NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 4 Data Report, Electronic Data Deliverable, Data Validation Report, Sample Location Report, SDG 17E075

NS

Treasure Island, CA

April 2021

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 05-30-2017
EMAX Batch No.: 17E075

ATTN: SEVDA ALECKSON

NOREAS
16361 SCIENTIFIC WAY
IRVINE, CA 92618

Subject: Laboratory Report
Project: TREASURE ISLAND, IR SITE 6

Enclosed is the Laboratory report for samples received on 05/10/17.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
QCFB-0517	E075-01	05/09/17	WATER	PFCS
QCTB-0517	E075-02	05/09/17	WATER	VOLATILE ORGANICS BY GC/MS
06-MW36-0517	E075-03	05/09/17	WATER	VOLATILE ORGANICS BY GC/MS
				TPH GASOLINE
				TPH DIESEL & MOTOR OIL
				DISSOLVED METALS BY ICP-MS
06-MW30-0517	E075-04	05/09/17	WATER	PFCS
06-MW30-0517 DUP	E075-05	05/09/17	WATER	PFCS
06-MW25-0517	E075-06	05/09/17	WATER	PFCS
06-MW26-0517	E075-07	05/09/17	WATER	PFCS
06-MW33-0517	E075-08	05/09/17	WATER	VOLATILE ORGANICS BY GC/MS
				TPH GASOLINE
				TPH DIESEL & MOTOR OIL
				DISSOLVED METALS BY ICP-MS
06-MW35-0517	E075-09	05/09/17	WATER	VOLATILE ORGANICS BY GC/MS
				TPH GASOLINE
				TPH DIESEL & MOTOR OIL
				DISSOLVED METALS BY ICP-MS
06-MW32-0517	E075-10	05/09/17	WATER	VOLATILE ORGANICS BY GC/MS
				TPH GASOLINE
				TPH DIESEL & MOTOR OIL
				DISSOLVED METALS BY ICP-MS
QCEB-0517	E075-11	05/09/17	WATER	VOLATILE ORGANICS BY GC/MS
				TPH GASOLINE
				TPH DIESEL & MOTOR OIL
				DISSOLVED METALS BY ICP-MS
06-MW25-0517MS	E075-06M	05/09/17	WATER	PFCS
06-MW25-0517MSD	E075-06S	05/09/17	WATER	PFCS

Note: PFCS was subcontracted to Maxxam.

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912016-11
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

NOREAS
Environmental Engineering and Science

17E075

CHAIN-OF-CUSTODY RECORD

COC No. TI-00 3
PAGE 1 of 1

Project Name/No:	Former Naval Station Treasure Island, San Francisco, CA	Purchase Order No.	17023
Project Location:	IR Site 6 - 1Q 2017 Groundwater Event	Laboratory Name:	EMAX, Inc.
Company Name:	NOREAS, Inc.	Laboratory Contact:	Richard Beauvil
Address:	16361 Scientific Way Irvine, CA 92618	Laboratory Address:	1835 W. 205th Street Torrance, CA 90501
Project Manager:	Hamlet Hamparsumian	Laboratory Phone:	(310) 618-8889, ext. 118
Phone/Fax No.	(949) 877-3720		
Project Contact:	Sevda K. Aleckson	Airbill No.	COURIER
Contact Phone:	(949) 467-9117		

Laboratory SDG No:

ANALYSES REQUIRED

	Sample ID	Sampling Location	Date	Time	Matrix	QC Level (3/4)	Unpreserved	Preserved	# of Containers	EPA 8015B - TPH-g	EPA 8015B - TPH-d/-mo	EPA 8260B - VOCs *	EPA 6020A - Dissolved Arsenic & Manganese (Field Filtered)	EPA 8151A - MCPP	EPA 537 mod. - PFOA/PFOS/PFBS						MS/MSD
1	QCFB-0517	System Blank	5/9/17	0730	W	3	1		1						X						
2	QCTB-0517	Trip Blank		0800				3	3			X									
3	06-MW36-0517	06-MW36		0815		3	1	7	8	X	X	X	X								
4	06-MW30-0517	06-MW30		0915		4	1		1						X						
5	06-MW30-0517 Dup	06-MW30		0920		3	1		1						X						
6	06-MW25-0517	06-MW25		1005		3	3		3						X						X
7	06-MW26-0517	06-MW26		1050		3	1		1						X						
8	06-MW33-0517	06-MW33		1145		3	1	7	8	X	X	X	X								
9	06-MW35-0517	06-MW35		1340		3	1	7	8	X	X	X	X								
10	06-MW32-0517	06-MW32		1405		3	1	7	8	X	X	X	X								
11	QCEB-0517	Equipment Blank		1415		3	1	7	8	X	X	X	X								
					MK																

Special Instructions: *Analyze for: 1,1,2-TCA, benzene, ethylbenzene, and naphthalene ONLY. All analytical and QC requirements specified in the Final Sampling and Analysis Plan (April 2017) must be followed. Dissolved As/Mn Field Filtered

Turnaround Time: ☐ 24 HR ☐ 48 HR ☐ 72 HR
X STANDARD OR ☐ _____

Matrix: W: Groundwater or Drinking water; S: Soil; W: Waste

Sampler(s) Name(s): Michael Price

Relinquished By (signature):	Date 5/9/17	Received By (signature)	Date
Company NOREAS, Inc.	Time 1515	Company	Time
Relinquished By (signature):	Date	Received By (signature)	Date 05/10/17
Company	Time	Company EMAX	Time 9:10

Sample Condition Upon Receipt (For Laboratory Use)
Cooler Temp (°C): 1.2 / 3.6
Sample Condition: ☑ Intact ☐ Broken
Cooler Seal: N/A ☐ Intact ☐ Broken

SAMPLE RECEIPT FORM 1

Reference: EMAX-SM02 Rev.8
Form: SM02F1

Type of Delivery	Airbill / Tracking Number	ECN 17E075	
☑ Fedex ☐ UPS ☐ GSO ☐ Others	Master: 7865 1518 8940	Recipient Miguel	
☐ EMAX Courier ☐ Client Delivery		Date 05/10/17	Time 9:10

COC INSPECTION

☑ Client Name ☑ Client PM/FC ☑ Sampler Name ☑ Sampling Date/Time ☑ Sample ID ☑ Matrix
☑ Address ☑ Tel # / Fax # ☐ Courier Signature ☑ Analysis Required ☑ Preservative (if any) ☑ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ From Superfund Site ☐ Rad screening required
Note:

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 1.2 °C	☑ Cooler 2 3.6 °C	☐ Cooler 3 ___ °C	☐ Cooler 4 ___ °C	☐ Cooler 5 ___ °C
	☐ Cooler 6 ___ °C	☐ Cooler 7 ___ °C	☐ Cooler 8 ___ °C	☐ Cooler 9 ___ °C	☐ Cooler 10 ___ °C

Thermometer: A - S/N 130538505 (B) S/N 150555522 C - S/N 140252067 D - S/N 150555630 FM 11/7/16

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**
Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	1	D4	Marked according to	R8, R1
↓ ↓	↓ ↓	↓	sampling location	↓
1-11	1-50	D16		R8
5	14	D7	Per label '10140'	R1
10-11	42, 52	D10		R8
2-11	2-50	D6	Label - 5/9/17	R9
			05/10/17	

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. RB 5/10/17

NOTES/OBSERVATIONS: Samples 3, 8-11 only one bottle provided for TPH-d analysis.

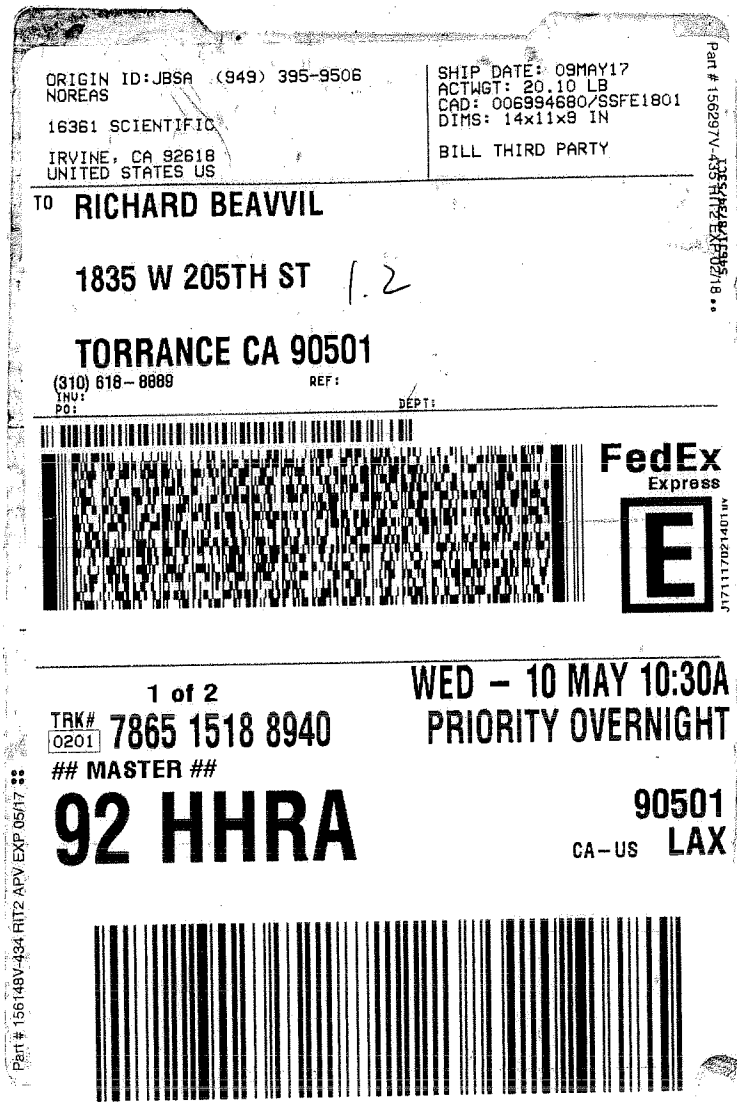
LEGEND: ☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ______	D13	Out of Holding Time	R1	Proceed as indicated in ☒ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
(D4)	Sample ID is not indicated in label	(D16)	Preservation not indicated in label	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	(Date)Time is not indicated in COC	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
(D7)	Date/(Time) mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	Informed Client
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	Follow time on Label
(D10)	No initial/date on corrections in COC/(label)	D22		R10	
D11	Container count mismatch COC vs received	D23		R11	
D12	Container size mismatch COC vs received	D24		R12	

REVIEWS:

Sample Labeling [signature] Date 05/10/17 [signature] 5/10/17 SRF [signature] Date 5/10/17 PM RB Date 5/10/17

EMAX Laboratories, Inc. 1835 W. 205th St., Torrance, Ca 90501



ORIGIN ID:JBSA (949) 395-9506
NOREAS

16361 SCIENTIFIC

IRVINE, CA 92618
UNITED STATES US

SHIP DATE: 09MAY17
ACTWGT: 20.10 LB
CAD: 006994680/SSFE1801
DIMS: 14x11x9 IN

BILL THIRD PARTY

TO RICHARD BEAVVIL

1835 W 205TH ST 1.2

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

1 of 2

TRK# 0201 7865 1518 8940

MASTER

92 HHRA

WED - 10 MAY 10:30A
PRIORITY OVERNIGHT

90501
CA-US LAX

Part # 156148V-434 RIT2 APV EXP 05/17

Part # 156297V-435 RIT2 EXP 05/18

ORIGIN ID:JBSA (949) 395-9506
NOREAS

16361 SCIENTIFIC

IRVINE, CA 92618
UNITED STATES US

SHIP DATE: 09MAY17
ACTWGT: 48.50 LB
CAD: 006994680/SSFE1801
DIMS: 24x14x13 IN

BILL THIRD PARTY

TO RICHARD BEAVVIL

1835 W 205TH ST (2) 3.6

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

2 of 2

MPS# 0263 7865 1518 8951

Mstr# 7865 1518 8940 0201

92 HHRA

WED - 10 MAY 10:30A
PRIORITY OVERNIGHT

90501
CA-US LAX

Part # 156297V-435 RIT2 EXP 05/18

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

NOREAS

TREASURE ISLAND, IR SITE 6

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 17E075

CASE NARRATIVE

Client : NOREAS

Project: TREASURE ISLAND, IR SITE 6

SDG : 17E075

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of six (6) water samples were received on 05/10/17 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All calibration requirements were satisfied. The Ending CCV was also compliant to project requirement. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. VO06E11B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. VO06E11L/VO06E11C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : NOREAS
Project : TREASURE ISLAND, IR SITE 6

SDG NO. : 17E075
Instrument ID : 06

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VO06E11B	1	NA	05/16/1714:18	05/16/1714:18	REW291	RDW007	VO06E11	Method Blank
LCS1W	VO06E11L	1	NA	05/16/1713:03	05/16/1713:03	REW288	RDW007	VO06E11	Lab Control Sample (LCS)
LCD1W	VO06E11C	1	NA	05/16/1713:28	05/16/1713:28	REW289	RDW007	VO06E11	LCS Duplicate
QCTB-0517	E075-02	1	NA	05/16/1719:37	05/16/1719:37	REW303	RDW007	VO06E11	Field Sample
06-MW36-0517	E075-03	1	NA	05/16/1720:03	05/16/1720:03	REW304	RDW007	VO06E11	Field Sample
06-MW33-0517	E075-08	1	NA	05/16/1720:28	05/16/1720:28	REW305	RDW007	VO06E11	Field Sample
06-MW35-0517	E075-09	1	NA	05/16/1720:53	05/16/1720:53	REW306	RDW007	VO06E11	Field Sample
06-MW32-0517	E075-10	1	NA	05/16/1721:18	05/16/1721:18	REW307	RDW007	VO06E11	Field Sample
QCEB-0517	E075-11	1	NA	05/16/1721:43	05/16/1721:43	REW308	RDW007	VO06E11	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/16/17 19:37
Sample ID: QCTB-0517	Date Analyzed: 05/16/17 19:37
Lab Samp ID: E075-02	Dilution Factor: 1
Lab File ID: REW303	Matrix : WATER
Ext Btch ID: VO06E11	% Moisture : NA
Calib. Ref.: RDW007	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,2-TRICHLOROETHANE	ND	1.0	0.10	0.20
BENZENE	ND	1.0	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
NAPHTHALENE	ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.40	10.00	94.0	81-118
4-BROMOFLUOROBENZENE	9.17	10.00	91.7	85-114
TOLUENE-D8	9.69	10.00	96.9	89-112
DIBROMOFLUOROMETHANE	9.89	10.00	98.9	80-119

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/16/17 20:03
Sample ID: 06-MW36-0517	Date Analyzed: 05/16/17 20:03
Lab Samp ID: E075-03	Dilution Factor: 1
Lab File ID: REW304	Matrix : WATER
Ext Btch ID: V006E11	% Moisture : NA
Calib. Ref.: RDW007	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,2-TRICHLOROETHANE	ND	1.0	0.10	0.20
BENZENE	ND	1.0	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
NAPHTHALENE	ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.41	10.00	94.1	81-118
4-BROMOFLUOROBENZENE	9.53	10.00	95.3	85-114
TOLUENE-D8	9.88	10.00	98.8	89-112
DIBROMOFLUOROMETHANE	10.0	10.00	100	80-119

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/16/17 20:28
Sample ID: 06-MW33-0517	Date Analyzed: 05/16/17 20:28
Lab Samp ID: E075-08	Dilution Factor: 1
Lab File ID: REW305	Matrix : WATER
Ext Btch ID: VO06E11	% Moisture : NA
Calib. Ref.: RDW007	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,2-TRICHLOROETHANE	ND	1.0	0.10	0.20
BENZENE	ND	1.0	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
NAPHTHALENE	ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.75	10.00	97.5	81-118
4-BROMOFLUOROBENZENE	9.21	10.00	92.1	85-114
TOLUENE-D8	9.43	10.00	94.3	89-112
DIBROMOFLUOROMETHANE	10.2	10.00	102	80-119

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/16/17 20:53
Sample ID: 06-MW35-0517	Date Analyzed: 05/16/17 20:53
Lab Samp ID: E075-09	Dilution Factor: 1
Lab File ID: REW306	Matrix : WATER
Ext Btch ID: VO06E11	% Moisture : NA
Calib. Ref.: RDW007	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,2-TRICHLOROETHANE	ND	1.0	0.10	0.20
BENZENE	ND	1.0	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
NAPHTHALENE	ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.55	10.00	95.5	81-118
4-BROMOFLUOROBENZENE	9.24	10.00	92.4	85-114
TOLUENE-D8	9.67	10.00	96.7	89-112
DIBROMOFLUOROMETHANE	10.1	10.00	101	80-119

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: NOREAS	Date Collected:	05/09/17
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
Batch No.	: 17E075	Date Extracted:	05/16/17 21:18
Sample ID:	06-MW32-0517	Date Analyzed:	05/16/17 21:18
Lab Samp ID:	E075-10	Dilution Factor:	1
Lab File ID:	REW307	Matrix	: WATER
Ext Btch ID:	VO06E11	% Moisture	: NA
Calib. Ref.:	RDW007	Instrument ID	: 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,2-TRICHLOROETHANE	ND	1.0	0.10	0.20
BENZENE	ND	1.0	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
NAPHTHALENE	ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	81-118
4-BROMOFLUOROBENZENE	8.94	10.00	89.4	85-114
TOLUENE-D8	9.75	10.00	97.5	89-112
DIBROMOFLUOROMETHANE	10.1	10.00	101	80-119

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/16/17 21:43
Sample ID: QCEB-0517	Date Analyzed: 05/16/17 21:43
Lab Samp ID: E075-11	Dilution Factor: 1
Lab File ID: REW308	Matrix : WATER
Ext Btch ID: VO06E11	% Moisture : NA
Calib. Ref.: RDW007	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,2-TRICHLOROETHANE	ND	1.0	0.10	0.20
BENZENE	ND	1.0	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
NAPHTHALENE	ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.60	10.00	96.0	81-118
4-BROMOFLUOROBENZENE	9.35	10.00	93.5	85-114
TOLUENE-D8	9.68	10.00	96.8	89-112
DIBROMOFLUOROMETHANE	10.1	10.00	101	80-119

QC SUMMARIES

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : NOREAS	Date Collected: NA
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/16/17
Batch No. : 17E075	Date Extracted: 05/16/17 14:18
Sample ID: MBLK1W	Date Analyzed: 05/16/17 14:18
Lab Samp ID: V006E11B	Dilution Factor: 1
Lab File ID: REW291	Matrix : WATER
Ext Btch ID: V006E11	% Moisture : NA
Calib. Ref.: RDW007	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,2-TRICHLOROETHANE	ND	1.0	0.10	0.20
BENZENE	ND	1.0	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
NAPHTHALENE	ND	2.0	0.50	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.20	10.00	92.0	81-118
4-BROMOFLUOROBENZENE	9.11	10.00	91.1	85-114
TOLUENE-D8	9.56	10.00	95.6	89-112
DIBROMOFLUOROMETHANE	9.86	10.00	98.6	80-119

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: NOREAS
PROJECT: TREASURE ISLAND, IR SITE 6
BATCH NO.: 17E075
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V006E11B	V006E11L	V006E11C		
LAB FILE ID:	REW291	REW288	REW289		
DATE EXTRACTED:	05/16/1714:18	05/16/1713:03	05/16/1713:28	DATE COLLECTED:	NA
DATE ANALYZED:	05/16/1714:18	05/16/1713:03	05/16/1713:28	DATE RECEIVED:	05/16/17
PREP. BATCH:	V006E11	V006E11	V006E11		
CALIB. REF:	RDW007	RDW007	RDW007		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,2-Trichloroethane	ND	10.0	9.80	98	10.0	10.2	102	4	80-119	20
Benzene	ND	10.0	9.11	91	10.0	9.66	97	6	79-120	20
Ethylbenzene	ND	10.0	9.19	92	10.0	9.76	98	6	79-121	20
Naphthalene	ND	10.0	9.48	95	10.0	10.3	103	8	61-128	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	8.83	88	10.0	8.72	87	81-118
4-Bromofluorobenzene	10.0	9.07	91	10.0	9.25	93	85-114
Toluene-d8	10.0	9.85	98	10.0	9.80	98	89-112
Dibromofluoromethane	10.0	9.58	96	10.0	9.41	94	80-119

INITIAL CALIBRATION(S)

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc | Contract: TREASURE ISLAND, IR SITE 6

Lab Code: EMXT Case No.: | SAS No.: SDG No.: 17E075

Lab File ID: RDW001 | BFB Injection Date : 04/05/17

Instrument ID: 06 | BFB Injection Time : 10:01

GC Column:RTX502.2ID:0.25mm (mm) | Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.80
75	30.0 - 60.0% of mass 95	46.41
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.68
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	86.31
175	5.0 - 9.0% of mass 174	6.06(7.0)1
176	95.0 - 101.0% of mass 174	83.59(96.9)1
177	5.0 - 9.0% of mass 176	5.67(6.8)2

1-Value is % mass 174 2-Value is % mass 176

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VO06D051	RDW002	04/05/17	10:41
2	VSTD0.5	VO06D052	RDW003	04/05/17	11:07
3	VSTD01	VO06D053	RDW004	04/05/17	11:32
4	VSTD02	VO06D054	RDW005	04/05/17	11:57
5	VSTD05	VO06D055	RDW006	04/05/17	12:22
6	VSTD010	VO06D056	RDW007	04/05/17	12:47
7	VSTD020	VO06D057	RDW008	04/05/17	13:13
8	VSTD030	VO06D058	RDW009	04/05/17	13:38
9	VSTD050	VO06D059	RDW010	04/05/17	14:03
10	VSTD100	VO06D0510	RDW011	04/05/17	14:28
11	VSTD010	IVO06D0501	RDW014	04/05/17	15:44

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :T006
Beginning DateTime :04/05/17 10:41
Spike Units :PPB
IC File :RDW007

Column Spec :RTX502.2 ID :0.25MM
Ending DateTime :04/05/17 14:28
HPChem Method :V006D05

M	IDX	Parameters	.3 10:41 RDW002	.5 11:07 RDW003	1 11:32 RDW004	2 11:57 RDW005	5 12:22 RDW006	10 12:47 RDW007	20 13:13 RDW008	30 13:38 RDW009	50 14:03 RDW010	100 14:28 RDW011	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	8.8910
	2	Dichlorodifluoromethane	0.374	0.367	0.356	0.404	0.361	0.376	0.371	0.378	0.376	0.365	0.373	3.49	1.8137
	3	Chloromethane	0.246	0.327	0.276	0.287	0.270	0.279	0.273	0.277	0.271	0.257	0.276	7.68	2.0428
	4	Vinyl chloride	------	0.288	0.280	0.298	0.278	0.280	0.286	0.273	0.266	0.228	0.275	7.24	2.1694
	5	Bromomethane	0.230	0.256	0.219	0.234	0.219	0.223	0.222	0.225	0.221	0.206	0.226	5.74	2.6735
	6	Chloroethane	0.184	0.179	0.162	0.177	0.164	0.164	0.160	0.163	0.158	0.147	0.166	6.69	2.7746
	7	Dichlorofluoromethane	0.562	0.593	0.542	0.558	0.531	0.541	0.515	0.533	0.512	0.478	0.537	5.89	2.8088
	8	Trichlorofluoromethane	0.489	0.471	0.453	0.504	0.461	0.467	0.468	0.478	0.469	0.451	0.471	3.43	3.0615
5	9	Acrolein	------	------	0.013	0.012	0.011	0.012	0.011	0.011	0.011	0.010	0.011	7.93	3.5875
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	0.186	0.200	0.202	0.199	0.198	0.220	0.197	0.213	0.213	0.226	0.205	5.95	3.6443
5	11	Acetone	------	------	0.028	0.031	0.025	0.024	0.023	0.023	0.023	0.022	0.025	13.03	3.6711
	12	1,1-Dichloroethene	0.479	0.490	0.467	0.477	0.468	0.498	0.464	0.477	0.470	0.457	0.475	2.59	3.8435
5	13	tert-Butyl alcohol	0.011	0.011	0.010	0.011	0.010	0.011	0.009	0.010	0.010	0.009	0.010	5.98	3.9714
	14	Acetonitrile	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	15	Methyl acetate	------	------	0.080	0.090	0.070	0.070	0.065	0.066	0.065	0.064	0.071	12.79	4.3271
	16	Iodomethane	0.499	0.554	0.502	0.517	0.509	0.535	0.502	0.524	0.526	0.509	0.518	3.37	4.2673
	17	Methylene chloride	0.339	0.374	0.317	0.306	0.283	0.300	0.273	0.279	0.269	0.253	0.299	12.19	4.5334
	18	Carbon disulfide	0.926	0.948	0.944	0.961	0.911	0.913	0.872	0.898	0.868	0.769	0.901	6.18	4.5349
5	19	Acrylonitrile	0.033	0.034	0.033	0.036	0.031	0.032	0.031	0.031	0.031	0.028	0.032	6.90	4.7430
	20	tert-Butyl methyl ether (MTBE)	0.495	0.565	0.480	0.492	0.481	0.501	0.471	0.487	0.487	0.471	0.493	5.49	4.7876
	21	trans-1,2-Dichloroethene	0.435	0.509	0.434	0.447	0.434	0.459	0.421	0.430	0.413	0.391	0.437	7.15	4.9958
	22	Isopropyl ether (DIPE)	0.944	0.955	0.844	0.857	0.820	0.869	0.804	0.852	0.807	0.753	0.850	7.29	5.5459
	23	Vinyl acetate	0.253	0.251	0.235	0.272	0.262	0.271	0.258	0.259	0.258	0.239	0.256	4.70	5.7451
	24	1,1-Dichloroethane	0.542	0.602	0.514	0.533	0.520	0.541	0.501	0.519	0.503	0.482	0.526	6.22	5.7094
5	25	2-Butanol	------	------	------	------	0.006	0.007	0.007	0.007	0.007	0.007	0.007	7.12	6.1242
	26	tert-Butyl ethyl ether (ETBE)	0.712	0.784	0.682	0.715	0.716	0.735	0.689	0.717	0.704	0.663	0.712	4.60	6.2595
5	27	2-Butanone	0.009	0.009	0.010	0.011	0.010	0.010	0.010	0.010	0.010	0.010	0.010	5.18	6.4751
	28	2,2-Dichloropropane	0.466	0.489	0.407	0.410	0.387	0.405	0.364	0.362	0.347	------	0.404	11.76	6.6742
	29	cis-1,2-Dichloroethene	0.325	0.342	0.318	0.317	0.309	0.320	0.291	0.306	0.295	0.281	0.310	5.78	6.7576
	30	Chloroform	0.606	0.652	0.554	0.582	0.547	0.586	0.527	0.543	0.532	0.481	0.561	8.45	7.0207
5	31	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	32	Bromochloromethane	0.182	0.194	0.169	0.180	0.176	0.184	0.170	0.179	0.174	0.162	0.177	5.18	7.2943
	33	Tetrahydrofuran	0.051	0.052	0.040	0.027	0.025	0.023	0.022	0.023	0.022	------	0.032	39.89	7.3614
	34	Dibromofluoromethane	0.342	0.358	0.313	0.311	0.303	0.315	0.304	0.306	0.297	0.270	0.312	7.69	7.3894
	35	1,1,1-Trichloroethane	0.546	0.600	0.532	0.519	0.505	0.541	0.495	0.511	0.492	0.455	0.520	7.49	7.6868
	36	Cyclohexane	0.531	0.429	0.467	0.484	0.415	0.436	0.407	0.407	0.404	0.372	0.435	10.72	7.7016
	37	2,2,4-Trimethylpentane	1.049	1.258	1.173	1.189	1.072	1.142	1.074	1.094	1.069	0.956	1.108	7.67	7.8057
	38	1,1-Dichloropropene	0.168	0.181	0.154	0.158	0.155	0.166	0.153	0.162	0.158	0.155	0.161	5.32	7.9544
	39	Carbon tetrachloride	0.497	0.521	0.479	0.466	0.471	0.509	0.459	0.489	0.475	0.472	0.484	4.11	8.1031
	40	tert-Amyl methyl ether (TAME)	0.139	0.150	0.132	0.134	0.131	0.136	0.128	0.133	0.132	0.125	0.134	5.04	8.1744
	41	1,2-Dichloroethane-d4	0.284	0.275	0.251	0.235	0.238	0.241	0.238	0.236	0.229	0.206	0.243	9.16	8.2264
	42	1,2-Dichloroethane	0.304	0.311	0.284	0.300	0.288	0.293	0.269	0.269	0.260	0.236	0.282	8.15	8.3840
	43	Benzene	1.175	1.289	1.090	1.091	1.063	1.116	1.017	1.042	1.007	0.920	1.081	9.29	8.3900
	44	Trichloroethene	0.381	0.414	0.363	0.356	0.356	0.379	0.336	0.350	0.336	0.309	0.358	8.10	9.4099
	45	Methylcyclohexane	------	0.543	0.569	0.602	0.496	0.530	0.498	0.503	0.499	0.458	0.522	8.41	9.4893
	46	1,2-Dichloropropane	0.278	0.297	0.254	0.259	0.257	0.269	0.247	0.252	0.241	0.222	0.258	7.93	9.6983
20	47	1,4-Dioxane	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	9.37	10.1310
	48	Bromodichloromethane	0.406	0.432	0.375	0.395	0.381	0.395	0.366	0.377	0.366	0.331	0.382	7.06	10.0789
	49	Dibromomethane	0.124	0.144	0.120	0.123	0.125	0.127	0.121	0.122	0.122	0.112	0.124	6.57	10.1532
	50	2-Chloroethyl vinyl ether	0.085	0.093	0.083	0.089	0.088	0.098	0.094	0.098	0.099	0.097	0.092	6.32	10.6141
5	51	4-Methyl-2-pentanone	0.159	0.122	0.130	0.145	0.123	0.128	0.120	0.121	0.116	0.104	0.127	12.03	10.6602
	52	cis-1,3-Dichloropropene	0.443	0.497	0.437	0.445	0.439	0.457	0.425	0.434	0.423	0.381	0.438	6.58	10.9739
	53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8061
	54	Toluene-d8	1.526	1.575	1.353	1.323	1.296	1.353	1.241	1.191	1.105	------	1.329	11.25	11.3574
	55	Toluene	1.782	1.911	1.571	1.513	1.509	1.568	1.360	1.397	1.268	------	1.542	13.09	11.4830
	56	Ethyl methacrylate	0.232	0.289	0.229	0.240	0.233	0.248	0.221	0.226	0.214	0.193	0.232	10.70	11.8050
	57	trans-1,3-Dichloropropene	0.404	0.470	0.396	0.414	0.409	0.451	0.405	0.415	0.395	0.366	0.412	7.11	11.7961
	58	1,1,2-Trichloroethane	0.184	0.216	0.187	0.194	0.192	0.204	0.188	0.191	0.184	0.173	0.191	6.20	12.0414

SW
4/10/17

5	59	2-Hexanone	0.111	0.088	0.087	0.106	0.091	0.096	0.089	0.087	0.085	0.076	0.092	11.15	12.0726
	60	1,3-Dichloropropane	0.360	0.412	0.352	0.372	0.359	0.383	0.353	0.360	0.351	0.331	0.363	5.95	12.4562
	61	Tetrachloroethene	0.351	0.416	0.358	0.337	0.339	0.381	0.321	0.333	0.316	0.305	0.346	9.52	12.5350
	62	Dibromochloromethane	0.308	0.338	0.283	0.298	0.294	0.326	0.297	0.309	0.305	0.292	0.305	5.40	12.8606
	63	2-Ethyl-1-butanol	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	64	1,2-Dibromoethane	0.186	0.220	0.184	0.202	0.200	0.215	0.198	0.205	0.202	0.192	0.200	5.70	13.1877
	65	1-Chlorohexane	0.678	0.708	0.682	0.614	0.632	0.742	0.611	0.651	0.620	0.593	0.653	7.37	13.4687
	66	Chlorobenzene	0.976	1.070	0.920	0.938	0.942	1.010	0.888	0.899	0.854	0.786	0.928	8.63	13.8686
	67	1,1,1,2-Tetrachloroethane	0.377	0.401	0.340	0.353	0.351	0.377	0.334	0.345	0.332	0.307	0.352	7.67	13.9444
	68	Ethylbenzene	1.923	2.058	1.856	1.778	1.761	1.884	1.568	1.582	1.442	------	1.761	11.16	13.9592
2	69	m-Xylene & p-Xylene	1.381	1.624	1.382	1.322	1.324	1.394	1.155	1.164	1.046	------	1.310	12.98	14.0782
	70	o-Xylene	1.424	1.575	1.351	1.359	1.342	1.454	1.216	1.225	1.157	1.048	1.315	11.81	14.7889
	71	Styrene	1.004	1.077	0.948	0.945	0.978	1.050	0.925	0.952	0.909	0.850	0.964	6.92	14.8513
	72	Isopropylbenzene	1.813	1.969	1.806	1.712	1.762	1.954	1.626	1.630	1.508	------	1.753	8.71	15.3716
	73	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	18.1147
	74	Bromoform	0.434	0.432	0.365	0.391	0.383	0.412	0.389	0.398	0.401	0.399	0.400	5.32	15.4000
	75	1,1,2,2-Tetrachloroethane	0.551	0.576	0.464	0.510	0.479	0.508	0.477	0.489	0.482	0.462	0.500	7.50	15.6557
	76	4-Bromofluorobenzene	1.320	1.378	1.146	1.129	1.108	1.167	1.135	1.098	1.094	1.027	1.160	9.26	15.7835
	77	1,2,3-Trichloropropane	0.172	0.187	0.139	0.157	0.152	0.165	0.149	0.156	0.156	0.157	0.159	8.19	15.8965
	78	trans-1,4-Dichloro-2-butene	0.140	0.185	0.130	0.142	0.144	0.146	0.135	0.137	0.134	0.135	0.143	10.82	16.0125
	79	n-Propylbenzene	5.627	5.886	5.315	4.944	5.119	5.426	4.736	4.812	4.378	------	5.138	9.23	16.0258
	80	Bromobenzene	0.979	1.049	0.891	0.883	0.878	0.950	0.862	0.889	0.855	0.838	0.907	7.23	16.1002
	81	1,3,5-Trimethylbenzene	3.631	3.867	3.430	3.180	3.301	3.510	3.086	3.135	2.871	2.731	3.274	10.58	16.2845
	82	2-Chlorotoluene	3.646	4.079	3.501	3.312	3.269	3.373	3.051	3.009	2.774	------	3.335	11.55	16.3116
	83	4-Chlorotoluene	3.131	3.299	2.830	2.683	2.765	2.976	2.661	2.816	2.570	2.517	2.825	8.76	16.3901
	84	tert-Butylbenzene	0.842	0.909	0.867	0.789	0.817	0.914	0.808	0.874	0.832	0.863	0.851	4.91	16.8659
	85	1,2,4-Trimethylbenzene	3.513	3.575	3.249	3.118	3.176	3.369	2.971	2.996	2.853	2.711	3.153	8.90	16.9224
	86	sec-Butylbenzene	4.967	5.041	4.754	4.225	4.524	5.024	4.275	4.371	4.002	3.579	4.476	10.75	17.1870
	87	p-Isopropyltoluene	3.866	4.056	3.798	3.505	3.700	4.091	3.493	3.584	3.358	3.071	3.652	8.66	17.3936
	88	1,3-Dichlorobenzene	1.967	2.040	1.784	1.770	1.733	1.884	1.679	1.699	1.579	1.494	1.763	9.49	17.5274
	89	1,4-Dichlorobenzene	1.888	2.013	1.726	1.702	1.669	1.816	1.640	1.669	1.543	1.435	1.710	9.68	17.6702
	90	n-Butylbenzene	------	3.671	3.536	3.045	3.361	3.521	3.045	3.065	2.785	2.623	3.184	11.29	17.9405
	91	1,2-Dichlorobenzene	1.463	1.575	1.386	1.396	1.406	1.492	1.365	1.395	1.290	1.219	1.399	7.13	18.1519
	92	1,2-Dibromo-3-chloropropane	0.107	0.096	0.085	0.082	0.092	0.096	0.092	0.095	0.097	0.100	0.094	7.57	19.0647
	93	1,2,4-Trichlorobenzene	0.991	0.992	0.938	0.887	0.974	1.035	0.923	0.964	0.919	0.911	0.953	4.78	20.0385
	94	Hexachlorobutadiene	0.760	0.743	0.762	0.654	0.774	0.867	0.733	0.787	0.748	0.793	0.762	7.03	20.1887
	95	Naphthalene	1.708	1.544	1.264	1.235	1.255	1.355	1.248	1.330	1.322	1.345	1.361	11.11	20.3418
	96	1,2,3-Trichlorobenzene	0.802	0.779	0.706	0.707	0.744	0.796	0.724	0.769	0.744	0.741	0.751	4.55	20.6347

Spike Amount = Nominal Amount * M
Ave_%RSD : 8.2 Max_%RSD : 39.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
33	Tetrahydrofuran	0.00123	0.02178	0.9989

SC
4/10/17

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :TO06
IC_Beginning DateTime :04/05/17 10:41
Spike Amount :10 PPB
CC/CV File :RDW014
IC File :RDW007

Column Spec :RTX502.2 ID :0.25MM
IC Ending DateTime :04/05/17 14:28
HPChem Method :V006D05
Date_Time :04/05/17 15:44

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	2233213	1	1	8.889	8.891	0				
	2	Dichlorodifluoromethane	10.870	8.7	904759	0.405	0.373	1.817	1.814	3.49				
	3	Chloromethane	10.391	3.9	640573	0.287	0.276	2.045	2.043	7.68				
	4	Vinyl chloride	10.802	8.0	663983	0.297	0.275	2.173	2.169	7.24				
	5	Bromomethane	10.378	3.8	522803	0.234	0.226	2.675	2.674	5.74				
	6	Chloroethane	10.229	2.3	378361	0.169	0.166	2.779	2.775	6.69				
	7	Dichlorofluoromethane	10.517	5.2	1260211	0.564	0.537	2.808	2.809	5.89				
	8	Trichlorofluoromethane	10.687	6.9	1124294	0.503	0.471	3.061	3.062	3.43				
5	9	Acrolein	47.495	-5.0	119405	0.011	0.011	3.596	3.588	7.93				
	10	1,1,2-Trichloro-1,2,2-trifluoroethane	11.641	16.4	533900	0.239	0.205	3.641	3.644	5.95				
5	11	Acetone	46.071	-7.9	254300	0.023	0.025	3.686	3.671	13.03				
	12	1,1-Dichloroethene	11.017	10.2	1167865	0.523	0.475	3.849	3.843	2.59				
5	13	tert-Butyl alcohol	47.348	-5.3	107357	0.010	0.010	3.968	3.971	5.98				
	14	Acetonitrile												
	15	Methyl acetate	9.465	-5.4	150407	0.067	0.071	4.325	4.327	12.79				
	16	Iodomethane	10.631	6.3	1228861	0.550	0.518	4.265	4.267	3.37				
	17	Methylene chloride	10.085	0.9	673876	0.302	0.299	4.533	4.533	12.19				
	18	Carbon disulfide	10.640	6.4	2140808	0.959	0.901	4.533	4.535	6.18				
5	19	Acrylonitrile	46.705	-6.6	334187	0.030	0.032	4.741	4.743	6.90				
	20	tert-Butyl methyl ether (MTBE)	10.001	0.0	1101220	0.493	0.493	4.786	4.788	5.49				
	21	trans-1,2-Dichloroethene	10.810	8.1	1055742	0.473	0.437	4.994	4.996	7.15				
	22	Isopropyl ether (DIPE)	10.458	4.6	1985974	0.889	0.850	5.544	5.546	7.29				
	23	Vinyl acetate	10.422	4.2	595335	0.267	0.256	5.752	5.745	4.70				
	24	1,1-Dichloroethane	10.627	6.3	1247465	0.559	0.526	5.707	5.709	6.22				
5	25	2-Butanol	43.392	-13.2	65391	0.006	0.007	6.124	6.124	7.12				
	26	tert-Butyl ethyl ether (ETBE)	10.270	2.7	1632559	0.731	0.712	6.258	6.260	4.60				
5	27	2-Butanone	47.545	-4.9	105944	0.009	0.010	6.466	6.475	5.18				
	28	2,2-Dichloropropane	10.541	5.4	951314	0.426	0.404	6.674	6.674	11.76				
	29	cis-1,2-Dichloroethene	10.487	4.9	726772	0.325	0.310	6.763	6.758	5.78				
	30	Chloroform	10.360	3.6	1297771	0.581	0.561	7.031	7.021	8.45				
5	31	tert-Amyl alcohol												
	32	Bromochloromethane	10.466	4.7	413601	0.185	0.177	7.298	7.294	5.18				
	33	Tetrahydrofuran	9.634	-3.7	49597	0.022	0.032	7.358	7.361	39.89	0.0012	0.0218		0.9989
	34	Dibromofluoromethane	9.983	-0.2	695593	0.311	0.312	7.387	7.389	7.69				
	35	1,1,1-Trichloroethane	11.041	10.4	1281007	0.574	0.520	7.685	7.687	7.49				
	36	Cyclohexane	10.253	2.5	996226	0.446	0.435	7.700	7.702	10.72				
	37	2,2,4-Trimethylpentane	10.512	5.1	2600192	1.164	1.108	7.804	7.806	7.67				
	38	1,1-Dichloropropene	10.949	9.5	393777	0.176	0.161	7.952	7.954	5.32				
	39	Carbon tetrachloride	11.181	11.8	1208282	0.541	0.484	8.101	8.103	4.11				
	40	tert-Amyl methyl ether (TAME)	9.996	-0.0	298859	0.134	0.134	8.175	8.174	5.04				
	41	1,2-Dichloroethane-d4	9.798	-2.0	532533	0.238	0.243	8.235	8.226	9.16				
	42	1,2-Dichloroethane	10.326	3.3	649211	0.291	0.282	8.384	8.384	8.15				
	43	Benzene	10.304	3.0	2487716	1.114	1.081	8.399	8.390	9.29				
	44	Trichloroethene	10.965	9.7	876861	0.393	0.358	9.410	9.410	8.10				
	45	Methylcyclohexane	10.496	5.0	1223949	0.548	0.522	9.499	9.489	8.41				
	46	1,2-Dichloropropane	10.544	5.4	606346	0.272	0.258	9.707	9.698	7.93				
20	47	1,4-Dioxane	211.810	5.9	46476	0.001	0.001	10.123	10.131	9.37				
	48	Bromodichloromethane	10.228	2.3	873437	0.391	0.382	10.078	10.079	7.06				
	49	Dibromomethane	9.858	-1.4	273298	0.122	0.124	10.168	10.153	6.57				
	50	2-Chloroethyl vinyl ether	10.148	1.5	209464	0.094	0.092	10.614	10.614	6.32				
5	51	4-Methyl-2-pentanone	47.721	-4.6	1351827	0.121	0.127	10.658	10.660	12.03				
	52	cis-1,3-Dichloropropene	10.283	2.8	1006210	0.451	0.438	10.985	10.974	6.58				
	53	CHLOROBENZENE-D5	10.000	0	1811256	1	1	13.810	13.806	0				
	54	Toluene-d8	10.204	2.0	2456646	1.356	1.329	11.357	11.357	11.25				
	55	Toluene	10.531	5.3	2941779	1.624	1.542	11.491	11.483	13.09				
	56	Ethyl methacrylate	10.203	2.0	429283	0.237	0.232	11.803	11.805	10.70				
	57	trans-1,3-Dichloropropene	10.430	4.3	779198	0.430	0.412	11.803	11.796	7.11				
	58	1,1,2-Trichloroethane	10.259	2.6	355492	0.196	0.191	12.041	12.041	6.20				
5	59	2-Hexanone	48.441	-3.1	804726	0.089	0.092	12.071	12.073	11.15				
	60	1,3-Dichloropropane	10.500	5.0	691191	0.382	0.363	12.457	12.456	5.95				
	61	Tetrachloroethene	11.224	12.2	702628	0.388	0.346	12.547	12.535	9.52				
	62	Dibromochloromethane	10.382	3.8	573429	0.317	0.305	12.874	12.861	5.40				
	63	2-Ethyl-1-butanol												
	64	1,2-Dibromoethane	10.448	4.5	378905	0.209	0.200	13.186	13.188	5.70				
	65	1-Chlorohexane	11.912	19.1	1409065	0.778	0.653	13.468	13.469	7.37				
	66	Chlorobenzene	10.817	8.2	1818603	1.004	0.928	13.870	13.869	8.63				
	67	1,1,1,2-Tetrachloroethane	10.531	5.3	670593	0.370	0.352	13.944	13.944	7.67				
	68	Ethylbenzene	10.837	8.4	3456991	1.909	1.761	13.959	13.959	11.16				
2	69	m-Xylene & p-Xylene	21.708	8.5	5152020	1.422	1.310	14.078	14.078	12.98				
	70	o-Xylene	11.150	11.5	2656083	1.466	1.315	14.792	14.789	11.81				
	71	Styrene	10.921	9.2	1906221	1.052	0.964	14.851	14.851	6.92				
	72	Isopropylbenzene	11.447	14.5	3635315	2.007	1.753	15.371	15.372	8.71				
	73	1,2-DICHLOROBENZENE-D4	10.000	0	726479	1	1	18.122	18.115	0				
	74	Bromoform	9.954	-0.5	289550	0.399	0.400	15.401	15.400	5.32				
	75	1,1,2,2-Tetrachloroethane	9.852	-1.5	357653	0.492	0.500	15.669	15.656	7.50				
	76	4-Bromofluorobenzene	9.900	-1.0	834431	1.149	1.160	15.788	15.783	9.26				
	77	1,2,3-Trichloropropane	9.984	-0.2	115291	0.159	0.159	15.906	15.896	8.19				
	78	trans-1,4-Dichloro-2-butene	10.391	3.9	107803	0.148	0.143	16.011	16.013	10.82				
	79	n-Propylbenzene	11.284	12.8	4212098	5.798	5.138	16.025	16.026	9.23				
	80	Bromobenzene	10.508	5.1	692596	0.953	0.907	16.100	16.100	7.23				
	81	1,3,5-Trimethylbenzene	11.306	13.1	2689143	3.702	3.274	16.293	16.285	10.58				
	82	2-Chlorotoluene	10.338	3.4	2504735	3.448	3.335	16.323	16.312	11.55				
	83	4-Chlorotoluene	10.987	9.9	2254807	3.104	2.825	16.397	16.390	8.76				
	84	tert-Butylbenzene	11.221	12.2	694100	0.955	0.851	16.873	16.866	4.91				
	85	1,2,4-Trimethylbenzene	10.939	9.4	2505702	3.449	3.153	16.932	16.922	8.90				
	86	sec-Butylbenzene	11.662	16.6	3792326	5.220	4.476	17.185	17.187	10.75				
	87	p-Isopropyltoluene	11.574	15.7	3070717	4.227	3.652	17.393	17.394	8.66				
	88	1,3-Dichlorobenzene	11.113	11.1	1423474	1.959	1.763	17.527	17.527	9.49				
	89	1,4-Dichlorobenzene	10.758	7.6	1336599	1.840	1.710	17.676	17.670	9.68				
	90	n-Butylbenzene	11.844	18.4	2739686	3.771	3.184	17.943	17.941	11.29				
	91	1,2-Dichlorobenzene	10.845	8.4	1101913	1.517	1.399	18.152	18.152	7.13				
	92	1,2-Dibromo-3-chloropropane	9.670	-3.3	66152	0.091	0.094	19.073	19.065	7.57				
	93	1,2,4-Trichlorobenzene	10.793	7.9	747585	1.029	0.953	20.040	20.038	4.78				
	94	Hexachlorobutadiene	11.860	18.6	656591	0.904	0.762	20.188	20.189	7.03				
	95	Naphthalene	9.694	-3.1	958216	1.319	1.361	20.352	20.342	11.11				
	96	1,2,3-Trichlorobenzene	10.491	4.9	572523	0.788	0.751	20.634	20.635	4.55				

Spike Amount = Nominal Amount * M

SW 4/19/17

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17D05\RDW014.D Vial: 14
Acq On : 5 Apr 2017 3:44 pm Operator: ODinh
Sample : IVO06D0501 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	99	0.00
2	T,M	Dichlorodifluoromethane	10.000	10.870	-8.7	107	0.00
3	P,T,M	Chloromethane	10.000	10.391	-3.9	102	0.00
4	C,T,M	Vinyl chloride	10.000	10.802	-8.0	105	0.00
5	T,M	Bromomethane	10.000	10.378	-3.8	104	0.00
6	T,M	Chloroethane	10.000	10.229	-2.3	103	0.00
7	T,M	Dichlorofluoromethane	10.000	10.517	-5.2	103	0.00
8	T,M	Trichlorofluoromethane	10.000	10.687	-6.9	107	0.00
9	T,M	Acrolein	50.000	47.495	5.0	91	0.00
10	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	11.641	-16.4	108	0.00
11	T,M	Acetone	50.000	46.071	7.9	94	0.02
12	C,T,M	1,1-Dichloroethene	10.000	11.017	-10.2	104	0.02
13	T,M	tert-Butyl alcohol	50.000	47.348	5.3	90	0.00
14	T,M	Acetonitrile	-1.000	0.000	0.0	0	0.00
15	T,M	Methyl acetate	10.000	9.465	5.4	96	0.00
16	T,M	Iodomethane	10.000	10.631	-6.3	102	0.00
17	T,M	Methylene chloride	10.000	10.086	-0.9	100	0.00
18	T,M	Carbon disulfide	10.000	10.640	-6.4	104	0.00
19	T,M	Acrylonitrile	50.000	46.705	6.6	93	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	10.001	-0.0	98	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	10.810	-8.1	102	0.00
22	T,M	Isopropyl ether (DIPE)	10.000	10.458	-4.6	102	0.00
23	T,M	Vinyl acetate	10.000	10.422	-4.2	98	0.02
24	P,T,M	1,1-Dichloroethane	10.000	10.627	-6.3	102	0.00
25	T,M	2-Butanol	50.000	43.392	13.2	84	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	10.270	-2.7	99	0.00
27	T,M	2-Butanone	50.000	47.545	4.9	94	0.00
28	T,M	2,2-Dichloropropane	10.000	10.541	-5.4	104	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	10.487	-4.9	101	0.02
30	C,T,M	Chloroform	10.000	10.360	-3.6	98	0.02
31	T,M	tert-Amyl alcohol	-1.000	0.000	0.0	0	-0.09
32	T,M	Bromochloromethane	10.000	10.466	-4.7	100	0.00
33	T,M	Tetrahydrofuran	10.000	9.634	3.7	94	-0.01
34	S	Dibromofluoromethane	10.000	9.983	0.2	98	0.00
35	T,M	1,1,1-Trichloroethane	10.000	11.041	-10.4	105	0.00
36	T,M	Cyclohexane	10.000	10.253	-2.5	102	0.00
37	T,M	2,2,4-Trimethylpentane	10.000	10.512	-5.1	101	0.00
38	T,M	1,1-Dichloropropene	10.000	10.949	-9.5	106	0.00
39	T,M	Carbon tetrachloride	10.000	11.181	-11.8	106	0.00
40	T,M	tert-Amyl methyl ether (TAM	10.000	9.996	0.0	98	0.00
41	S	1,2-Dichloroethane-d4	10.000	9.798	2.0	98	0.02

(#) = Out of Range
RDW014.D VO06D05.M Thu Apr 06 17:20:24 2017 Page 1

SC 4/10/17

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17D05\RDW014.D Vial: 14
Acq On : 5 Apr 2017 3:44 pm Operator: ODinh
Sample : IVO06D0501 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.326	-3.3	98	0.00
43	T,M	Benzene	10.000	10.305	-3.0	99	0.02
44	T,M	Trichloroethene	10.000	10.965	-9.6	103	0.00
45	T,M	Methylcyclohexane	10.000	10.496	-5.0	103	0.02
46	C,T,M	1,2-Dichloropropane	10.000	10.544	-5.4	100	0.00
47	T,M	1,4-Dioxane	200.000	211.810	-5.9	97	-0.01
48	T,M	Bromodichloromethane	10.000	10.228	-2.3	98	0.00
49	T,M	Dibromomethane	10.000	9.858	1.4	96	0.02
50	T,M	2-Chloroethyl vinyl ether	10.000	10.148	-1.5	95	0.00
51	T,M	4-Methyl-2-pentanone	50.000	47.721	4.6	94	0.00
52	T,M	cis-1,3-Dichloropropene	10.000	10.283	-2.8	98	0.02
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	99	0.00
54	S	Toluene-d8	10.000	10.204	-2.0	100	0.00
55	C,T,M	Toluene	10.000	10.531	-5.3	103	0.00
56	T,M	Ethyl methacrylate	10.000	10.203	-2.0	95	0.00
57	T,M	trans-1,3-Dichloropropene	10.000	10.430	-4.3	95	0.00
58	T,M	1,1,2-Trichloroethane	10.000	10.259	-2.6	96	0.00
59	T,M	2-Hexanone	50.000	48.441	3.1	92	0.00
60	T,M	1,3-Dichloropropane	10.000	10.500	-5.0	99	0.00
61	T,M	Tetrachloroethene	10.000	11.224	-12.2	101	0.02
62	T,M	Dibromochloromethane	10.000	10.382	-3.8	97	0.02
63	T,M	2-Ethyl-1-butanol	-1.000	0.000	0.0	0	0.00
64	T,M	1,2-Dibromoethane	10.000	10.448	-4.5	97	0.00
65	T,M	1-Chlorohexane	10.000	11.912	-19.1	104	0.00
66	P, T,M	Chlorobenzene	10.000	10.817	-8.2	99	0.00
67	T,M	1,1,1,2-Tetrachloroethane	10.000	10.531	-5.3	98	0.00
68	C,T,M	Ethylbenzene	10.000	10.837	-8.4	101	0.00
69	T,M	m-Xylene & p-Xylene	20.000	21.708	-8.5	101	0.00
70	T,M	o-Xylene	10.000	11.150	-11.5	100	0.00
71	T,M	Styrene	10.000	10.921	-9.2	100	0.00
72	T,M	Isopropylbenzene	10.000	11.447	-14.5	102	0.00
73	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	98	0.00
74	P,T,M	Bromoform	10.000	9.954	0.5	94	0.00
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.852	1.5	95	0.02
76	S	4-Bromofluorobenzene	10.000	9.900	1.0	96	0.00
77	T,M	1,2,3-Trichloropropane	10.000	9.984	0.2	94	0.00
78	T,M	trans-1,4-Dichloro-2-butene	10.000	10.391	-3.9	99	0.00
79	T,M	n-Propylbenzene	10.000	11.284	-12.8	104	0.00
80	T,M	Bromobenzene	10.000	10.508	-5.1	98	0.00

(#) = Out of Range

4/10/17

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17D05\RDW014.D Vial: 14
Acq On : 5 Apr 2017 3:44 pm Operator: ODinh
Sample : IVO06D0501 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	11.306	-13.1	103	0.02
82	T,M	2-Chlorotoluene	10.000	10.338	-3.4	100	0.02
83	T,M	4-Chlorotoluene	10.000	10.987	-9.9	102	0.00
84	T,M	tert-Butylbenzene	10.000	11.221	-12.2	102	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	10.939	-9.4	100	0.02
86	T,M	sec-Butylbenzene	10.000	11.662	-16.6	101	0.00
87	T,M	p-Isopropyltoluene	10.000	11.574	-15.7	101	0.00
88	T,M	1,3-Dichlorobenzene	10.000	11.113	-11.1	102	0.00
89	T,M	1,4-Dichlorobenzene	10.000	10.758	-7.6	99	0.00
90	T,M	n-Butylbenzene	10.000	11.845	-18.5	105	0.00
91	T,M	1,2-Dichlorobenzene	10.000	10.845	-8.5	99	0.00
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.670	3.3	92	0.00
93	T,M	1,2,4-Trichlorobenzene	10.000	10.793	-7.9	97	0.00
94	T,M	Hexachlorobutadiene	10.000	11.860	-18.6	102	0.00
95	T,M	Naphthalene	10.000	9.694	3.1	95	0.00
96	T,M	1,2,3-Trichlorobenzene	10.000	10.491	-4.9	97	0.00

SA 4/10/17

(#) = Out of Range SPCC's out = 0 CCC's out = 0
RDW014.D VO06D05.M Thu Apr 06 17:20:25 2017 Page 3

DAILY CALIBRATION(S)

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: TREASURE ISLAND, IR SITE 6

Lab Code: EMXT Case No.: SAS No.: SDG No.: 17E075

Lab File ID: REW285 BFB Injection Date : 05/16/17

Instrument ID: 06 BFB Injection Time : 11:38

GC Column:RTX502.2ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.33
75	30.0 - 60.0% of mass 95	45.64
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.54
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	88.02
175	5.0 - 9.0% of mass 174	6.49(7.4)1
176	95.0 - 101.0% of mass 174	84.24(95.7)1
177	5.0 - 9.0% of mass 176	5.42(6.4)2

1-Value is % mass 174 2-Value is % mass 176

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVO06D0524	REW287	05/16/17	12:29
2	MBLK1W	VO06E11B	REW291	05/16/17	14:18
3	LCS1W	VO06E11L	REW288	05/16/17	13:03
4	LCD1W	VO06E11C	REW289	05/16/17	13:28
5	QCTB-0517	E075-02	REW303	05/16/17	19:37
6	06-MW36-0517	E075-03	REW304	05/16/17	20:03
7	06-MW33-0517	E075-08	REW305	05/16/17	20:28
8	06-MW35-0517	E075-09	REW306	05/16/17	20:53
9	06-MW32-0517	E075-10	REW307	05/16/17	21:18
10	QCEB-0517	E075-11	REW308	05/16/17	21:43
11	VSTD010	CVO06D0524A	REW311	05/16/17	22:59

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDW007
Instrument ID: 06
GC Column : RTX502.2ID:0.25mm (mm)

Project: TREASURE ISLAND, IR SITE 6
SDG No: 17E075
Date Analyzed: 04/05/2017
Time Analyzed: 12:47
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	2250704	8.89	1820694	13.81	744037	18.12
	UPPER LIMIT	4501408	9.06	3641388	13.98	1488074	18.29
	LOWER LIMIT	1125352	8.72	910347	13.64	372019	17.95
	SAMPLE ID						
1	VSTD010	2361012	8.89	1916683	13.80	801058	18.11
2	MBLK1W	2396014	8.89	2018058	13.80	825039	18.11
3	LCS1W	2432884	8.89	1982992	13.81	843170	18.11
4	LCD1W	2315954	8.89	1910058	13.80	796923	18.11
5	QCTB-0517	2149232	8.89	1806704	13.81	742660	18.12
6	06-MW36-0517	2210075	8.89	1825445	13.81	745156	18.12
7	06-MW33-0517	2123000	8.89	1809756	13.80	751085	18.11
8	06-MW35-0517	2105624	8.89	1767771	13.80	729210	18.11
9	06-MW32-0517	2070377	8.89	1749687	13.80	737953	18.11
10	QCEB-0517	2187953	8.89	1811329	13.80	742322	18.11
11	VSTD010	2017101	8.89	1653253	13.81	718576	18.11

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW287.D Vial: 3
Acq On : 16 May 2017 12:29 pm Operator: TWilki
Sample : CVO06D0524 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	105	0.00
2	T,M	Dichlorodifluoromethane	10.000	9.801	2.0	102	0.00
3	P,T,M	Chloromethane	10.000	10.295	-2.9	107	0.02
4	C,T,M	Vinyl chloride	10.000	10.796	-8.0	111	0.02
5	T,M	Bromomethane	10.000	10.200	-2.0	108	0.00
6	T,M	Chloroethane	10.000	10.898	-9.0	116	0.00
7	T,M	Dichlorofluoromethane	10.000	8.484	15.2	88	0.02
8	T,M	Trichlorofluoromethane	10.000	10.960	-9.6	116	0.00
9	T,M	Acrolein	50.000	49.221	1.6	100	0.00
10	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	10.166	-1.7	100	0.02
11	T,M	Acetone	50.000	48.896	2.2	106	0.00
12	C,T,M	1,1-Dichloroethene	10.000	8.131	18.7	81	0.00
13	T,M	tert-Butyl alcohol	50.000	51.022	-2.0	103	0.00
14	T,M	Acetonitrile	-1.000	0.000	0.0	0	0.00
15	T,M	Methyl acetate	10.000	0.000	100.0#	0	-4.32#
16	T,M	Iodomethane	10.000	8.673	13.3	88	0.00
17	T,M	Methylene chloride	10.000	8.218	17.8	86	0.00
18	T,M	Carbon disulfide	10.000	10.894	-8.9	113	0.00
19	T,M	Acrylonitrile	50.000	45.954	8.1	96	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	8.224	17.8	85	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	8.043	19.6	80	0.00
22	T,M	Isopropyl ether (DIPE)	10.000	8.869	11.3	91	0.00
23	T,M	Vinyl acetate	10.000	11.030	-10.3	109	0.00
24	P,T,M	1,1-Dichloroethane	10.000	9.313	6.9	95	0.00
25	T,M	2-Butanol	50.000	0.000	100.0#	0	-6.12#
26	T,M	tert-Butyl ethyl ether (ETB	10.000	8.345	16.5	85	0.00
27	T,M	2-Butanone	50.000	49.692	0.6	104	0.00
28	T,M	2,2-Dichloropropane	10.000	8.795	12.1	92	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	9.276	7.2	94	0.00
30	C,T,M	Chloroform	10.000	9.364	6.4	94	0.00
31	T,M	tert-Amyl alcohol	-1.000	0.000	0.0	0	-0.09
32	T,M	Bromochloromethane	10.000	8.795	12.1	89	-0.01
33	T,M	Tetrahydrofuran	10.000	9.525	4.7	98	-0.01
34	S	Dibromofluoromethane	10.000	9.315	6.9	97	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.596	4.0	97	0.00
36	T,M	Cyclohexane	10.000	0.000	100.0#	0	-7.70#
37	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-7.80#
38	T,M	1,1-Dichloropropene	10.000	9.133	8.7	93	0.00
39	T,M	Carbon tetrachloride	10.000	9.202	8.0	92	0.00
40	T,M	tert-Amyl methyl ether (TAM	10.000	8.335	16.6	86	0.00
41	S	1,2-Dichloroethane-d4	10.000	8.704	13.0	92	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW287.D Vial: 3
Acq On : 16 May 2017 12:29 pm Operator: TWilki
Sample : CVO06D0524 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	8.670	13.3	87	0.00
43	T,M	Benzene	10.000	9.354	6.5	95	0.00
44	T,M	Trichloroethene	10.000	9.551	4.5	95	0.00
45	T,M	Methylcyclohexane	10.000	0.073	99.3#	1	-0.07
46	C,T,M	1,2-Dichloropropane	10.000	9.847	1.5	99	-0.01
47	T,M	1,4-Dioxane	200.000	192.530	3.7	93	-0.01
48	T,M	Bromodichloromethane	10.000	9.519	4.8	97	0.00
49	T,M	Dibromomethane	10.000	9.033	9.7	93	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	6.029	39.7#	60	0.00
51	T,M	4-Methyl-2-pentanone	50.000	44.202	11.6	92	0.00
52	T,M	cis-1,3-Dichloropropene	10.000	8.947	10.5	90	0.00
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	105	-0.01
54	S	Toluene-d8	10.000	9.826	1.7	102	0.00
55	C,T,M	Toluene	10.000	9.072	9.3	94	-0.01
56	T,M	Ethyl methacrylate	10.000	9.570	4.3	94	-0.01
57	T,M	trans-1,3-Dichloropropene	10.000	8.900	11.0	86	-0.01
58	T,M	1,1,2-Trichloroethane	10.000	9.888	1.1	97	0.00
59	T,M	2-Hexanone	50.000	47.969	4.1	97	0.00
60	T,M	1,3-Dichloropropane	10.000	9.680	3.2	97	-0.01
61	T,M	Tetrachloroethene	10.000	9.809	1.9	94	0.00
62	T,M	Dibromochloromethane	10.000	9.371	6.3	92	0.00
63	T,M	2-Ethyl-1-butanol	-1.000	0.000	0.0	0	0.00
64	T,M	1,2-Dibromoethane	10.000	9.492	5.1	93	0.00
65	T,M	1-Chlorohexane	10.000	10.399	-4.0	96	-0.01
66	P, T,M	Chlorobenzene	10.000	10.135	-1.3	98	-0.01
67	T,M	1,1,1,2-Tetrachloroethane	10.000	9.799	2.0	96	-0.01
68	C,T,M	Ethylbenzene	10.000	9.466	5.3	93	-0.01
69	T,M	m-Xylene & p-Xylene	20.000	18.697	6.5	92	0.00
70	T,M	o-Xylene	10.000	9.827	1.7	94	-0.01
71	T,M	Styrene	10.000	10.360	-3.6	100	-0.01
72	T,M	Isopropylbenzene	10.000	10.616	-6.2	100	0.00
73	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	108	-0.01
74	P,T,M	Bromoform	10.000	8.244	17.6	86	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.611	3.9	102	0.00
76	S	4-Bromofluorobenzene	10.000	9.140	8.6	98	-0.01
77	T,M	1,2,3-Trichloropropane	10.000	9.209	7.9	96	-0.01
78	T,M	trans-1,4-Dichloro-2-butene	10.000	5.985	40.1#	63	0.00
79	T,M	n-Propylbenzene	10.000	10.076	-0.8	103	0.00
80	T,M	Bromobenzene	10.000	9.915	0.9	102	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW287.D Vial: 3
Acq On : 16 May 2017 12:29 pm Operator: TWilki
Sample : CVO06D0524 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	10.059	-0.6	101	0.00
82	T,M	2-Chlorotoluene	10.000	9.695	3.0	103	0.00
83	T,M	4-Chlorotoluene	10.000	9.080	9.2	93	-0.01
84	T,M	tert-Butylbenzene	10.000	10.264	-2.6	103	-0.01
85	T,M	1,2,4-Trimethylbenzene	10.000	10.210	-2.1	103	0.00
86	T,M	sec-Butylbenzene	10.000	10.918	-9.2	105	0.00
87	T,M	p-Isopropyltoluene	10.000	11.068	-10.7	106	-0.01
88	T,M	1,3-Dichlorobenzene	10.000	10.397	-4.0	105	-0.01
89	T,M	1,4-Dichlorobenzene	10.000	10.206	-2.1	103	-0.01
90	T,M	n-Butylbenzene	10.000	11.164	-11.6	109	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	10.310	-3.1	104	0.00
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.245	7.6	97	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	10.796	-8.0	107	-0.01
94	T,M	Hexachlorobutadiene	10.000	11.055	-10.5	105	0.00
95	T,M	Naphthalene	10.000	10.011	-0.1	108	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	10.317	-3.2	105	-0.01

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW287.D Vial: 3
Acq On : 16 May 2017 12:29 pm Operator: TWilki
Sample : CVO06D0524 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	105	0.00
2	T,M	Dichlorodifluoromethane	0.373	0.365	2.1	102	0.00
3	P,T,M	Chloromethane	0.276	0.284	-2.9	107	0.02
4	C,T,M	Vinyl chloride	0.275	0.297	-8.0	111	0.02
5	T,M	Bromomethane	0.226	0.230	-1.8	108	0.00
6	T,M	Chloroethane	0.166	0.180	-8.4	116	0.00
7	T,M	Dichlorofluoromethane	0.537	0.455	15.3	88	0.02
8	T,M	Trichlorofluoromethane	0.471	0.516	-9.6	116	0.00
9	T,M	Acrolein	0.011	0.011	0.0	100	0.00
10	T,M	1,1,2-Trichloro-1,2,2-trifl	0.205	0.209	-2.0	100	0.02
11	T,M	Acetone	0.025	0.024	4.0	106	0.00
12	C,T,M	1,1-Dichloroethene	0.475	0.386	18.7	81	0.00
13	T,M	tert-Butyl alcohol	0.010	0.010	0.0	103	0.00
14	T,M	Acetonitrile	0.000	0.000	0.0	0#	0.00
15	T,M	Methyl acetate	0.071	0.000	100.0#	0#	-4.32#
16	T,M	Iodomethane	0.518	0.449	13.3	88	0.00
17	T,M	Methylene chloride	0.299	0.246	17.7	86	0.00
18	T,M	Carbon disulfide	0.901	0.982	-9.0	113	0.00
19	T,M	Acrylonitrile	0.032	0.029	9.4	96	0.00
20	T,M	tert-Butyl methyl ether (MT	0.493	0.405	17.8	85	0.00
21	T,M	trans-1,2-Dichloroethene	0.437	0.352	19.5	80	0.00
22	T,M	Isopropyl ether (DIPE)	0.850	0.754	11.3	91	0.00
23	T,M	Vinyl acetate	0.256	0.282	-10.2	109	0.00
24	P,T,M	1,1-Dichloroethane	0.526	0.490	6.8	95	0.00
25	T,M	2-Butanol	0.000	0.000	100.0#	0#	-6.12#
26	T,M	tert-Butyl ethyl ether (ETB	0.712	0.594	16.6	85	0.00
27	T,M	2-Butanone	0.010	0.010	0.0	104	0.00
28	T,M	2,2-Dichloropropane	0.404	0.355	12.1	92	0.00
29	T,M	cis-1,2-Dichloroethene	0.310	0.288	7.1	94	0.00
30	C,T,M	Chloroform	0.561	0.525	6.4	94	0.00
31	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	-0.09
32	T,M	Bromochloromethane	0.177	0.156	11.9	89	-0.01
33	T,M	Tetrahydrofuran	0.032	0.022	31.3#	98	-0.01
34	S	Dibromofluoromethane	0.312	0.291	6.7	97	0.00
35	T,M	1,1,1-Trichloroethane	0.520	0.499	4.0	97	0.00
36	T,M	Cyclohexane	0.435	0.000	100.0#	0#	-7.70#
37	T,M	2,2,4-Trimethylpentane	1.108	0.000	100.0#	0#	-7.80#
38	T,M	1,1-Dichloropropene	0.161	0.147	8.7	93	0.00
39	T,M	Carbon tetrachloride	0.484	0.445	8.1	92	0.00
40	T,M	tert-Amyl methyl ether (TAM	0.134	0.112	16.4	86	0.00
41	S	1,2-Dichloroethane-d4	0.243	0.212	12.8	92	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW287.D Vial: 3
Acq On : 16 May 2017 12:29 pm Operator: TWilki
Sample : CVO06D0524 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.282	0.244	13.5	87	0.00
43	T,M	Benzene	1.081	1.011	6.5	95	0.00
44	T,M	Trichloroethene	0.358	0.342	4.5	95	0.00
45	T,M	Methylcyclohexane	0.522	0.004	99.2#	1#	-0.07
46	C,T,M	1,2-Dichloropropane	0.258	0.254	1.6	99	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	93	-0.01
48	T,M	Bromodichloromethane	0.382	0.364	4.7	97	0.00
49	T,M	Dibromomethane	0.124	0.112	9.7	93	0.00
50	T,M	2-Chloroethyl vinyl ether	0.092	0.056	39.1#	60	0.00
51	T,M	4-Methyl-2-pentanone	0.127	0.112	11.8	92	0.00
52	T,M	cis-1,3-Dichloropropene	0.438	0.392	10.5	90	0.00
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	105	-0.01
54	S	Toluene-d8	1.329	1.306	1.7	102	0.00
55	C,T,M	Toluene	1.542	1.399	9.3	94	-0.01
56	T,M	Ethyl methacrylate	0.232	0.222	4.3	94	-0.01
57	T,M	trans-1,3-Dichloropropene	0.412	0.367	10.9	86	-0.01
58	T,M	1,1,2-Trichloroethane	0.191	0.189	1.0	97	0.00
59	T,M	2-Hexanone	0.092	0.088	4.3	97	0.00
60	T,M	1,3-Dichloropropane	0.363	0.352	3.0	97	-0.01
61	T,M	Tetrachloroethene	0.346	0.339	2.0	94	0.00
62	T,M	Dibromochloromethane	0.305	0.286	6.2	92	0.00
63	T,M	2-Ethyl-1-butanol	0.000	0.000	0.0	0#	0.00
64	T,M	1,2-Dibromoethane	0.200	0.190	5.0	93	0.00
65	T,M	1-Chlorohexane	0.653	0.679	-4.0	96	-0.01
66	P, T,M	Chlorobenzene	0.928	0.941	-1.4	98	-0.01
67	T,M	1,1,1,2-Tetrachloroethane	0.352	0.344	2.3	96	-0.01
68	C,T,M	Ethylbenzene	1.761	1.667	5.3	93	-0.01
69	T,M	m-Xylene & p-Xylene	1.310	1.225	6.5	92	0.00
70	T,M	o-Xylene	1.315	1.292	1.7	94	-0.01
71	T,M	Styrene	0.964	0.998	-3.5	100	-0.01
72	T,M	Isopropylbenzene	1.753	1.861	-6.2	100	0.00
73	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	108	-0.01
74	P,T,M	Bromoform	0.400	0.330	17.5	86	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.500	0.480	4.0	102	0.00
76	S	4-Bromofluorobenzene	1.160	1.060	8.6	98	-0.01
77	T,M	1,2,3-Trichloropropane	0.159	0.146	8.2	96	-0.01
78	T,M	trans-1,4-Dichloro-2-butene	0.143	0.085	40.6#	63	0.00
79	T,M	n-Propylbenzene	5.138	5.177	-0.8	103	0.00
80	T,M	Bromobenzene	0.907	0.900	0.8	102	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW287.D Vial: 3
Acq On : 16 May 2017 12:29 pm Operator: TWilki
Sample : CVO06D0524 Inst : TO06
Misc : 10PPB 8260/50PPB KET-AA-TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.274	3.293	-0.6	101	0.00
82	T,M	2-Chlorotoluene	3.335	3.233	3.1	103	0.00
83	T,M	4-Chlorotoluene	2.825	2.565	9.2	93	-0.01
84	T,M	tert-Butylbenzene	0.851	0.874	-2.7	103	-0.01
85	T,M	1,2,4-Trimethylbenzene	3.153	3.219	-2.1	103	0.00
86	T,M	sec-Butylbenzene	4.476	4.887	-9.2	105	0.00
87	T,M	p-Isopropyltoluene	3.652	4.042	-10.7	106	-0.01
88	T,M	1,3-Dichlorobenzene	1.763	1.833	-4.0	105	-0.01
89	T,M	1,4-Dichlorobenzene	1.710	1.745	-2.0	103	-0.01
90	T,M	n-Butylbenzene	3.184	3.555	-11.7	109	-0.01
91	T,M	1,2-Dichlorobenzene	1.399	1.442	-3.1	104	0.00
92	T,M	1,2-Dibromo-3-chloropropane	0.094	0.087	7.4	97	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.953	1.029	-8.0	107	-0.01
94	T,M	Hexachlorobutadiene	0.762	0.842	-10.5	105	0.00
95	T,M	Naphthalene	1.361	1.362	-0.1	108	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.751	0.775	-3.2	105	-0.01

