7	4.4306	50.1102	100.22

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



Quantitative Analysis Calibration Report

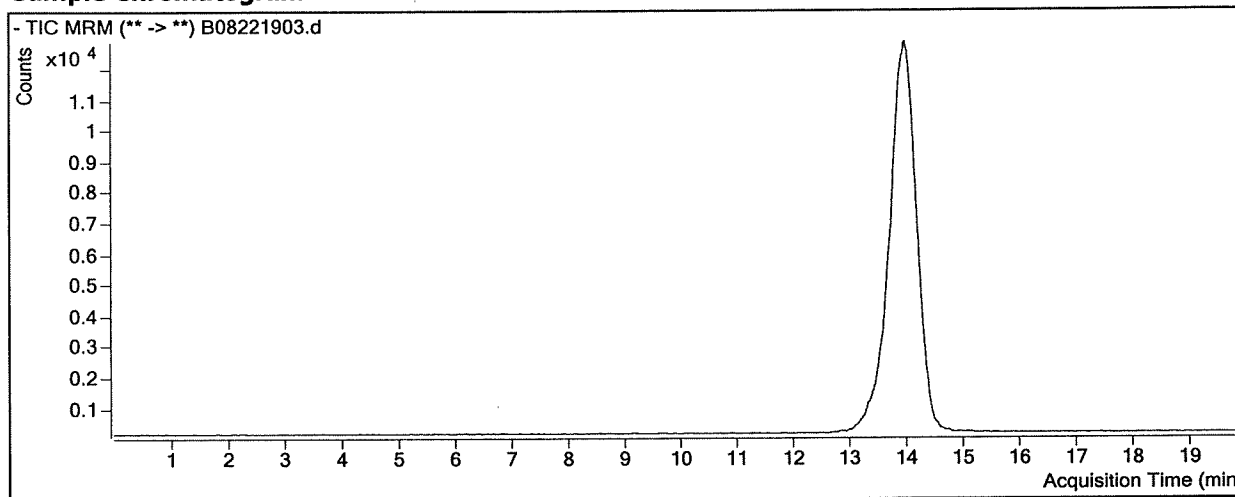
010012

Batch Data Path	D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin		
Analysis Time	8/23/2019 1:24 PM	Analyst Name	SWRI01\AYY
Report Time	8/23/2019 1:25 PM	Reporter Name	AYY
Last Calib Update	8/23/2019 1:24 PM	Batch State	Processed

Analysis Info

Acq Time	2019-08-22 18:34	Data File	B08221903.d
Position	P1-A3	Sample Name	Perchlorate 20 ng/mL
Dilution	1	Sample Info	11-STD6-Lab102_2019
Inj Vol	20	Acq Method File	Perchlorate.m
Sample Type	Calibration	Project & TO	24099.02.014 / TO: 190723-8

Sample Chromatogram

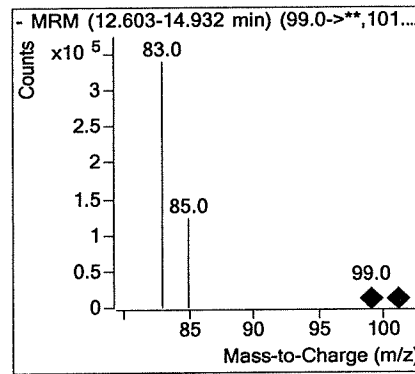
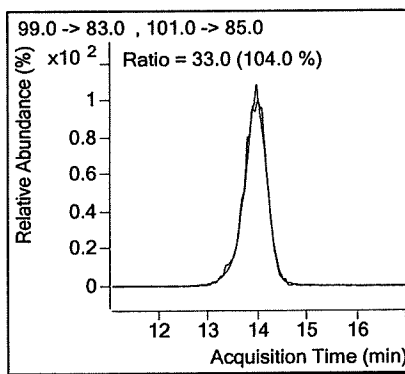
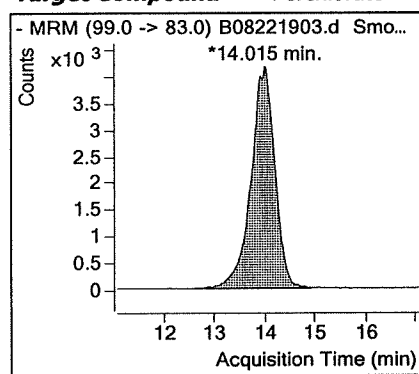


Quantitation Results

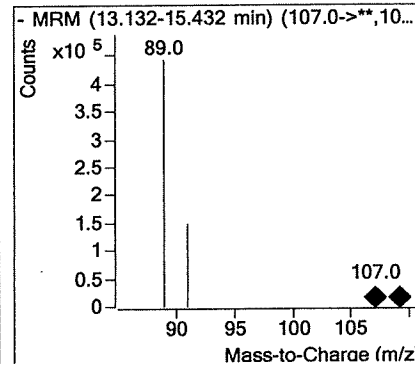
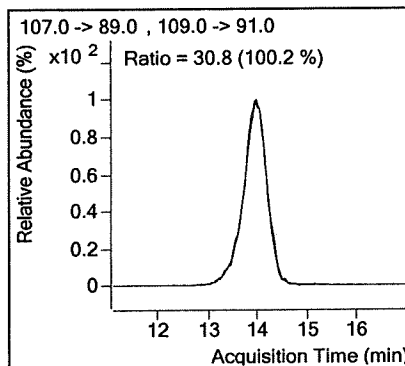
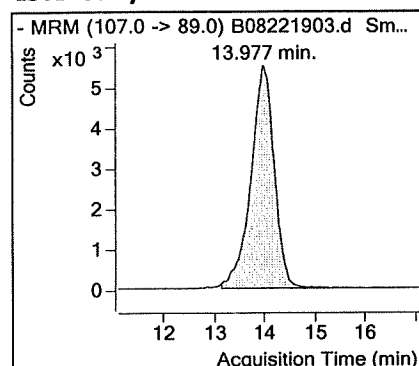
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-1804	14.015	138243.5	182336.0	0.7582	8.5687	42.84

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



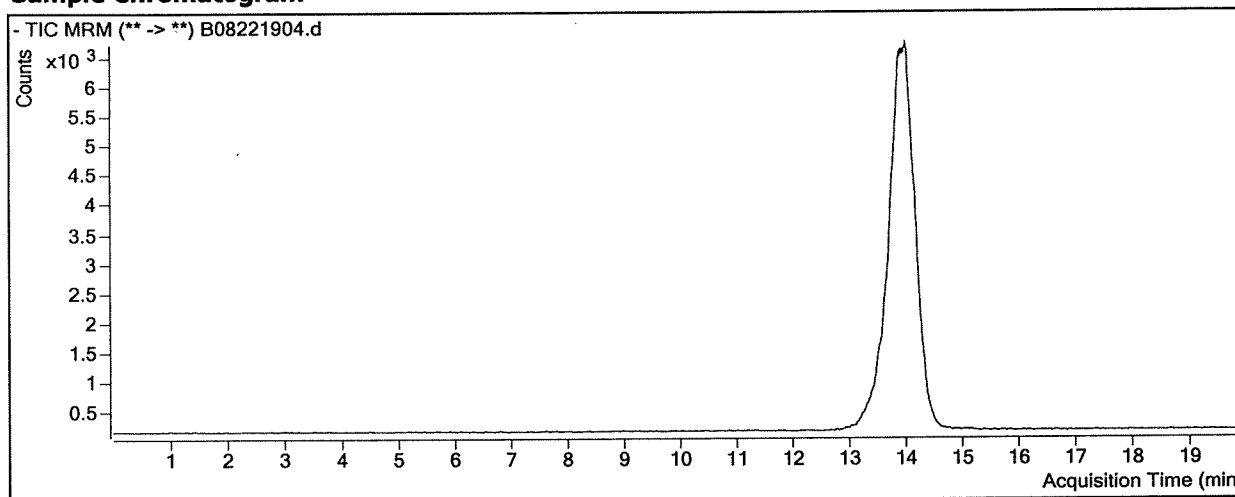
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 18:55
Position P1-A4
Dilution 1
Inj Vol 20
Sample Type Calibration

Data File B08221904.d
Sample Name Perchlorate 10 ng/mL
Sample Info 11-STD5-Lab102_2019
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

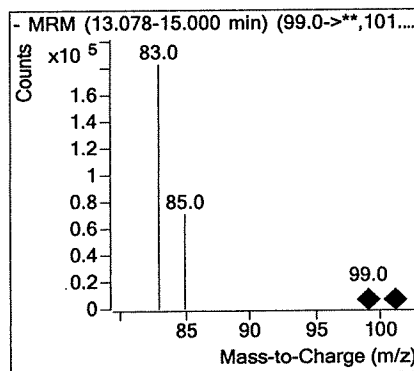
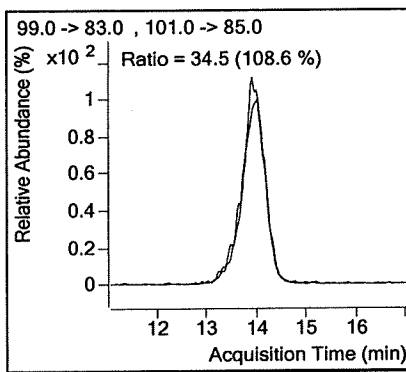
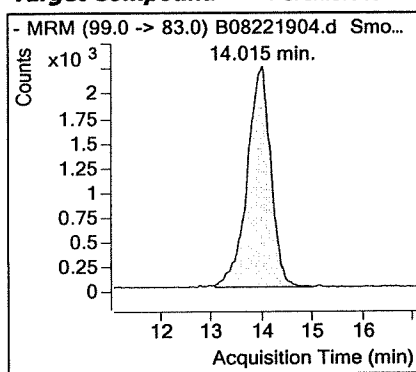


Quantitation Results

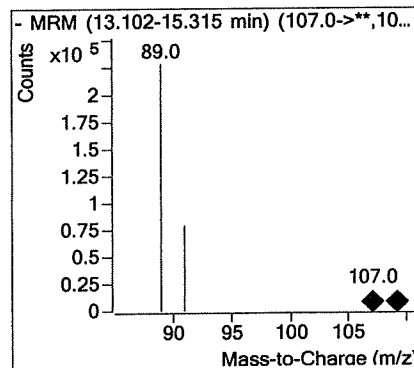
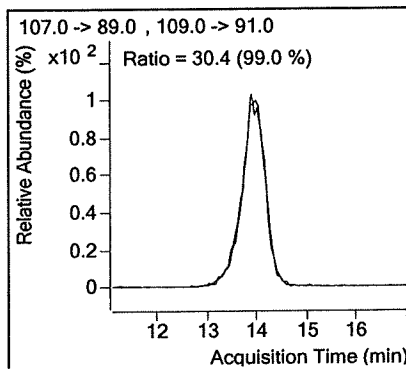
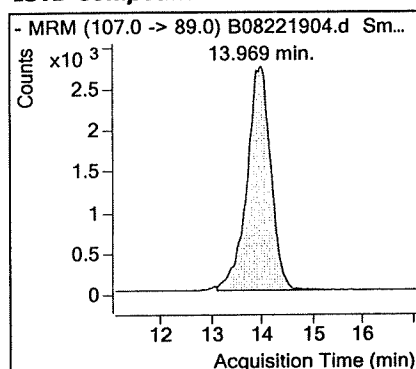
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-18O4	14.015	73183.0	91386.6	0.8008	9.0509	90.51

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



Quantitative Analysis Calibration Report

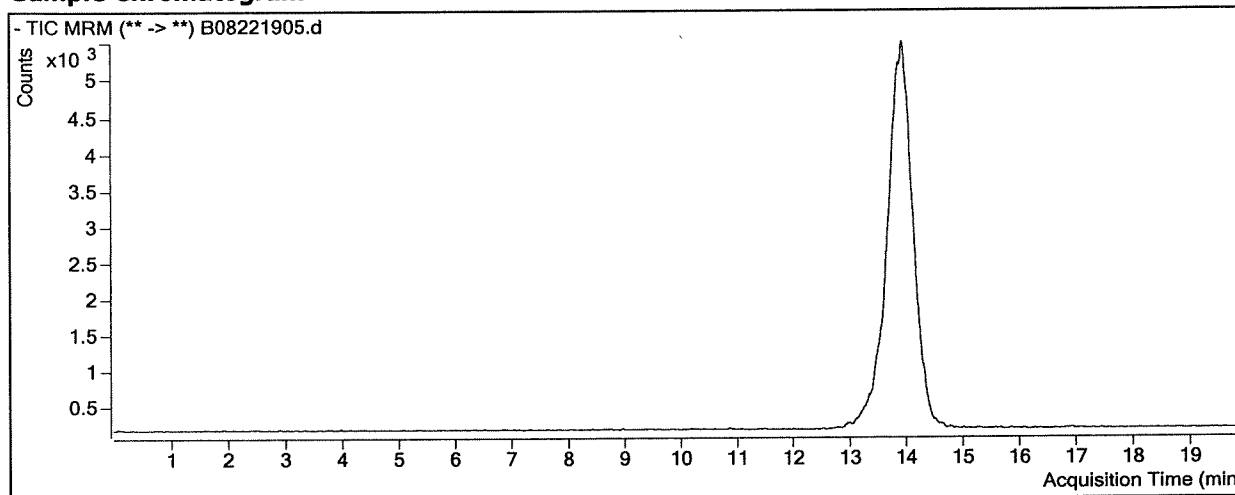
010014

Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM **Analyst Name** SWRI01\AYY
Report Time 8/23/2019 1:25 PM **Reporter Name** AYY
Last Calib Update 8/23/2019 1:24 PM **Batch State** Processed

Analysis Info

Acq Time 2019-08-22 19:16 **Data File** B08221905.d
Position P1-A5 **Sample Name** Perchlorate 5 ng/mL
Dilution 1 **Sample Info** 11-STD4-Lab102_2019
Inj Vol 20 **Acq Method File** Perchlorate.m
Sample Type Calibration **Project & TO** 24099.02.014 / TO: 190723-8

Sample Chromatogram

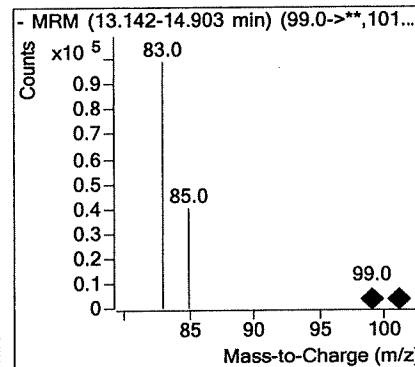
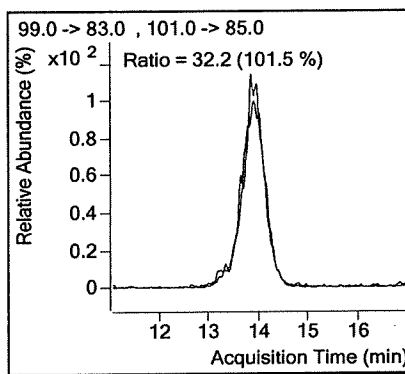
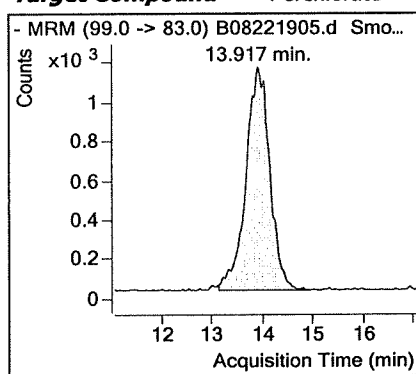


Quantitation Results

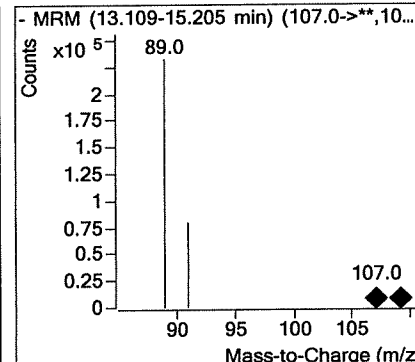
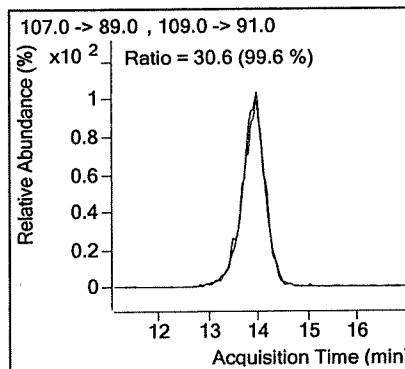
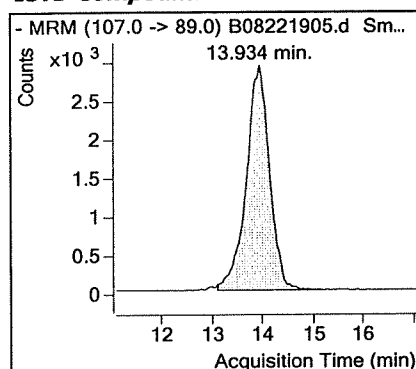
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-18O4	13.917	37549.0	93592.2	0.4012	4.5305	90.61

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



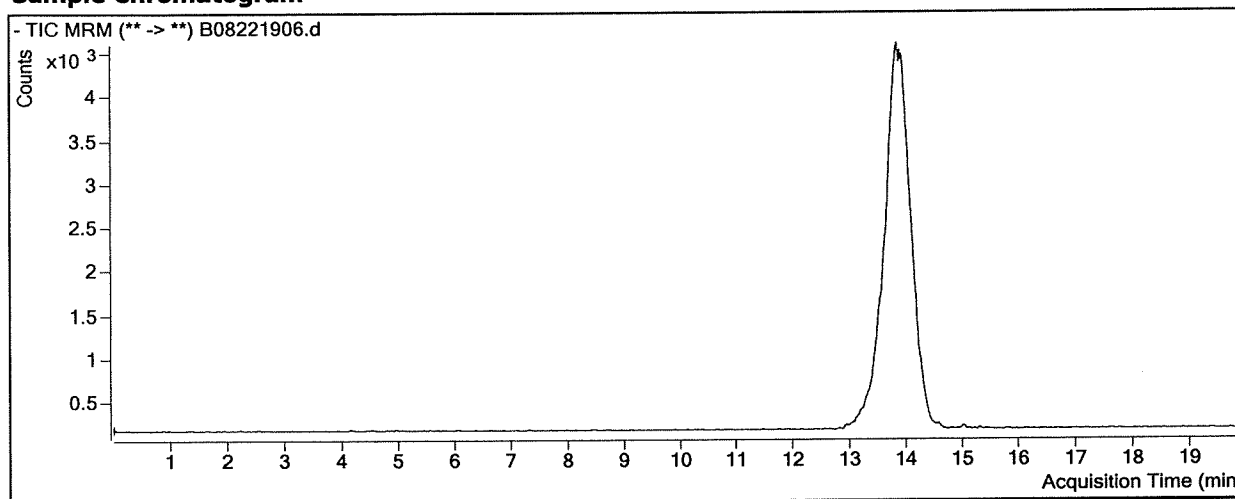
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 19:37
Position P1-A6
Dilution 1
Inj Vol 20
Sample Type Calibration

Data File B08221906.d
Sample Name Perchlorate 2 ng/mL
Sample Info 11-STD3-Lab102_2019
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

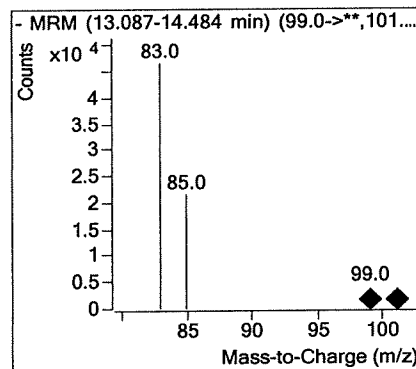
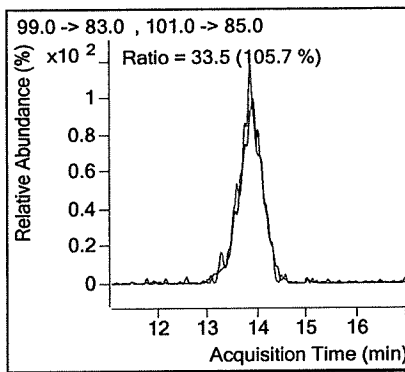
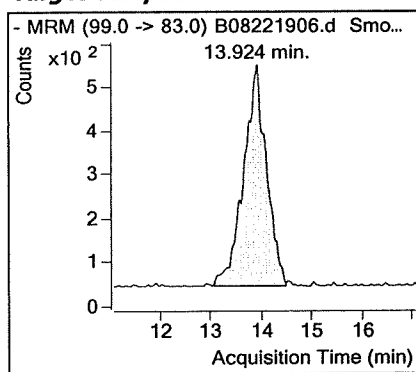


Quantitation Results

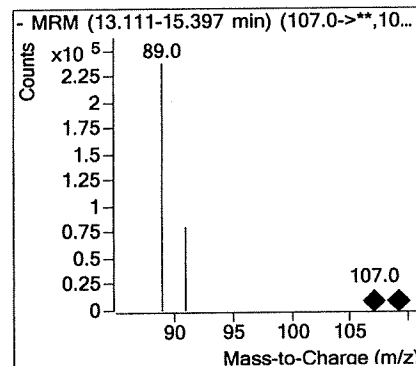
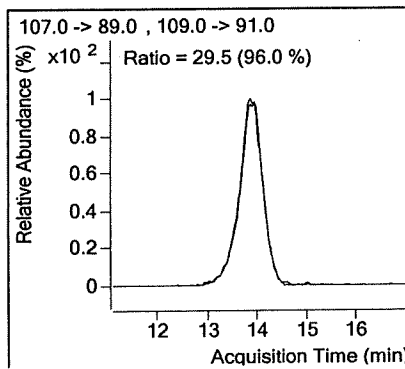
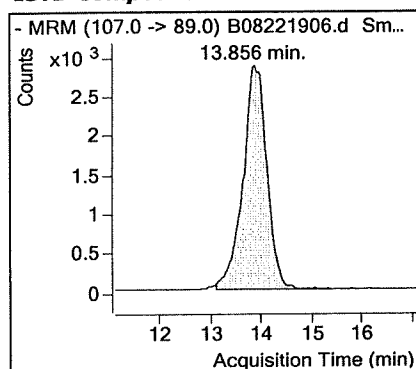
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-18O4	13.924	16088.6	95390.7	0.1687	1.9001	95.00

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



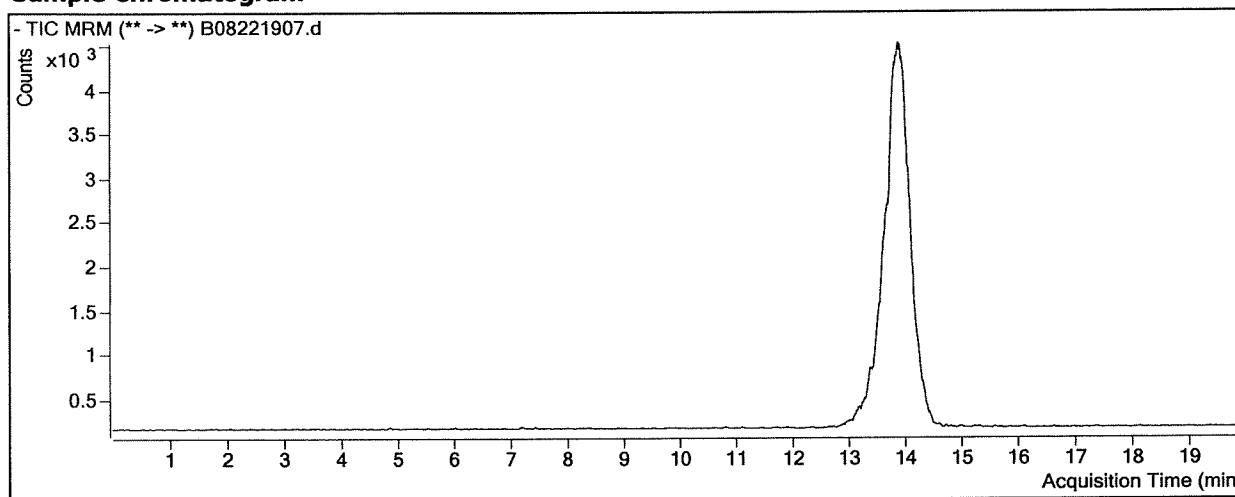
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 19:58
Position P1-A7
Dilution 1
Inj Vol 20
Sample Type Calibration

Data File B08221907.d
Sample Name Perchlorate 0.8 ng/mL
Sample Info 11-STD2-Lab102_2019
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