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW311.D
Acq On : 16 May 2017 10:59 pm
Sample : CVO06D0524A
Misc : 10PPB 8260\50PPB KET-AA
MS Integration Params: RTE.P

Vial: 26
Operator: TWilki
Inst : TO06
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	90	0.00
2	T,M	Dichlorodifluoromethane	10.000	9.311	6.9	83	0.00
3	P,T,M	Chloromethane	10.000	8.609	13.9	76	0.02
4	C,T,M	Vinyl chloride	10.000	8.902	11.0	78	0.02
5	T,M	Bromomethane	10.000	9.082	9.2	82	0.02
6	T,M	Chloroethane	10.000	9.292	7.1	84	0.00
7	T,M	Dichlorofluoromethane	10.000	11.084	-10.8	98	0.02
8	T,M	Trichlorofluoromethane	10.000	10.287	-2.9	93	0.00
9	T,M	Acrolein	50.000	45.407	9.2	79	0.00
10	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	11.400	-14.0	95	0.02
11	T,M	Acetone	50.000	46.003	8.0	85	0.02
12	C,T,M	1,1-Dichloroethene	10.000	11.351	-13.5	97	0.02
13	T,M	tert-Butyl alcohol	50.000	48.046	3.9	83	0.00
14	T,M	Acetonitrile	-1.000	0.000	0.0	0	0.00
15	T,M	Methyl acetate	10.000	0.000	100.0#	0	-4.32#
16	T,M	Iodomethane	10.000	10.476	-4.8	91	0.00
17	T,M	Methylene chloride	10.000	9.582	4.2	86	0.00
18	T,M	Carbon disulfide	10.000	9.000	10.0	80	0.02
19	T,M	Acrylonitrile	50.000	43.443	13.1	78	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	9.550	4.5	84	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	11.079	-10.8	95	0.00
22	T,M	Isopropyl ether (DIPE)	10.000	10.139	-1.4	89	0.00
23	T,M	Vinyl acetate	10.000	7.606	23.9#	64	0.02
24	P,T,M	1,1-Dichloroethane	10.000	10.812	-8.1	94	0.00
25	T,M	2-Butanol	50.000	0.000	100.0#	0	-6.12#
26	T,M	tert-Butyl ethyl ether (ETB	10.000	9.942	0.6	86	0.00
27	T,M	2-Butanone	50.000	47.223	5.6	84	0.00
28	T,M	2,2-Dichloropropane	10.000	9.078	9.2	81	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	10.670	-6.7	93	0.02
30	C,T,M	Chloroform	10.000	10.672	-6.7	92	0.02
31	T,M	tert-Amyl alcohol	-1.000	0.000	0.0	0	-0.09
32	T,M	Bromochloromethane	10.000	9.909	0.9	85	0.00
33	T,M	Tetrahydrofuran	10.000	9.539	4.6	84	-0.01
34	S	Dibromofluoromethane	10.000	9.839	1.6	87	0.00
35	T,M	1,1,1-Trichloroethane	10.000	11.247	-12.5	97	0.00
36	T,M	Cyclohexane	10.000	0.000	100.0#	0	-7.70#
37	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-7.80#
38	T,M	1,1-Dichloropropene	10.000	11.051	-10.5	96	0.00
39	T,M	Carbon tetrachloride	10.000	10.896	-9.0	93	0.00
40	T,M	tert-Amyl methyl ether (TAM	10.000	9.609	3.9	85	0.00
41	S	1,2-Dichloroethane-d4	10.000	9.344	6.6	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW311.D
Acq On : 16 May 2017 10:59 pm
Sample : CVO06D0524A
Misc : 10PPB 8260\50PPB KET-AA
MS Integration Params: RTE.P

Vial: 26
Operator: TWilki
Inst : TO06
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.413	-4.1	90	0.00
43	T,M	Benzene	10.000	11.079	-10.8	96	0.02
44	T,M	Trichloroethene	10.000	11.659	-16.6	99	0.00
45	T,M	Methylcyclohexane	10.000	0.087	99.1#	1	-0.07
46	C,T,M	1,2-Dichloropropane	10.000	10.990	-9.9	94	-0.01
47	T,M	1,4-Dioxane	200.000	189.869	5.1	78	0.00
48	T,M	Bromodichloromethane	10.000	10.484	-4.8	91	0.00
49	T,M	Dibromomethane	10.000	10.095	-1.0	88	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	7.160	28.4#	61	0.00
51	T,M	4-Methyl-2-pentanone	50.000	44.228	11.5	78	0.00
52	T,M	cis-1,3-Dichloropropene	10.000	10.235	-2.3	88	0.00
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	91	0.00
54	S	Toluene-d8	10.000	9.972	0.3	89	0.00
55	C,T,M	Toluene	10.000	10.714	-7.1	96	-0.01
56	T,M	Ethyl methacrylate	10.000	10.058	-0.6	86	0.00
57	T,M	trans-1,3-Dichloropropene	10.000	9.935	0.6	83	-0.01
58	T,M	1,1,2-Trichloroethane	10.000	10.503	-5.0	89	0.00
59	T,M	2-Hexanone	50.000	46.011	8.0	80	0.00
60	T,M	1,3-Dichloropropane	10.000	10.667	-6.7	92	0.00
61	T,M	Tetrachloroethene	10.000	11.765	-17.7	97	0.00
62	T,M	Dibromochloromethane	10.000	9.967	0.3	85	0.00
63	T,M	2-Ethyl-1-butanol	-1.000	0.000	0.0	0	0.00
64	T,M	1,2-Dibromoethane	10.000	10.516	-5.2	89	0.00
65	T,M	1-Chlorohexane	10.000	11.901	-19.0	95	0.00
66	P, T,M	Chlorobenzene	10.000	11.171	-11.7	93	0.00
67	T,M	1,1,1,2-Tetrachloroethane	10.000	10.962	-9.6	93	0.00
68	C,T,M	Ethylbenzene	10.000	11.310	-13.1	96	0.00
69	T,M	m-Xylene & p-Xylene	20.000	22.469	-12.3	96	0.00
70	T,M	o-Xylene	10.000	11.769	-17.7	97	-0.01
71	T,M	Styrene	10.000	11.194	-11.9	93	0.00
72	T,M	Isopropylbenzene	10.000	12.302	-23.0#	100	0.00
73	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	97	-0.01
74	P,T,M	Bromoform	10.000	8.454	15.5	79	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.518	4.8	90	0.00
76	S	4-Bromofluorobenzene	10.000	9.273	7.3	89	-0.01
77	T,M	1,2,3-Trichloropropane	10.000	9.625	3.8	90	-0.01
78	T,M	trans-1,4-Dichloro-2-butene	10.000	5.324	46.8#	50	0.00
79	T,M	n-Propylbenzene	10.000	11.082	-10.8	101	0.00
80	T,M	Bromobenzene	10.000	10.286	-2.9	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW311.D Vial: 26
Acq On : 16 May 2017 10:59 pm Operator: TWilki
Sample : CVO06D0524A Inst : TO06
Misc : 10PPB 8260\50PPB KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	11.397	-14.0	103	0.00
82	T,M	2-Chlorotoluene	10.000	10.503	-5.0	100	0.00
83	T,M	4-Chlorotoluene	10.000	10.368	-3.7	95	-0.01
84	T,M	tert-Butylbenzene	10.000	11.405	-14.0	103	-0.01
85	T,M	1,2,4-Trimethylbenzene	10.000	11.600	-16.0	105	0.00
86	T,M	sec-Butylbenzene	10.000	11.956	-19.6	103	0.00
87	T,M	p-Isopropyltoluene	10.000	12.449	-24.5#	107	-0.01
88	T,M	1,3-Dichlorobenzene	10.000	11.171	-11.7	101	0.00
89	T,M	1,4-Dichlorobenzene	10.000	10.918	-9.2	99	-0.01
90	T,M	n-Butylbenzene	10.000	12.447	-24.5#	109	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	10.899	-9.0	99	0.00
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.286	7.1	88	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	11.210	-12.1	100	-0.01
94	T,M	Hexachlorobutadiene	10.000	11.216	-12.2	95	0.00
95	T,M	Naphthalene	10.000	10.262	-2.6	100	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	10.905	-9.0	99	0.00

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW311.D Vial: 26
Acq On : 16 May 2017 10:59 pm Operator: TWilki
Sample : CVO06D0524A Inst : TO06
Misc : 10PPB 8260\50PPB KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	90	0.00
2	T,M	Dichlorodifluoromethane	0.373	0.347	7.0	83	0.00
3	P,T,M	Chloromethane	0.276	0.238	13.8	76	0.02
4	C,T,M	Vinyl chloride	0.275	0.245	10.9	78	0.02
5	T,M	Bromomethane	0.226	0.205	9.3	82	0.02
6	T,M	Chloroethane	0.166	0.154	7.2	84	0.00
7	T,M	Dichlorofluoromethane	0.537	0.595	-10.8	98	0.02
8	T,M	Trichlorofluoromethane	0.471	0.485	-3.0	93	0.00
9	T,M	Acrolein	0.011	0.010	9.1	79	0.00
10	T,M	1,1,2-Trichloro-1,2,2-trifl	0.205	0.234	-14.1	95	0.02
11	T,M	Acetone	0.025	0.023	8.0	85	0.02
12	C,T,M	1,1-Dichloroethene	0.475	0.539	-13.5	97	0.02
13	T,M	tert-Butyl alcohol	0.010	0.010	0.0	83	0.00
14	T,M	Acetonitrile	0.000	0.000	0.0	0#	0.00
15	T,M	Methyl acetate	0.071	0.000	100.0#	0#	-4.32#
16	T,M	Iodomethane	0.518	0.542	-4.6	91	0.00
17	T,M	Methylene chloride	0.299	0.287	4.0	86	0.00
18	T,M	Carbon disulfide	0.901	0.811	10.0	80	0.02
19	T,M	Acrylonitrile	0.032	0.028	12.5	78	0.00
20	T,M	tert-Butyl methyl ether (MT	0.493	0.471	4.5	84	0.00
21	T,M	trans-1,2-Dichloroethene	0.437	0.484	-10.8	95	0.00
22	T,M	Isopropyl ether (DIPE)	0.850	0.862	-1.4	89	0.00
23	T,M	Vinyl acetate	0.256	0.195	23.8#	64	0.02
24	P,T,M	1,1-Dichloroethane	0.526	0.568	-8.0	94	0.00
25	T,M	2-Butanol	0.007	0.000	100.0#	0#	-6.12#
26	T,M	tert-Butyl ethyl ether (ETB	0.712	0.708	0.6	86	0.00
27	T,M	2-Butanone	0.010	0.009	10.0	84	0.00
28	T,M	2,2-Dichloropropane	0.404	0.367	9.2	81	0.00
29	T,M	cis-1,2-Dichloroethene	0.310	0.331	-6.8	93	0.02
30	C,T,M	Chloroform	0.561	0.599	-6.8	92	0.02
31	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	-0.09
32	T,M	Bromochloromethane	0.177	0.175	1.1	85	0.00
33	T,M	Tetrahydrofuran	0.032	0.022	31.3#	84	-0.01
34	S	Dibromofluoromethane	0.312	0.307	1.6	87	0.00
35	T,M	1,1,1-Trichloroethane	0.520	0.584	-12.3	97	0.00
36	T,M	Cyclohexane	0.435	0.000	100.0#	0#	-7.70#
37	T,M	2,2,4-Trimethylpentane	1.108	0.000	100.0#	0#	-7.80#
38	T,M	1,1-Dichloropropene	0.161	0.178	-10.6	96	0.00
39	T,M	Carbon tetrachloride	0.484	0.527	-8.9	93	0.00
40	T,M	tert-Amyl methyl ether (TAM	0.134	0.129	3.7	85	0.00
41	S	1,2-Dichloroethane-d4	0.243	0.227	6.6	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW311.D Vial: 26
Acq On : 16 May 2017 10:59 pm Operator: TWilki
Sample : CVO06D0524A Inst : TO06
Misc : 10PPB 8260\50PPB KET-AA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.282	0.293	-3.9	90	0.00
43	T,M	Benzene	1.081	1.198	-10.8	96	0.02
44	T,M	Trichloroethene	0.358	0.418	-16.8	99	0.00
45	T,M	Methylcyclohexane	0.522	0.005	99.0#	1#	-0.07
46	C,T,M	1,2-Dichloropropane	0.258	0.283	-9.7	94	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	78	0.00
48	T,M	Bromodichloromethane	0.382	0.401	-5.0	91	0.00
49	T,M	Dibromomethane	0.124	0.125	-0.8	88	0.00
50	T,M	2-Chloroethyl vinyl ether	0.092	0.066	28.3#	61	0.00
51	T,M	4-Methyl-2-pentanone	0.127	0.112	11.8	78	0.00
52	T,M	cis-1,3-Dichloropropene	0.438	0.448	-2.3	88	0.00
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	91	0.00
54	S	Toluene-d8	1.329	1.325	0.3	89	0.00
55	C,T,M	Toluene	1.542	1.652	-7.1	96	-0.01
56	T,M	Ethyl methacrylate	0.232	0.234	-0.9	86	0.00
57	T,M	trans-1,3-Dichloropropene	0.412	0.410	0.5	83	-0.01
58	T,M	1,1,2-Trichloroethane	0.191	0.201	-5.2	89	0.00
59	T,M	2-Hexanone	0.092	0.084	8.7	80	0.00
60	T,M	1,3-Dichloropropane	0.363	0.388	-6.9	92	0.00
61	T,M	Tetrachloroethene	0.346	0.407	-17.6	97	0.00
62	T,M	Dibromochloromethane	0.305	0.304	0.3	85	0.00
63	T,M	2-Ethyl-1-butanol	0.000	0.000	0.0	0#	0.00
64	T,M	1,2-Dibromoethane	0.200	0.211	-5.5	89	0.00
65	T,M	1-Chlorohexane	0.653	0.777	-19.0	95	0.00
66	P, T,M	Chlorobenzene	0.928	1.037	-11.7	93	0.00
67	T,M	1,1,1,2-Tetrachloroethane	0.352	0.385	-9.4	93	0.00
68	C,T,M	Ethylbenzene	1.761	1.992	-13.1	96	0.00
69	T,M	m-Xylene & p-Xylene	1.310	1.472	-12.4	96	0.00
70	T,M	o-Xylene	1.315	1.548	-17.7	97	-0.01
71	T,M	Styrene	0.964	1.079	-11.9	93	0.00
72	T,M	Isopropylbenzene	1.753	2.157	-23.0#	100	0.00
73	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	97	-0.01
74	P,T,M	Bromoform	0.400	0.339	15.3	79	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.500	0.476	4.8	90	0.00
76	S	4-Bromofluorobenzene	1.160	1.076	7.2	89	-0.01
77	T,M	1,2,3-Trichloropropane	0.159	0.153	3.8	90	-0.01
78	T,M	trans-1,4-Dichloro-2-butene	0.143	0.076	46.9#	50	0.00
79	T,M	n-Propylbenzene	5.138	5.694	-10.8	101	0.00
80	T,M	Bromobenzene	0.907	0.933	-2.9	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\17E16\REW311.D
Acq On : 16 May 2017 10:59 pm
Sample : CVO06D0524A
Misc : 10PPB 8260\50PPB KET-AA
MS Integration Params: RTE.P

Vial: 26
Operator: TWilki
Inst : TO06
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO06D05.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Apr 06 11:27:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.274	3.732	-14.0	103	0.00
82	T,M	2-Chlorotoluene	3.335	3.503	-5.0	100	0.00
83	T,M	4-Chlorotoluene	2.825	2.929	-3.7	95	-0.01
84	T,M	tert-Butylbenzene	0.851	0.971	-14.1	103	-0.01
85	T,M	1,2,4-Trimethylbenzene	3.153	3.657	-16.0	105	0.00
86	T,M	sec-Butylbenzene	4.476	5.352	-19.6	103	0.00
87	T,M	p-Isopropyltoluene	3.652	4.546	-24.5#	107	-0.01
88	T,M	1,3-Dichlorobenzene	1.763	1.970	-11.7	101	0.00
89	T,M	1,4-Dichlorobenzene	1.710	1.867	-9.2	99	-0.01
90	T,M	n-Butylbenzene	3.184	3.963	-24.5#	109	-0.01
91	T,M	1,2-Dichlorobenzene	1.399	1.524	-8.9	99	0.00
92	T,M	1,2-Dibromo-3-chloropropane	0.094	0.087	7.4	88	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.953	1.069	-12.2	100	-0.01
94	T,M	Hexachlorobutadiene	0.762	0.855	-12.2	95	0.00
95	T,M	Naphthalene	1.361	1.396	-2.6	100	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.751	0.819	-9.1	99	0.00

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 04/05/17 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A06-063

BATCH V006D056

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount (µL)	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RDW 001	BFB06D01		M	M	NA		10:01
02		02	V006D051	0.03					5760 0.3 KET/ANITBA 1.5 ppb
03		03	2	0.05					0.5 2.5
04		04	3	0.1					1.0 5.0
05		05	4	0.2					2.0 10
06		06	5	0.5					5.0 25
07		07	6	1					10 50
08		08	7	2					20 100
09		09	8	3					30 150
10		10	9	5					50 250
11		11	10	10					100 500
12		12	RINSE						
13		13							
14		14	IV006D051						10/50 ppb
15		15	RINSE						
16		16	LOD WEPP.						0.2/4.0 ppb 16:34
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									04/06/17 OP

Instrument No.	06
INITIAL CALIBRATION REFERENCE	
DATE	04/05/17
ICAL ID	V006D05

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SV1-28-01-01	*	250
DCC	-01-02		250
DCC	-01-03		1250/250
DCC	SV1-27-98-03		250
BFB	-85-01	1	50
IS/SURR.	-87-03	1	250
	-88-01	*	250
ICV/LCS	-98-01	1	250
	-90-03	1	250
ICV/LCS	-92-02	5	50
	-98-02	5	250
ICV/LCS	-66-02	5	50
ICV/LCS	-66-01	5	250
Data File Folder	17D05		

	LOT #	Syringe Lot #
pH strip		MW-01-04-01
Chlorine strip		-04-10
Methanol		-01-13
$NaHSO_4$		-02-10-15
Reagent Water	RW4-15-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO06	

Comments:

Analyzed By: OP

Date Disposed: 04/06/17 Disposed By: OP

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 4

Start Date: 5/16/17 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A06-063

BATCH CV006P0524

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		REW 285	BFB 06E11						11:38
02		86	STD. CHECK						
03		87	CV006D0524						
04		88	V006E11L						
05		89	↓ C						
06		90	RINSE						
07		91	V006E11B	25mL	1.0				
08		92	17E051-03I	0.5mL	50	✓	✓		
09		93	17E072-08	25mL	1.0	✓	✓		
10		94	17E071-01	↓	↓	✓	✓		
11		95	02			✓	✓		
12		96	03			✓	✓		
13		97	↓ 04	↓	↓	✓	✓		
14		98	17E072-03I	2.5mL	10	✓	✓		
15		99	07I	↓	↓	✓	✓		
16		300	↓ 04	25mL	1.0	✓	✓		
17		01	17E079-01	↓	↓	✓	✓		
18		02	↓ 02			✓	✓		
19		03	17E075-02			✓	✓		
20		04	03			✓	✓		
21		05	08			✓	✓		
22		06	09			✓	✓		
23		07	10			✓	✓		
24		08	↓ 11			✓	✓		
25		09	17E088-01			✓	✓		
26		10	17E113-01	↓	↓	✓	✓		
27		11	CV006D0524A						22:54
28		12	RINSE						
29		↓ 13	↓						
30									TFL 5/16/17

Instrument No. 06

INITIAL CALIBRATION REFERENCE

DATE 4/5/17

ICAL ID V006D05

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SV1-28-12-01	1	
DCC	11-02	1	
DCC	20-03	5	
DCC	17-03	5	
BFB	SV1-27-85-01	1	50/250
IS/SURR.	SV1-28-22-01	5	
ICV/LCS	14-02	1	
ICV/LCS	10-03	5	
ICV/LCS	SV1-27-93-02	5	
ICV/LCS	98-01	1	
Data File Folder	17E16		

	LOT #	Syringe Lot #
pH strip	HC681819	MSF-01-03-01
Chlorine strip	6021	MSV-01-03-03
Methanol		
$NaHSO_4$		
Reagent Water	RW4-17-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO06	

Comments:

Analyzed By: TFL 10

Date Disposed: 5/17/17 Disposed By: TFL

LABORATORY REPORT FOR

NOREAS

TREASURE ISLAND, IR SITE 6

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 17E075

CASE NARRATIVE

Client : NOREAS

Project: TREASURE ISLAND, IR SITE 6

SDG : 17E075

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of five (5) water samples were received on 05/10/17 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method SW5030B/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. VG55E02Q - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. VG55E02L/VG55E02C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in E075-10M/S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : NOREAS
Project : TREASURE ISLAND, IR SITE 6

SDG NO. : 17E075
Instrument ID : GCT055

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VG55E02Q	1	NA	05/11/1706:06	05/11/1706:06	UE10029A	UE10025A	VG55E02	Method Blank
LCS1W	VG55E02L	1	NA	05/11/1704:51	05/11/1704:51	UE10027A	UE10025A	VG55E02	Lab Control Sample (LCS)
LCD1W	VG55E02C	1	NA	05/11/1705:29	05/11/1705:29	UE10028A	UE10025A	VG55E02	LCS Duplicate
06-MW36-0517	E075-03	1	NA	05/11/1714:57	05/11/1714:57	UE10043A	UE10036A	VG55E02	Field Sample
06-MW33-0517	E075-08	1	NA	05/11/1715:34	05/11/1715:34	UE10044A	UE10036A	VG55E02	Field Sample
06-MW35-0517	E075-09	1	NA	05/11/1716:12	05/11/1716:12	UE10045A	UE10036A	VG55E02	Field Sample
06-MW32-0517	E075-10	1	NA	05/11/1716:49	05/11/1716:49	UE10046A	UE10036A	VG55E02	Field Sample
06-MW32-0517MS	E075-10M	1	NA	05/11/1718:04	05/11/1718:04	UE10048A	UE10047A	VG55E02	Matrix Spike Sample (MS)
06-MW32-0517MSD	E075-10S	1	NA	05/11/1718:42	05/11/1718:42	UE10049A	UE10047A	VG55E02	MS Duplicate (MSD)
QCEB-0517	E075-11	1	NA	05/11/1714:20	05/11/1714:20	UE10042A	UE10036A	VG55E02	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/11/17 14:57
Sample ID: 06-MW36-0517	Date Analyzed: 05/11/17 14:57
Lab Samp ID: E075-03	Dilution Factor: 1
Lab File ID: UE10043A	Matrix : WATER
Ext Btch ID: VG55E02	% Moisture : NA
Calib. Ref.: UE10036A	Instrument ID : GCT-055

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GASOLINE	7.3J	100	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	34.7	40.00	86.9	69-133

Parameter	H-C Range
Gasoline	C6-C10

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: NOREAS	Date Collected:	05/09/17
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
Batch No.	: 17E075	Date Extracted:	05/11/17 15:34
Sample ID:	06-MW33-0517	Date Analyzed:	05/11/17 15:34
Lab Samp ID:	E075-08	Dilution Factor:	1
Lab File ID:	UE10044A	Matrix :	WATER
Ext Btch ID:	VG55E02	% Moisture :	NA
Calib. Ref.:	UE10036A	Instrument ID :	GCT-055

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GASOLINE	8.5J	100	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	32.6	40.00	81.5	69-133

Parameter	H-C Range
Gasoline	C6-C10

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/11/17 16:12
Sample ID: 06-MW35-0517	Date Analyzed: 05/11/17 16:12
Lab Samp ID: E075-09	Dilution Factor: 1
Lab File ID: UE10045A	Matrix : WATER
Ext Btch ID: VG55E02	% Moisture : NA
Calib. Ref.: UE10036A	Instrument ID : GCT-055

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GASOLINE	5.1J	100	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	32.9	40.00	82.1	69-133

Parameter	H-C Range
Gasoline	C6-C10

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: NOREAS	Date Collected:	05/09/17
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
Batch No.	: 17E075	Date Extracted:	05/11/17 16:49
Sample ID	: 06-MW32-0517	Date Analyzed:	05/11/17 16:49
Lab Samp ID	: E075-10	Dilution Factor:	1
Lab File ID	: UE10046A	Matrix	: WATER
Ext Btch ID	: VG55E02	% Moisture	: NA
Calib. Ref.	: UE10036A	Instrument ID	: GCT-055

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GASOLINE	ND	100	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	32.7	40.00	81.7	69-133

Parameter	H-C Range
Gasoline	C6-C10

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/11/17 14:20
Sample ID: QCEB-0517	Date Analyzed: 05/11/17 14:20
Lab Samp ID: E075-11	Dilution Factor: 1
Lab File ID: UE10042A	Matrix : WATER
Ext Btch ID: VG55E02	% Moisture : NA
Calib. Ref.: UE10036A	Instrument ID : GCT-055

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GASOLINE	8.8J	100	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	32.7	40.00	81.8	69-133

Parameter	H-C Range
Gasoline	C6-C10

QC SUMMARIES

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : NOREAS	Date Collected: NA
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/11/17
Batch No. : 17E075	Date Extracted: 05/11/17 06:06
Sample ID: MBLK1W	Date Analyzed: 05/11/17 06:06
Lab Samp ID: VG55E02Q	Dilution Factor: 1
Lab File ID: UE10029A	Matrix : WATER
Ext Btch ID: VG55E02	% Moisture : NA
Calib. Ref.: UE10025A	Instrument ID : GCT-055

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
GASOLINE	ND	100	5.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	31.6	40.00	78.9	69-133

Parameter	H-C Range
Gasoline	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: NOREAS
PROJECT: TREASURE ISLAND, IR SITE 6
BATCH NO.: 17E075
METHOD: SW5030B/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VG55E02Q	VG55E02L	VG55E02C		
LAB FILE ID:	UE10029A	UE10027A	UE10028A		
DATE EXTRACTED:	05/11/1706:06	05/11/1704:51	05/11/1705:29	DATE COLLECTED:	NA
DATE ANALYZED:	05/11/1706:06	05/11/1704:51	05/11/1705:29	DATE RECEIVED:	05/11/17
PREP. BATCH:	VG55E02	VG55E02	VG55E02		
CALIB. REF:	UE10025A	UE10025A	UE10025A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	467	93	500	464	93	1	78-122	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
4-Bromofluorobenzene	40.0	39.6	99	40.0	38.0	95	69-133

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: NOREAS
PROJECT: TREASURE ISLAND, IR SITE 6
BATCH NO.: 17E075
METHOD: SW5030B/8015B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	06-MW32-0517				
LAB SAMP ID:	E075-10	E075-10M	E075-10S		
LAB FILE ID:	UE10046A	UE10048A	UE10049A		
DATE EXTRACTED:	05/11/1716:49	05/11/1718:04	05/11/1718:42	DATE COLLECTED:	05/09/17
DATE ANALYZED:	05/11/1716:49	05/11/1718:04	05/11/1718:42	DATE RECEIVED:	05/10/17
PREP. BATCH:	VG55E02	VG55E02	VG55E02		
CALIB. REF:	UE10036A	UE10047A	UE10047A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	432	86	500	443	89	3	78-122	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
4-Bromofluorobenzene	40.0	36.6	92	40.0	38.7	97	69-133

LABORATORY REPORT FOR

NOREAS

TREASURE ISLAND, IR SITE 6

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 17E075

CASE NARRATIVE

Client : NOREAS

Project: TREASURE ISLAND, IR SITE 6

SDG : 17E075

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of five (5) water samples were received on 05/10/17 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method SW3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. DSE025WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. DSE025WL/DSE025WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples E075-03, -09 and -10 displayed heavier fuel pattern.

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : NOREAS
Project : TREASURE ISLAND, IR SITE 6

SDG NO. : 17E075
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSE025WB	1	NA	05/16/1711:59	05/15/1712:15	LE16006A	LE16004A	DSE025W	Method Blank
LCS1W	DSE025WL	1	NA	05/16/1712:16	05/15/1712:15	LE16007A	LE16004A	DSE025W	Lab Control Sample (LCS)
LCD1W	DSE025WC	1	NA	05/16/1712:33	05/15/1712:15	LE16008A	LE16004A	DSE025W	LCS Duplicate
06-MW36-0517	E075-03	1.08	NA	05/16/1712:49	05/15/1712:15	LE16009A	LE16004A	DSE025W	Field Sample
06-MW33-0517	E075-08	1.12	NA	05/16/1713:06	05/15/1712:15	LE16010A	LE16004A	DSE025W	Field Sample
06-MW35-0517	E075-09	1.23	NA	05/16/1713:23	05/15/1712:15	LE16011A	LE16004A	DSE025W	Field Sample
06-MW32-0517	E075-10	1.15	NA	05/16/1713:40	05/15/1712:15	LE16012A	LE16004A	DSE025W	Field Sample
QCEB-0517	E075-11	1.18	NA	05/16/1713:56	05/15/1712:15	LE16013A	LE16004A	DSE025W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: NOREAS	Date Collected:	05/09/17
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
Batch No.	: 17E075	Date Extracted:	05/15/17 12:15
Sample ID:	06-MW36-0517	Date Analyzed:	05/16/17 12:49
Lab Samp ID:	E075-03	Dilution Factor:	1.08
Lab File ID:	LE16009A	Matrix :	WATER
Ext Btch ID:	DSE025W	% Moisture :	NA
Calib. Ref.:	LE16004A	Instrument ID :	D5

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIESEL	260J	540	27	54
MOTOR OIL	240J	540	27	54

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	799	1080	74.0	60-130
HEXACOSANE	252	270.0	93.3	60-130

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : NOREAS	Date Collected: 05/09/17
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
Batch No. : 17E075	Date Extracted: 05/15/17 12:15
Sample ID: 06-MW33-0517	Date Analyzed: 05/16/17 13:06
Lab Samp ID: E075-08	Dilution Factor: 1.12
Lab File ID: LE16010A	Matrix : WATER
Ext Btch ID: DSE025W	% Moisture : NA
Calib. Ref.: LE16004A	Instrument ID : D5

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIESEL	ND	560	28	56
MOTOR OIL	ND	560	28	56

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	807	1120	72.0	60-130
HEXACOSANE	251	280.0	89.6	60-130

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: NOREAS	Date Collected	: 05/09/17
Project	: TREASURE ISLAND, IR SITE 6	Date Received	: 05/10/17
Batch No.	: 17E075	Date Extracted	: 05/15/17 12:15
Sample ID	: 06-MW35-0517	Date Analyzed	: 05/16/17 13:23
Lab Samp ID	: E075-09	Dilution Factor	: 1.23
Lab File ID	: LE16011A	Matrix	: WATER
Ext Btch ID	: DSE025W	% Moisture	: NA
Calib. Ref.	: LE16004A	Instrument ID	: D5

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIESEL	130J	620	31	62
MOTOR OIL	290J	620	31	62

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	897	1230	72.9	60-130
HEXACOSANE	271	307.5	88.2	60-130

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: NOREAS	Date Collected:	05/09/17
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
Batch No.	: 17E075	Date Extracted:	05/15/17 12:15
Sample ID	: 06-MW32-0517	Date Analyzed:	05/16/17 13:40
Lab Samp ID	: E075-10	Dilution Factor:	1.15
Lab File ID	: LE16012A	Matrix :	WATER
Ext Btch ID	: DSE025W	% Moisture :	NA
Calib. Ref.:	LE16004A	Instrument ID :	D5

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIESEL	1600	580	29	57
MOTOR OIL	530J	580	29	57

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	821	1150	71.4	60-130
HEXACOSANE	241	287.5	84.0	60-130

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: NOREAS	Date Collected:	05/09/17
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
Batch No.	: 17E075	Date Extracted:	05/15/17 12:15
Sample ID:	QCEB-0517	Date Analyzed:	05/16/17 13:56
Lab Samp ID:	E075-11	Dilution Factor:	1.18
Lab File ID:	LE16013A	Matrix :	WATER
Ext Btch ID:	DSE025W	% Moisture :	NA
Calib. Ref.:	LE16004A	Instrument ID :	D5

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIESEL	ND	590	29	59
MOTOR OIL	ND	590	29	59

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	897	1180	76.0	60-130
HEXACOSANE	289	295.0	97.8	60-130

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

QC SUMMARIES

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: NOREAS	Date Collected:	NA
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/15/17
Batch No.	: 17E075	Date Extracted:	05/15/17 12:15
Sample ID:	MBLK1W	Date Analyzed:	05/16/17 11:59
Lab Samp ID:	DSE025WB	Dilution Factor:	1
Lab File ID:	LE16006A	Matrix :	WATER
Ext Btch ID:	DSE025W	% Moisture :	NA
Calib. Ref.:	LE16004A	Instrument ID :	D5

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIESEL	ND	500	25	50
MOTOR OIL	ND	500	25	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	697	1000	69.7	60-130
HEXACOSANE	206	250.0	82.5	60-130

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: NOREAS
PROJECT: TREASURE ISLAND, IR SITE 6
BATCH NO.: 17E075
METHOD: SW3520C/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSE025WB	DSE025WL	DSE025WC		
LAB FILE ID:	LE16006A	LE16007A	LE16008A		
DATE EXTRACTED:	05/15/1712:15	05/15/1712:15	05/15/1712:15	DATE COLLECTED:	NA
DATE ANALYZED:	05/16/1711:59	05/16/1712:16	05/16/1712:33	DATE RECEIVED:	05/15/17
PREP. BATCH:	DSE025W	DSE025W	DSE025W		
CALIB. REF:	LE16004A	LE16004A	LE16004A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5000	4830	97	5000	4690	94	3	36-132	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	1000	744	74	1000	758	76	60-130
Hexacosane	250	228	91	250	234	93	60-130

INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LC28004A 03/29/17 19:14
LFID & Datetime: LC28005A 03/29/17 19:30
LFID & Datetime: LC28006A 03/29/17 19:47
LFID & Datetime: LC28007A 03/29/17 20:04
LFID & Datetime: LC28008A 03/29/17 20:21
LFID & Datetime: LC28009A 03/29/17 20:37
LFID & Datetime: LC28010A 03/29/17 20:54
CONC UNIT: ppm

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 1.00X	2.00X	10.00X	20.00X	100.00X	300.00X	600.00X	MEAN	%RSD
DIESEL(TOTAL)	5.00	24541	22722	22488	25778	30053	30402	31466	26778.7	14.2
DIESEL(C10-C24)	5.00	22416	21360	21504	24511	28250	28432	29417	25127.2	14.0
DIESEL(C10-C28)	5.00	23159	21722	21578	24538	28379	28631	29636	25377.6	13.6
DIESEL(C10-C25)	5.00	22753	21501	21542	24521	28322	28552	29550	25248.9	13.9
DIESEL(C9-C24)	5.00	23365	22195	22149	25234	29254	29449	30463	26015.6	14.0
DIESEL(C9-C25)	5.00	23702	22336	22187	25244	29327	29569	30596	26137.2	13.8
DIESEL(C10-C36)	5.00	23159	21722	21578	24538	28415	28726	29737	25410.8	13.7
DIESEL(C10-C40)	5.00	23159	21722	21578	24538	28415	28726	29737	25410.8	13.7
SURROGATE	X	0.00X	1.00X	2.00X	3.00X	4.00X	5.00X	11.00X	MEAN	%RSD
BROMOBENZENE	20.00	0	18130	17939	18670	20717	19114	19469	19006.4	5.4
HEXACOSANE	5.00	0	21767	20750	22349	24398	21621	23042	22321.1	5.7

DSD5C28.MET

05/31/2017

FORM VI DIESEL -2 1/96 Rev 2/2006

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LC28013A 03/29/17 21:44
LFID & Datetime: LC28014A 03/29/17 22:01
LFID & Datetime: LC28015A 03/29/17 22:18
LFID & Datetime: LC28016A 03/29/17 22:35
LFID & Datetime: LC28017A 03/29/17 22:51
LFID & Datetime: LC28018A 03/29/17 23:08
CONC UNIT: ppm

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	20.00X	100.00X	200.00X	300.00X	MEAN	%RSD
JP5(C8-C18)	5.00	36729	31862	32627	33929	33996	31345	33414.6	5.8
M.OIL(C18-C36)	5.00	26134	24905	22519	23869	23691	22023	23856.7	6.3
M.OIL(C24-C36)	5.00	23315	21831	19343	20291	20233	18835	20641.3	8.0
M.OIL(C24-C40)	5.00	23315	21831	19343	20291	20233	18835	20641.3	8.0

DSD5C28.MET

03/31/2017

FORM VI DIESEL -2 1/96 Rev 2/2006

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC28007A 03/29/2017 20:04
Conc Cont LFID & Datetime: LC28011A 03/29/2017 21:11
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	26778.7	14542060	543.05	9		20
DIESEL(C10-C24)	NA	NA	NA	500.0	25127.2	13913905	553.74	11		20
DIESEL(C10-C28)	NA	NA	NA	500.0	25377.6	14024454	552.63	11		20
DIESEL(C10-C25)	NA	NA	NA	500.0	25248.9	13958042	552.82	11		20
DIESEL(C9-C24)	NA	NA	NA	500.0	26015.6	14132869	543.25	9		20
DIESEL(C9-C25)	NA	NA	NA	500.0	26137.2	14177006	542.41	8		20
DIESEL(C10-C36)	NA	NA	NA	500.0	25410.8	14134943	556.26	11		20
DIESEL(C10-C40)	NA	NA	NA	500.0	25410.8	14134943	556.26	11		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
BROMOBENZENE	1.745	1.735	1.755	80.0	19006.4	1550952	81.60	2		20
HEXACOSANE	4.911	4.717	5.105	20.0	22321.1	496166	22.23	11		20

DSD5C28.MET

AA 3/31/2017

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC28016A 03/29/2017 22:35
Conc Cont LFID & Datetime: LC28019A 03/29/2017 23:25
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	33414.6	15230110	455.79	-9		20
M.OIL(C18-C36)	NA	NA	NA	500.0	23856.7	11222013	470.39	-6		20
M.OIL(C24-C36)	NA	NA	NA	500.0	20641.3	9574274	463.84	-7		20
M.OIL(C24-C40)	NA	NA	NA	500.0	20641.3	9574274	463.84	-7		20

DSD5C28.MET

AA
03/31/2017

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC28016A 03/29/2017 22:35
Conc Cont LFID & Datetime: LC28020A 03/29/2017 23:42
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	33414.6	14662745	438.81	-12		20
M.OIL(C18-C36)	NA	NA	NA	500.0	23856.7	10941015	458.61	-8		20
M.OIL(C24-C36)	NA	NA	NA	500.0	20641.3	8321980	403.17	-19		20
M.OIL(C24-C40)	NA	NA	NA	500.0	20641.3	8321980	403.17	-19		20

DSD5C28.MET

AA
05/31/2017

DAILY CALIBRATIONS

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC28008A 03/29/2017 20:21
Conc Cont LFID & Datetime: LE16004A 05/16/2017 11:26
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	26778.7	12240288	457.09	-9		20
DIESEL(C10-C24)	NA	NA	NA	500.0	25127.2	11660961	464.08	-7		20
DIESEL(C10-C28)	NA	NA	NA	500.0	25377.6	11678764	460.20	-8		20
DIESEL(C10-C25)	NA	NA	NA	500.0	25248.9	11660961	461.84	-8		20
DIESEL(C9-C24)	NA	NA	NA	500.0	26015.6	11882112	456.73	-9		20
DIESEL(C9-C25)	NA	NA	NA	500.0	26137.2	11882112	454.61	-9		20
DIESEL(C10-C36)	NA	NA	NA	500.0	25410.8	11678764	459.60	-8		20
DIESEL(C10-C40)	NA	NA	NA	500.0	25410.8	11678764	459.60	-8		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
BROMOBENZENE	1.712	1.702	1.722	80.0	19006.4	1427358	75.10	-6		20
HEXACOSANE	4.933	4.739	5.127	20.0	22321.1	424694	19.03	-5		20

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC28016A 03/29/2017 22:35
Conc Cont LFID & Datetime: LE16005A 05/16/2017 11:43
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	33414.6	15311994	458.24	-8		20
M.OIL(C18-C36)	NA	NA	NA	500.0	23856.7	10645609	446.23	-11		20
M.OIL(C24-C36)	NA	NA	NA	500.0	20641.3	9076347	439.72	-12		20
M.OIL(C24-C40)	NA	NA	NA	500.0	20641.3	9076347	439.72	-12		20

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC28008A 03/29/2017 20:21
Conc Cont LFID & Datetime: LE16019A 05/16/2017 15:37
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	26778.7	12654456	472.56	-5		20
DIESEL(C10-C24)	NA	NA	NA	500.0	25127.2	12054276	479.73	-4		20
DIESEL(C10-C28)	NA	NA	NA	500.0	25377.6	12069341	475.59	-5		20
DIESEL(C10-C25)	NA	NA	NA	500.0	25248.9	12067815	477.95	-4		20
DIESEL(C9-C24)	NA	NA	NA	500.0	26015.6	12279062	471.99	-6		20
DIESEL(C9-C25)	NA	NA	NA	500.0	26137.2	12292601	470.31	-6		20
DIESEL(C10-C36)	NA	NA	NA	500.0	25410.8	12073985	475.15	-5		20
DIESEL(C10-C40)	NA	NA	NA	500.0	25410.8	12073985	475.15	-5		20
SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
BROMOBENZENE	1.709	1.699	1.719	80.0	19006.4	1499197	78.88	-1		20
HEXACOSANE	4.915	4.721	5.109	20.0	22321.1	465439	20.85	4		20

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LC28016A 03/29/2017 22:35
Conc Cont LFID & Datetime: LE16020A 05/16/2017 15:54
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	33414.6	15189064	454.56	-9		20
M.OIL(C18-C36)	NA	NA	NA	500.0	23856.7	10922124	457.82	-8		20
M.OIL(C24-C36)	NA	NA	NA	500.0	20641.3	9340136	452.50	-10		20
M.OIL(C24-C40)	NA	NA	NA	500.0	20641.3	9340136	452.50	-10		20

ANALYTICAL LOGS

ANALYSIS RUN LOG
for
EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

ICAL
CDSL & JP5/5W30) LC28002.dat - LC28020.dat
DSC049W 170156
170157
170169
170173
DSC049S 170164
170170
170173
DSC049ZS 170183

Book #: AD5-040
Instrument No.: D5
Analytical Sequence: LC28
Method File: DSD5C08
Analytical Batch: CDSD5C080001

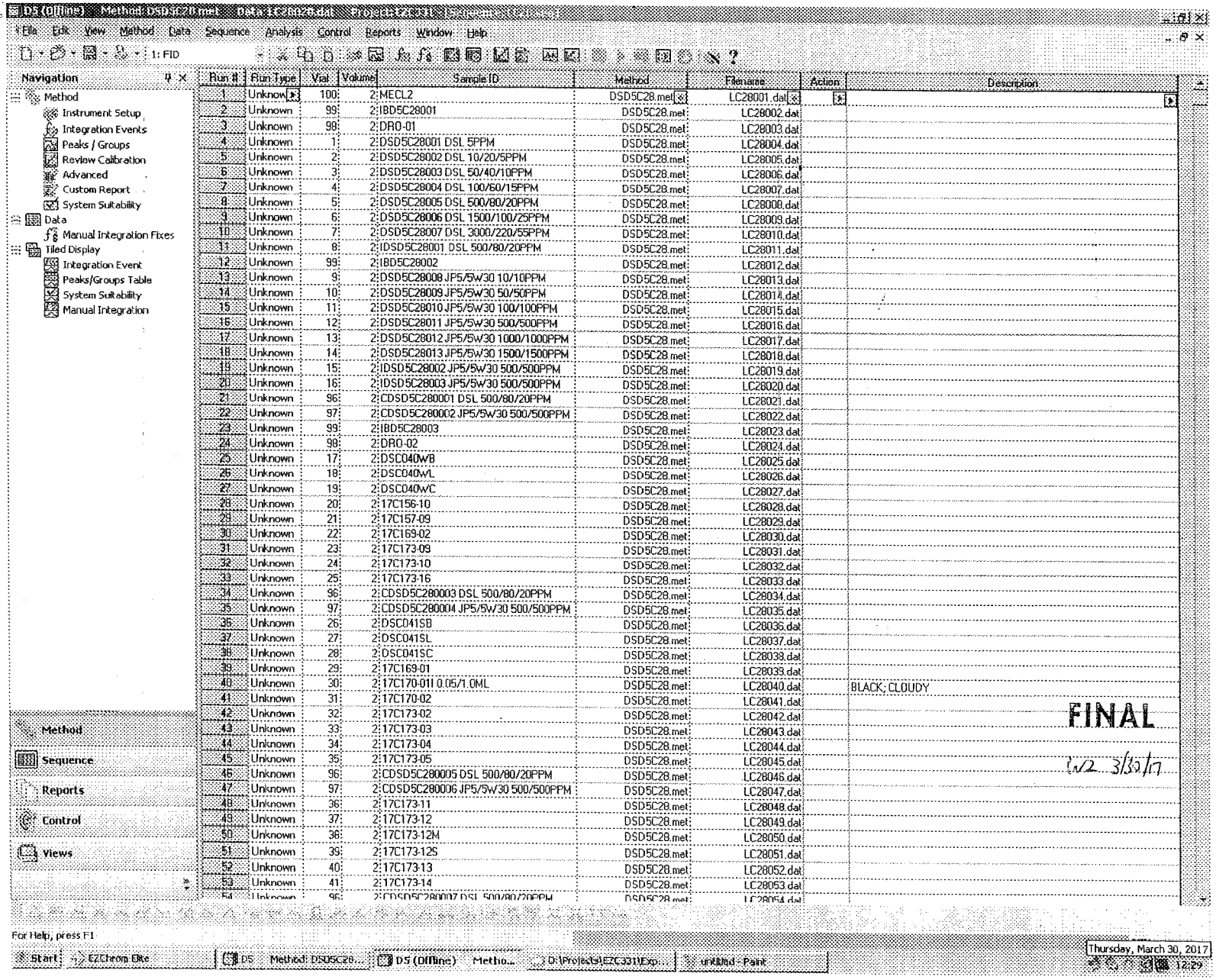
SOP #	Rev. #
☑ EMAX-8015D	6
☐ EMAX-AK102/AK103	3
☐ EMAX-	

STANDARDS ID	Conc (mg/L)
ICAL	
☑ Diesel SS3B-21-27-01	5-3000
☑ Motor Oil ☑ JP5 SS3B-21-27-03	10-1500
CH_2Cl_2 167784	pure
DSL DCC SS3B-21-22-02	500/8000
JP5/5W30 DCC SS3B-21-22-03	500/500
~~Alaska DCC~~ DSL ICV SS3B-21-27-02	500/8000
Arizona DCC	
JP5/5W30 ICV1 SS3B-21-25-01	500/500
JP5/5W30 ICV2 SS3B-21-25-03	500/500
DRO SS3B-21-25-03	20

SYRINGES
☐ 1 mL - MSF-01-01-05
☑ 500 µL - MSF-01-01-06
☐ 250 µL - MSF-01-01-09
☐ 100 µL - MSF-01-01-07
☐ 50 µL - MSF-01-01-08
☐ 10 µL - MSF-01-01-10
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZCHROM_GC6890N	
☐ External Hard Drive	

Analyzed By: WZ
Date: 3/28/17


DS (Offline)
File Edit View Method Data Sequence Analysis Control Reports Window Help
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Method
Instrument Setup
Integration Events
Peaks / Groups
Review Calibration
Advanced
Custom Report
System Suitability
Data
Manual Integration Fixes
Tiled Display
Integration Event
Peaks/Groups Table
System Suitability
Manual Integration
Method
Sequence
Reports
Control
Views
Run # | Run Type | Vial | Volume | Sample ID | Method | Filename | Action | Description
1 Unknown 100 2:MECL2 DSD5C28.met LC28001.dat
2 Unknown 99 2:IBD5C28001 DSD5C28.met LC28002.dat
3 Unknown 98 2:DRO-01 DSD5C28.met LC28003.dat
4 Unknown 1 2:DSD5C28001 DSL 5PPM DSD5C28.met LC28004.dat
5 Unknown 2 2:DSD5C28002 DSL 10/20/5PPM DSD5C28.met LC28005.dat
6 Unknown 3 2:DSD5C28003 DSL 50/40/10PPM DSD5C28.met LC28006.dat
7 Unknown 4 2:DSD5C28004 DSL 100/60/15PPM DSD5C28.met LC28007.dat
8 Unknown 5 2:DSD5C28005 DSL 500/80/20PPM DSD5C28.met LC28008.dat
9 Unknown 6 2:DSD5C28006 DSL 1500/100/25PPM DSD5C28.met LC28009.dat
10 Unknown 7 2:DSD5C28007 DSL 3000/220/55PPM DSD5C28.met LC28010.dat
11 Unknown 8 2:IDSD5C28001 DSL 500/80/20PPM DSD5C28.met LC28011.dat
12 Unknown 99 2:IBD5C28002 DSD5C28.met LC28012.dat
13 Unknown 9 2:DSD5C28008 JP5/5W30 10/10PPM DSD5C28.met LC28013.dat
14 Unknown 10 2:DSD5C28009 JP5/5W30 50/50PPM DSD5C28.met LC28014.dat
15 Unknown 11 2:DSD5C28010 JP5/5W30 100/100PPM DSD5C28.met LC28015.dat
16 Unknown 12 2:DSD5C28011 JP5/5W30 500/500PPM DSD5C28.met LC28016.dat
17 Unknown 13 2:DSD5C28012 JP5/5W30 1000/1000PPM DSD5C28.met LC28017.dat
18 Unknown 14 2:DSD5C28013 JP5/5W30 1500/1500PPM DSD5C28.met LC28018.dat
19 Unknown 15 2:IDSD5C28002 JP5/5W30 500/500PPM DSD5C28.met LC28019.dat
20 Unknown 16 2:IDSD5C28003 JP5/5W30 500/500PPM DSD5C28.met LC28020.dat
21 Unknown 96 2:CDSD5C280001 DSL 500/80/20PPM DSD5C28.met LC28021.dat
22 Unknown 97 2:CDSD5C280002 JP5/5W30 500/500PPM DSD5C28.met LC28022.dat
23 Unknown 99 2:IBD5C28003 DSD5C28.met LC28023.dat
24 Unknown 98 2:DRO-02 DSD5C28.met LC28024.dat
25 Unknown 17 2:DSC040WB DSD5C28.met LC28025.dat
26 Unknown 18 2:DSC040WL DSD5C28.met LC28026.dat
27 Unknown 19 2:DSC040WC DSD5C28.met LC28027.dat
28 Unknown 20 2:17C156-10 DSD5C28.met LC28028.dat
29 Unknown 21 2:17C157-09 DSD5C28.met LC28029.dat
30 Unknown 22 2:17C169-02 DSD5C28.met LC28030.dat
31 Unknown 23 2:17C173-09 DSD5C28.met LC28031.dat
32 Unknown 24 2:17C173-10 DSD5C28.met LC28032.dat
33 Unknown 25 2:17C173-16 DSD5C28.met LC28033.dat
34 Unknown 96 2:CDSD5C280003 DSL 500/80/20PPM DSD5C28.met LC28034.dat
35 Unknown 97 2:CDSD5C280004 JP5/5W30 500/500PPM DSD5C28.met LC28035.dat
36 Unknown 26 2:DSC041SB DSD5C28.met LC28036.dat
37 Unknown 27 2:DSC041SL DSD5C28.met LC28037.dat
38 Unknown 28 2:DSC041SC DSD5C28.met LC28038.dat
39 Unknown 29 2:17C169-01 DSD5C28.met LC28039.dat
40 Unknown 30 2:17C170-01I 0.05/1.0ML DSD5C28.met LC28040.dat BLACK; CLOUDY
41 Unknown 31 2:17C170-02 DSD5C28.met LC28041.dat
42 Unknown 32 2:17C173-02 DSD5C28.met LC28042.dat
43 Unknown 33 2:17C173-03 DSD5C28.met LC28043.dat
44 Unknown 34 2:17C173-04 DSD5C28.met LC28044.dat
45 Unknown 35 2:17C173-05 DSD5C28.met LC28045.dat
46 Unknown 96 2:CDSD5C280005 DSL 500/80/20PPM DSD5C28.met LC28046.dat
47 Unknown 97 2:CDSD5C280006 JP5/5W30 500/500PPM DSD5C28.met LC28047.dat
48 Unknown 36 2:17C173-11 DSD5C28.met LC28048.dat
49 Unknown 37 2:17C173-12 DSD5C28.met LC28049.dat
50 Unknown 38 2:17C173-12M DSD5C28.met LC28050.dat
51 Unknown 39 2:17C173-12S DSD5C28.met LC28051.dat
52 Unknown 40 2:17C173-13 DSD5C28.met LC28052.dat
53 Unknown 41 2:17C173-14 DSD5C28.met LC28053.dat
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LW2 3/30/17
For Help, press F1
Start
EZChrom Elite
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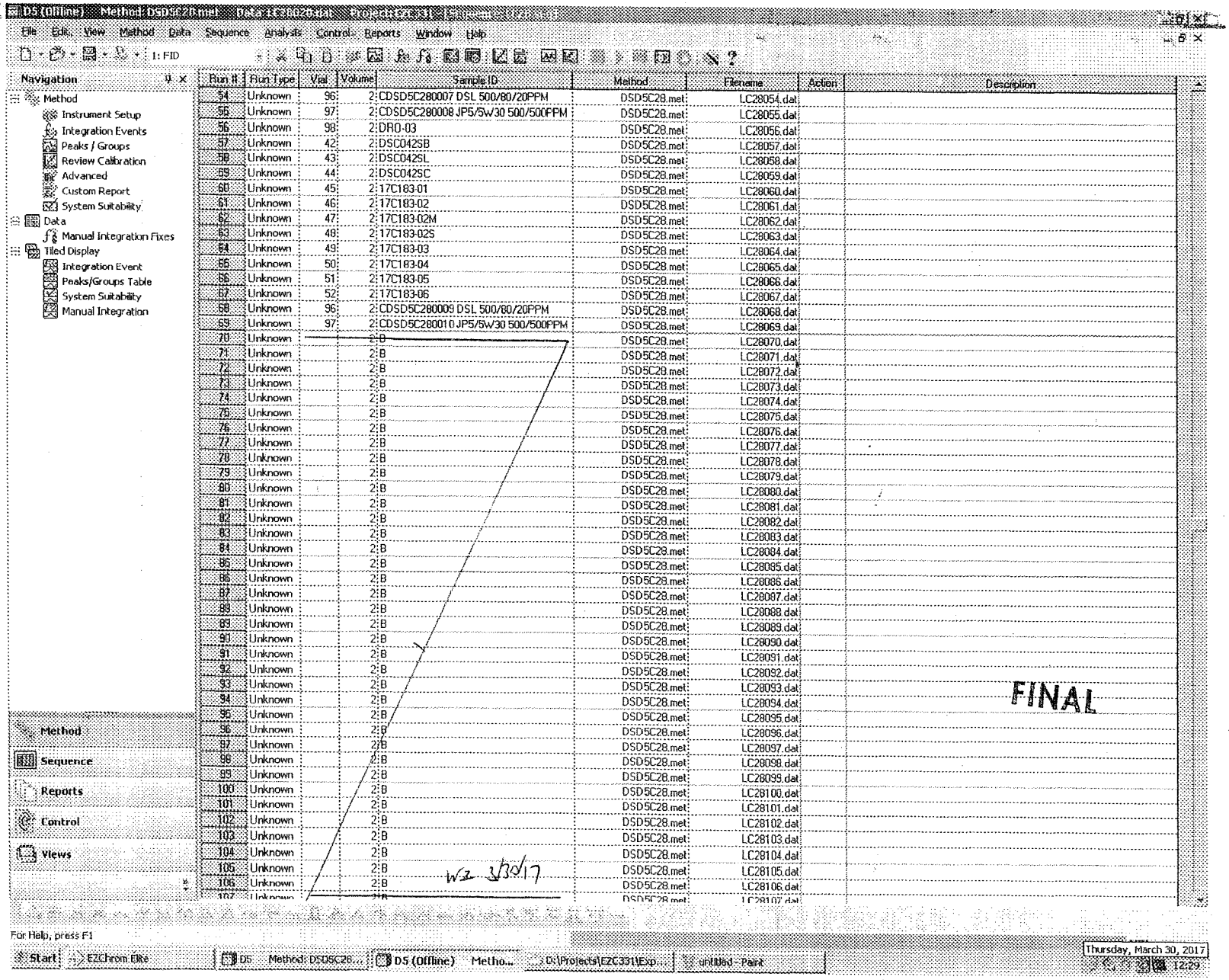
untitled - Paint
Thursday, March 30, 2017
12:29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Integration Events
Peaks / Groups
Review Calibration
Advanced
Custom Report
System Suitability
Data
Manual Integration Fixes
Tiled Display
Integration Event
Peaks/Groups Table
System Suitability
Manual Integration
Method
Sequence
Reports
Control
Views
Run # | Run Type | Vial | Volume | Sample ID | Method | Filename | Action | Description
54 Unknown 96 2 CDSD5C280007 DSL 500/80/20PPM DSD5C28.met LC28054.dat
55 Unknown 97 2 CDSD5C280008 JP5/SW30 500/500PPM DSD5C28.met LC28055.dat
56 Unknown 98 2 DRO-03 DSD5C28.met LC28056.dat
57 Unknown 42 2 DSC042SB DSD5C28.met LC28057.dat
58 Unknown 43 2 DSC042SL DSD5C28.met LC28058.dat
59 Unknown 44 2 DSC042SC DSD5C28.met LC28059.dat
60 Unknown 45 2 17C183-01 DSD5C28.met LC28060.dat
61 Unknown 46 2 17C183-02 DSD5C28.met LC28061.dat
62 Unknown 47 2 17C183-02M DSD5C28.met LC28062.dat
63 Unknown 48 2 17C183-02S DSD5C28.met LC28063.dat
64 Unknown 49 2 17C183-03 DSD5C28.met LC28064.dat
65 Unknown 50 2 17C183-04 DSD5C28.met LC28065.dat
66 Unknown 51 2 17C183-05 DSD5C28.met LC28066.dat
67 Unknown 52 2 17C183-06 DSD5C28.met LC28067.dat
68 Unknown 96 2 CDSD5C280009 DSL 500/80/20PPM DSD5C28.met LC28068.dat
69 Unknown 97 2 CDSD5C280010 JP5/SW30 500/500PPM DSD5C28.met LC28069.dat
70 Unknown 2 B DSD5C28.met LC28070.dat
71 Unknown 2 B DSD5C28.met LC28071.dat
72 Unknown 2 B DSD5C28.met LC28072.dat
73 Unknown 2 B DSD5C28.met LC28073.dat
74 Unknown 2 B DSD5C28.met LC28074.dat
75 Unknown 2 B DSD5C28.met LC28075.dat
76 Unknown 2 B DSD5C28.met LC28076.dat
77 Unknown 2 B DSD5C28.met LC28077.dat
78 Unknown 2 B DSD5C28.met LC28078.dat
79 Unknown 2 B DSD5C28.met LC28079.dat
80 Unknown 2 B DSD5C28.met LC28080.dat
81 Unknown 2 B DSD5C28.met LC28081.dat
82 Unknown 2 B DSD5C28.met LC28082.dat
83 Unknown 2 B DSD5C28.met LC28083.dat
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85 Unknown 2 B DSD5C28.met LC28085.dat
86 Unknown 2 B DSD5C28.met LC28086.dat
87 Unknown 2 B DSD5C28.met LC28087.dat
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89 Unknown 2 B DSD5C28.met LC28089.dat
90 Unknown 2 B DSD5C28.met LC28090.dat
91 Unknown 2 B DSD5C28.met LC28091.dat
92 Unknown 2 B DSD5C28.met LC28092.dat
93 Unknown 2 B DSD5C28.met LC28093.dat
94 Unknown 2 B DSD5C28.met LC28094.dat
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103 Unknown 2 B DSD5C28.met LC28103.dat
104 Unknown 2 B DSD5C28.met LC28104.dat
105 Unknown 2 B DSD5C28.met LC28105.dat
106 Unknown 2 B DSD5C28.met LC28106.dat
WZ 3/30/17
FINAL
For Help, press F1
Start
EZChrom Elite
D5 Method: DSD5C28...
D5 (Offline) Metho...
D:\Projects\EZC331\Exp...
untitled - Paint
Thursday, March 30, 2017
12:29

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DSE025W 17E075
17E081
17E087
17E088
17E089
17E096
17E104

Book #:	AD5-040
Instrument No.:	D5
Analytical Sequence:	15E16
Method File:	D5D5E28
Analytical Batch:	CD5D5E28053

SOP #	Rev. #
☑ EMAX-8015D	6
☐ EMAX-AK102/AK103	3
☐ EMAX-	

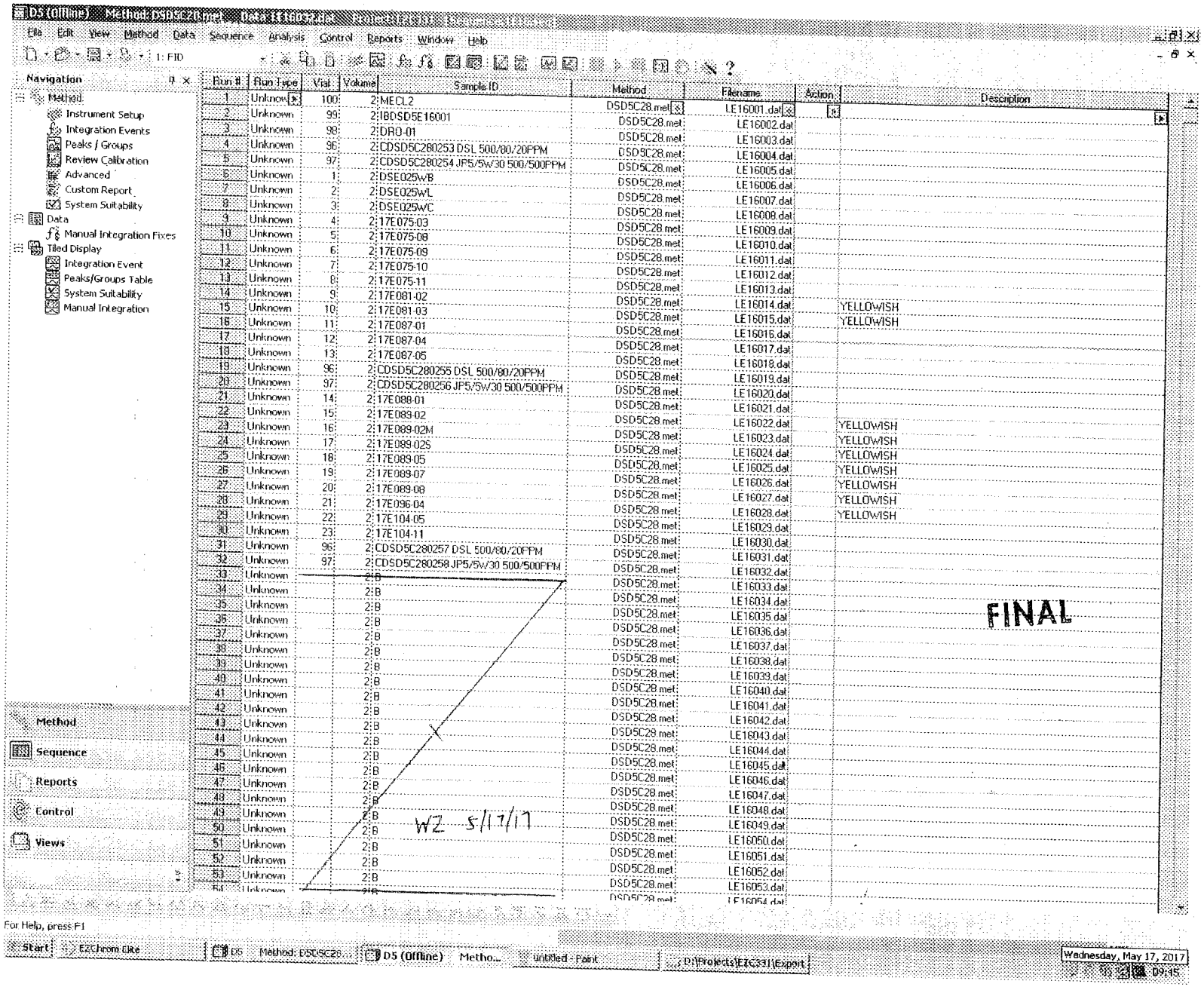
STANDARDS ID		Conc (mg/L)
ICAL		
☐ Diesel		
☐ Motor Oil ☐ JP5		
CH_2Cl_2	170110	pure
DSL DCC	SSSB-21-31-02	50/50/05
JP5/5W30 DCC	SSSB-21-22-05	500/500
Alaska DCC		
Arizona DCC		
PP20	SSSB-21-25-03	20

SYRINGES
☐ 1 mL - MSF-01-01-05
☐ 500 µL - MSF-01-01-06
☐ 250 µL - MSF-01-01-09
☐ 100 µL - MSF-01-01-07
☐ 50 µL - MSF-01-01-08
☐ 10 µL - MSF-01-01-10
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZCHROM_GC6890N	
☐ External Hard Drive	

Analyzed By: WL

Date: 5/16/17


File Edit View Method Data Sequence Analysis Control Reports Window Help
Navigation
Method
Instrument Setup
Integration Events
Peaks / Groups
Review Calibration
Advanced
Custom Report
System Suitability
Data
Manual Integration Fixes
Tiled Display
Integration Event
Peaks/Groups Table
System Suitability
Manual Integration
Method
Sequence
Reports
Control
Views
Run # | Run Type | Vial | Volume | Sample ID | Method | Filename | Action | Description
1 Unknown 100 2 MECL2 DSD5C28.met LE16001.dat
2 Unknown 99 2 IBDSD5E16001 DSD5C28.met LE16002.dat
3 Unknown 98 2 DRO-01 DSD5C28.met LE16003.dat
4 Unknown 96 2 CDSD5C280253 DSL 500/80/20PPM DSD5C28.met LE16004.dat
5 Unknown 97 2 CDSD5C280254 JP5/5W30 500/500PPM DSD5C28.met LE16005.dat
6 Unknown 1 2 DSE025WB DSD5C28.met LE16006.dat
7 Unknown 2 2 DSE025WL DSD5C28.met LE16007.dat
8 Unknown 3 2 DSE025WC DSD5C28.met LE16008.dat
9 Unknown 4 2 17E075-03 DSD5C28.met LE16009.dat
10 Unknown 5 2 17E075-08 DSD5C28.met LE16010.dat
11 Unknown 6 2 17E075-09 DSD5C28.met LE16011.dat
12 Unknown 7 2 17E075-10 DSD5C28.met LE16012.dat
13 Unknown 8 2 17E075-11 DSD5C28.met LE16013.dat
14 Unknown 9 2 17E081-02 DSD5C28.met LE16014.dat YELLOWISH
15 Unknown 10 2 17E081-03 DSD5C28.met LE16015.dat YELLOWISH
16 Unknown 11 2 17E087-01 DSD5C28.met LE16016.dat
17 Unknown 12 2 17E087-04 DSD5C28.met LE16017.dat
18 Unknown 13 2 17E087-05 DSD5C28.met LE16018.dat
19 Unknown 96 2 CDSD5C280255 DSL 500/80/20PPM DSD5C28.met LE16019.dat
20 Unknown 97 2 CDSD5C280256 JP5/5W30 500/500PPM DSD5C28.met LE16020.dat
21 Unknown 14 2 17E088-01 DSD5C28.met LE16021.dat
22 Unknown 15 2 17E089-02 DSD5C28.met LE16022.dat YELLOWISH
23 Unknown 16 2 17E089-02M DSD5C28.met LE16023.dat YELLOWISH
24 Unknown 17 2 17E089-025 DSD5C28.met LE16024.dat YELLOWISH
25 Unknown 18 2 17E089-05 DSD5C28.met LE16025.dat YELLOWISH
26 Unknown 19 2 17E089-07 DSD5C28.met LE16026.dat YELLOWISH
27 Unknown 20 2 17E089-08 DSD5C28.met LE16027.dat YELLOWISH
28 Unknown 21 2 17E096-04 DSD5C28.met LE16028.dat YELLOWISH
29 Unknown 22 2 17E104-05 DSD5C28.met LE16029.dat
30 Unknown 23 2 17E104-11 DSD5C28.met LE16030.dat
31 Unknown 96 2 CDSD5C280257 DSL 500/80/20PPM DSD5C28.met LE16031.dat
32 Unknown 97 2 CDSD5C280258 JP5/5W30 500/500PPM DSD5C28.met LE16032.dat
33 Unknown 2 B DSD5C28.met LE16033.dat
34 Unknown 2 B DSD5C28.met LE16034.dat
35 Unknown 2 B DSD5C28.met LE16035.dat
36 Unknown 2 B DSD5C28.met LE16036.dat
37 Unknown 2 B DSD5C28.met LE16037.dat
38 Unknown 2 B DSD5C28.met LE16038.dat
39 Unknown 2 B DSD5C28.met LE16039.dat
40 Unknown 2 B DSD5C28.met LE16040.dat
41 Unknown 2 B DSD5C28.met LE16041.dat
42 Unknown 2 B DSD5C28.met LE16042.dat
43 Unknown 2 B DSD5C28.met LE16043.dat
44 Unknown 2 B DSD5C28.met LE16044.dat
45 Unknown 2 B DSD5C28.met LE16045.dat
46 Unknown 2 B DSD5C28.met LE16046.dat
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48 Unknown 2 B DSD5C28.met LE16048.dat
49 Unknown 2 B DSD5C28.met LE16049.dat
50 Unknown 2 B DSD5C28.met LE16050.dat
51 Unknown 2 B DSD5C28.met LE16051.dat
52 Unknown 2 B DSD5C28.met LE16052.dat
53 Unknown 2 B DSD5C28.met LE16053.dat
FINAL
WZ 5/17/17
For Help, press F1
Start
EZChrom Elite
D5 Method: DSD5C28...
D5 (Offline) Metho...
untitled - Paint
D:\Projects\EZC33\Export
Wednesday, May 17, 2017
09:45

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
TPH

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3550	5
☐ EMAX-3580	2
☐ EMAX-8015AZ	2
☐ EMAX-AK 102/103	3
☐ EMAX-AKSGC	0

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Book #: EDS-081
Preparation Batch: DSE025W
Matrix: Water
Micropipette ID: 1000µl PE00-03
Micropipette ID: 100µl PE97C-03

Standards	ID	Amount Added (ml)
Surrogate		
Surrogate	SS3-009-11-25	0.5
LCS/MS (DSL)	SS3-009-11-23	0.1
LCS/MS		
Reagent	Lot # / ID	
CH_2Cl_2	170110	
Na_2SO_4	SW1B-003-22-09	
HCl	4116040	
Silica Sand		
Silica Gel		
Reagent Water	SW1A-006-05-17	
pH strip	HC693124	
Filter Paper	9792770	

Lab Sample ID	Sonicator #	Concentrator #
DSE025WB		3
-WL		3
-WC		3
E075-03		3
-08		3
-09		3
-10		4
-11		4
E081-02		5
-03		5
E087-01		5
-04		4
-05		4
E088-01		5
E089-02		5
-02M		5
-025		6
-05		6
-07		6
-08		4
E096-04		6
E104-05		6
-11		4

TUNING

Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2		
3	35	35
4	35	35
5	35	35
6	35	35

Comments:

Test thermometer = SVOC-T1

Prepared By: NNC / A.L. Standard Added By: NNC

Witnessed By: A.L. Checked By: ML

Extract Received By: WL 5/16/11 Extraction Location: SE06 #50

Disposal Date: Disposed By:

FileID: DSE025W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR EXTRACTABLE TPH

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
17DSE025W01	DSE025WB	1000	ml	5/15/17 13:01	10	1000	10	1	
17DSE025W02	DSE025WL	1000	ml	5/15/17 13:01	10	1000	10	1	DSL
17DSE025W03	DSE025WC	1000	ml	5/15/17 13:01	10	1000	10	1	DSL
17DSE025W04	E075-03	930	ml	5/15/17 13:04	10	1000	10	1.08	Light Yellow
17DSE025W05	E075-08	890	ml	5/15/17 13:04	10	1000	10	1.12	Light Yellow
17DSE025W06	E075-09	810	ml	5/15/17 13:04	10	1000	10	1.23	Light Yellow, Turbid w/ Soil Sedi
17DSE025W07	E075-10	870	ml	5/15/17 13:05	10	1000	10	1.15	Light Yellow, Turbid w/ Soil Sedi
17DSE025W08	E075-11	850	ml	5/15/17 13:05	10	1000	10	1.18	
17DSE025W09	E081-02	890	ml	5/15/17 13:05	10	1000	10	1.12	Light Yellow, Cloudy
17DSE025W10	E081-03	940	ml	5/15/17 13:05	10	1000	10	1.06	Yellow, Cloudy
17DSE025W11	E087-01	890	ml	5/15/17 13:05	10	1000	10	1.12	
17DSE025W12	E087-04	820	ml	5/15/17 13:05	10	1000	10	1.22	
17DSE025W13	E087-05	1000	ml	5/15/17 13:05	10	1000	10	1	
17DSE025W14	E088-01	870	ml	5/15/17 13:05	10	1000	10	1.15	Light Yellow, Turbid
17DSE025W15	E089-02	910	ml	5/15/17 13:05	10	1000	10	1.1	Light Yellow, Turbid
17DSE025W16	E089-02M	840	ml	5/15/17 13:05	10	1000	10	1.19	DSL, Light Yellow, Turbid
17DSE025W17	E089-02S	820	ml	5/15/17 13:05	10	1000	10	1.22	DSL, Light Yellow, Turbid
17DSE025W18	E089-05	870	ml	5/15/17 13:05	10	1000	10	1.15	Light Yellow
17DSE025W19	E089-07	860	ml	5/15/17 13:05	10	1000	10	1.16	Light Yellow
17DSE025W20	E089-08	810	ml	5/15/17 13:05	10	1000	10	1.23	
17DSE025W21	E096-04	960	ml	5/15/17 13:05	10	1000	10	1.04	Yellow
17DSE025W22	E104-05	860	ml	5/15/17 13:05	10	1000	10	1.16	Light Yellow
17DSE025W23	E104-11	970	ml	5/15/17 13:05	10	1000	10	1.03	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 5/15/17 12:15

Prepared By: NCrist/ALy

☑ Extraction Ended @ 5/16/17 6:15

Checked By: ML

Comments: Volume entered after extraction started, pH adjusted to pH <2.

Date 5/16/17

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

NOREAS

TREASURE ISLAND, IR SITE 6

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

SDG#: 17E075

CASE NARRATIVE

Client : NOREAS

Project: TREASURE ISLAND, IR SITE 6

SDG : 17E075

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of five (5) water samples were received on 05/10/17 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. Manganese(0.118J <1/2 LOQ) was detected at trace level in IME013WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME013WL/IME013WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : NOREAS
Project : TREASURE ISLAND, IR SITE 6

SDG NO. : 17E075
Instrument ID : T-I98

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IME013WB	1.00	NA	05/16/1721:30	05/16/1711:50	98E12041	98E12039	IME013W	Method Blank
LCS1W	IME013WL	1.00	NA	05/16/1721:34	05/16/1711:50	98E12042	98E12039	IME013W	Lab Control Sample (LCS)
LCD1W	IME013WC	1.00	NA	05/16/1721:39	05/16/1711:50	98E12043	98E12039	IME013W	LCS Duplicate
06-MW36-0517	E075-03	1.00	NA	05/16/1721:44	05/16/1711:50	98E12044	98E12039	IME013W	Field Sample
06-MW33-0517	E075-08	1.00	NA	05/16/1721:48	05/16/1711:50	98E12045	98E12039	IME013W	Field Sample
06-MW35-0517	E075-09	1.00	NA	05/16/1721:53	05/16/1711:50	98E12046	98E12039	IME013W	Field Sample
06-MW32-0517	E075-10	1.00	NA	05/16/1721:57	05/16/1711:50	98E12047	98E12039	IME013W	Field Sample
QCEB-0517	E075-11	1.00	NA	05/16/1722:02	05/16/1711:50	98E12048	98E12039	IME013W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: NOREAS	Date Collected:	05/09/17 08:15
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
SDG NO.	: 17E075	Date Extracted:	05/16/17 11:50
Sample ID:	06-MW36-0517	Date Analyzed:	05/16/17 21:44
Lab Samp ID:	E075-03	Dilution Factor:	1
Lab File ID:	98E12044	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	98E12039	Instrument ID:	98

PARAMETERS	Result (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	12.0	1.00	0.100	0.200
Manganese	266	1.00	0.100	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : SPara Analyzed by:CCapul

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : NOREAS	Date Collected: 05/09/17 11:45
Project : TREASURE ISLAND, IR SITE 6	Date Received: 05/10/17
SDG NO. : 17E075	Date Extracted: 05/16/17 11:50
Sample ID: 06-MW33-0517	Date Analyzed: 05/16/17 21:48
Lab Samp ID: E075-08	Dilution Factor: 1
Lab File ID: 98E12045	Matrix: WATER
Ext Btch ID: IME013W	% Moisture: NA
Calib. Ref.: 98E12039	Instrument ID: 98

PARAMETERS	Result (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	23.9	1.00	0.100	0.200
Manganese	135	1.00	0.100	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml	Final Volume:50ml
Prepared by : SPara	Analyzed by:CCapul

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: NOREAS	Date Collected:	05/09/17 13:40
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
SDG NO.	: 17E075	Date Extracted:	05/16/17 11:50
Sample ID:	06-MW35-0517	Date Analyzed:	05/16/17 21:53
Lab Samp ID:	E075-09	Dilution Factor:	1
Lab File ID:	98E12046	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	98E12039	Instrument ID:	98

PARAMETERS	Result (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	20.8	1.00	0.100	0.200
Manganese	58.7	1.00	0.100	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: SPara	Analyzed by:	CCapul

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: NOREAS	Date Collected:	05/09/17 14:05
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
SDG NO.	: 17E075	Date Extracted:	05/16/17 11:50
Sample ID:	06-MW32-0517	Date Analyzed:	05/16/17 21:57
Lab Samp ID:	E075-10	Dilution Factor:	1
Lab File ID:	98E12047	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	98E12039	Instrument ID:	98

PARAMETERS	Result (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	5.78	1.00	0.100	0.200
Manganese	326	1.00	0.100	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: SPara	Analyzed by:	CCapul

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: NOREAS	Date Collected:	05/09/17 14:15
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	05/10/17
SDG NO.	: 17E075	Date Extracted:	05/16/17 11:50
Sample ID:	QCEB-0517	Date Analyzed:	05/16/17 22:02
Lab Samp ID:	E075-11	Dilution Factor:	1
Lab File ID:	98E12048	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	98E12039	Instrument ID:	98

PARAMETERS	Result (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	ND	1.00	0.100	0.200
Manganese	ND	1.00	0.100	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: SPara	Analyzed by:	CCapul

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: NOREAS	Date Collected:	NA
Project	: TREASURE ISLAND, IR SITE 6	Date Received:	NA
SDG NO.	: 17E075	Date Extracted:	05/16/17 11:50
Sample ID	: MBLK1W	Date Analyzed:	05/16/17 21:30
Lab Samp ID	: IME013WB	Dilution Factor:	1
Lab File ID	: 98E12041	Matrix:	WATER
Ext Btch ID	: IME013W	% Moisture:	NA
Calib. Ref.	: 98E12039	Instrument ID:	98

PARAMETERS	Result (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Arsenic	ND	1.00	0.100	0.200
Manganese	0.118J	1.00	0.100	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: SPara	Analyzed by:	CCapul

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : NOREAS
PROJECT : TREASURE ISLAND, IR SITE 6
BATCH NO. : 17E075
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME013WB	IME013WL	IME013WC
LAB FILE ID	: 98E12041	98E12042	98E12043
DATE PREPARED	: 05/16/17 11:50	05/16/17 11:50	05/16/17 11:50
DATE ANALYZED	: 05/16/17 21:30	05/16/17 21:34	05/16/17 21:39
PREP BATCH	: IME013W	IME013W	IME013W
CALIBRATION REF	: 98E12039	98E12039	98E12039

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Arsenic	ND	30	29.8	99	30	28.7	96	4	84-116	20
Manganese	0.118J	30	29.6	99	30	29.0	97	2	87-115	20

ICP-MS QC CHECK TABLE

QC	S4	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : NOREAS
Project : TREASURE ISLAND, IR SITE 6
SDG NO. : 17E075
Method : METHOD SW6020A
Sequence : I98E12
InstrumentID: 98

		ICV				ICSA			ICSAB		
Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		98E12009				98E12013			98E12014		
DateAnalyed :		05/16/1719:01				05/16/1719:19			05/16/1719:24		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LDD	Result	ICSAB EV	%Recovery
Lithium		27.67	30	2.71	92	.8638	0	>0	19.79	20	99
Beryllium		29.46	30	1.26	98	.01513	0	<0.1	21.26	20	106
Boron		28.67	30	1.42	96	.3554	0	<5.0	19.56	20	98
Sodium		28740	30000	0.27	96	97870	100000	98	96080	100000	96
Magnesium		28950	30000	1.57	96	93940	100000	94	92850	100000	93
Aluminum		27990	30000	2.61	93	90570	100000	91	89590	100000	90
Silicon		2907	3000	0.49	97	6.865	0	<20	186.2	200	93
Phosphorus		288	300	1.73	96	99050	100000	99	97250	100000	97
Potassium		30470	30000	1.60	102	101500	100000	102	101700	100000	102
Calcium		29360	30000	0.73	98	102000	100000	102	100200	100000	100
Titanium		295.2	300	0.69	98	2183	2000	109	2200	2000	110
Vanadium		296.8	300	0.50	99	.01758	0	<0.5	20.37	20	102
Chromium		293.3	300	0.72	98	1.275	0	>0.2	21.54	20	108
Manganese	T	1908	2000	0.61	95	.2788	0	>0.2	20.27	20	101
Iron		29950	30000	1.10	100	98170	100000	98	101400	100000	101
Cobalt		291.2	300	1.14	97	.1585	0	<0.2	19.74	20	99
Nickel		287	300	0.32	96	.1126	0	<0.2	19.44	20	97
Copper		287	300	0.26	96	.5943	0	>0.5	19.5	20	98
Zinc		295.5	300	1.79	98	1.892	0	<10	21.75	20	109
Arsenic	T	293.3	300	0.52	98	.08185	0	<0.2	21.24	20	106
Selenium		296.2	300	0.24	99	.05903	0	<0.3	22.76	20	114
Strontium		288.5	300	0.55	96	.6512	0	<1.0	20.5	20	102
Zirconium		26.44	30	0.60	88*	.09447	0	<2.0	11.39	20	57*
Molybdenum		304.7	300	1.77	102	2099	2000	105	2088	2000	104
Silver		28.49	30	2.17	95	.01788	0	<0.2	18.48	20	92
Cadmium		296.8	300	1.50	99	.2566	0	>0.2	19.88	20	99
Tin		312.2	300	0.32	104	.03346	0	<0.2	20.07	20	100
Antimony		61.76	60	1.94	103	.05028	0	<0.5	19.86	20	99
Barium		306.3	300	1.18	102	.09351	0	<0.5	20.03	20	100
Tungsten		29.54	30	0.20	98	.1247	0	<1.0	19.22	20	96
Thallium		284.9	300	0.36	95	.0004895	0	<0.2	18.53	20	93
Lead		287.1	300	0.18	96	.191	0	>0.1	18.75	20	94
Uranium		293.4	300	0.71	98	.003858	0	<0.1	19.61	20	98

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : NOREAS
Project : TREASURE ISLAND, IR SITE 6
SDG NO. : 17E075
Method : METHOD SW6020A
Sequence : I98E12
Instrument ID: 98

CCV SampleID		: CCV1			CCV3			CCV4		
CCV DataFileID		: 98E12016			98E12039			98E12049		
CCV DateTime		: 05/16/17 19:34			05/16/17 21:21			05/16/17 22:07		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	25.1	101	1.86	21.1	85*	0.70	20.6	82*	0.77
Beryllium		25	27.4	110	4.51	19.6	78*	0.67	18.6	74*	0.92
Boron		50	56.4	113*	10.22	39.3	79*	0.74	39.1	78*	0.78
Sodium		25000	23400	94	0.56	22900	92	0.21	23200	93	0.84
Magnesium		25000	24100	96	5.44	24900	99	0.70	24800	99	0.47
Aluminum		25000	23200	93	5.23	24400	98	0.35	24200	97	0.31
Silicon		2500	2300	92	0.30	2080	83*	0.73	2110	84*	0.18
Phosphorus		250	238	95	3.19	263	105	0.57	266	106	0.21
Potassium		25000	25600	102	1.76	26600	106	1.31	26200	105	3.63
Calcium		25000	25600	102	0.79	23800	95	0.31	24000	96	0.07
Titanium		250	251	100	2.65	247	99	1.09	248	99	0.86
Vanadium		250	258	103	1.57	254	101	1.83	242	97	2.79
Chromium		250	255	102	0.75	245	98	1.43	232	93	3.28
Manganese	T	1500	1600	107	3.18	1480	99	1.17	1480	99	0.66
Iron		25000	26300	105	0.50	27000	108	0.66	27200	109	0.22
Cobalt		250	269	107	2.50	249	99	0.65	249	100	0.08
Nickel		250	253	101	2.00	239	96	1.47	225	90	3.18
Copper		250	251	101	1.20	237	95	1.19	222	89*	3.13
Zinc		250	249	99	2.50	253	101	0.32	253	101	0.46
Arsenic	T	250	252	101	1.52	257	103	2.04	258	103	2.03
Selenium		250	261	104	0.81	273	109	0.23	268	107	0.58
Strontium		250	266	106	3.12	264	106	1.05	269	108	0.96
Zirconium		25	24.3	97	0.40	23.3	93	0.32	23.7	95	0.96
Molybdenum		250	249	100	5.03	255	102	0.53	253	101	0.17
Silver		25	24.4	98	6.75	24.0	96	0.75	24.0	96	0.67
Cadmium		250	252	101	2.11	250	100	0.97	250	100	1.03
Tin		250	266	106	1.17	266	106	0.56	266	106	0.93
Antimony		50	49.7	99	1.57	49.8	100	0.97	49.6	99	0.90
Barium		500	521	104	3.25	544	109	0.70	542	108	0.99
Tungsten		25	25.6	102	3.54	24.3	97	0.43	24.2	97	0.50
Thallium		250	262	105	3.27	244	98	1.13	245	98	0.73
Lead		250	264	106	1.31	244	98	0.10	246	98	0.44
Uranium		250	261	104	4.60	242	97	1.13	244	98	1.00

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : NOREAS
Project : TREASURE ISLAND, IR SITE 6
SDG ND. : 17E075
Method : SW6020A
Sequence : I98E12
Instrument ID: 98

CB SampleID		: ICB		CCB1		CCB3		CCB4	
CB DataFileID		: 98E12010		98E12017		98E12040		98E12050	
CB DateTime		: 05/16/1719:05		05/16/1719:38		05/16/1721:25		05/16/1722:11	
PARAMETER	LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium	0	0.2	>0	0.2	>0	0.4	>0	0.5	>0
Beryllium	0.1	0.004	<0.1	0.002	<0.1	0.003	<0.1	0.0004	<0.1
Boron	5.0	0.3	<5.0	0.1	<5.0	0.07	<5.0	1	<5.0
Sodium	50	10	<50	10	<50	10	<50	10	<50
Magnesium	10	0.2	<10	0.5	<10	0.5	<10	0.4	<10
Aluminum	20	0.2	<20	0.3	<20	0.4	<20	0.4	<20
Silicon	20	1	<20	0.5	<20	2	<20	0.4	<20
Phosphorus	25	2	<25	2	<25	4	<25	4	<25
Potassium	20	4	<20	1	<20	0.3	<20	0.6	<20
Calcium	25	0.4	<25	0.6	<25	5	<25	0.8	<25
Titanium	0.5	0.008	<0.5	0.02	<0.5	0.04	<0.5	0.01	<0.5
Vanadium	0.5	0.01	<0.5	0.01	<0.5	0.03	<0.5	0.02	<0.5
Chromium	0.2	0.004	<0.2	0.004	<0.2	0.01	<0.2	0.01	<0.2
Manganese T	0.2	0.05	<0.2	0.03	<0.2	0.07	<0.2	0.08	<0.2
Iron	10	2	<10	2	<10	2	<10	2	<10
Cobalt	0.2	0.01	<0.2	0.003	<0.2	0.01	<0.2	0.007	<0.2
Nickel	0.2	0.02	<0.2	0.02	<0.2	0.02	<0.2	0.03	<0.2
Copper	0.5	0.002	<0.5	0.001	<0.5	0.005	<0.5	0.001	<0.5
Zinc	10	0.1	<10	0.1	<10	0.1	<10	0.09	<10
Arsenic T	0.2	0.02	<0.2	0.008	<0.2	0.01	<0.2	0.01	<0.2
Selenium	0.3	0.05	<0.3	0.04	<0.3	0.04	<0.3	0.04	<0.3
Strontium	1.0	0.006	<1.0	0.008	<1.0	0.04	<1.0	0.04	<1.0
Zirconium	2.0	0.06	<2.0	0.06	<2.0	0.06	<2.0	0.06	<2.0
Molybdenum	0.5	0.05	<0.5	0.06	<0.5	0.03	<0.5	0.03	<0.5
Silver	0.2	0.0006	<0.2	0.001	<0.2	0.0003	<0.2	0.0006	<0.2
Cadmium	0.2	0.001	<0.2	0.002	<0.2	0.001	<0.2	0.005	<0.2
Tin	0.2	0.06	<0.2	0.03	<0.2	0.03	<0.2	0.03	<0.2
Antimony	0.5	0.004	<0.5	0.01	<0.5	0.02	<0.5	0.02	<0.5
Barium	0.5	0.02	<0.5	0.010	<0.5	0.02	<0.5	0.02	<0.5
Tungsten	1.0	0.008	<1.0	0.004	<1.0	0.002	<1.0	0.003	<1.0
Thallium	0.2	0.03	<0.2	0.008	<0.2	0.005	<0.2	0.005	<0.2
Lead	0.1	0.008	<0.1	0.002	<0.1	0.0002	<0.1	0.00002	<0.1
Uranium	0.1	0.02	<0.1	0.01	<0.1	0.01	<0.1	0.01	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	Final WT or Vol	Sample WT or Vol	Dil Multiplier	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE									
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	98E12001	6020tunchk		1.000							
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	98E12002	2008tunchk		1.000							
4		Keyword		TUNEND	End of TUNE									
5		Keyword		CALBEG	Start of CALIB									
6	C:\ICPCHEM\1\METHODS\EM6020HR.M	CalBlk	1101	98E12003	BLNK		Level 1							
7	C:\ICPCHEM\1\METHODS\EM6020HR.M	CalBlk	1202	98E12004	S0		Level 1							
8	C:\ICPCHEM\1\METHODS\EM6020HR.M	CalStd	1104	98E12005	S1 0.5		Level 2							
9	C:\ICPCHEM\1\METHODS\EM6020HR.M	CalStd	1105	98E12006	S2 50		Level 3							
10	C:\ICPCHEM\1\METHODS\EM6020HR.M	CalStd	1106	98E12007	S3 250		Level 4							
11	C:\ICPCHEM\1\METHODS\EM6020HR.M	CalStd	1107	98E12008	S4 500		Level 5							
12	C:\ICPCHEM\1\METHODS\EM6020HR.M	ICV1	1204	98E12009	ICV		1.000							
13	C:\ICPCHEM\1\METHODS\EM6020HR.M	ICB	1202	98E12010	ICB		1.000							
14	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	1305	98E12011	MRLE1601	1/100/10 ppb	1.000							
15	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	1306	98E12012	MRLE1602	0.5/50/4 ppb	1.000							
16	C:\ICPCHEM\1\METHODS\EM6020HR.M	ICS-A	1303	98E12013	ICSA		1.000							
17	C:\ICPCHEM\1\METHODS\EM6020HR.M	ICS-AB	1304	98E12014	ICSAB		1.000							
18	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	1207	98E12015	MRLE1603	CAT 500 ppb	1.000							
19	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCV	1206	98E12016	CCV1		1.000							
20	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCB	1202	98E12017	CCB1		1.000							
21		Keyword		CALEND	End of CALIB									
22		Keyword		SMPLBEG	Start of SMPL									
23	C:\ICPCHEM\1\METHODS\EM6020HR.M	MBW	2101	98E12018	IME014WB		1.000							
24	C:\ICPCHEM\1\METHODS\EM6020HR.M	LCS	2102	98E12019	IME014WL		1.000							
25	C:\ICPCHEM\1\METHODS\EM6020HR.M	LCS	2103	98E12020	IME014WC		1.000							
26	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2104	98E12021	TXE008SB		1.000							
27	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2105	98E12022	E074-01M		1.000							
28	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2106	98E12023	E074-01S		1.000							
29	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2107	98E12024	E074-01A		1.000							
30	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2108	98E12025	E074-01		1.000							
31	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2109	98E12026	E074-01J		5.000							
32	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2110	98E12027	E074-02		1.000							
33	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCV	1206	98E12028	CCV2		1.000							
34	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCB	1202	98E12029	CCB2		1.000							
35	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2111	98E12030	E074-03		1.000							
36	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2112	98E12031	E074-04		1.000							
37	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2201	98E12032	E074-05		1.000							
38	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2202	98E12033	E074-06		1.000							
39	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2203	98E12034	E074-07		1.000							
40	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2204	98E12035	E074-08		1.000							
41	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2205	98E12036	E074-09		1.000							
42	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2206	98E12037	E074-10		1.000							
43	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2207	98E12038	E074-11		1.000							
44	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCV	1206	98E12039	CCV3	Be failed	1.000							
45	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCB	1202	98E12040	CCB3		1.000							
46	C:\ICPCHEM\1\METHODS\EM6020HR.M	MBW	2208	98E12041	IME013WB		1.000							
47	C:\ICPCHEM\1\METHODS\EM6020HR.M	LCS	2209	98E12042	IME013WL		1.000							
48	C:\ICPCHEM\1\METHODS\EM6020HR.M	LCS	2210	98E12043	IME013WC		1.000							
49	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2211	98E12044	E075-03		1.000							
50	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2212	98E12045	E075-08		1.000							
51	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2301	98E12046	E075-09		1.000							

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	Final WT or Vol	Sample WT or Vol	Dil Multiplier	ISTD Conc	Action on Failure	Skip	Result
52	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2302	98E12047	E075-10		1.000							
53	C:\ICPCHEM\1\METHODS\EM6020HR.M	Sample	2303	98E12048	E075-11		1.000							
54	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCV	1206	98E12049	CCV4		1.000							
55	C:\ICPCHEM\1\METHODS\EM6020HR.M	CCB	1202	98E12050	CCB4		1.000							
56		Keyword		StandBy										
57		Keyword		SMPLEND	End of SMPL									
58		Keyword		End	End of Sequence									
59		Keyword		CCVBEG	Start of CCV									
60		Keyword		CCVEND	End of CCV									
61		Keyword		BLKBEG	Start of BLANK									
62		Keyword		BLKEND	End of BLANK									
63		Keyword		ERRBEG	Start of ERRTERM									
64		Keyword		ERREND	End of ERRTERM									

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 5/16/17 1833

End Date: 5/16/17 2211

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: LA

CCV3 Pre fails

Book #:	A98-043
Instrument No.:	98
Analytical Batch:	98F12
Analytical Sequence:	98F12
Method File:	EMG6020HR
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐
Micropipette ID:	☐
Micropipette ID:	☐
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-6020	9
☐ EMAX-200.8	5
☐ EMAX-	
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SMG6011-02.01	MRL1 (0.1)	SMG6011-03.04
S1	↓ -02.04	MRL2 (0.5)	↓ -03.05
S2	-02.05	MRL3 (CAL)	↓ -04.01
S3	-03.01	MRL4	LA
S4	↓ -03.02	MRL5	↓
S5	LA	MRL6	
S6	↓	Internal Standard	SMG210.10.06
S7	↓	Post-Spike 1	SMGA.007.04.06
ICV	SMG6011.01.01	Post-Spike 2	↓ 04.04
CCV	↓ 03.03	Post-Spike 3	LA
ICSA	02.02	Post-Spike 4	↓
ICSAB	↓ 02.07		
6020 TUNE SOLN.	SMG6010.44.04		
200.8 TUNE SOLN.	↓ 44.05		

Analyzed By: CM

Date: 5/16/17

Calibration - d:\DATA\I982017\E\I98E12.B\EM6020HR.C

Last Calib: May 16, 2017 06:59 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020HR.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	d:\data\i982017\e\i98e12.b\98e12004.d\98e12004.d#	S0	May 16 2017 06:38 pm
2	d:\data\i982017\e\i98e12.b\98e12005.d\98e12005.d#	S1 0.5	May 16 2017 06:43 pm
3	d:\data\i982017\e\i98e12.b\98e12006.d\98e12006.d#	S2 50	May 16 2017 06:47 pm
4	d:\data\i982017\e\i98e12.b\98e12007.d\98e12007.d#	S3 250	May 16 2017 06:52 pm
5	d:\data\i982017\e\i98e12.b\98e12008.d\98e12008.d#	S4 500	May 16 2017 06:56 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - d:\DATA\I982017\E\I98E12.B\EM6020HR.C

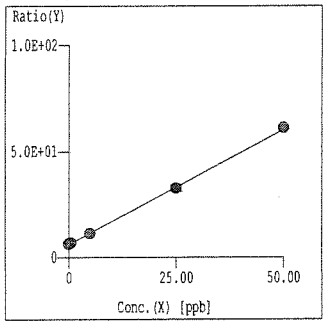
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

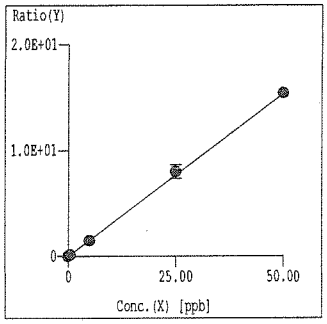
=== Graph Detail ===

Step Mass Element (3) 7 Li | ISTD 6 | Unit ppb



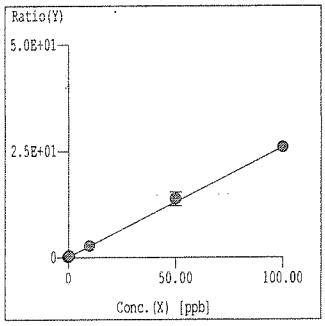
Curve Fit: Y=aX+b
r = 0.9998
Y = 1.082E+000*X +6.166E+000
X = 9.241E-001*Y -5.699E+000
DL = 2.291E-01 ppb
BEC = 5.699 ppb

Step Mass Element (3) 9 Be | ISTD 6 | Unit ppb



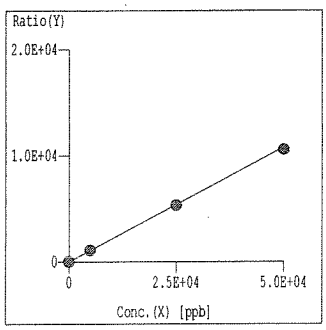
Curve Fit: Y=aX+b
r = 0.9998
Y = 3.072E-001*X +5.165E-004
X = 3.255E+000*Y -1.681E-003
DL = 5.011E-03 ppb
BEC = 1.681E-03 ppb

Step Mass Element (3) 11 B | ISTD 6 | Unit ppb



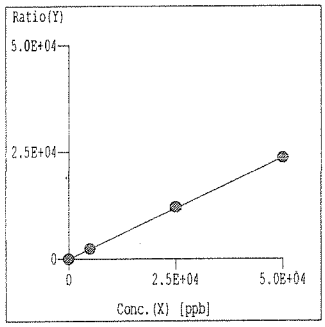
Curve Fit: Y=aX+b
r = 0.9996
Y = 2.585E-001*X +1.199E-001
X = 3.869E+000*Y -4.637E-001
DL = 2.274E-02 ppb
BEC = 4.637E-01 ppb

Step Mass Element (1) 23 Na | ISTD 45 | Unit ppb



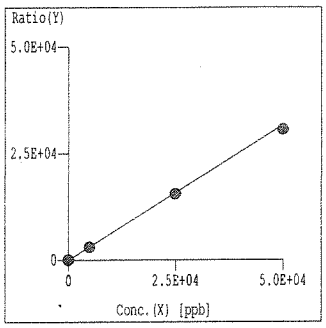
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.159E-001*X +5.532E+000
X = 4.632E+000*Y -2.562E+001
DL = 7.965E-01 ppb
BEC = 25.62 ppb

Step Mass Element (3) 24 Mg | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 4.734E-001*X +1.916E-001
X = 2.112E+000*Y -4.047E-001
DL = 1.409E-02 ppb
BEC = 4.047E-01 ppb

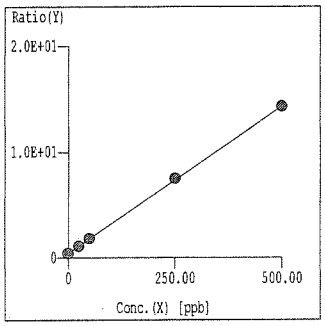
Step Mass Element (3) 27 Al | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.328E-001*X +7.516E-002
X = 1.580E+000*Y -1.188E-001
DL = 8.929E-03 ppb
BEC = 1.188E-01 ppb

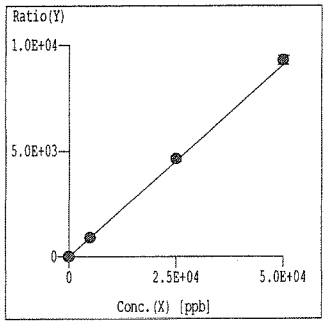
=== Graph Detail ===

Step Mass Element (3) 31 P | ISTD 45 | Unit ppb



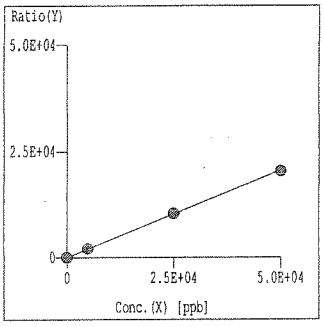
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.781E-002*X +4.121E-001
X = 3.596E+001*Y -1.482E+001
DL = 1.126 ppb
BEC = 14.82 ppb

Step Mass Element (2) 39 K | ISTD 45 | Unit ppb



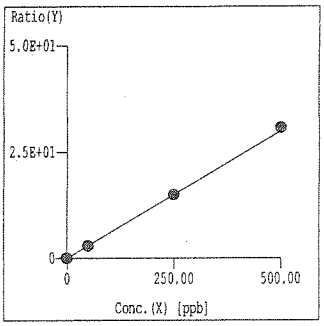
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.811E-001*X +4.088E+000
X = 5.523E+000*Y -2.258E+001
DL = 5.977 ppb
BEC = 22.58 ppb

Step Mass Element (1) 40 Ca | ISTD 45 | Unit ppb



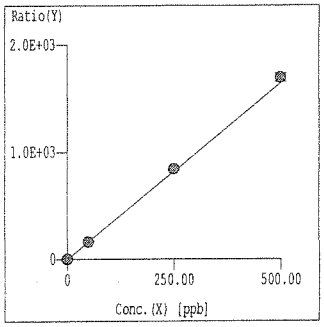
Curve Fit: Y=aX+b
r = 1.0000
Y = 4.118E-001*X +8.810E-001
X = 2.429E+000*Y -2.139E+000
DL = 1.725E-01 ppb
BEC = 2.139 ppb

Step Mass Element (3) 47 Ti | ISTD 45 | Unit ppb



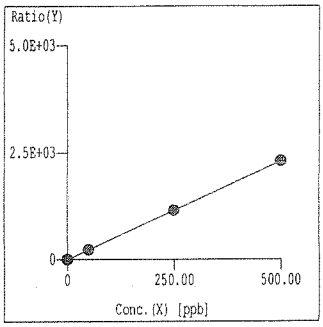
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.990E-002*X +1.526E-003
X = 1.669E+001*Y -2.547E-002
DL = 7.840E-03 ppb
BEC = 2.547E-02 ppb

Step Mass Element (2) 51 V | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 3.280E+000*X +1.295E-001
X = 3.048E-001*Y -3.946E-002
DL = 2.505E-02 ppb
BEC = 3.946E-02 ppb

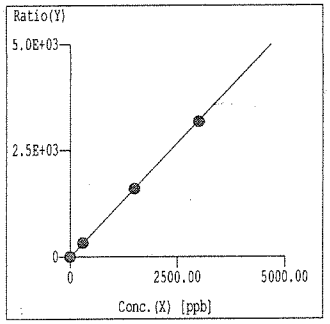
Step Mass Element (2) 52 Cr | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 4.605E+000*X +2.693E-001
X = 2.171E-001*Y -5.849E-002
DL = 1.681E-02 ppb
BEC = 5.849E-02 ppb

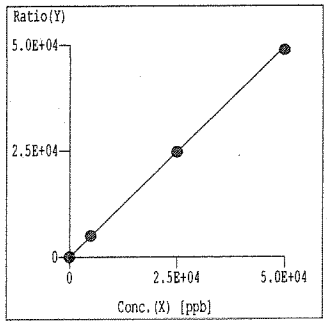
=== Graph Detail ===

Step Mass Element (3) 55 Mn | ISTD 45 | Unit ppb



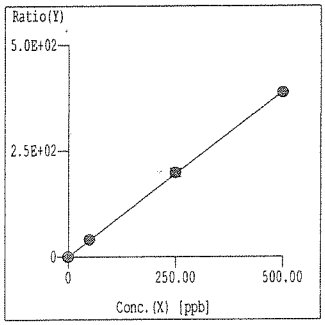
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.067E+000*X +8.366E-002
X = 9.371E-001*Y -7.840E-002
DL = 9.485E-03 ppb
BEC = 7.840E-02 ppb

Step Mass Element (1) 56 Fe | ISTD 45 | Unit ppb



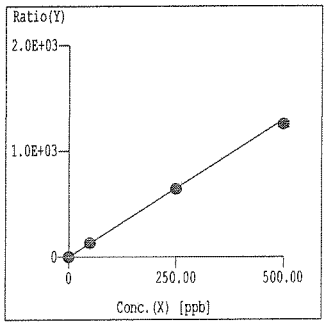
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.903E-001*X +5.099E-001
X = 1.010E+000*Y -5.149E-001
DL = 1.038E-01 ppb
BEC = 5.149E-01 ppb

Step Mass Element (3) 59 Co | ISTD 45 | Unit ppb



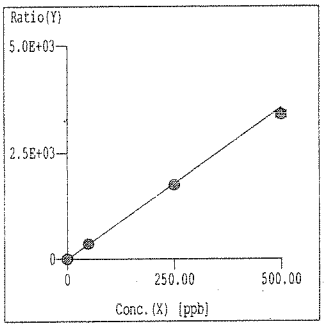
Curve Fit: Y=aX+b
r = 0.9999
Y = 7.797E-001*X +1.901E-002
X = 1.283E+000*Y -2.438E-002
DL = 8.853E-03 ppb
BEC = 2.438E-02 ppb

Step Mass Element (2) 60 Ni | ISTD 45 | Unit ppb



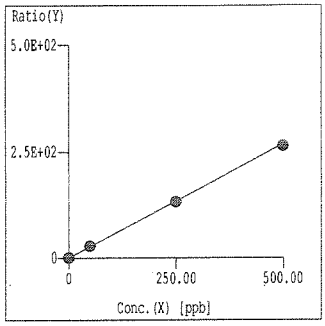
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.585E+000*X +1.378E-001
X = 3.868E-001*Y -5.331E-002
DL = 3.493E-02 ppb
BEC = 5.331E-02 ppb

Step Mass Element (2) 63 Cu | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 7.129E+000*X +2.806E-001
X = 1.403E-001*Y -3.936E-002
DL = 1.051E-02 ppb
BEC = 3.936E-02 ppb

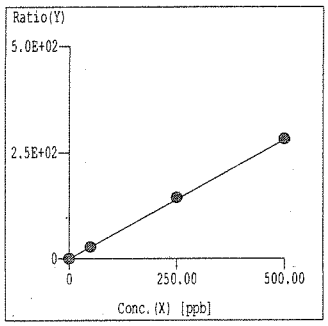
Step Mass Element (3) 66 Zn | ISTD 72 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.366E-001*X +2.406E-001
X = 1.864E+000*Y -4.484E-001
DL = 9.714E-02 ppb
BEC = 4.484E-01 ppb

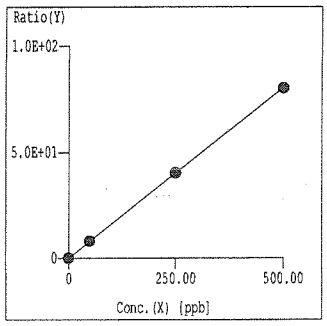
=== Graph Detail ===

Step Mass Element (2) 75 As | ISTD 72 | Unit ppb



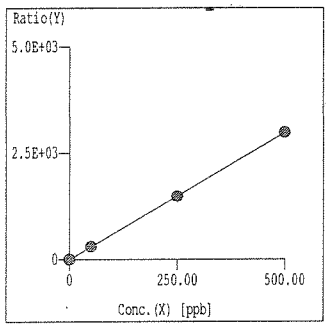
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.605E-001*X +9.397E-003
X = 1.784E+000*Y -1.676E-002
DL = 3.411E-02 ppb
BEC = 1.676E-02 ppb

Step Mass Element (1) 78 Se | ISTD 72 | Unit ppb



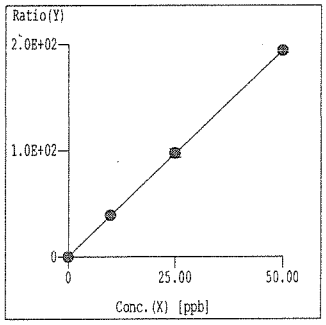
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.612E-001*X +8.515E-004
X = 6.204E+000*Y -5.282E-003
DL = 1.045E-02 ppb
BEC = 5.282E-03 ppb

Step Mass Element (3) 88 Sr | ISTD 72 | Unit ppb



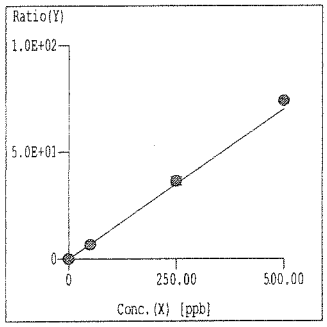
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.950E+000*X +6.062E-002
X = 1.681E-001*Y -1.019E-002
DL = 2.235E-03 ppb
BEC = 1.019E-02 ppb

Step Mass Element (3) 90 Zr | ISTD 72 | Unit ppb



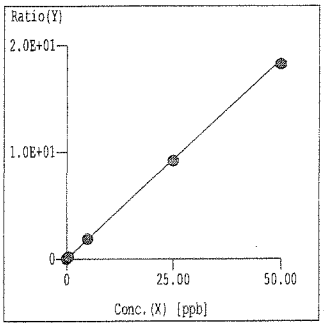
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.873E+000*X +2.766E-001
X = 2.582E-001*Y -7.142E-002
DL = 2.655E-03 ppb
BEC = 7.142E-02 ppb

Step Mass Element (3) 95 Mo | ISTD 115 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.400E-001*X +4.451E-004
X = 7.143E+000*Y -3.179E-003
DL = 1.331E-03 ppb
BEC = 3.179E-03 ppb

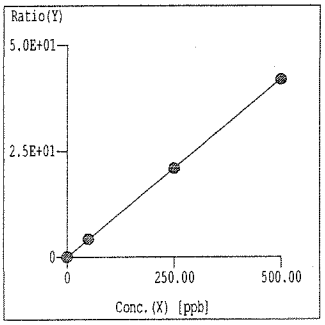
Step Mass Element (3) 107 Ag | ISTD 115 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 3.731E-001*X +1.159E-003
X = 2.680E+000*Y -3.106E-003
DL = 2.675E-03 ppb
BEC = 3.106E-03 ppb

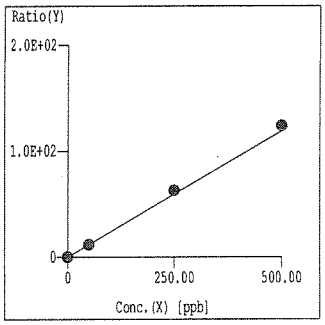
=== Graph Detail ===

Step Mass Element (3) 111 Cd | ISTD 115 | Unit ppb



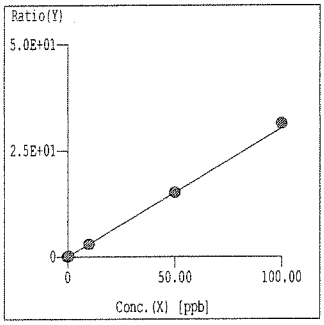
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.410E-002*X +6.906E-004
X = 1.189E+001*Y -8.212E-003
DL = 1.295E-02 ppb
BEC = 8.212E-03 ppb

Step Mass Element (3) 118 Sn | ISTD 115 | Unit ppb



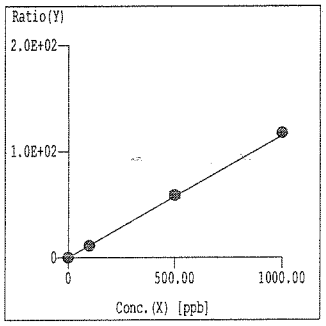
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.377E-001*X +2.524E-003
X = 4.207E+000*Y -1.062E-002
DL = 7.948E-03 ppb
BEC = 1.062E-02 ppb

Step Mass Element (3) 121 Sb | ISTD 115 | Unit ppb



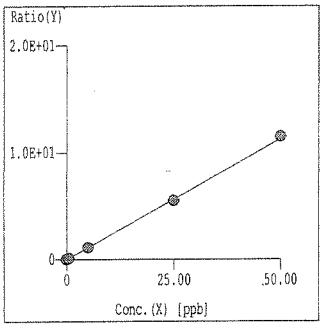
Curve Fit: Y=aX+b
r = 0.9998
Y = 3.032E-001*X +1.925E-003
X = 3.299E+000*Y -6.350E-003
DL = 2.678E-03 ppb
BEC = 6.350E-03 ppb

Step Mass Element (3) 137 Ba | ISTD 115 | Unit ppb



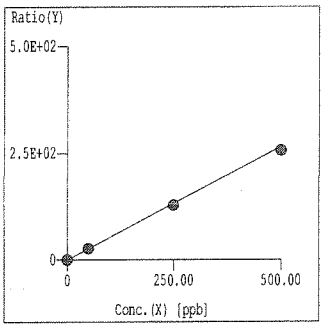
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.148E-001*X +1.860E-003
X = 8.713E+000*Y -1.620E-002
DL = 4.488E-03 ppb
BEC = 1.620E-02 ppb

Step Mass Element (3) 182 W | ISTD 159 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 2.255E-001*X +1.120E-003
X = 4.434E+000*Y -4.967E-003
DL = 1.090E-03 ppb
BEC = 4.967E-03 ppb

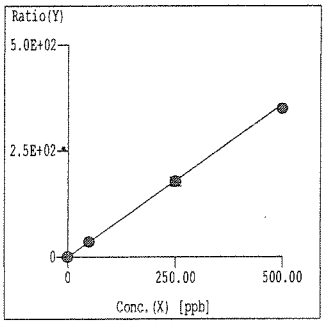
Step Mass Element (3) 205 Tl | ISTD 159 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.306E-001*X +6.646E-003
X = 1.885E+000*Y -1.252E-002
DL = 2.758E-03 ppb
BEC = 1.252E-02 ppb

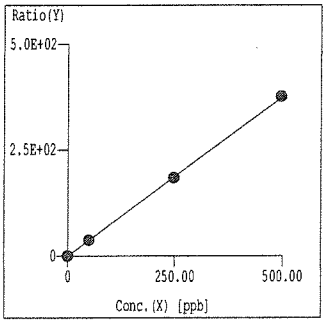
=== Graph Detail ===

Step	Mass	Element	ISTD	Unit
(3)	208	Pb	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 7.187E-001*X +1.684E-002
X = 1.391E+000*Y -2.343E-002
DL = 2.323E-03 ppb
BEC = 2.343E-02 ppb

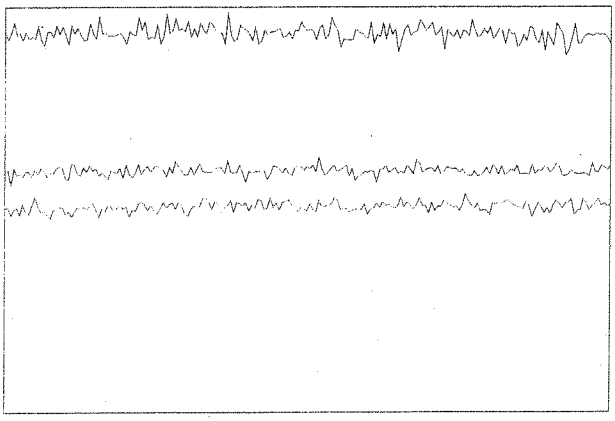
Step	Mass	Element	ISTD	Unit
(3)	238	U	159	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 7.498E-001*X +7.244E-004
X = 1.334E+000*Y -9.662E-004
DL = 2.539E-04 ppb
BEC = 9.662E-04 ppb

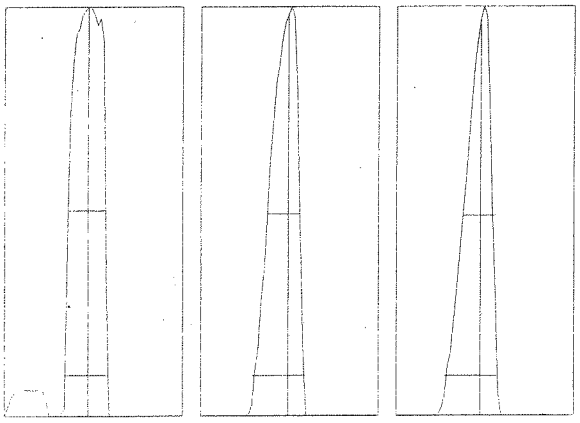
Tune Report

Tune File : NORM.U
Comment : I98E~~13~~7
12 cw 5/16/17



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.760%
Doubly Charged:	70/140	0.677%

m/z	Range	Count	Mean	RSD%	Background
7	50,000	25669.0	25334.2	2.25	1.20
89	100,000	60953.0	59532.1	1.84	2.10
205	50,000	45219.0	46768.1	1.94	3.90
156/140	5	1.957%	1.875%	4.85	
70/140	2	0.737%	0.784%	6.28	



m/z:	7	89	205
Height:	25,482	59,440	44,251
Axis:	6.95	89.00	204.95
W-50%:	0.65	0.55	0.55
W-10%:	0.7500	0.900	0.900

Integration Time:	0.1000 sec
Acquisition Time:	22.7600 sec

Y axis : Linear

Generated : May 16, 2017 18:05:41
Printed : May 16, 2017 18:05:43

Tune Report

Tune File : NORM.U
Comment : I98E12 ~~12~~ cw 5/16/17

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	133
RF Matching	:	1.78 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	1.0004
Torch-H	:	0.5 mm	Omega Lens-ce	:	1.2 V	Axis Offset	:	-0.03
Torch-V	:	0.3 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.15 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	1970 V
Sample Pump	:	--- rps	OctP RF	:	170 V	Pulse HV	:	1040 V
S/C Temp	:	2 degC	OctP Bias	:	-6 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

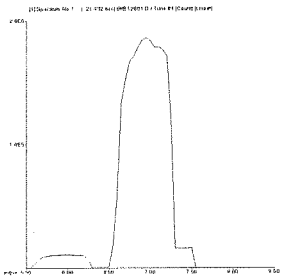
Generated : May 16, 2017 18:05:41
Printed : May 16, 2017 18:05:45

6020 QC Tune Report

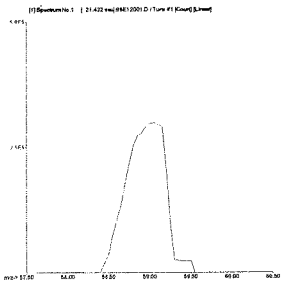
Data File: D:\DATA\I982017\E\I98E12.B\98E12001.D
Date Acquired: May 16 2017 06:25 pm
Acq. Method: TN6020_C.M
Operator: CCapul
Sample Name: 6020tunchk
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

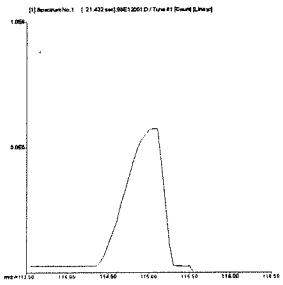
Element	Actual	Required	Flag
7 Li	0.94	5.00	
59 Co	0.91	5.00	
115 In	0.43	5.00	
205 Tl	1.64	5.00	



7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width-10%
Actual: 0.70
Limit 0.90
Flag:



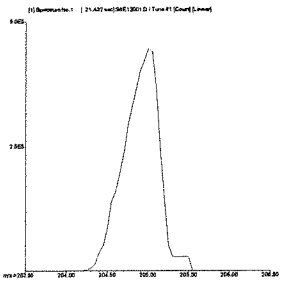
115 In

Mass Calib.

Actual:	115.00	
Required:	114.90 -	115.10
Flag:		

Peak Width-10%

Actual:	0.65
Limit	0.90
Flag:	



205 Tl

Mass Calib.

Actual:	204.95	
Required:	204.90 -	205.10
Flag:		

Peak Width-10%

Actual:	0.65
Limit	0.90
Flag:	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 1501179 - 7A - 5241

all the samples are pH < 2

Book #: EIM-064
Batch: TMEQ134W
Matrix: Water
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	90.8 °C		92.6 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 04 - 06	0.15
LCS-2	↓ - 04 - 07	0.15
MS	Same spike soln & vol as LCS 1&2	
Blank Soil (Bead)	NA	NA
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA - 006 - 04 - 04	0.5 + 1
HCl	↓ - 03 - 10	0.25 + 0.25
H_2O_2	NA	NA
HNO_3(1:1)	NA	NA
pH Strip (0-14)	HC681919	NA
Digestate Location	Metals	
Extract Location	NA	
☑ Reagent Water ID:	SM5A - 03 - 09 - 20	
☑ Thermometer ID:	150590610/E7	
☑ Pipette ID:	239360316	
☐ Pipette ID:	NA	
☐ Pipette ID:	NA	
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: SP
Standard Added By: SP Witnessed By: ✓
Extract Rcvd By: ✓ Checked By: ✓

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
17IME013W01	IME013WB	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W02	IME013WL	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W03	IME013WC	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W04	E031-01	50	ml	5/16/17 10:29	50	50	50	1	DISSOLVED
17IME013W05	E031-02	50	ml	5/16/17 10:30	50	50	50	1	DISSOLVED
17IME013W06	E031-03	50	ml	5/16/17 10:30	50	50	50	1	DISSOLVED
17IME013W07	E053-02	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W08	E053-02M	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W09	E053-02S	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W10	E053-03	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W11	E058-01	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W12	E058-02	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W13	E058-03	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W14	E058-04	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W15	E058-05	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W16	E058-06	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W17	E058-07	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W18	E058-08	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W19	E058-09	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W20	E071-04	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W21	E075-03	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W22	E075-08	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W23	E075-09	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W24	E075-10	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W25	E075-11	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED

SP 5/16/17

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 5/16/17 11:50 Prepared By: SPara

☑ Digestion Ended @ 5/16/17 16:51 Checked By: CW

Comments: Date 5/16/17

SOP EMAX-6020 Rev. 9

LABORATORY REPORT FOR

NOREAS

TREASURE ISLAND, IR SITE 6

PFCS

SDG#: 17E075

Prepared for: EMAX Laboratories, Inc.

Project: 17E075 TREASURE ISLAND, IR SITE 6
(T10000006825)

Analytical Data Package
(Level IV)

Analysis: PFOS and PFOA in water (Method 537 mod.)

Maxxam Job #: B799808

Maxxam Analytics International
6740 Campobello Rd.
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

Table of Contents

Maxxam Analytics International
6740 Campobello Rd.
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

Table of Contents

I hereby certify that to the best of my knowledge all analytical data presented in this report:

- Has been checked for completeness.
- Is accurate, legible and error free.
- Has been conducted in accordance with approved SOP's and that all deviations are clearly listed in the Case Narrative.
- This report has been generated in .pdf format.

Review Performed By:

Maxxam Analytics International
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Glossary of Terms

- ***Detection Limit (DL)*** this can also be called ***Method Detection Limit (MDL***): The lowest concentration or amount of the target analyte that can be identified, measured, and reported with confidence that the analyte concentration is not a false positive value. (Clarification): The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. At the DL, the false positive rate (Type I error) is 1%.

- ***Limit of Detection (LOD*)**: An estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. (Clarification): The smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

- ***Limits of Quantitation (LOQ)*** this can also be called ***Reporting Detection Limit (RDL)***: The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. (Clarification): The lowest concentration that produces a quantitative result within specified limits of precision and bias. For DoD projects, the LOQ shall be set at or above the concentration of the lowest initial calibration standard.

- ***Acceptance Criteria*** are values used by the laboratory to determine that a process is in control.

- ***Accuracy*** is the degree of agreement of a measured value with the true or expected value.

- ***Calibration Standards*** are a set of solutions containing the analytes of interest at a specified concentration.

- ***Calibration Verification Standard*** consists of a calibration standard solution of intermediate concentration (mid-point initial calibration level) used to access whether the initial calibration is still valid

- ***Certified Reference Material*** is a stable homogenous material that is certified by repetitive analysis from a supplier who is certified to generate said materials.

- ***Internal Standard*** a deuterated or ^{13}C-labelled analyte that is added to a sample extract prior to instrumental analysis to compensate for injection variability.

- ***Isomer*** is a member of a group of compounds that differ from each other only in the locations of a specific number of common substituent atoms or groups of atoms on the parent compound.

- ***Method Blank*** is a laboratory control sample using reagents that are known to be free of contamination.

- ***Precision*** is the degree of agreement between the data generated from repetitive measurements under specific conditions.

- ***Quality Assurance*** is a system of activities whose purpose is to provide the producer or user of a product with the assurance that the product meets a defined standard of quality.

- ***Quality Control*** is the overall system of activities whose purpose is to control the quality of a product so that it meets the needs of the end user.

- ***RSD*** is the relative standard deviation.

- ***Blank Spike*** is a laboratory control sample that has been fortified with native analytes of interest.

- ***Window Defining Mixture*** is a solution containing only the earliest and latest eluting congeners within each homologous group of target analytes on a specified GC column.

- ***RPD*** or Relative Percent Difference. A measure used to compare duplicate sample analysis.

- ***EMPC/NDR –*** Peak detected does not meet ratio criteria and has resulted in a higher detection limit.

1.0 Project Narrative

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Maxxam Job: B799808

Sample Analysis

Samples were initially pre-screened and estimated concentrations were obtained so that samples could be appropriately diluted for quantitative analysis on QC batch 4989765 (2017/05/19). Due to high concentrations, 20x dilutions were required for selected analytes in the following samples:

EJU284	*06-MW25-0517*	*Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonate (PFOS)*
EJU285	*06-MW26-0517*	*Perfluorooctanesulfonate (PFOS)*

Detection limits were adjusted accordingly.

Data was evaluated in accordance with acceptance criteria specified in DoD QSM 5.1.

Sin Chii Chia, B.Sc.
schia@maxxam.ca
Office 905 817 5700

PROJECT NARRATIVE

Maxxam Analytics
Client Project #: NO_1702_

Client: EMAX Laboratories Inc
Client Project: NO_1702_

I. SAMPLE RECEIPT/ANALYSIS

a) Sample Listing

Maxxam ID	Client Sample ID	Date Sampled	Date Received	Date Prepped	Date Run	Initial Calibration
PFOS and PFOA in water						
EJU281	QCFB-0517	2017/05/09	2017/05/16	2017/05/18	2017/05/19	2017/05/19
EJU282	06-MW30-0517	2017/05/09	2017/05/16	2017/05/18	2017/05/19	2017/05/19
EJU283	06-MW30-0517DUP	2017/05/09	2017/05/16	2017/05/18	2017/05/19	2017/05/19
EJU284	06-MW25-0517	2017/05/09	2017/05/16	2017/05/18	2017/05/19	2017/05/19
EJU285	06-MW26-0517	2017/05/09	2017/05/16	2017/05/18	2017/05/19	2017/05/19

Run Date is defined as the date of injection of the last calibration standard (12 hours or less) prior to the samples analyzed within that run sequence. Therefore the time of calibration injection that defines the run date is always within 12 hours of the time of sample injection.

b) Shipping Problems: none encountered

c) Documentation Problems: none encountered

II. SAMPLE PREP:

No problems encountered

III. SAMPLE ANALYSIS:

See also comments within the appropriate Certificate of Analysis

a) Hold Times: all within recommended hold times

b) Instrument Calibration: all within control limits

c) Quality Control: All applicable QC meets control criteria, except where otherwise noted.

d) All analytes requiring manual intergration(s) are noted on the sample chromatograms

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for other than the conditions detailed above.

In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the cognizant laboratory official or his/her designee, as verified by this signature.

M Di Grazia

Supervisor- Environmental Customer Service

2017/06/05

Date

2. Sample Management Records

Maxxam Analytics International
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2.1 Sample Custody

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Mississauga, Ontario, Canada
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1-800-668-0639
www.maxxamanalytics.com

AIR

CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
Tel#: 310-618-8889 FAX#: 310-618-0818
email: info@emaxlabs.com

EMAX CONTROL NO	17E075
PROJECT CODE	NO_1702_
TURN-AROUND-TIME	10 BUS. DAYS

SEND REPORT TO:
EMAX LABORATORIES, INC.
1835 W. 205TH ST. CA 90501

ATTN: **Richard Beauvil**

CLIENT: NOREAS
PROJECT: Treasure Island, IR Site 6

SEND SAMPLES TO: MAXXAM

EMAX Sample ID	Client Sample ID	Collection Date	CollectionTime	Matrix	Method		COMMENTS
E075-01	QCFB-0517	5/9/2017	7:30:00 AM	WATER	E537	PFCs	
E075-04	06-MW30-0517	5/9/2017	9:15:00 AM	WATER	E537	PFCs	Level 4
E075-05	06-MW30-0517 DUP	5/9/2017	9:20:00 AM	WATER	E537	PFCs	
E075-06	06-MW25-0517	5/9/2017	10:05:00 AM	WATER	E537	PFCs	
E075-06M	06-MW25-0517MS	5/9/2017	10:05:00 AM	WATER	E537	PFCs	
E075-06S	06-MW25-0517MSD	5/9/2017	10:05:00 AM	WATER	E537	PFCs	
E075-07	06-MW26-0517	5/9/2017	10:50:00 AM	WATER	E537	PFCs	

16-May-17 15:15
Melissa DiGrazia
B799808
TSP ENV-1275

INSTRUCTION: Data Package: 1HC mailed to EMAX and 1 pdf emailed to rbeauvil@emaxlabs.com
EDDS: NEDD and EDF geotracker (Specs sent via email on 5/12/17)

COOLER TEMPERATURE

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
JEFF Y.	5/15/17	15:15	KLAPMO ESTUTPPA [illegible]	2017/05/16	15:15

2.3 / 1.6 / 3.2
2.1 / 2.1 / 2.8

METHOD 537 Modified

DETERMINATION OF SELECTED PERFLUORINATED ALKYL ACIDS IN DRINKING WATER BY SOLID PHASE EXTRACTION AND LIQUID CHROMATOGRAPHY/TANDEM MASS SPECTROMETRY (LC/MS/MS)

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3. Analytical Results

Maxxam Analytics International
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3.1 Summary Report

Maxxam Analytics International
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Your P.O. #: 17E075
Your Project #: NO_1702_
Your C.O.C. #: 17E075

EMAX Laboratories Inc
1835 W 205th St
Torrance, CA
USA 90501

Report Date: 2017/05/26
Report #: R4485318
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B799808
Received: 2017/05/16, 15:15

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
PFOS and PFOA in water	5	2017/05/18	2017/05/19	CAM SOP-00894	EPA 537 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Melissa Di Grazia
Supervisor- Environmental Customer Service
26 May 2017 18:21:34

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Melissa DiGrazia, Supervisor –Environmental Customer Service
Email: MDiGrazia@maxxam.ca
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total Cover Pages : 1

Maxxam Job #: B799808
Report Date: 2017/05/26

EMAX Laboratories Inc
Client Project #: NO_1702_
Your P.O. #: 17E075

RESULTS OF ANALYSES OF WATER

Maxxam ID		EJU281	EJU282	EJU283				
Sampling Date		2017/05/09 07:30	2017/05/09 09:15	2017/05/09 09:20				
COC Number		17E075	17E075	17E075				
	UNITS	QCFB-0517	06-MW30-0517	06-MW30-0517DUP	DL	LOD	LOQ	QC Batch
Miscellaneous Parameters								
Perfluorobutane Sulfonate (PFBS)	ug/L	0.010 U	0.0060 J	0.0065 J	0.0048	0.010	0.020	4989765
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	0.010 U	0.032	0.033	0.0046	0.010	0.020	4989765
Perfluorooctane Sulfonate (PFOS)	ug/L	0.010 U	0.13	0.17	0.0026	0.010	0.020	4989765
Surrogate Recovery (%)								
13C4-Perfluorooctanesulfonate	%	93	87	112				4989765
13C4-Perfluorooctanoic acid	%	93	92	123				4989765
18O2-Perfluorohexanesulfonate	%	90	92	115				4989765

DL = Detection Limit
LOD = Limit of Detection
LOQ = Limit of Quantitation
QC Batch = Quality Control Batch
N/A = Not Applicable

Maxxam ID		EJU284				EJU285				
Sampling Date		2017/05/09 10:05				2017/05/09 10:50				
COC Number		17E075				17E075				
	UNITS	06-MW25-0517	DL	LOD	LOQ	06-MW26-0517	DL	LOD	LOQ	QC Batch
Miscellaneous Parameters										
Perfluorobutane Sulfonate (PFBS)	ug/L	0.12	0.0048	0.010	0.020	0.038	0.0048	0.010	0.020	4989765
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	7.3 (1)	0.092	0.20	0.40	0.75	0.0046	0.010	0.020	4989765
Perfluorooctane Sulfonate (PFOS)	ug/L	7.1 (1)	0.052	0.20	0.40	10 (1)	0.052	0.20	0.40	4989765
Surrogate Recovery (%)										
13C4-Perfluorooctanesulfonate	%	108				100				4989765
13C4-Perfluorooctanoic acid	%	113				115				4989765
18O2-Perfluorohexanesulfonate	%	103				108				4989765

DL = Detection Limit
LOD = Limit of Detection
LOQ = Limit of Quantitation
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Due to high concentrations of the target analyte, sample required 20x dilution. Detection limit was adjusted accordingly.

Maxxam Job #: B799808
Report Date: 2017/05/26

EMAX Laboratories Inc
Client Project #: NO_1702_
Your P.O. #: 17E075

TEST SUMMARY

Maxxam ID: EJU281 **Collected:** 2017/05/09
Sample ID: QCFB-0517 **Shipped:**
Matrix: Water **Received:** 2017/05/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water	LCMS	4989765	2017/05/18	2017/05/19	Daniela Zupu

Maxxam ID: EJU282 **Collected:** 2017/05/09
Sample ID: 06-MW30-0517 **Shipped:**
Matrix: Water **Received:** 2017/05/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water	LCMS	4989765	2017/05/18	2017/05/19	Daniela Zupu

Maxxam ID: EJU283 **Collected:** 2017/05/09
Sample ID: 06-MW30-0517DUP **Shipped:**
Matrix: Water **Received:** 2017/05/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water	LCMS	4989765	2017/05/18	2017/05/19	Daniela Zupu

Maxxam ID: EJU284 **Collected:** 2017/05/09
Sample ID: 06-MW25-0517 **Shipped:**
Matrix: Water **Received:** 2017/05/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water	LCMS	4989765	2017/05/18	2017/05/19	Daniela Zupu

Maxxam ID: EJU285 **Collected:** 2017/05/09
Sample ID: 06-MW26-0517 **Shipped:**
Matrix: Water **Received:** 2017/05/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water	LCMS	4989765	2017/05/18	2017/05/19	Daniela Zupu

Maxxam Job #: B799808
Report Date: 2017/05/26

EMAX Laboratories Inc
Client Project #: NO_1702_
Your P.O. #: 17E075

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.4°C
Package 2	2.3°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B799808
Report Date: 2017/05/26

EMAX Laboratories Inc
Client Project #: NO_1702_
Your P.O. #: 17E075

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4989765	DZU	Matrix Spike(EJU284)	13C4-Perfluorooctanesulfonate	2017/05/19		71	%	50 - 150
			13C4-Perfluorooctanoic acid	2017/05/19		74	%	50 - 150
			18O2-Perfluorohexanesulfonate	2017/05/19		85	%	50 - 150
			Perfluorobutane Sulfonate (PFBS)	2017/05/19		106	%	70 - 130
			Perfluoro-n-Octanoic Acid (PFOA)	2017/05/19		NC	%	70 - 130
			Perfluorooctane Sulfonate (PFOS)	2017/05/19		NC	%	70 - 130
4989765	DZU	Matrix Spike DUP(EJU284)	13C4-Perfluorooctanesulfonate	2017/05/19		71	%	50 - 150
			13C4-Perfluorooctanoic acid	2017/05/19		77	%	50 - 150
			18O2-Perfluorohexanesulfonate	2017/05/19		80	%	50 - 150
			Perfluorobutane Sulfonate (PFBS)	2017/05/19		103	%	70 - 130
			Perfluoro-n-Octanoic Acid (PFOA)	2017/05/19		NC	%	70 - 130
			Perfluorooctane Sulfonate (PFOS)	2017/05/19		NC	%	70 - 130
4989765	DZU	MS/MSD RPD	Perfluorobutane Sulfonate (PFBS)	2017/05/19	3.3		%	30
			Perfluoro-n-Octanoic Acid (PFOA)	2017/05/19	0		%	30
			Perfluorooctane Sulfonate (PFOS)	2017/05/19	0		%	30
4989765	DZU	Spiked Blank	13C4-Perfluorooctanesulfonate	2017/05/19		88	%	50 - 150
			13C4-Perfluorooctanoic acid	2017/05/19		94	%	50 - 150
			18O2-Perfluorohexanesulfonate	2017/05/19		92	%	50 - 150
			Perfluorobutane Sulfonate (PFBS)	2017/05/19		92	%	70 - 130
			Perfluoro-n-Octanoic Acid (PFOA)	2017/05/19		101	%	70 - 130
			Perfluorooctane Sulfonate (PFOS)	2017/05/19		98	%	70 - 130
4989765	DZU	Method Blank	13C4-Perfluorooctanesulfonate	2017/05/19		87	%	50 - 150
			13C4-Perfluorooctanoic acid	2017/05/19		89	%	50 - 150
			18O2-Perfluorohexanesulfonate	2017/05/19		83	%	50 - 150
			Perfluorobutane Sulfonate (PFBS)	2017/05/19	0.010 U, LOD=0.010		ug/L	
			Perfluoro-n-Octanoic Acid (PFOA)	2017/05/19	0.010 U, LOD=0.010		ug/L	
			Perfluorooctane Sulfonate (PFOS)	2017/05/19	0.010 U, LOD=0.010		ug/L	

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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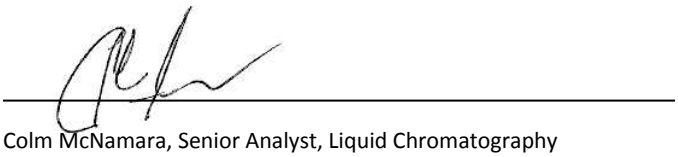
Maxxam Job #: B799808
Report Date: 2017/05/26

EMAX Laboratories Inc
Client Project #: NO_1702_
Your P.O. #: 17E075

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Colm McNamara, Senior Analyst, Liquid Chromatography

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

3.2 Sample Chromatograms

Maxxam Analytics International
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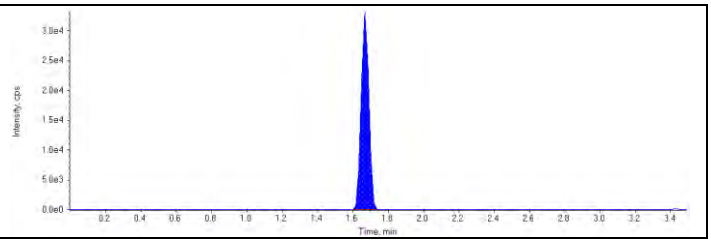
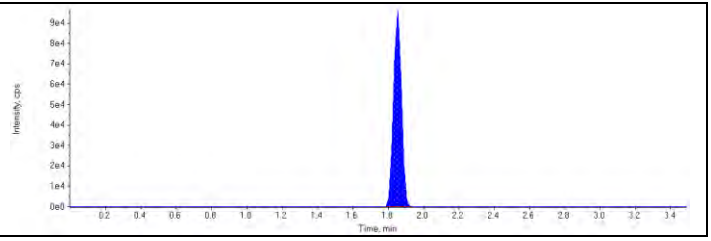
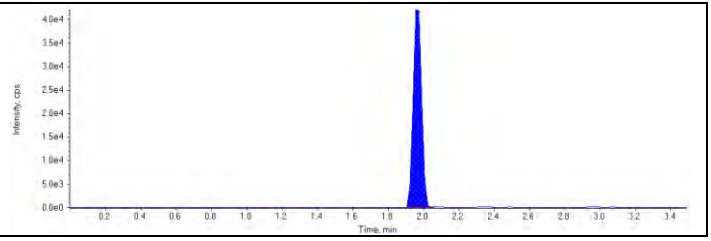
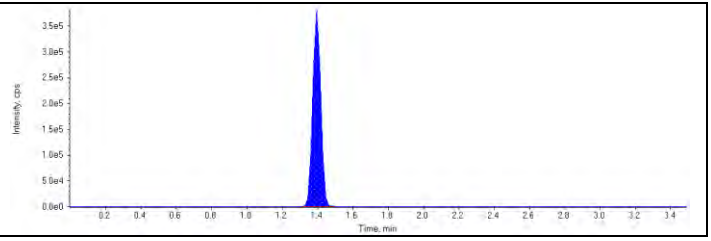
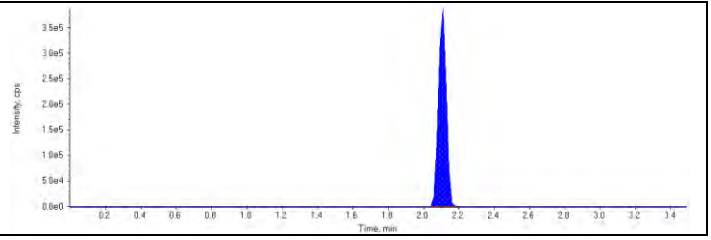
Sample ID	4989765~EJU281-01	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	22
Acquisition Date	2017/05/19 8:25:09 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	100000.	1.67	1.00	-
MPFOA	299000.	1.85	1.00	-
MPFOS	140000.	1.97	1.00	-
13C6-PFHxA IS	1200000.	1.40	41.7	-
13C9-PFDA IS	1190000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	774	1.27	N/A	0.00167	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	1200	1.84	N/A	0.00193	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	921	1.98	N/A	0.00490	N/A
13C4-PFOA	299000	1.85	N/A	93.0	N/A
13C4-PFOS	140000	1.97	N/A	92.6	N/A
13C8-PFOSA	272000	2.46	N/A	78.9	N/A
13C6-PFHxA	1200000	1.40	N/A	2.54	N/A
13C9-PFDA	1190000	2.11	N/A	2.67	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

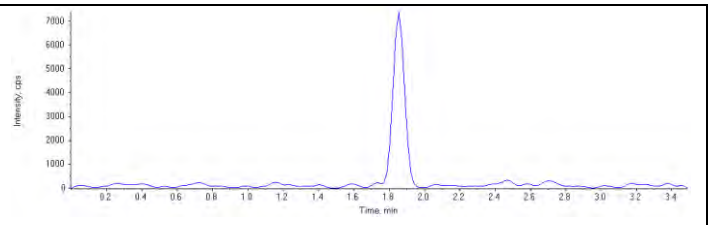
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



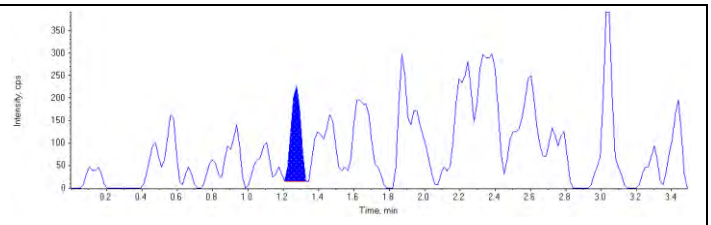
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.27 (1.11) min

Calculated Conc: 0.00167 µg/L

Area Ratio: 0.00773

Sample Type: (Unknown)



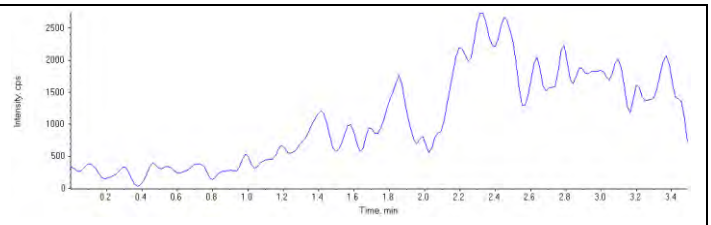
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



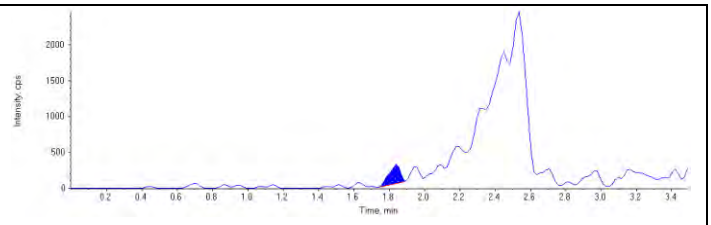
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.84 (1.85) min

Calculated Conc: 0.00193 µg/L

Area Ratio: 0.00400

Sample Type: (Unknown)



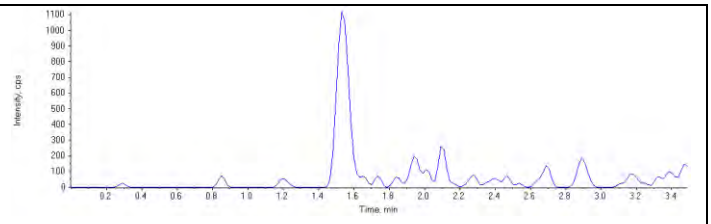
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



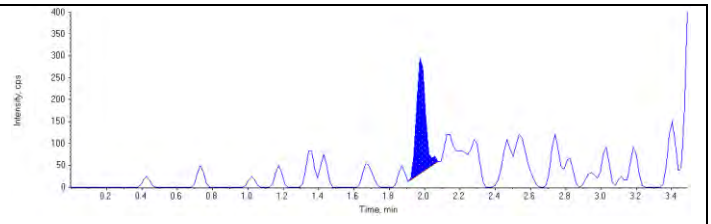
PFOS 2 (498.900/98.900 Da)