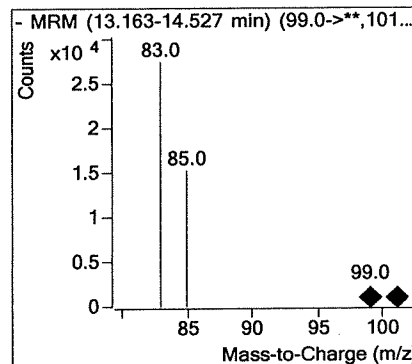
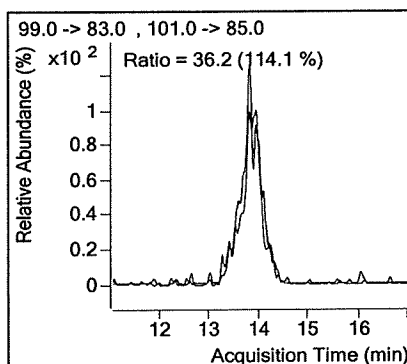
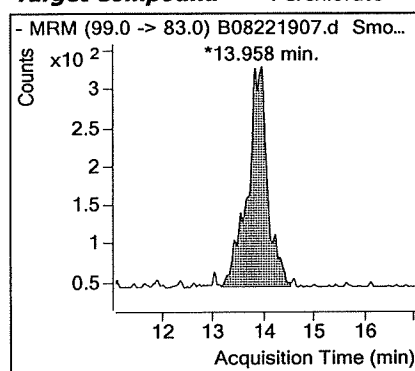


Quantitation Results

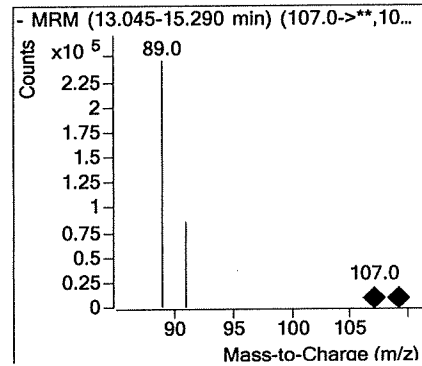
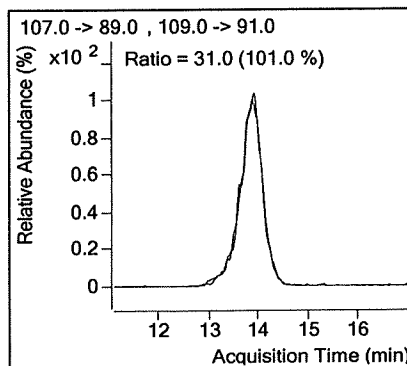
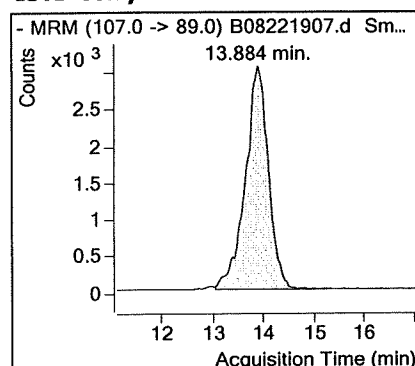
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-18O4	13.958	8019.7	98801.4	0.0812	0.9104	113.80

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



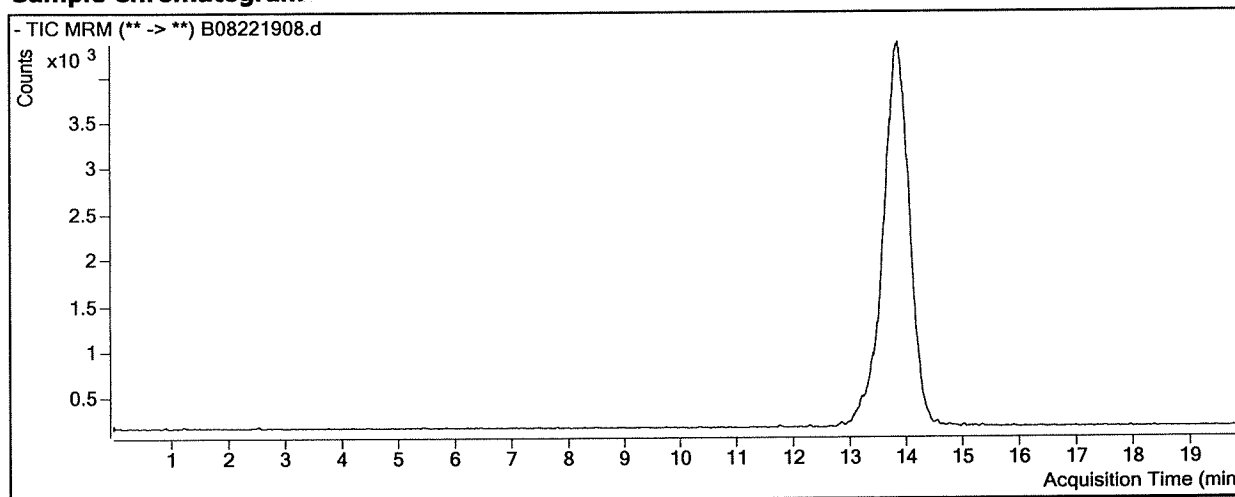
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 20:19
Position P1-A8
Dilution 1
Inj Vol 20
Sample Type Calibration

Data File B08221908.d
Sample Name Perchlorate 0.4 ng/mL
Sample Info 11-STD1-Lab102_2019
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

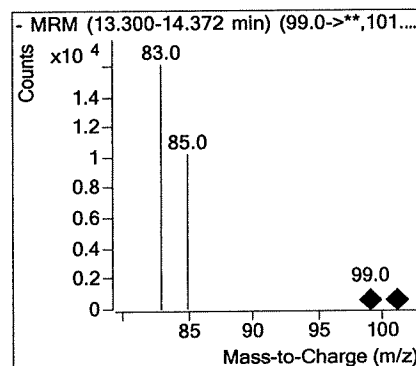
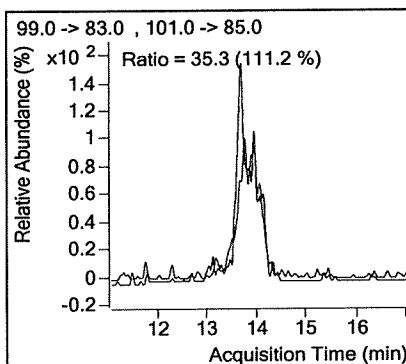
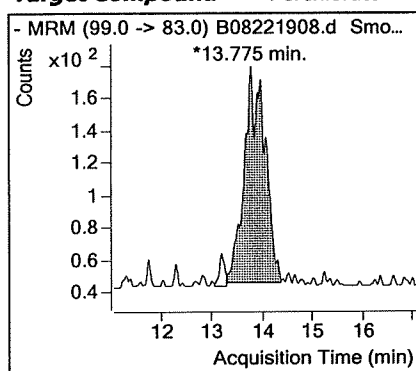


Quantitation Results

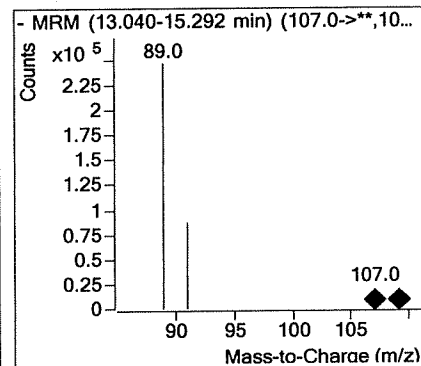
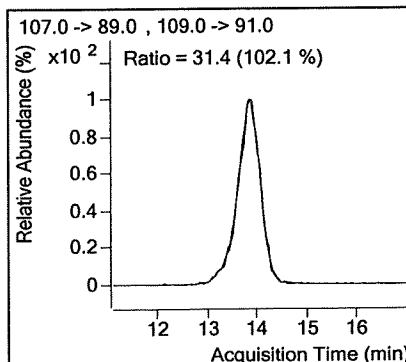
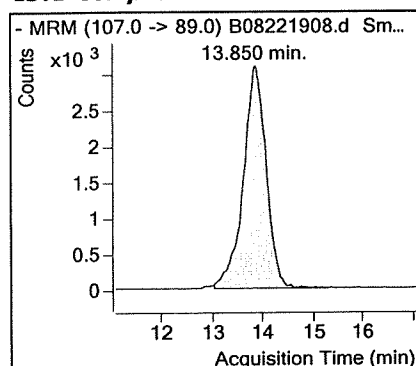
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-1804	13.775	3874.9	99136.8	0.0391	0.4344	108.59

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



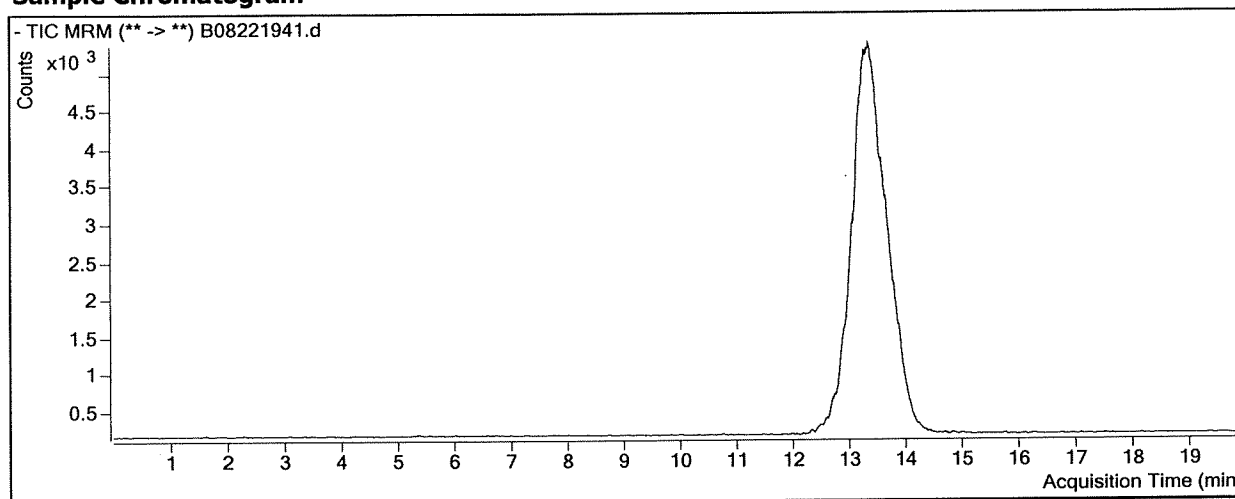
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 07:35
Position P1-A5
Dilution 1
Inj Vol 20
Sample Type QC

Data File B08221941.d
Sample Name Perchlorate CCV 5 ng/mL
Sample Info 11-STD4-Lab102_2019
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

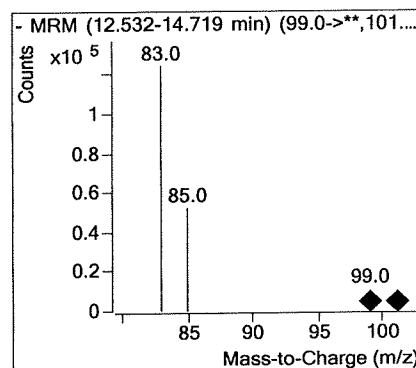
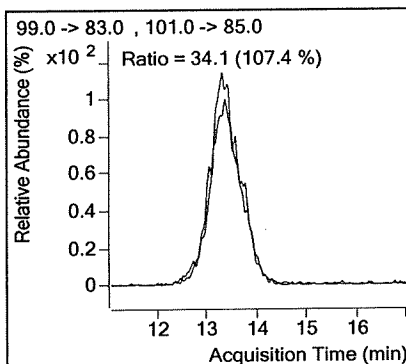
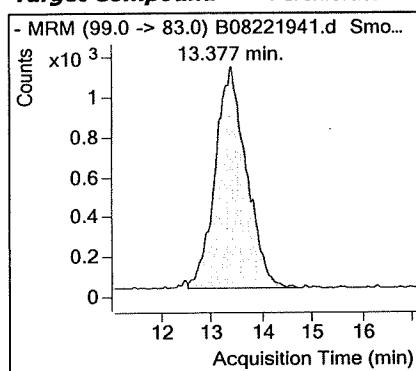


Quantitation Results

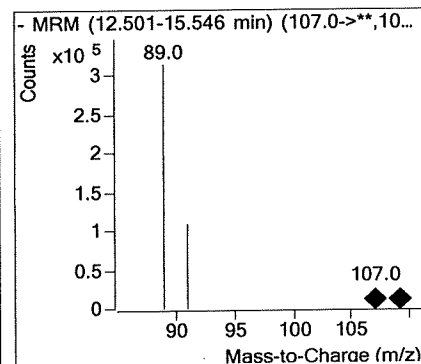
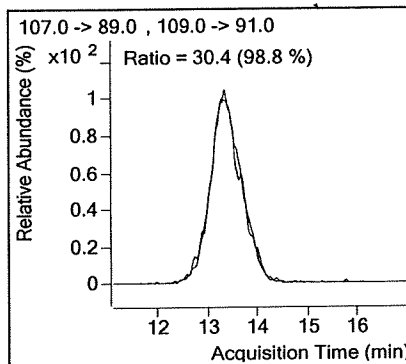
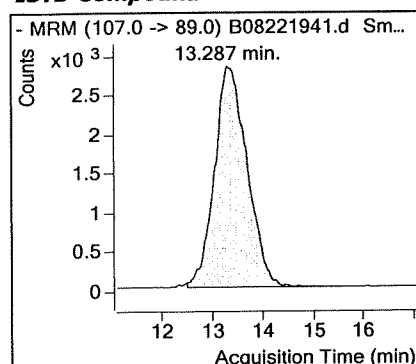
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc	Accuracy
Perchlorate	Perchlorate-18O4	13.377	47403.5	125814.7	0.3768	4.2542	85.08

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



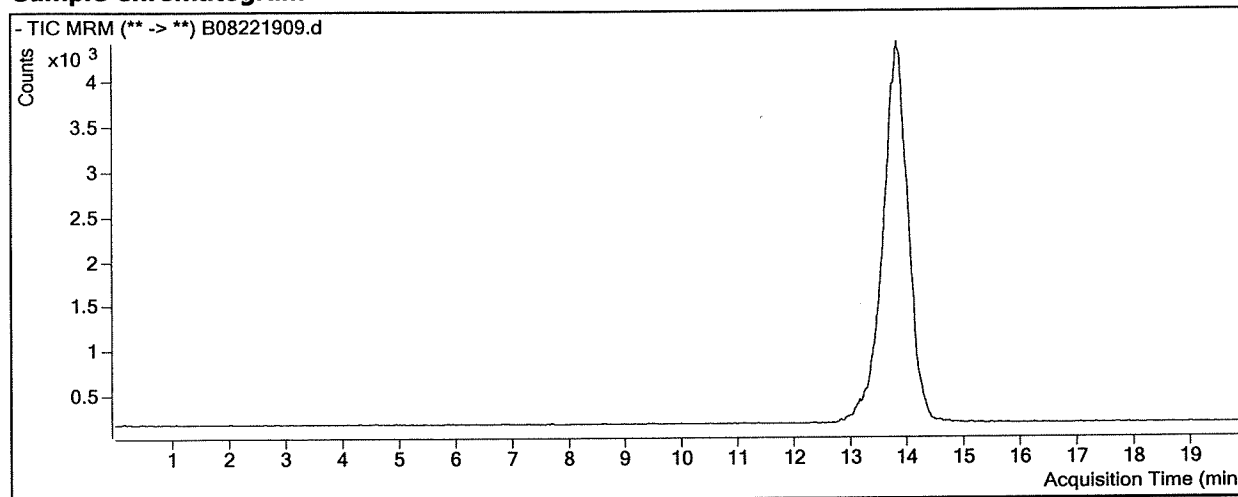
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 20:41
Position P1-A9
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221909.d
Sample Name 651352
Sample Info BLK_15AUG19
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

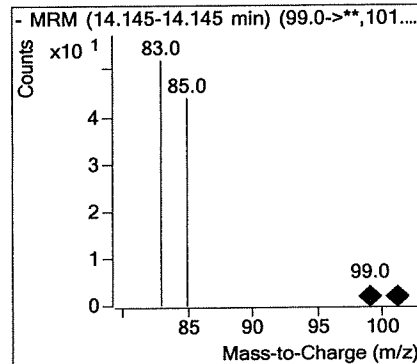
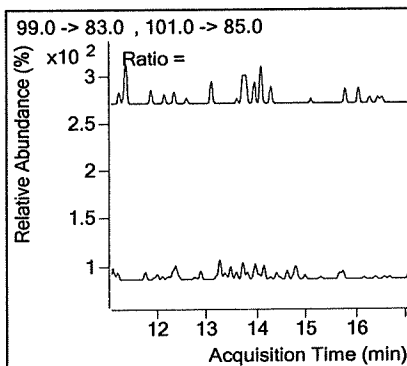
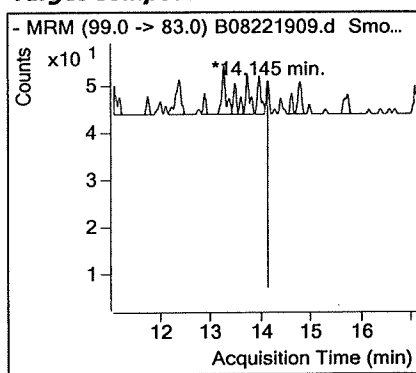


Quantitation Results

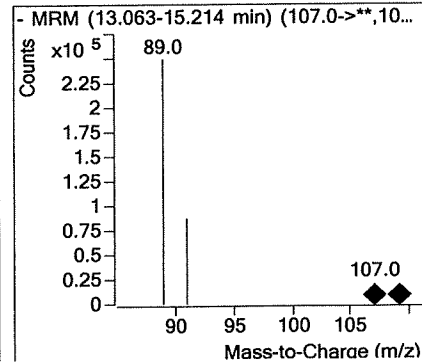
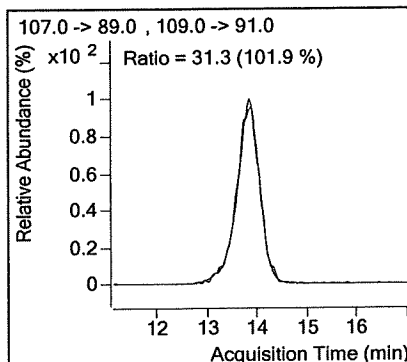
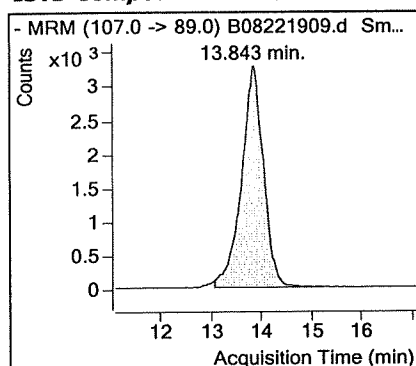
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	14.145	0.0	100832.1	0.0000	0.0000

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



Quantitative Analysis Calibration Report

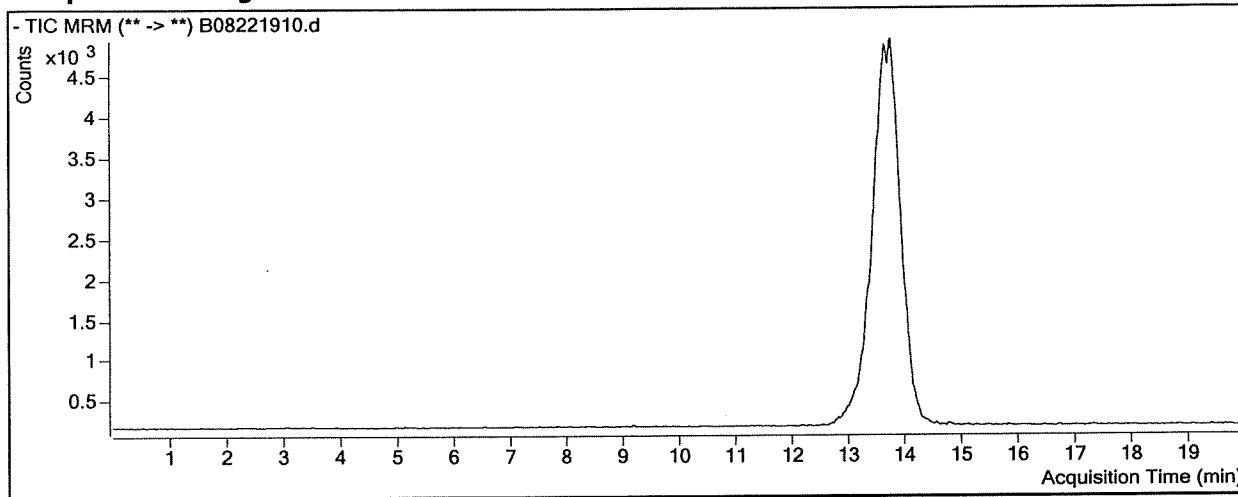
010020

Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
 Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
 Report Time 8/23/2019 1:25 PM Reporter Name AYY
 Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 21:02 Data File B08221910.d
 Position P1-B1 Sample Name 649977
 Dilution 1 Sample Info VIR-WM-P002
 Inj Vol 20 Acq Method File Perchlorate.m
 Sample Type Sample Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

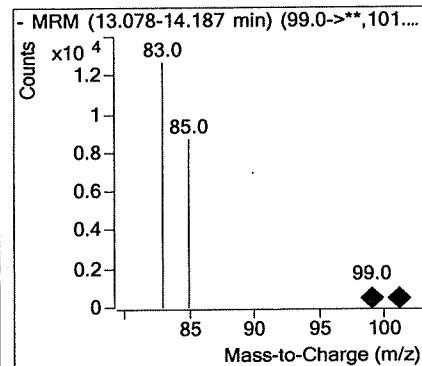
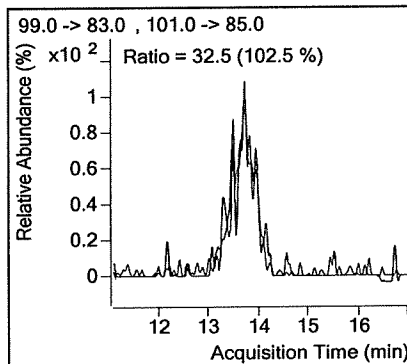
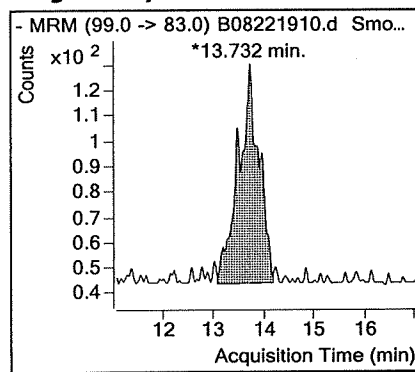


Quantitation Results

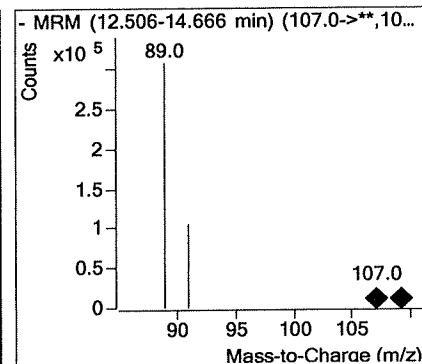
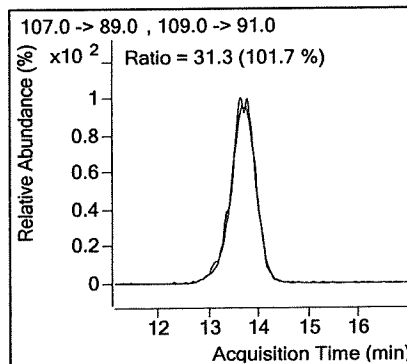
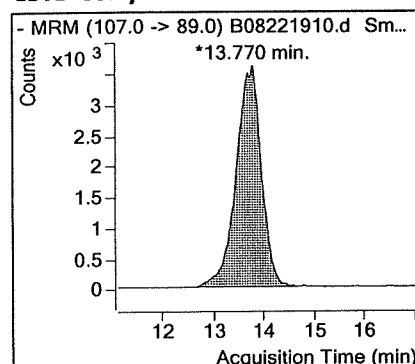
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.732	2496.7	125026.9	0.0200	0.2181

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



Quantitative Analysis Calibration Report

010021

Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
 Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
 Report Time 8/23/2019 1:25 PM Reporter Name AYY
 Last Calib Update 8/23/2019 1:24 PM Batch State Processed

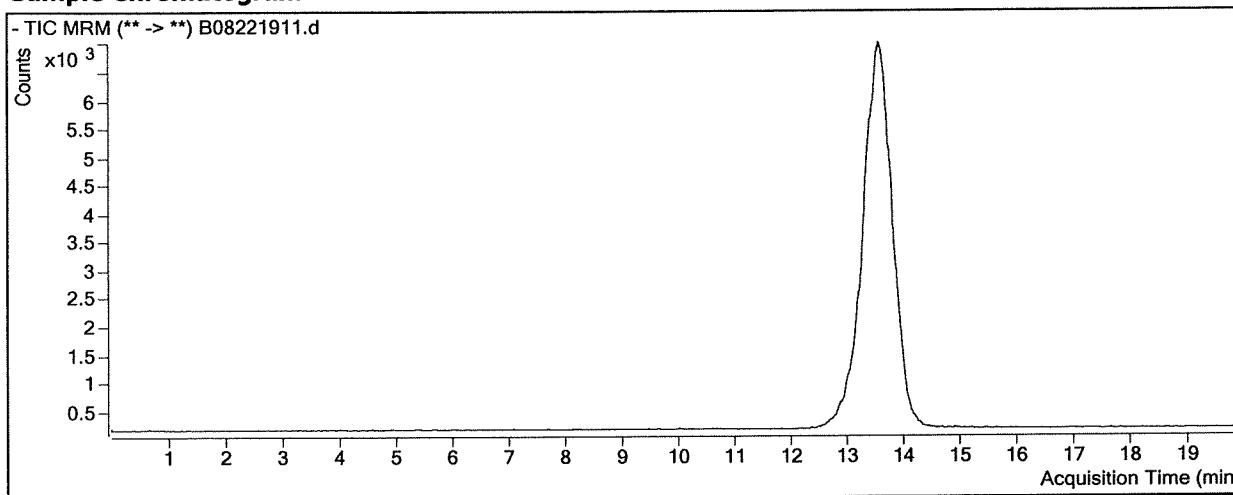
Agar
 08/23/19

Analysis Info

Acq Time 2019-08-22 21:23
 Position P1-B2
 Dilution 1
 Inj Vol 20
 Sample Type Sample

Data File B08221911.d
 Sample Name 649976
 Sample Info VA-028-PAM
 Acq Method File Perchlorate.m
 Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

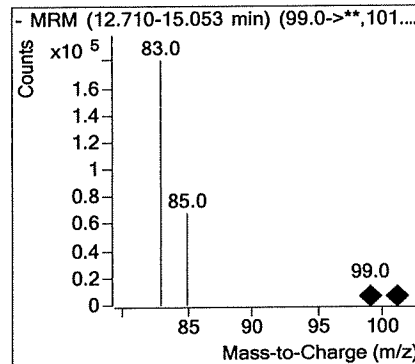
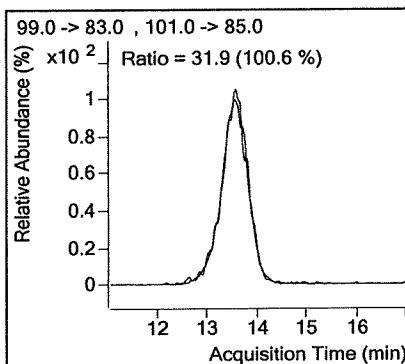
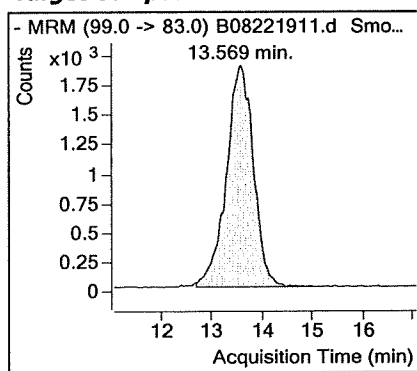


Quantitation Results

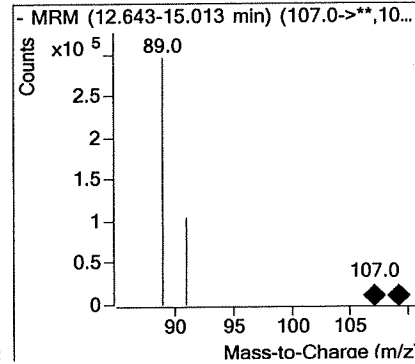
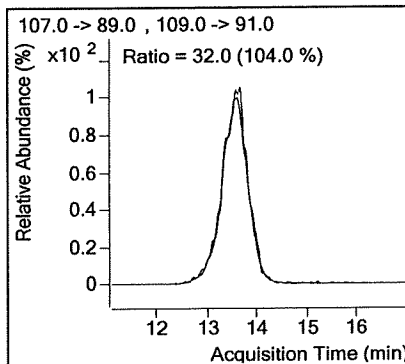
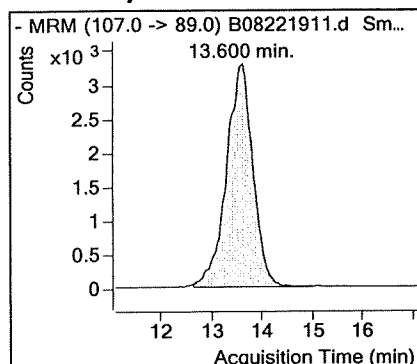
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.569	70599.8	119830.4	0.5892	6.6568

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



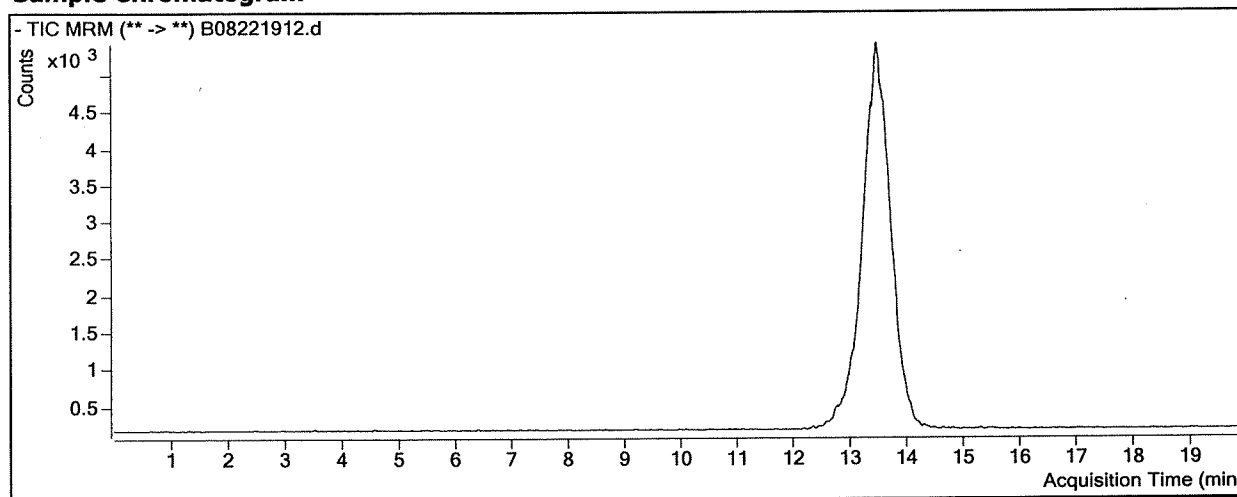
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 21:44
Position P1-B3
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221912.d
Sample Name 649966
Sample Info MN-013-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

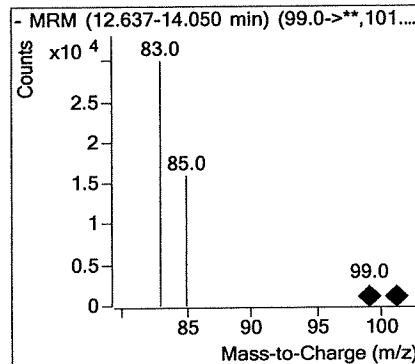
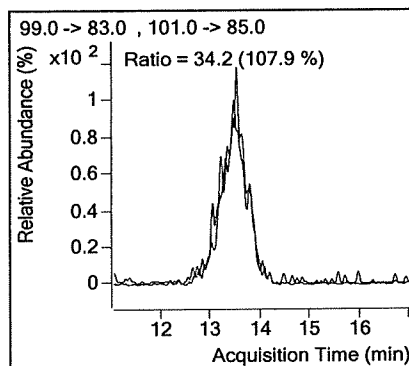
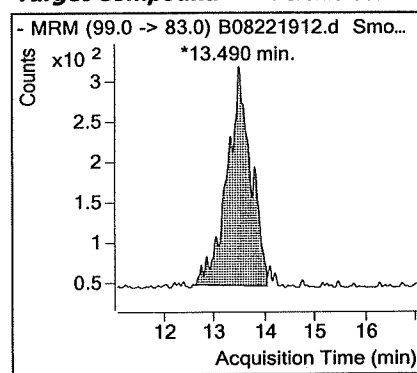


Quantitation Results

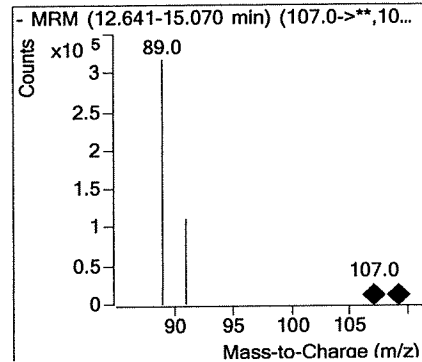
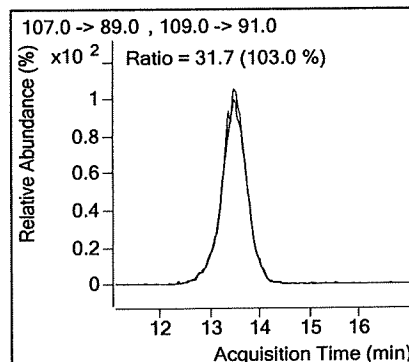
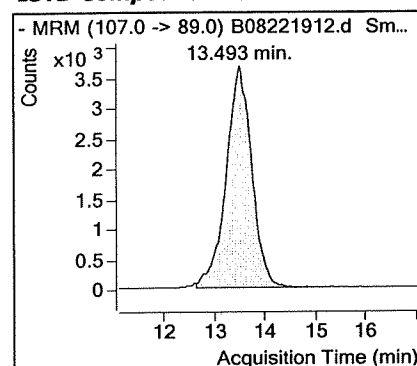
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.490	8892.2	129125.6	0.0689	0.7712

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



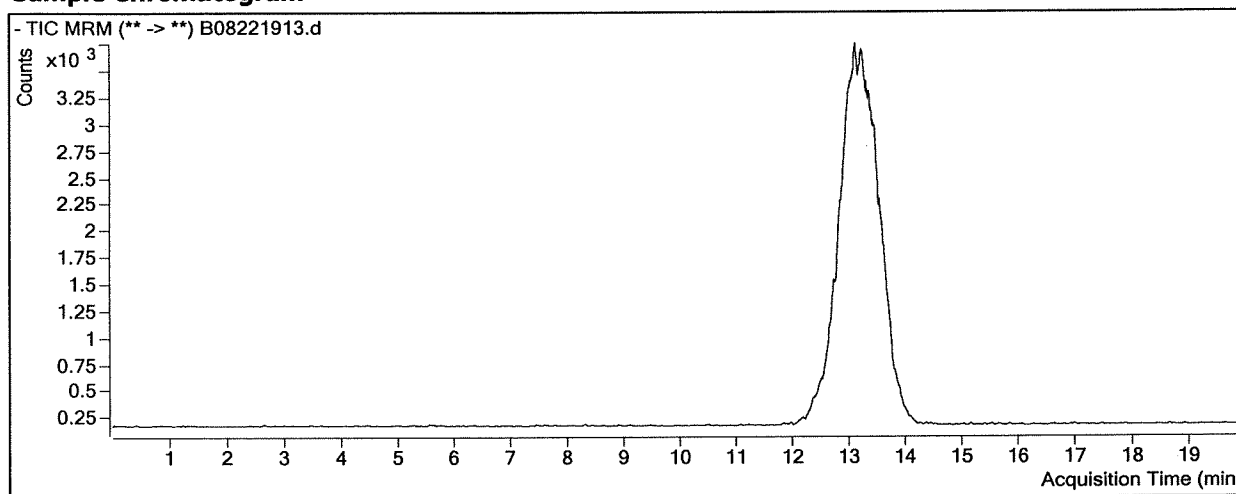
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 22:05
Position P1-B4
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221913.d
Sample Name 649962
Sample Info ME-025-PWM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

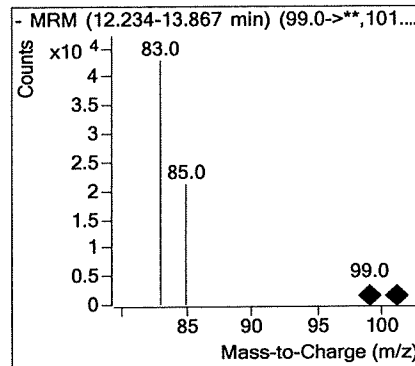
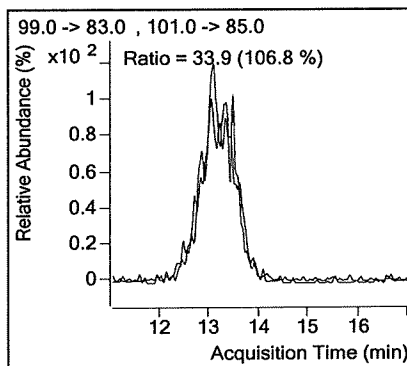
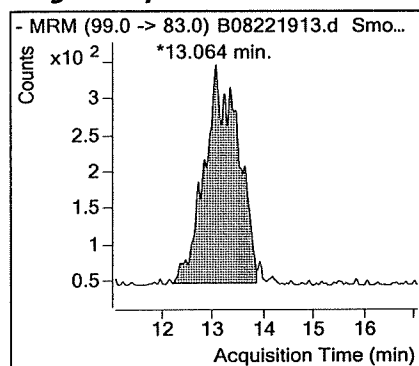


Quantitation Results

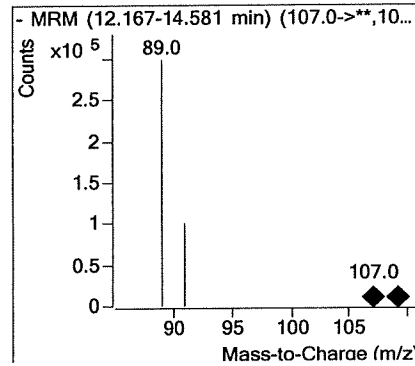
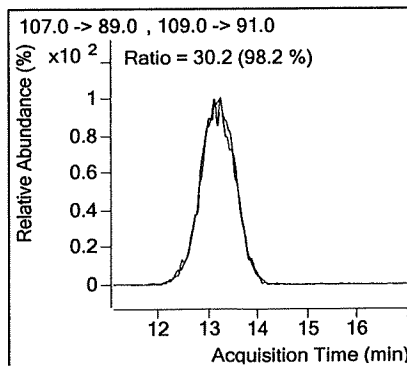
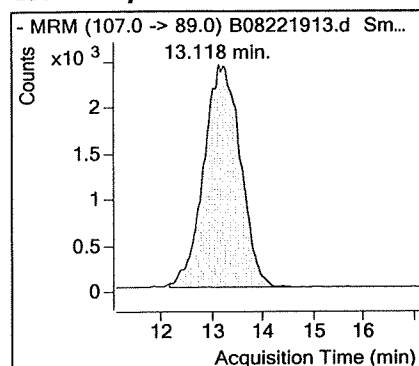
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.064	13703.4	121210.1	0.1131	1.2711

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



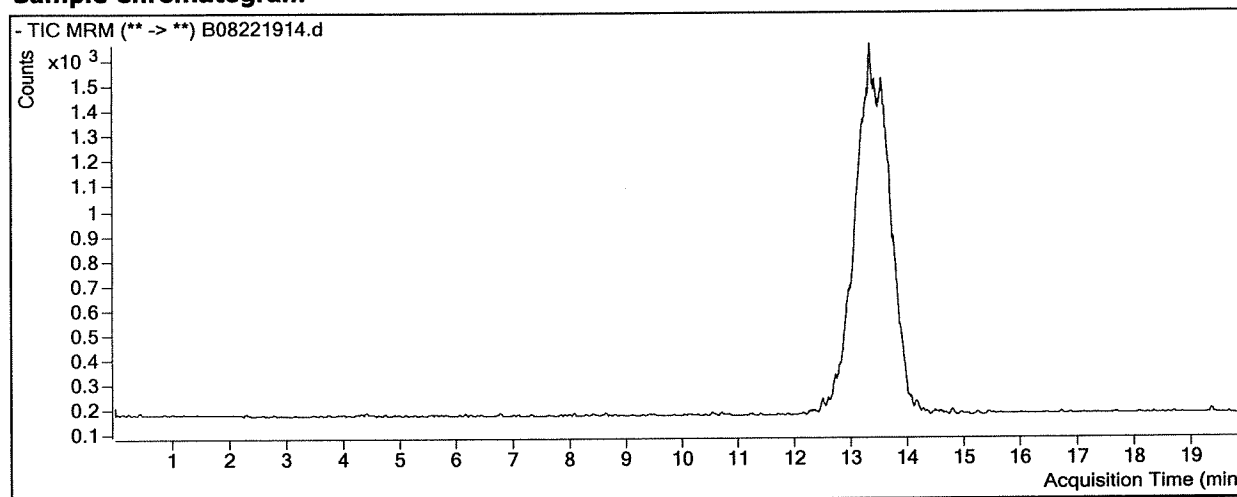
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 22:26
Position P1-B5
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221914.d
Sample Name 649959
Sample Info ME-001-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

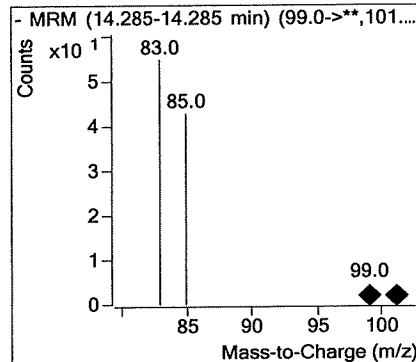
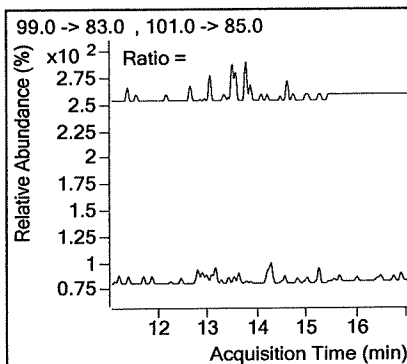
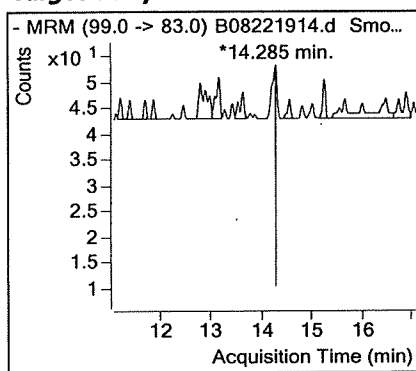


Quantitation Results

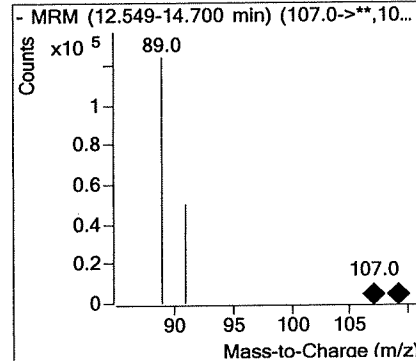
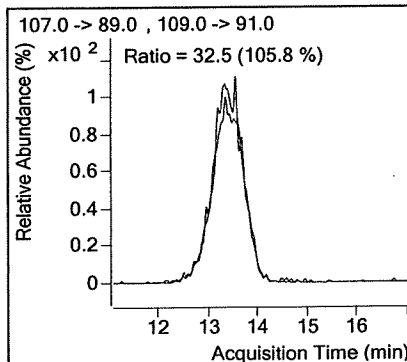
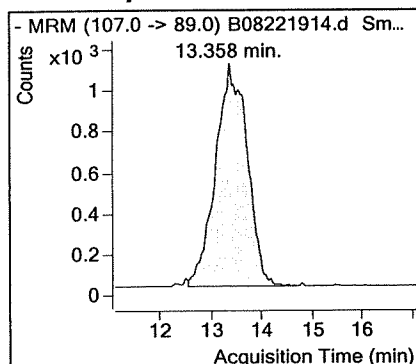
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	14.285	0.0	47358.9	0.0000	0.0000

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



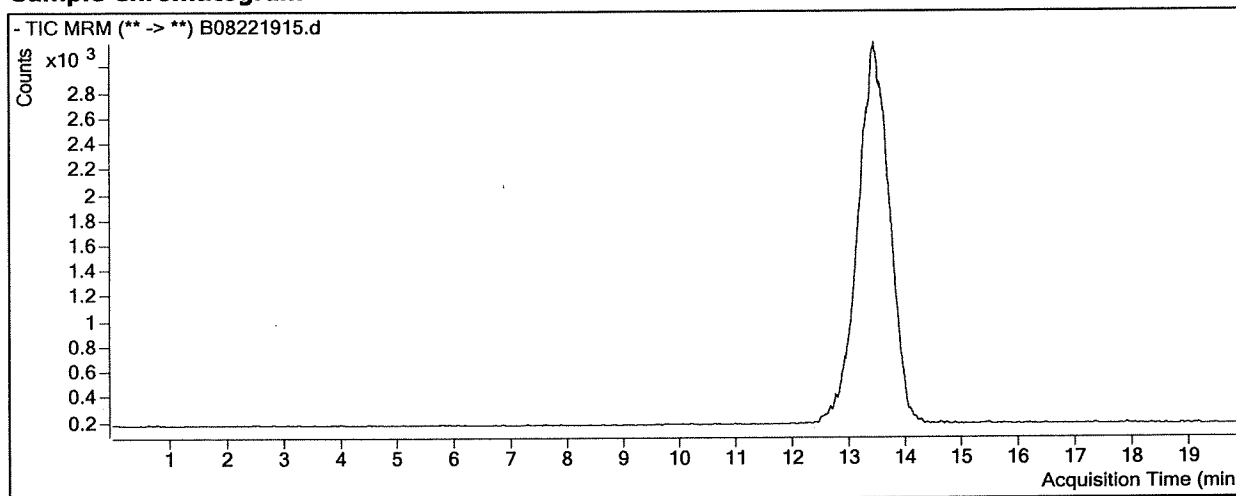
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 22:47
Position P1-B6
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221915.d
Sample Name 649958
Sample Info MD-030-PG
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

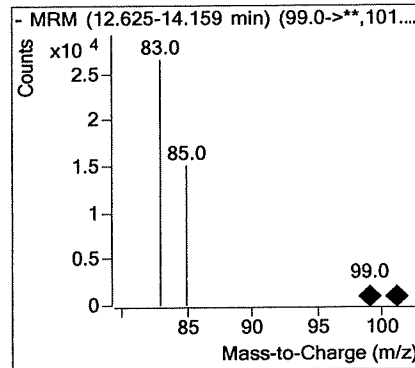
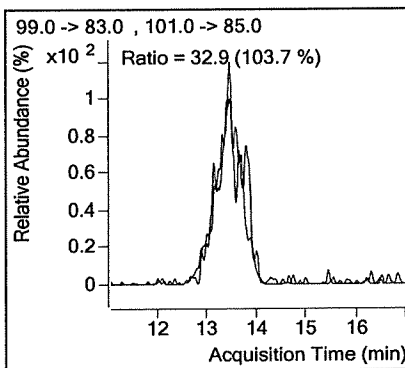
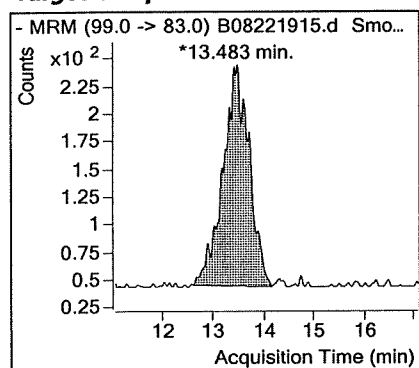


Quantitation Results

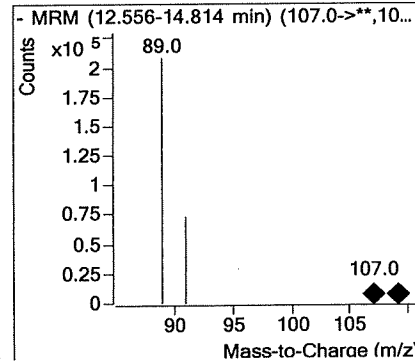
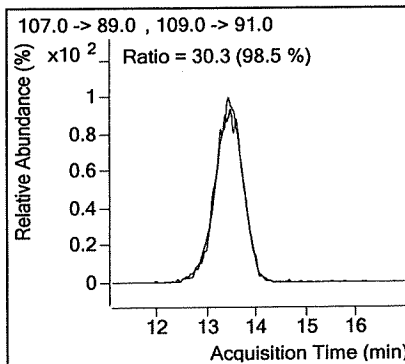
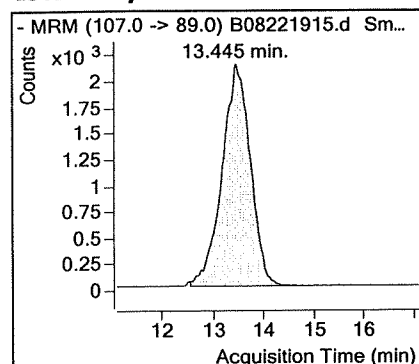
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.483	7167.8	82674.8	0.0867	0.9729