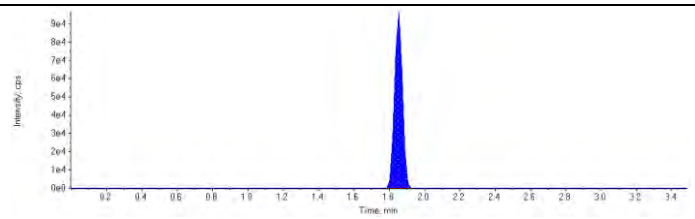
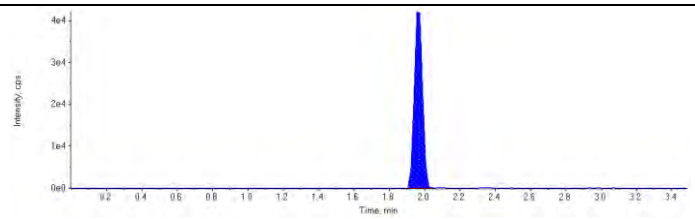
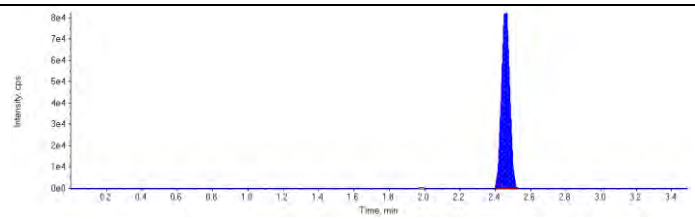
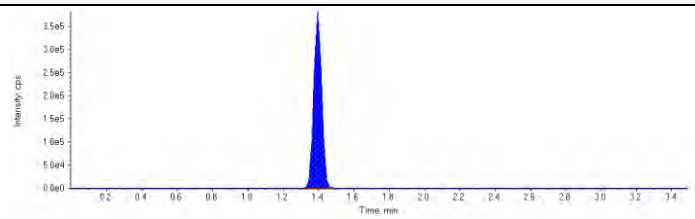
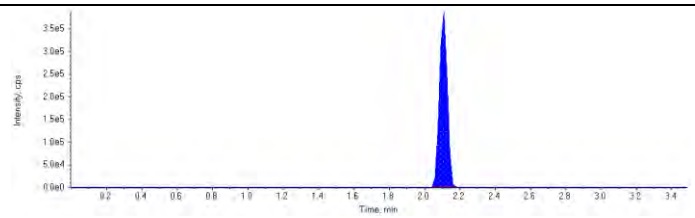
RT (Exp. RT): 1.98 (1.96) min

Calculated Conc: 0.00490 µg/L

Area Ratio: 0.00658

Sample Type: (Unknown)

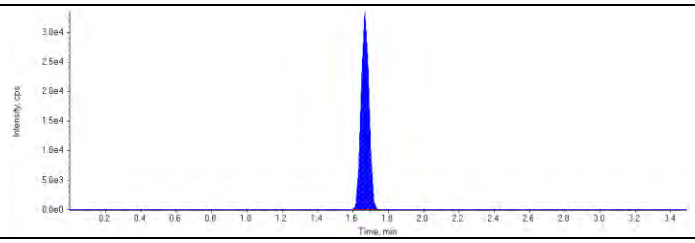
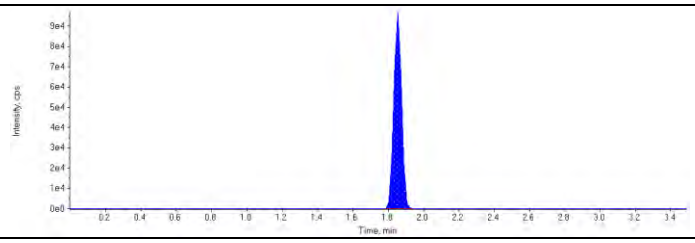
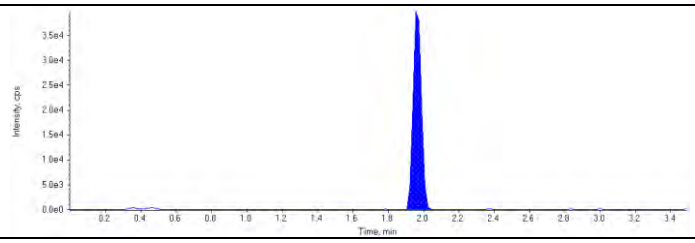
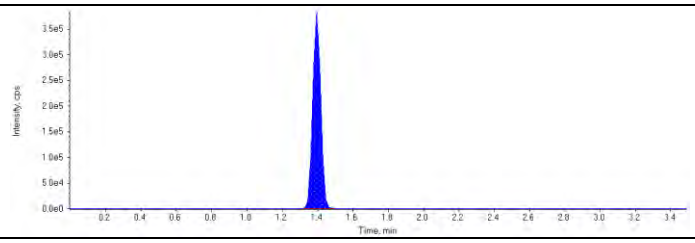
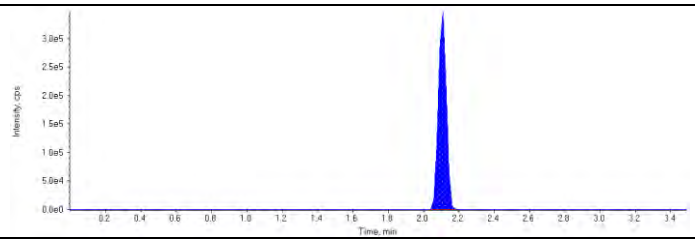


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 93.0 µg/L Area Ratio: 0.249 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 92.6 µg/L Area Ratio: 0.117 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 78.9 µg/L Area Ratio: 0.228 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.54 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.67 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

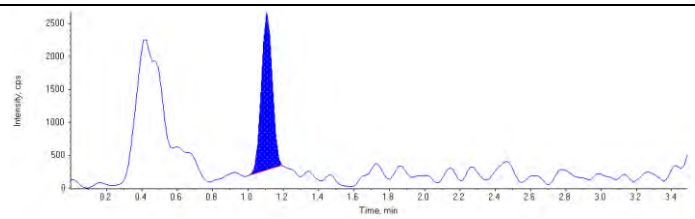
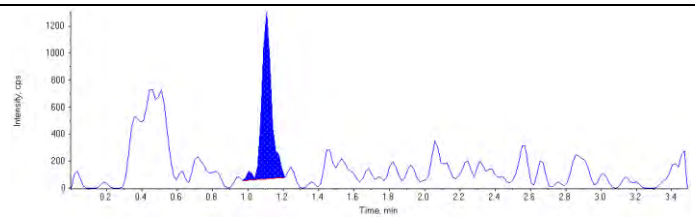
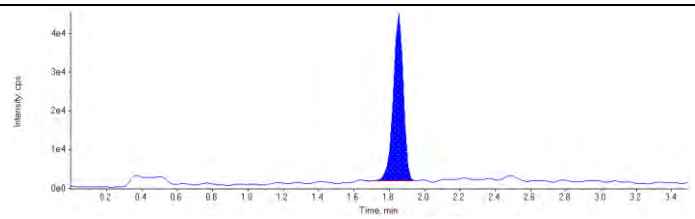
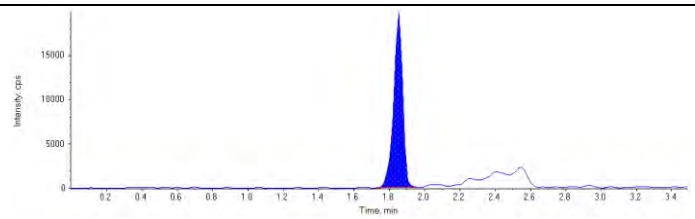
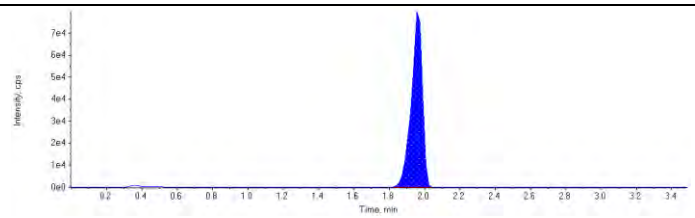
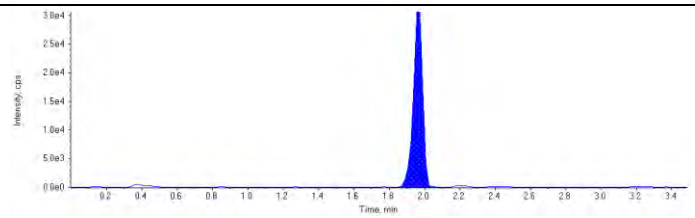
Sample ID	4989765~EJU282-01	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	23
Acquisition Date	2017/05/19 8:30:13 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

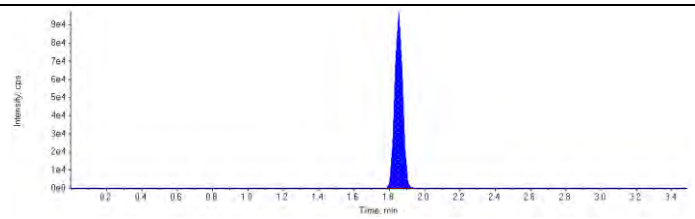
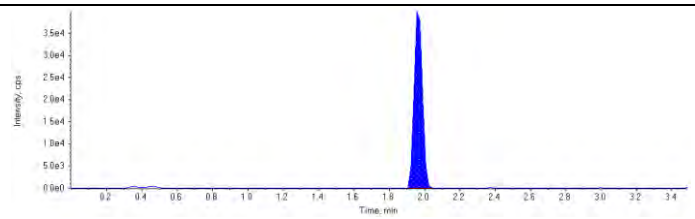
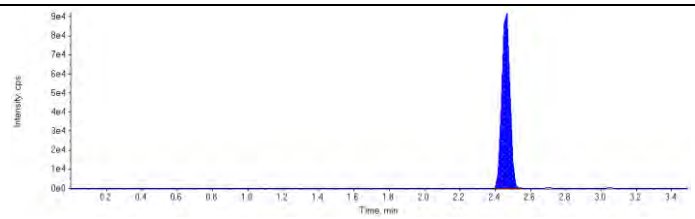
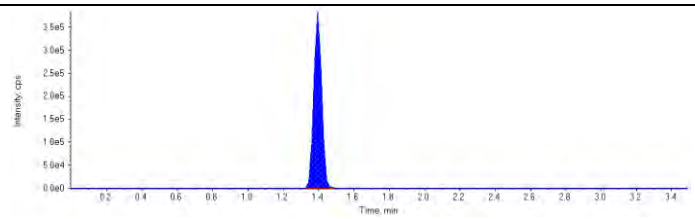
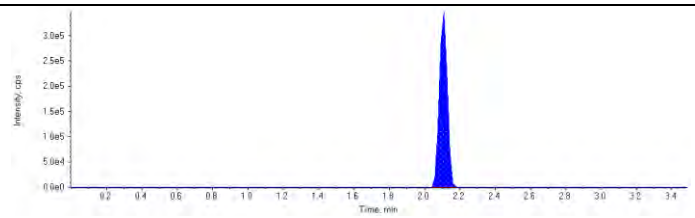
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	102000.	1.67	1.00	-
MPFOA	296000.	1.85	1.00	-
MPFOS	131000.	1.96	1.00	-
13C6-PFHxA IS	1200000.	1.40	41.7	-
13C9-PFDA IS	1080000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	10100	1.11	N/A	0.00600	N/A
PFBS 2	4700	1.11	N/A	0.00330	N/A
PFOA 1	169000	1.85	N/A	0.0316	N/A
PFOA 2	69600	1.85	N/A	0.0330	N/A
PFOS 1	346000	1.96	N/A	0.130	N/A
PFOS 2	116000	1.97	N/A	0.134	N/A
13C4-PFOA	296000	1.85	N/A	92.4	N/A
13C4-PFOS	131000	1.96	N/A	86.8	N/A
13C8-PFOSA	298000	2.46	N/A	95.4	N/A
13C6-PFHxA	1200000	1.40	N/A	2.53	N/A
13C9-PFDA	1080000	2.11	N/A	2.42	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.96(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

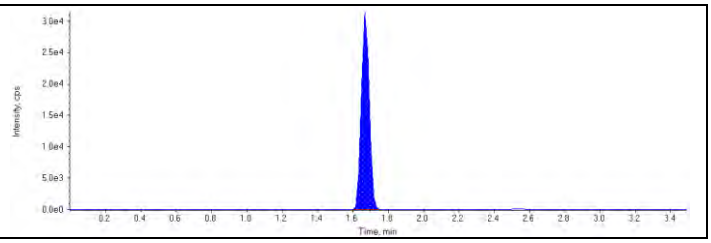
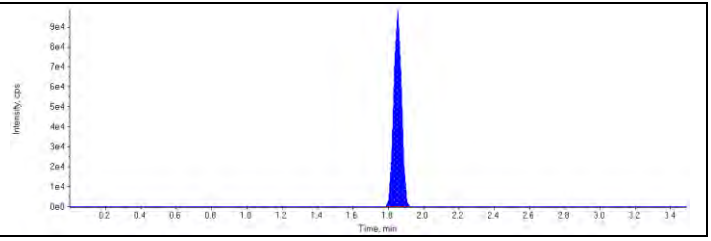
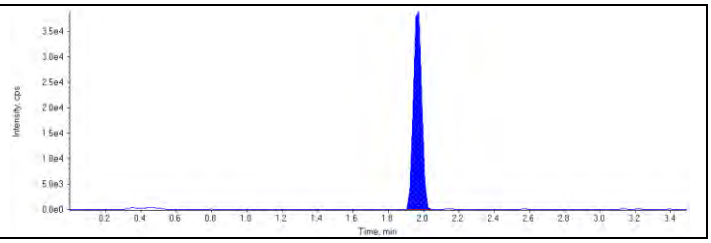
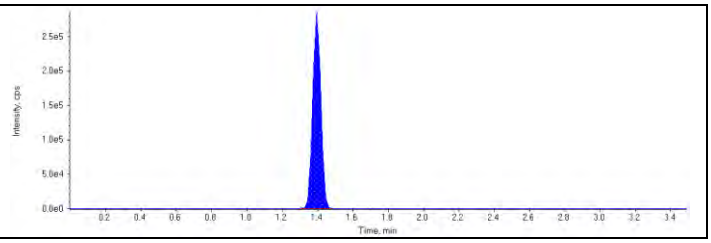
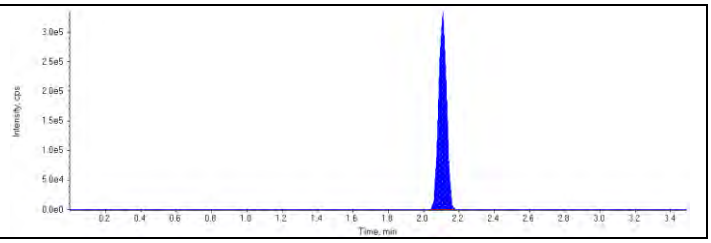
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.11 (1.11) min Calculated Conc: 0.00600 µg/L Area Ratio: 0.0997 Sample Type: (Unknown)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.11 (1.11) min Calculated Conc: 0.00330 µg/L Area Ratio: 0.0463 Sample Type: (Unknown)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.0316 µg/L Area Ratio: 0.570 Sample Type: (Unknown)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.0330 µg/L Area Ratio: 0.235 Sample Type: (Unknown)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 0.130 µg/L Area Ratio: 2.65 Sample Type: (Unknown)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.97 (1.96) min Calculated Conc: 0.134 µg/L Area Ratio: 0.883 Sample Type: (Unknown)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 92.4 µg/L Area Ratio: 0.248 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.96 (1.97) min Calculated Conc: 86.8 µg/L Area Ratio: 0.109 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 95.4 µg/L Area Ratio: 0.276 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.53 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.42 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

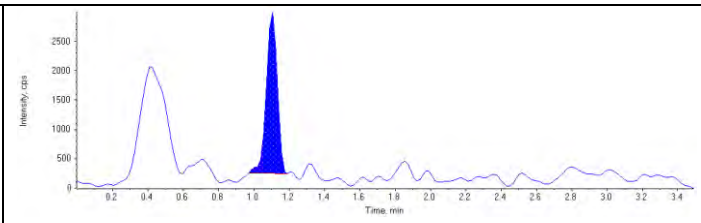
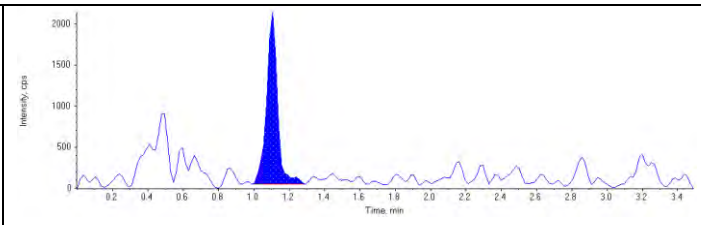
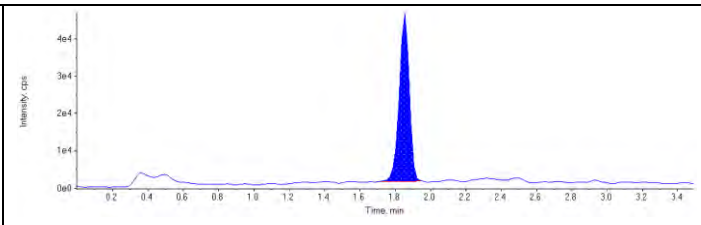
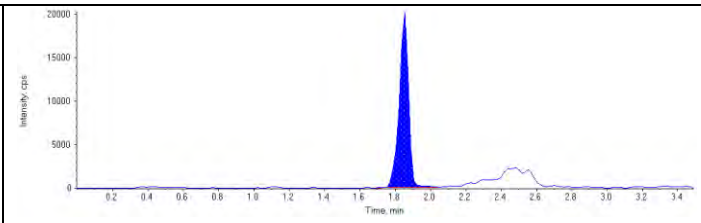
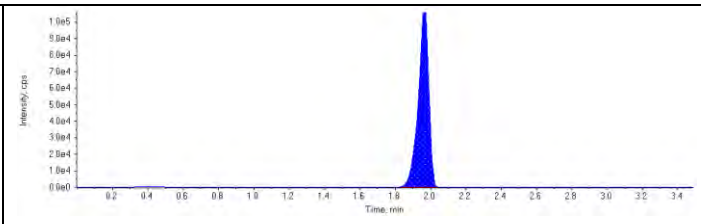
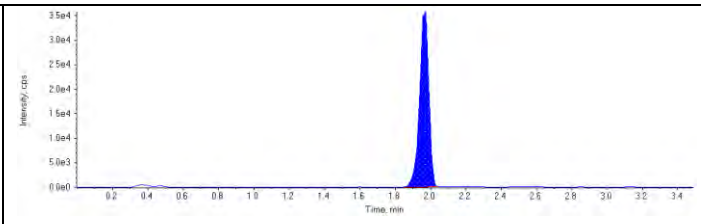
Sample ID	4989765~EJU283-01	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	24
Acquisition Date	2017/05/19 8:50:27 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

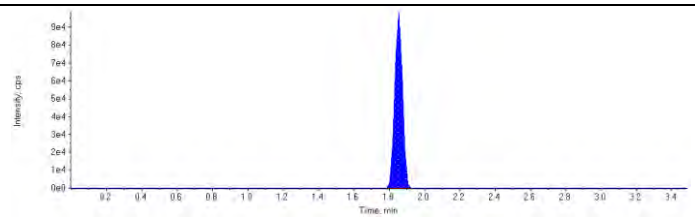
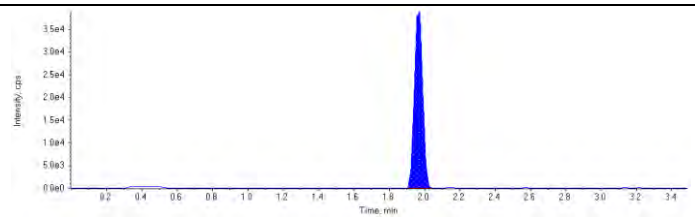
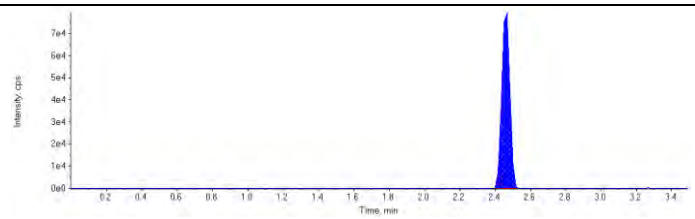
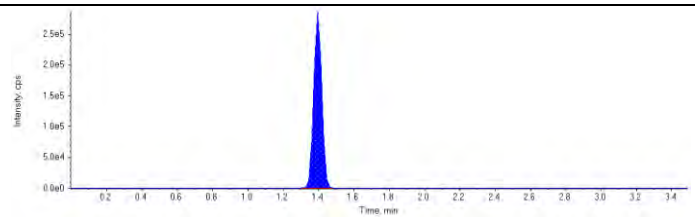
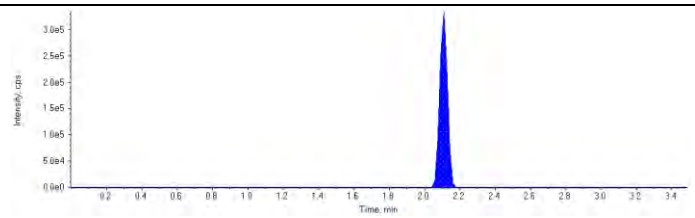
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	97300.	1.67	1.00	-
MPFOA	299000.	1.85	1.00	-
MPFOS	129000.	1.97	1.00	-
13C6-PFHxA IS	912000.	1.40	41.7	-
13C9-PFDA IS	1020000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	11800	1.10	N/A	0.00648	N/A
PFBS 2	8970	1.10	N/A	0.00526	N/A
PFOA 1	177000	1.85	N/A	0.0328	N/A
PFOA 2	73700	1.85	N/A	0.0346	N/A
PFOS 1	448000	1.97	N/A	0.170	N/A
PFOS 2	131000	1.97	N/A	0.154	N/A
13C4-PFOA	299000	1.85	N/A	123.	N/A
13C4-PFOS	129000	1.97	N/A	112.	N/A
13C8-PFOSA	257000	2.46	N/A	87.4	N/A
13C6-PFHxA	912000	1.40	N/A	1.93	N/A
13C9-PFDA	1020000	2.11	N/A	2.28	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

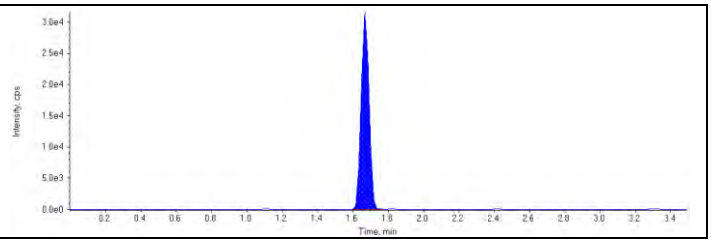
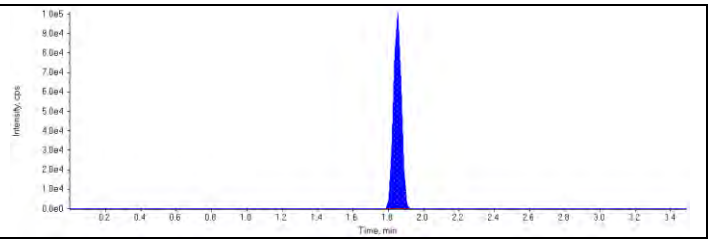
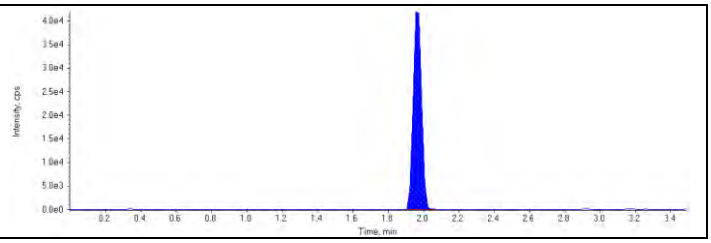
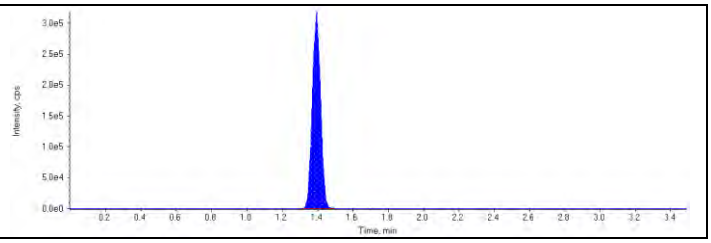
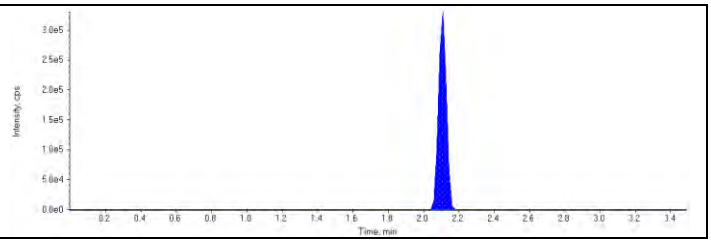
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.00648 µg/L Area Ratio: 0.122 Sample Type: (Unknown)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.00526 µg/L Area Ratio: 0.0923 Sample Type: (Unknown)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.0328 µg/L Area Ratio: 0.591 Sample Type: (Unknown)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.0346 µg/L Area Ratio: 0.246 Sample Type: (Unknown)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.97 (1.96) min Calculated Conc: 0.170 µg/L Area Ratio: 3.47 Sample Type: (Unknown)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.97 (1.96) min Calculated Conc: 0.154 µg/L Area Ratio: 1.02 Sample Type: (Unknown)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 123. µg/L Area Ratio: 0.328 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 112. µg/L Area Ratio: 0.141 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 87.4 µg/L Area Ratio: 0.252 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 1.93 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.28 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

Sample ID	4989765~EJU284-01:20x	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	25
Acquisition Date	2017/05/19 8:55:31 PM	**Dilution Factor**	0.480
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	Reported for PFOA & PFOS		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	97600.	1.67	1.00	-
MPFOA	311000.	1.85	1.00	-
MPFOS	140000.	1.97	1.00	-
13C6-PFHxA IS	1020000.	1.39	2.08	-
13C9-PFDA IS	1020000.	2.11	2.08	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	23500	1.10	N/A	0.181	N/A
PFBS 2	12300	1.10	N/A	0.133	N/A
PFOA 1	2080000	1.85	N/A	7.32	N/A
PFOA 2	924000	1.85	N/A	8.04	N/A
PFOS 1	1020000	1.96	N/A	7.05	N/A
PFOS 2	305000	1.96	N/A	6.49	N/A
13C4-PFOA	311000	1.85	N/A	113.	N/A
13C4-PFOS	140000	1.97	N/A	108.	N/A
13C8-PFOSA	278000	2.46	N/A	94.3	N/A
13C6-PFHxA	1020000	1.39	N/A	43.3	N/A
13C9-PFDA	1020000	2.11	N/A	45.4	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 2.08 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 2.08 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

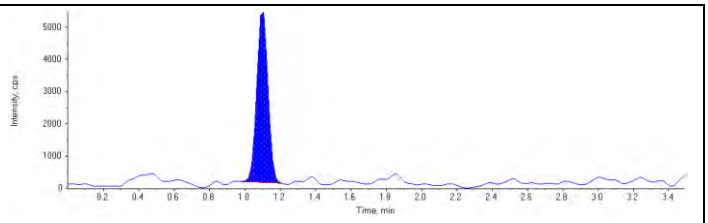
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 0.181 µg/L

Area Ratio: 0.241

Sample Type: (Unknown)



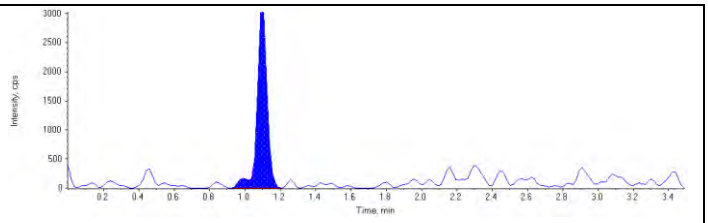
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 0.133 µg/L

Area Ratio: 0.126

Sample Type: (Unknown)



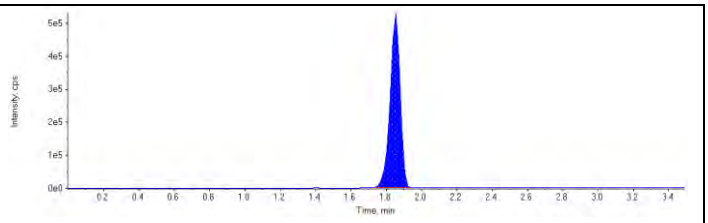
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 7.32 µg/L

Area Ratio: 6.71

Sample Type: (Unknown)



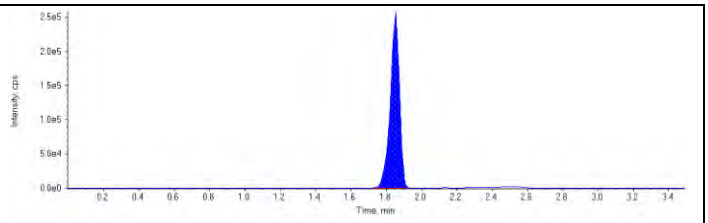
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 8.04 µg/L

Area Ratio: 2.97

Sample Type: (Unknown)



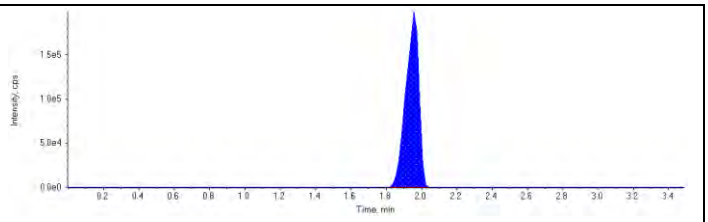
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 7.05 µg/L

Area Ratio: 7.32

Sample Type: (Unknown)



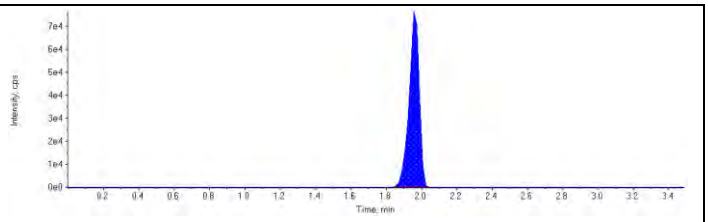
PFOS 2 (498.900/98.900 Da)

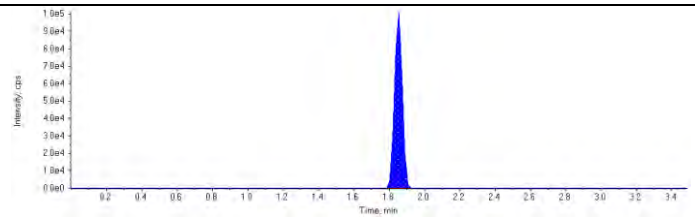
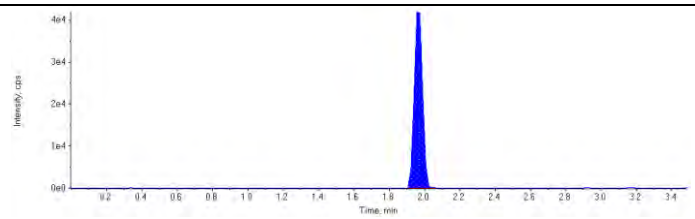
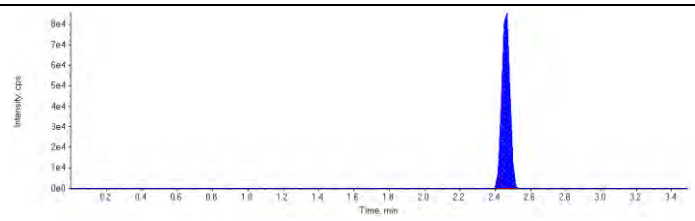
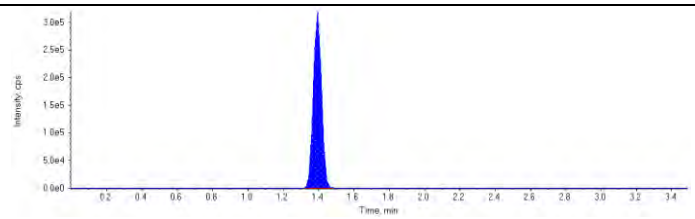
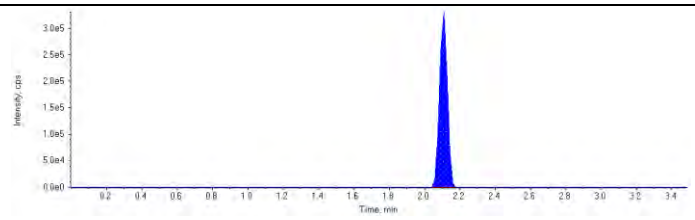
RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 6.49 µg/L

Area Ratio: 2.18

Sample Type: (Unknown)

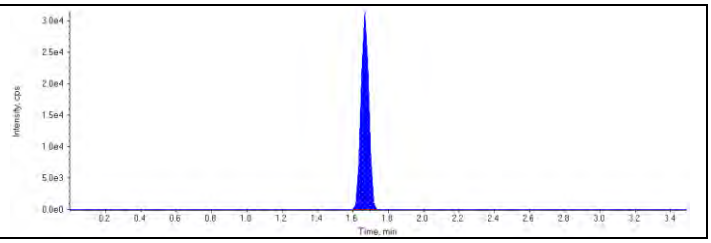
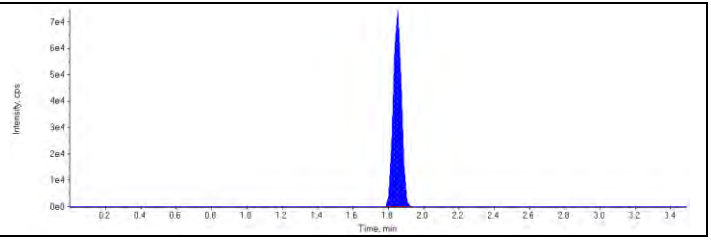
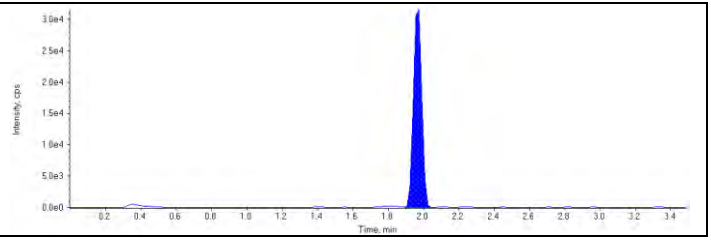
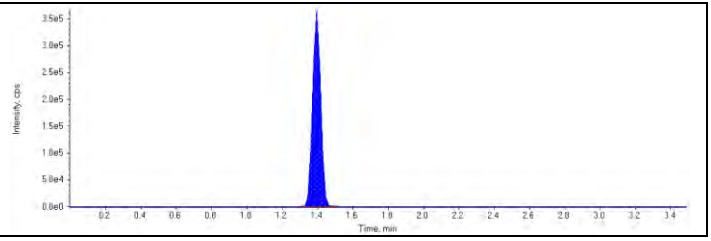
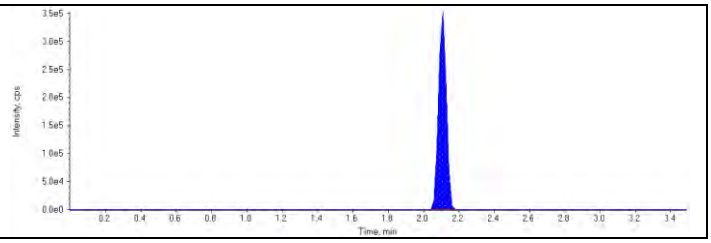


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 113. µg/L Area Ratio: 0.304 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 108. µg/L Area Ratio: 0.137 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 94.3 µg/L Area Ratio: 0.273 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 43.3 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 45.4 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

Sample ID	4989765~EJU284-01	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	26
Acquisition Date	2017/05/19 9:00:35 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	Reported for PFBS		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	95300.	1.67	1.00	-
MPFOA	237000.	1.85	1.00	-
MPFOS	105000.	1.97	1.00	-
13C6-PFHxA IS	1170000.	1.40	41.7	-
13C9-PFDA IS	1090000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	507000	1.10	N/A	0.118	N/A
PFBS 2	264000	1.10	N/A	0.119	N/A
PFOA 1	21700000	1.85	N/A	4.99	N/A
PFOA 2	13800000	1.85	N/A	7.84	N/A
PFOS 1	18800000	1.96	N/A	8.53	N/A
PFOS 2	5100000	1.96	N/A	7.17	N/A
13C4-PFOA	237000	1.85	N/A	75.5	N/A
13C4-PFOS	105000	1.97	N/A	70.9	N/A
13C8-PFOSA	289000	2.46	N/A	92.1	N/A
13C6-PFHxA	1170000	1.40	N/A	2.48	N/A
13C9-PFDA	1090000	2.11	N/A	2.43	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

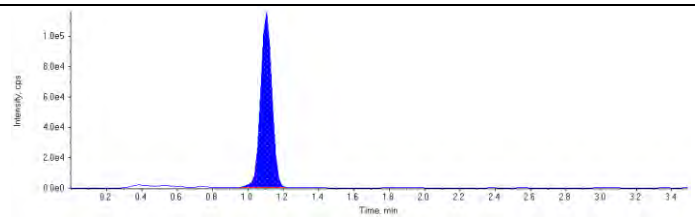
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 0.118 µg/L

Area Ratio: 5.31

Sample Type: (Unknown)



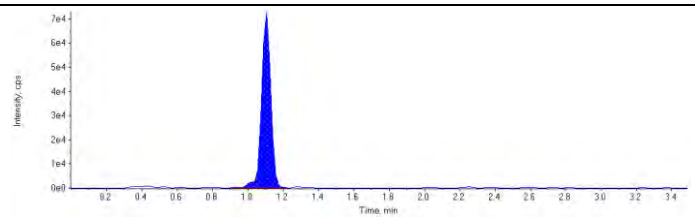
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 0.119 µg/L

Area Ratio: 2.77

Sample Type: (Unknown)



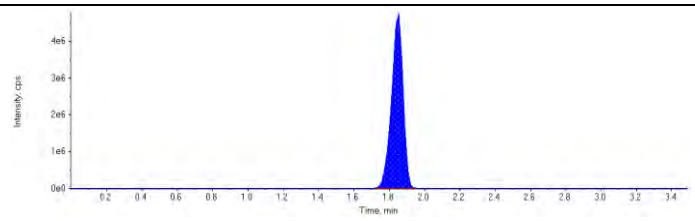
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 4.99 µg/L

Area Ratio: 91.5

Sample Type: (Unknown)



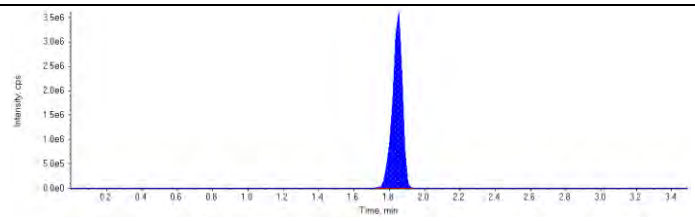
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 7.84 µg/L

Area Ratio: 58.2

Sample Type: (Unknown)



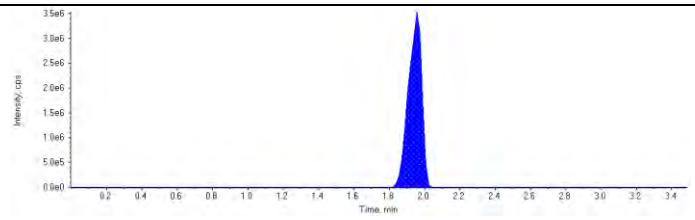
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 8.53 µg/L

Area Ratio: 180.

Sample Type: (Unknown)



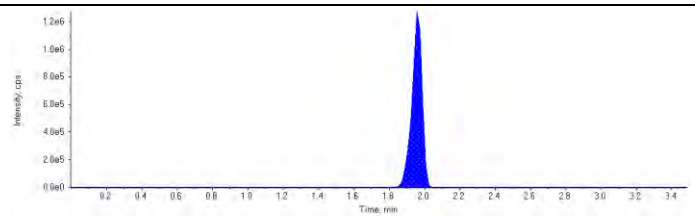
PFOS 2 (498.900/98.900 Da)

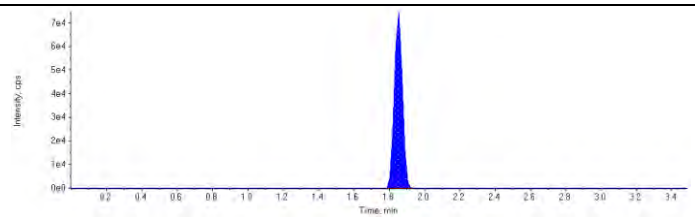
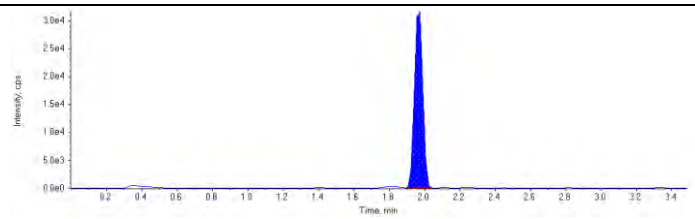
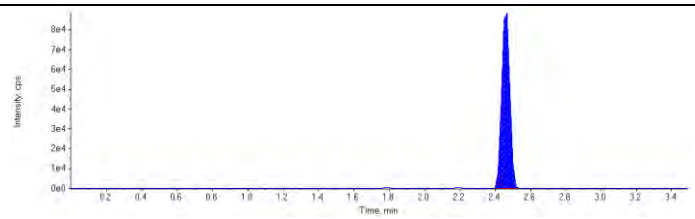
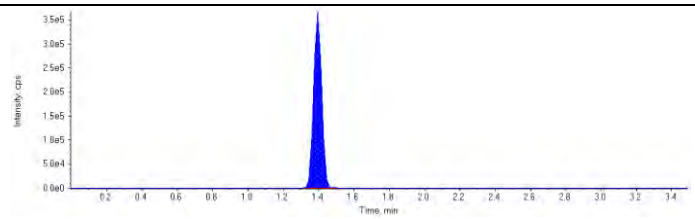
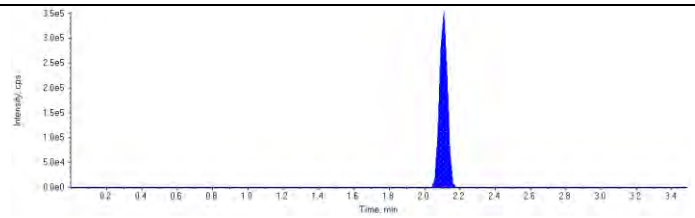
RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 7.17 µg/L

Area Ratio: 48.7

Sample Type: (Unknown)

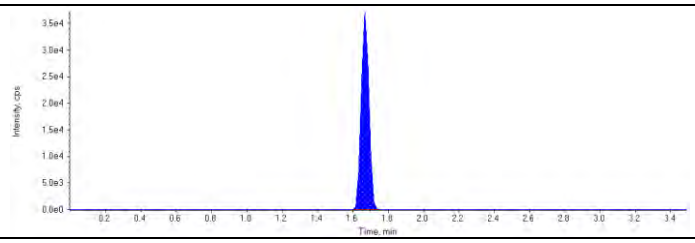
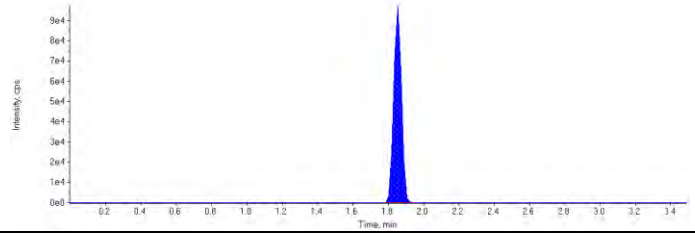
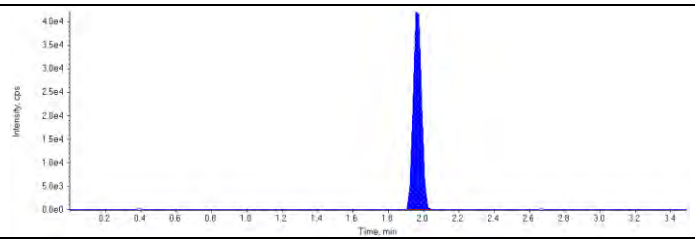
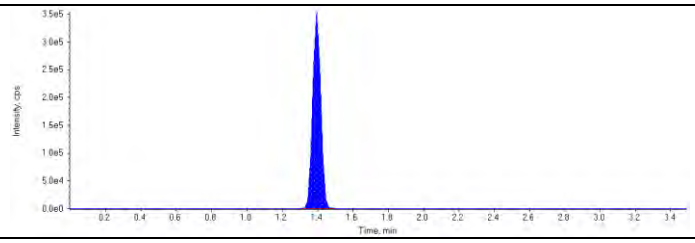
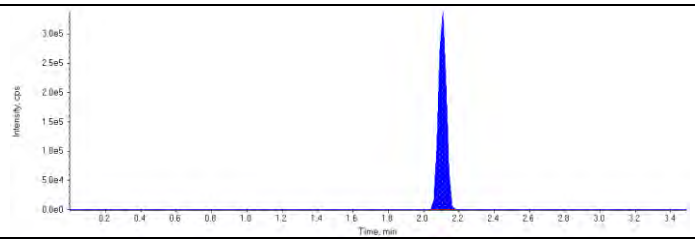


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 75.5 µg/L Area Ratio: 0.202 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 70.9 µg/L Area Ratio: 0.0893 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 92.1 µg/L Area Ratio: 0.266 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.48 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.43 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

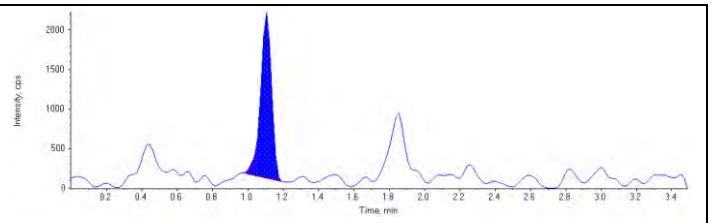
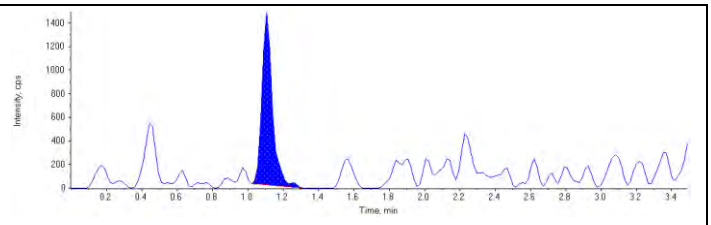
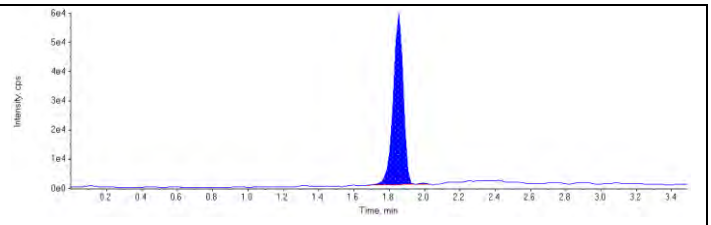
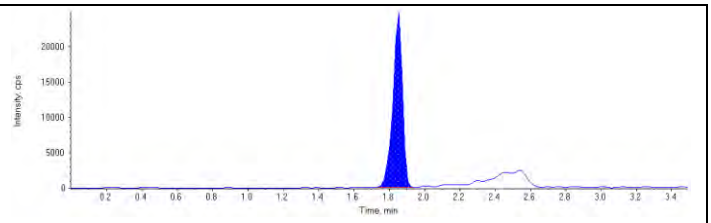
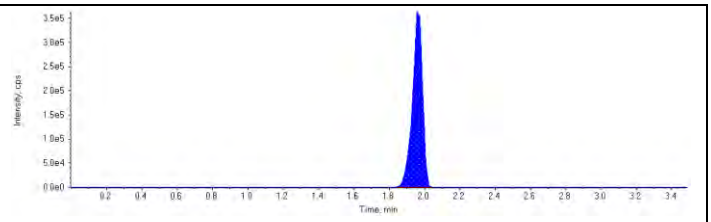
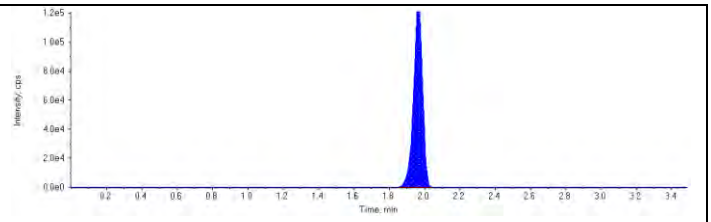
Sample ID	4989765~EJU285-01:20x	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	27
Acquisition Date	2017/05/19 9:10:44 PM	**Dilution Factor**	0.480
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	Reported for PFOS		

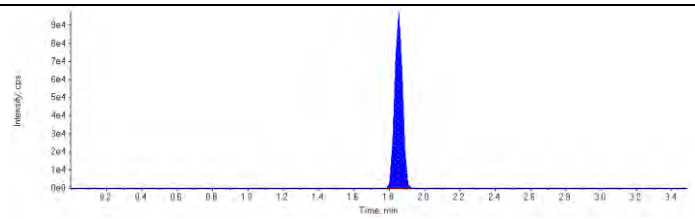
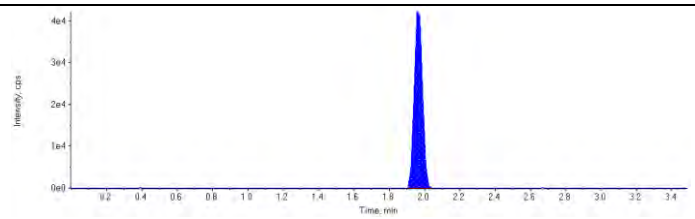
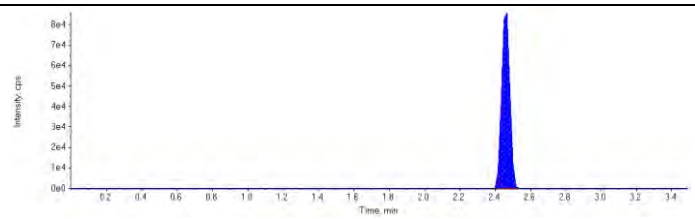
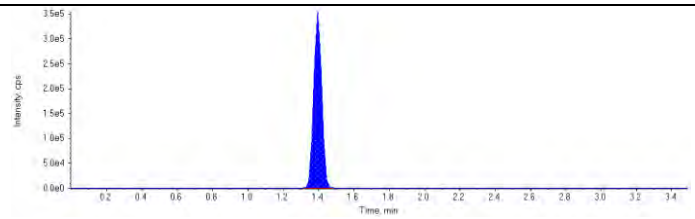
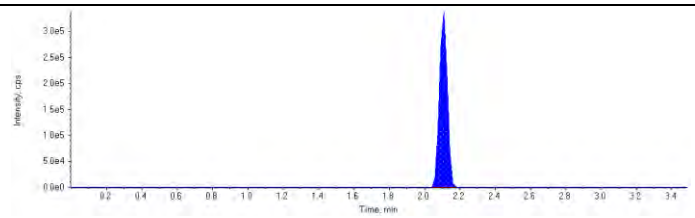
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	112000.	1.67	1.00	-
MPFOA	297000.	1.85	1.00	-
MPFOS	141000.	1.97	1.00	-
13C6-PFHxA IS	1120000.	1.40	2.08	-
13C9-PFDA IS	1050000.	2.11	2.08	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	9110	1.10	N/A	0.112	N/A
PFBS 2	6020	1.11	N/A	0.0725	N/A
PFOA 1	230000	1.85	N/A	0.856	N/A
PFOA 2	93000	1.85	N/A	0.872	N/A
PFOS 1	1460000	1.96	N/A	9.97	N/A
PFOS 2	451000	1.97	N/A	9.53	N/A
13C4-PFOA	297000	1.85	N/A	99.0	N/A
13C4-PFOS	141000	1.97	N/A	99.8	N/A
13C8-PFOSA	282000	2.46	N/A	93.2	N/A
13C6-PFHxA	1120000	1.40	N/A	47.2	N/A
13C9-PFDA	1050000	2.11	N/A	46.7	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 2.08 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 2.08 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

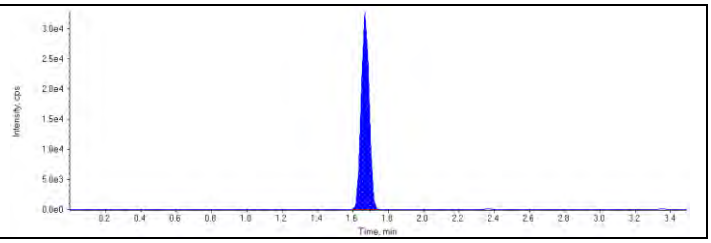
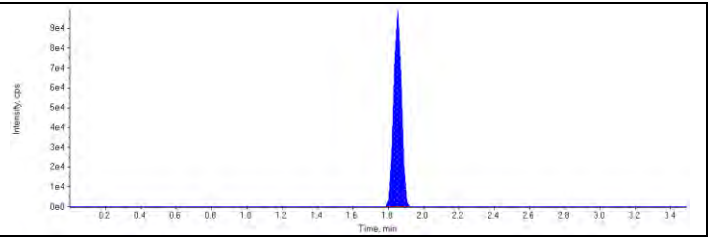
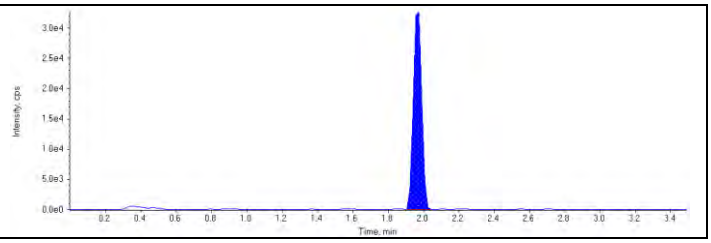
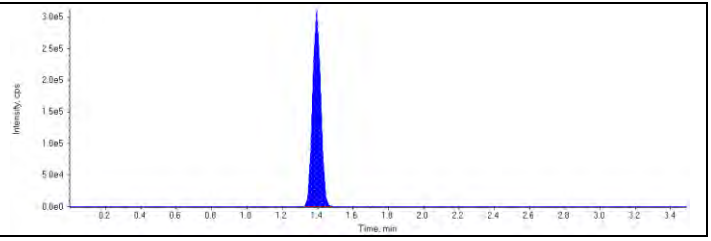
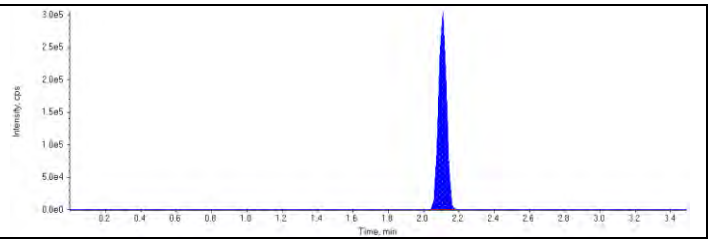
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.112 µg/L Area Ratio: 0.0814 Sample Type: (Unknown)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.11 (1.11) min Calculated Conc: 0.0725 µg/L Area Ratio: 0.0538 Sample Type: (Unknown)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.856 µg/L Area Ratio: 0.775 Sample Type: (Unknown)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.872 µg/L Area Ratio: 0.313 Sample Type: (Unknown)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 9.97 µg/L Area Ratio: 10.4 Sample Type: (Unknown)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.97 (1.96) min Calculated Conc: 9.53 µg/L Area Ratio: 3.21 Sample Type: (Unknown)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 99.0 µg/L Area Ratio: 0.266 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 99.8 µg/L Area Ratio: 0.126 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 93.2 µg/L Area Ratio: 0.270 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 47.2 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 46.7 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

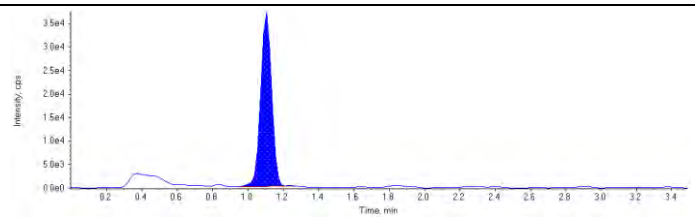
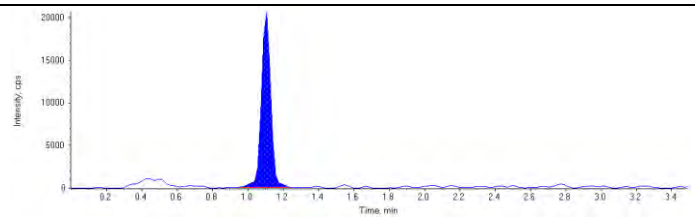
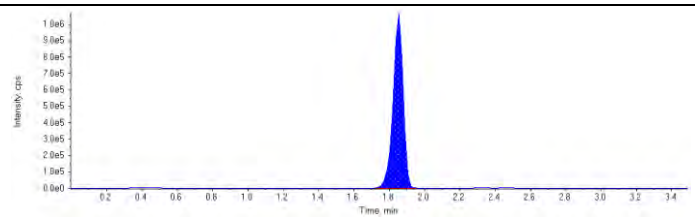
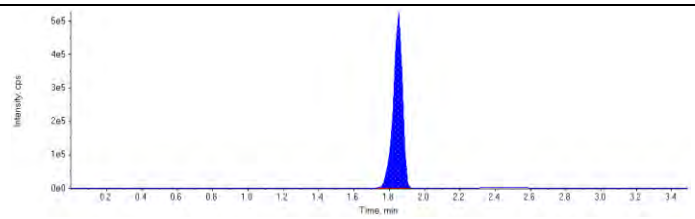
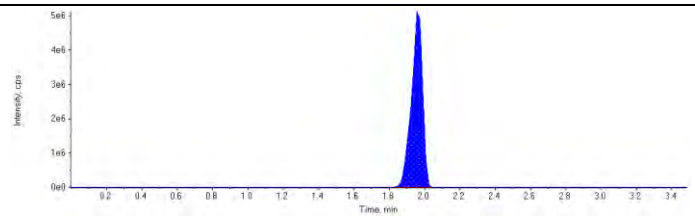
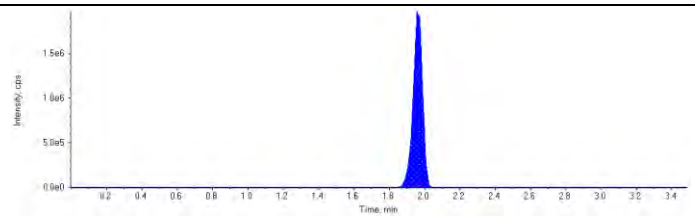
Sample ID	4989765~EJU285-01	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	28
Acquisition Date	2017/05/19 9:15:48 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	Reported for PFBS & PFOA		

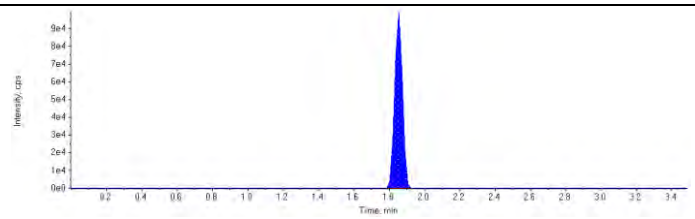
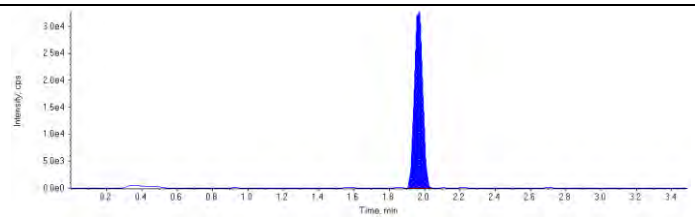
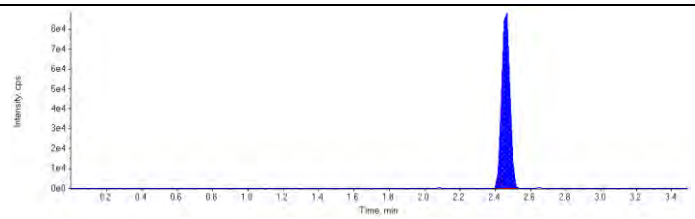
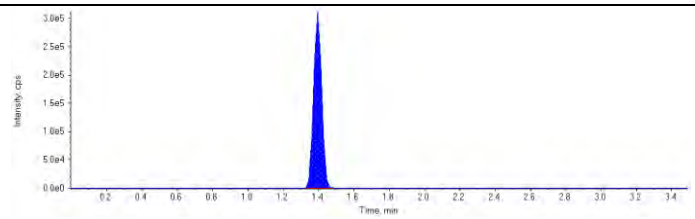
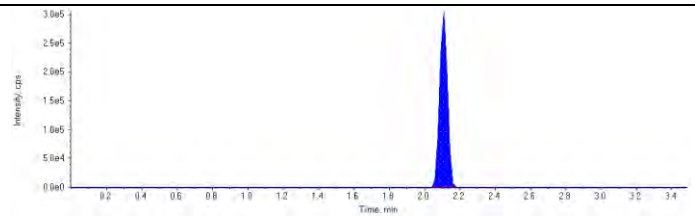
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	101000.	1.67	1.00	-
MPFOA	304000.	1.85	1.00	-
MPFOS	109000.	1.97	1.00	-
13C6-PFHxA IS	989000.	1.40	41.7	-
13C9-PFDA IS	936000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	160000	1.10	N/A	0.0380	N/A
PFBS 2	75900	1.10	N/A	0.0332	N/A
PFOA 1	4180000	1.85	N/A	0.751	N/A
PFOA 2	1870000	1.85	N/A	0.832	N/A
PFOS 1	22600000	1.96	N/A	9.89	N/A
PFOS 2	7420000	1.96	N/A	10.0	N/A
13C4-PFOA	304000	1.85	N/A	115.	N/A
13C4-PFOS	109000	1.97	N/A	87.3	N/A
13C8-PFOSA	288000	2.46	N/A	107.	N/A
13C6-PFHxA	989000	1.40	N/A	2.09	N/A
13C9-PFDA	936000	2.11	N/A	2.09	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.0380 µg/L Area Ratio: 1.58 Sample Type: (Unknown)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.0332 µg/L Area Ratio: 0.751 Sample Type: (Unknown)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.751 µg/L Area Ratio: 13.8 Sample Type: (Unknown)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.832 µg/L Area Ratio: 6.17 Sample Type: (Unknown)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 9.89 µg/L Area Ratio: 208. Sample Type: (Unknown)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 10.0 µg/L Area Ratio: 68.2 Sample Type: (Unknown)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 115. µg/L Area Ratio: 0.307 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 87.3 µg/L Area Ratio: 0.110 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 107. µg/L Area Ratio: 0.308 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.09 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.09 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

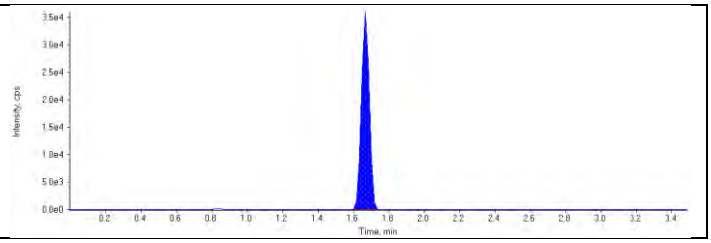
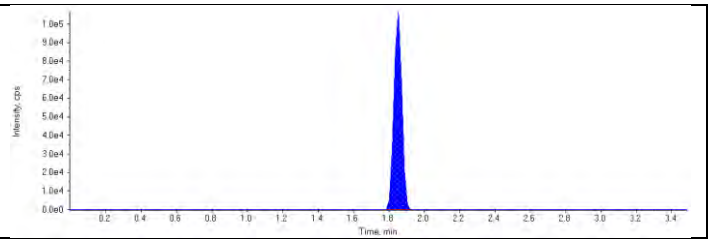
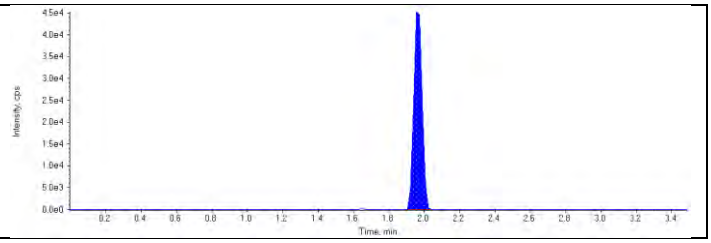
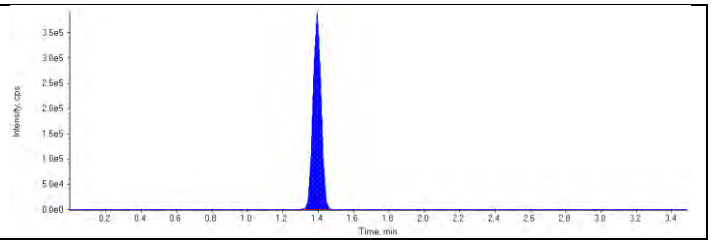
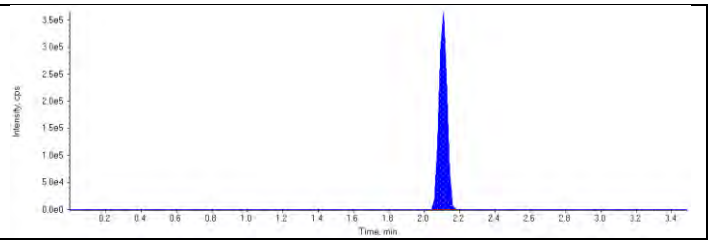
4. QA/QC Data

Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 5:58:20 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	111000.	1.67	1.00	-
MPFOA	331000.	1.85	1.00	-
MPFOS	150000.	1.97	1.00	-
13C6-PFHxA IS	1230000.	1.39	41.7	-
13C9-PFDA IS	1130000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	1100	0.879	N/A	0.00176	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	1230	1.86	N/A	0.00190	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	647	2.17	N/A	0.00456	N/A
13C4-PFOA	331000	1.85	N/A	100.	N/A
13C4-PFOS	150000	1.97	N/A	97.0	N/A
13C8-PFOSA	298000	2.46	N/A	91.1	N/A
13C6-PFHxA	1230000	1.39	N/A	2.60	N/A
13C9-PFDA	1130000	2.11	N/A	2.53	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

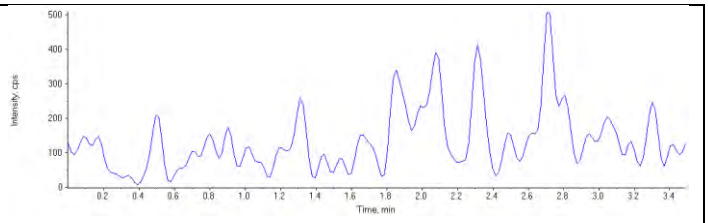
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



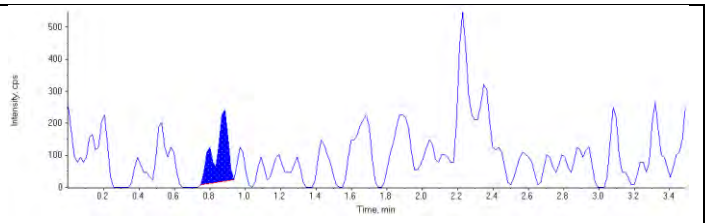
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 0.879 (1.11) min

Calculated Conc: 0.00176 µg/L

Area Ratio: 0.00989

Sample Type: (Unknown)



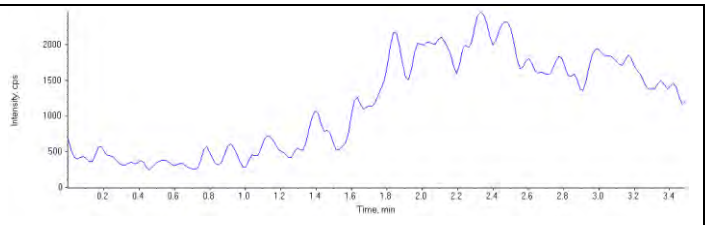
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



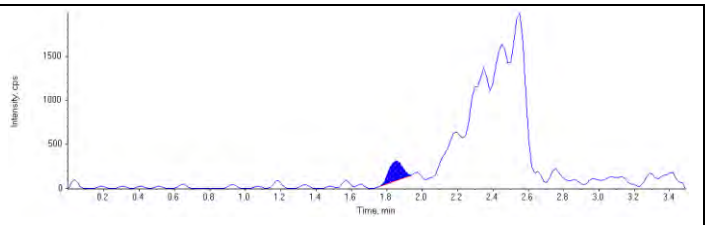
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.86 (1.85) min

Calculated Conc: 0.00190 µg/L

Area Ratio: 0.00371

Sample Type: (Unknown)



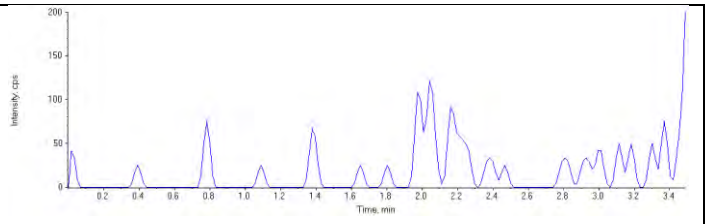
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



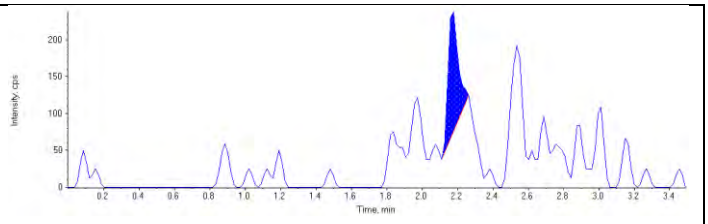
PFOS 2 (498.900/98.900 Da)

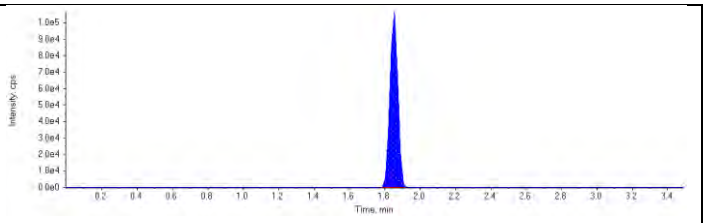
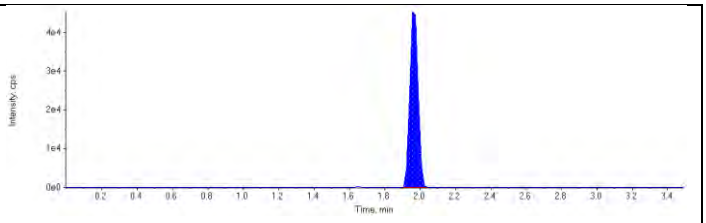
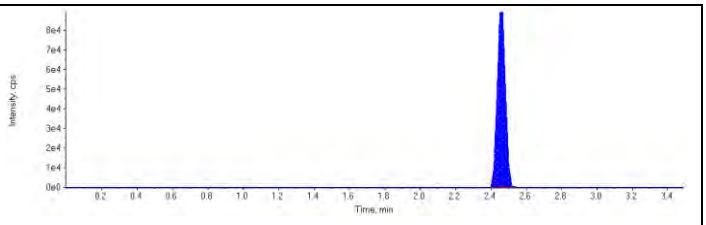
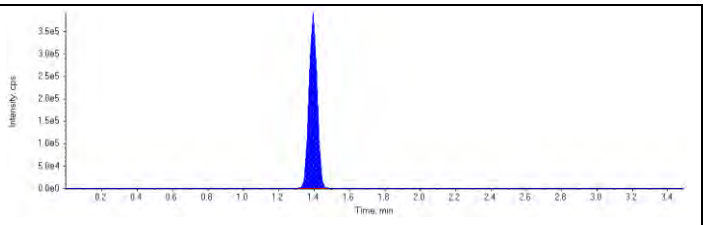
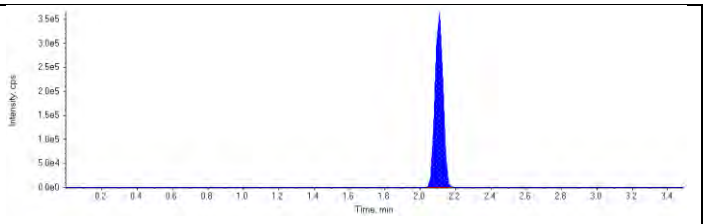
RT (Exp. RT): 2.17 (1.96) min

Calculated Conc: 0.00456 µg/L

Area Ratio: 0.00430

Sample Type: (Unknown)

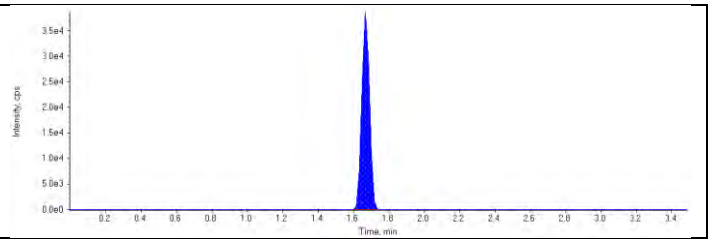
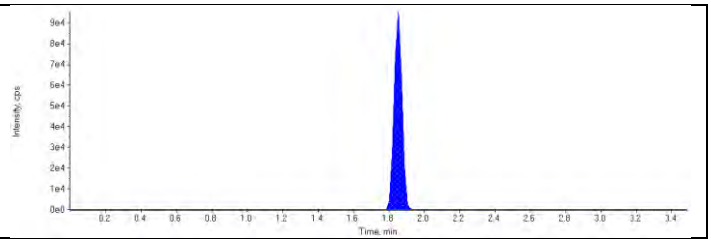
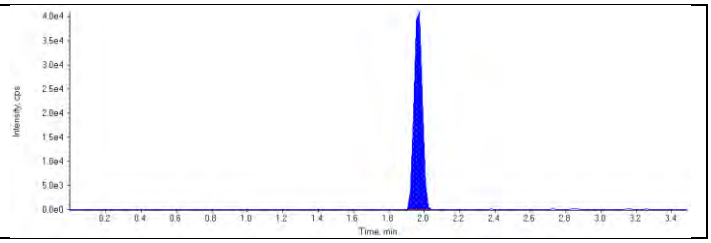
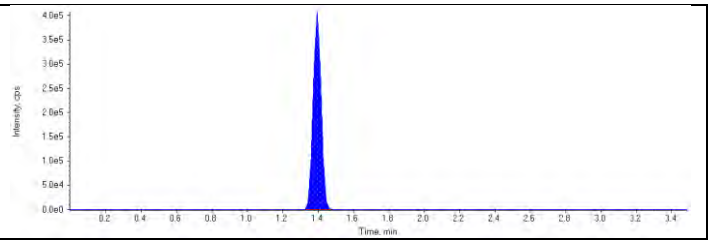
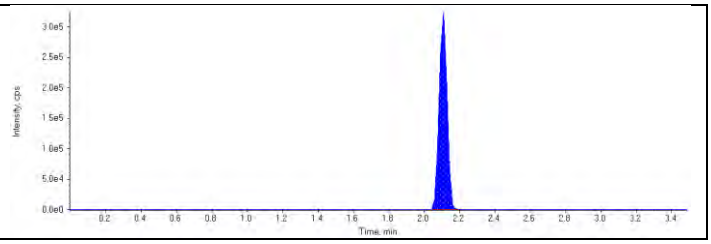


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 100. µg/L Area Ratio: 0.269 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 97.0 µg/L Area Ratio: 0.122 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 91.1 µg/L Area Ratio: 0.263 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 2.60 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.53 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 7:24:23 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	117000.	1.67	1.00	-
MPFOA	295000.	1.85	1.00	-
MPFOS	134000.	1.97	1.00	-
13C6-PFHxA IS	1270000.	1.40	41.7	-
13C9-PFDA IS	1010000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	1390	1.09	N/A	0.00184	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	1100	1.85	N/A	0.00190	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	0	0.00	N/A	N/A	N/A
13C4-PFOA	295000	1.85	N/A	86.8	N/A
13C4-PFOS	134000	1.97	N/A	84.1	N/A
13C8-PFOSA	326000	2.46	N/A	112.	N/A
13C6-PFHxA	1270000	1.40	N/A	2.68	N/A
13C9-PFDA	1010000	2.11	N/A	2.25	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

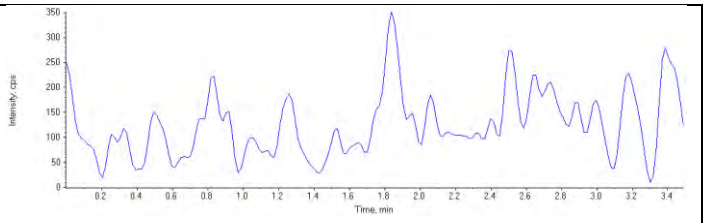
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



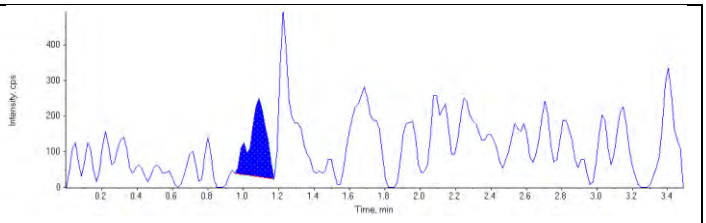
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.09 (1.11) min

Calculated Conc: 0.00184 µg/L

Area Ratio: 0.0118

Sample Type: (Unknown)



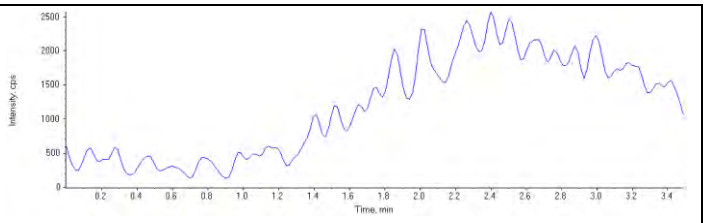
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



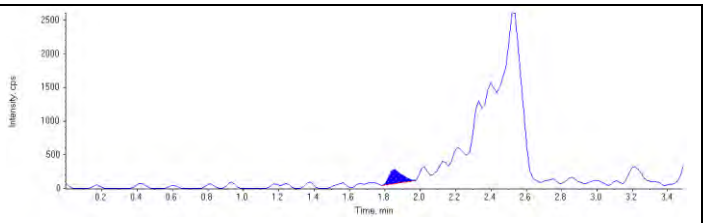
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 0.00190 µg/L

Area Ratio: 0.00373

Sample Type: (Unknown)



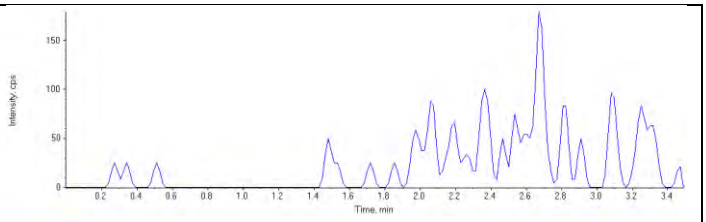
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



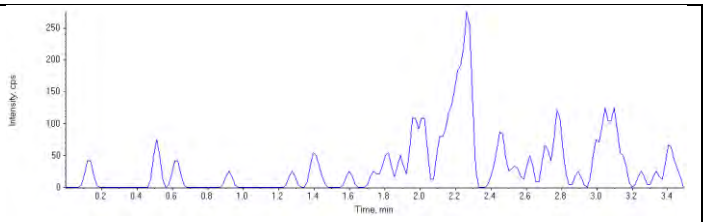
PFOS 2 (498.900/98.900 Da)

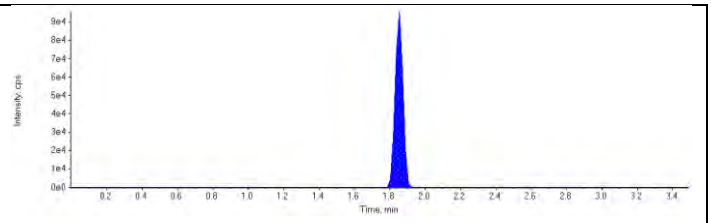
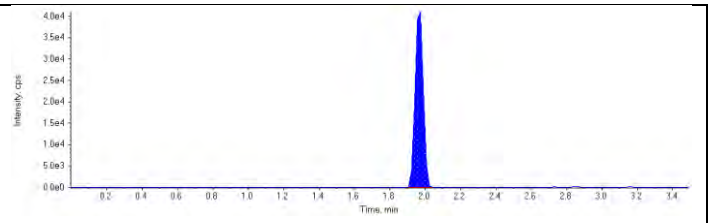
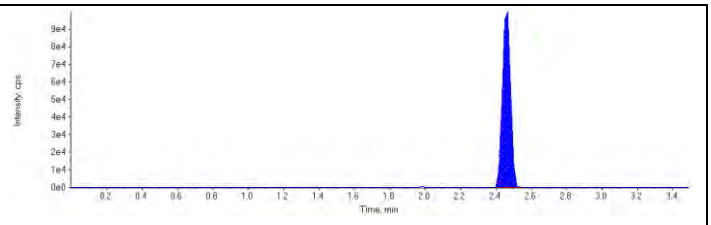
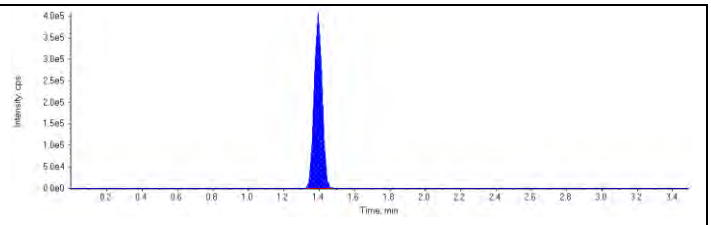
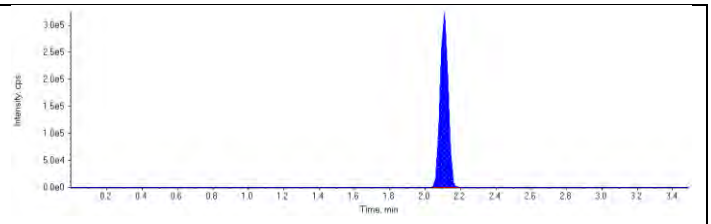
RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 86.8 µg/L Area Ratio: 0.233 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 84.1 µg/L Area Ratio: 0.106 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 112. µg/L Area Ratio: 0.323 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.68 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.25 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

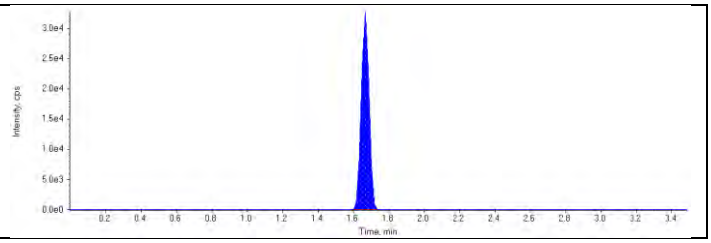
Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 7:44:38 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	99800.	1.67	1.00	-
MPFOA	338000.	1.85	1.00	-
MPFOS	149000.	1.97	1.00	-
13C6-PFHxA IS	1120000.	1.39	41.7	-
13C9-PFDA IS	1200000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	758	1.14	N/A	0.00166	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	2590	1.86	N/A	0.00243	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	0	0.00	N/A	N/A	N/A
13C4-PFOA	338000	1.85	N/A	112.	N/A
13C4-PFOS	149000	1.97	N/A	105.	N/A
13C8-PFOSA	311000	2.46	N/A	89.9	N/A
13C6-PFHxA	1120000	1.39	N/A	2.38	N/A
13C9-PFDA	1200000	2.11	N/A	2.68	N/A

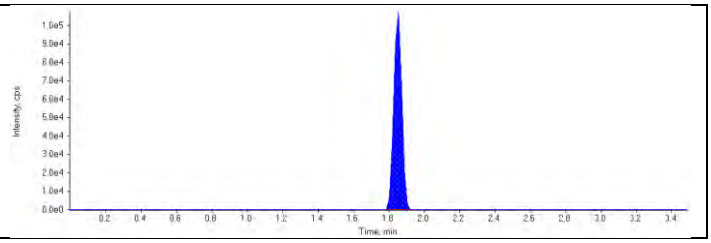
MPFHxS (Internal Standard)

RT (Exp. RT): 1.67(1.77) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



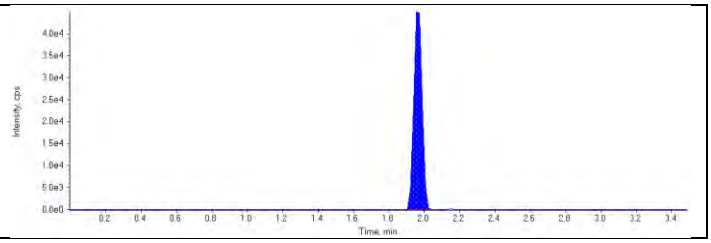
MPFOA (Internal Standard)

RT (Exp. RT): 1.85(1.85) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



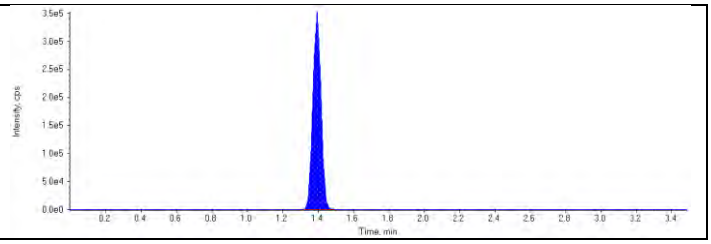
MPFOS (Internal Standard)

RT (Exp. RT): 1.97(1.97) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



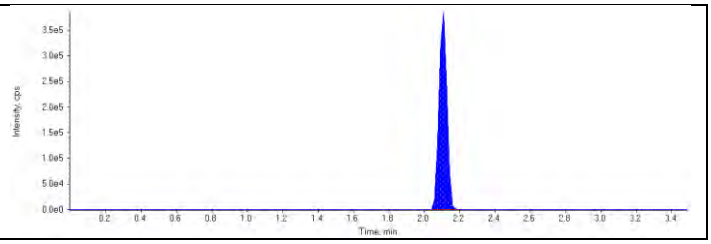
13C6-PFHxA IS (Internal Standard)

RT (Exp. RT): 1.39(1.40) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



13C9-PFDA IS (Internal Standard)

RT (Exp. RT): 2.11(2.11) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



N/A (Internal Standard)

RT (Exp. RT): N/A(N/A) min
Concentration: N/A N/A
Sample Type: (Unknown)

This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

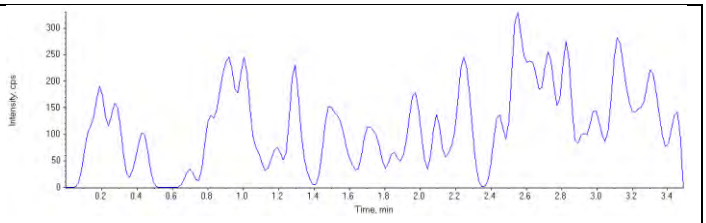
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



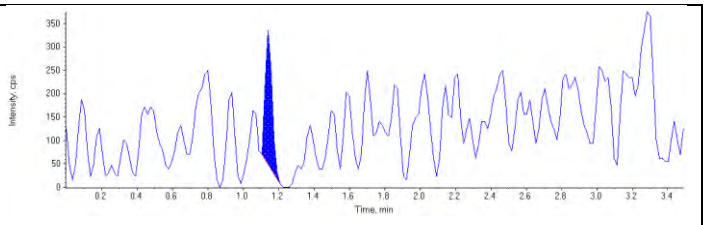
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.14 (1.11) min

Calculated Conc: 0.00166 µg/L

Area Ratio: 0.00759

Sample Type: (Unknown)



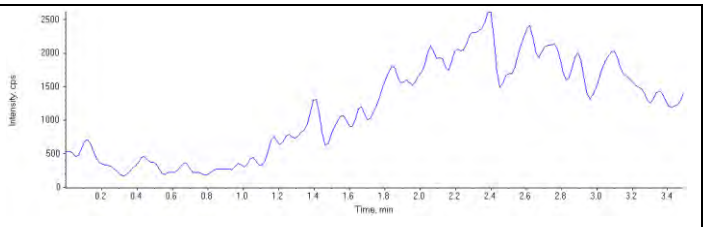
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



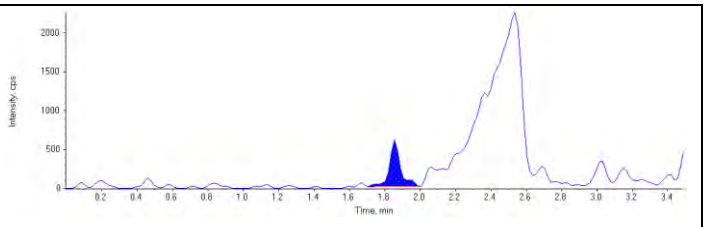
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.86 (1.85) min

Calculated Conc: 0.00243 µg/L

Area Ratio: 0.00764

Sample Type: (Unknown)



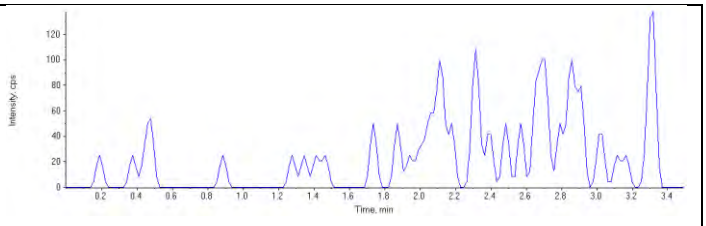
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



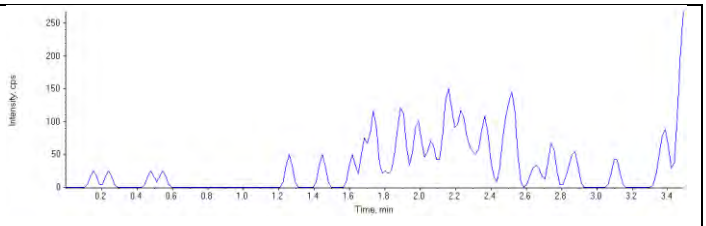
PFOS 2 (498.900/98.900 Da)

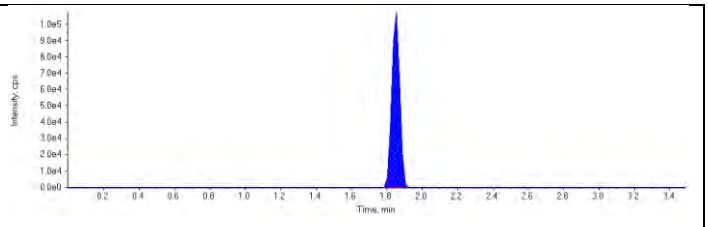
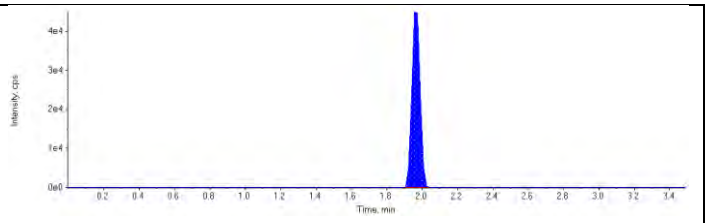
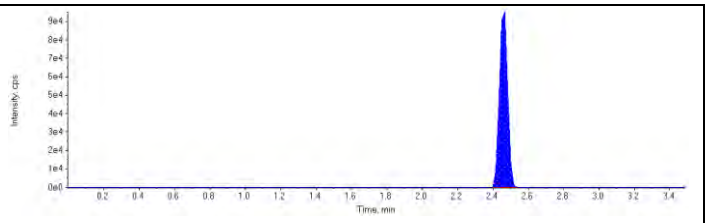
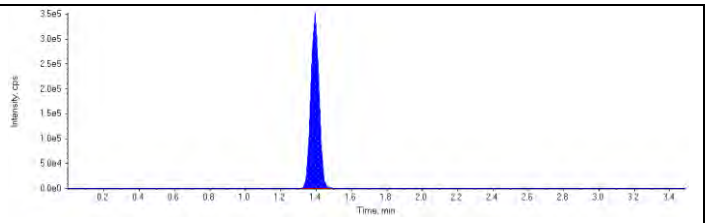
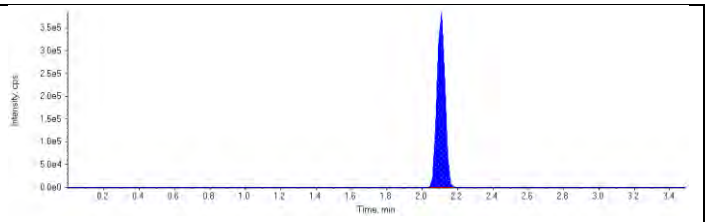
RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)

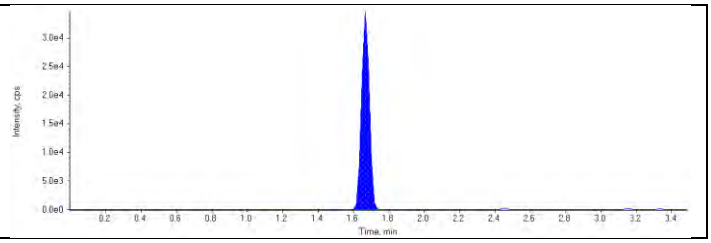
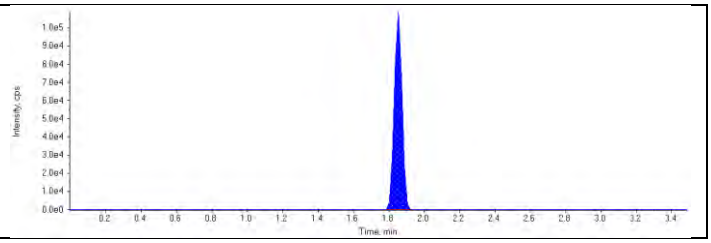
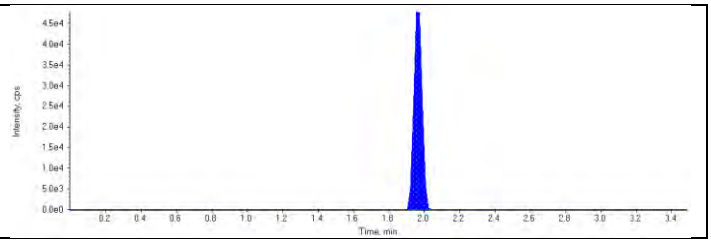
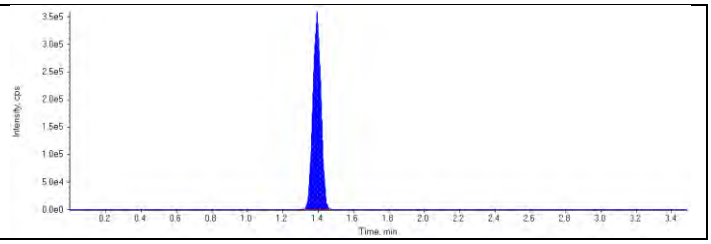
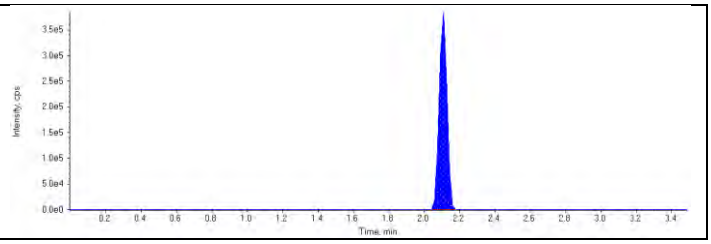


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 112. µg/L Area Ratio: 0.301 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 105. µg/L Area Ratio: 0.132 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 89.9 µg/L Area Ratio: 0.260 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 2.38 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.68 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 7:59:49 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	104000.	1.67	1.00	-
MPFOA	332000.	1.85	1.00	-
MPFOS	159000.	1.97	1.00	-
13C6-PFHxA IS	1130000.	1.39	41.7	-
13C9-PFDA IS	1180000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	1030	1.17	N/A	0.00176	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	1440	1.85	N/A	0.00198	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	0	0.00	N/A	N/A	N/A
13C4-PFOA	332000	1.85	N/A	109.	N/A
13C4-PFOS	159000	1.97	N/A	112.	N/A
13C8-PFOSA	304000	2.46	N/A	89.0	N/A
13C6-PFHxA	1130000	1.39	N/A	2.39	N/A
13C9-PFDA	1180000	2.11	N/A	2.64	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

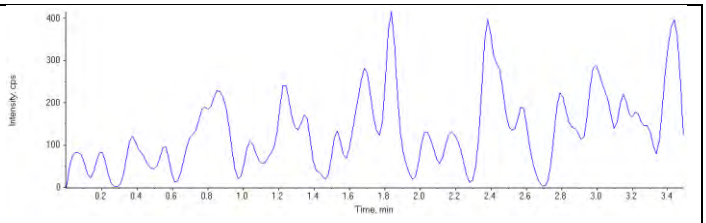
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



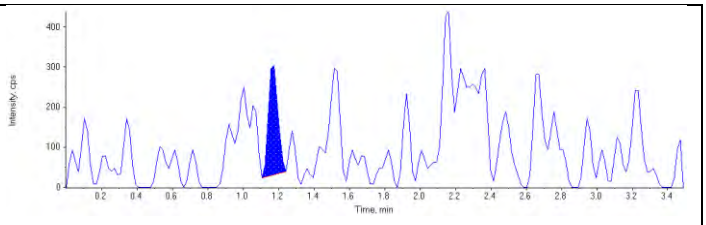
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.17 (1.11) min

Calculated Conc: 0.00176 µg/L

Area Ratio: 0.00986

Sample Type: (Unknown)



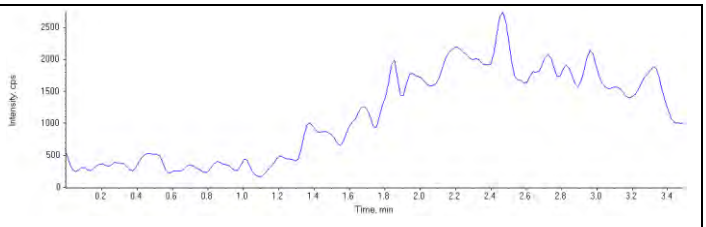
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



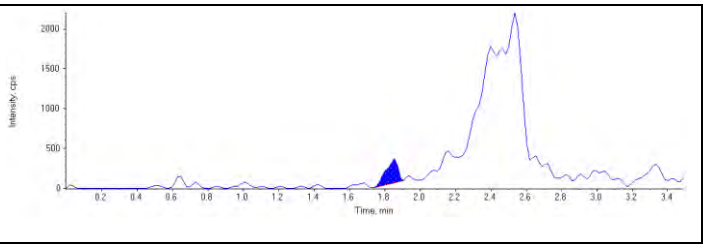
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 0.00198 µg/L

Area Ratio: 0.00433

Sample Type: (Unknown)



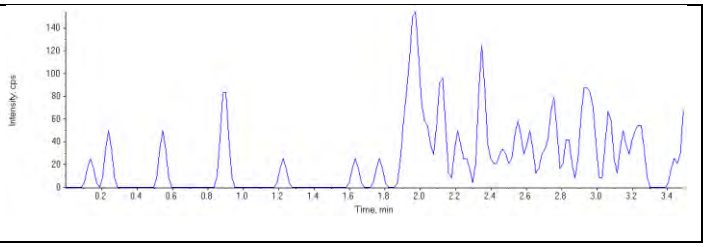
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



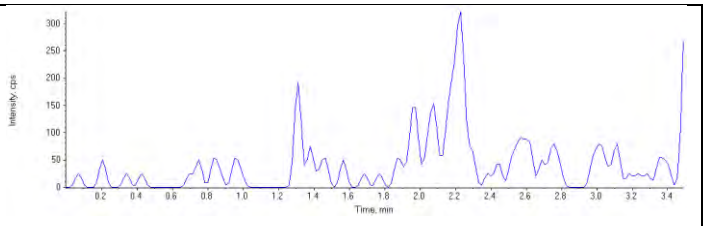
PFOS 2 (498.900/98.900 Da)

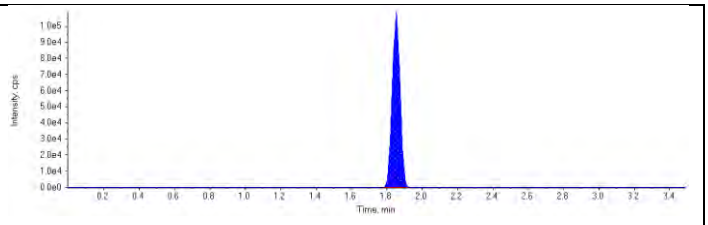
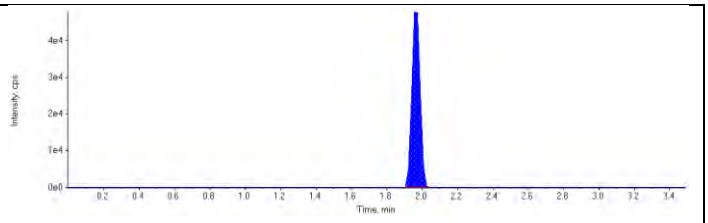
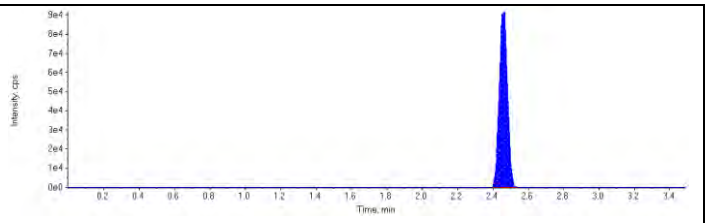
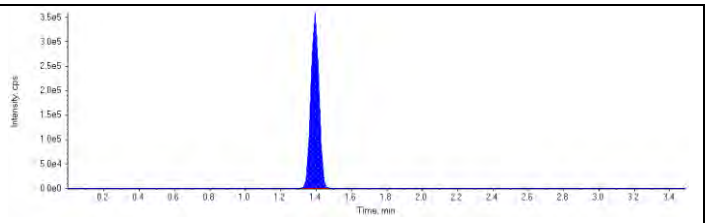
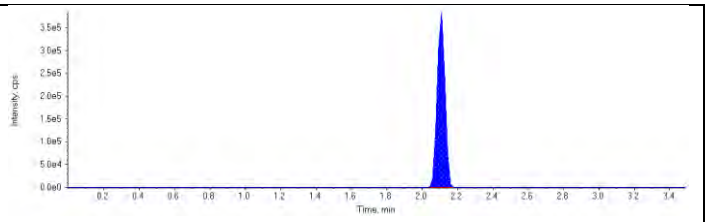
RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 109. µg/L Area Ratio: 0.293 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 112. µg/L Area Ratio: 0.141 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 89.0 µg/L Area Ratio: 0.257 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 2.39 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.64 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

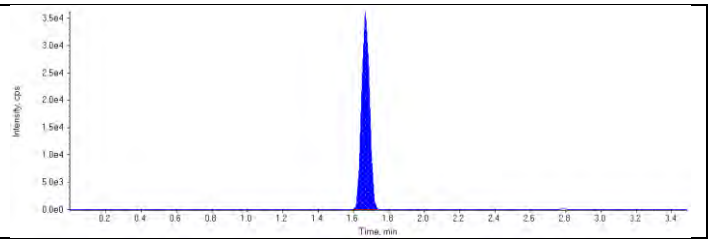
Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 8:20:05 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	110000.	1.67	1.00	-
MPFOA	314000.	1.85	1.00	-
MPFOS	147000.	1.97	1.00	-
13C6-PFHxA IS	1140000.	1.40	41.7	-
13C9-PFDA IS	1180000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	790	1.08	N/A	0.00164	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	1230	1.85	N/A	0.00192	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	577	1.99	N/A	0.00451	N/A
13C4-PFOA	314000	1.85	N/A	103.	N/A
13C4-PFOS	147000	1.97	N/A	102.	N/A
13C8-PFOSA	336000	2.46	N/A	98.7	N/A
13C6-PFHxA	1140000	1.40	N/A	2.41	N/A
13C9-PFDA	1180000	2.11	N/A	2.63	N/A

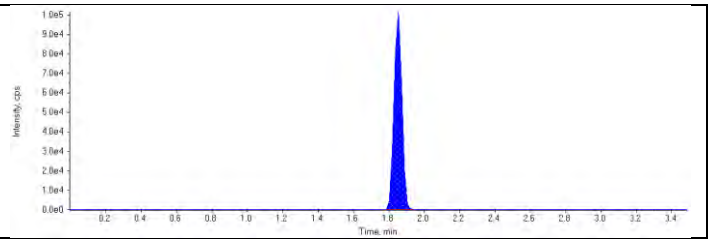
MPFHxS (Internal Standard)

RT (Exp. RT): 1.67(1.77) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



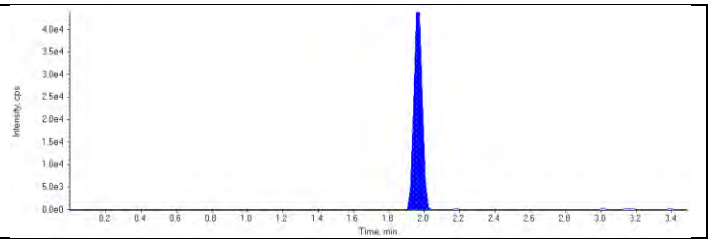
MPFOA (Internal Standard)

RT (Exp. RT): 1.85(1.85) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



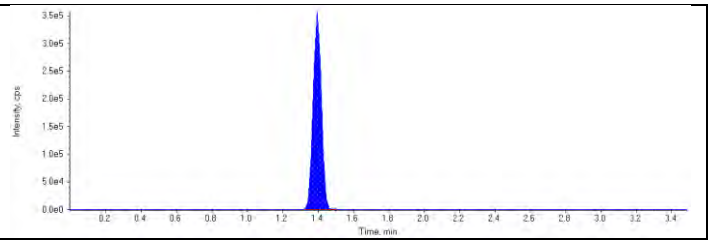
MPFOS (Internal Standard)

RT (Exp. RT): 1.97(1.97) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



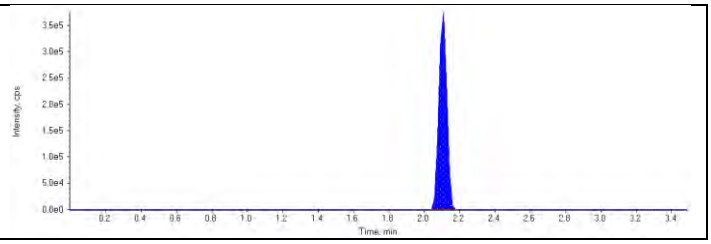
13C6-PFHxA IS (Internal Standard)

RT (Exp. RT): 1.40(1.40) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



13C9-PFDA IS (Internal Standard)

RT (Exp. RT): 2.11(2.11) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



N/A (Internal Standard)

RT (Exp. RT): N/A(N/A) min
Concentration: N/A N/A
Sample Type: (Unknown)

This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

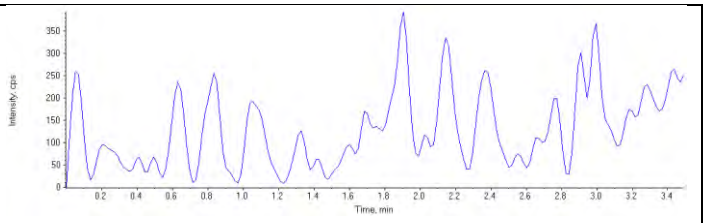
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



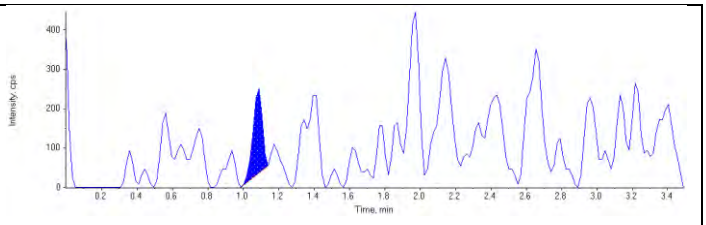
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.08 (1.11) min

Calculated Conc: 0.00164 µg/L

Area Ratio: 0.00721

Sample Type: (Unknown)



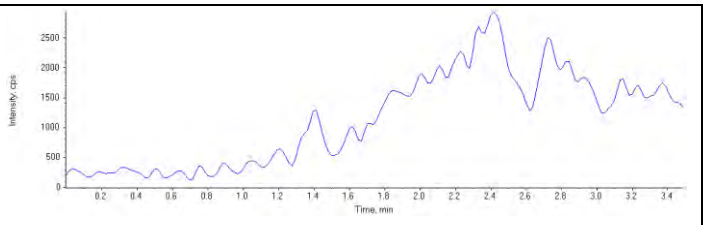
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



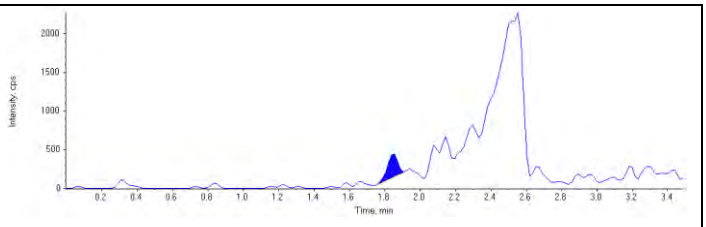
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 0.00192 µg/L

Area Ratio: 0.00392

Sample Type: (Unknown)



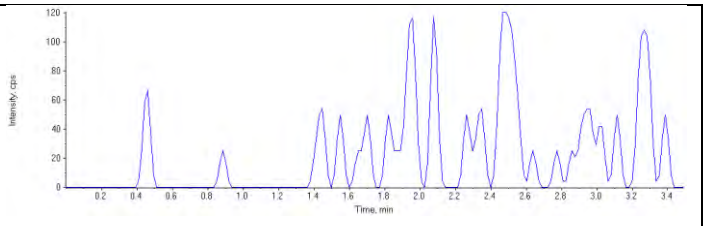
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



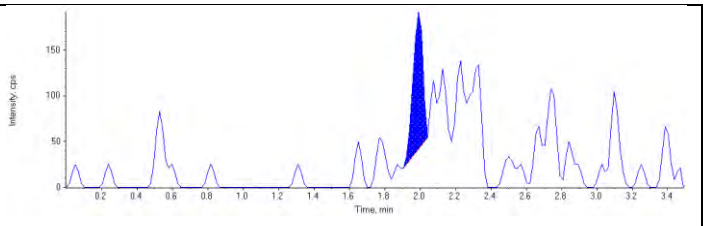
PFOS 2 (498.900/98.900 Da)

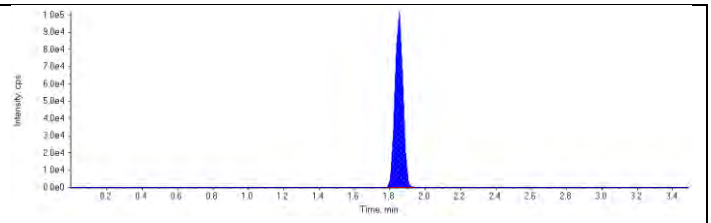
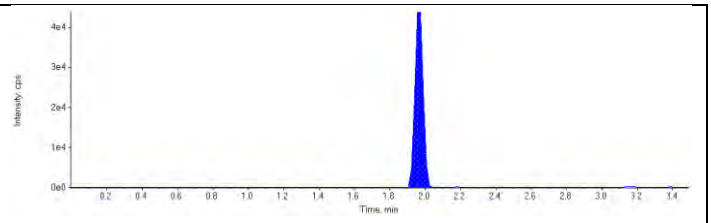
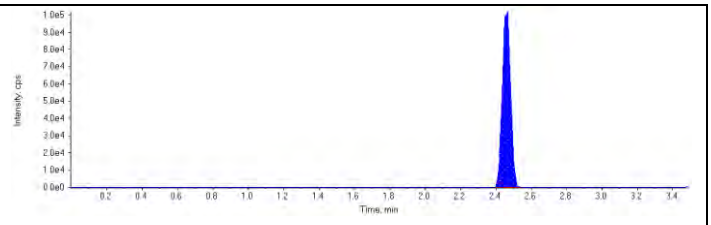
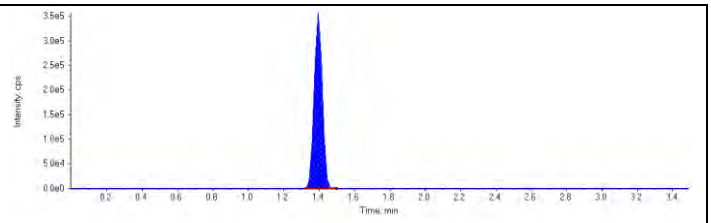
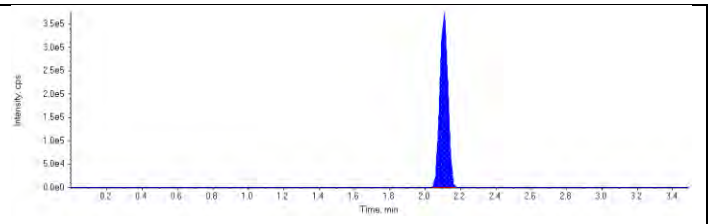
RT (Exp. RT): 1.99 (1.96) min

Calculated Conc: 0.00451 µg/L

Area Ratio: 0.00393

Sample Type: (Unknown)

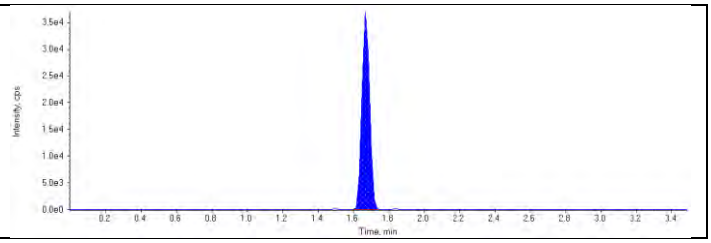
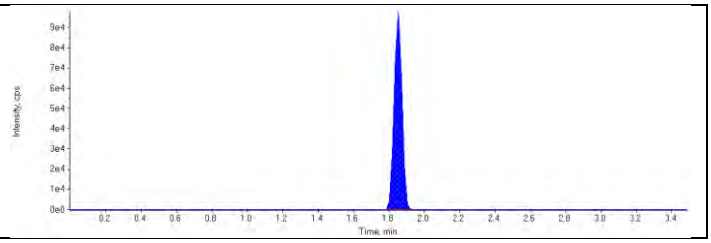
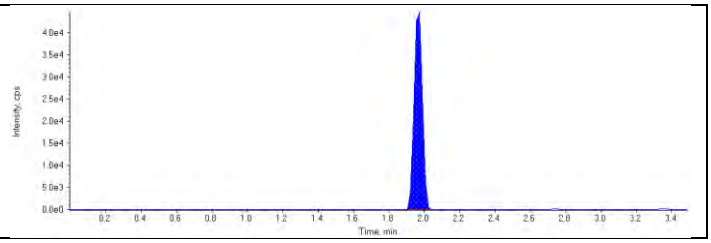
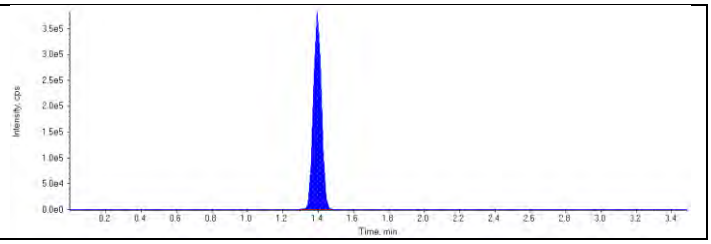
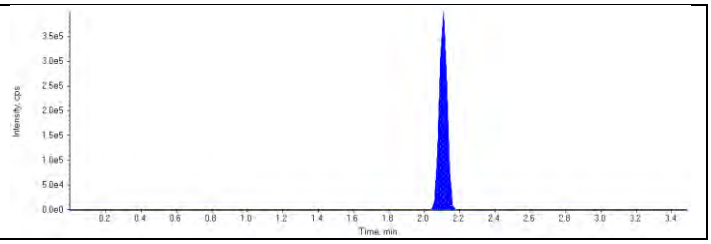


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 103. µg/L Area Ratio: 0.275 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 102. µg/L Area Ratio: 0.129 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 98.7 µg/L Area Ratio: 0.285 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.41 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.63 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 9:05:40 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	112000.	1.67	1.00	-
MPFOA	303000.	1.85	1.00	-
MPFOS	147000.	1.97	1.00	-
13C6-PFHxA IS	1190000.	1.40	41.7	-
13C9-PFDA IS	1210000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	893	1.25	N/A	0.00168	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	1400	1.86	N/A	0.00202	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	0	0.00	N/A	N/A	N/A
13C4-PFOA	303000	1.85	N/A	94.6	N/A
13C4-PFOS	147000	1.97	N/A	97.5	N/A
13C8-PFOSA	300000	2.46	N/A	85.7	N/A
13C6-PFHxA	1190000	1.40	N/A	2.53	N/A
13C9-PFDA	1210000	2.11	N/A	2.71	N/A

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Unknown)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Unknown)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

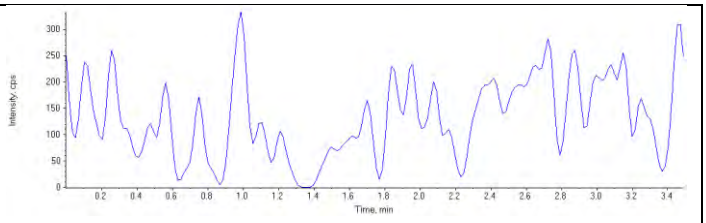
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



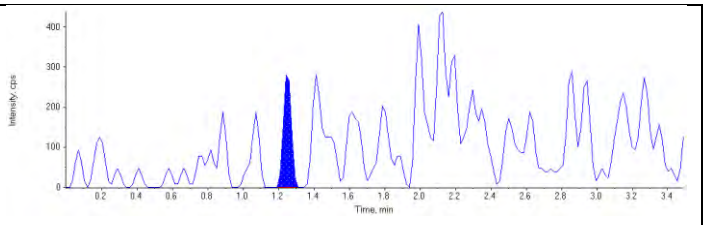
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.25 (1.11) min

Calculated Conc: 0.00168 µg/L

Area Ratio: 0.00799

Sample Type: (Unknown)



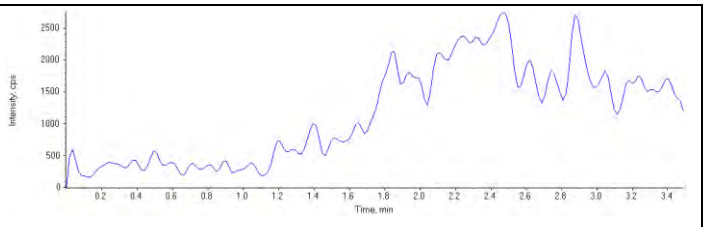
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



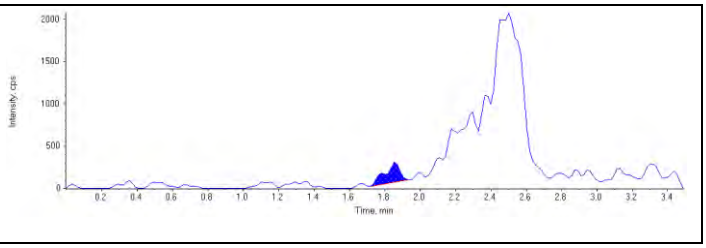
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.86 (1.85) min

Calculated Conc: 0.00202 µg/L

Area Ratio: 0.00461

Sample Type: (Unknown)



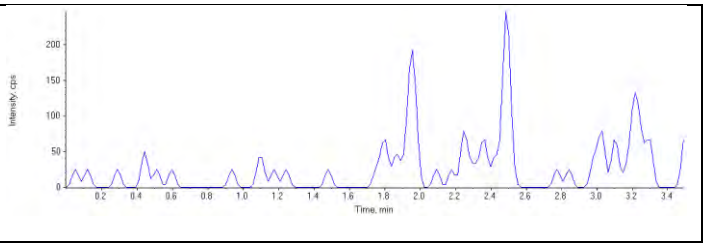
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



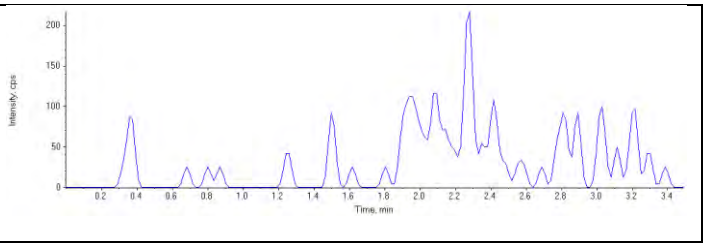
PFOS 2 (498.900/98.900 Da)

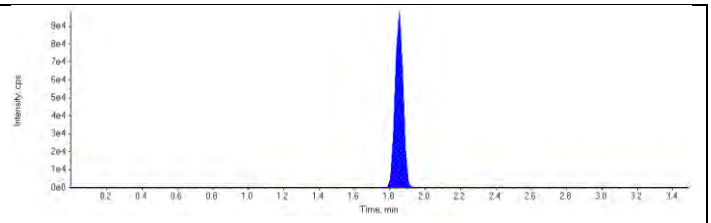
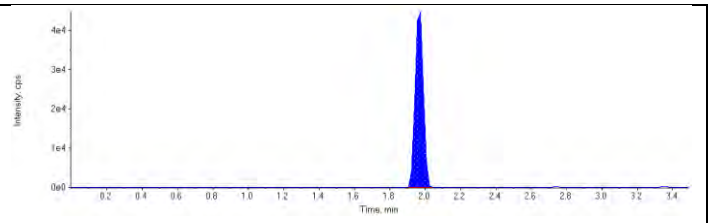
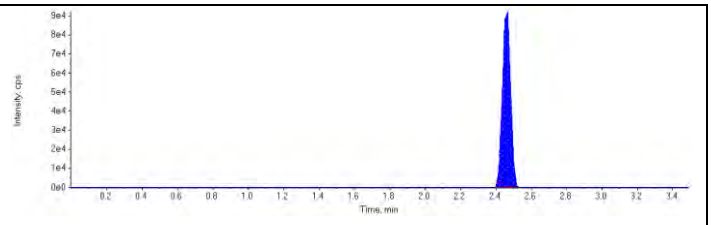
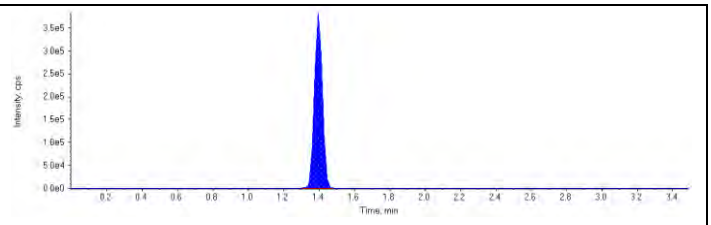
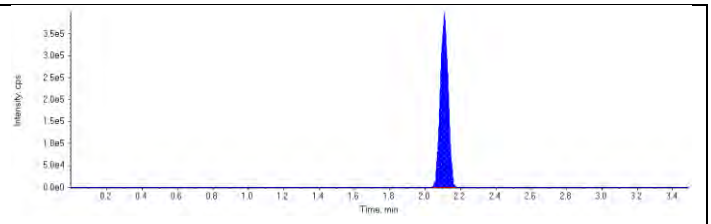
RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 94.6 µg/L Area Ratio: 0.254 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 97.5 µg/L Area Ratio: 0.123 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 85.7 µg/L Area Ratio: 0.248 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.53 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.71 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

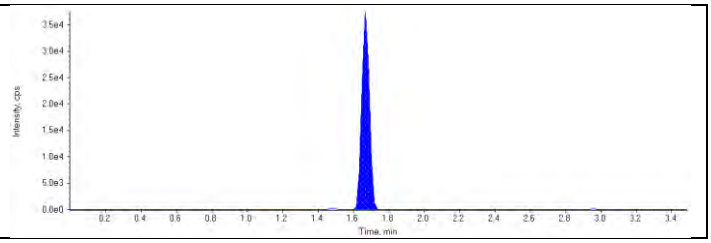
Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 9:20:52 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	111000.	1.67	1.00	-
MPFOA	283000.	1.85	1.00	-
MPFOS	148000.	1.97	1.00	-
13C6-PFHxA IS	1180000.	1.40	41.7	-
13C9-PFDA IS	1160000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	830	1.23	N/A	0.00166	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	559	1.84	N/A	0.00166	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	765	2.12	N/A	0.00469	N/A
13C4-PFOA	283000	1.85	N/A	89.7	N/A
13C4-PFOS	148000	1.97	N/A	99.7	N/A
13C8-PFOSA	318000	2.46	N/A	94.7	N/A
13C6-PFHxA	1180000	1.40	N/A	2.49	N/A
13C9-PFDA	1160000	2.11	N/A	2.60	N/A

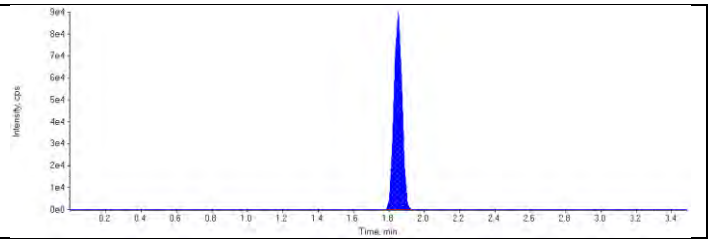
MPFHxS (Internal Standard)

RT (Exp. RT): 1.67(1.77) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



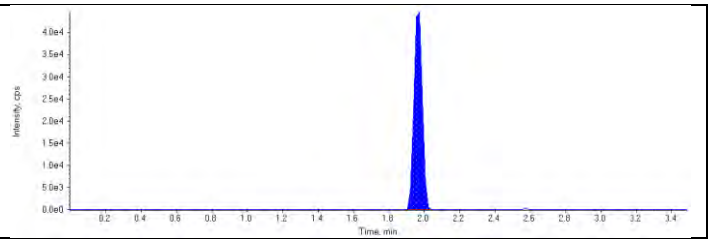
MPFOA (Internal Standard)

RT (Exp. RT): 1.85(1.85) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



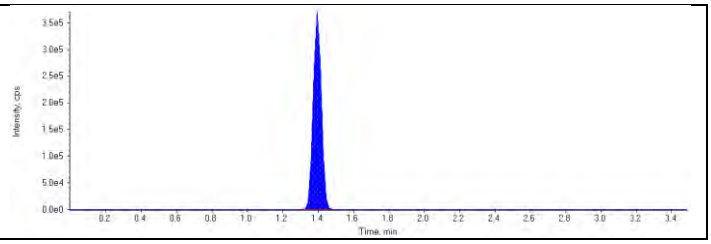
MPFOS (Internal Standard)

RT (Exp. RT): 1.97(1.97) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



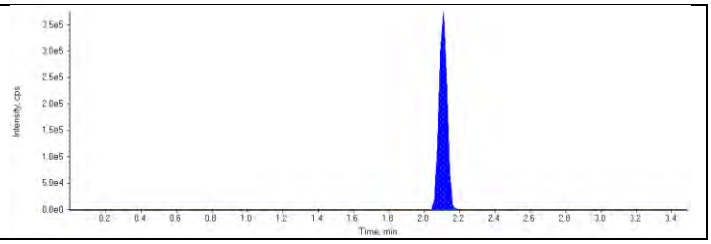
13C6-PFHxA IS (Internal Standard)

RT (Exp. RT): 1.40(1.40) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



13C9-PFDA IS (Internal Standard)

RT (Exp. RT): 2.11(2.11) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



N/A (Internal Standard)

RT (Exp. RT): N/A(N/A) min
Concentration: N/A N/A
Sample Type: (Unknown)

This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

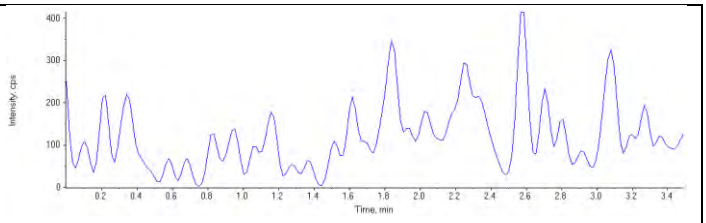
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



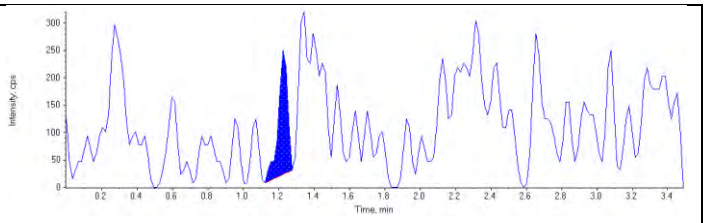
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.23 (1.11) min

Calculated Conc: 0.00166 µg/L

Area Ratio: 0.00748

Sample Type: (Unknown)



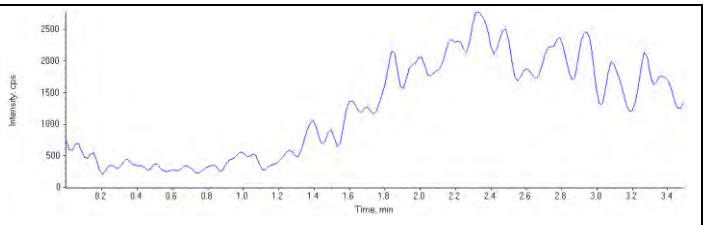
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



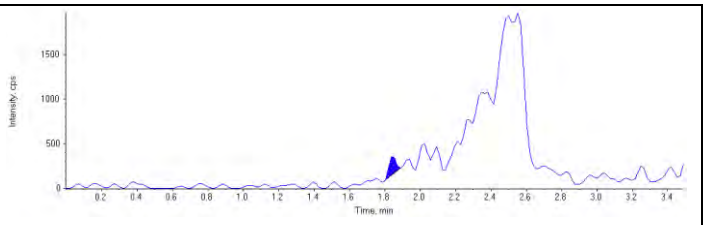
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.84 (1.85) min

Calculated Conc: 0.00166 µg/L

Area Ratio: 0.00198

Sample Type: (Unknown)



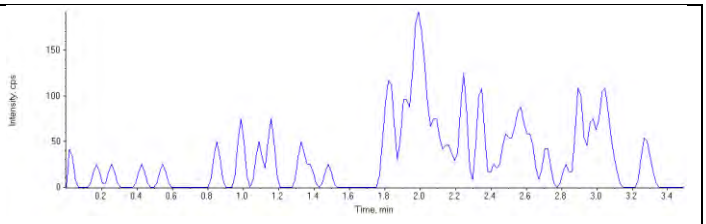
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



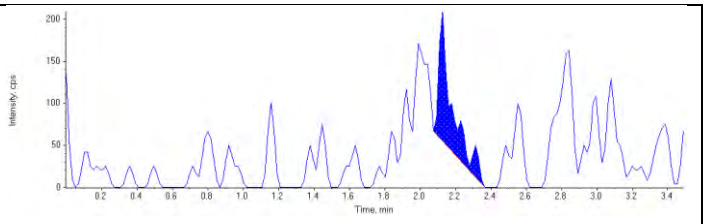
PFOS 2 (498.900/98.900 Da)

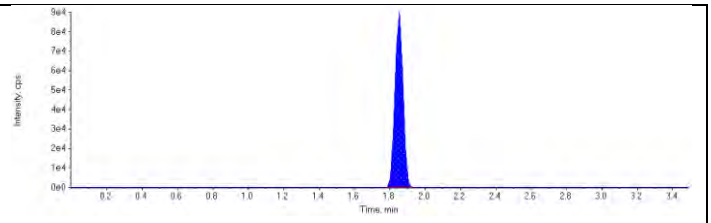
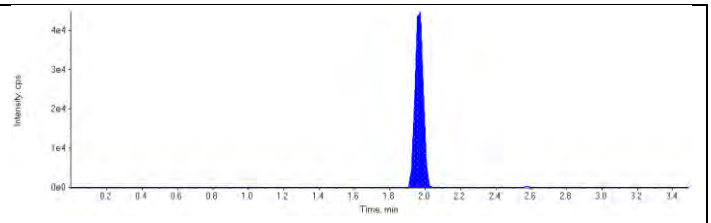
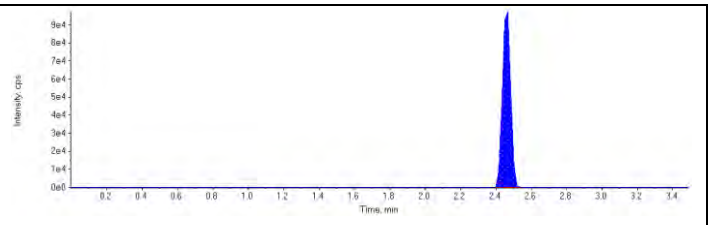
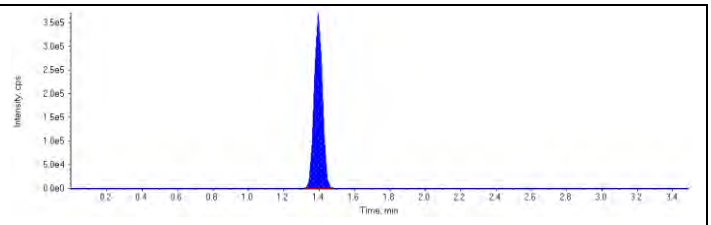
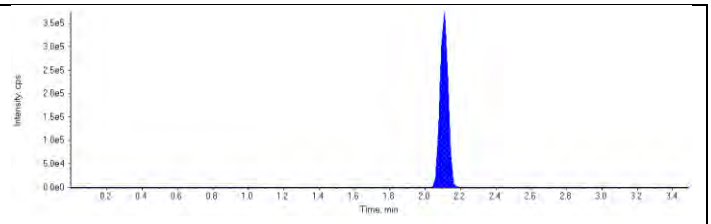
RT (Exp. RT): 2.12 (1.96) min

Calculated Conc: 0.00469 µg/L

Area Ratio: 0.00517

Sample Type: (Unknown)



13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 89.7 µg/L Area Ratio: 0.240 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 99.7 µg/L Area Ratio: 0.126 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 94.7 µg/L Area Ratio: 0.273 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.49 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.60 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

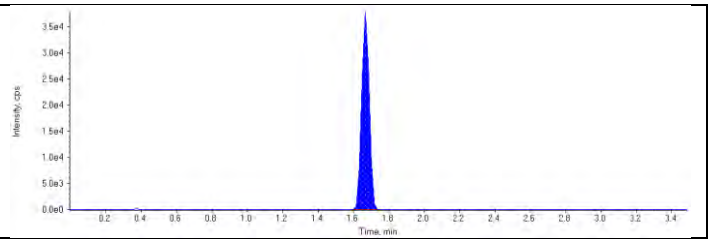
Sample ID	IB	**Injection Volume (µL)**	1
Sample Type	Unknown	**Injection Vial**	8
Acquisition Date	2017/05/19 9:46:13 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	112000.	1.67	1.00	-
MPFOA	296000.	1.85	1.00	-
MPFOS	147000.	1.97	1.00	-
13C6-PFHxA IS	1190000.	1.40	41.7	-
13C9-PFDA IS	1120000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	N/A	N/A	N/A
PFBS 2	475	1.01	N/A	0.00152	N/A
PFOA 1	0	0.00	N/A	N/A	N/A
PFOA 2	1110	1.85	N/A	0.00190	N/A
PFOS 1	0	0.00	N/A	N/A	N/A
PFOS 2	0	0.00	N/A	N/A	N/A
13C4-PFOA	296000	1.85	N/A	92.8	N/A
13C4-PFOS	147000	1.97	N/A	98.2	N/A
13C8-PFOSA	338000	2.46	N/A	104.	N/A
13C6-PFHxA	1190000	1.40	N/A	2.52	N/A
13C9-PFDA	1120000	2.11	N/A	2.51	N/A

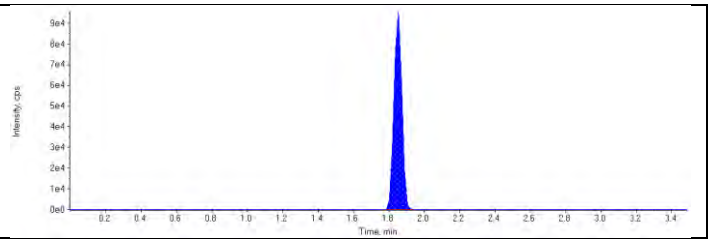
MPFHxS (Internal Standard)

RT (Exp. RT): 1.67(1.77) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



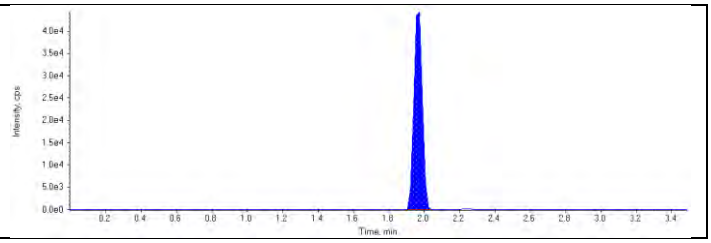
MPFOA (Internal Standard)

RT (Exp. RT): 1.85(1.85) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



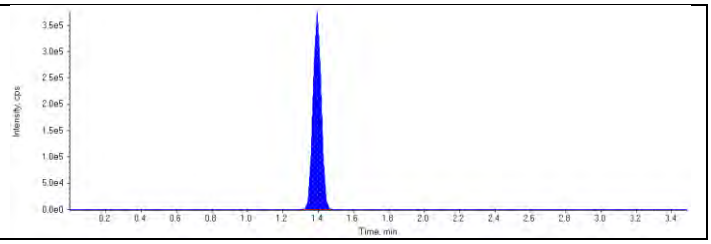
MPFOS (Internal Standard)

RT (Exp. RT): 1.97(1.97) min
Concentration: 1.00 ug/L
Sample Type: (Unknown)



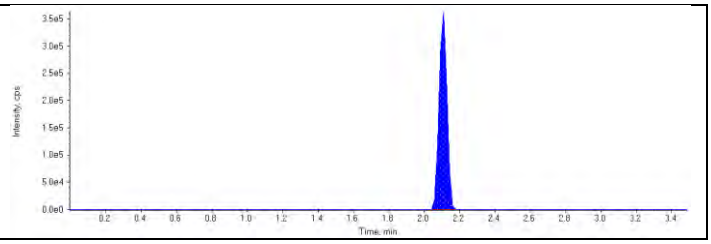
13C6-PFHxA IS (Internal Standard)

RT (Exp. RT): 1.40(1.40) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



13C9-PFDA IS (Internal Standard)

RT (Exp. RT): 2.11(2.11) min
Concentration: 41.7 ug/L
Sample Type: (Unknown)



N/A (Internal Standard)

RT (Exp. RT): N/A(N/A) min
Concentration: N/A N/A
Sample Type: (Unknown)

This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Unknown)	This image is not available

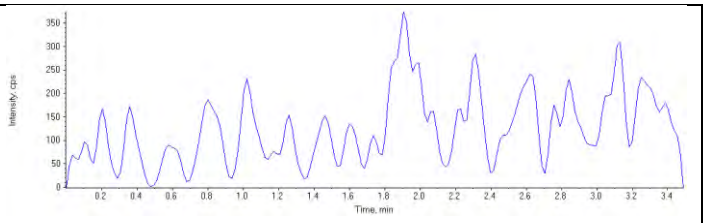
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 0.00 (1.11) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



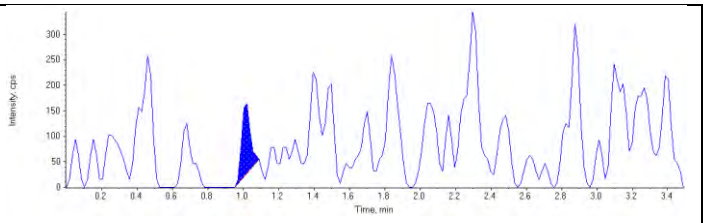
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.01 (1.11) min

Calculated Conc: 0.00152 µg/L

Area Ratio: 0.00422

Sample Type: (Unknown)



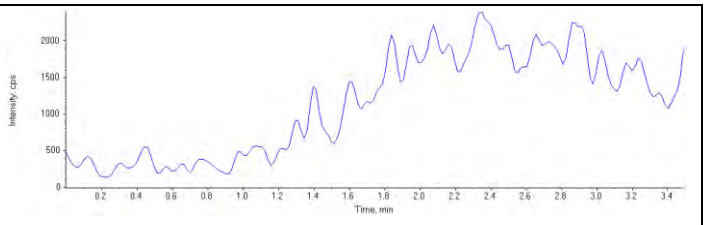
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 0.00 (1.85) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



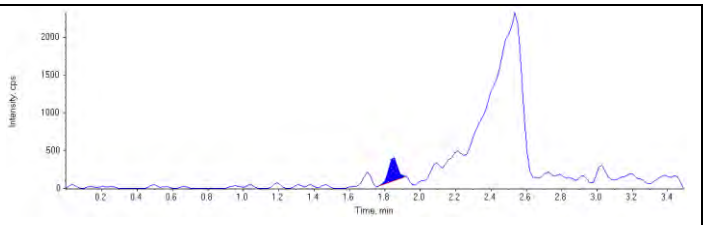
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 0.00190 µg/L

Area Ratio: 0.00375

Sample Type: (Unknown)



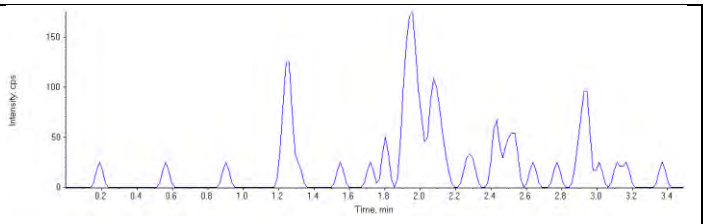
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)



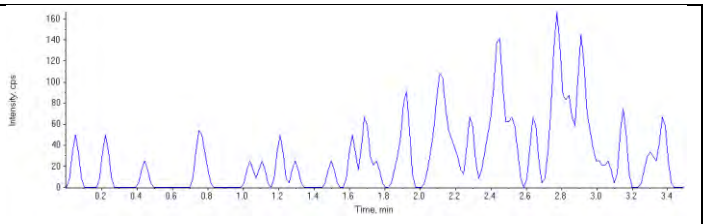
PFOS 2 (498.900/98.900 Da)

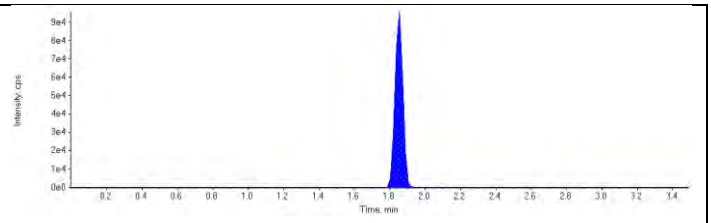
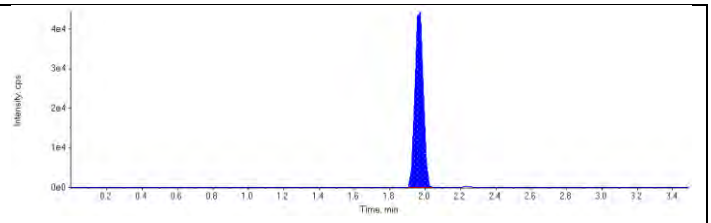
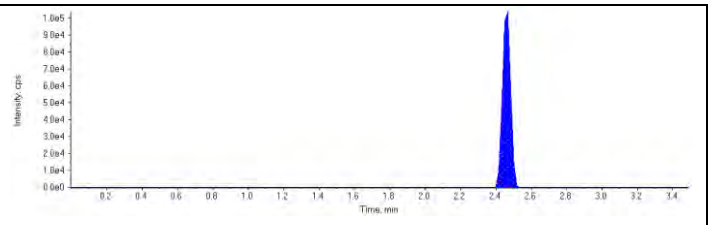
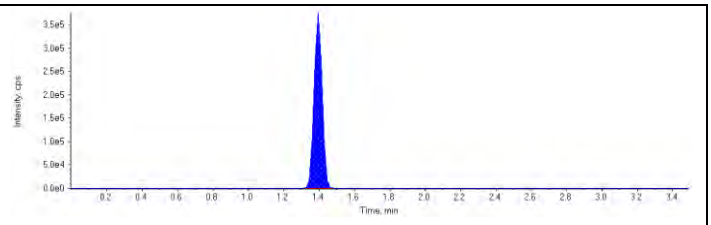
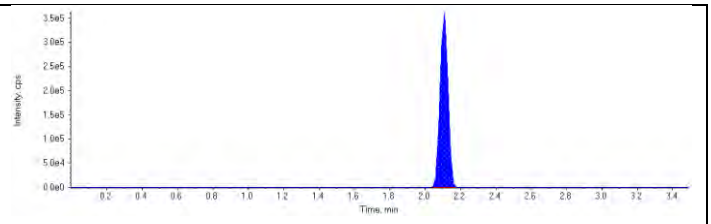
RT (Exp. RT): 0.00 (1.96) min

Calculated Conc: N/A µg/L

Area Ratio: 0.00

Sample Type: (Unknown)

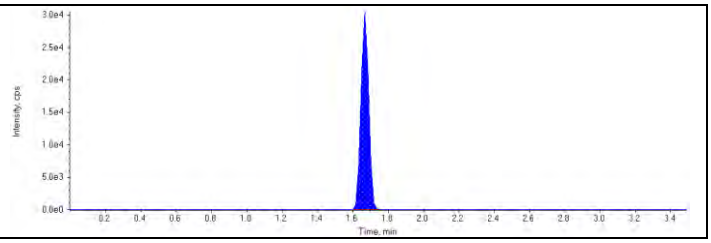
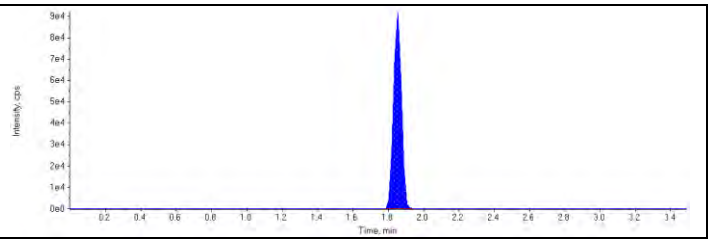
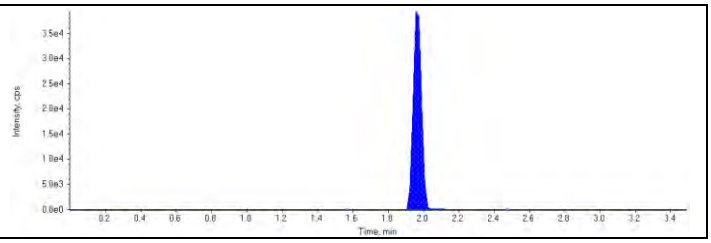
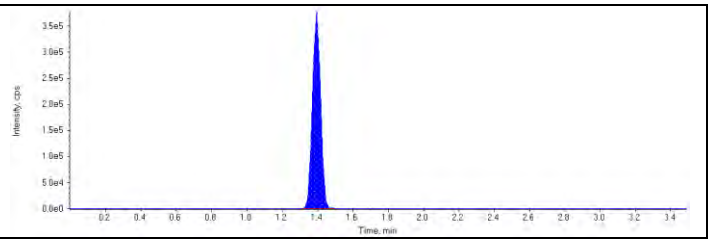
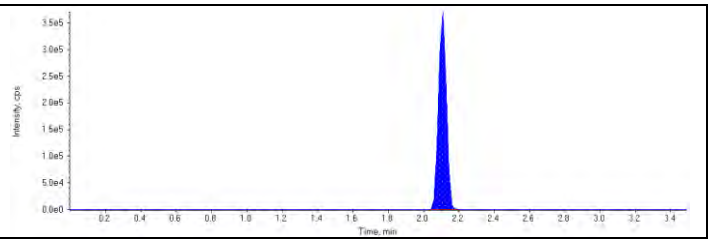