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4

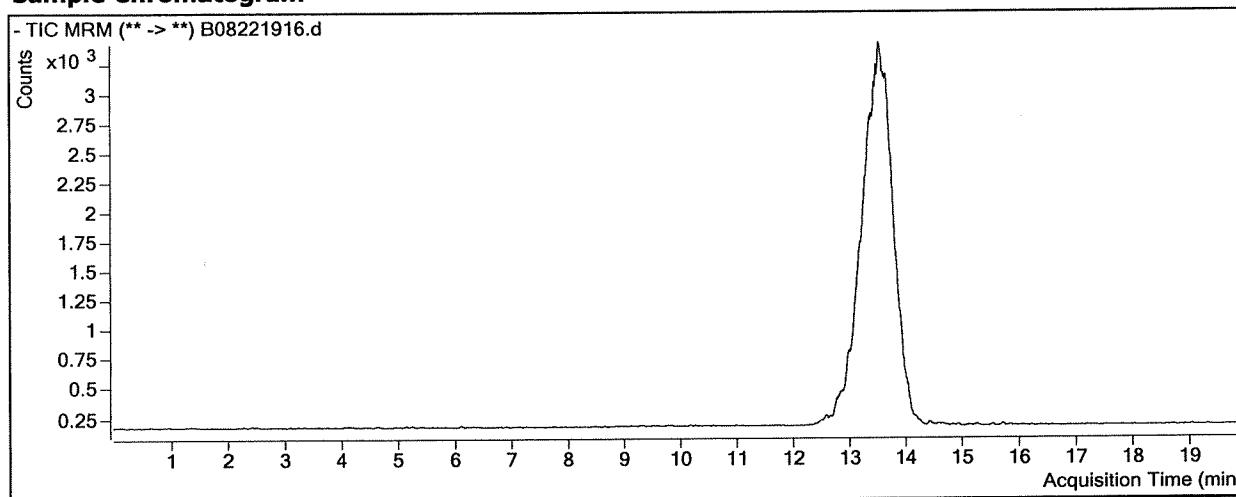


Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 23:08 Data File B08221916.d
Position P1-B7 Sample Name 649957
Dilution 1 Sample Info CO-001-PAM
Inj Vol 20 Acq Method File Perchlorate.m
Sample Type Sample Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

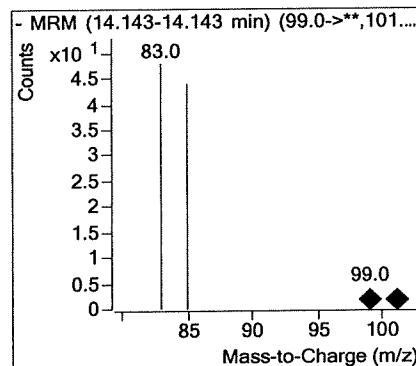
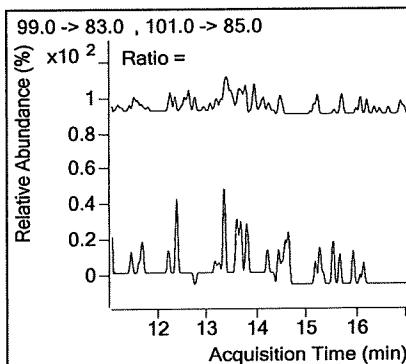
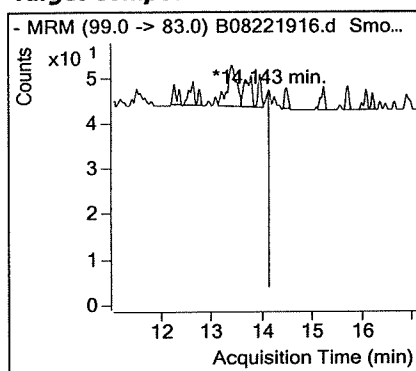


Quantitation Results

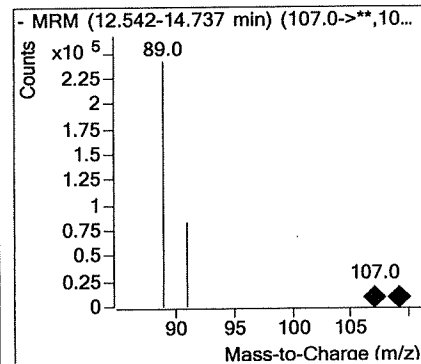
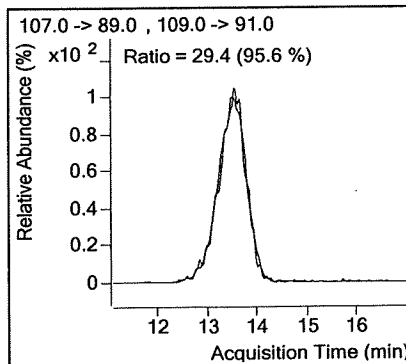
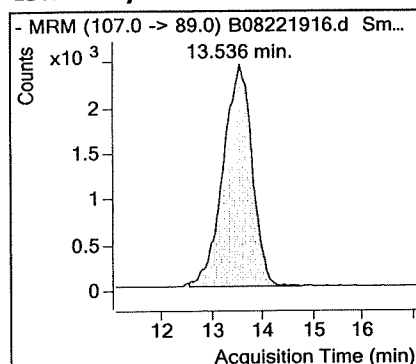
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	14.143	0	97298.3	0.0000	0.0000

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



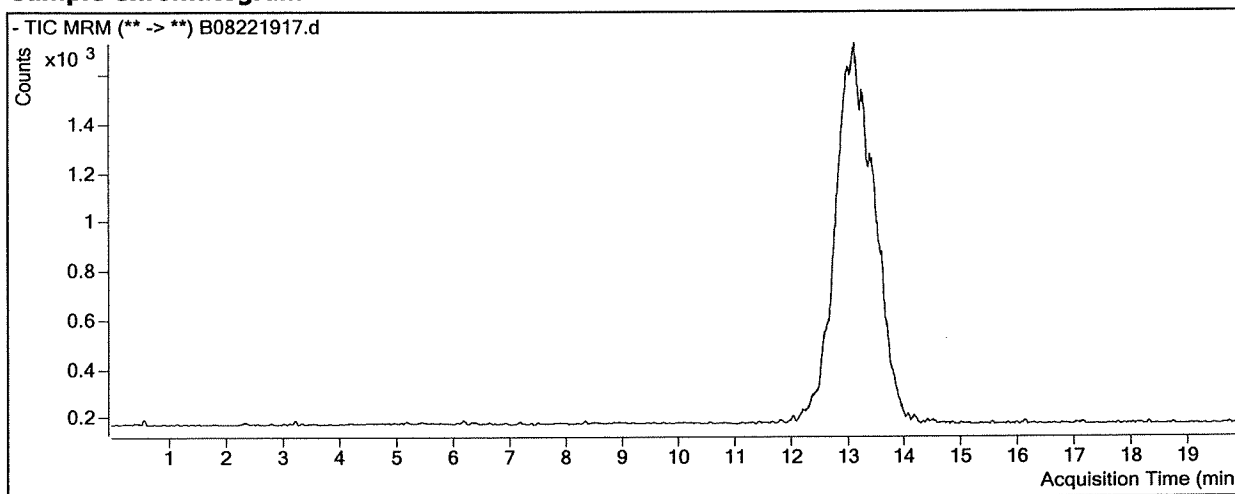
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-22 23:29
Position P1-B8
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221917.d
Sample Name 649956
Sample Info CA-99-015-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

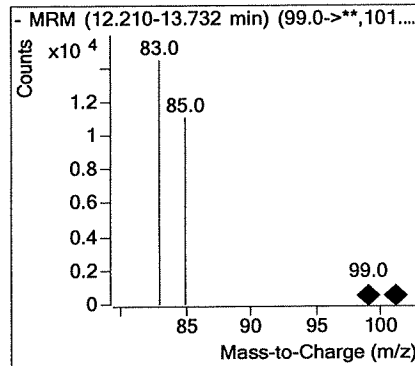
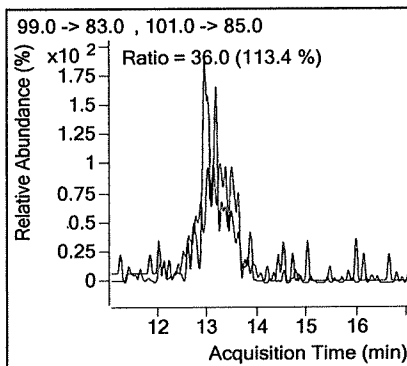
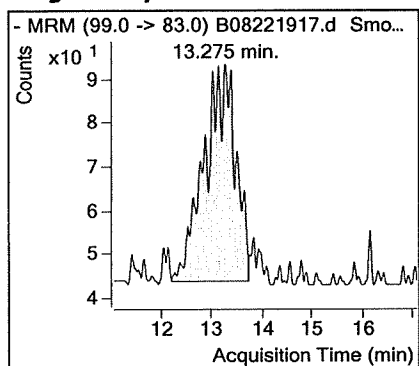


Quantitation Results

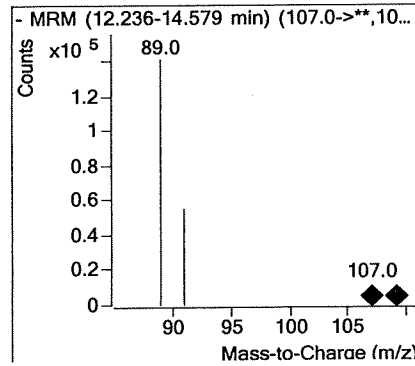
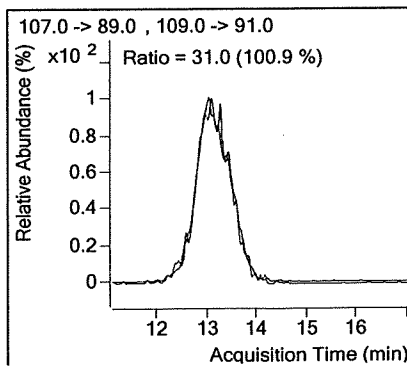
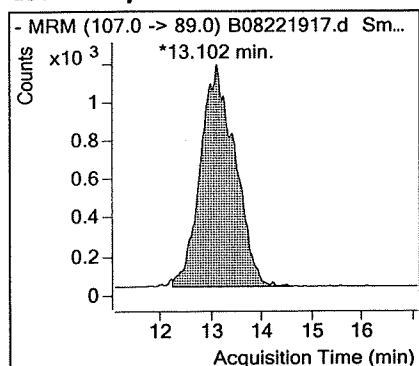
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.275	2122.6	54091.5	0.0392	0.4361

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804

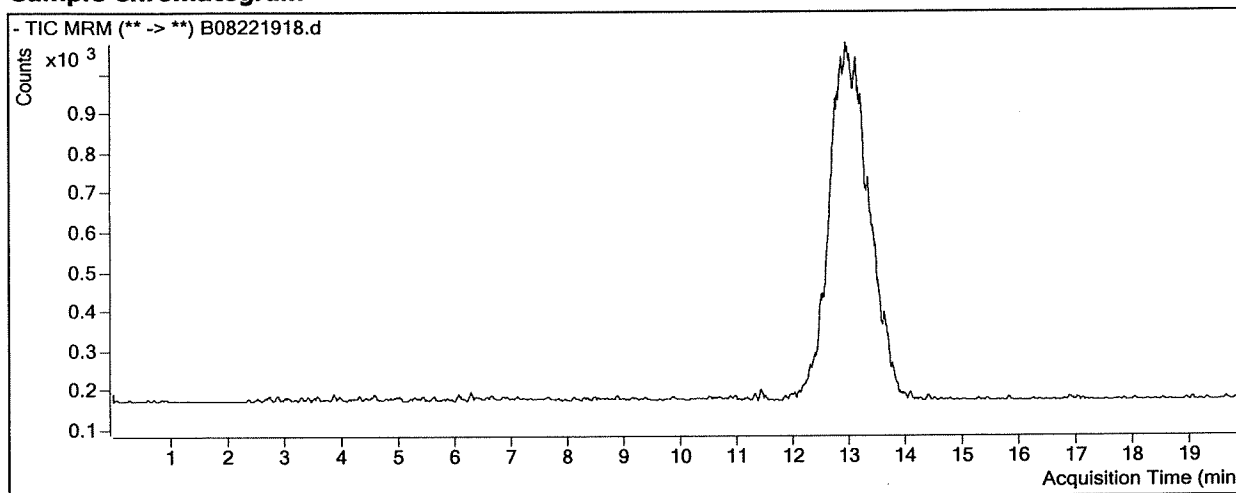


Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM **Analyst Name** SWRI01\AYY
Report Time 8/23/2019 1:25 PM **Reporter Name** AYY
Last Calib Update 8/23/2019 1:24 PM **Batch State** Processed

Analysis Info

Acq Time 2019-08-22 23:50
Position P1-B9
Dilution 1
Inj Vol 20
Sample Type Sample

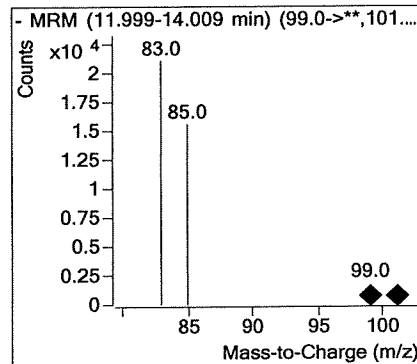
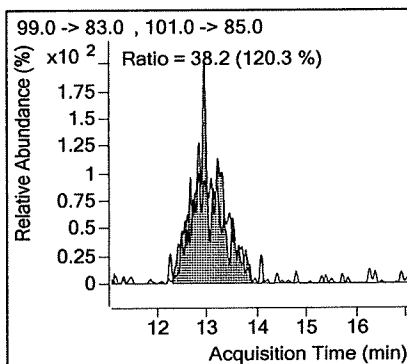
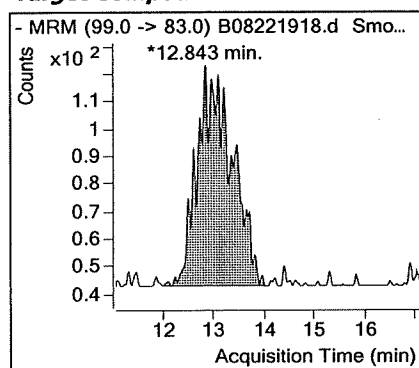
Data File B08221918.d
Sample Name 649955
Sample Info AK-009-PT
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram**Quantitation Results**

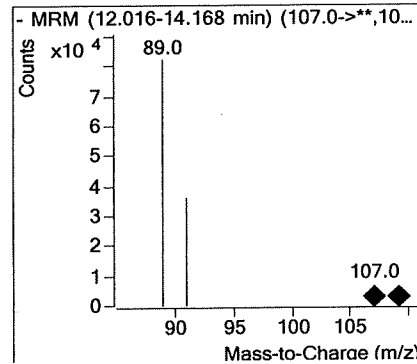
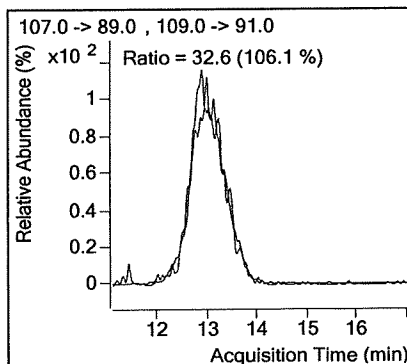
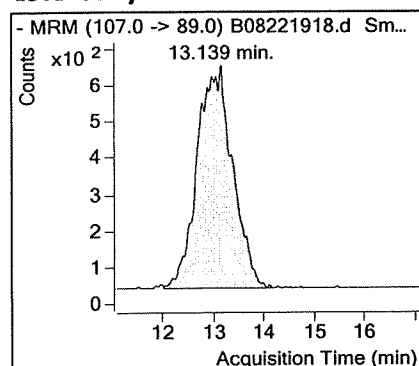
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	12.843	3777.8	29545.2	0.1279	1.4386

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



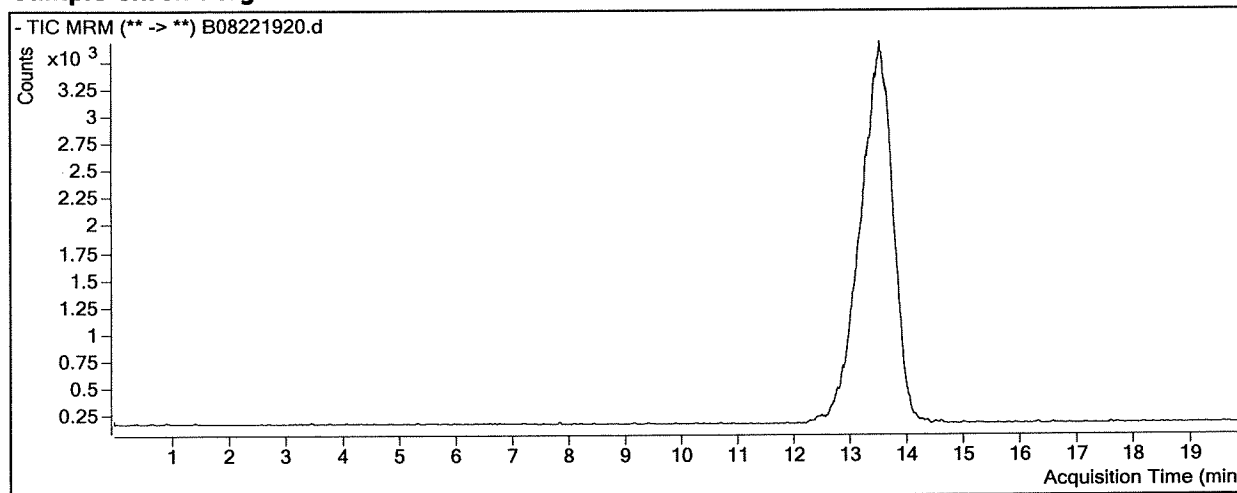
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 00:12
Position P1-C1
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221920.d
Sample Name 649954
Sample Info AK-007-PG
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

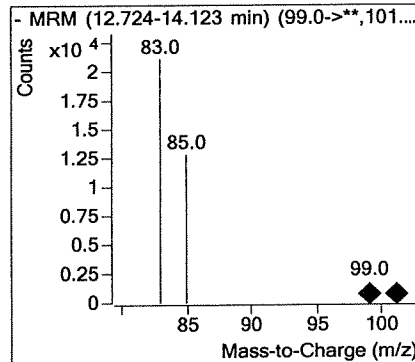
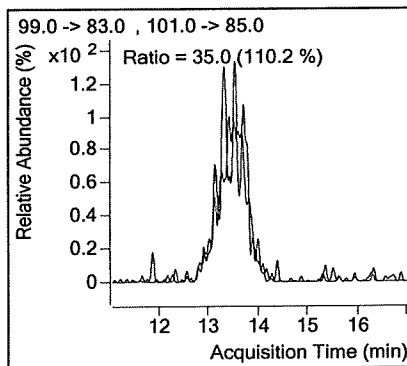
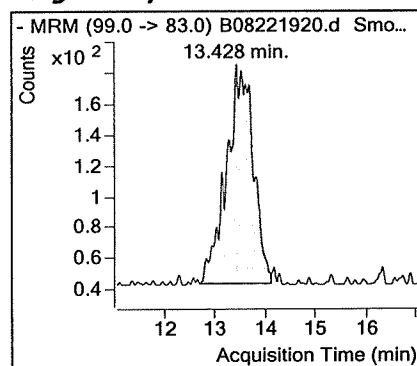


Quantitation Results

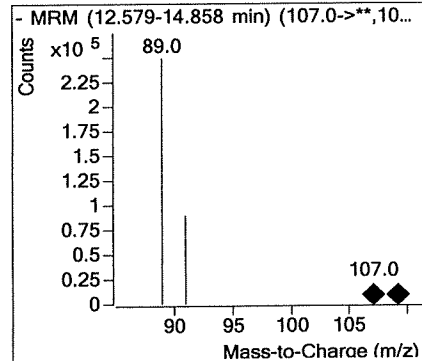
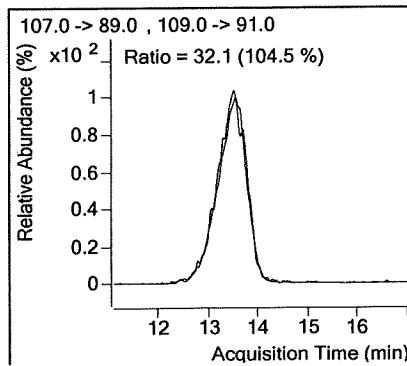
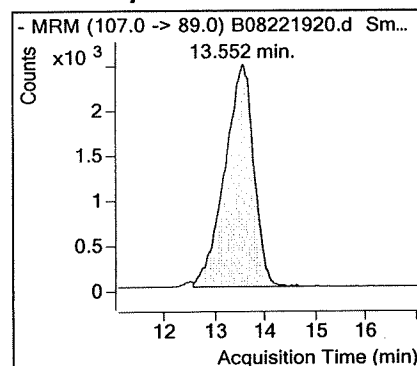
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.428	5283.3	100272.9	0.0527	0.5882

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



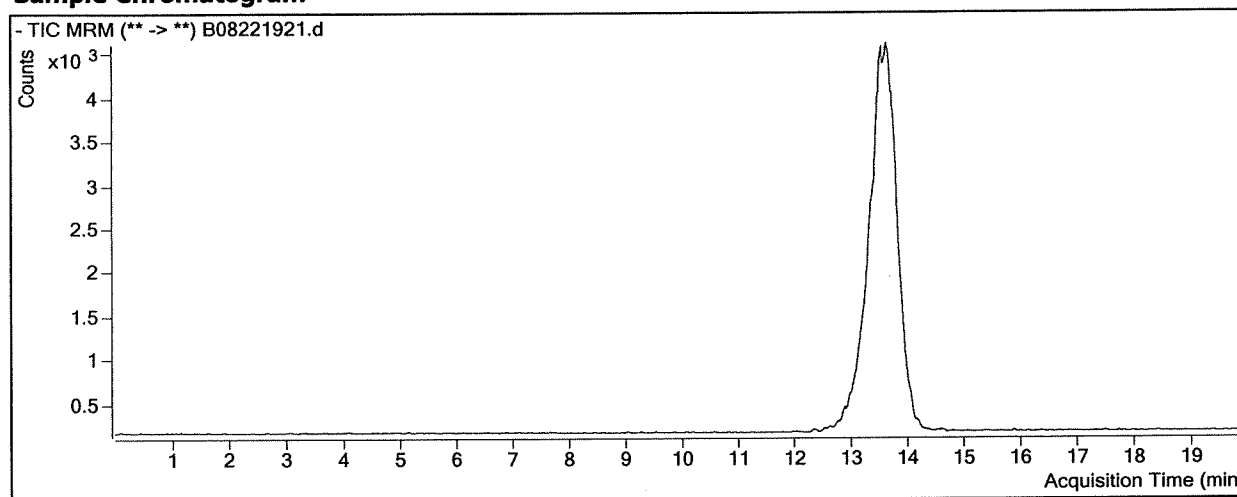
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 00:33
Position P1-C2
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221921.d
Sample Name 649967
Sample Info NY-006-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

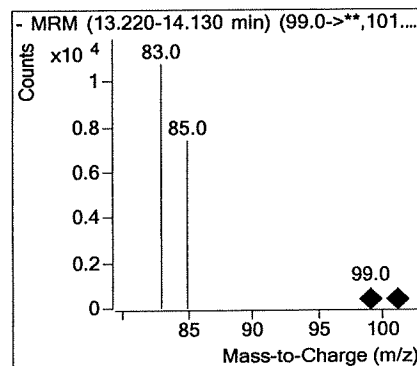
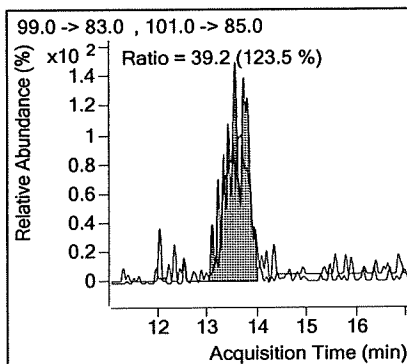
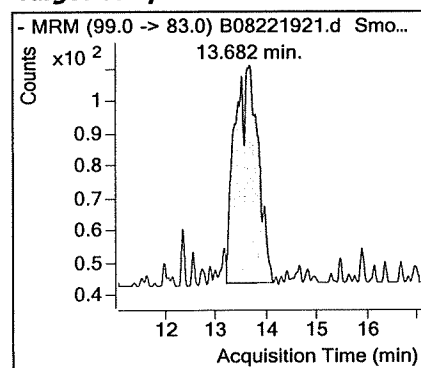