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 92.8 µg/L Area Ratio: 0.249 Sample Type: (Unknown)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 98.2 µg/L Area Ratio: 0.124 Sample Type: (Unknown)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 104. µg/L Area Ratio: 0.301 Sample Type: (Unknown)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.52 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.51 µg/L Area Ratio: 0.00 Sample Type: (Unknown)	

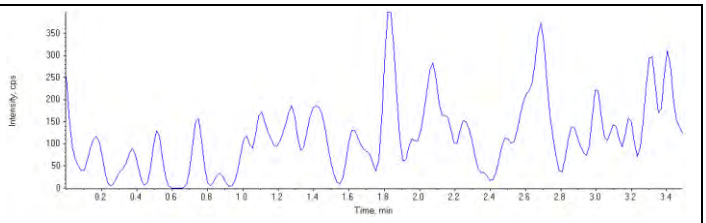
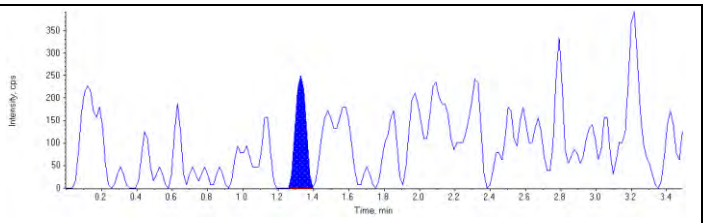
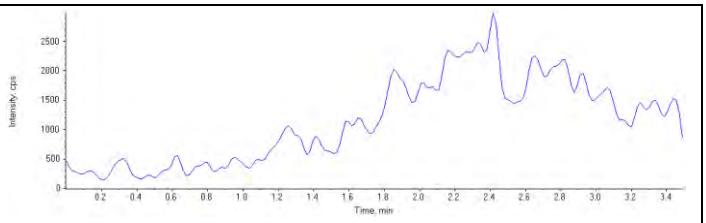
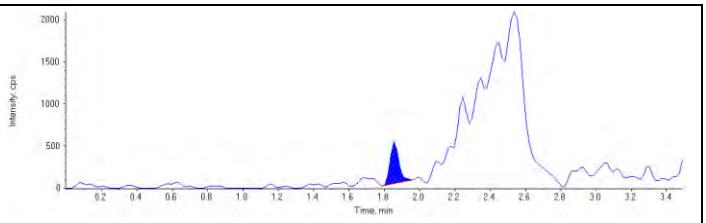
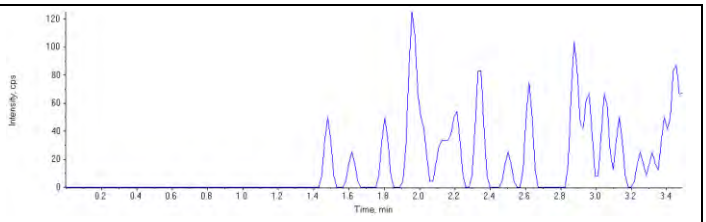
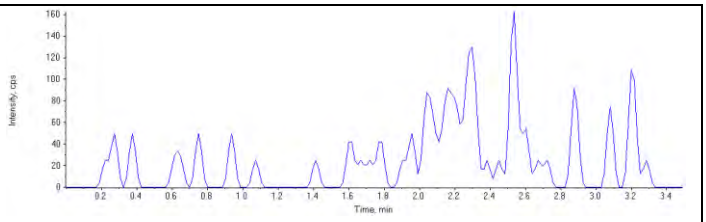
Sample ID	4989765~BLANK	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	10
Acquisition Date	2017/05/19 7:04:08 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

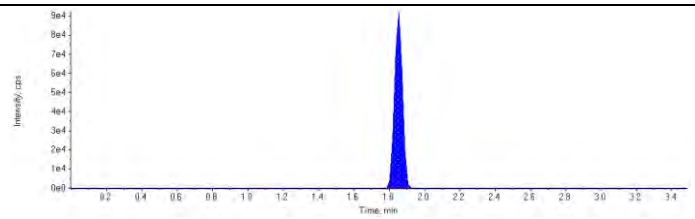
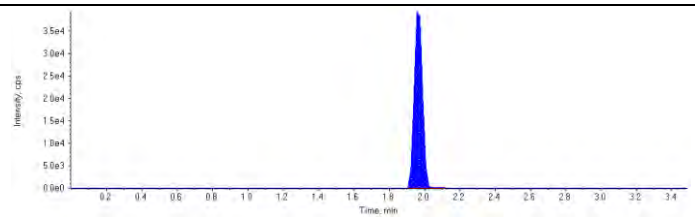
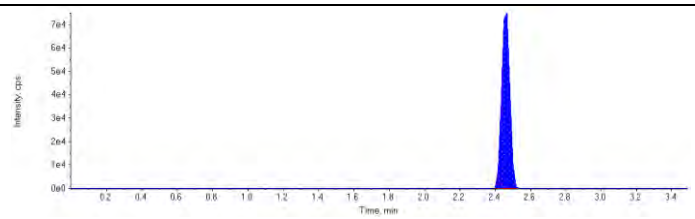
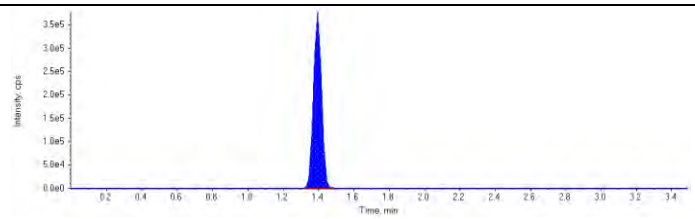
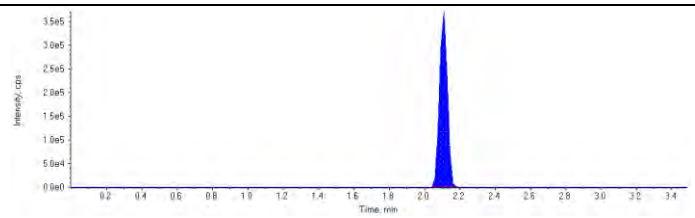
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	92200.	1.67	1.00	-
MPFOA	286000.	1.85	1.00	-
MPFOS	131000.	1.96	1.00	-
13C6-PFHxA IS	1200000.	1.39	41.7	-
13C9-PFDA IS	1150000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	0	0.00	0.00	N/A	0.0
PFBS 2	1020	1.33	0.00	0.00181	0.0
PFOA 1	0	0.00	0.00	N/A	0.0
PFOA 2	1700	1.86	0.00	0.00220	0.0
PFOS 1	0	0.00	0.00	N/A	0.0
PFOS 2	0	0.00	0.00	N/A	0.0
13C4-PFOA	286000	1.85	0.00	89.1	0.0
13C4-PFOS	131000	1.96	0.00	86.8	0.0
13C8-PFOSA	247000	2.46	0.00	74.7	0.0
13C6-PFHxA	1200000	1.39	0.00	2.53	0.0
13C9-PFDA	1150000	2.11	0.00	2.56	0.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.96(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

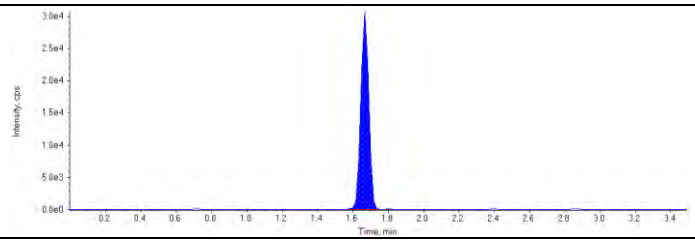
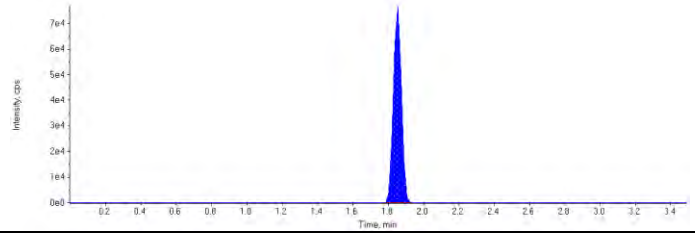
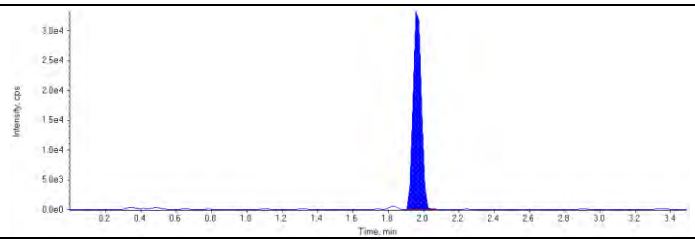
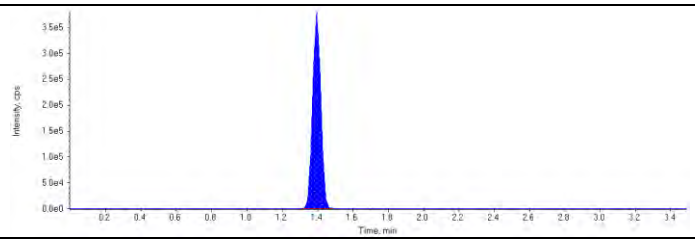
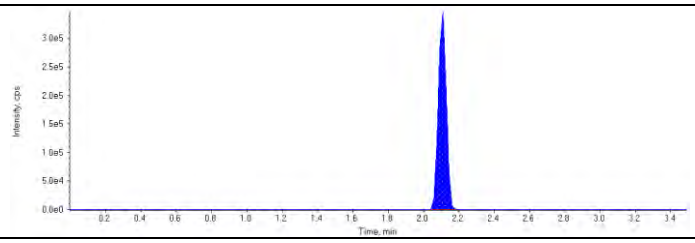
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 0.00 (1.11) min Calculated Conc: N/A µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.33 (1.11) min Calculated Conc: 0.00181 µg/L Area Ratio: 0.0111 Sample Type: (Quality Control)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 0.00 (1.85) min Calculated Conc: N/A µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.86 (1.85) min Calculated Conc: 0.00220 µg/L Area Ratio: 0.00595 Sample Type: (Quality Control)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 0.00 (1.96) min Calculated Conc: N/A µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 0.00 (1.96) min Calculated Conc: N/A µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 89.1 µg/L Area Ratio: 0.239 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.96 (1.97) min Calculated Conc: 86.8 µg/L Area Ratio: 0.109 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 74.7 µg/L Area Ratio: 0.216 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 2.53 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.56 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

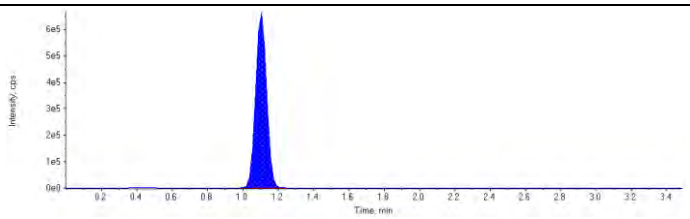
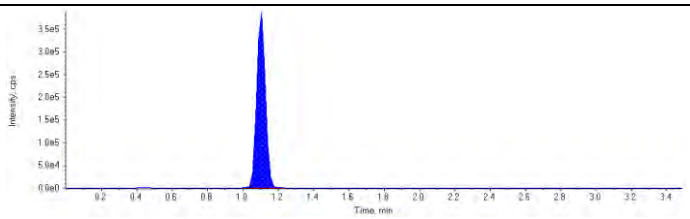
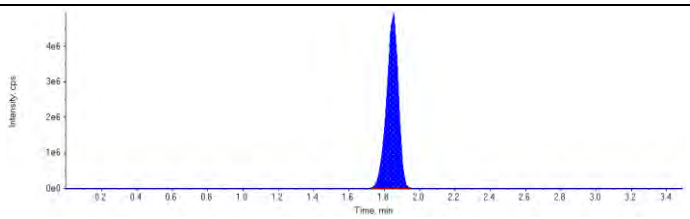
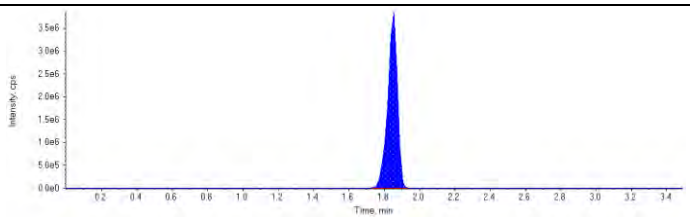
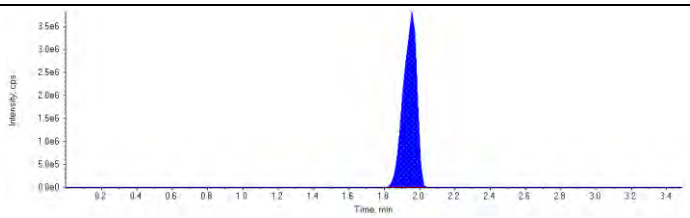
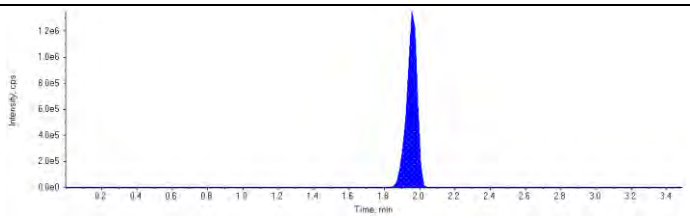
Sample ID	4989765~MTRX SPK (EJU284)	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	11
Acquisition Date	2017/05/19 7:09:11 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

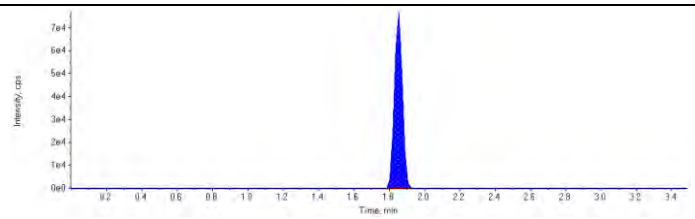
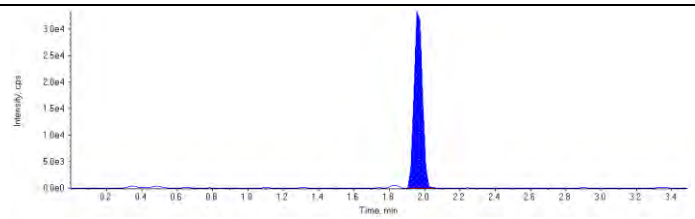
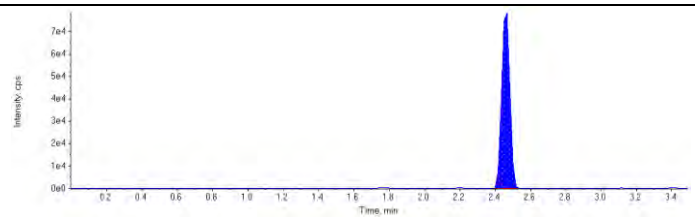
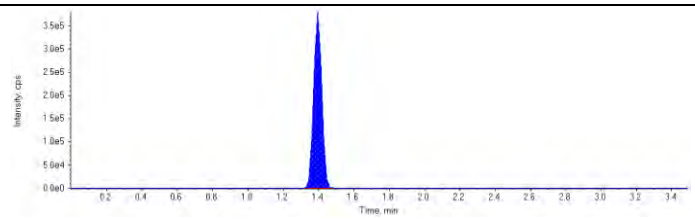
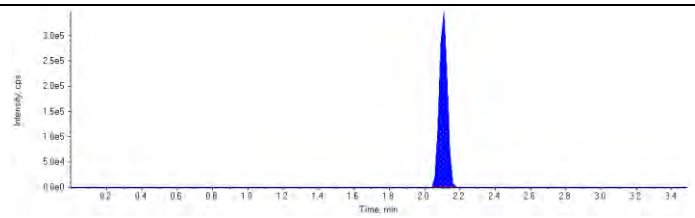
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	95900.	1.67	1.00	-
MPFOA	241000.	1.85	1.00	-
MPFOS	108000.	1.96	1.00	-
13C6-PFHxA IS	1220000.	1.40	41.7	-
13C9-PFDA IS	1090000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	2870000	1.10	0.500	0.649	130.0
PFBS 2	1340000	1.10	0.500	0.596	119.0
PFOA 1	22500000	1.85	0.500	5.09	1020.0
PFOA 2	14600000	1.85	0.500	8.16	1630.0
PFOS 1	20100000	1.96	0.500	8.82	1760.0
PFOS 2	5480000	1.96	0.500	7.44	1490.0
13C4-PFOA	241000	1.85	100.	73.9	73.9
13C4-PFOS	108000	1.96	100.	70.6	70.6
13C8-PFOSA	257000	2.46	100.	81.9	81.9
13C6-PFHxA	1220000	1.40	100.	2.58	2.6
13C9-PFDA	1090000	2.11	100.	2.43	2.4

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.96(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

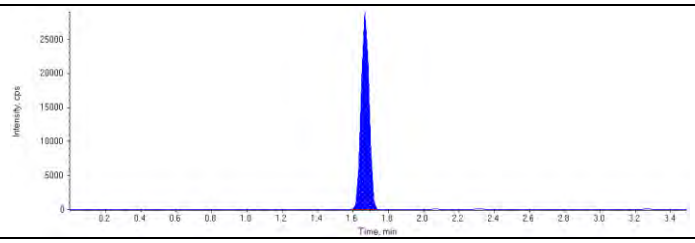
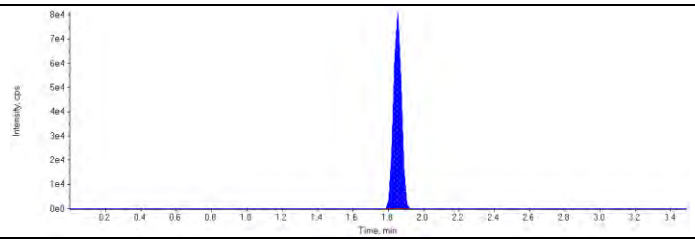
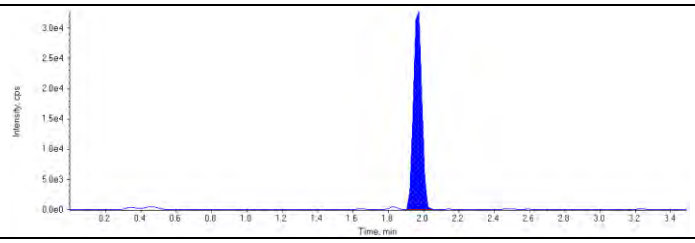
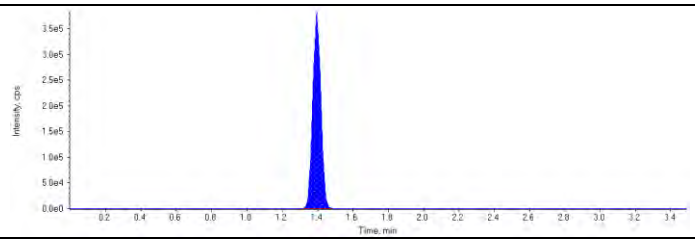
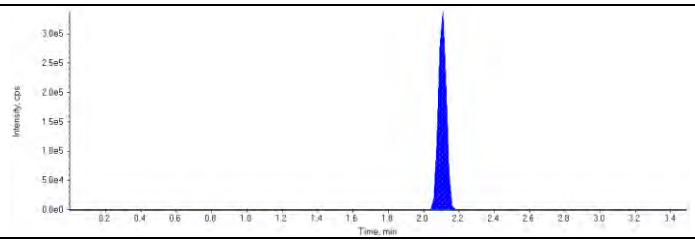
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.649 µg/L Area Ratio: 29.9 Sample Type: (Quality Control)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.596 µg/L Area Ratio: 14.0 Sample Type: (Quality Control)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 5.09 µg/L Area Ratio: 93.4 Sample Type: (Quality Control)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 8.16 µg/L Area Ratio: 60.6 Sample Type: (Quality Control)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 8.82 µg/L Area Ratio: 186. Sample Type: (Quality Control)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 7.44 µg/L Area Ratio: 50.5 Sample Type: (Quality Control)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 73.9 µg/L Area Ratio: 0.198 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.96 (1.97) min Calculated Conc: 70.6 µg/L Area Ratio: 0.0890 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 81.9 µg/L Area Ratio: 0.237 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.58 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.43 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

Sample ID	4989765~MTRX SPK:D1 (EJU284)	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	12
Acquisition Date	2017/05/19 7:14:15 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	89600.	1.67	1.00	-
MPFOA	250000.	1.85	1.00	-
MPFOS	109000.	1.97	1.00	-
13C6-PFHxA IS	1210000.	1.40	41.7	-
13C9-PFDA IS	1060000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	2610000	1.11	0.500	0.632	126.0
PFBS 2	1280000	1.11	0.500	0.609	122.0
PFOA 1	21400000	1.85	0.500	4.65	930.0
PFOA 2	14100000	1.85	0.500	7.59	1520.0
PFOS 1	19300000	1.96	0.500	8.47	1690.0
PFOS 2	5230000	1.96	0.500	7.10	1420.0
13C4-PFOA	250000	1.85	100.	77.4	77.4
13C4-PFOS	109000	1.97	100.	71.4	71.4
13C8-PFOSA	248000	2.46	100.	81.1	81.1
13C6-PFHxA	1210000	1.40	100.	2.55	2.6
13C9-PFDA	1060000	2.11	100.	2.36	2.4

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

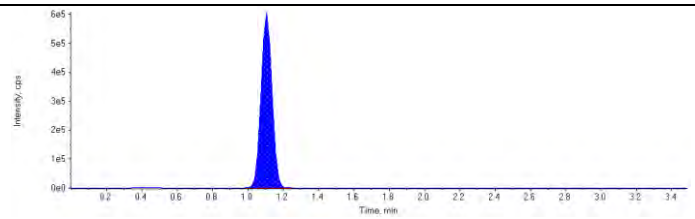
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 1.11 (1.11) min

Calculated Conc: 0.632 µg/L

Area Ratio: 29.1

Sample Type: (Quality Control)



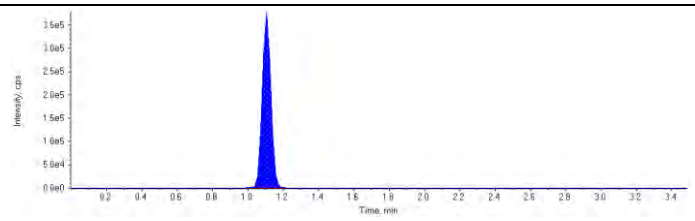
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.11 (1.11) min

Calculated Conc: 0.609 µg/L

Area Ratio: 14.3

Sample Type: (Quality Control)



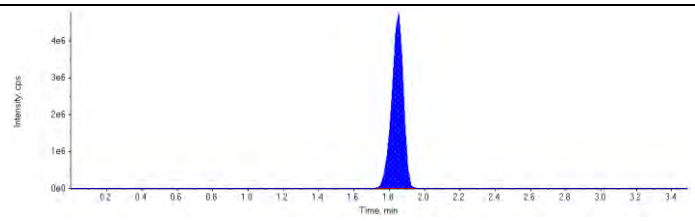
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 4.65 µg/L

Area Ratio: 85.4

Sample Type: (Quality Control)



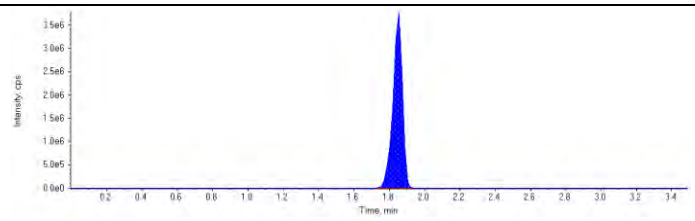
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 7.59 µg/L

Area Ratio: 56.3

Sample Type: (Quality Control)



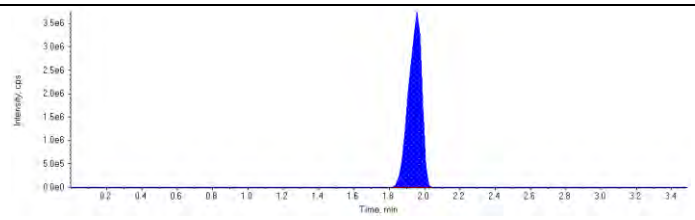
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 8.47 µg/L

Area Ratio: 178.

Sample Type: (Quality Control)



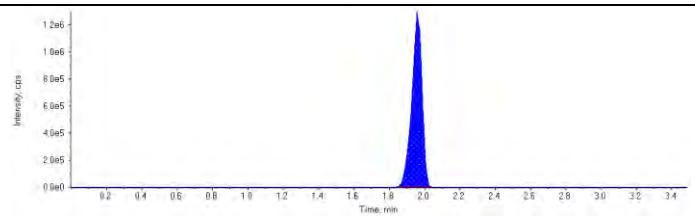
PFOS 2 (498.900/98.900 Da)

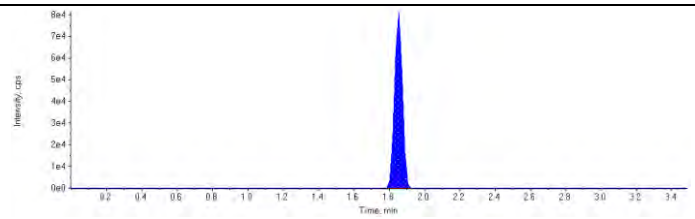
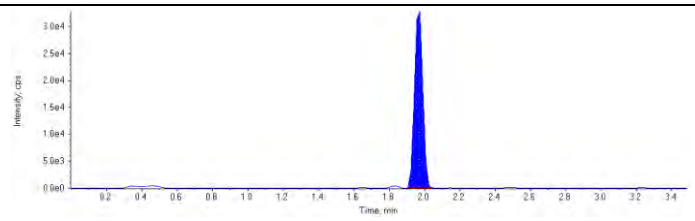
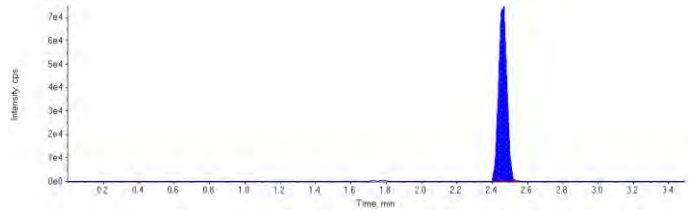
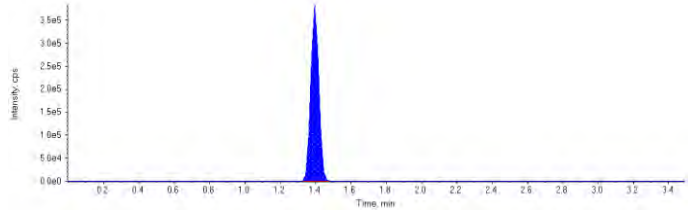
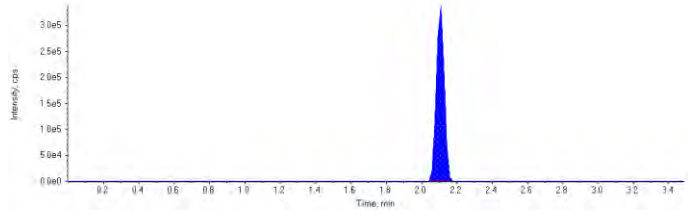
RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 7.10 µg/L

Area Ratio: 48.2

Sample Type: (Quality Control)

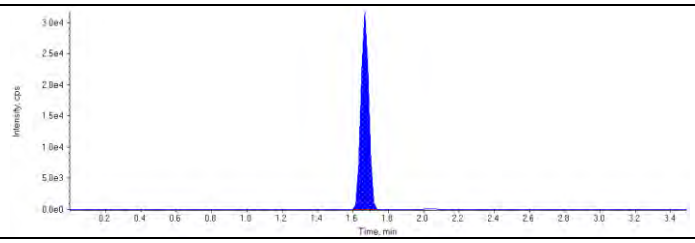
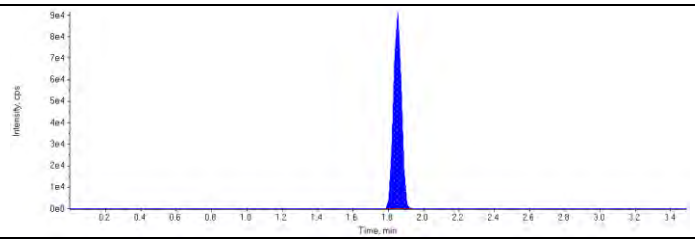
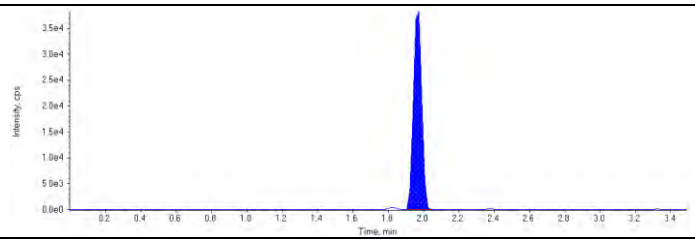
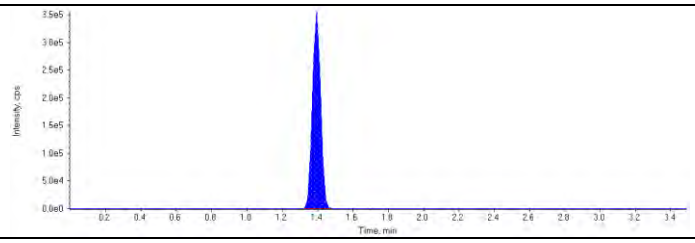
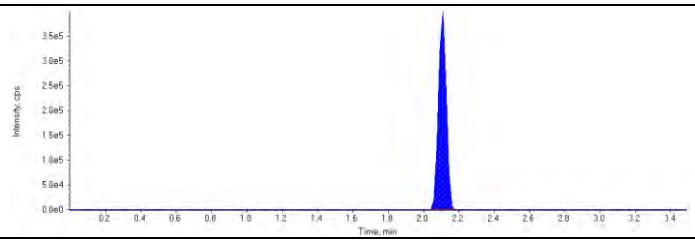


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 77.4 µg/L Area Ratio: 0.207 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 71.4 µg/L Area Ratio: 0.0899 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 81.1 µg/L Area Ratio: 0.234 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 2.55 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.36 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

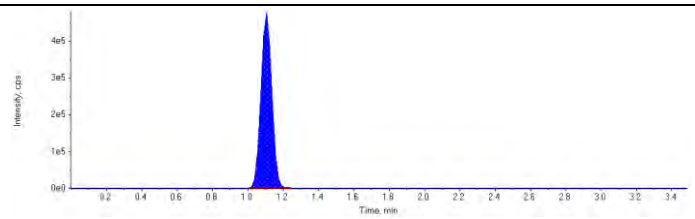
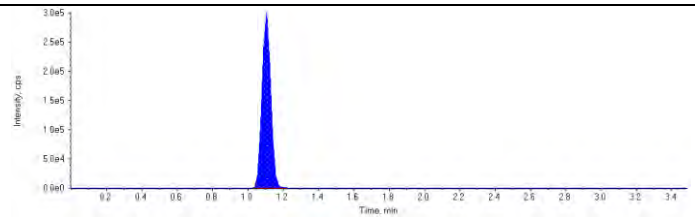
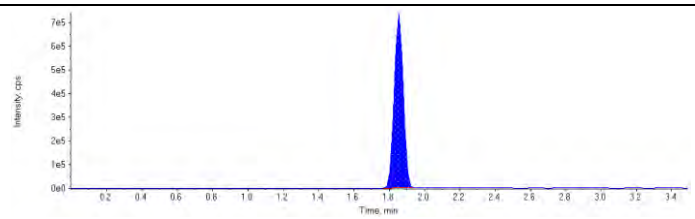
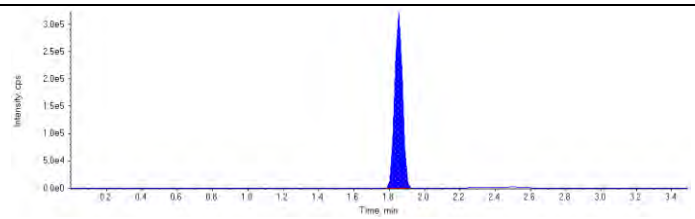
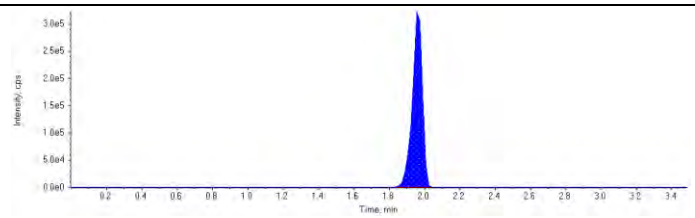
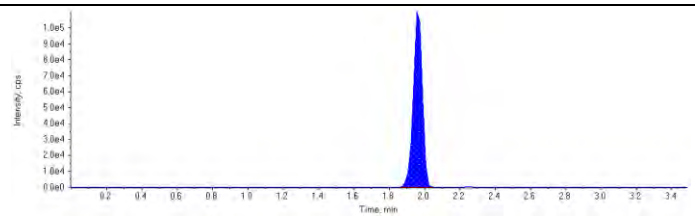
Sample ID	4989765~SPIKE	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	13
Acquisition Date	2017/05/19 7:19:18 PM	**Dilution Factor**	0.0240
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

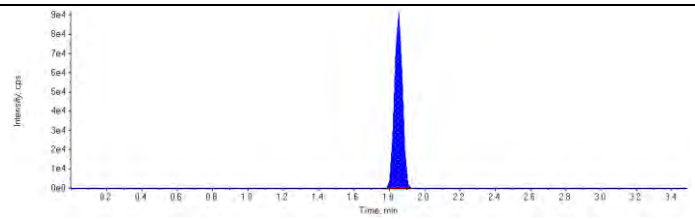
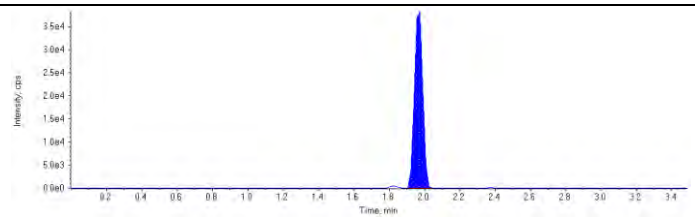
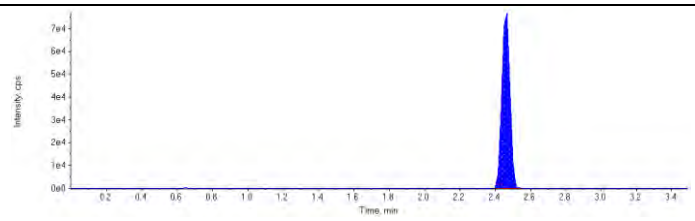
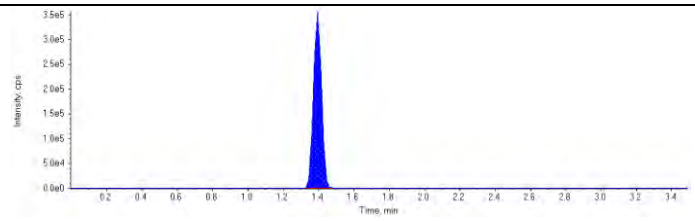
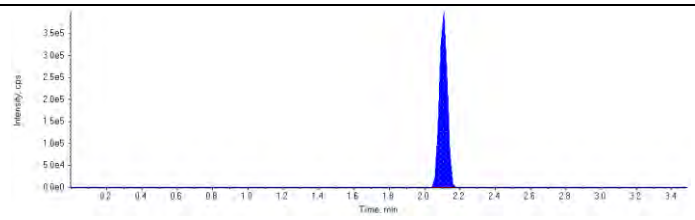
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	96500.	1.67	1.00	-
MPFOA	284000.	1.85	1.00	-
MPFOS	126000.	1.97	1.00	-
13C6-PFHxA IS	1130000.	1.39	41.7	-
13C9-PFDA IS	1230000.	2.11	41.7	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	2040000	1.10	0.500	0.459	91.8
PFBS 2	1030000	1.10	0.500	0.453	90.5
PFOA 1	2620000	1.85	0.500	0.503	101.0
PFOA 2	988000	1.85	0.500	0.469	93.8
PFOS 1	1280000	1.96	0.500	0.488	97.6
PFOS 2	396000	1.96	0.500	0.467	93.3
13C4-PFOA	284000	1.85	100.	93.6	93.6
13C4-PFOS	126000	1.97	100.	88.2	88.2
13C8-PFOSA	248000	2.46	100.	69.9	69.9
13C6-PFHxA	1130000	1.39	100.	2.40	2.4
13C9-PFDA	1230000	2.11	100.	2.75	2.8

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 41.7 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.459 µg/L Area Ratio: 21.1 Sample Type: (Quality Control)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.453 µg/L Area Ratio: 10.6 Sample Type: (Quality Control)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.503 µg/L Area Ratio: 9.23 Sample Type: (Quality Control)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.469 µg/L Area Ratio: 3.47 Sample Type: (Quality Control)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 0.488 µg/L Area Ratio: 10.2 Sample Type: (Quality Control)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 0.467 µg/L Area Ratio: 3.14 Sample Type: (Quality Control)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 93.6 µg/L Area Ratio: 0.251 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 88.2 µg/L Area Ratio: 0.111 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 69.9 µg/L Area Ratio: 0.202 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 2.40 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 2.75 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

DoD Projects - Internal Data Validation Checklist

Run date: 20170519

Worksheet # (s): 4989765

Analysis: PFOSALCM-W

	Primary review by the analyst - 1st 100 % analysis review	1st 100% review yes	no	n/a	*2nd 100% review
1	Sample analyses meet hold time criteria 20170525MG	X	✓		✓
2	Analysis set-up meets method criteria	✓			✓
3	Tuning and correct calibration used - criteria meets method criteria	✓			✓
4	SQC/Control Charts updated, analysis in statistical/method control	✓			✓
5	Internal area counts checked (if applicable)	✓			✓
6	LCS, 5RM are within acceptance criteria	✓			✓
7	Surrogate Recovery(s) is within acceptance criteria	✓			✓
8	Method Blank meets acceptance criteria	✓			✓
9	Matrix Spike recovery(s) meets acceptance criteria		✓		✓
10	Duplicate precision meets acceptance criteria	✓			✓
11	QC is documented on the run logs	✓			✓
12	Runs checked for carryover	✓			✓
13	Prep log / worksheet(s) are present, signed / dated by a prep / instrument analysts	✓			✓
14	Initial weights, splits, impringer volumes (where applicable) are documented	✓			✓
15	Standards and reagents traceable to Certificates of Analysis	✓			✓
16	Samples above calibration range diluted and reanalyzed	✓			✓
17	Dilution factors (where justified) have been checked for correctness and entered	✓			✓
18	Analytical observations/anomalies documented in LIMS	✓			✓
19	Random calculation checked and in correct units	✓			✓
20	If corrective actions were applied they are documented, initialed & dated			✓	✓
21	Manual integration – before & after data with a reason included, initialed & dated			✓	✓
22	Transferred data is validated in LIMS for correctness	✓			✓
23	Data package assembled (where required)	✓			✓

Reviewed by: MG Date: 20170525

Comments:

	Secondary Supervisor/Qualified Data Review Staff - 2nd 100% verification review	yes	no	n/a	
1	Repeats documented and referenced			✓	
2	Method and sample deviations noted, anomalies described (if applicable)			✓	
3	Data and QC validated in LIMS	✓			
4	Random calculation checked	✓			
5	Benchsheet (s) signed and dated	✓			
6	Data Package (if required) checked for completeness	✓			

Reviewed by: CM Date: 20170526

Comments:

Note: 2nd 100% verification review documented by secondary qualified data review
Primary and Secondary Internal Data Review Check must be performed by a different person

Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 4989765 Testcode: PFOSACCM-W

Sample Preparation		yes	no	n/a
1	Samples extracted within hold time		✓	
2	Client sample ID verified against Lab ID (waters & oils)	✓		
3	Parameter list and Client comments reviewed, (Spiking solutions matched to parameter list)	✓		
4	Height of sediment or if sample was decanted, recorded on worksheet	✓		
5	Method required QC processed with samples, maximum batch size = 20 client samples.	✓		
6	Sample, duplicate, matrix spike appear similar, initial sample as well as final extract	✓		
7	Sample weight or initial volume and extract final volume, aliquot factor clearly recorded.	✓		
8	If performed any additional dilution clearly recorded	✓		
9	Matrix spike / Duplicate performed on IOL samples if present	✓		✓
10	Spiking solutions valid (haven't expired), ID and volume used clearly identified on worksheet	✓		
11	Spiking process witnessed and signed off	✓		
12	Extraction type recorded (N3A2B = neutral, 3 x acidic, 2 x basic)			✓
13	Sample prep deviations documented within CompliantPro as a Policy Deviation			✓
14	Job Remarks reviewed on 2nd page of worksheet.	✓		
15	Worksheet and reagent tracking record completed and authorized.	✓		

SSV 2/7/05/18

Reviewed by: SSV Date: 2/7/05/18

Comments:

Worksheet Approval		yes	no	n/a
1	Verified the position of the vials in autosampler against sequence list; signed off sequence list			
2	Calibration and CCV standards valid (haven't expired)			
3	Initial calibration curve and DFTPP tune (if applicable) acceptable			
4	Continuing and Final CCV and DFTPP tune (if applicable) acceptable			
5	System performance check acceptable (if applicable)			
6	Internal standard responses acceptable			
7	Method blank meets acceptance criteria			
8	Lab Control Samples recoveries meets acceptance criteria			
9	Duplicate RPD meets acceptance criteria			
10	Matrix spike recoveries meets acceptance criteria			
11	Surrogate recoveries meets acceptance criteria			
12	Appropriate control charts updated			
13	Samples above calibration range diluted and reanalyzed			
14	Dilutions clearly documented on tracking record, inst file and verified during data upload			
15	Samples following high level samples checked for carryover.			
16	Mass spectra ion ratios acceptable for positive results, hardcopy in file.			
17	Analytical observations / anomalies documented			
18	DQW comments entered in LIMS, hardcopy in file			
19	Sample Prep section (above) reviewed and verified.			
20	WS Approval performed in LIMS			

DQW 2/10/05/10SWG

Reviewed by: Date:

Comments:

Worksheet Validation		yes	no	n/a
1	Calibration, QC and sample results reviewed and determined acceptable			
2	Manual integrations verified			
3	Random calculation checked			
4	Data and QC validated in LIMS			
5	Comments reviewed for appropriateness			
6	Reworks / relogs documented in file			
7	Worksheet signed and dated,			
8	Worksheet approved and validated within LIMS			

Reviewed by: Date:

Comments:

WS# : 4989765

Page #: 1/2

RUSH

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Thursday, May 18, 2017

Assigned to : Shivani Shivani

Test Code : PFOSALCM-W

Instrument Id:

Test Description : PFOS and PFOA in water by LC-MS/MS

Job Number	Sample Number	D	Sample ID	F	Moisture (sediment)	Wt or Vol (mL)	Final Vol (mL)	DF or AF	# Cont	Expiry Date	Test DeadLine	Criteria	Extract Date
	MTRX SPK	0	PFOS EJU284-01		0.1	125	3	1X					2017/05/18
	MTRX SPK	1	PFOS EJU284-01		0.1	125	3	1X					2017/05/18
	SPIKE		PFOS		0	125	3	1X					2017/05/18
	BLANK				0	125	3	1X					2017/05/18
B780524*	*EGH865-01R		[redacted]		0.1	125	3	1X	1	2017/05/05	2017/05/25 17:00		2017/05/18
B797633	*EJK050-01R		[redacted]		0.1	125	3	10/100	1	2017/05/23	2017/05/29 18:00	DOD	2017/05/18
B797633	*EJK051-01R		[redacted]		0.1	125	3	10/100	1	2017/05/23	2017/05/29 18:00	DOD	2017/05/18
B797633	*EJK052-01R		[redacted]		0.1	125	3	N	1	2017/05/23	2017/05/29 18:00	DOD	2017/05/18
B797633	*EJK053-01R		[redacted]		0.1	125	3	10/100	1	2017/05/24	2017/05/29 18:00	DOD	2017/05/18
B799808	*EJU281-01R		QCFB-0517		0.1	125	3	1X	1	2017/05/23	2017/05/31 18:00	DOD	2017/05/18
B799808	*EJU282-01R		06-MW30-0517		0.1	125	3	1X	1	2017/05/23	2017/05/31 18:00	DOD	2017/05/18
B799808	*EJU283-01R		06-MW30-0517DUP		0.1	125	3	1X	1	2017/05/23	2017/05/31 18:00	DOD	2017/05/18
B799808	*EJU284-01R		06-MW25-0517		0.1	125	3	1X/20X	3	2017/05/23	2017/05/31 18:00	DOD	2017/05/18
B799808	*EJU285-01R		06-MW26-0517		0.1	125	3	1X/20X	1	2017/05/23	2017/05/31 18:00	DOD	2017/05/18
B799814	*EJU312-01R		[redacted]		0.1	125	3	N	2	2017/05/25	2017/06/01 18:00	DOD	2017/05/18
B799814	*EJU313-01R		[redacted]		0.1	125	3	1X	2	2017/05/26	2017/06/01 18:00	DOD	2017/05/18
B799814	*EJU314-01R		[redacted]		0.1	125	3	1X/10X	2	2017/05/26	2017/06/01 18:00	DOD	2017/05/18
B799814	*EJU315-01R		[redacted]		0.1	125	3	1X	2	2017/05/27	2017/06/01 18:00	DOD	2017/05/18
B799819	*EJU327-01R		[redacted]		0.1	125	3	1X	1	2017/05/26	2017/05/31 23:00		2017/05/18
B799819	*EJU330-01R		[redacted]		0.1	125	3	1X	1	2017/05/26	2017/05/31 23:00		2017/05/18
B799819	*EJU331-01R		[redacted]		0.1	125	0	1X	1	2017/05/26	2017/05/31 23:00		2017/05/18

2017/05/18 SSV

Remarks: Shivani 2017/05/18

[redacted]

Samples extracted by: Shivani Shivani

Instrumentation performed by: [signature] Date: 2017/05/19

Calculations performed by: [signature] Date: 2017/05/25

Validated by: [signature] Date: 2017/05/26

Job No.	Rep / Client Name / Remarks	Contact	Client Tier	National
GB780524	[redacted]			
GB797633	[redacted]			
GB799808	**MDG EMAX Laboratories Inc** NREG PFOSALCM-W Level IV package (hardcopy not required as per Paul Henige), NEDD EDD and EDF EDD required MS/MSD required on EJU284 Pricing confirmed by AM. Project #: NO_1702_	Richard Beauvil	Tier 4 (Enviro.)	
GB799814	[redacted]			
GB799819	[redacted]			

Surrogates/Spikes	MeOH	IS	Spk	Method Spike	Spikes	Samples
IB	2850		25 SSV 2.7/05/18			
S1	2825		50 25			
S2	2800	ST-6439 3/4	150 50 SK-6786			
S3	2700		37.5 150			
S4	2713		75 37.5			
S5	2775		17 ~~12.5~~ 75 I-4990			
S6	2729		12.5 SSV 2.7/05/18			
ICV	2788	150 uL	62.5 – I-5015			

Sample	Preparation Remarks

Sample	Instrumentation Remarks

Worksheet Number: **4989765**

PFOS and PFOA in water - Water
ug/L

Parameter Name	Units	MTRX SPK	MTRX SPK Dup1	SPIKE	BLANK	DL	B780524 EGH865
6:2 Fluorotelomer sulfonate	ug/L	!! 20.00NC	!! 40.00NC	84.80000	0	0.02	0
8:2 Fluorotelomer sulfonate	ug/L	111.60000	110.80000	84.40000	0	0.02	0
N-ethylperfluorooctane sulfonamide	ug/L	104.20000	94.80000	106.00000	0	0.02	0
EtFOSAA	ug/L	N/A*******	N/A*******	N/A*******	N/A*******		N/A*******
N-ethylperfluorooctane sulfonamidoe	ug/L	102.20000	107.20000	114.40000	0	0.02	0
N-methylperfluorooctane sulfonamide	ug/L	99.40000	102.40000	96.00000	0	0.02	0
MeFOSAA	ug/L	N/A*******	N/A*******	N/A*******	N/A*******		N/A*******
N-methylperfluorooctanesulfonamidol	ug/L	92.40000	92.20000	93.00000	0	0.02	0
Perfluorobutanoic acid	ug/L	!! 68.00NC	86.00000NC	118.80000	0	0.02	0
Perfluorobutane Sulfonate (PFBS)	ug/L	106.20000	102.80000	91.80000	0	0.02	0
Perfluorodecane Sulfonate	ug/L	99.60000	92.20000	92.00000	0	0.02	0
Perfluoroheptanoic Acid (PFHpA)	ug/L	101.6000NC	95.60000NC	102.00000	0	0.02	0
Perfluoroheptane sulfonate	ug/L	117.8000NC	97.80000NC	113.00000	0	0.02	0
Perfluorohexanoic Acid (PFHxA)	ug/L	82.00000NC	!! 62.00NC	98.40000	0	0.02	0
Perfluorohexane Sulfonate (PFHxS)	ug/L	82.00000NC	78.00000NC	93.40000	0	0.02	0
Perfluorononanoic Acid (PFNA)	ug/L	103.70000	100.90000	92.80000	0	0.02	0
Perfluorooctane Sulfonamide (PFOSA)	ug/L	105.80000	103.80000	90.20000	0	0.02	0
Perfluoropentanoic Acid (PFPeA)	ug/L	109.8000NC	89.80000NC	88.60000	0	0.02	0
Perfluorotetradecanoic Acid	ug/L	95.40000	99.60000	103.80000	0	0.02	0
Perfluorotridecanoic Acid	ug/L	105.80000	109.40000	95.20000	0	0.02	0
Perfluoroundecanoic Acid (PFUnA)	ug/L	92.40000	87.20000	85.20000	0	0.02	0
Perfluorodecanoic Acid (PFDA)	ug/L	104.62000	108.02000	98.80000	0	0.02	0
Perfluorododecanoic Acid (PFDoA)	ug/L	102.60000	111.80000	102.40000	0	0.02	0
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	!! 20.00NC	!! -68.0NC	100.60000	0	0.02	0
Perfluorooctane Sulfonate (PFOS)	ug/L	!! 58.00NC	!! -12.0NC	97.60000	0	0.02	0
13C2-6:2 Fluorotelomer sulfonate	ug/L	85.9	78.7	86.9	79.4		87.9
13C2-8:2 Fluorotelomer sulfonate	ug/L	90.1	82.1	93.5	83.7		82.8
13C2-perfluorotetradecanoic acid	ug/L	87.7	78.1	73.7	70.5		82.6
13C4-Perfluorobutanoic acid	ug/L	87.8	75.6	80.5	91.4		96.6
13C6-Perfluorohexanoic Acid	ug/L	N/A*******	N/A*******	N/A*******	N/A*******		N/A*******
13C9-Perfluorodecanoic Acid	ug/L	N/A*******	N/A*******	N/A*******	N/A*******		N/A*******
N-methyl-d3-perfluorooctane sulfona	ug/L	79.2	70.4	70.2	80.1		87.4
N-ethyl-d5-perfluorooctane sulfonam	ug/L	80.9	71.3	63.3	79.5		94.3
13C2-Perfluorodecanoic acid	ug/L	88.5	79.8	77.8	87.4		108.
13C2-Perfluorododecanoic acid	ug/L	85.9	81.4	70.3	90.6		88.9
13C2-Perfluorohexanoic acid	ug/L	79.0	77.0	86.2	84.2		85.9
13C2-Perfluoroundecanoic acid	ug/L	86.6	87.4	80.1	84.4		99.0
13C4-Perfluoroheptanoic acid	ug/L	80.8	75.9	85.7	87.8		83.4
13C5-Perfluorononanoic acid	ug/L	84.6	76.7	91.7	89.0		85.6
13C4-Perfluorooctanoic acid	ug/L	73.9	77.4	93.6	89.1		88.6
13C4-Perfluorooctanesulfonate	ug/L	70.6	71.4	88.2	86.8		97.4
13C5-Perfluoropentanoic acid	ug/L	85.1	87.0	94.3	88.7		95.4
13C8-Perfluorooctane Sulfonamide	ug/L	81.9	81.1	69.9	74.7		105.
18O2-Perfluorohexanesulfonate	ug/L	85.1	80.2	92.0	83.2		92.3

PFOS and PFOA in water - Water
ug/L

Parameter Name	DL	B797633 EJK050	DL	B797633 EJK051	DL	B797633 EJK052	DL
6:2 Fluorotelomer sulfonate	0.02	4.20000	0.2	1.02000	0.2	0	0.02
8:2 Fluorotelomer sulfonate	0.02	0	0.2	0.23800	0.2	0	0.02
N-ethylperfluorooctane sulfonamide	0.02	N/A*******	0.2	N/A*******	0.2	N/A*******	0.02
EtFOSAA	0.02	N/A*******	0.2	N/A*******	0.2	N/A*******	0.02
N-ethylperfluorooctane sulfonamidoe	0.02	N/A*******	0.2	N/A*******	0.2	N/A*******	0.02
N-methylperfluorooctane sulfonamide	0.02	N/A*******	0.2	N/A*******	0.2	N/A*******	0.02
MeFOSAA	0.02	N/A*******	0.2	N/A*******	0.2	N/A*******	0.02
N-methylperfluorooctanesulfonamidol	0.02	N/A*******	0.2	N/A*******	0.2	N/A*******	0.02
Perfluorobutanoic acid	0.02	5.19000	0.2	2.32000	0.2	0	0.02
Perfluorobutane Sulfonate (PFBS)	0.02	7.54000	0.2	3.25000	0.2	0	0.02
Perfluorodecane Sulfonate	0.02	0	0.2	0	0.2	0	0.02
Perfluoroheptanoic Acid (PFHpA)	0.02	1.97000	0.2	0.63800	0.2	0	0.02
Perfluoroheptane sulfonate	0.02	N/A*******	0.2	N/A*******	0.2	N/A*******	0.02
Perfluorohexanoic Acid (PFHxA)	0.02	13.90000	2.0	8.20000	0.2	0	0.02
Perfluorohexane Sulfonate (PFHxS)	0.02	53.10000	2.0	17.90000	2.0	0	0.02
Perfluorononanoic Acid (PFNA)	0.02	0.07550	0.2	0.07580	0.2	0	0.02
Perfluorooctane Sulfonamide (PFOSA)	0.02	0	0.2	0.10100	0.2	0	0.02
Perfluoropentanoic Acid (PFPeA)	0.02	13.60000	2.0	5.21000	0.2	0	0.02
Perfluorotetradecanoic Acid	0.02	0	0.2	0	0.2	0	0.02
Perfluorotridecanoic Acid	0.02	0	0.2	0	0.2	0	0.02
Perfluoroundecanoic Acid (PFUnA)	0.02	0	0.2	0	0.2	0	0.02
Perfluorodecanoic Acid (PFDA)	0.02	0	0.2	0	0.2	0	0.02
Perfluorododecanoic Acid (PFDoA)	0.02	0	0.2	0	0.2	0	0.02
Perfluoro-n-Octanoic Acid (PFOA)	0.02	2.67000	0.2	1.04000	0.2	0	0.02
Perfluorooctane Sulfonate (PFOS)	0.02	38.80000	2.0	54.50000	2.0	0	0.02
13C2-6:2 Fluorotelomer sulfonate		96.8		126.		93.2	
13C2-8:2 Fluorotelomer sulfonate		108.		89.8		97.7	
13C2-perfluorotetradecanoic acid		76.6		85.6		77.7	
13C4-Perfluorobutanoic acid		102.		115.		83.9	
13C6-Perfluorohexanoic Acid		N/A*******		N/A*******		N/A*******	
13C9-Perfluorodecanoic Acid		N/A*******		N/A*******		N/A*******	
N-methyl-d3-perfluorooctane sulfona		78.9		93.5		84.4	
N-ethyl-d5-perfluorooctane sulfonam		80.7		101.		76.2	
13C2-Perfluorodecanoic acid		94.6		111.		96.0	
13C2-Perfluorododecanoic acid		80.3		101.		83.2	
13C2-Perfluorohexanoic acid		103.		105.		81.6	
13C2-Perfluoroundecanoic acid		84.3		120.		84.9	
13C4-Perfluoroheptanoic acid		91.4		121.		84.8	
13C5-Perfluorononanoic acid		93.3		106.		84.2	
13C4-Perfluorooctanoic acid		104.		107.		81.0	
13C4-Perfluorooctanesulfonate		110.		97.0		88.8	
13C5-Perfluoropentanoic acid		101.		111.		81.9	
13C8-Perfluorooctane Sulfonamide		82.6		95.4		88.0	
18O2-Perfluorohexanesulfonate		99.5		88.3		81.5	

PFOS and PFOA in water - Water
ug/L

Parameter Name	B797633 EJK053	DL	B799808 EJU281	B799808 EJU282	B799808 EJU283	DL	B799808 EJU284
6:2 Fluorotelomer sulfonate	50.90000	2.0	N/A*******	N/A*******	N/A*******	0.02	N/A*******
8:2 Fluorotelomer sulfonate	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
N-ethylperfluorooctane sulfonamide	N/A*******	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
EtFOSAA	N/A*******	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
N-ethylperfluorooctane sulfonamidoe	N/A*******	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
N-methylperfluorooctane sulfonamide	N/A*******	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
MeFOSAA	N/A*******	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
N-methylperfluorooctanesulfonamidol	N/A*******	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorobutanoic acid	7.21000	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorobutane Sulfonate (PFBS)	3.17000	0.2	0	0.00600	0.00648	0.02	0.11800
Perfluorodecane Sulfonate	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluoroheptanoic Acid (PFHpA)	2.64000	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluoroheptane sulfonate	N/A*******	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorohexanoic Acid (PFHxA)	33.70000	2.0	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorohexane Sulfonate (PFHxS)	8.30000	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorononanoic Acid (PFNA)	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorooctane Sulfonamide (PFOSA)	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluoropentanoic Acid (PFPeA)	19.50000	2.0	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorotetradecanoic Acid	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorotridecanoic Acid	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluoroundecanoic Acid (PFUnA)	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorodecanoic Acid (PFDA)	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluorododecanoic Acid (PFDoA)	0	0.2	N/A*******	N/A*******	N/A*******	0.02	N/A*******
Perfluoro-n-Octanoic Acid (PFOA)	1.66000	0.2	0	0.03160	0.03280	0.02	7.32000
Perfluorooctane Sulfonate (PFOS)	1.11000	0.2	0	0.13000	0.17000	0.02	7.05000
13C2-6:2 Fluorotelomer sulfonate	79.7		116.	110.	!! 151.		98.6
13C2-8:2 Fluorotelomer sulfonate	87.9		139.	80.1	134.		97.6
13C2-perfluorotetradecanoic acid	78.0		72.7	80.0	89.8		74.7
13C4-Perfluorobutanoic acid	79.3		90.3	94.1	144.		94.0
13C6-Perfluorohexanoic Acid	N/A*******		N/A*******	N/A*******	N/A*******		N/A*******
13C9-Perfluorodecanoic Acid	N/A*******		N/A*******	N/A*******	N/A*******		N/A*******
N-methyl-d3-perfluorooctane sulfona	63.7		81.6	72.7	90.4		82.2
N-ethyl-d5-perfluorooctane sulfonam	72.5		75.8	81.5	87.9		83.1
13C2-Perfluorodecanoic acid	77.8		88.2	101.	102.		94.6
13C2-Perfluorododecanoic acid	76.6		87.3	93.4	94.1		84.1
13C2-Perfluorohexanoic acid	80.0		111.	99.6	116.		92.5
13C2-Perfluoroundecanoic acid	72.1		81.3	98.7	94.5		91.9
13C4-Perfluoroheptanoic acid	89.8		93.4	84.9	131.		90.2
13C5-Perfluorononanoic acid	97.0		87.8	98.0	117.		89.7
13C4-Perfluorooctanoic acid	90.6		93.0	92.4	123.		113.
13C4-Perfluorooctanesulfonate	94.8		92.6	86.8	112.		108.
13C5-Perfluoropentanoic acid	73.4		84.1	88.0	109.		103.
13C8-Perfluorooctane Sulfonamide	81.0		78.9	95.4	87.4		92.1
18O2-Perfluorohexanesulfonate	98.8		90.1	91.8	115.		103.

Worksheet Number: **4989765**

PFOS and PFOA in water - Water
ug/L

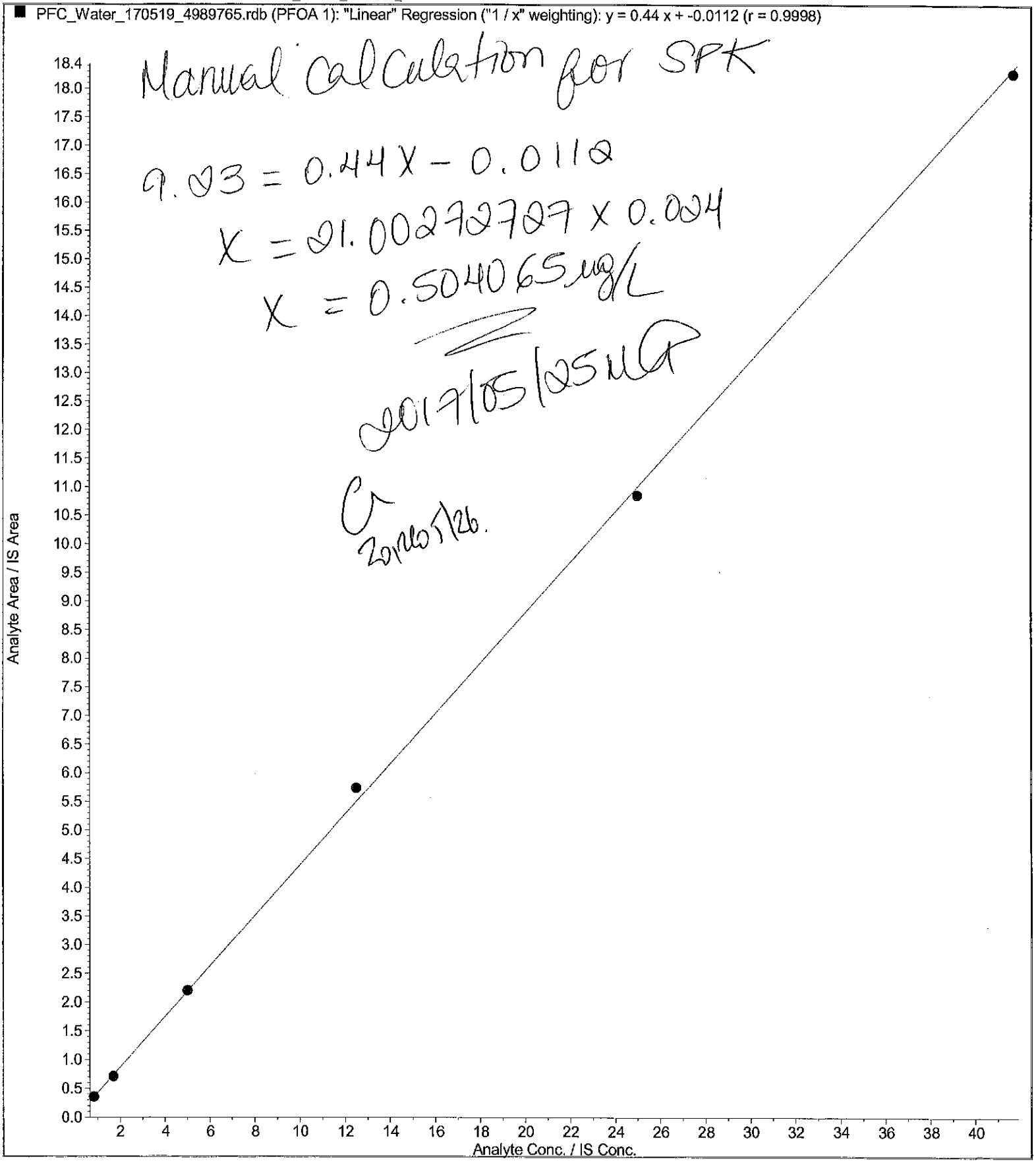
Parameter Name	DL	B799808 EJU285	DL	B799814 EJU312	B799814 EJU313	DL	B799814 EJU314
6:2 Fluorotelomer sulfonate	0.02	N/A*******	0.02	0	0.55200	0.02	2.24000
8:2 Fluorotelomer sulfonate	0.02	N/A*******	0.02	0	0.05390	0.02	0.22200
N-ethylperfluorooctane sulfonamide	0.02	N/A*******	0.02	N/A*******	N/A*******	0.02	N/A*******
EtFOSAA	0.02	N/A*******	0.02	N/A*******	N/A*******	0.02	N/A*******
N-ethylperfluorooctane sulfonamidoe	0.02	N/A*******	0.02	N/A*******	N/A*******	0.02	N/A*******
N-methylperfluorooctane sulfonamide	0.02	N/A*******	0.02	N/A*******	N/A*******	0.02	N/A*******
MeFOSAA	0.02	N/A*******	0.02	N/A*******	N/A*******	0.02	N/A*******
N-methylperfluorooctanesulfonamidol	0.02	N/A*******	0.02	N/A*******	N/A*******	0.02	N/A*******
Perfluorobutanoic acid	0.02	N/A*******	0.02	0.00956	0.07620	0.02	0.10800
Perfluorobutane Sulfonate (PFBS)	0.02	0.03800	0.02	0	0.00705	0.02	0.01020
Perfluorodecane Sulfonate	0.02	N/A*******	0.02	0	0	0.02	0
Perfluoroheptanoic Acid (PFHpA)	0.02	N/A*******	0.02	0.00407	0.11400	0.02	0.16300
Perfluoroheptane sulfonate	0.02	N/A*******	0.02	N/A*******	N/A*******	0.02	N/A*******
Perfluorohexanoic Acid (PFHxA)	0.4	N/A*******	0.02	0.00606	0.23800	0.02	0.32900
Perfluorohexane Sulfonate (PFHxS)	0.4	N/A*******	0.4	0.01100	0.33400	0.02	0.18100
Perfluorononanoic Acid (PFNA)	0.02	N/A*******	0.02	0	0.01340	0.02	0.01160
Perfluorooctane Sulfonamide (PFOSA)	0.02	N/A*******	0.02	0	0	0.02	0
Perfluoropentanoic Acid (PFPeA)	0.02	N/A*******	0.02	0.01030	0.32700	0.02	0.55300
Perfluorotetradecanoic Acid	0.02	N/A*******	0.02	0	0	0.02	0
Perfluorotridecanoic Acid	0.02	N/A*******	0.02	0	0	0.02	0
Perfluoroundecanoic Acid (PFUnA)	0.02	N/A*******	0.02	0	0	0.02	0
Perfluorodecanoic Acid (PFDA)	0.02	N/A*******	0.02	0	0	0.02	0
Perfluorododecanoic Acid (PFDoA)	0.02	N/A*******	0.02	0	0	0.02	0
Perfluoro-n-Octanoic Acid (PFOA)	0.4	0.75100	0.02	0	0.09420	0.02	0.19000
Perfluorooctane Sulfonate (PFOS)	0.4	9.97000	0.4	0	0.16800	0.02	0.02490
13C2-6:2 Fluorotelomer sulfonate		116.		92.1	130.		99.4
13C2-8:2 Fluorotelomer sulfonate		138.		87.1	126.		98.3
13C2-perfluorotetradecanoic acid		91.6		68.3	68.7		61.4
13C4-Perfluorobutanoic acid		115.		112.	131.		95.7
13C6-Perfluorohexanoic Acid		N/A*******		N/A*******	N/A*******		N/A*******
13C9-Perfluorodecanoic Acid		N/A*******		N/A*******	N/A*******		N/A*******
N-methyl-d3-perfluorooctane sulfona		93.3		91.6	89.9		83.7
N-ethyl-d5-perfluorooctane sulfonam		86.4		76.1	91.5		84.1
13C2-Perfluorodecanoic acid		106.		89.1	102.		93.7
13C2-Perfluorododecanoic acid		107.		76.2	105.		91.6
13C2-Perfluorohexanoic acid		102.		94.4	102.		86.4
13C2-Perfluoroundecanoic acid		114.		91.8	102.		81.1
13C4-Perfluoroheptanoic acid		110.		92.8	109.		87.8
13C5-Perfluorononanoic acid		113.		93.3	107.		90.6
13C4-Perfluorooctanoic acid		115.		104.	108.		91.2
13C4-Perfluorooctanesulfonate		99.8		100.	114.		97.2
13C5-Perfluoropentanoic acid		112.		98.9	111.		83.3
13C8-Perfluorooctane Sulfonamide		107.		92.9	104.		86.3
18O2-Perfluorohexanesulfonate		108.		108.	113.		93.0

PFOS and PFOA in water - Water
ug/L

Parameter Name	DL	B799814 EJU315	B799819 EJU327	B799819 EJU330	B799819 EJU331	DL	RDL
6:2 Fluorotelomer sulfonate	0.2	0	0	0	0	0.02	0.02
8:2 Fluorotelomer sulfonate	0.02	0.01130	0	0	0	0.02	0.02
N-ethylperfluorooctane sulfonamide	0.02	N/A*******	0	0	0	0.02	0.02
EtFOSAA	0.02	N/A*******	N/A*******	N/A*******	N/A*******	0.02	0.02
N-ethylperfluorooctane sulfonamidoe	0.02	N/A*******	0	0	0	0.02	0.02
N-methylperfluorooctane sulfonamide	0.02	N/A*******	0	0	0	0.02	0.02
MeFOSAA	0.02	N/A*******	N/A*******	N/A*******	N/A*******	0.02	0.02
N-methylperfluorooctanesulfonamidol	0.02	N/A*******	0	0	0	0.02	0.02
Perfluorobutanoic acid	0.02	0.01260	0	0	0	0.02	0.02
Perfluorobutane Sulfonate (PFBS)	0.02	0	0	0	0	0.02	0.02
Perfluorodecane Sulfonate	0.02	0	0	0	0	0.02	0.02
Perfluoroheptanoic Acid (PFHpA)	0.02	0.01120	0	0	0	0.02	0.02
Perfluoroheptane sulfonate	0.02	N/A*******	0	0	0	0.02	0.02
Perfluorohexanoic Acid (PFHxA)	0.02	0.01100	0	0	0	0.02	0.02
Perfluorohexane Sulfonate (PFHxS)	0.02	0.03620	0	0	0	0.02	0.02
Perfluorononanoic Acid (PFNA)	0.02	0	0	0	0	0.02	0.02
Perfluorooctane Sulfonamide (PFOSA)	0.02	0	0	0	0	0.02	0.02
Perfluoropentanoic Acid (PFPeA)	0.02	0.01410	0.00668	0	0	0.02	0.02
Perfluorotetradecanoic Acid	0.02	0	0	0	0	0.02	0.02
Perfluorotridecanoic Acid	0.02	0	0	0	0	0.02	0.02
Perfluoroundecanoic Acid (PFUnA)	0.02	0.00547	0	0	0	0.02	0.02
Perfluorodecanoic Acid (PFDA)	0.02	0	0	0	0	0.02	0.02
Perfluorododecanoic Acid (PFDoA)	0.02	0	0	0	0	0.02	0.02
Perfluoro-n-Octanoic Acid (PFOA)	0.02	0.01200	0	0	0	0.02	0.02
Perfluorooctane Sulfonate (PFOS)	0.02	0.00677	0	0	0	0.02	0.02
13C2-6:2 Fluorotelomer sulfonate		128.	130.	112.	106.		
13C2-8:2 Fluorotelomer sulfonate		111.	110.	109.	85.5		
13C2-perfluorotetradecanoic acid		82.3	82.3	69.9	80.8		
13C4-Perfluorobutanoic acid		92.9	125.	113.	98.2		
13C6-Perfluorohexanoic Acid		N/A*******	N/A*******	N/A*******	N/A*******		
13C9-Perfluorodecanoic Acid		N/A*******	N/A*******	N/A*******	N/A*******		
N-methyl-d3-perfluorooctane sulfona		104.	80.2	81.3	92.6		
N-ethyl-d5-perfluorooctane sulfonam		89.7	78.4	79.5	93.6		
13C2-Perfluorodecanoic acid		99.0	91.7	93.6	105.		
13C2-Perfluorododecanoic acid		99.5	83.6	93.5	90.9		
13C2-Perfluorohexanoic acid		110.	113.	107.	103.		
13C2-Perfluoroundecanoic acid		103.	95.5	105.	95.0		
13C4-Perfluoroheptanoic acid		101.	98.1	114.	93.2		
13C5-Perfluorononanoic acid		103.	115.	112.	102.		
13C4-Perfluorooctanoic acid		98.2	117.	114.	110.		
13C4-Perfluorooctanesulfonate		93.8	112.	100.	100.		
13C5-Perfluoropentanoic acid		98.9	120.	109.	100.		
13C8-Perfluorooctane Sulfonamide		94.2	89.1	85.4	99.5		
18O2-Perfluorohexanesulfonate		96.5	112.	112.	108.		