Quantitation Results

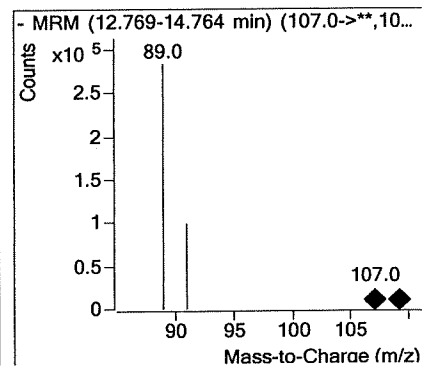
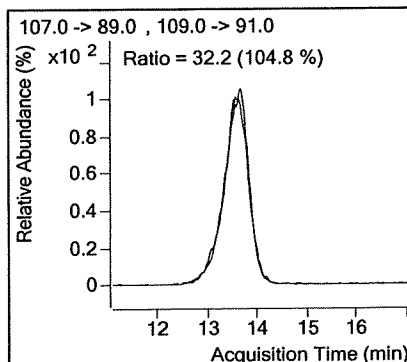
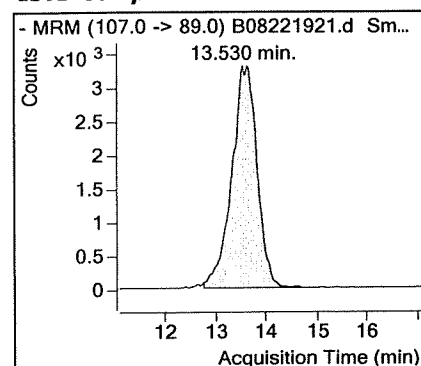
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.682	2177.8	115401.6	0.0189	0.2057

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4

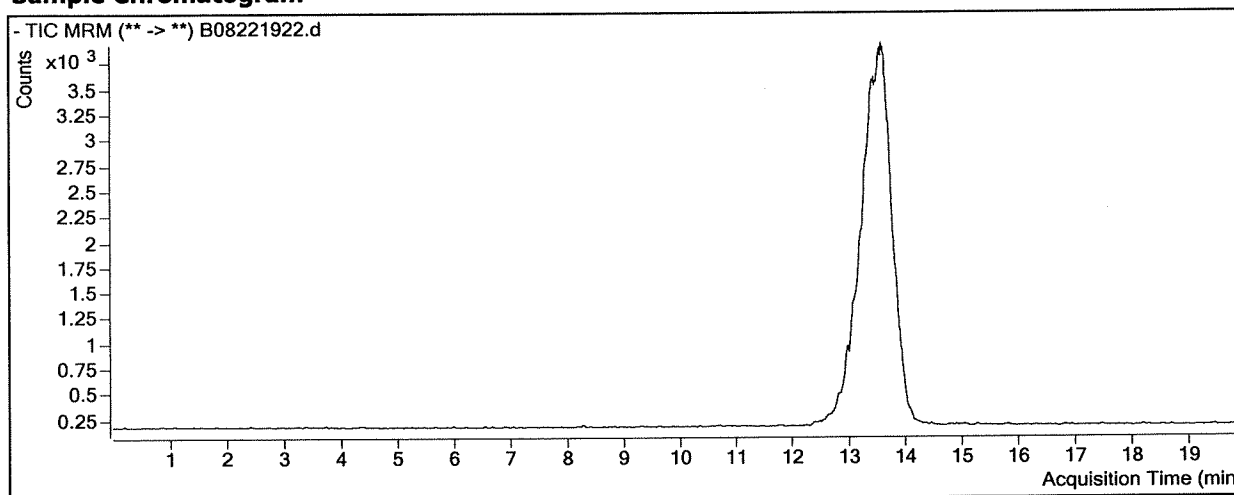


Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 00:54 Data File B08221922.d
Position P1-C3 Sample Name 649965
Dilution 1 Sample Info MN-008-PAM
Inj Vol 20 Acq Method File Perchlorate.m
Sample Type Sample Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

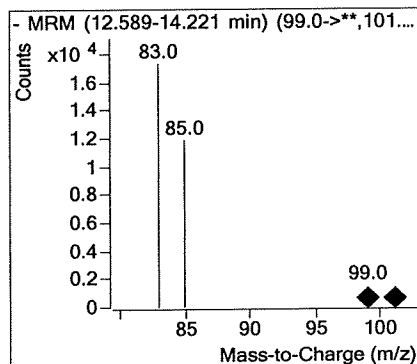
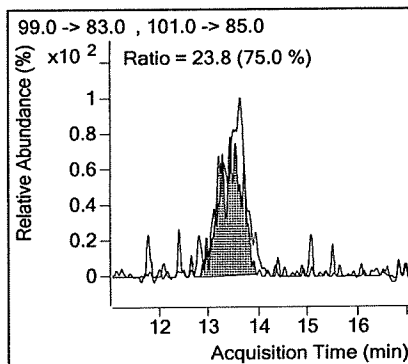
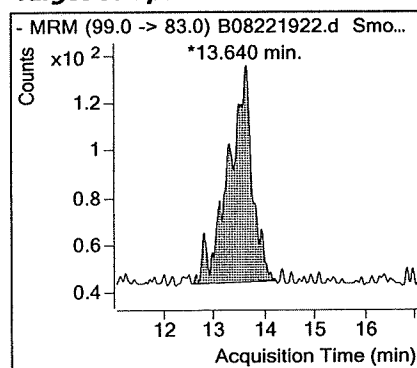


Quantitation Results

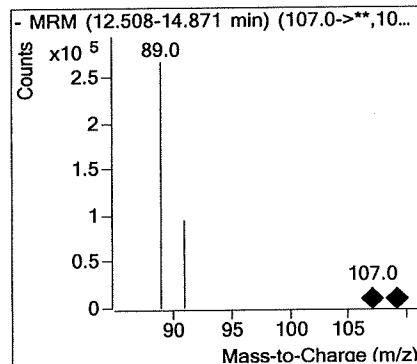
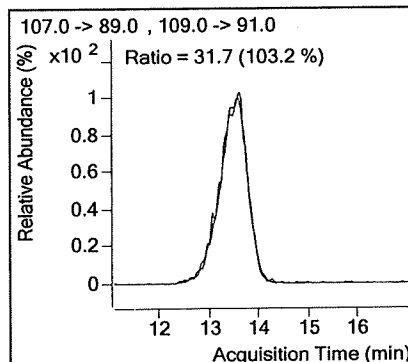
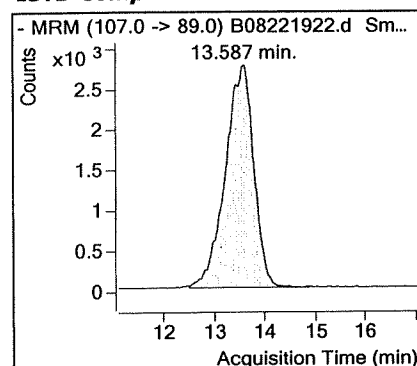
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.640	2973.1	107504.5	0.0277	0.3051

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



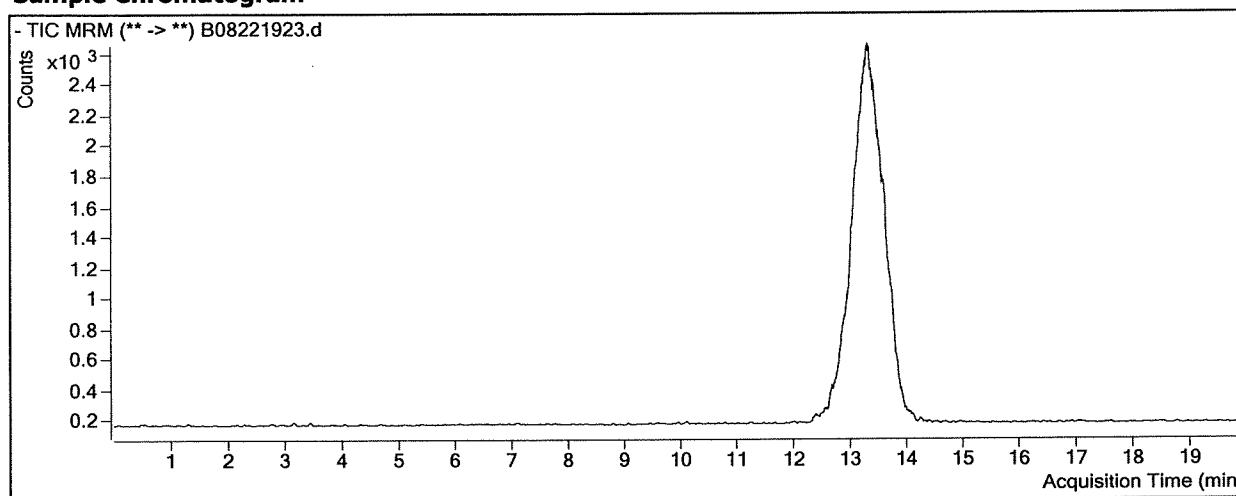
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 01:15
Position P1-C4
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221923.d
Sample Name 649964
Sample Info MI-013-PG
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

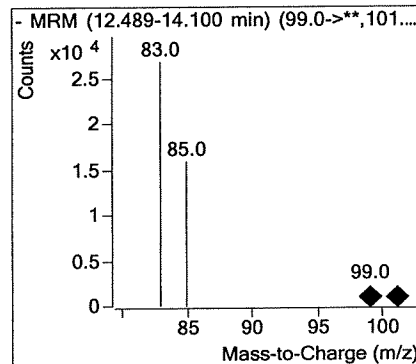
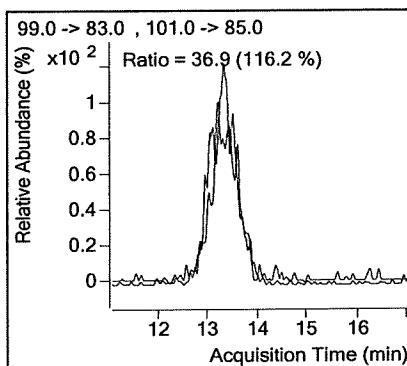
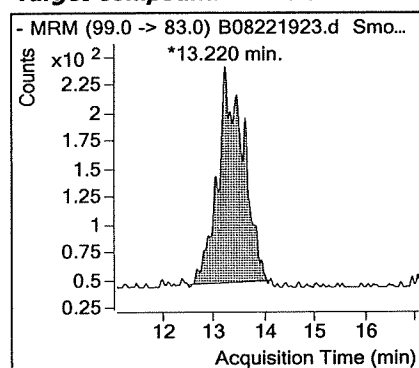


Quantitation Results

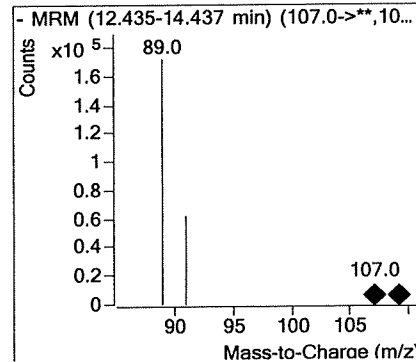
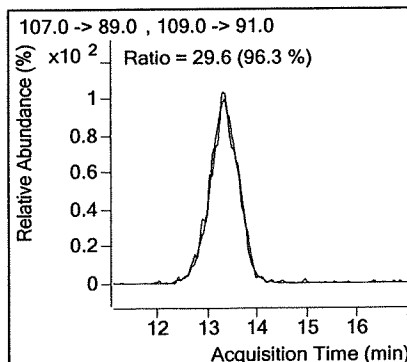
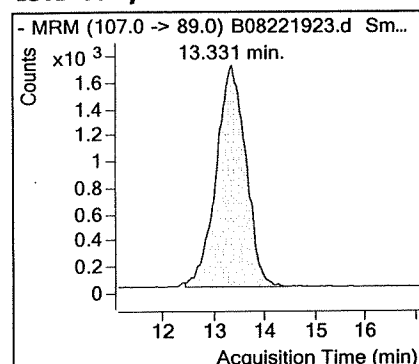
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.220	6714.0	67884.9	0.0989	1.1110

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



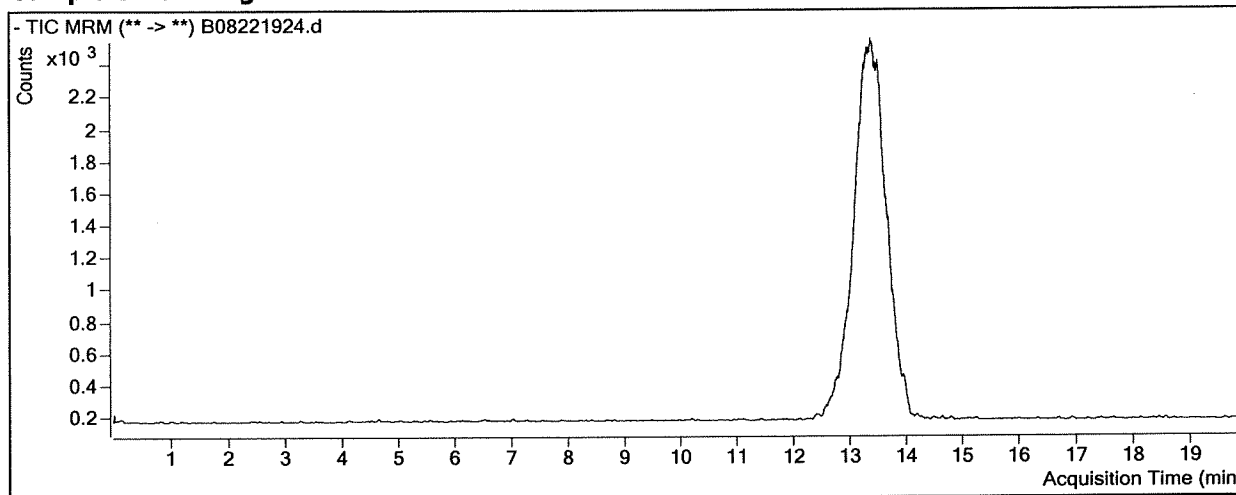
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 01:36
Position P1-C5
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221924.d
Sample Name 649961
Sample Info ME-004-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

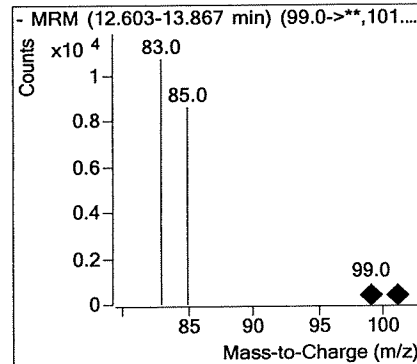
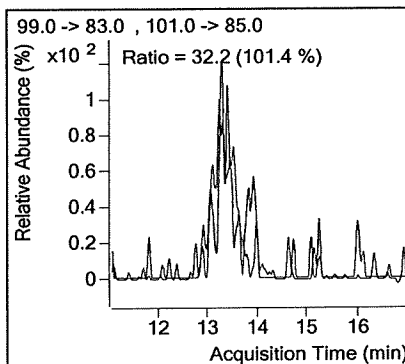
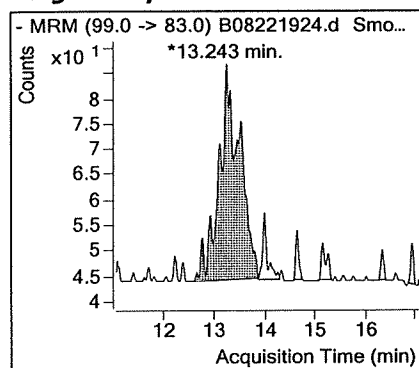


Quantitation Results

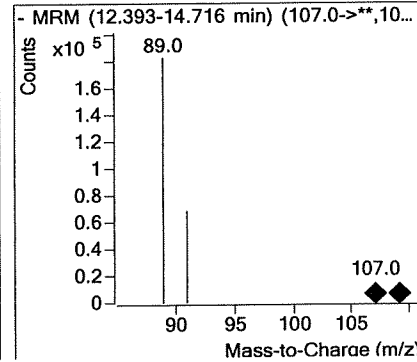
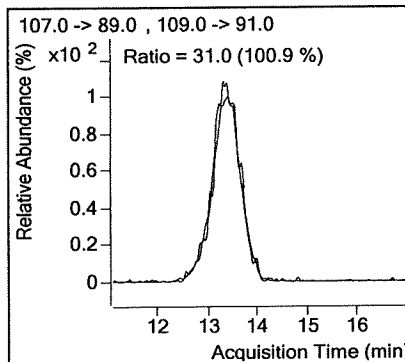
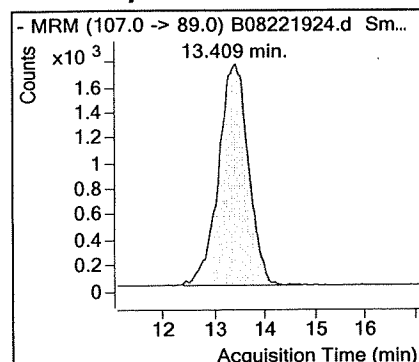
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.243	1205.4	71700.2	0.0168	0.1824

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4

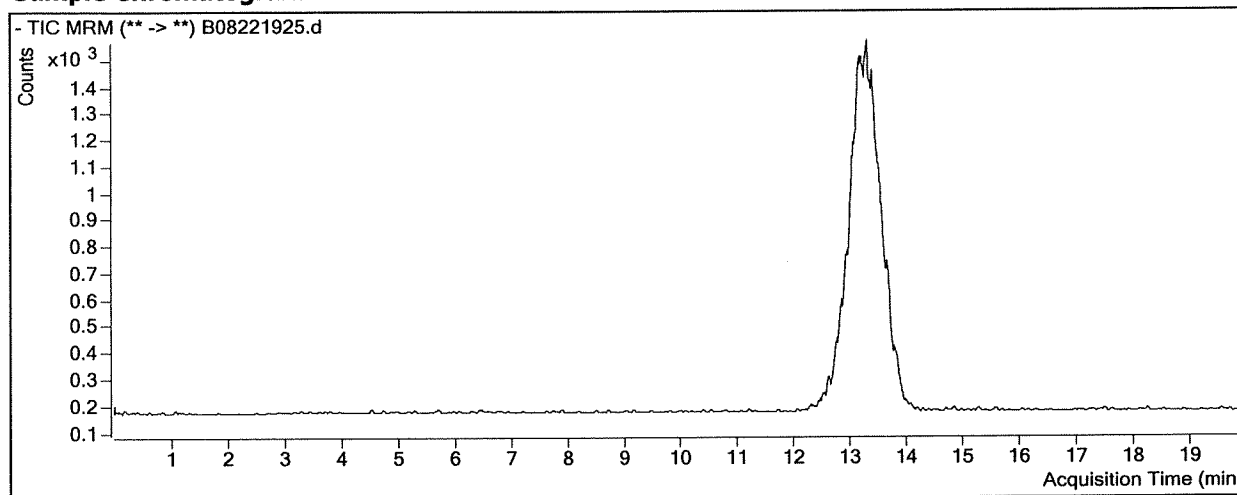


Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 01:57 Data File B08221925.d
Position P1-C6 Sample Name 649974
Dilution 1 Sample Info SC-003-PAM
Inj Vol 20 Acq Method File Perchlorate.m
Sample Type Sample Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

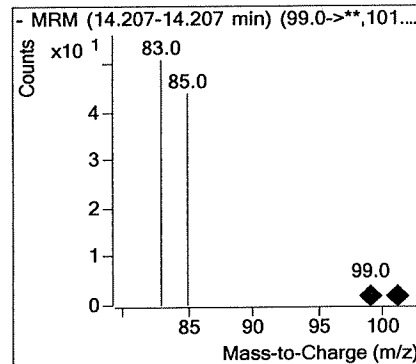
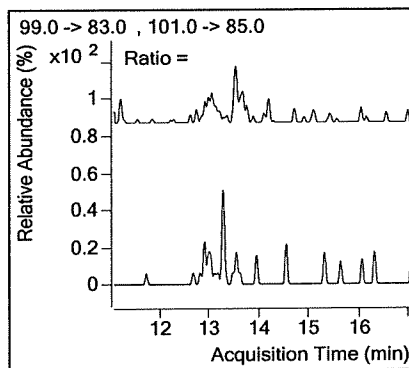
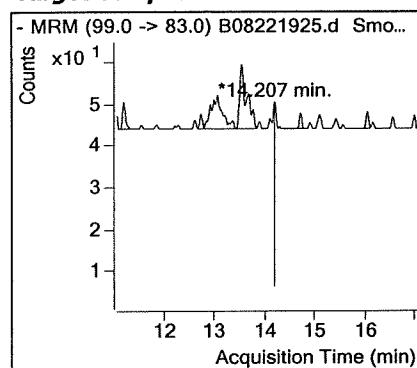


Quantitation Results

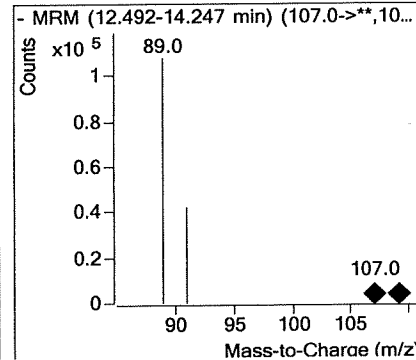
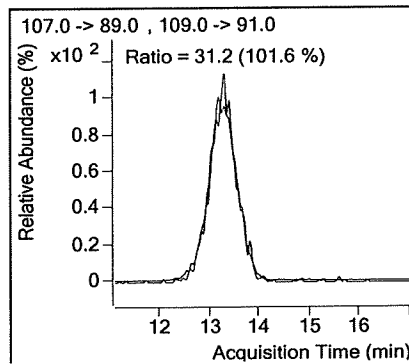
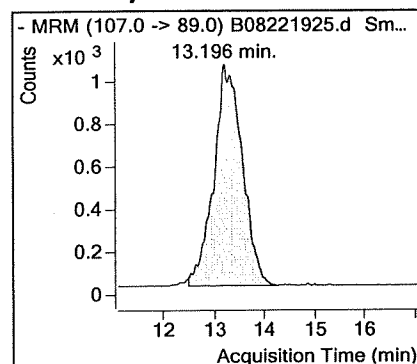
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	14.207	0.0	41247.7	0.0000	0.0000

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



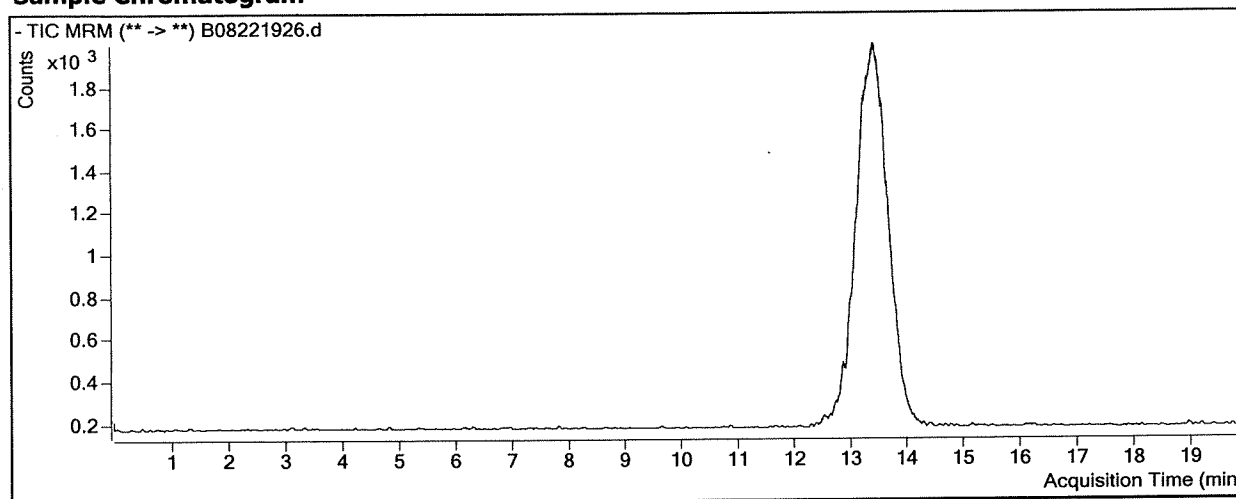
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 02:18
Position P1-C7
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221926.d
Sample Name 649960
Sample Info ME-002-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

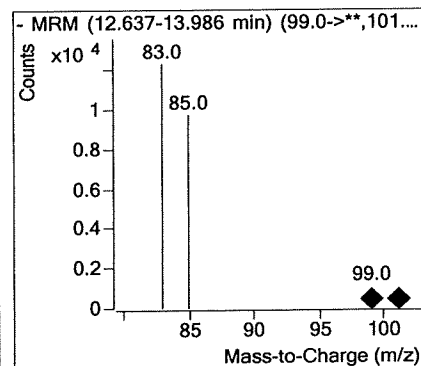
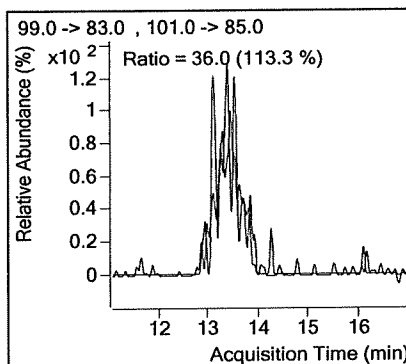
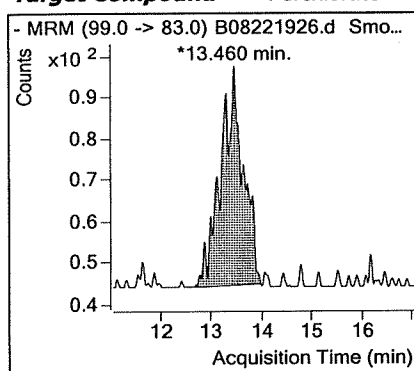


Quantitation Results

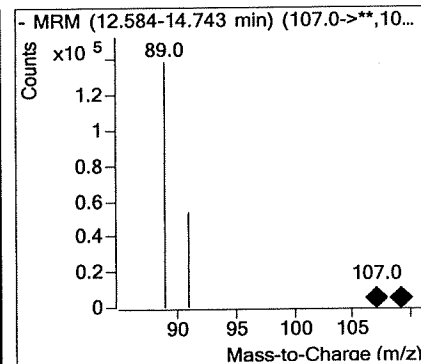
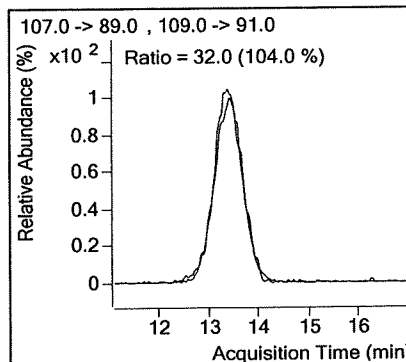
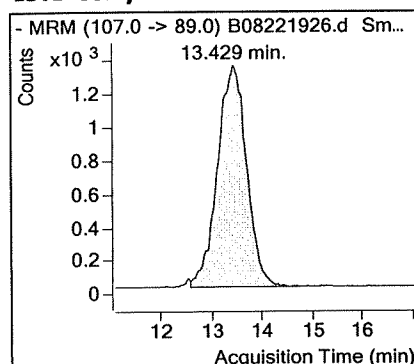
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.460	1637.7	53357.0	0.0307	0.3394

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



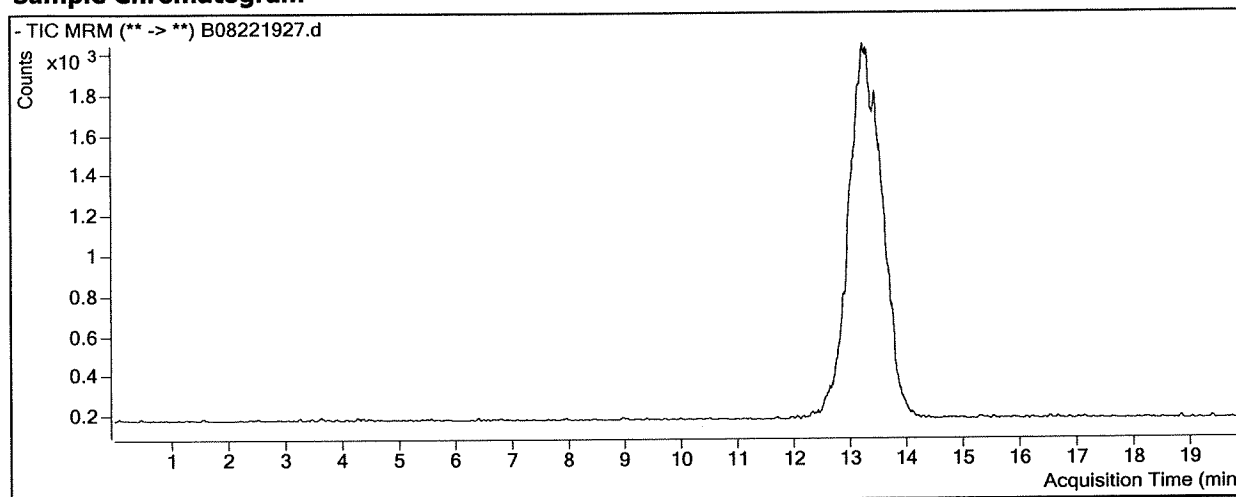
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 02:39
Position P1-C8
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221927.d
Sample Name 649963
Sample Info MI-012-PBBB
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

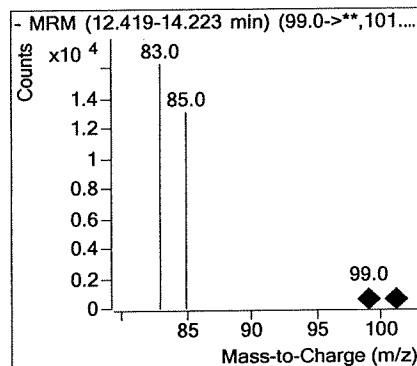
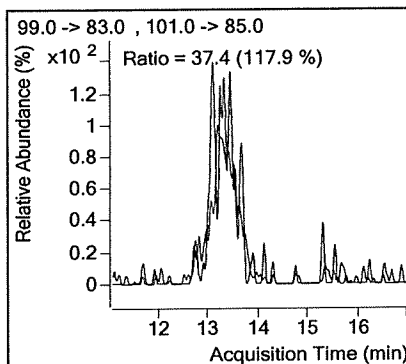
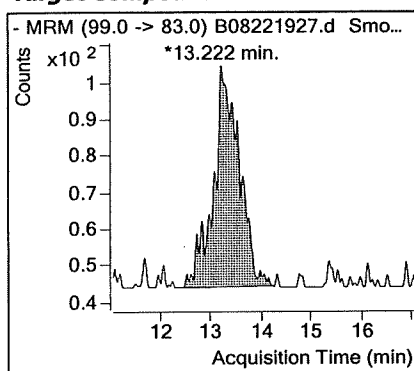


Quantitation Results

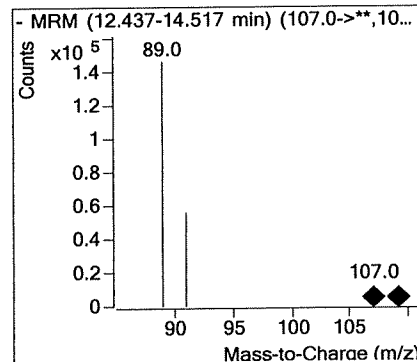
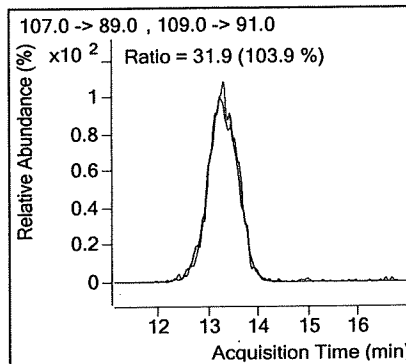
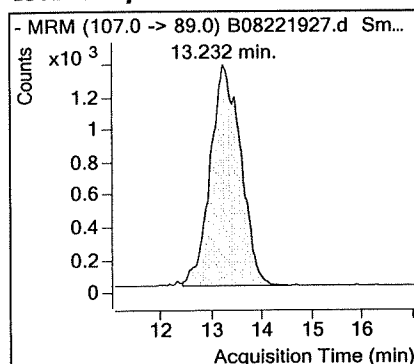
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.222	2129.9	56612.2	0.0376	0.4178

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804

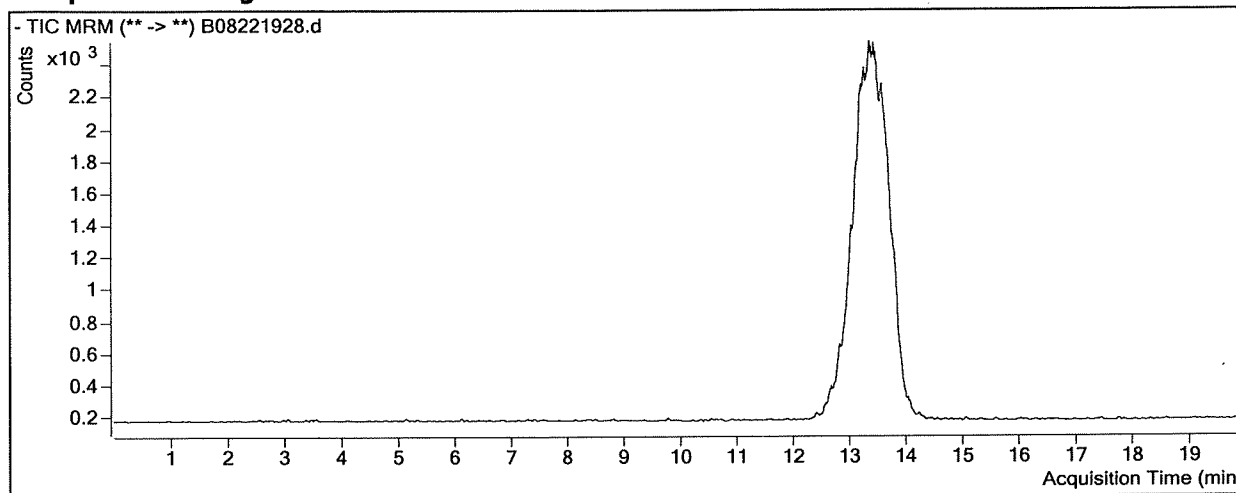


Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 03:00 Data File B08221928.d
Position P1-C9 Sample Name 650539
Dilution 1 Sample Info NY-002-PAM
Inj Vol 20 Acq Method File Perchlorate.m
Sample Type Sample Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

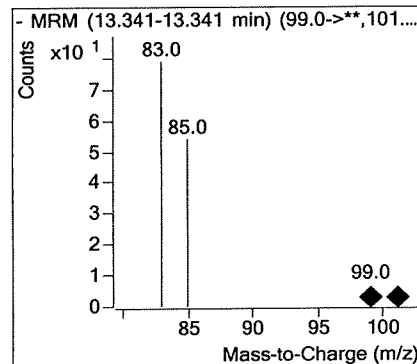
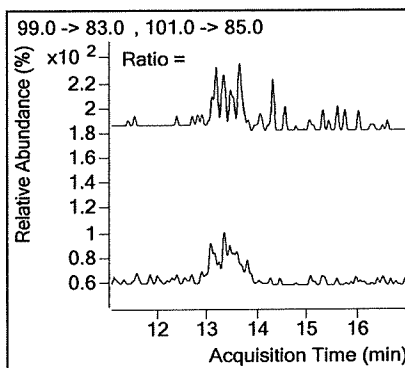
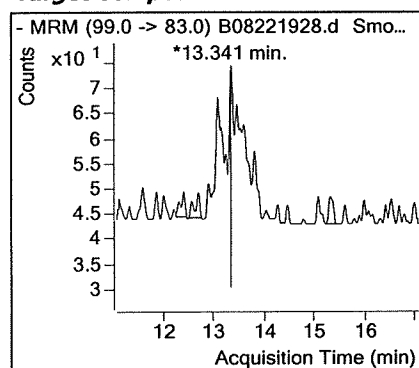


Quantitation Results

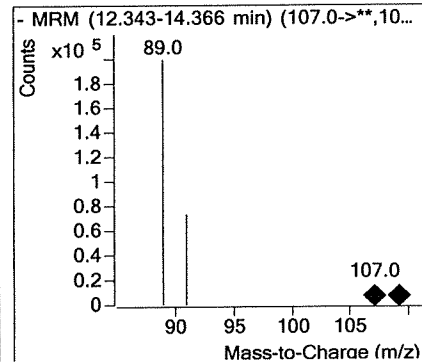
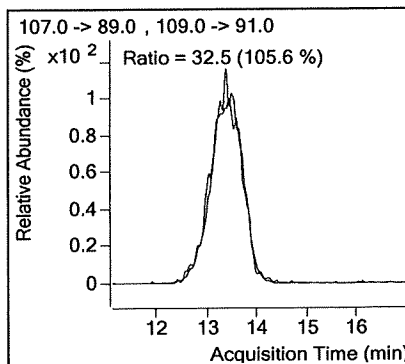
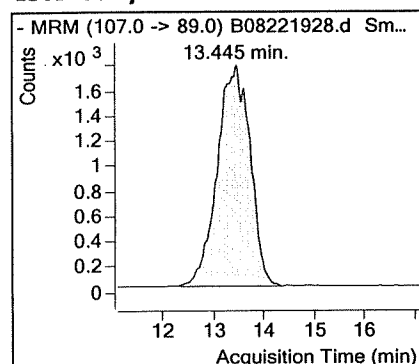
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.341	0	79585.7	0.0000	0.0000

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



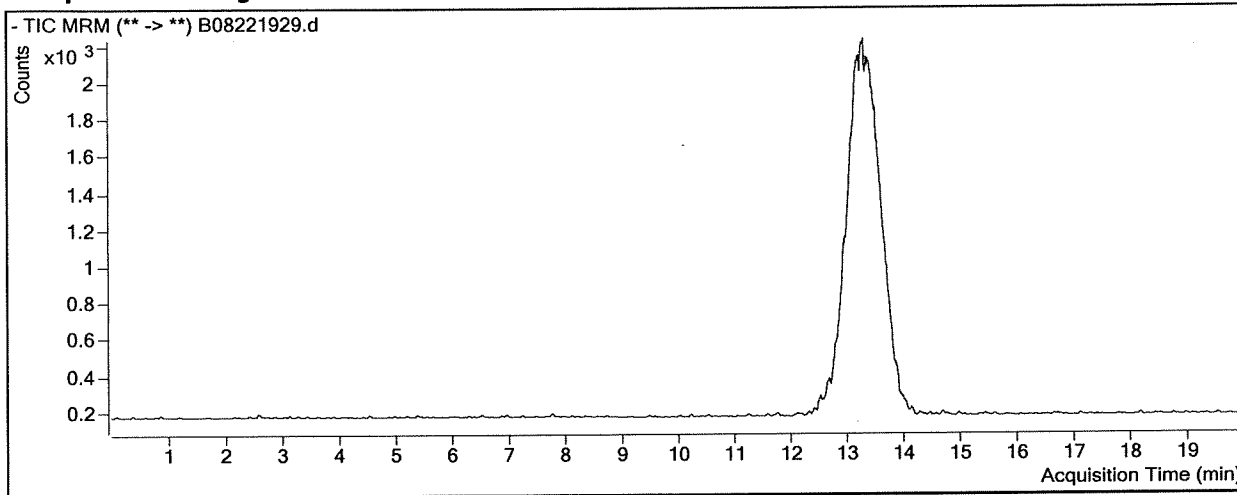
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 03:21
Position P1-D1
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221929.d
Sample Name 649968
Sample Info OH-005-PG
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

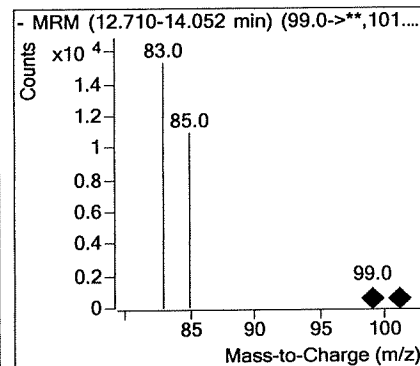
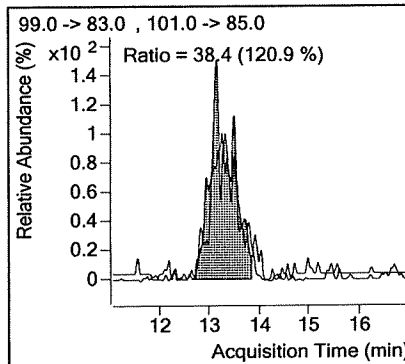
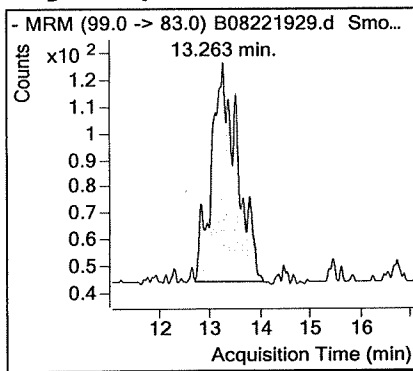


Quantitation Results

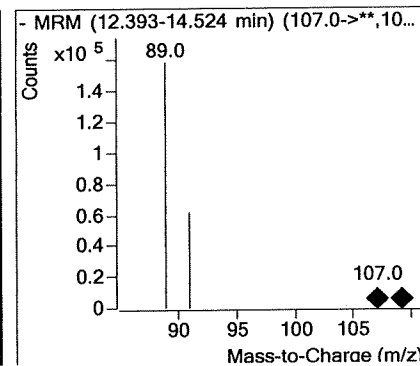
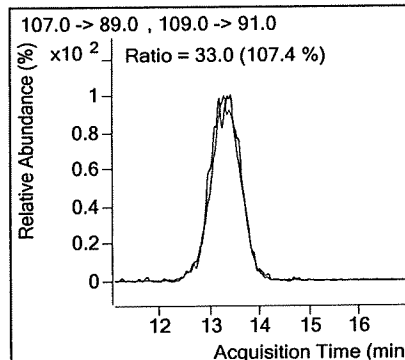
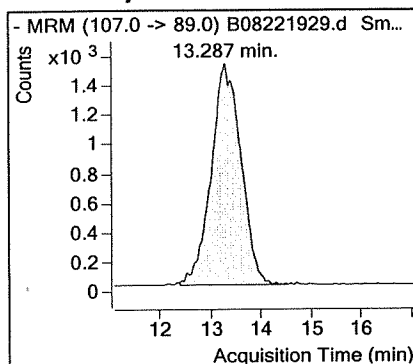
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.263	2959.9	61986.7	0.0478	0.5324

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



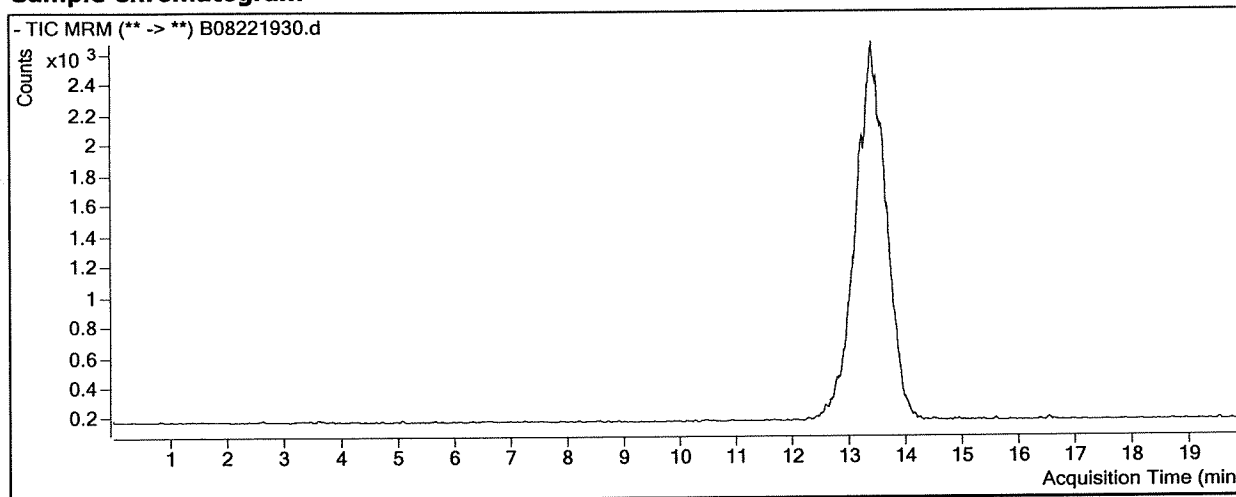
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 03:43
Position P1-D2
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221930.d
Sample Name 649969
Sample Info OH-024-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

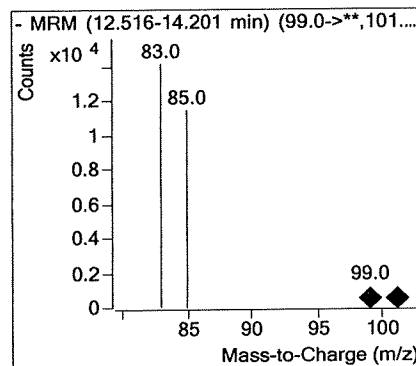
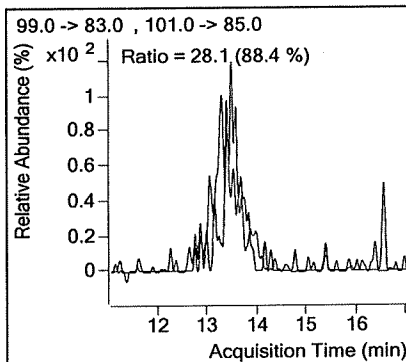
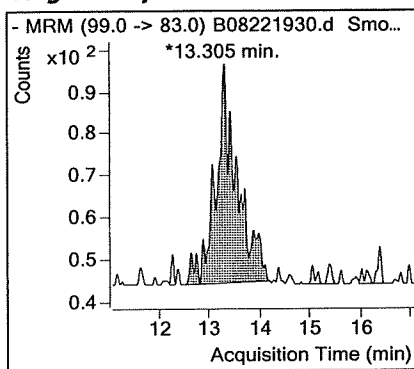


Quantitation Results

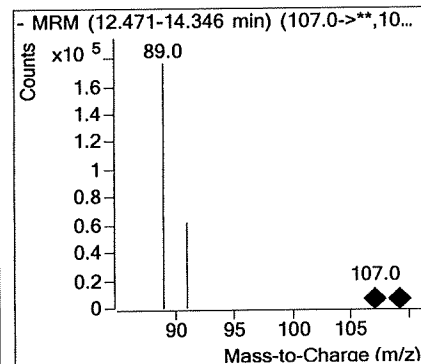
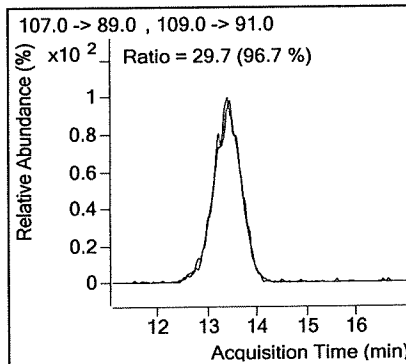
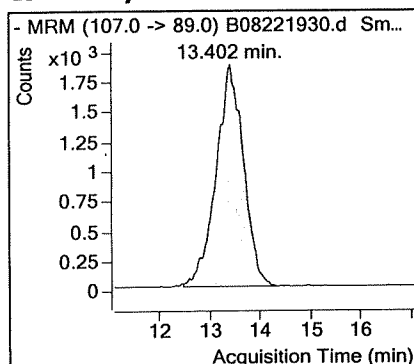
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.305	1523.9	70237.2	0.0217	0.2377

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



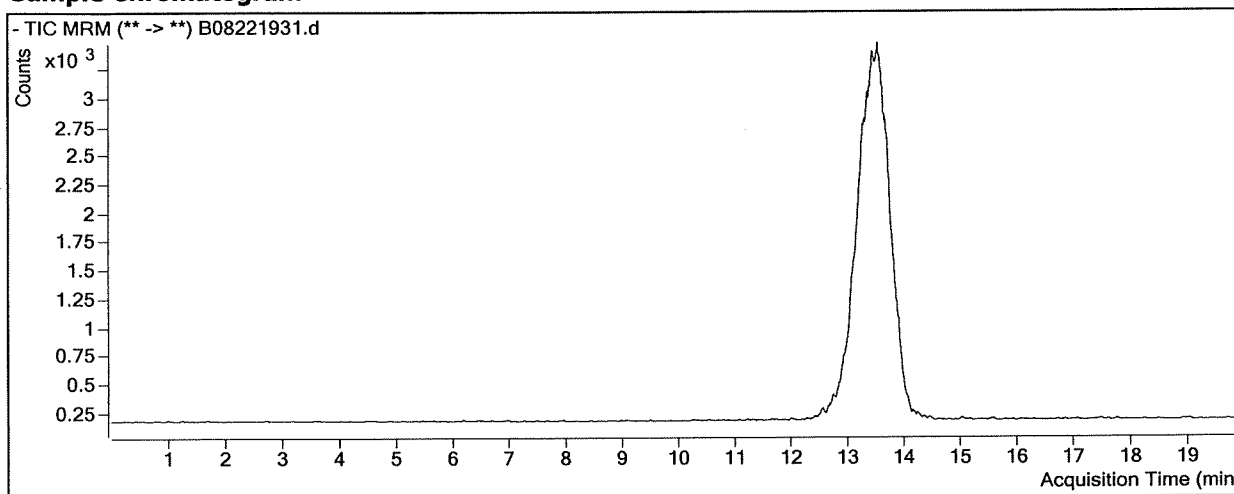
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 04:04
Position P1-D3
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221931.d
Sample Name 649970
Sample Info OH-027-PWM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