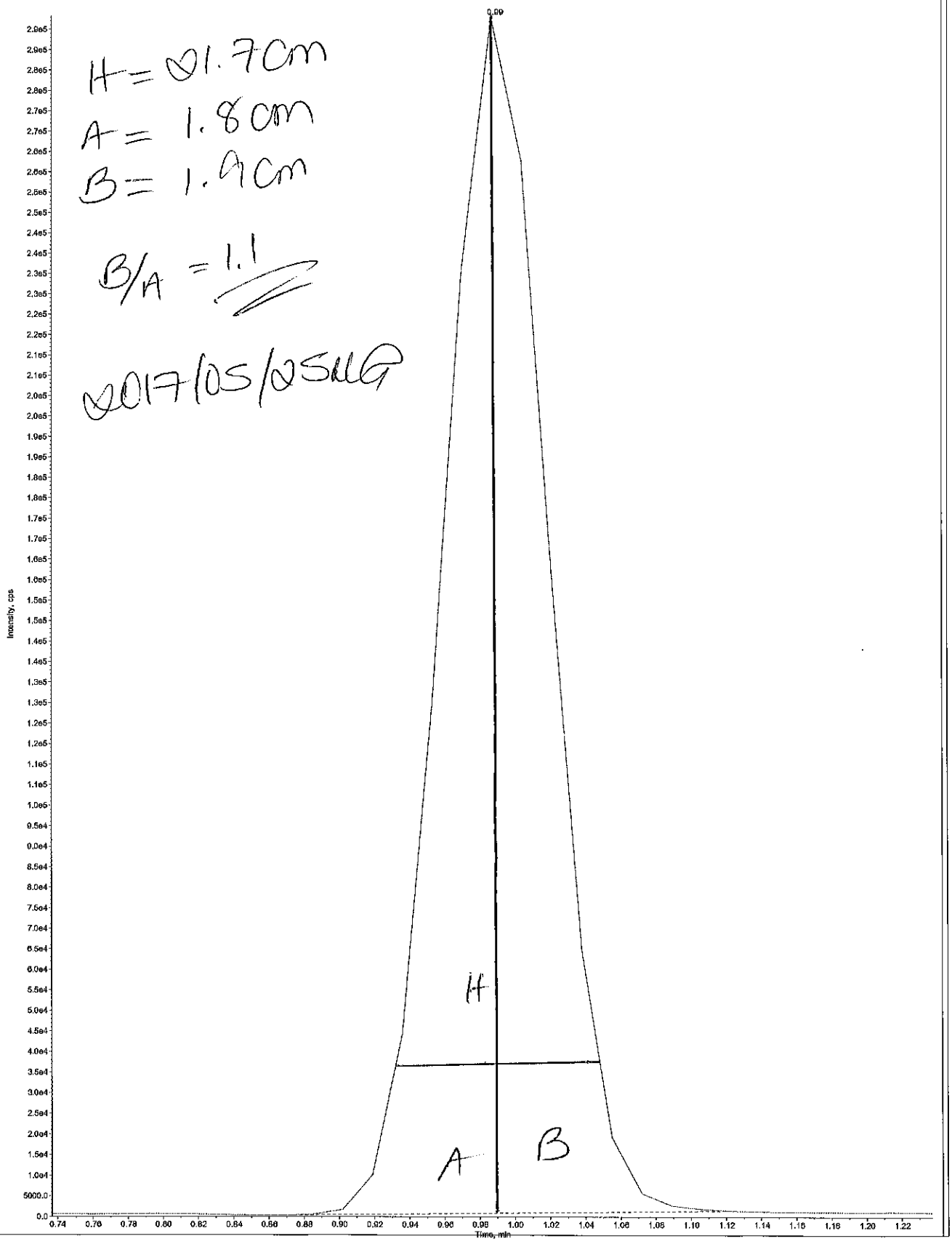
PFOS and PFOA in water - Water
ug/L

Parameter Name	MDL	IDL					
6:2 Fluorotelomer sulfonate	0.0032	0					
8:2 Fluorotelomer sulfonate	0.0036	0					
N-ethylperfluorooctane sulfonamide	0.0058	0					
EtFOSAA	0.0036	0					
N-ethylperfluorooctane sulfonamidoe	0.0063	0					
N-methylperfluorooctane sulfonamide	0.0041	0					
MeFOSAA	0.0026	0					
N-methylperfluorooctanesulfonamidol	0.0043	0					
Perfluorobutanoic acid	0.0066	0					
Perfluorobutane Sulfonate (PFBS)	0.0048	0					
Perfluorodecane Sulfonate	0.0046	0					
Perfluoroheptanoic Acid (PFHpA)	0.0033	0					
Perfluoroheptane sulfonate	0.0048	0					
Perfluorohexanoic Acid (PFHxA)	0.0029	0					
Perfluorohexane Sulfonate (PFHxS)	0.0034	0					
Perfluorononanoic Acid (PFNA)	0.0046	0					
Perfluorooctane Sulfonamide (PFOSA)	0.0036	0					
Perfluoropentanoic Acid (PFPeA)	0.0027	0					
Perfluorotetradecanoic Acid	0.0038	0					
Perfluorotridecanoic Acid	0.0033	0					
Perfluoroundecanoic Acid (PFUnA)	0.0043	0					
Perfluorodecanoic Acid (PFDA)	0.004	0					
Perfluorododecanoic Acid (PFDoA)	0.0028	0					
Perfluoro-n-Octanoic Acid (PFOA)	0.0046	0					
Perfluorooctane Sulfonate (PFOS)	0.0026	0					
13C2-6:2 Fluorotelomer sulfonate							
13C2-8:2 Fluorotelomer sulfonate							
13C2-perfluorotetradecanoic acid							
13C4-Perfluorobutanoic acid							
13C6-Perfluorohexanoic Acid							
13C9-Perfluorodecanoic Acid							
N-methyl-d3-perfluorooctane sulfona							
N-ethyl-d5-perfluorooctane sulfonam							
13C2-Perfluorodecanoic acid							
13C2-Perfluorododecanoic acid							
13C2-Perfluorohexanoic acid							
13C2-Perfluoroundecanoic acid							
13C4-Perfluoroheptanoic acid							
13C5-Perfluorononanoic acid							
13C4-Perfluorooctanoic acid							
13C4-Perfluorooctanesulfonate							
13C5-Perfluoropentanoic acid							
13C8-Perfluorooctane Sulfonamide							
18O2-Perfluorohexanesulfonate							


PFC_Water_170519_4989765.rdb (PFOA 1): "Linear" Regression ("1 / x" weighting): y = 0.44 x + -0.0112 (r = 0.9998)
Manual calculation for SPK
9.03 = 0.44X − 0.0112
X = 21.002727 x 0.024
X = 0.504065 ng/L
2017/05/25 MG
2017/5/26.
Analyte Area / IS Area
Analyte Conc. / IS Conc.

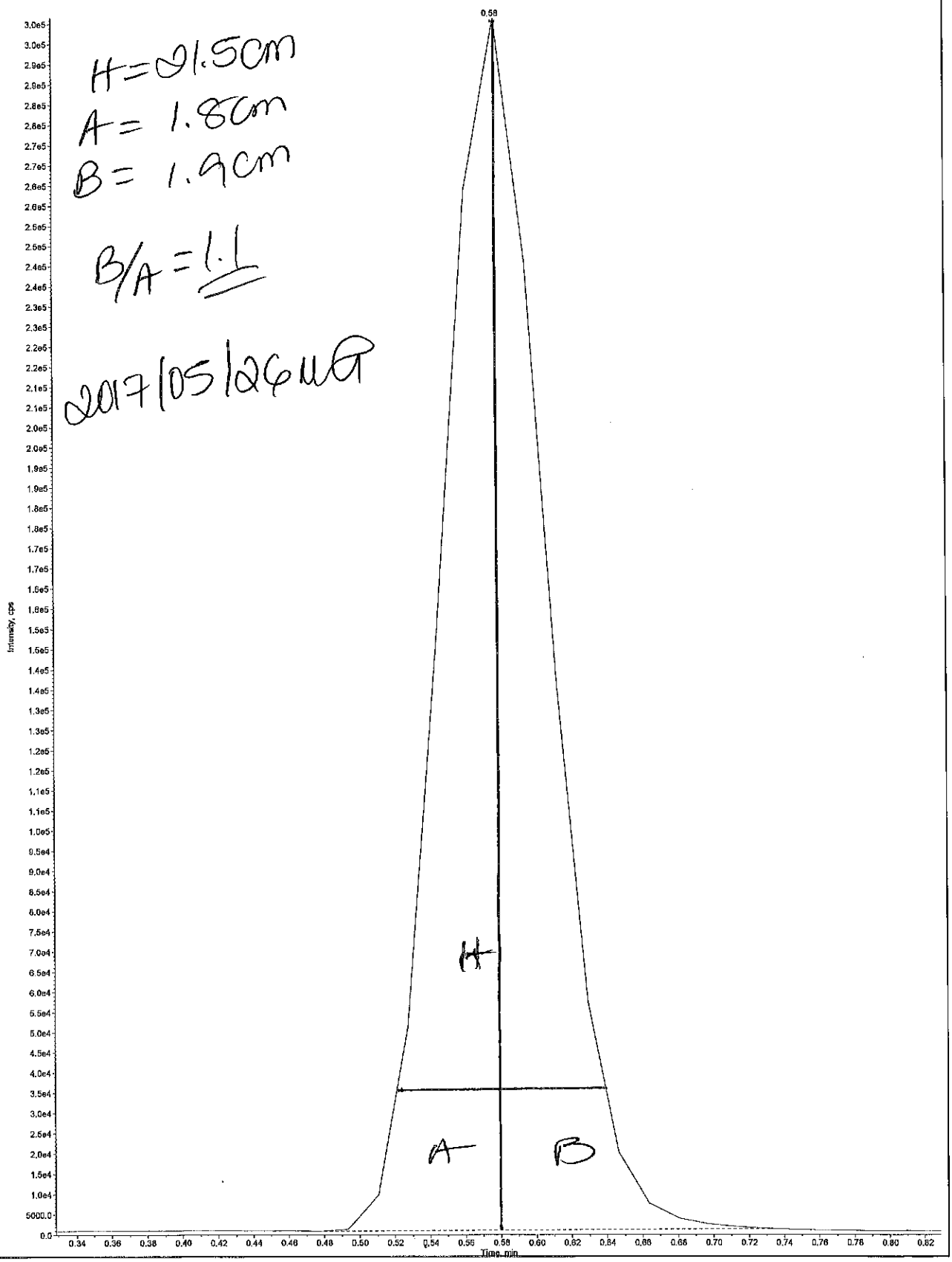
Sample Name: "Std 4" Sample ID: "" File: "WS#4989765.wiff"
Peak Name: "PFPeA 1" Mass(es): "262.900/218.900 Da"
Comment: "" Annotation: ""

Sample Index:	5	
Sample Type:	Standard	
Concentration:	12.5	ng/L
Calculated Conc:	13.7	ng/L
Acq. Date:	2017/05/19	
Acq. Time:	5:45:10 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Smoothing Factor:	1	
Noise Threshold:	1000.00	cps
Area Threshold:	500.00	cps
Num. Smooths:	3	
Sep. Width:	0.00	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	1.00	
Exp. Val. Ratio:	5.00	
RT Window:	30.0	sec
Expected RT:	0.987	min
Use Relative RT:	No	
Int. Type:	Base To Base	
Retention Time:	0.989	min
Area:	1230060.	counts
Height:	2.93e+025	cps
Start Time:	0.863	min
End Time:	1.12	min



Sample Name: "Std 4" Sample ID: "" File: "WS#4989765.wiff"
Peak Name: "PFBA 1" Mass(es): "212.900/169.000 Da"
Comment: "" Annotation: "-"

Sample Index:	5	
Sample Type:	Standard	
Concentration:	12.5	ug/L
Calculated Conc:	10.9	ug/L
Acq. Date:	2017/05/19	
Acq. Time:	5:43:10 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	1	
Noise Threshold:	1200.00	cps
Area Threshold:	200.00	cps
,Num. Smooths:	3	
Sep. Width:	0.00	
Sep. Height:	0.00	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.0	sec
Expected RT:	0.579	min
Use Relative RT:	No	
Int. Type:	Base To Base	
Retention Time:	0.577	min
Area:	1250000.	counts
Height:	3.01e+005	cps
Start Time:	0.476	min
End Time:	0.732	min



Report Name: Worksheet - Parameter Lists

Report Date: 2017/05/18

Test Code: **PFOSALCM-W**

Worksheet Number: **4989765**

Sample Number	Parameter
	Perfluorotridecanoic Acid
	Perfluoroundecanoic Acid (PFUnA)
EJU281-01	Perfluorobutane Sulfonate (PFBS)
EJU282-01	Perfluoro-n-Octanoic Acid (PFOA)
EJU283-01	Perfluorooctane Sulfonate (PFOS)
EJU284-01	
EJU285-01	

* - This parameter is usually off, but will be reported for this group of samples!

WorkSheet 4989765 Instrument Sequences

1.	4989765:MTRX SPK	MTRX SPK
2.	4989765:MTRX SPK:D1	MTRX SPK :D1
3.	4989765:SPIKE	SPIKE
4.	4989765:BLANK	BLANK
5.	4989765:EGH865-01	[redacted]
6.	4989765:EJK050-01	[redacted]
7.	4989765:EJK051-01	[redacted]
8.	4989765:EJK052-01	[redacted]
9.	4989765:EJK053-01	[redacted]
10.	4989765:EJU281-01	QCFB-0517
11.	4989765:EJU282-01	06-MW30-0517
12.	4989765:EJU283-01	06-MW30-0517DUP
13.	4989765:EJU284-01	06-MW25-0517
14.	4989765:EJU285-01	06-MW26-0517
15.	4989765:EJU312-01	[redacted]
16.	4989765:EJU313-01	[redacted]
17.	4989765:EJU314-01	[redacted]
18.	4989765:EJU315-01	[redacted]
19.	4989765:EJU327-01	[redacted]
20.	4989765:EJU330-01	[redacted]
21.	4989765:EJU331-01	[redacted]

Worksheet Reagent Tracking Record

Worksheet # 498765

Surrogate/Spike solutions	√	Solution ID #	Conc.	Blk-Spk Solid	Blk-Spk Liquid	MS Solid	MS Liquid	Samples Solid	Samples Liquid
DGT Spike			100 ug/mL	60	30	60	30	NA	NA
Diquat Dibromide			50 ug/mL	NA	350	NA	350	NA	NA
Explosives Spiking solution A			20 ug/mL	250	100	250	100	NA	NA
Explosives Spiking solution B			20/80 ug/mL	250	100	250	100	NA	NA
Formaldehyde Spike			100 ug/mL	25	25	25	25	NA	NA
Glyphosate Spike			25 ug/mL	500	20	500	20	NA	NA
Nonylphenol Ethoxylate Spike			100 ug/mL	100	100	100	100	NA	NA
Nonylphenol Spike			10 ug/mL	100	100	100	100	NA	NA
Paraquat Cl Tetrahydrate			20 ug/mL	NA	125	NA	125	NA	NA
Perchlorate Standard Spike			10 ng/mL	NA	100	NA	100	NA	NA
Perchlorate Standard Spike			500 ng/mL	40	NA	40	NA	NA	NA
Perchlorate O-18 Internal Standard			0.10 ng/uL	20	20	20	20	20	20
Morpholine Second Source Working Std			2500 ug/L	NA	80	NA	80	NA	NA
Morpholine-D8 Internal Standard			10 ug/mL	NA	50	NA	50	NA	50
Steril Second Source Spiking Solution			NA	20	NA	20	NA	NA	NA
Sterilants Comp. IS Working Solution			3 ug/mL	50	NA	50	NA	50	NA
Comp. PFC Working Solution A	✓	I-5015-1	1ug/mL	75	21 (62.5)	75	21 (62.5)	NA	NA
PFC Internal Standard Solution	✓	SI-6439-3	50/125 ng/mL	200	100 (150)	200	100 (150)	200	100 (150)
PFC Injection IS	✓	SI-6423-2	~~400~~ 100 ng/mL	20	(20)	20	(20)	20	(20)
ICV	✓	I-5015-1	1ug/ml		62.5				

Solvent/Reagent	√	Lot No.	Date Opened	Solvent/Reagent	√	Lot No.	Date Opened/ Prepared
DCM				50% NaOH			
Ottawa Sand				o-Phosphoric Acid			
Methanol	✓	SHBG9002V	2017-5/18	Borax			
2-Propanol (IPA)				Calcium Chloride			
Acetonitrile				EDTA			
Sodium Sulfate				Phosphate Buffer			
70:30 Methanol: Water				Sodium Thiosulphate			
60:40 Water: Methanol	✓	PRLRE 104-73		DNPH			
DCM:Ethyl Ether (75:25)				FMOC			
Hexane:IPA (98:2)				5M Acetate Buffer			
2% Formic Acid	✓	PRLRE104-85		0.2% NH_4OH	✓	PRLRE104-99	
0.2% Formic Acid				Leachate Fluid			
0.05M KOH				Reagent Water	✓	56218	2017/05/18
0.05M HCl							

*Spiked by: SSU

Spike Date: 2017/05/18

Spike Syringe/Pipette ID#: M23487B

Int. Std Syringe/Pipette ID#: K19609D

*Spiking Witnessed by: GSZ

Final pH:

Equipment & ID	√	Equipment	ID#	√	Equipment	Lot #
Pipettor ~~K39372~~ K39732F N19320D	✓ ✓	SPE Cartridge	003137023A	✓	QC Balance ID	
		Filter			Thermometer ID &Temp	
Dispenser		Centrifuge				
		Sonicator				

Bottle Tracking
Bottle# 17359
Cap# 17376
Systems plus Lot# 17/04/25

Comments: 125ml reference bottle HPLC

* - SPIKING OF QC's & SAMPLES MUST BE WITNESSED AT ALL TIMES.

Worksheet: 4989765

Dilution and Column Cleanup Worksheet

Job Number	Sample ID	Sample: Initial Final Volume	Dilution Required	Sample added mL	Solvent Added mL	Int Stan Added uL	New Effective Final Volume	INITIAL SSU DATE	Column Clean Up
B797633	EDK050	—	X10	12.5	112.5	—	125	2017/05/18	—
	EDK052	—	X100	1.25	123.75	—	125	2017/05/18	—
	EDK051	—	X10	12.5	112.5	—	125	2017/05/18	—
	EDK051	—	X100	1.25	123.75	—	125	2017/05/18	—
	EDK053	—	X10	12.5	112.5	—	125	2017/05/18	—
	EDK053	—	X100	1.25	123.75	—	125	2017/05/18	—
B799808	EDU284	—	X20	6.25	118.75	—	125	2017/05/18	—
	EDU285	—	X20	6.25	118.75	—	125	2017/05/18	—
B799814	EDU314	—	X10	12.5	112.5	—	125	2017/05/18	—
			2017/05/18 SSU						

Project: D:\Analyst Data\Projects\Enviro\PFOS Batch:PFC_170519A Tab:Sample Set:SET1 AcqMethod:PFC_Water_Low.dam

Sample

	Sample Name	Rack Code	Rack Position	Plate Code	Plate Position	Vial Position	Data File	Inj.Volume (µl)
1	Rinse	2 Well Plate	1	*54VialPlate	1	1	PFC_170519A\WS#4989765	1.000
2	Std 1	2 Well Plate	1	*54VialPlate	1	2	PFC_170519A\WS#4989765	1.000
3	Std 2	2 Well Plate	1	*54VialPlate	1	3	PFC_170519A\WS#4989765	1.000
4	Std 3	2 Well Plate	1	*54VialPlate	1	4	PFC_170519A\WS#4989765	1.000
5	Std 4	2 Well Plate	1	*54VialPlate	1	5	PFC_170519A\WS#4989765	1.000
6	Std 5	2 Well Plate	1	*54VialPlate	1	6	PFC_170519A\WS#4989765	1.000
7	Std 6	2 Well Plate	1	*54VialPlate	1	7	PFC_170519A\WS#4989765	1.000
8	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
9	ICV	2 Well Plate	1	*54VialPlate	1	9	PFC_170519A\WS#4989765	1.000
10	ISC	2 Well Plate	1	*54VialPlate	1	2	PFC_170519A\WS#4989765	1.000
11	4989765~BLANK	2 Well Plate	1	*54VialPlate	1	10	PFC_170519A\WS#4989765	1.000
12	4989765~MTRX SPK	2 Well Plate	1	*54VialPlate	1	11	PFC_170519A\WS#4989765	1.000
13	4989765~MTRX SPK:D1	2 Well Plate	1	*54VialPlate	1	12	PFC_170519A\WS#4989765	1.000
14	4989765~SPIKE	2 Well Plate	1	*54VialPlate	1	13	PFC_170519A\WS#4989765	1.000
15	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
16	4989765~EGH865-01	2 Well Plate	1	*54VialPlate	1	14	PFC_170519A\WS#4989765	1.000
17	4989765~EJK050-01;100x	2 Well Plate	1	*54VialPlate	1	15	PFC_170519A\WS#4989765	1.000
18	4989765~EJK050-01;10x	2 Well Plate	1	*54VialPlate	1	16	PFC_170519A\WS#4989765	1.000
19	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
20	4989765~EJK051-01;100x	2 Well Plate	1	*54VialPlate	1	17	PFC_170519A\WS#4989765	1.000
21	4989765~EJK051-01;10x	2 Well Plate	1	*54VialPlate	1	18	PFC_170519A\WS#4989765	1.000
22	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
23	4989765~EJK052-01	2 Well Plate	1	*54VialPlate	1	19	PFC_170519A\WS#4989765	1.000
24	4989765~EJK053-01;100x	2 Well Plate	1	*54VialPlate	1	20	PFC_170519A\WS#4989765	1.000
25	4989765~EJK053-01;10x	2 Well Plate	1	*54VialPlate	1	21	PFC_170519A\WS#4989765	1.000
26	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
27	4989765~EJU281-01	2 Well Plate	1	*54VialPlate	1	22	PFC_170519A\WS#4989765	1.000
28	4989765~EJU282-01	2 Well Plate	1	*54VialPlate	1	23	PFC_170519A\WS#4989765	1.000
29	CCV	2 Well Plate	1	*54VialPlate	1	5	PFC_170519A\WS#4989765	1.000
30	4989765~EJU283-01	2 Well Plate	1	*54VialPlate	1	24	PFC_170519A\WS#4989765	1.000
31	4989765~EJU284-01:20x	2 Well Plate	1	*54VialPlate	1	25	PFC_170519A\WS#4989765	1.000
32	4989765~EJU284-01	2 Well Plate	1	*54VialPlate	1	26	PFC_170519A\WS#4989765	1.000
33	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
34	4989765~EJU285-01:20x	2 Well Plate	1	*54VialPlate	1	27	PFC_170519A\WS#4989765	1.000
35	4989765~EJU285-01	2 Well Plate	1	*54VialPlate	1	28	PFC_170519A\WS#4989765	1.000
36	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
37	4989765~EJU312-01	2 Well Plate	1	*54VialPlate	1	29	PFC_170519A\WS#4989765	1.000
38	4989765~EJU313-01	2 Well Plate	1	*54VialPlate	1	30	PFC_170519A\WS#4989765	1.000
39	4989765~EJU314-01;10x	2 Well Plate	1	*54VialPlate	1	31	PFC_170519A\WS#4989765	1.000
40	4989765~EJU314-01	2 Well Plate	1	*54VialPlate	1	32	PFC_170519A\WS#4989765	1.000
41	IB	2 Well Plate	1	*54VialPlate	1	8	PFC_170519A\WS#4989765	1.000
42	4989765~EJU315-01	2 Well Plate	1	*54VialPlate	1	33	PFC_170519A\WS#4989765	1.000
43	CCV	2 Well Plate	1	*54VialPlate	1	5	PFC_170519A\WS#4989765	1.000
44	4989765~EJU327-01	2 Well Plate	1	*54VialPlate	1	34	PFC_170519A\WS#4989765	1.000
45	4989765~EJU330-01	2 Well Plate	1	*54VialPlate	1	35	PFC_170519A\WS#4989765	1.000
46	4989765~EJU331-01	2 Well Plate	1	*54VialPlate	1	36	PFC_170519A\WS#4989765	1.000
47	CCV	2 Well Plate	1	*54VialPlate	1	5	PFC_170519A\WS#4989765	1.000

Column # 173
MPA: Sol# 93,75REHN
MPB: MeOH, Sigma
Lot # SHBG9002V

2017/05/19

Verified
2017/05/19

	Sample ID	Sample Annotation	Acquisition Date	Acquisition Method	File Name	Rack Type	Rack Position	Vial Position	Plate Type	Plate Position
1	Std 1	-	2017/05/19 5:27:59 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	2	*54VialPlate*	1
2	Std 2	-	2017/05/19 5:33:03 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	3	*54VialPlate*	1
3	Std 3	-	2017/05/19 5:38:07 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	4	*54VialPlate*	1
4	Std 4	-	2017/05/19 5:43:10 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	5	*54VialPlate*	1
5	Std 5	-	2017/05/19 5:48:14 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	6	*54VialPlate*	1
6	Std 6	-	2017/05/19 5:53:16 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	7	*54VialPlate*	1
7	IB	-	2017/05/19 5:58:20 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
8	ICV	-	2017/05/19 6:03:24 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	9	*54VialPlate*	1
9	ISC	-	2017/05/19 6:48:56 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	2	*54VialPlate*	1
10	4989765~BLANK	-	2017/05/19 7:04:08 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	10	*54VialPlate*	1
11	4989765~MTRX SPK (EJU284)	-	2017/05/19 7:09:11 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	11	*54VialPlate*	1
12	4989765~MTRX SPK:D1 (EJU284	-	2017/05/19 7:14:15 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	12	*54VialPlate*	1
13	4989765~SPIKE	-	2017/05/19 7:19:18 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	13	*54VialPlate*	1
14	IB	-	2017/05/19 7:24:23 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
15	4989765~EGH865-01	-	2017/05/19 7:29:27 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	14	*54VialPlate*	1
16	4989765~EJK050-01:100x	Reported for PFPeA, PFHxA, PFHxS, PFOS	2017/05/19 7:34:31 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	15	*54VialPlate*	1
17	4989765~EJK050-01:10x	Reported for ALL except PFPeA, PFHxA, PFHxS, PFOS	2017/05/19 7:39:34 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	16	*54VialPlate*	1
18	IB	-	2017/05/19 7:44:38 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
19	4989765~EJK051-01:100x	Reported for PFHxS, PFOS	2017/05/19 7:49:42 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	17	*54VialPlate*	1
20	4989765~EJK051-01:10x	Reported for ALL except PFHxS, PFOS	2017/05/19 7:54:46 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	18	*54VialPlate*	1
21	IB	-	2017/05/19 7:59:49 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
22	4989765~EJK052-01	-	2017/05/19 8:04:53 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	19	*54VialPlate*	1
23	4989765~EJK053-01:100x	Reported for PFPeA, PFHxA, 6:2FTS	2017/05/19 8:09:57 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	20	*54VialPlate*	1
24	4989765~EJK053-01:10x	Reported for ALL except PFPeA, PFHxA, 6:2FTS	2017/05/19 8:15:02 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	21	*54VialPlate*	1
25	IB	-	2017/05/19 8:20:05 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
26	4989765~EJU281-01	-	2017/05/19 8:25:09 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	22	*54VialPlate*	1
27	4989765~EJU282-01	-	2017/05/19 8:30:13 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	23	*54VialPlate*	1
28	CCV	-	2017/05/19 8:35:17 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	5	*54VialPlate*	1
29	4989765~EJU283-01	-	2017/05/19 8:50:27 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	24	*54VialPlate*	1
30	4989765~EJU284-01:20x	Reported for PFOA & PFOS	2017/05/19 8:55:31 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	25	*54VialPlate*	1
31	4989765~EJU284-01	Reported for PFBS	2017/05/19 9:00:35 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	26	*54VialPlate*	1
32	IB	-	2017/05/19 9:05:40 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
33	4989765~EJU285-01:20x	Reported for PFOS	2017/05/19 9:10:44 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	27	*54VialPlate*	1
34	4989765~EJU285-01	Reported for PFBS & PFOA	2017/05/19 9:15:48 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	28	*54VialPlate*	1
35	IB	-	2017/05/19 9:20:52 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
36	4989765~EJU312-01	-	2017/05/19 9:25:56 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	29	*54VialPlate*	1
37	4989765~EJU313-01	-	2017/05/19 9:30:59 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	30	*54VialPlate*	1
38	4989765~EJU314-01:10x	Reported for 6:2FTS ONLY	2017/05/19 9:36:03 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	31	*54VialPlate*	1
39	4989765~EJU314-01	Reported for ALL except 6:2FTS.	2017/05/19 9:41:08 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	32	*54VialPlate*	1
40	IB	-	2017/05/19 9:46:13 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	8	*54VialPlate*	1
41	4989765~EJU315-01	-	2017/05/19 9:51:17 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	33	*54VialPlate*	1
42	CCV	-	2017/05/19 9:56:22 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	5	*54VialPlate*	1
43	4989765~EJU327-01	-	2017/05/19 10:11:32 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	34	*54VialPlate*	1
44	4989765~EJU330-01	-	2017/05/19 10:16:36 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	35	*54VialPlate*	1
45	4989765~EJU331-01	-	2017/05/19 10:21:40 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	36	*54VialPlate*	1
46	CCV	-	2017/05/19 10:26:44 PM	PFC_Water_Low.dam	PFC_170519A\WS#4989765.wiff	2 Well Plates	1	5	*54VialPlate*	1

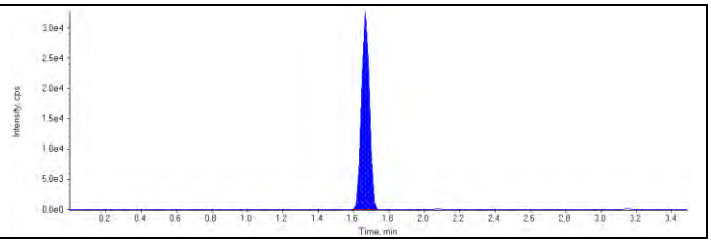
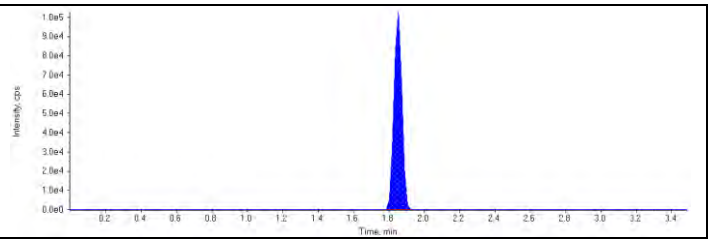
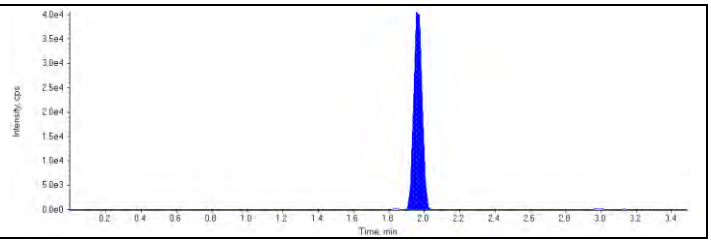
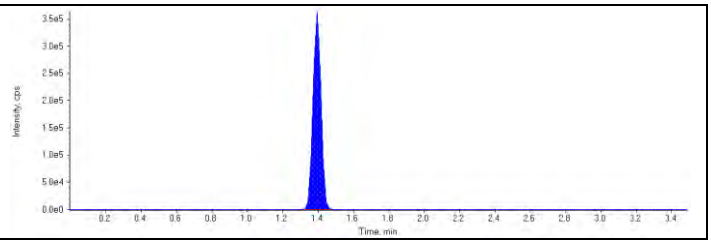
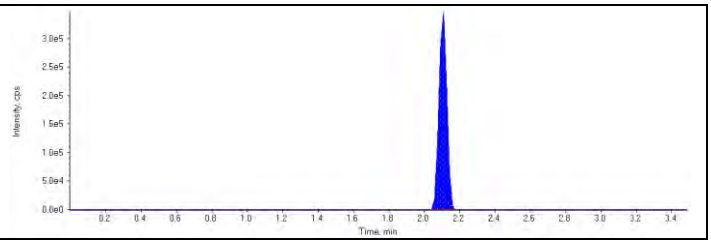
5. Initial Calibration

Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

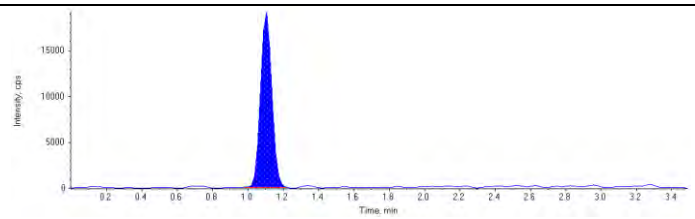
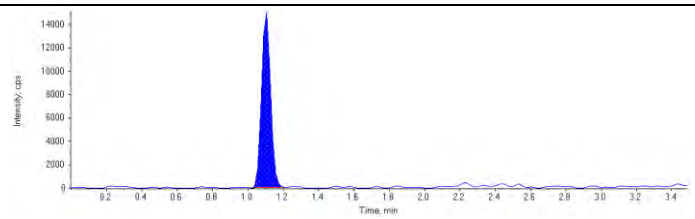
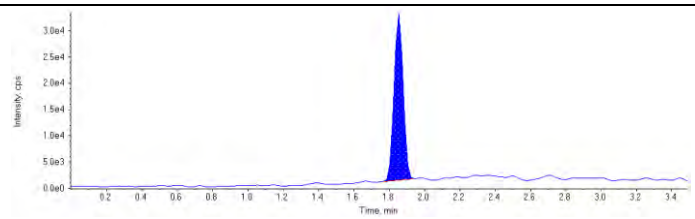
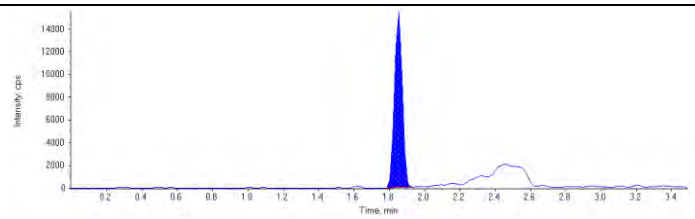
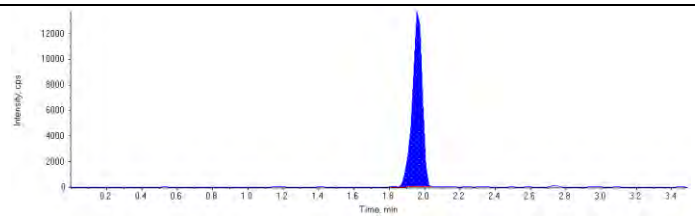
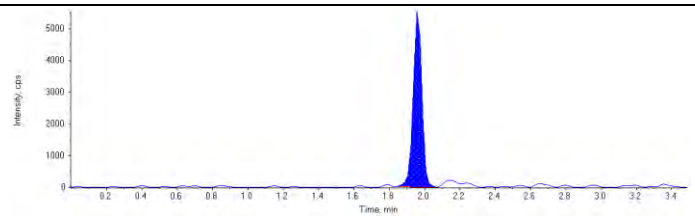
Sample ID	Std 1	**Injection Volume (µL)**	1
Sample Type	Standard	**Injection Vial**	2
Acquisition Date	2017/05/19 5:27:59 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

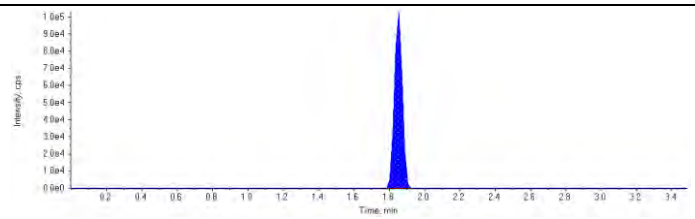
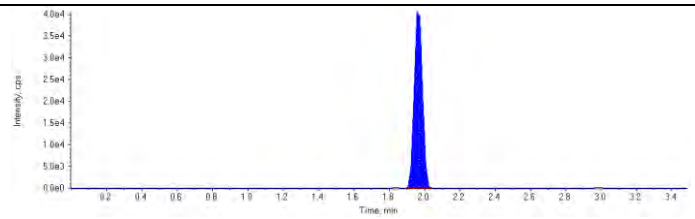
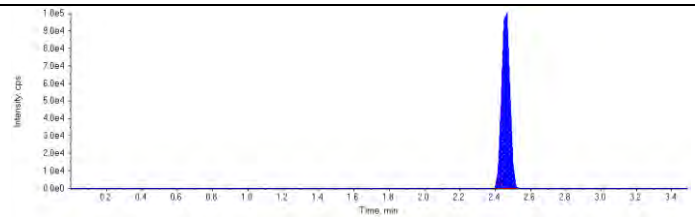
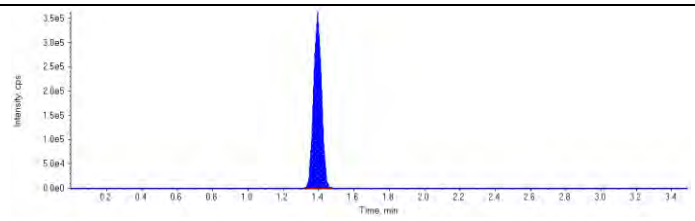
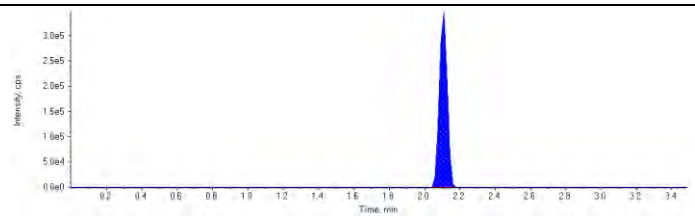
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	100000.	1.67	1.00	-
MPFOA	320000.	1.85	1.00	-
MPFOS	135000.	1.96	1.00	-
13C6-PFHxA IS	1130000.	1.39	1.00	-
13C9-PFDA IS	1080000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	84900	1.10	0.830	0.920	111.0
PFBS 2	53400	1.10	0.830	0.996	120.0
PFOA 1	114000	1.85	0.830	0.834	100.0
PFOA 2	47600	1.85	0.830	0.893	108.0
PFOS 1	52800	1.96	0.830	0.969	117.0
PFOS 2	18900	1.96	0.830	1.02	123.0
13C4-PFOA	320000	1.85	100.	105.	105.0
13C4-PFOS	135000	1.96	100.	94.3	94.3
13C8-PFOSA	329000	2.46	100.	105.	105.0
13C6-PFHxA	1130000	1.39	100.	100.	100.0
13C9-PFDA	1080000	2.11	100.	100.	100.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOS (Internal Standard) RT (Exp. RT): 1.96(1.97) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Standard)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

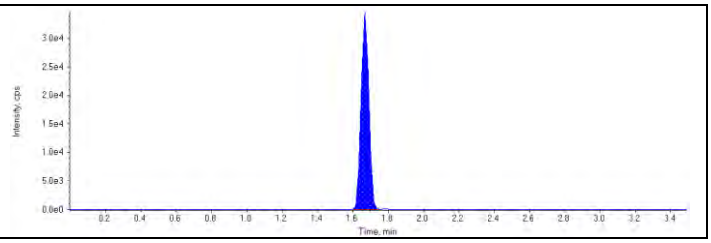
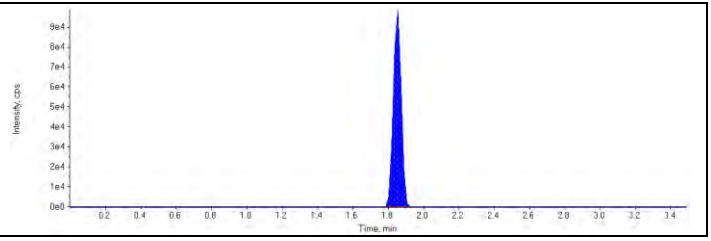
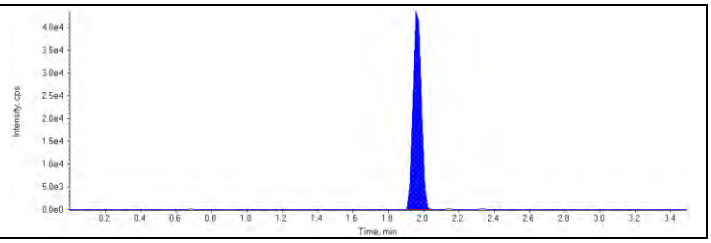
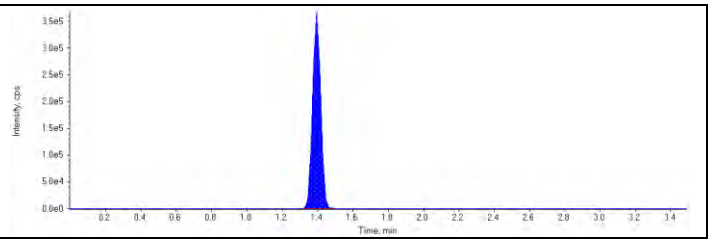
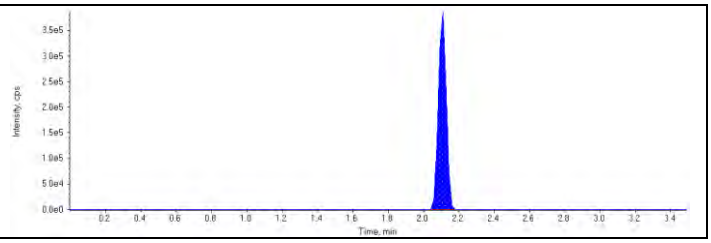
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.920 µg/L Area Ratio: 0.846 Sample Type: (Standard)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.996 µg/L Area Ratio: 0.532 Sample Type: (Standard)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.834 µg/L Area Ratio: 0.356 Sample Type: (Standard)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.893 µg/L Area Ratio: 0.149 Sample Type: (Standard)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 0.969 µg/L Area Ratio: 0.392 Sample Type: (Standard)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 1.02 µg/L Area Ratio: 0.140 Sample Type: (Standard)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 105. µg/L Area Ratio: 0.282 Sample Type: (Standard)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.96 (1.97) min Calculated Conc: 94.3 µg/L Area Ratio: 0.119 Sample Type: (Standard)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 105. µg/L Area Ratio: 0.305 Sample Type: (Standard)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 100. µg/L Area Ratio: 0.00 Sample Type: (Standard)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 100. µg/L Area Ratio: 0.00 Sample Type: (Standard)	

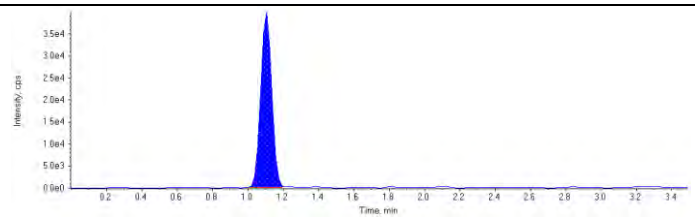
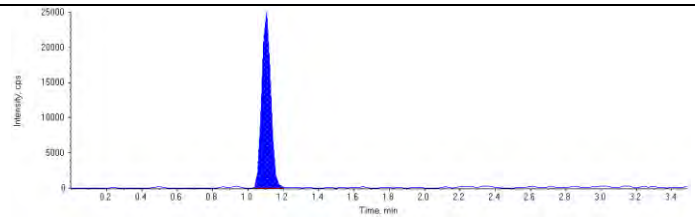
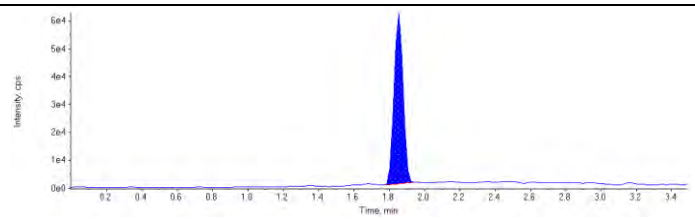
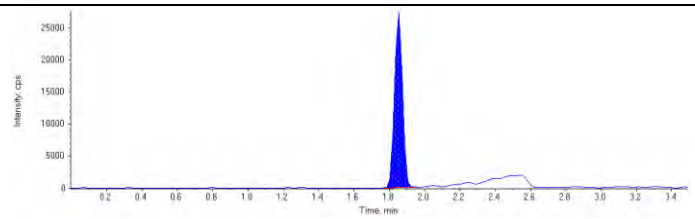
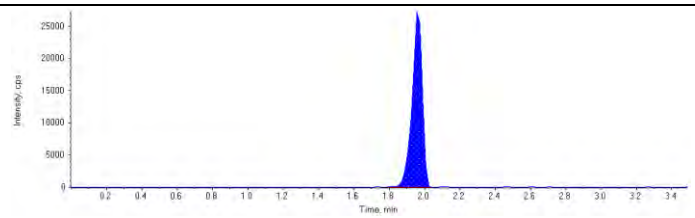
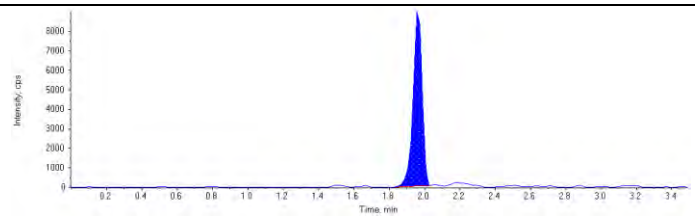
Sample ID	Std 2	**Injection Volume (µL)**	1
Sample Type	Standard	**Injection Vial**	3
Acquisition Date	2017/05/19 5:33:03 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

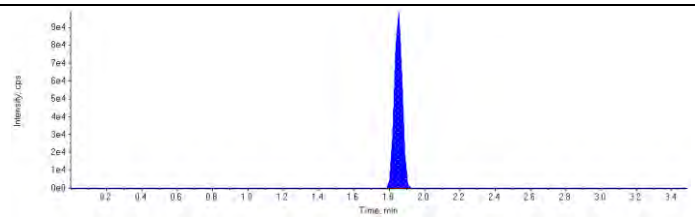
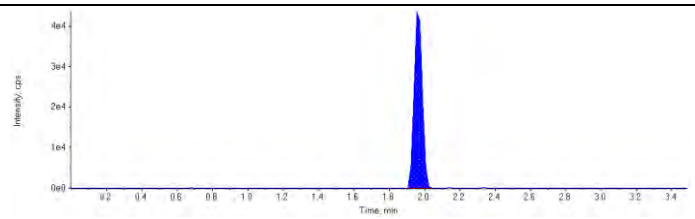
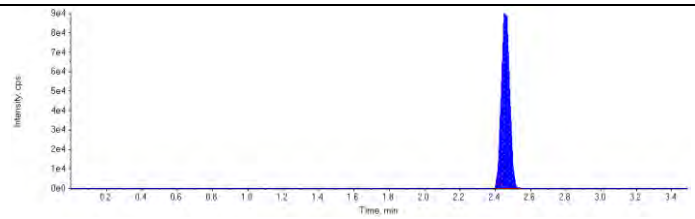
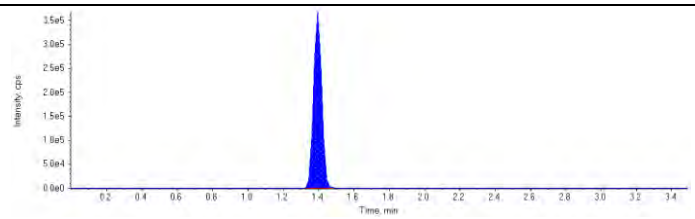
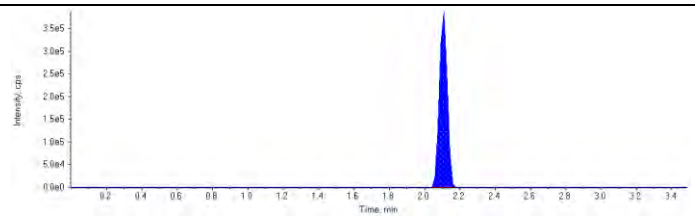
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	105000.	1.67	1.00	-
MPFOA	305000.	1.85	1.00	-
MPFOS	142000.	1.96	1.00	-
13C6-PFHxA IS	1170000.	1.39	1.00	-
13C9-PFDA IS	1200000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	172000	1.10	1.70	1.63	96.1
PFBS 2	87000	1.10	1.70	1.53	89.8
PFOA 1	217000	1.85	1.70	1.64	96.4
PFOA 2	86100	1.85	1.70	1.64	96.6
PFOS 1	110000	1.96	1.70	1.72	101.0
PFOS 2	32000	1.96	1.70	1.55	90.9
13C4-PFOA	305000	1.85	100.	97.1	97.1
13C4-PFOS	142000	1.96	100.	96.1	96.1
13C8-PFOSA	298000	2.46	100.	85.8	85.8
13C6-PFHxA	1170000	1.39	100.	103.	103.0
13C9-PFDA	1200000	2.11	100.	112.	112.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOS (Internal Standard) RT (Exp. RT): 1.96(1.97) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Standard)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

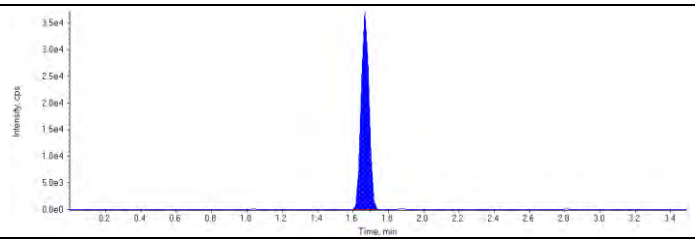
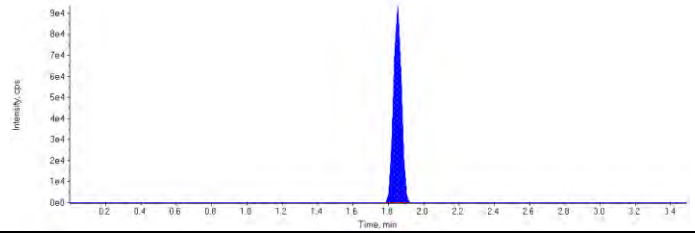
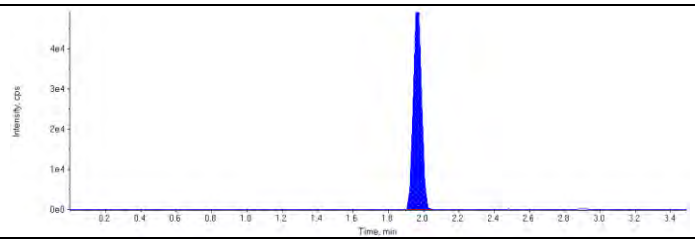
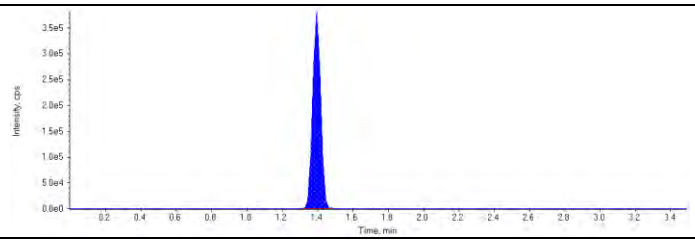
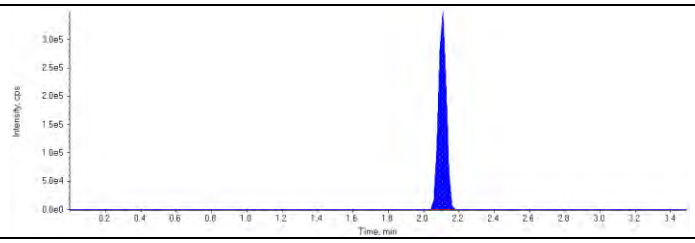
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 1.63 µg/L Area Ratio: 1.64 Sample Type: (Standard)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 1.53 µg/L Area Ratio: 0.832 Sample Type: (Standard)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 1.64 µg/L Area Ratio: 0.711 Sample Type: (Standard)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 1.64 µg/L Area Ratio: 0.282 Sample Type: (Standard)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 1.72 µg/L Area Ratio: 0.772 Sample Type: (Standard)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 1.55 µg/L Area Ratio: 0.225 Sample Type: (Standard)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 97.1 µg/L Area Ratio: 0.260 Sample Type: (Standard)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.96 (1.97) min Calculated Conc: 96.1 µg/L Area Ratio: 0.121 Sample Type: (Standard)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 85.8 µg/L Area Ratio: 0.248 Sample Type: (Standard)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 103. µg/L Area Ratio: 0.00 Sample Type: (Standard)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 112. µg/L Area Ratio: 0.00 Sample Type: (Standard)	

Sample ID	Std 3	**Injection Volume (µL)**	1
Sample Type	Standard	**Injection Vial**	4
Acquisition Date	2017/05/19 5:38:07 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	113000.	1.67	1.00	-
MPFOA	292000.	1.85	1.00	-
MPFOS	164000.	1.97	1.00	-
13C6-PFHxA IS	1200000.	1.40	1.00	-
13C9-PFDA IS	1070000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	534000	1.10	5.00	4.41	88.2
PFBS 2	280000	1.10	5.00	4.44	88.8
PFOA 1	643000	1.85	5.00	5.03	101.0
PFOA 2	244000	1.85	5.00	4.75	95.0
PFOS 1	346000	1.96	5.00	4.36	87.2
PFOS 2	118000	1.97	5.00	4.56	91.3
13C4-PFOA	292000	1.85	100.	91.0	91.0
13C4-PFOS	164000	1.97	100.	109.	109.0
13C8-PFOSA	324000	2.46	100.	105.	105.0
13C6-PFHxA	1200000	1.40	100.	105.	105.0
13C9-PFDA	1070000	2.11	100.	99.9	99.9

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Standard)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

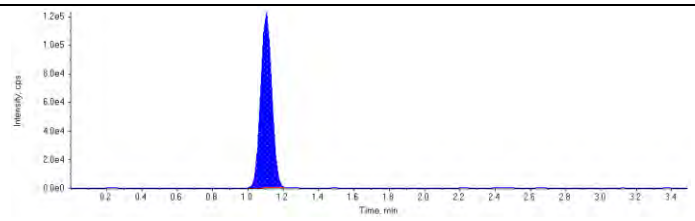
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 4.41 µg/L

Area Ratio: 4.73

Sample Type: (Standard)



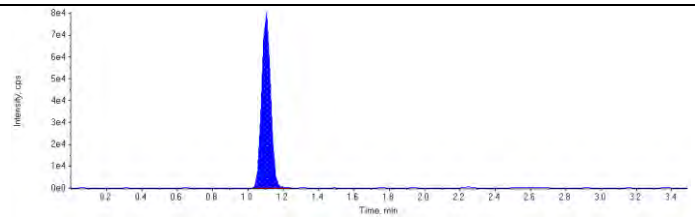
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 4.44 µg/L

Area Ratio: 2.48

Sample Type: (Standard)



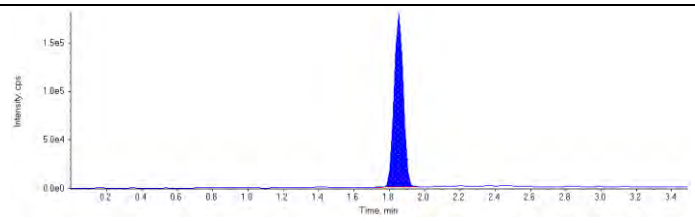
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 5.03 µg/L

Area Ratio: 2.20

Sample Type: (Standard)



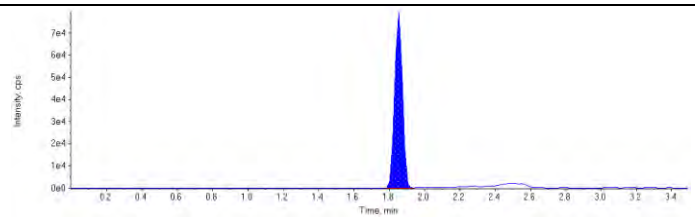
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 4.75 µg/L

Area Ratio: 0.836

Sample Type: (Standard)



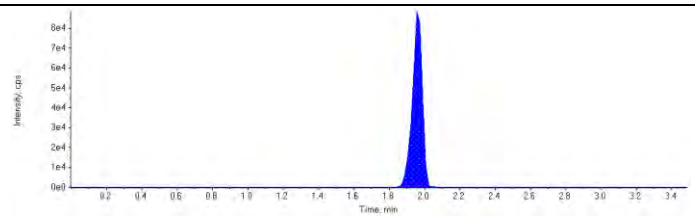
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 4.36 µg/L

Area Ratio: 2.11

Sample Type: (Standard)



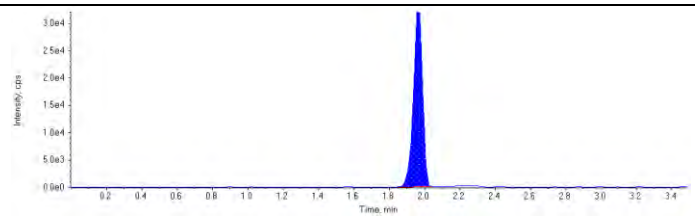
PFOS 2 (498.900/98.900 Da)

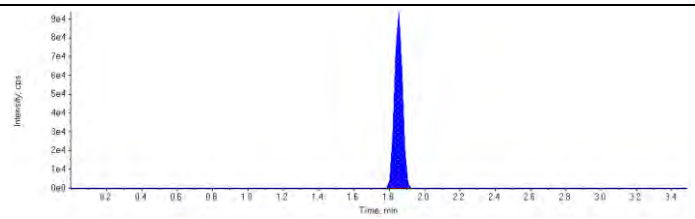
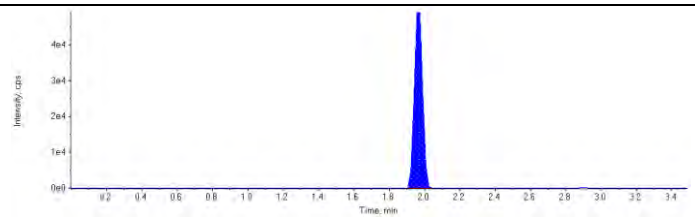
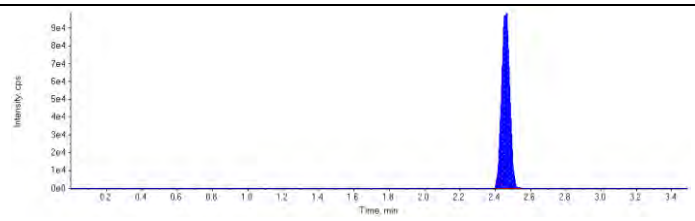
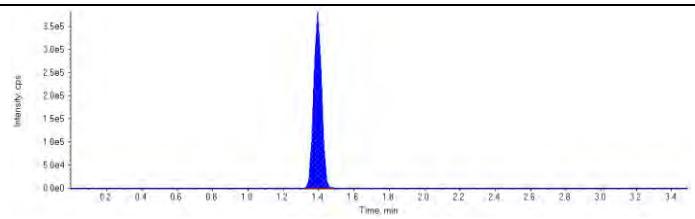
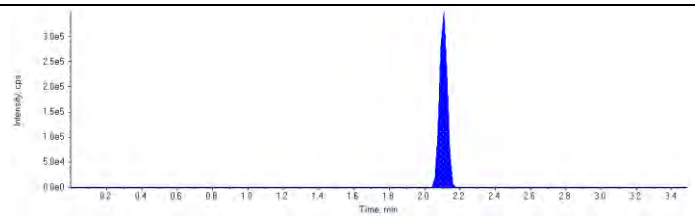
RT (Exp. RT): 1.97 (1.96) min

Calculated Conc: 4.56 µg/L

Area Ratio: 0.717

Sample Type: (Standard)



13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 91.0 µg/L Area Ratio: 0.244 Sample Type: (Standard)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 109. µg/L Area Ratio: 0.137 Sample Type: (Standard)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 105. µg/L Area Ratio: 0.302 Sample Type: (Standard)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 105. µg/L Area Ratio: 0.00 Sample Type: (Standard)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 99.9 µg/L Area Ratio: 0.00 Sample Type: (Standard)	

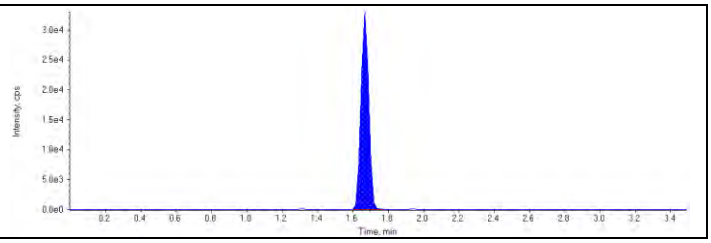
Sample ID	Std 4	**Injection Volume (µL)**	1
Sample Type	Standard	**Injection Vial**	5
Acquisition Date	2017/05/19 5:43:10 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	101000.	1.67	1.00	-
MPFOA	305000.	1.85	1.00	-
MPFOS	147000.	1.97	1.00	-
13C6-PFHxA IS	1070000.	1.40	1.00	-
13C9-PFDA IS	1020000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	1410000	1.10	12.5	12.7	101.0
PFBS 2	705000	1.10	12.5	12.4	99.4
PFOA 1	1750000	1.85	12.5	13.0	104.0
PFOA 2	678000	1.85	12.5	12.5	100.0
PFOS 1	859000	1.96	12.5	11.8	94.4
PFOS 2	271000	1.96	12.5	11.5	91.9
13C4-PFOA	305000	1.85	100.	106.	106.0
13C4-PFOS	147000	1.97	100.	108.	108.0
13C8-PFOSA	302000	2.46	100.	102.	102.0
13C6-PFHxA	1070000	1.40	100.	94.8	94.8
13C9-PFDA	1020000	2.11	100.	95.3	95.3

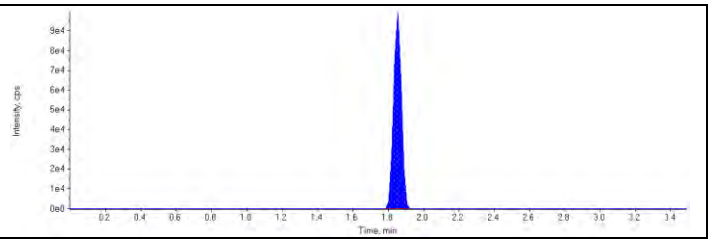
MPFHxS (Internal Standard)

RT (Exp. RT): 1.67(1.77) min
Concentration: 1.00 ug/L
Sample Type: (Standard)



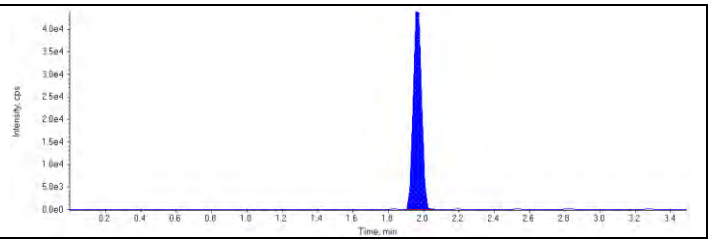
MPFOA (Internal Standard)

RT (Exp. RT): 1.85(1.85) min
Concentration: 1.00 ug/L
Sample Type: (Standard)



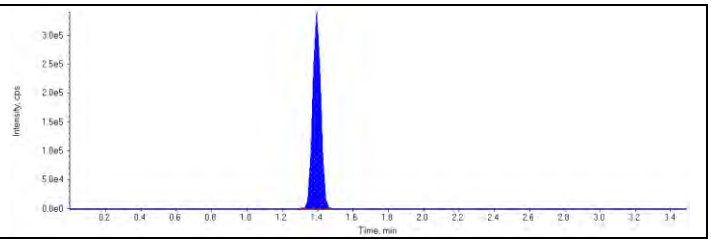
MPFOS (Internal Standard)

RT (Exp. RT): 1.97(1.97) min
Concentration: 1.00 ug/L
Sample Type: (Standard)



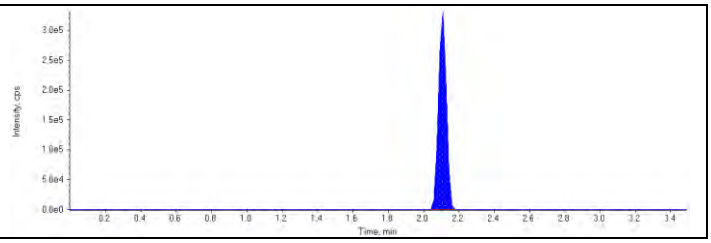
13C6-PFHxA IS (Internal Standard)

RT (Exp. RT): 1.40(1.40) min
Concentration: 1.00 ug/L
Sample Type: (Standard)



13C9-PFDA IS (Internal Standard)

RT (Exp. RT): 2.11(2.11) min
Concentration: 1.00 ug/L
Sample Type: (Standard)

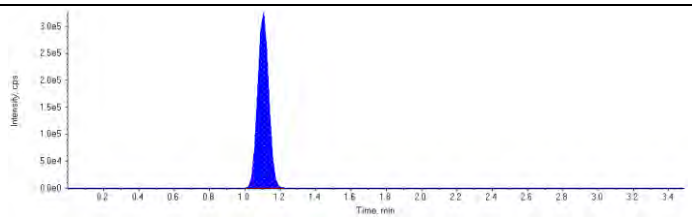
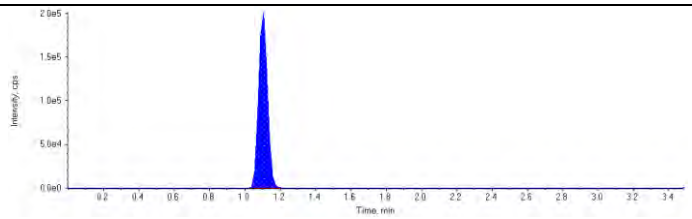
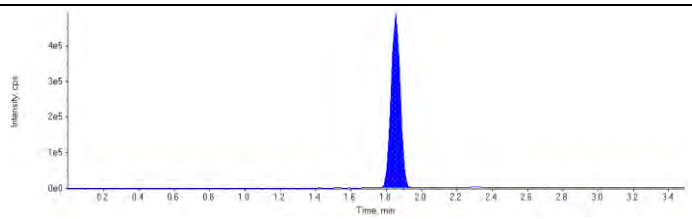
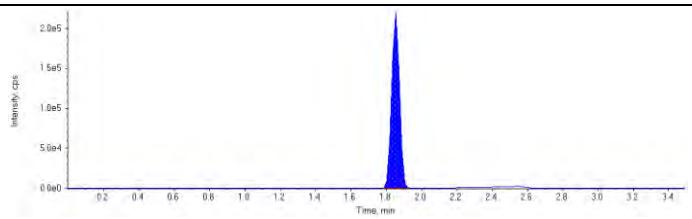
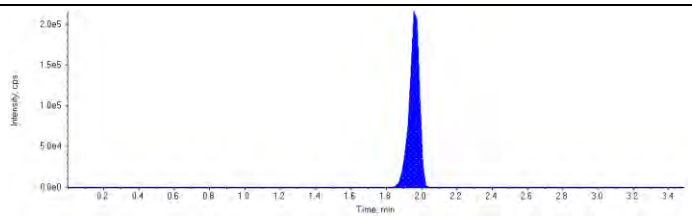
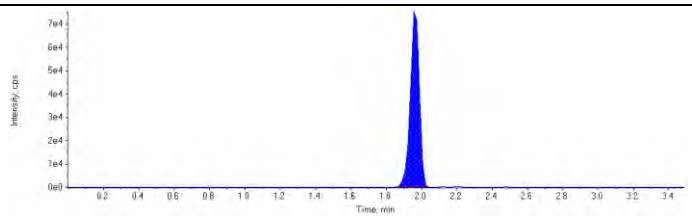


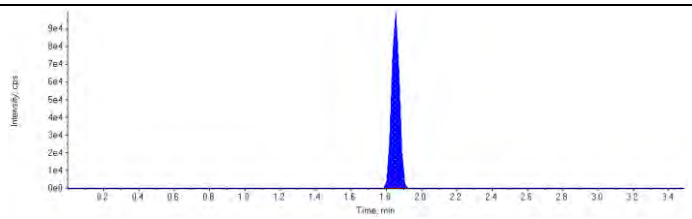
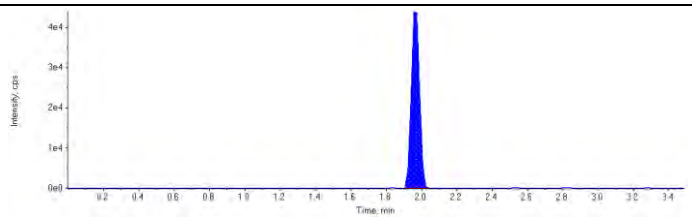
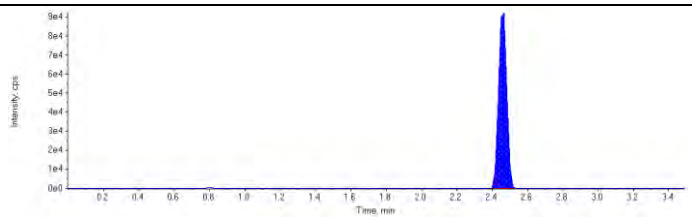
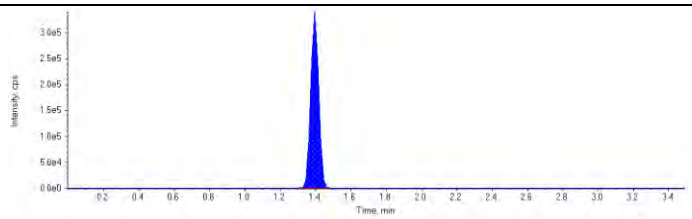
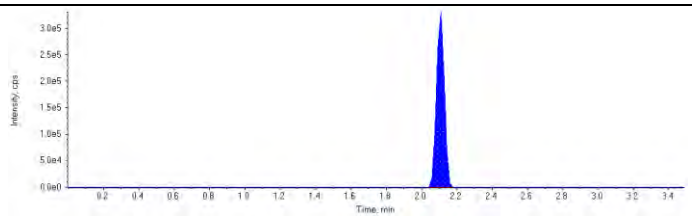
N/A (Internal Standard)

RT (Exp. RT): N/A(N/A) min
Concentration: N/A N/A
Sample Type: (Standard)

This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

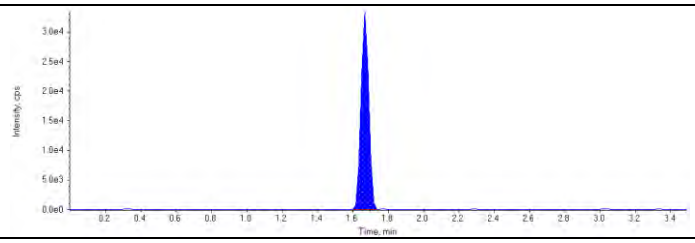
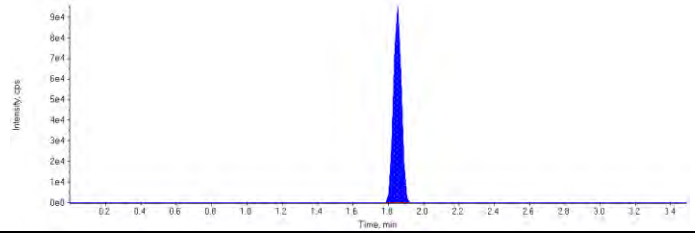
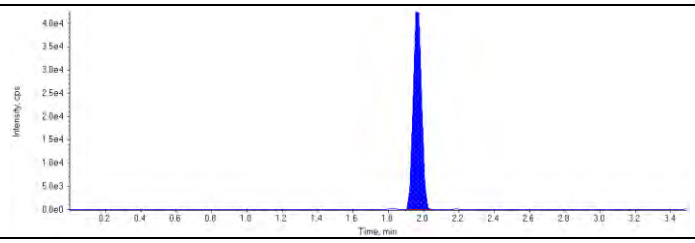
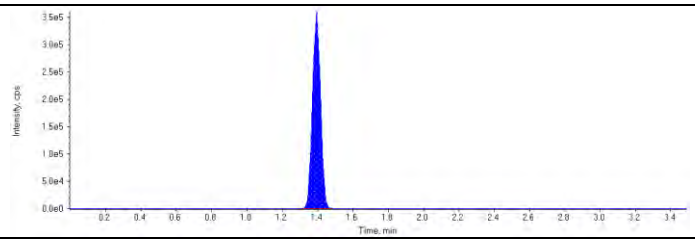
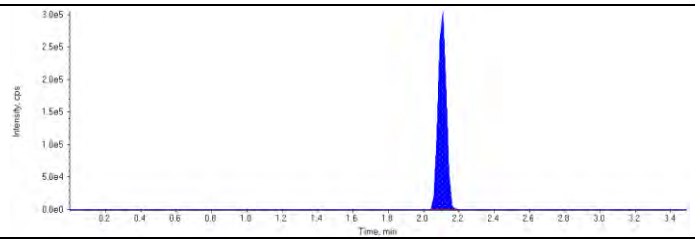
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 12.7 µg/L Area Ratio: 13.9 Sample Type: (Standard)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 12.4 µg/L Area Ratio: 6.99 Sample Type: (Standard)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 13.0 µg/L Area Ratio: 5.74 Sample Type: (Standard)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 12.5 µg/L Area Ratio: 2.22 Sample Type: (Standard)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 11.8 µg/L Area Ratio: 5.86 Sample Type: (Standard)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 11.5 µg/L Area Ratio: 1.85 Sample Type: (Standard)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 106. µg/L Area Ratio: 0.284 Sample Type: (Standard)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 108. µg/L Area Ratio: 0.136 Sample Type: (Standard)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 102. µg/L Area Ratio: 0.295 Sample Type: (Standard)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 94.8 µg/L Area Ratio: 0.00 Sample Type: (Standard)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 95.3 µg/L Area Ratio: 0.00 Sample Type: (Standard)	

Sample ID	Std 5	**Injection Volume (µL)**	1
Sample Type	Standard	**Injection Vial**	6
Acquisition Date	2017/05/19 5:48:14 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	101000.	1.67	1.00	-
MPFOA	296000.	1.85	1.00	-
MPFOS	141000.	1.97	1.00	-
13C6-PFHxA IS	1140000.	1.39	1.00	-
13C9-PFDA IS	971000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	2960000	1.10	25.0	26.5	106.0
PFBS 2	1440000	1.10	25.0	25.3	101.0
PFOA 1	3220000	1.85	25.0	24.7	98.6
PFOA 2	1320000	1.85	25.0	25.1	100.0
PFOS 1	1670000	1.96	25.0	23.5	94.0
PFOS 2	561000	1.96	25.0	24.5	98.0
13C4-PFOA	296000	1.85	100.	97.2	97.2
13C4-PFOS	141000	1.97	100.	98.6	98.6
13C8-PFOSA	319000	2.46	100.	114.	114.0
13C6-PFHxA	1140000	1.39	100.	100.	100.0
13C9-PFDA	971000	2.11	100.	90.4	90.4

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Standard)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

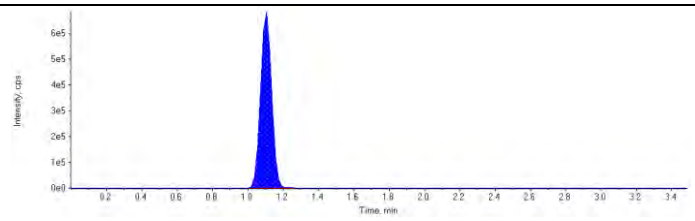
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 26.5 µg/L

Area Ratio: 29.3

Sample Type: (Standard)