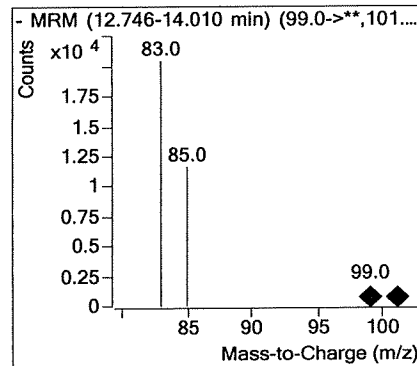
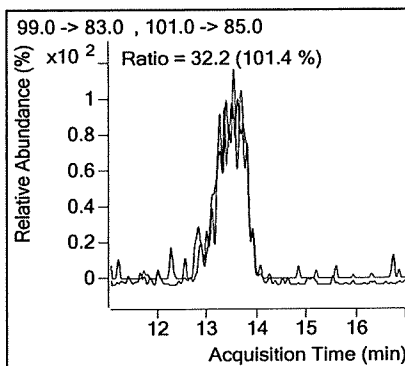
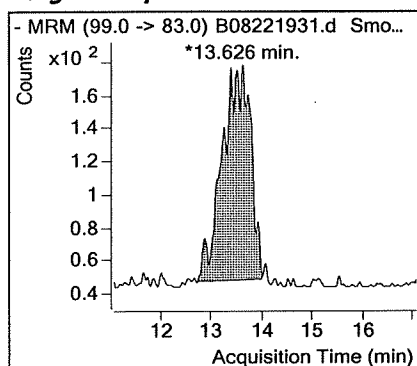


Quantitation Results

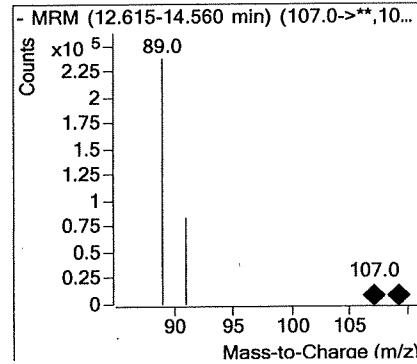
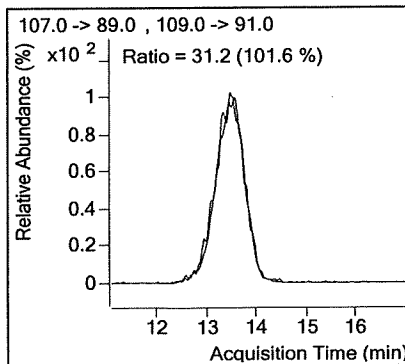
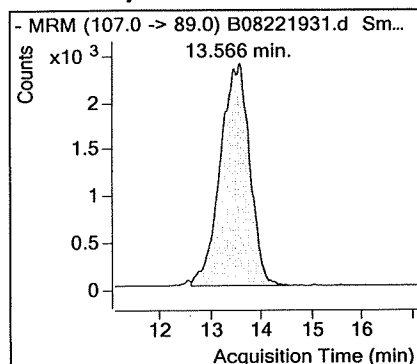
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.626	5058.5	96141.7	0.0526	0.5874

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



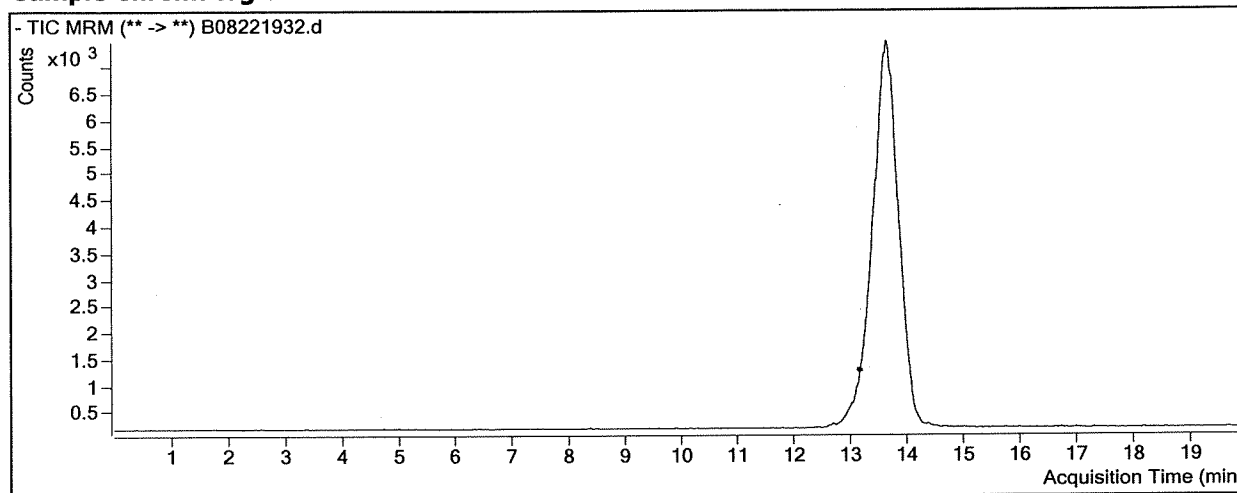
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 04:25
Position P1-D4
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221932.d
Sample Name 649971
Sample Info OL-AM-008-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

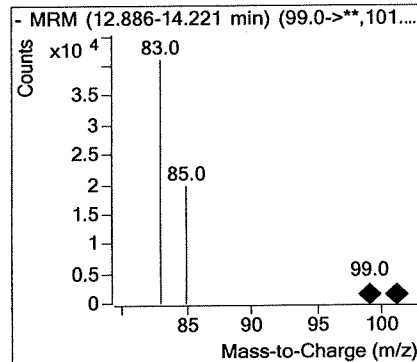
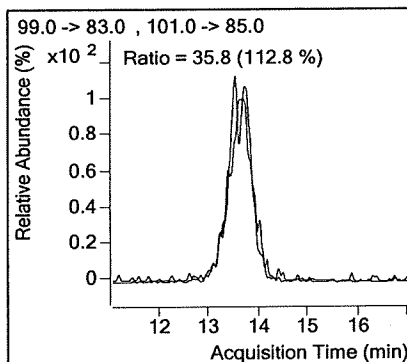
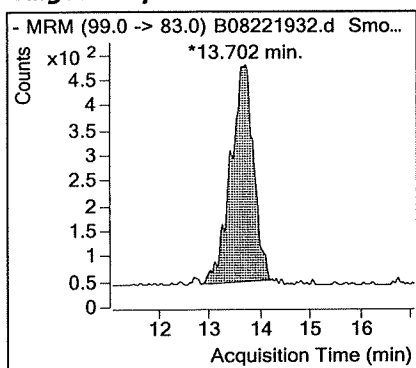


Quantitation Results

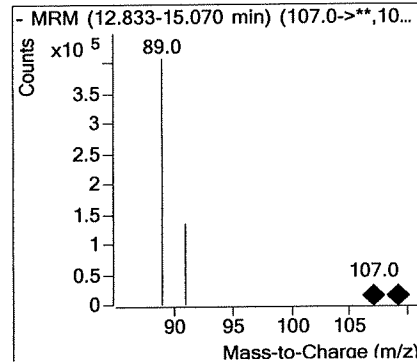
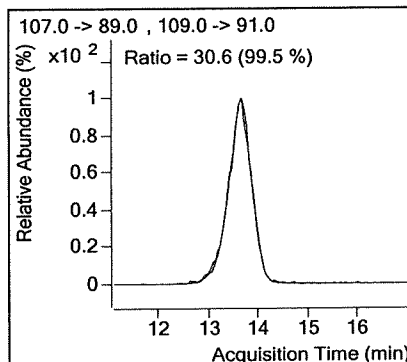
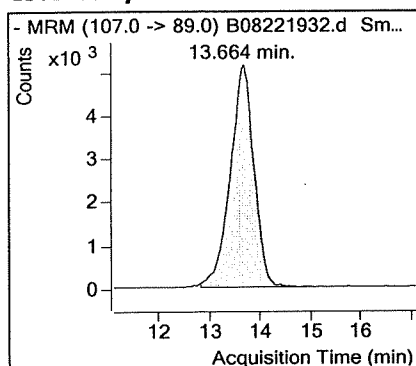
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.702	13415.2	167543.1	0.0801	0.8980

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



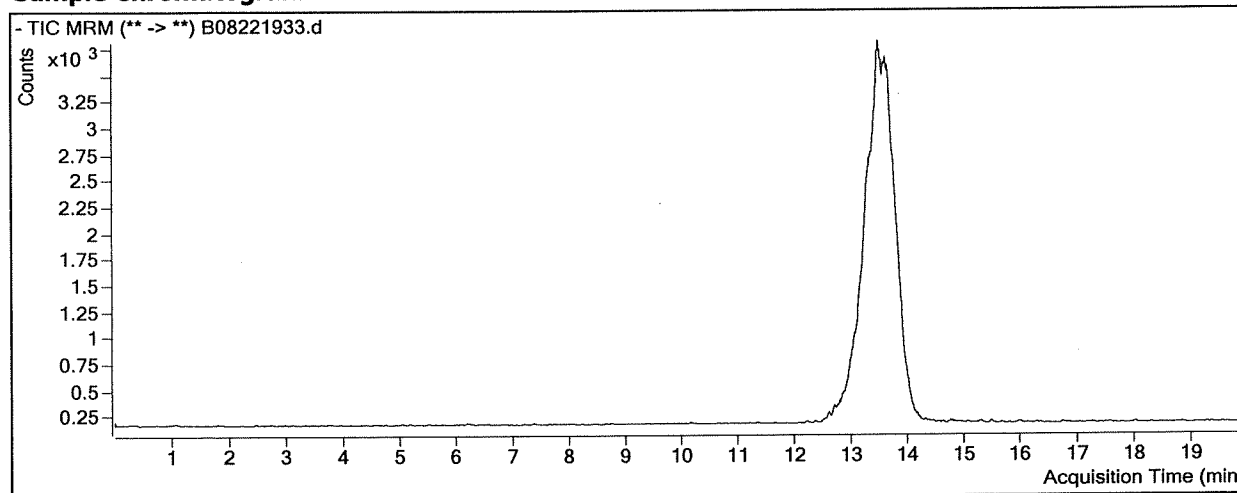
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 04:46
Position P1-D5
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221933.d
Sample Name 649972
Sample Info OL-AM-010-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

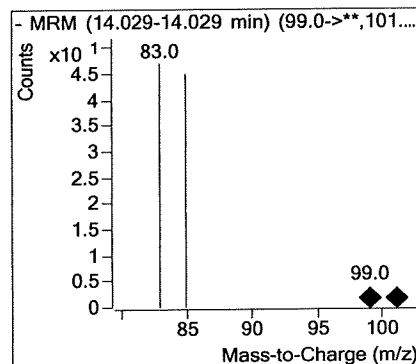
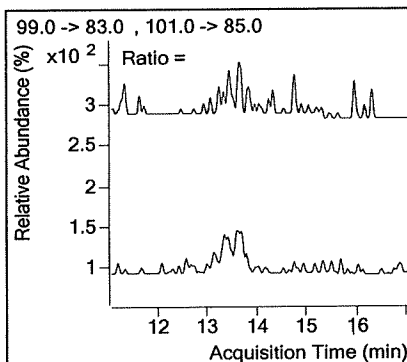
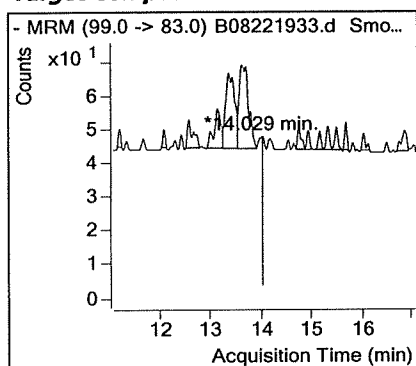


Quantitation Results

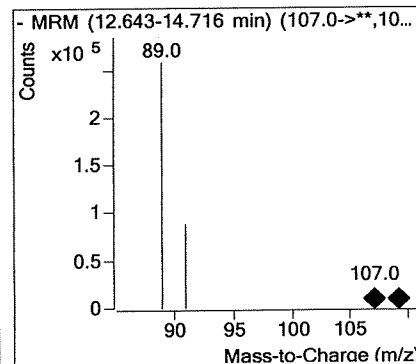
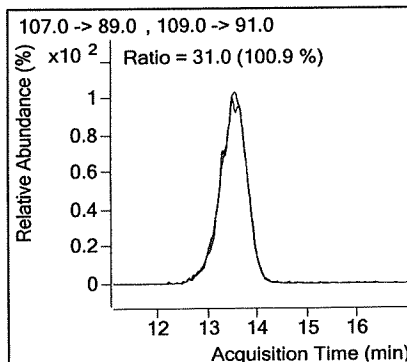
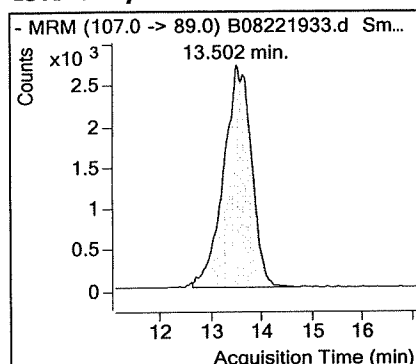
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	14.029	0	104427.0	0.0000	0.0000

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4

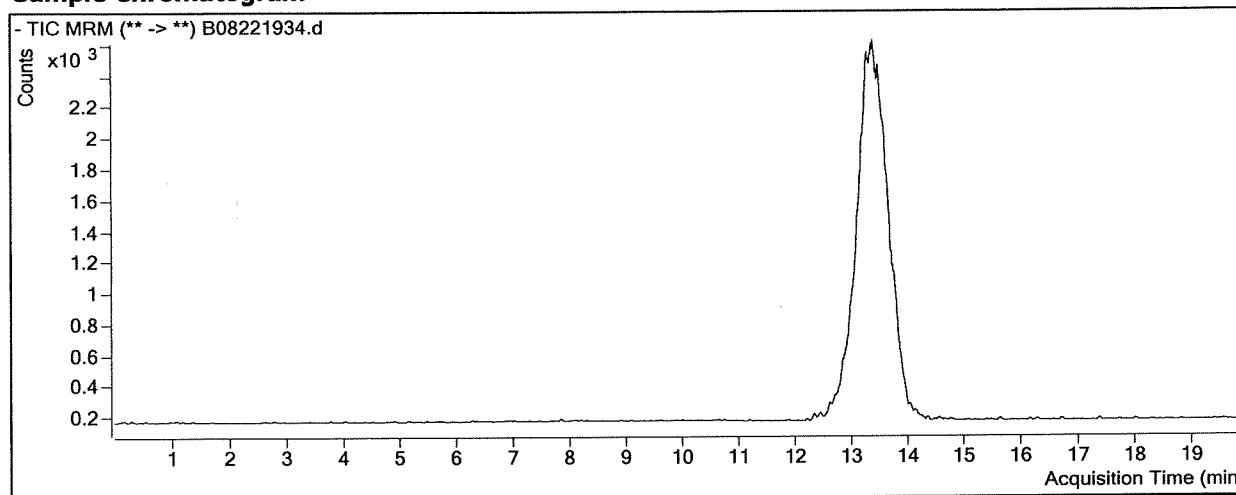


Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 05:07 Data File B08221934.d
Position P1-D6 Sample Name 649973
Dilution 1 Sample Info OR-004-PAM
Inj Vol 20 Acq Method File Perchlorate.m
Sample Type Sample Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

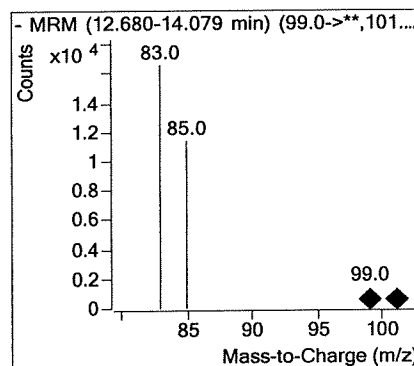
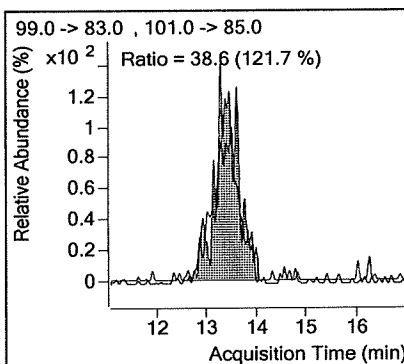
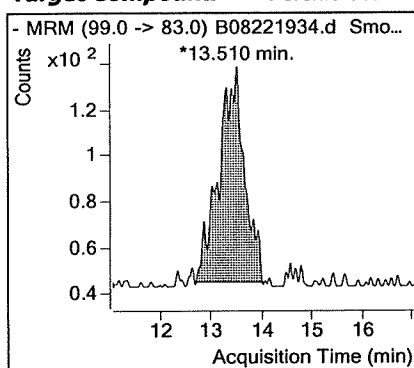


Quantitation Results

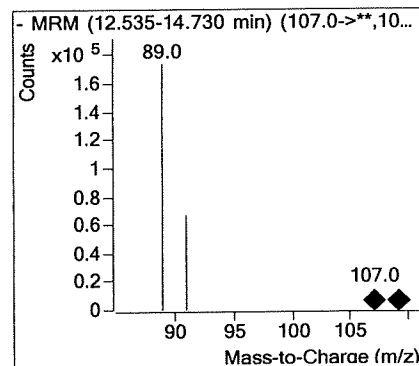
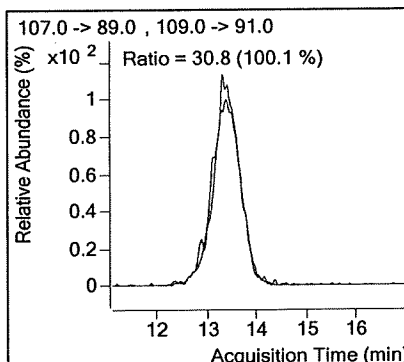
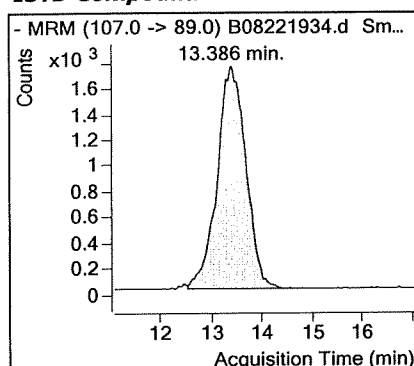
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.510	3283.0	68425.6	0.0480	0.5350

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



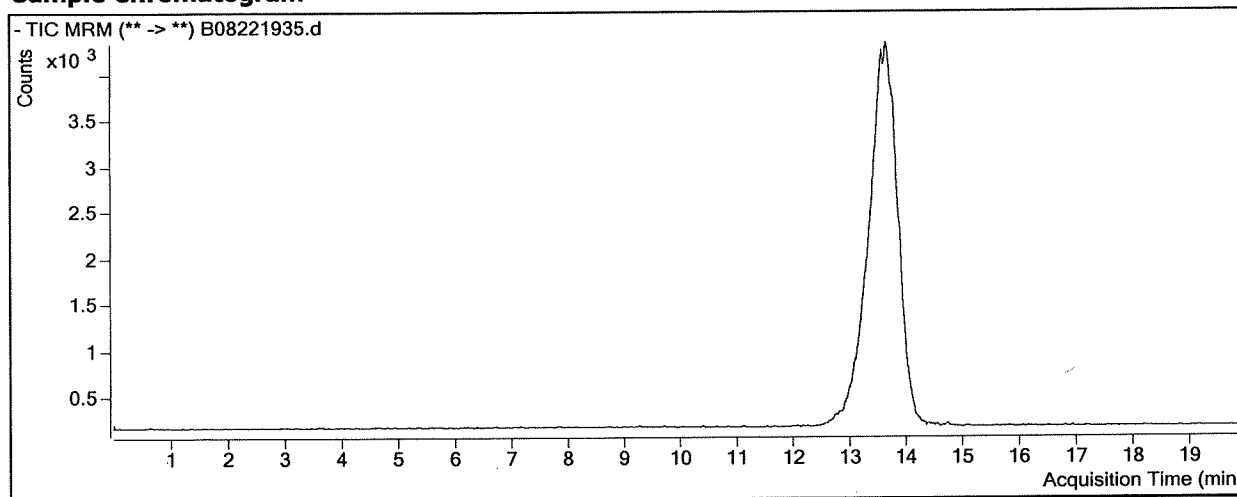
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 05:28
Position P1-D7
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221935.d
Sample Name 649975
Sample Info VA-010-PAM
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

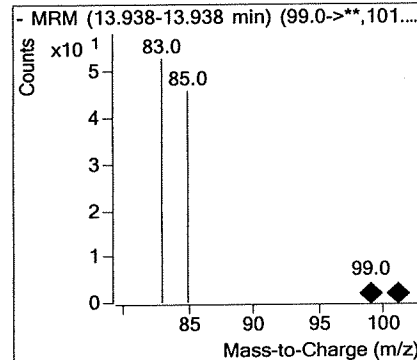
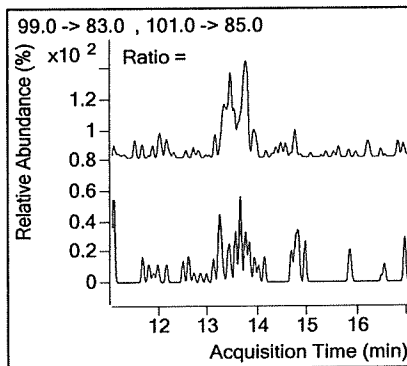
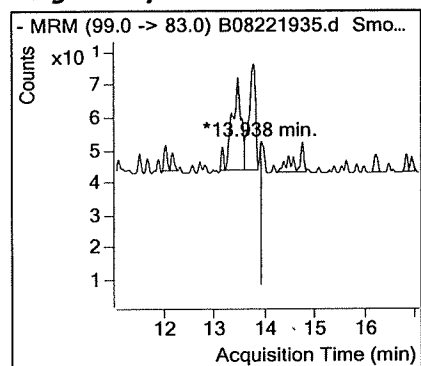


Quantitation Results

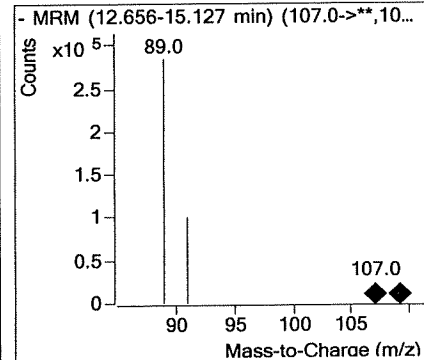
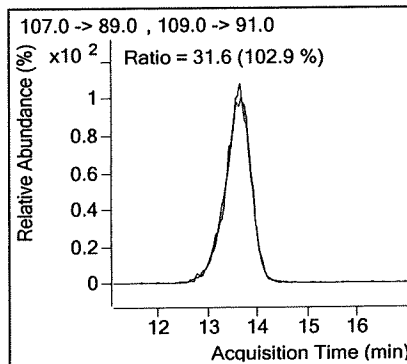
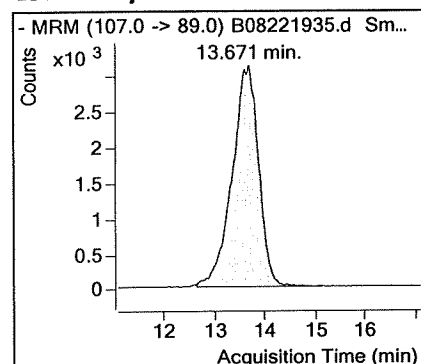
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.938	0	114974.6	0.0000	0.0000

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



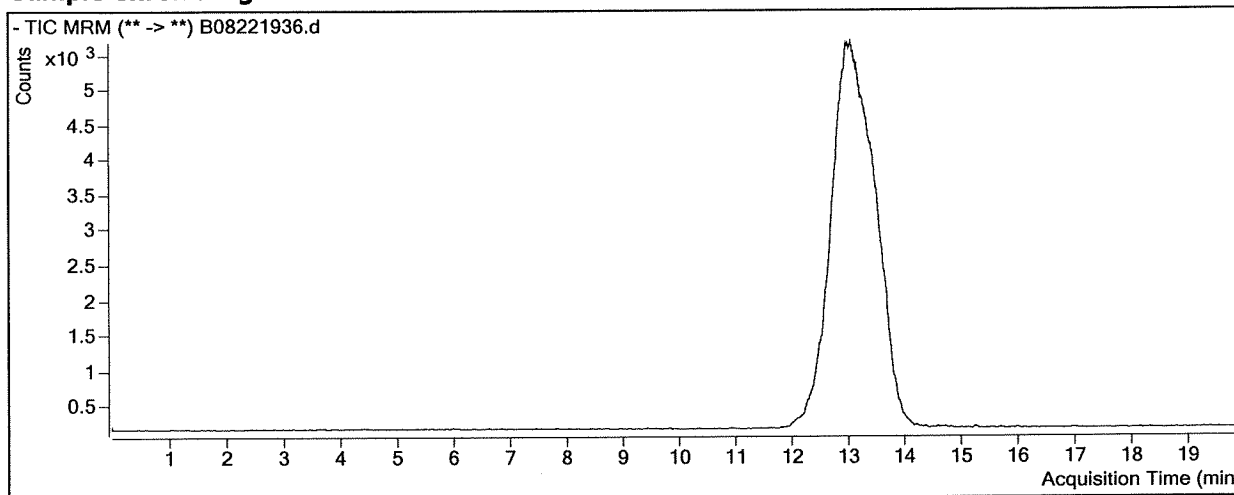
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 05:49
Position P1-D8
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221936.d
Sample Name 649962 MS
Sample Info ME-025-PWM MS
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

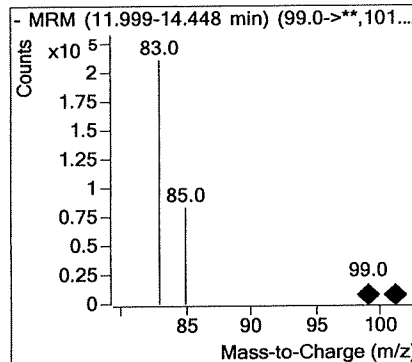
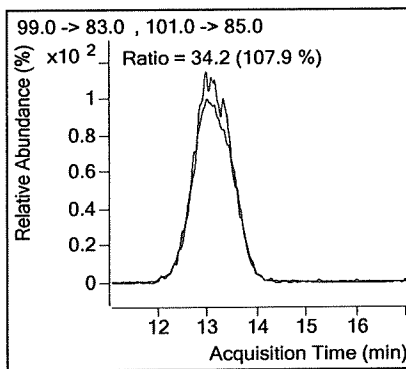
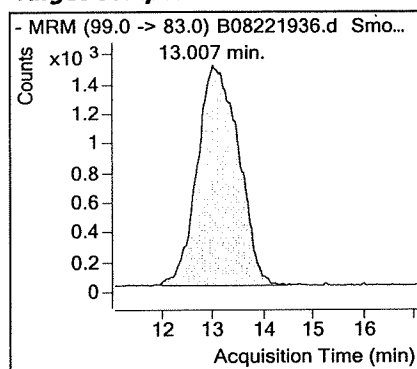


Quantitation Results

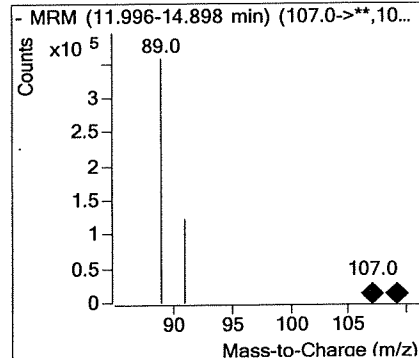
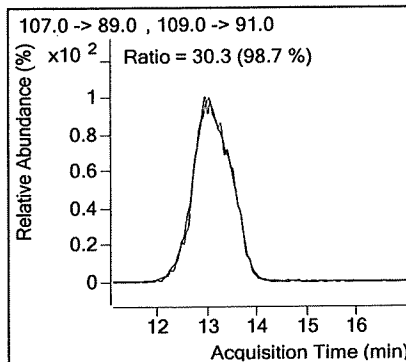
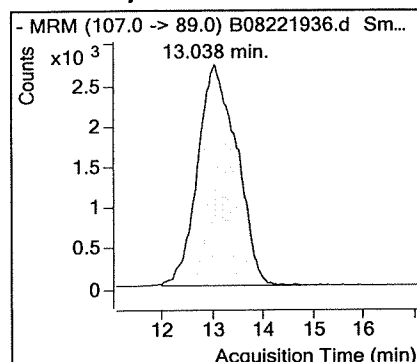
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-18O4	13.007	83536.7	145117.4	0.5756	6.5039

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-18O4



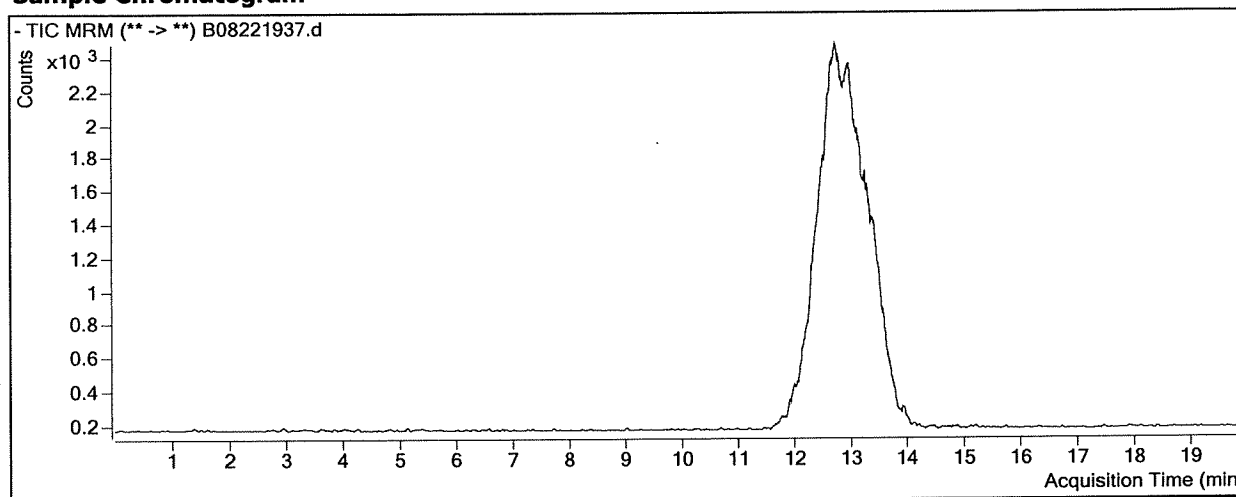
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 06:10
Position P1-D9
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221937.d
Sample Name 649962 MSD
Sample Info ME-025-PWM MSD
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

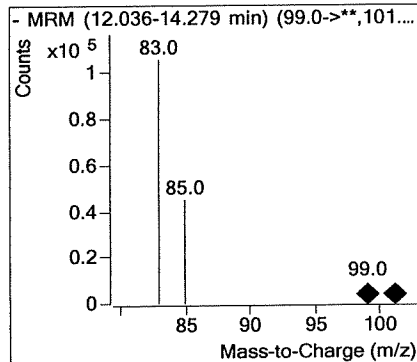
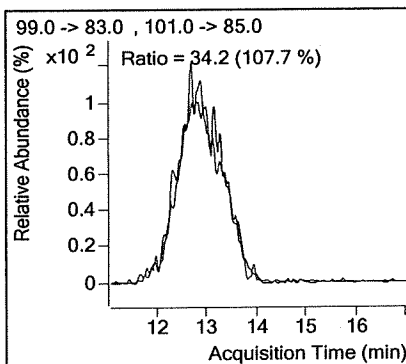
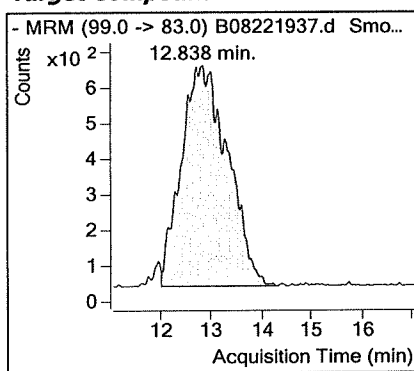


Quantitation Results

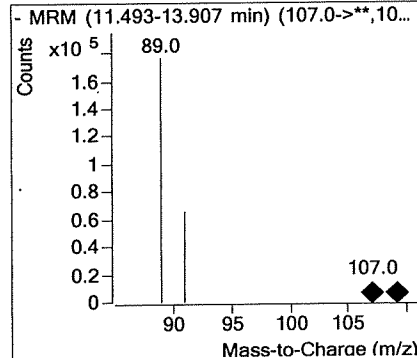
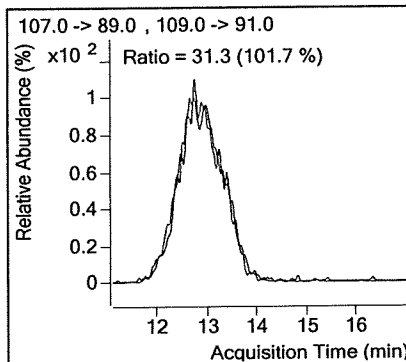
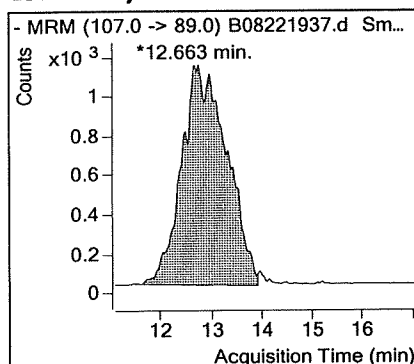
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	12.838	39181.1	69165.4	0.5665	6.4002

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



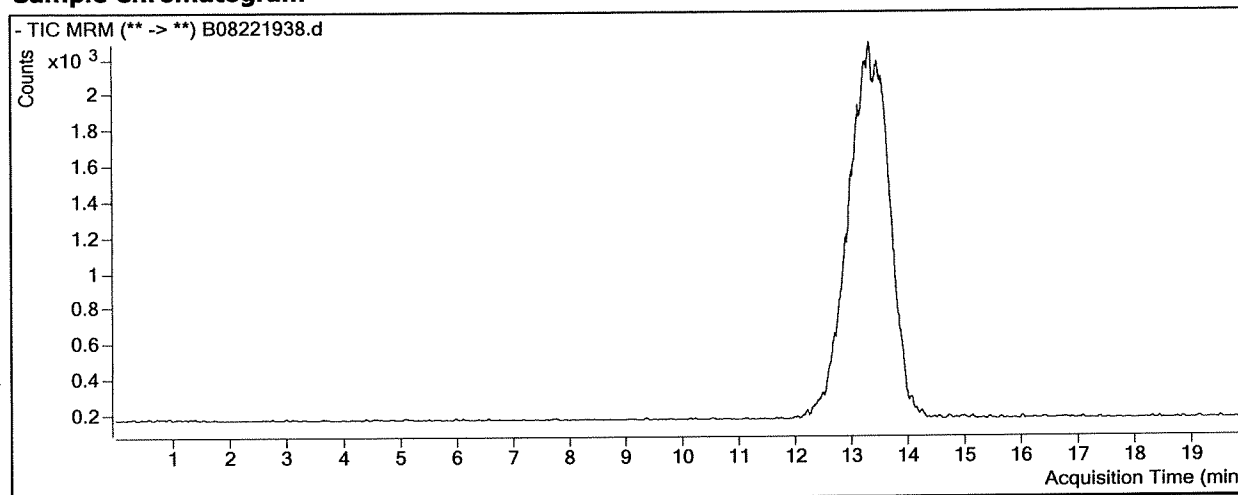
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 06:31
Position P1-E1
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221938.d
Sample Name 649954 MS
Sample Info AK-007-PG MS
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

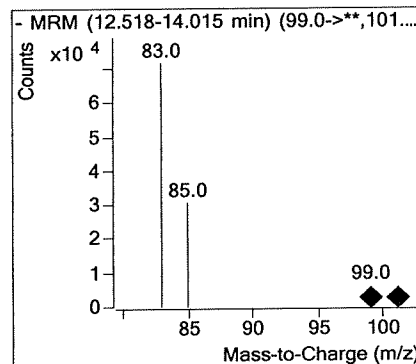
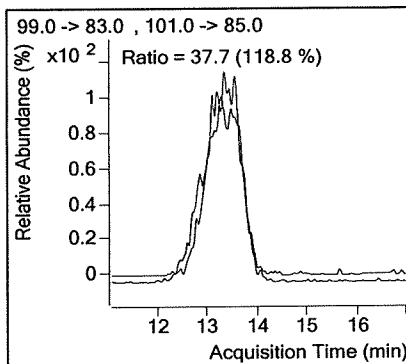
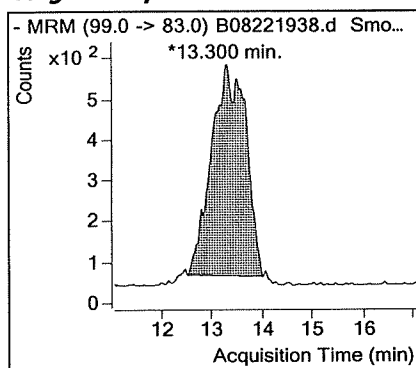


Quantitation Results

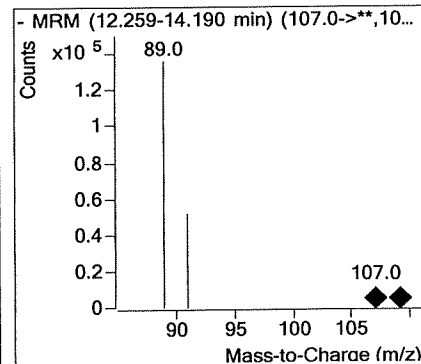
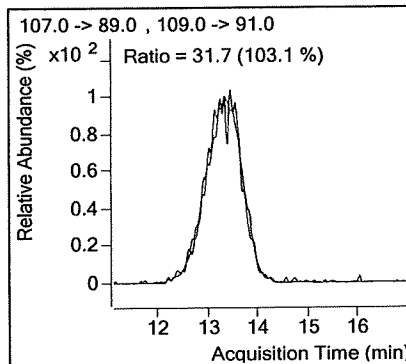
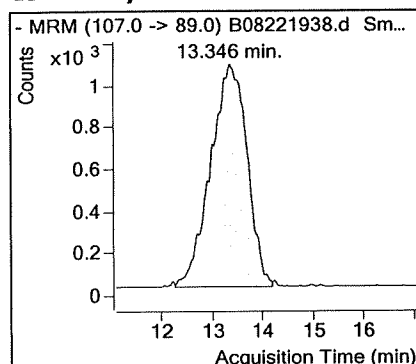
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.300	24510.4	53037.5	0.4621	5.2198

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



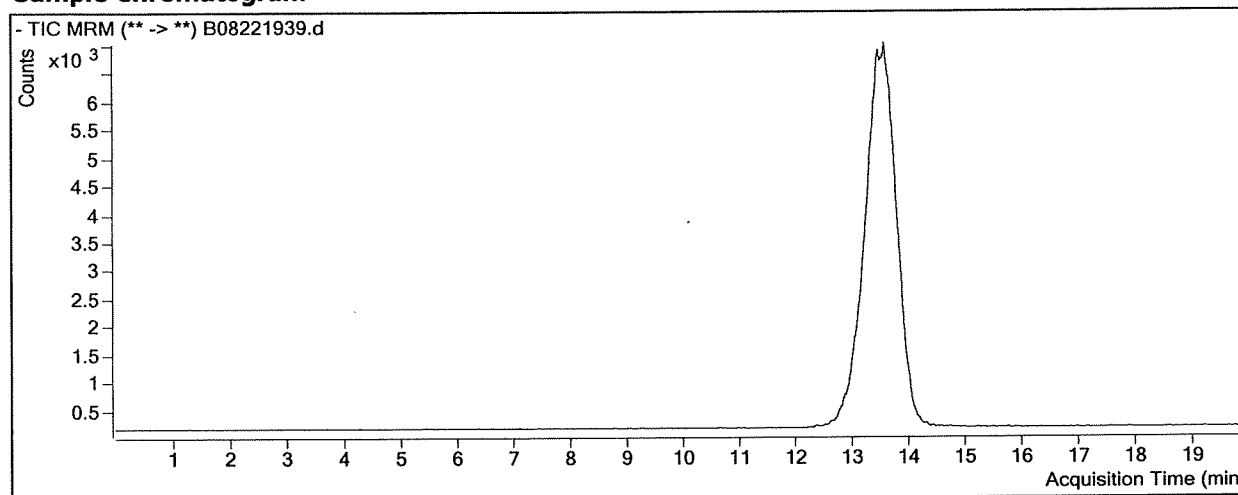
Batch Data Path D:\MassHunter\Data\082219_Perchlorate\QuantResults\Perchlorate.batch.bin
Analysis Time 8/23/2019 1:24 PM Analyst Name SWRI01\AYY
Report Time 8/23/2019 1:25 PM Reporter Name AYY
Last Calib Update 8/23/2019 1:24 PM Batch State Processed

Analysis Info

Acq Time 2019-08-23 06:52
Position P1-E2
Dilution 1
Inj Vol 20
Sample Type Sample

Data File B08221939.d
Sample Name 649954 MSD
Sample Info AK-007-PG MSD
Acq Method File Perchlorate.m
Project & TO 24099.02.014 / TO: 190723-8

Sample Chromatogram

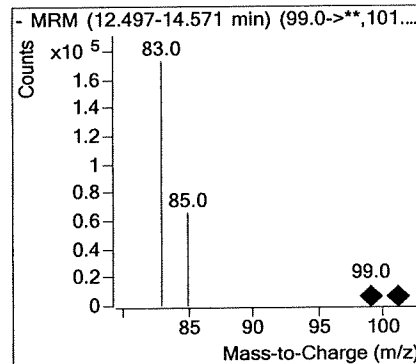
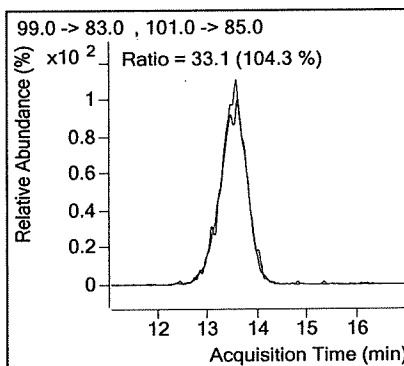
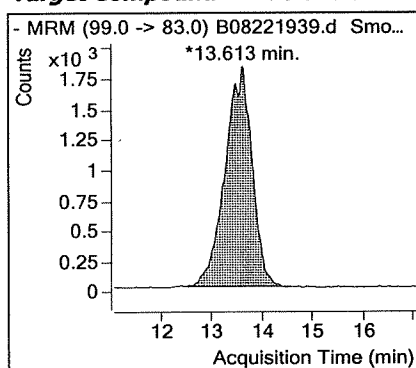


Quantitation Results

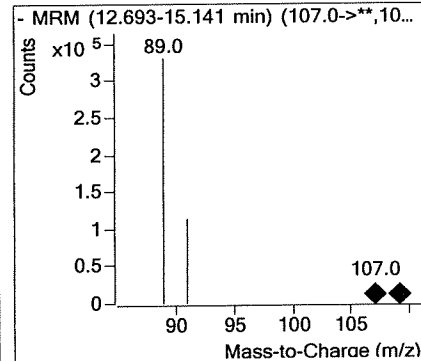
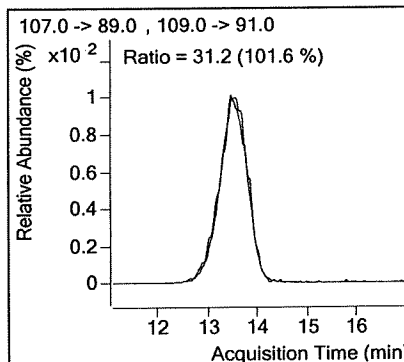
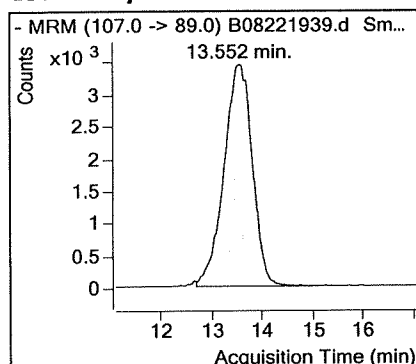
Compound	ISTD	RT	Response	ISTD Resp	RR	Conc
Perchlorate	Perchlorate-1804	13.613	67444.3	134493.2	0.5015	5.6648

Compound Graphics

Target Compound Perchlorate



ISTD Compound Perchlorate-1804



SOUTHWEST RESEARCH INSTITUTE

CLIENT: Healthy Babies Bright Futures/Virginia
Organizing

SwRI PROJECT#: 24099.02.014

SwRI TASK ORDER: 190723-8

SwRI SRR: 63739, 63791

SDG: 649954

VTSR: 07/23/2019, 08/05/2019

INJECTION LOG

76 TITLE

PROJECT NO.

BOOK NO. 18-0605-008

W01

LC/MS/MS analysis of perchlorate in food

SwRI Project: 24099.02.014

Client: HBBF/Virginia Organizing

Task order: 190723-8

Column: Waters IC-Pak Anion HR 4.6 x 75 mm Part no: WAT026765

Mobile phase A: 50% - 25 mM ammonium bicarbonate in water (pH 10)

Mobile phase B: 50% Acetonitrile

Flow rate: 0.4 mL/min

Injection volume: 20 µL

Stop time: 20 minutes

Column temp: 40 °C

Mass spec: ESI- MRM mode

Data File	Name	Type	Acq. Date-Time
B08221901.d	Perchlorate 100 ng/mL	Cal	8/22/2019 5:52 PM
B08221902.d	Perchlorate 50 ng/mL	Cal	8/22/2019 6:13 PM
B08221903.d	Perchlorate 20 ng/mL	Cal	8/22/2019 6:34 PM
B08221904.d	Perchlorate 10 ng/mL	Cal	8/22/2019 6:55 PM
B08221905.d	Perchlorate 5 ng/mL	Cal	8/22/2019 7:16 PM
B08221906.d	Perchlorate 2 ng/mL	Cal	8/22/2019 7:37 PM
B08221907.d	Perchlorate 0.8 ng/mL	Cal	8/22/2019 7:58 PM
B08221908.d	Perchlorate 0.4 ng/mL	Cal	8/22/2019 8:19 PM
B08221909.d	651352 BLK_15AUG19	Sample	8/22/2019 8:41 PM
B08221910.d	649977	Sample	8/22/2019 9:02 PM
B08221911.d	649976	Sample	8/22/2019 9:23 PM
B08221912.d	649966	Sample	8/22/2019 9:44 PM
B08221913.d	649962	Sample	8/22/2019 10:05 PM
B08221914.d	649959	Sample	8/22/2019 10:26 PM
B08221915.d	649958	Sample	8/22/2019 10:47 PM
B08221916.d	649957	Sample	8/22/2019 11:08 PM
B08221917.d	649956	Sample	8/22/2019 11:29 PM
B08221918.d	649955	Sample	8/22/2019 11:50 PM
B08221920.d	649954	Sample	8/23/2019 12:12 AM
B08221921.d	649967	Sample	8/23/2019 12:33 AM
B08221922.d	649965	Sample	8/23/2019 12:54 AM
B08221923.d	649964	Sample	8/23/2019 1:15 AM
B08221924.d	649961	Sample	8/23/2019 1:36 AM
B08221925.d	649974	Sample	8/23/2019 1:57 AM
B08221926.d	649960	Sample	8/23/2019 2:18 AM
B08221927.d	649963	Sample	8/23/2019 2:39 AM
B08221928.d	650539	Sample	8/23/2019 3:00 AM
B08221929.d	649968	Sample	8/23/2019 3:21 AM
B08221930.d	649969	Sample	8/23/2019 3:43 AM
B08221931.d	649970	Sample	8/23/2019 4:04 AM
B08221932.d	649971	Sample	8/23/2019 4:25 AM
B08221933.d	649972	Sample	8/23/2019 4:46 AM
B08221934.d	649973	Sample	8/23/2019 5:07 AM
B08221935.d	649975	Sample	8/23/2019 5:28 AM
B08221936.d	649962 MS	Sample	8/23/2019 5:49 AM
B08221937.d	649962 MSD	Sample	8/23/2019 6:10 AM
B08221938.d	649954 MS	Sample	8/23/2019 6:31 AM
B08221939.d	649954 MSD	Sample	8/23/2019 6:52 AM
B08221940.d	Perchlorate 20 ng/mL	QC	8/23/2019 7:13 AM
B08221941.d	Perchlorate 5 ng/mL	QC	8/23/2019 7:35 AM

RI

not used; IS double spiked

Argum 08/27/19

not used; IS double spiked
Work continued to Page

www.s

SIGNA

DATE

DISCLOSED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE

08/27/19