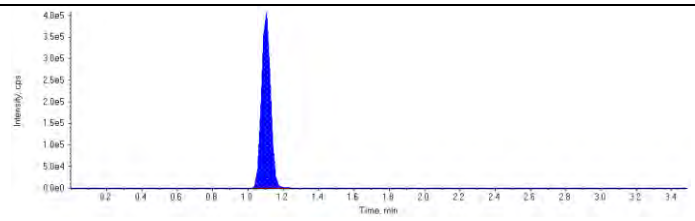
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 25.3 µg/L

Area Ratio: 14.3

Sample Type: (Standard)



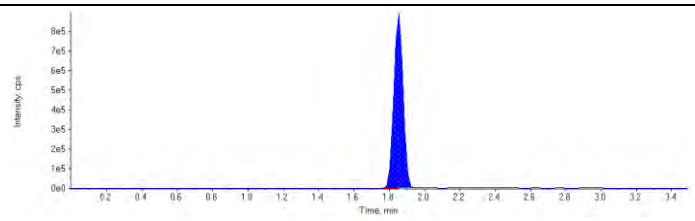
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 24.7 µg/L

Area Ratio: 10.9

Sample Type: (Standard)



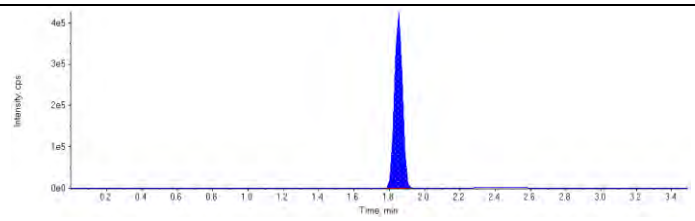
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 25.1 µg/L

Area Ratio: 4.46

Sample Type: (Standard)



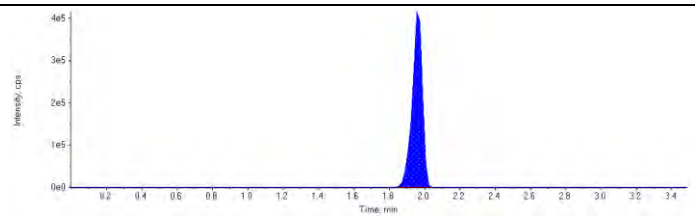
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 23.5 µg/L

Area Ratio: 11.8

Sample Type: (Standard)



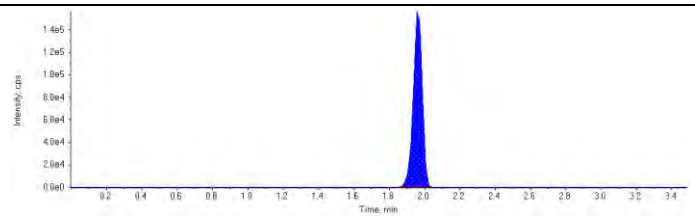
PFOS 2 (498.900/98.900 Da)

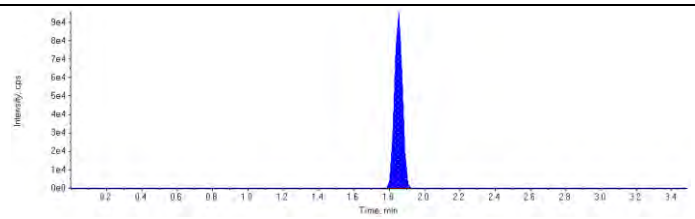
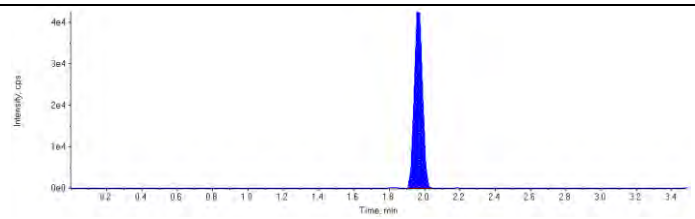
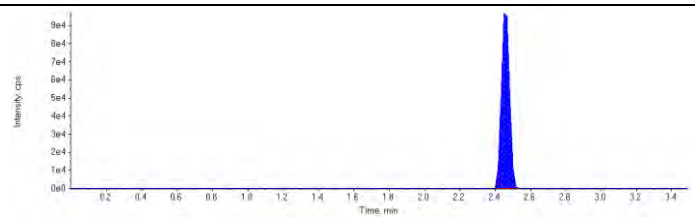
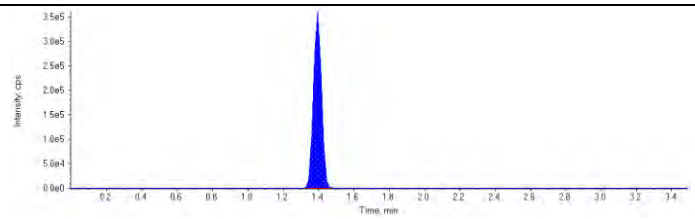
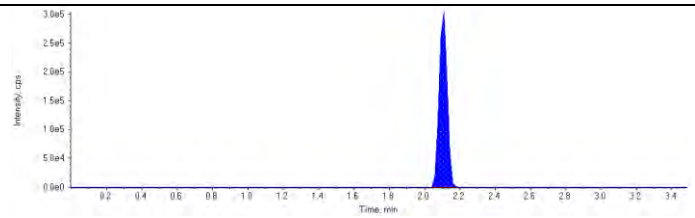
RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 24.5 µg/L

Area Ratio: 3.97

Sample Type: (Standard)

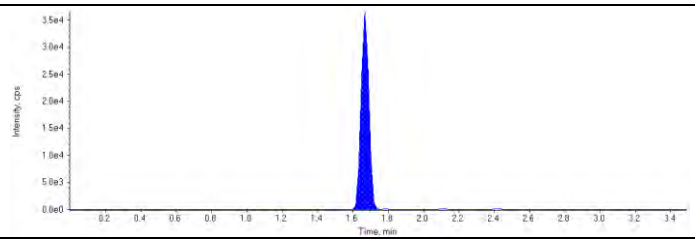
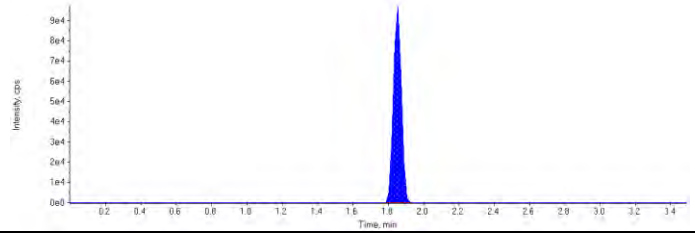
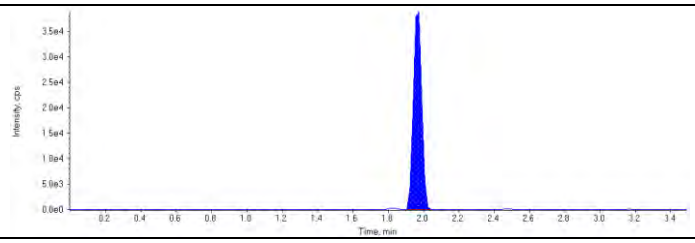
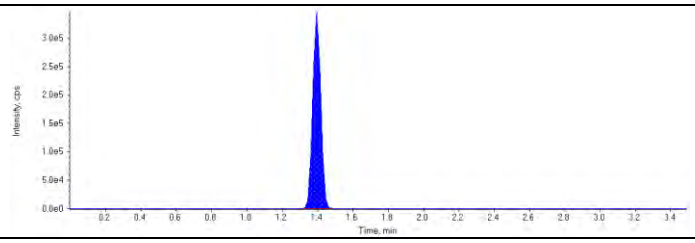
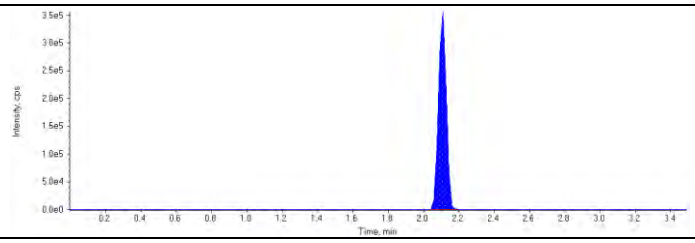


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 97.2 µg/L Area Ratio: 0.261 Sample Type: (Standard)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 98.6 µg/L Area Ratio: 0.124 Sample Type: (Standard)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 114. µg/L Area Ratio: 0.328 Sample Type: (Standard)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 100. µg/L Area Ratio: 0.00 Sample Type: (Standard)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 90.4 µg/L Area Ratio: 0.00 Sample Type: (Standard)	

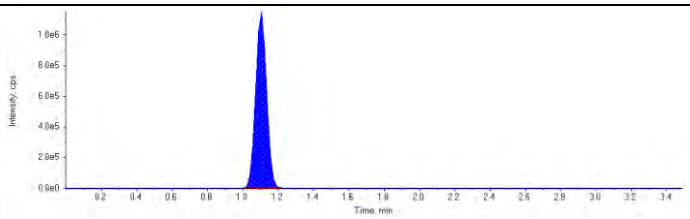
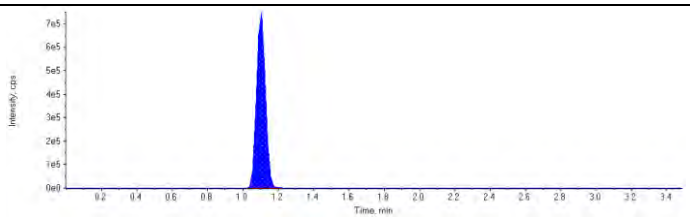
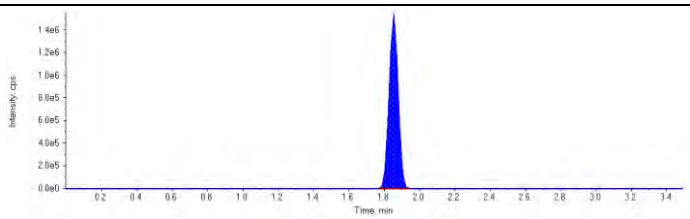
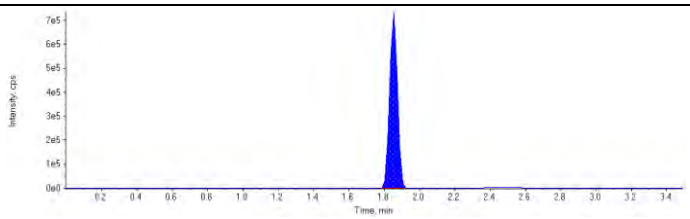
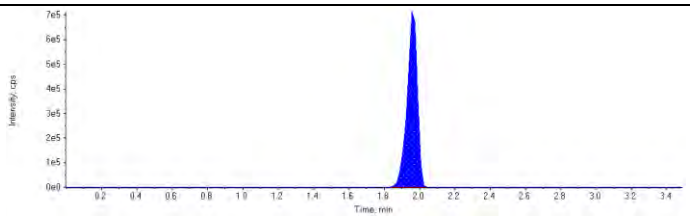
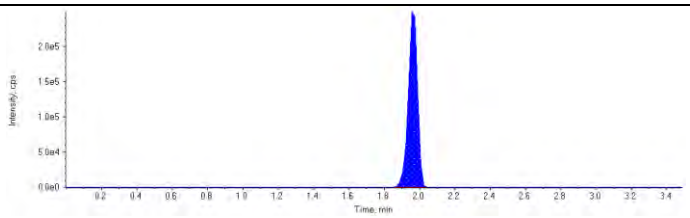
Sample ID	Std 6	**Injection Volume (µL)**	1
Sample Type	Standard	**Injection Vial**	7
Acquisition Date	2017/05/19 5:53:16 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

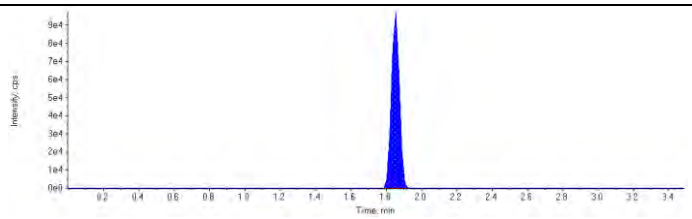
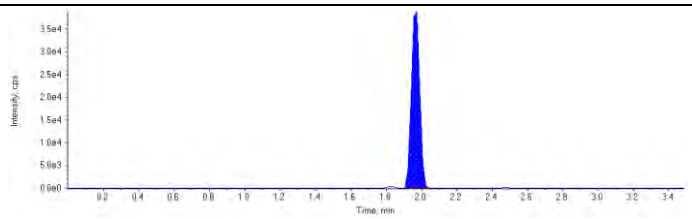
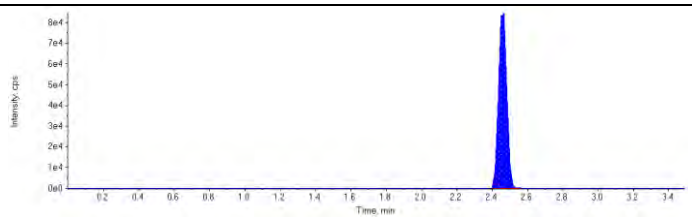
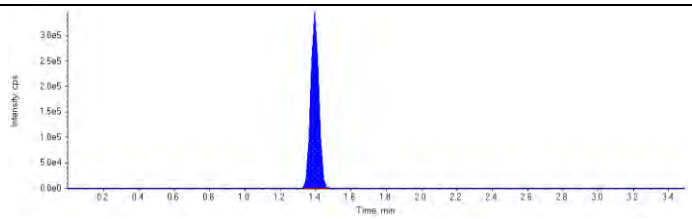
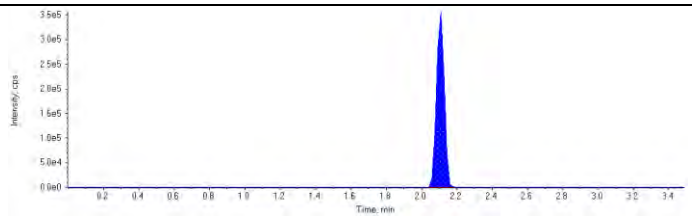
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	111000.	1.67	1.00	-
MPFOA	304000.	1.85	1.00	-
MPFOS	129000.	1.97	1.00	-
13C6-PFHxA IS	1090000.	1.40	1.00	-
13C9-PFDA IS	1100000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	4970000	1.10	41.7	40.6	97.3
PFBS 2	2630000	1.10	41.7	42.1	101.0
PFOA 1	5560000	1.85	41.7	41.5	99.6
PFOA 2	2270000	1.85	41.7	41.8	100.0
PFOS 1	2880000	1.96	41.7	44.4	106.0
PFOS 2	915000	1.96	41.7	43.6	105.0
13C4-PFOA	304000	1.85	100.	104.	104.0
13C4-PFOS	129000	1.97	100.	93.8	93.8
13C8-PFOSA	281000	2.46	100.	88.5	88.5
13C6-PFHxA	1090000	1.40	100.	96.3	96.3
13C9-PFDA	1100000	2.11	100.	102.	102.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Standard)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 1.00 ug/L Sample Type: (Standard)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Standard)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Standard)	This image is not available

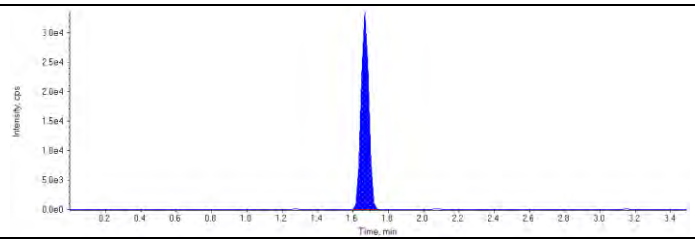
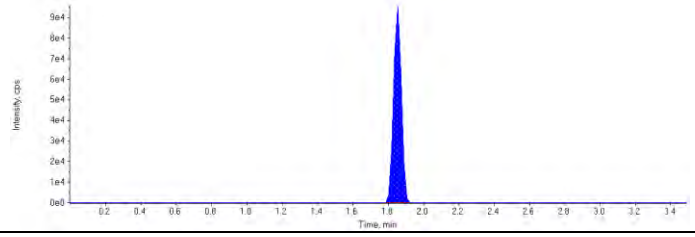
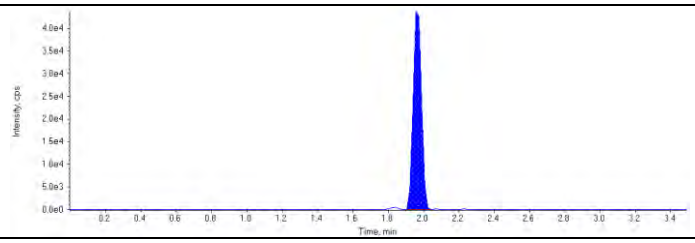
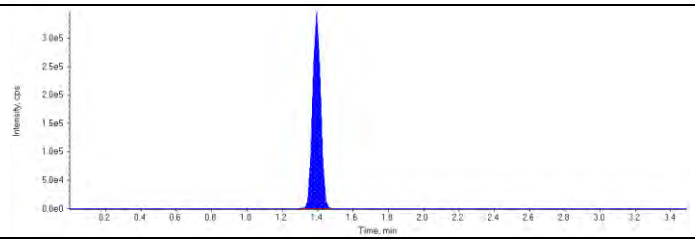
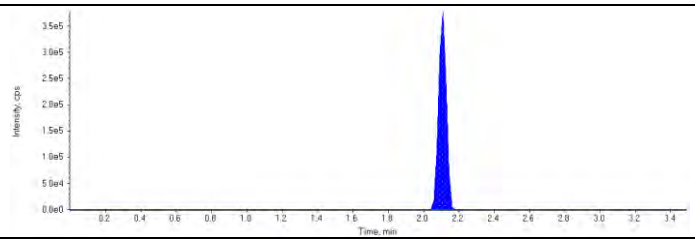
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 40.6 µg/L Area Ratio: 45.0 Sample Type: (Standard)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 42.1 µg/L Area Ratio: 23.8 Sample Type: (Standard)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 41.5 µg/L Area Ratio: 18.3 Sample Type: (Standard)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 41.8 µg/L Area Ratio: 7.45 Sample Type: (Standard)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 44.4 µg/L Area Ratio: 22.3 Sample Type: (Standard)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 43.6 µg/L Area Ratio: 7.08 Sample Type: (Standard)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 104. µg/L Area Ratio: 0.279 Sample Type: (Standard)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 93.8 µg/L Area Ratio: 0.118 Sample Type: (Standard)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 88.5 µg/L Area Ratio: 0.256 Sample Type: (Standard)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 96.3 µg/L Area Ratio: 0.00 Sample Type: (Standard)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 102. µg/L Area Ratio: 0.00 Sample Type: (Standard)	

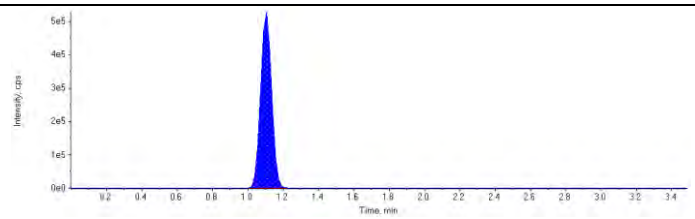
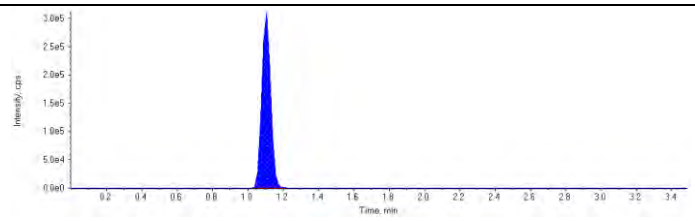
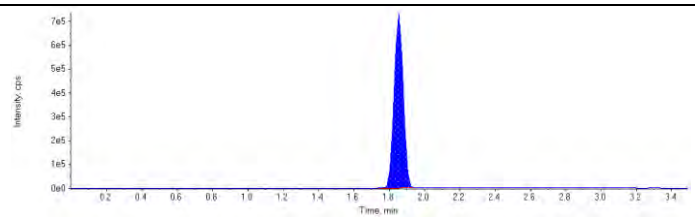
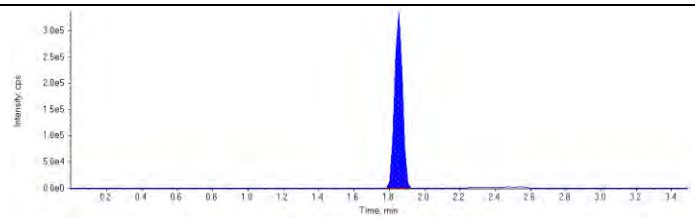
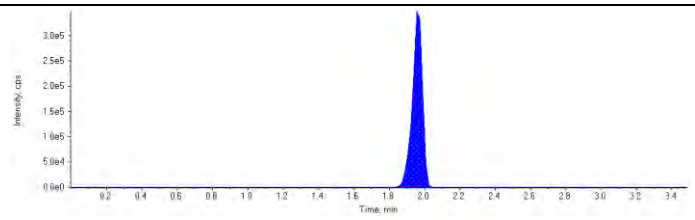
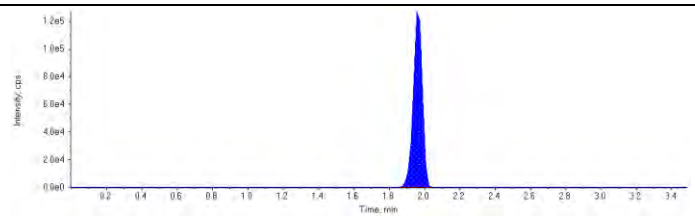
Sample ID	ICV	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	9
Acquisition Date	2017/05/19 6:03:24 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

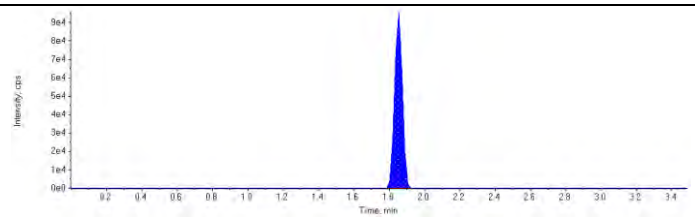
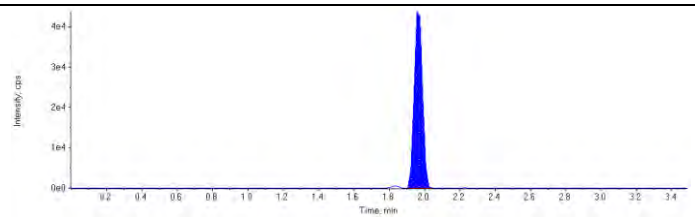
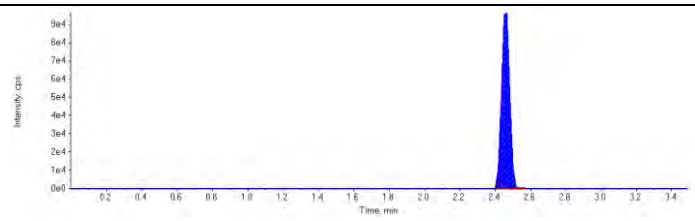
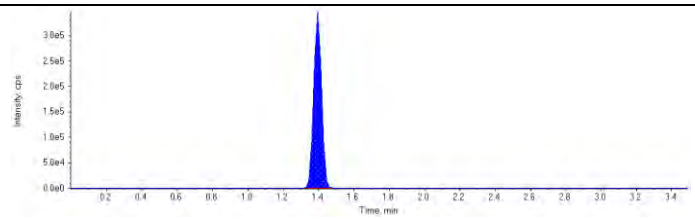
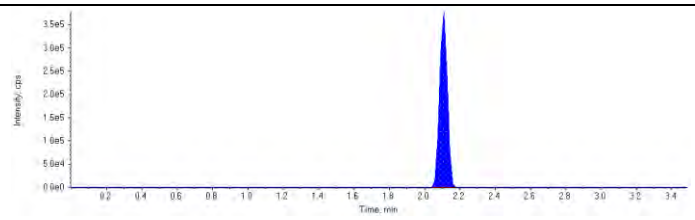
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	100000.	1.67	1.00	-
MPFOA	294000.	1.85	1.00	-
MPFOS	144000.	1.96	1.00	-
13C6-PFHxA IS	1080000.	1.39	1.00	-
13C9-PFDA IS	1150000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	2280000	1.10	20.8	20.6	98.8
PFBS 2	1080000	1.10	20.8	19.1	92.1
PFOA 1	2620000	1.85	20.8	20.2	97.2
PFOA 2	1040000	1.85	20.8	19.8	95.3
PFOS 1	1400000	1.96	20.8	19.4	93.3
PFOS 2	456000	1.96	20.8	19.6	94.1
13C4-PFOA	294000	1.85	100.	102.	102.0
13C4-PFOS	144000	1.96	100.	106.	106.0
13C8-PFOSA	321000	2.46	100.	96.6	96.6
13C6-PFHxA	1080000	1.39	100.	94.8	94.8
13C9-PFDA	1150000	2.11	100.	107.	107.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.96(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 20.6 µg/L Area Ratio: 22.7 Sample Type: (Quality Control)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 19.1 µg/L Area Ratio: 10.8 Sample Type: (Quality Control)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 20.2 µg/L Area Ratio: 8.89 Sample Type: (Quality Control)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 19.8 µg/L Area Ratio: 3.52 Sample Type: (Quality Control)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 19.4 µg/L Area Ratio: 9.71 Sample Type: (Quality Control)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 19.6 µg/L Area Ratio: 3.17 Sample Type: (Quality Control)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 102. µg/L Area Ratio: 0.273 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.96 (1.97) min Calculated Conc: 106. µg/L Area Ratio: 0.134 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 96.6 µg/L Area Ratio: 0.279 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 94.8 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 107. µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

INJECTION INTERNAL STANDARD PEAK AREAS

Sample Name	Analyte	13C6-PFHxA	13C6-PFHxA	13C9-PFDA	13C9-PFDA
	Mass labeled IS	STD 4	ISC/CCV	STD 4	ISC/CCV
	IS Area	1070000	0	1020000	0
		IS Peak Area	IS Peak Area	IS Peak Area	IS Peak Area
Std 1		1130000		1080000	
Std 2		1170000		1200000	
Std 3		1200000		1070000	
Std 4		1070000		1020000	
Std 5		1140000		971000	
Std 6		1090000		1100000	
IB		1230000		1130000	
ICV		1080000		1150000	
ISC		1210000		1190000	
4989765~BLANK		1200000		1150000	
4989765~MTRX SPK		1220000		1090000	
4989765~MTRX SPK:D1		1210000		1060000	
4989765~SPIKE		1130000		1230000	
IB		1270000		1010000	
4989765~EGH865-01		1250000		1000000	
4989765~EJK050-01:100x		1010000		1120000	
4989765~EJK050-01:10x		1090000		1130000	
IB		1120000		1200000	
4989765~EJK051-01:100x		1150000		1160000	
4989765~EJK051-01:10x		980000		951000	
IB		1130000		1180000	
4989765~EJK052-01		1280000		1100000	
4989765~EJK053-01:100x		1310000		1320000	
4989765~EJK053-01:10x		1120000		1160000	
IB		1140000		1180000	
4989765~EJU281-01		1200000		1190000	
4989765~EJU282-01		1200000		1080000	
CCV		1130000		1110000	
4989765~EJU283-01		912000		1020000	
4989765~EJU284-01:20x		1020000		1020000	
4989765~EJU284-01		1170000		1090000	
IB		1190000		1210000	
4989765~EJU285-01:20x		1120000		1050000	
4989765~EJU285-01		989000		936000	
IB		1180000		1160000	
4989765~EJU312-01		1110000		1110000	
4989765~EJU313-01		1020000		1050000	
4989765~EJU314-01:10x		1130000		1030000	
4989765~EJU314-01		1160000		1080000	
IB		1190000		1120000	
4989765~EJU315-01		997000		915000	
CCV		996000		1020000	
4989765~EJU327-01		1050000		1120000	
4989765~EJU330-01		1030000		1060000	
4989765~EJU331-01		1150000		1020000	
CCV		1050000		1000000	

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Printed: 02/06/2017 10:44:40 AM

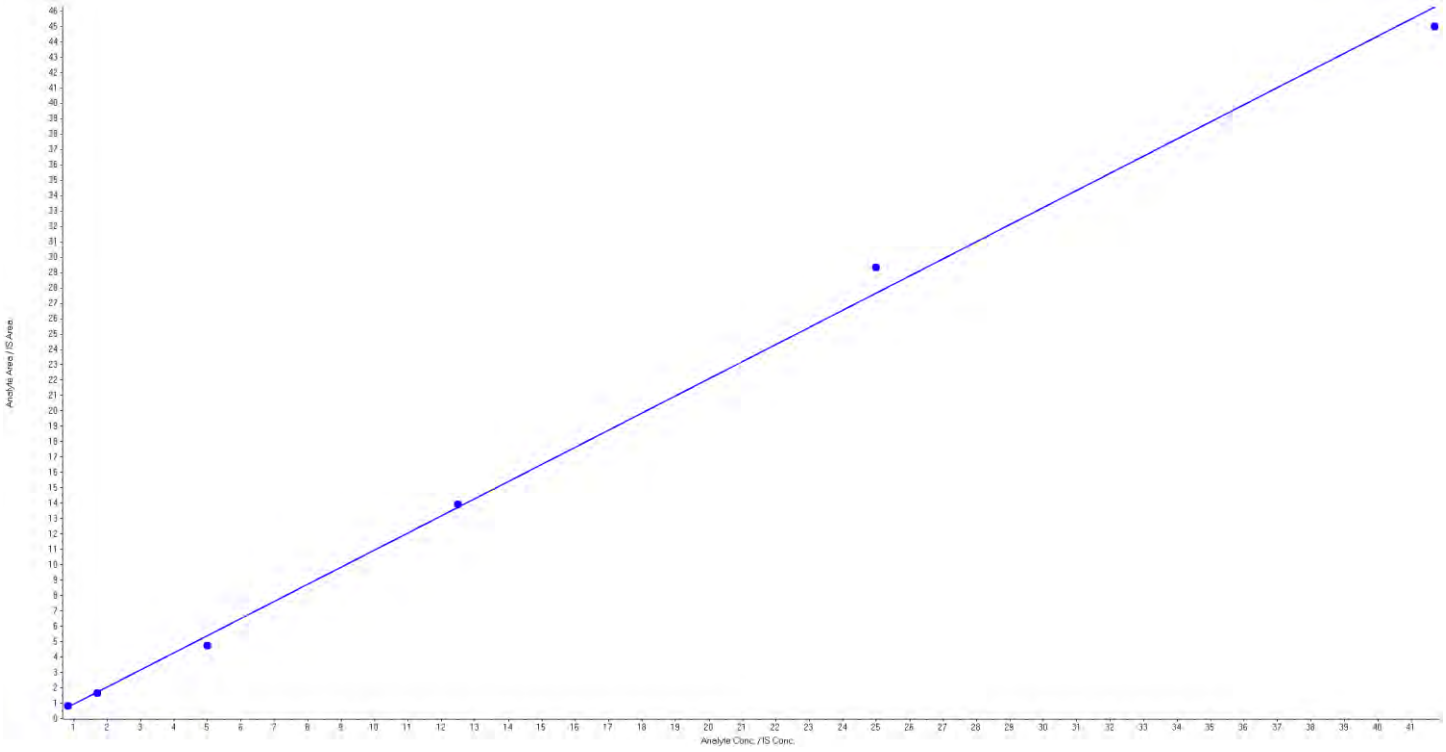
Analyte Name: **PFBS 1**
Internal Standard: MPFHxS

Data File	PFC_170519A\WS#4989765.wiff	**Result Table**	PFC_Water_170519_4989765_EMAX.rdb
Acquisition Date	2017/05/19 5:27:59 PM	**Project**	Enviro\PFOS
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03

Regression Equation: y = 1.11 x + -0.179 (r = 0.9985)

Expected Concentration (µg/L)	Number of Values	Calculated Concentration (µg/L)	% Accuracy
0.83	1	0.92	110.9
1.7	1	1.63	96.1
5	1	4.41	88.2
12.5	1	12.68	101.5
25	1	26.51	106.0
41.7	1	40.58	97.3

Sample ID	Response Factor	S/N
Std 1	1.0200	158
Std 2	0.9650	449
Std 3	0.9460	1630
Std 4	1.1200	3620
Std 5	1.1700	9160
Std 6	1.0800	16700



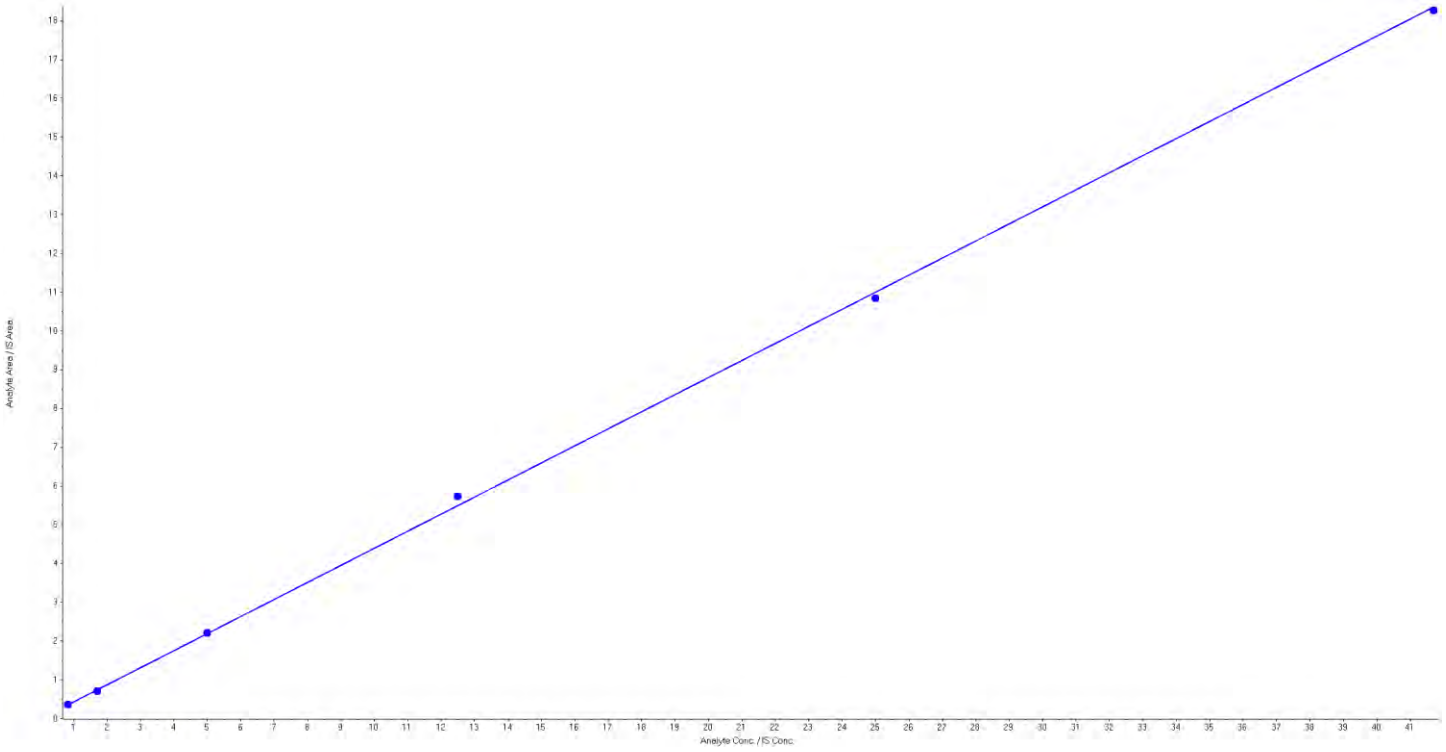
Analyte Name: **PFOA 1**
Internal Standard: MPFOA

Data File	PFC_170519A\WS#4989765.wiff	**Result Table**	PFC_Water_170519_4989765_EMAX.rdb
Acquisition Date	2017/05/19 5:27:59 PM	**Project**	Enviro\PFOS
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03

Regression Equation: y = 0.44 x + -0.0112 (r = 0.9998)

Expected Concentration (µg/L)	Number of Values	Calculated Concentration (µg/L)	% Accuracy
0.83	1	0.83	100.4
1.7	1	1.64	96.4
5	1	5.03	100.6
12.5	1	13.05	104.4
25	1	24.66	98.6
41.7	1	41.52	99.6

Sample ID	Response Factor	S/N
Std 1	0.4290	233
Std 2	0.4180	258
Std 3	0.4410	844
Std 4	0.4590	3710
Std 5	0.4340	4690
Std 6	0.4380	4330



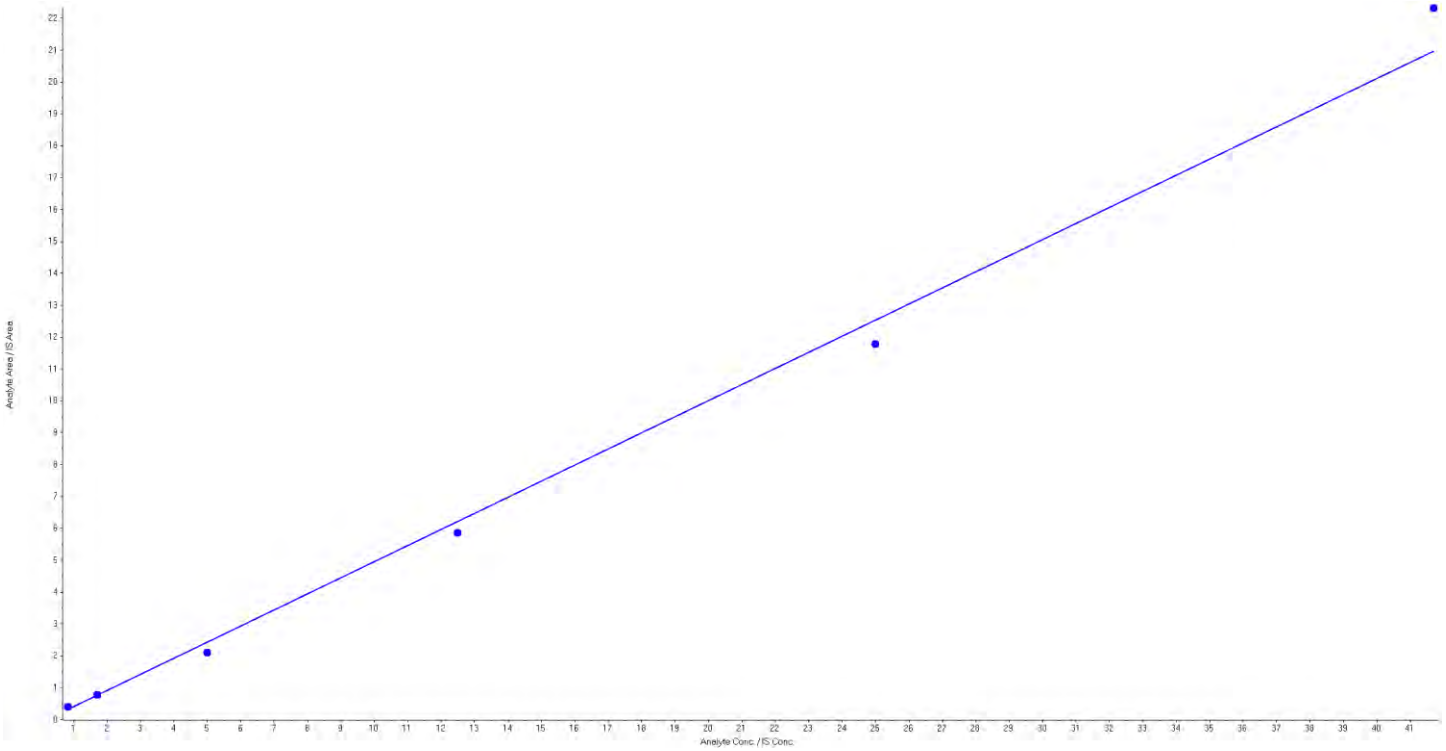
Analyte Name: **PFOS 1**
Internal Standard: MPFOS

Data File	PFC_170519A\WS#4989765.wiff	**Result Table**	PFC_Water_170519_4989765_EMAX.rdb
Acquisition Date	2017/05/19 5:27:59 PM	**Project**	Enviro\PFOS
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03

Regression Equation: y = 0.505 x + -0.0977 (r = 0.9971)

Expected Concentration (µg/L)	Number of Values	Calculated Concentration (µg/L)	% Accuracy
0.83	1	0.97	116.7
1.7	1	1.72	101.3
5	1	4.36	87.2
12.5	1	11.79	94.4
25	1	23.51	94.0
41.7	1	44.38	106.4

Sample ID	Response Factor	S/N
Std 1	0.4720	849
Std 2	0.4540	1310
Std 3	0.4210	3650
Std 4	0.4690	17100
Std 5	0.4710	9060
Std 6	0.5350	25100



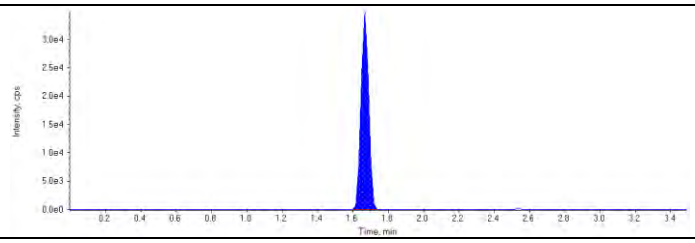
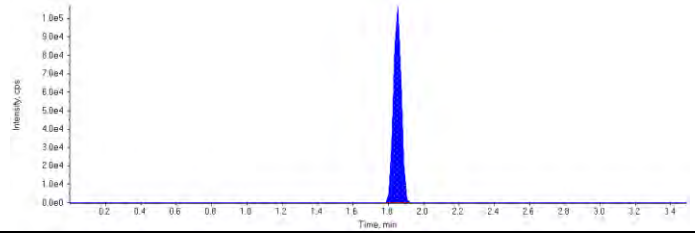
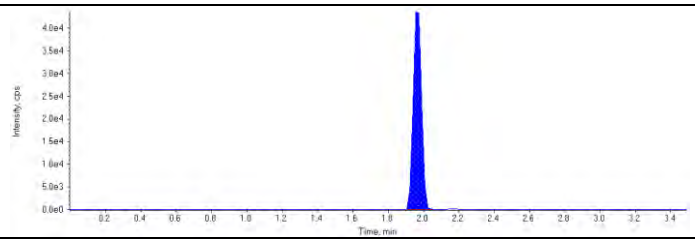
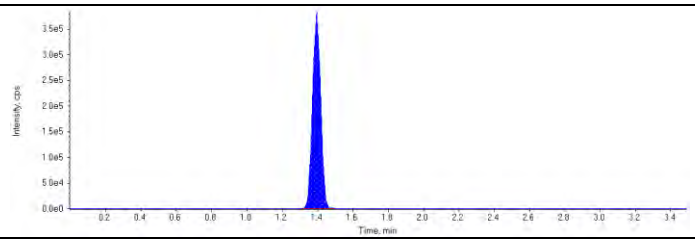
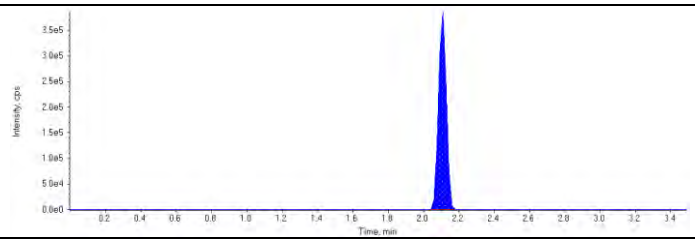
6. Continuing Calibration

Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

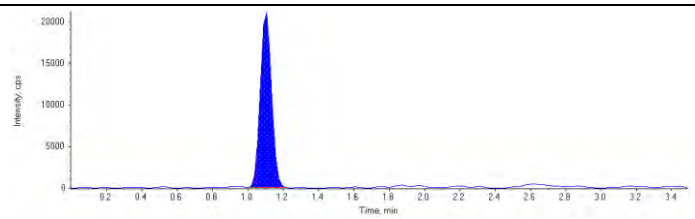
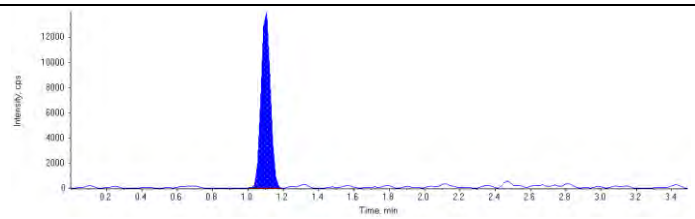
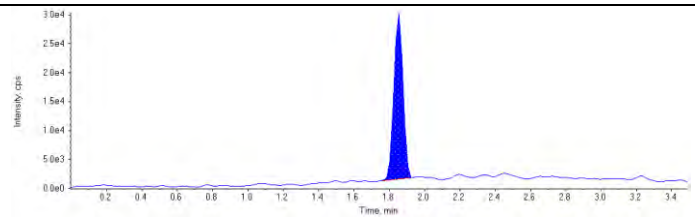
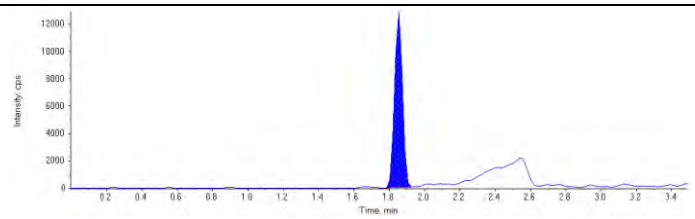
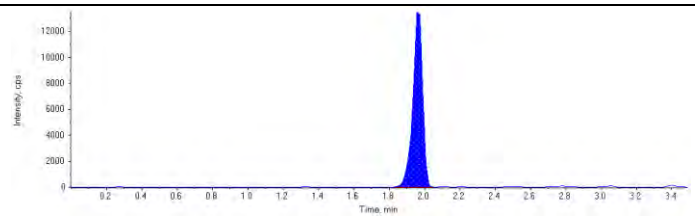
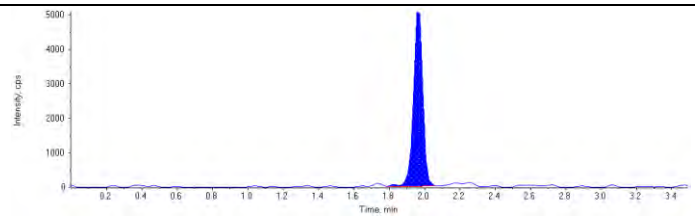
Sample ID	ISC	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	2
Acquisition Date	2017/05/19 6:48:56 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

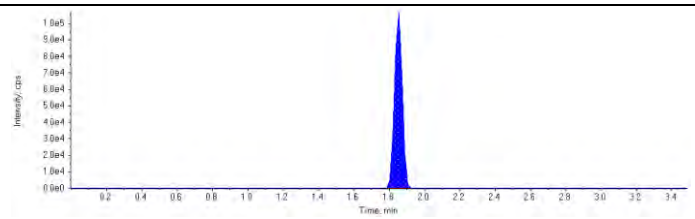
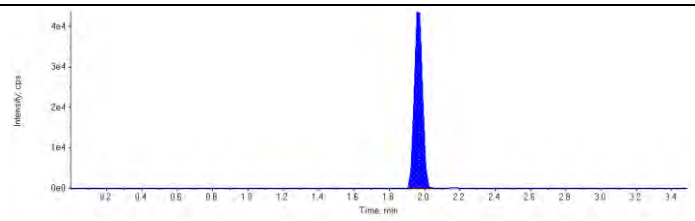
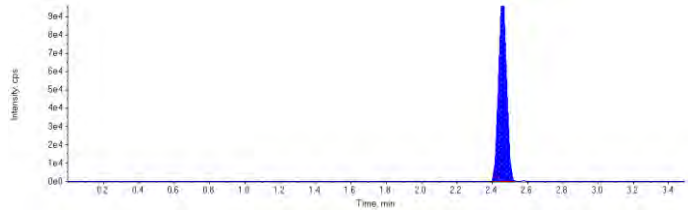
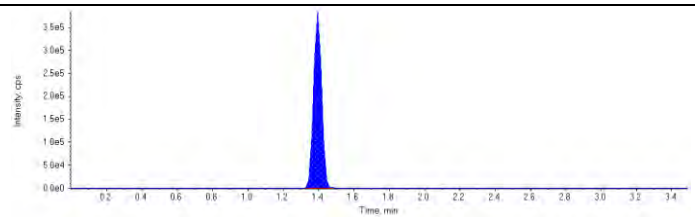
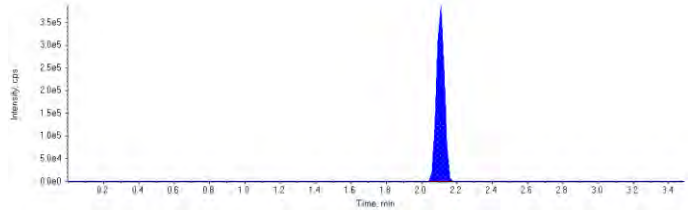
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	104000.	1.67	1.00	-
MPFOA	328000.	1.85	1.00	-
MPFOS	145000.	1.97	1.00	-
13C6-PFHxA IS	1210000.	1.39	1.00	-
13C9-PFDA IS	1190000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	92900	1.10	0.830	0.959	116.0
PFBS 2	50700	1.10	0.830	0.915	110.0
PFOA 1	103000	1.85	0.830	0.739	89.0
PFOA 2	39800	1.85	0.830	0.738	88.9
PFOS 1	52600	1.96	0.830	0.913	110.0
PFOS 2	18900	1.97	0.830	0.965	116.0
13C4-PFOA	328000	1.85	100.	101.	101.0
13C4-PFOS	145000	1.97	100.	94.7	94.7
13C8-PFOSA	318000	2.46	100.	92.3	92.3
13C6-PFHxA	1210000	1.39	100.	107.	107.0
13C9-PFDA	1190000	2.11	100.	111.	111.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.39(1.40) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

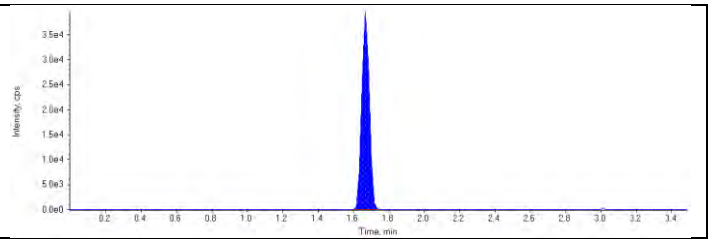
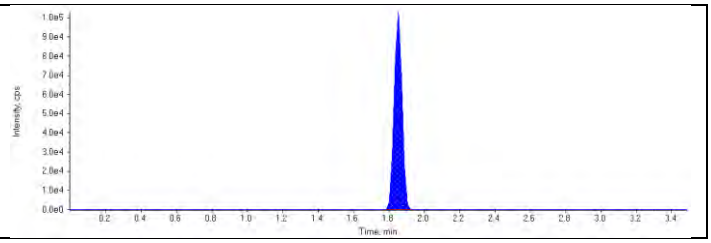
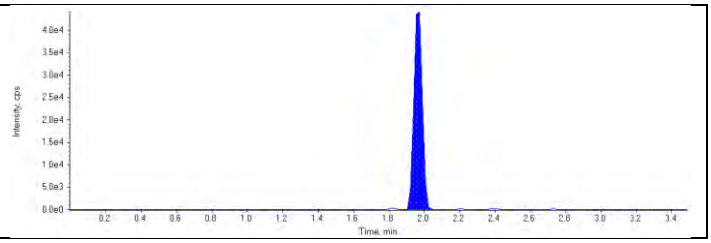
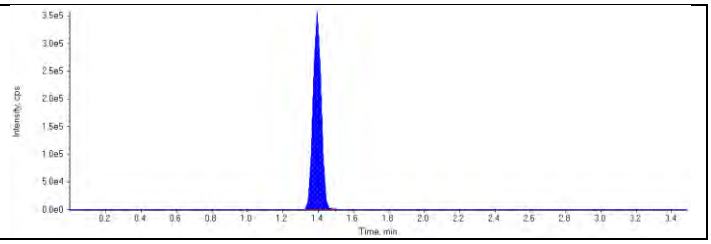
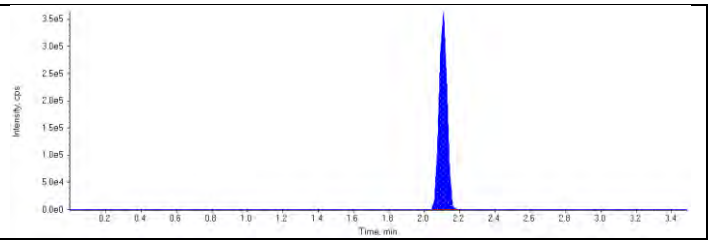
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.959 µg/L Area Ratio: 0.890 Sample Type: (Quality Control)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.10 (1.11) min Calculated Conc: 0.915 µg/L Area Ratio: 0.486 Sample Type: (Quality Control)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.739 µg/L Area Ratio: 0.314 Sample Type: (Quality Control)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 0.738 µg/L Area Ratio: 0.121 Sample Type: (Quality Control)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.96 (1.96) min Calculated Conc: 0.913 µg/L Area Ratio: 0.364 Sample Type: (Quality Control)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.97 (1.96) min Calculated Conc: 0.965 µg/L Area Ratio: 0.131 Sample Type: (Quality Control)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 101. µg/L Area Ratio: 0.271 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 94.7 µg/L Area Ratio: 0.119 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 92.3 µg/L Area Ratio: 0.267 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.39 (1.40) min Calculated Conc: 107. µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 111. µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

Sample ID	CCV	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	5
Acquisition Date	2017/05/19 8:35:17 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	117000.	1.67	1.00	-
MPFOA	316000.	1.85	1.00	-
MPFOS	147000.	1.97	1.00	-
13C6-PFHxA IS	1130000.	1.40	1.00	-
13C9-PFDA IS	1110000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	1420000	1.10	12.5	11.1	88.9
PFBS 2	709000	1.10	12.5	10.8	86.3
PFOA 1	1680000	1.85	12.5	12.1	96.9
PFOA 2	690000	1.85	12.5	12.3	98.3
PFOS 1	854000	1.96	12.5	11.7	93.3
PFOS 2	283000	1.96	12.5	11.9	95.5
13C4-PFOA	316000	1.85	100.	104.	104.0
13C4-PFOS	147000	1.97	100.	103.	103.0
13C8-PFOSA	335000	2.46	100.	104.	104.0
13C6-PFHxA	1130000	1.40	100.	99.6	99.6
13C9-PFDA	1110000	2.11	100.	104.	104.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

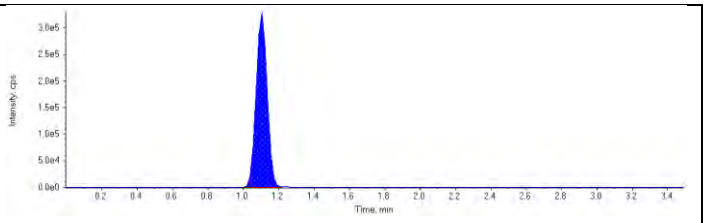
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 11.1 µg/L

Area Ratio: 12.2

Sample Type: (Quality Control)



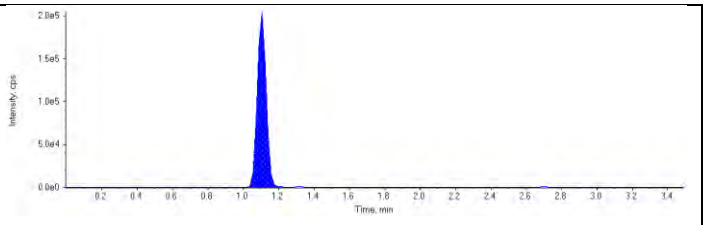
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 10.8 µg/L

Area Ratio: 6.07

Sample Type: (Quality Control)



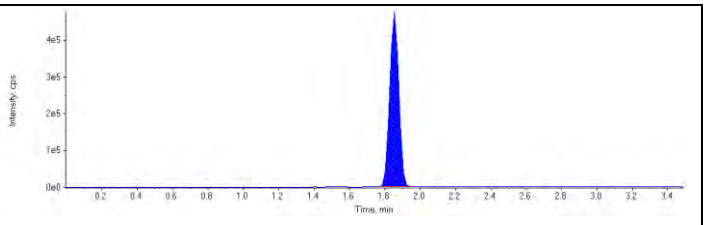
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 12.1 µg/L

Area Ratio: 5.32

Sample Type: (Quality Control)



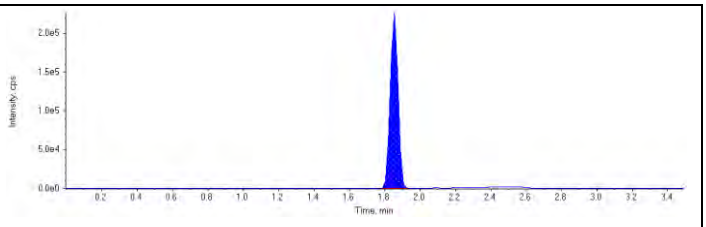
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 12.3 µg/L

Area Ratio: 2.18

Sample Type: (Quality Control)



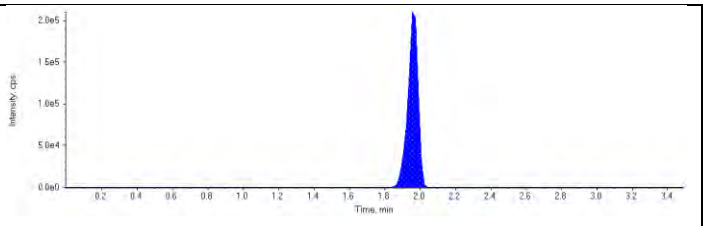
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 11.7 µg/L

Area Ratio: 5.80

Sample Type: (Quality Control)



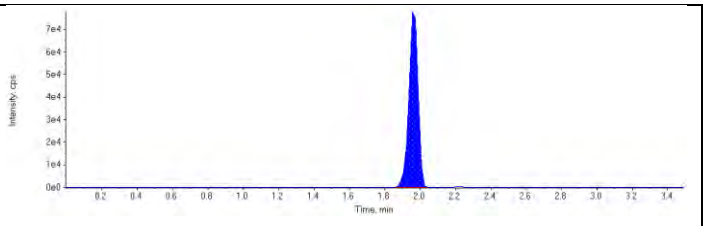
PFOS 2 (498.900/98.900 Da)

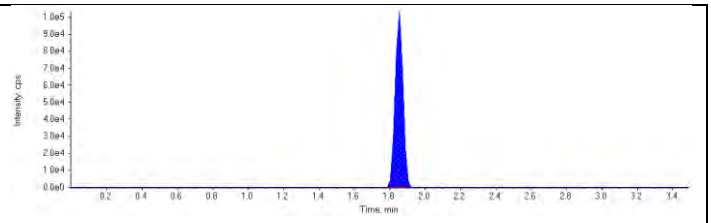
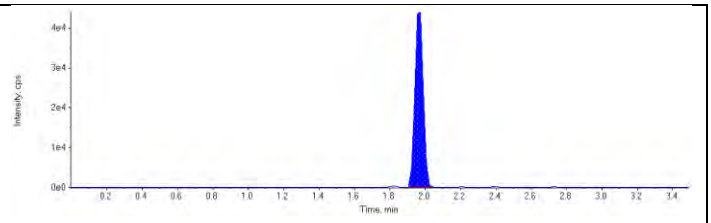
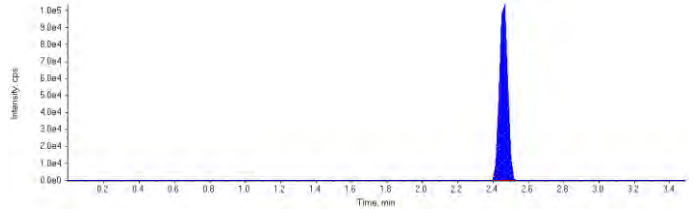
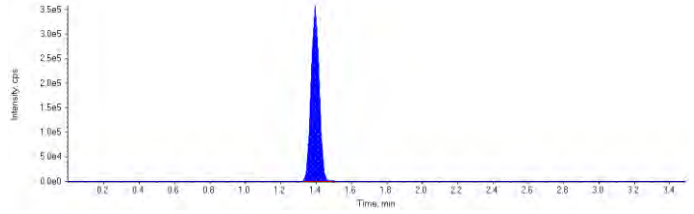
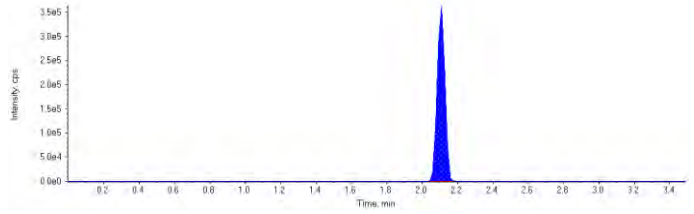
RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 11.9 µg/L

Area Ratio: 1.92

Sample Type: (Quality Control)

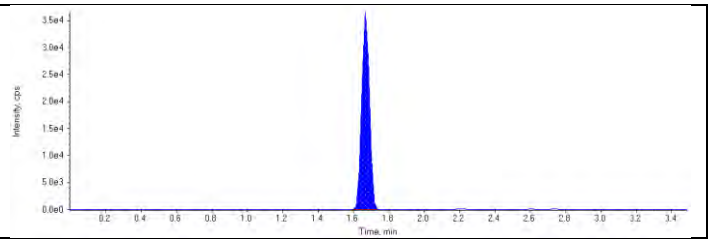
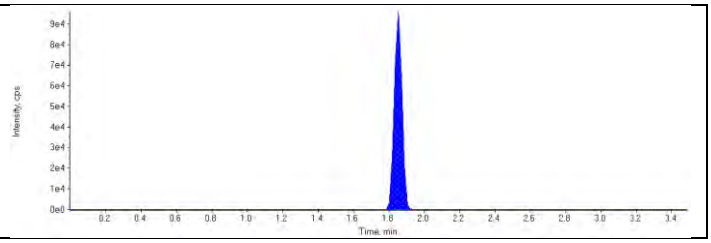
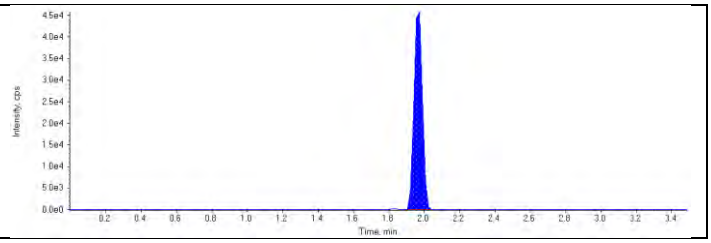
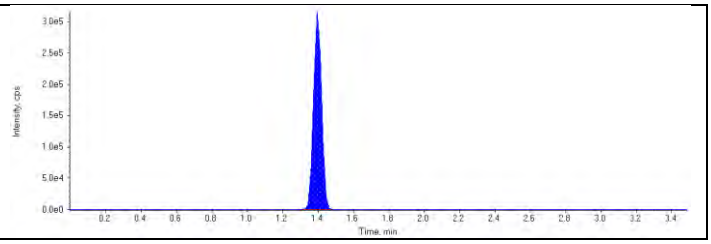
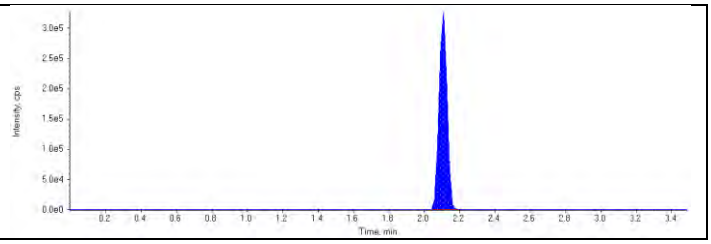


13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 104. µg/L Area Ratio: 0.280 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 103. µg/L Area Ratio: 0.130 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 104. µg/L Area Ratio: 0.301 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 99.6 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 104. µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

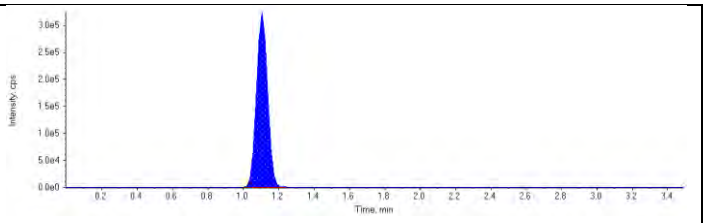
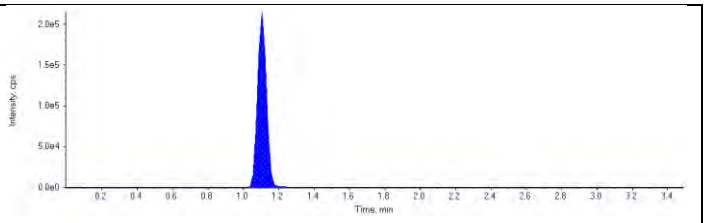
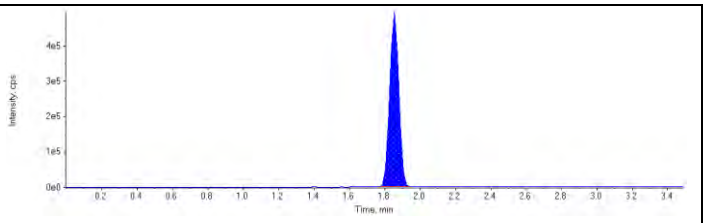
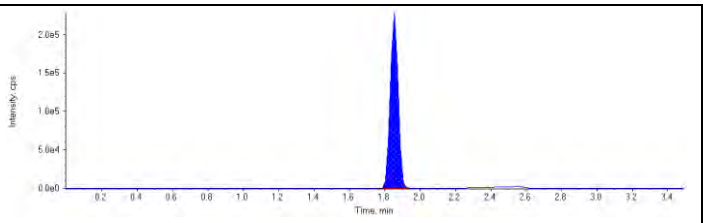
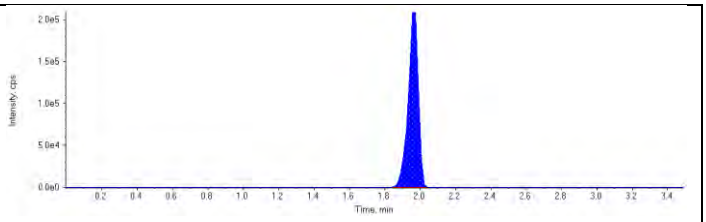
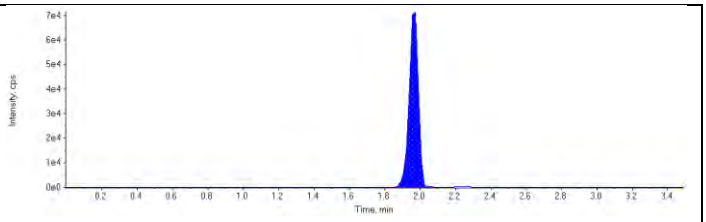
Sample ID	CCV	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	5
Acquisition Date	2017/05/19 9:56:22 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

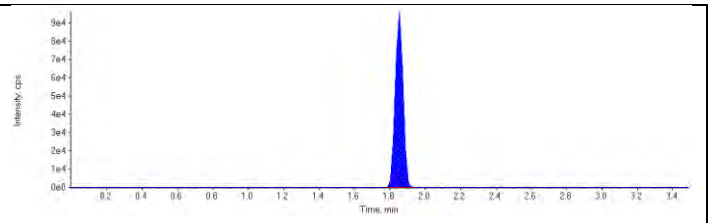
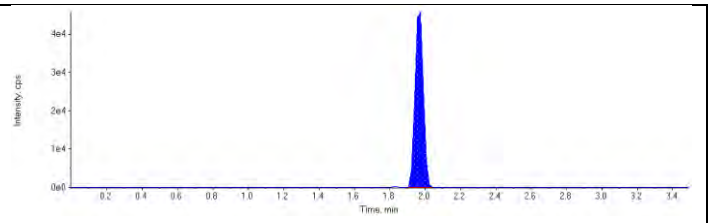
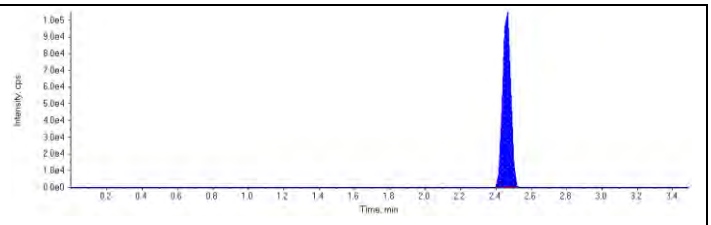
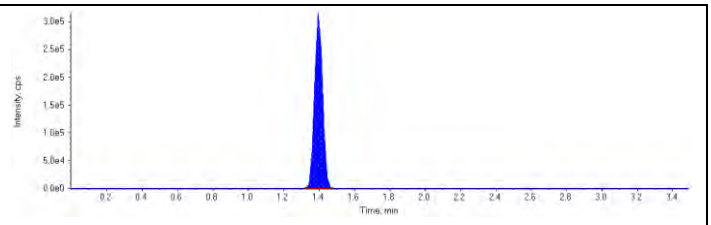
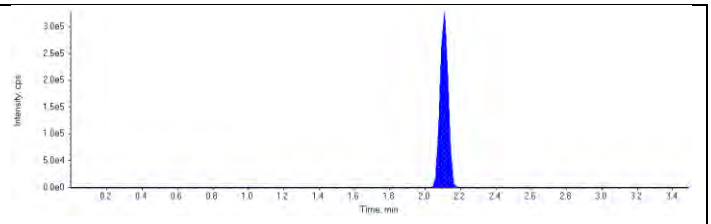
Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	110000.	1.67	1.00	-
MPFOA	293000.	1.85	1.00	-
MPFOS	152000.	1.97	1.00	-
13C6-PFHxA IS	996000.	1.40	1.00	-
13C9-PFDA IS	1020000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	1400000	1.11	12.5	11.6	92.7
PFBS 2	742000	1.11	12.5	12.0	95.8
PFOA 1	1760000	1.85	12.5	13.7	109.0
PFOA 2	703000	1.85	12.5	13.5	108.0
PFOS 1	850000	1.97	12.5	11.3	90.1
PFOS 2	263000	1.97	12.5	10.8	86.3
13C4-PFOA	293000	1.85	100.	110.	110.0
13C4-PFOS	152000	1.97	100.	121.	121.0
13C8-PFOSA	335000	2.46	100.	114.	114.0
13C6-PFHxA	996000	1.40	100.	87.8	87.8
13C9-PFDA	1020000	2.11	100.	95.0	95.0

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

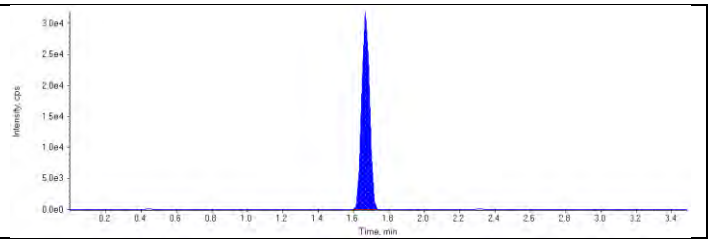
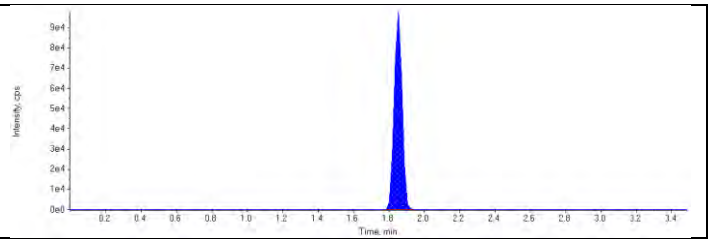
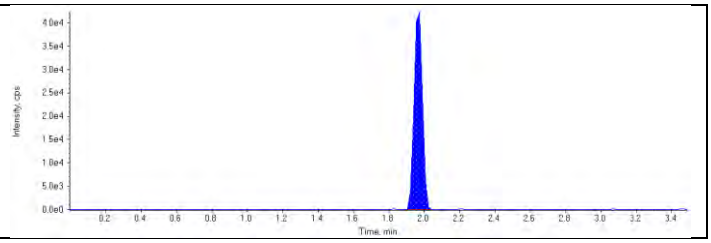
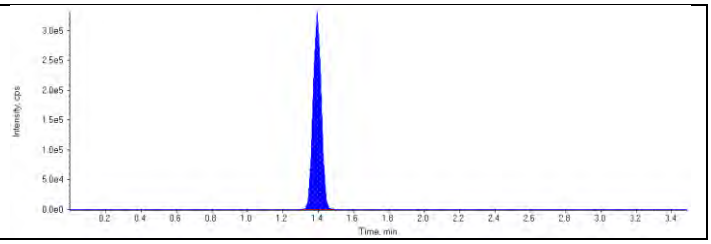
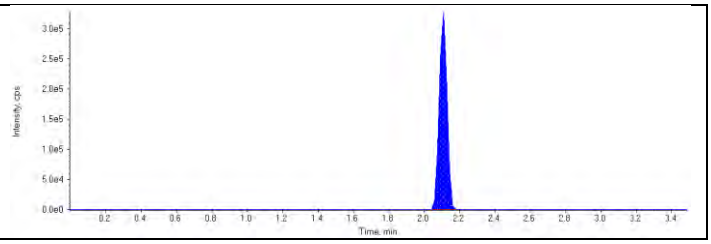
PFBS 1 (298.900/79.900 Da) RT (Exp. RT): 1.11 (1.11) min Calculated Conc: 11.6 µg/L Area Ratio: 12.7 Sample Type: (Quality Control)	
PFBS 2 (298.900/98.900 Da) RT (Exp. RT): 1.11 (1.11) min Calculated Conc: 12.0 µg/L Area Ratio: 6.74 Sample Type: (Quality Control)	
PFOA 1 (413.100/369.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 13.7 µg/L Area Ratio: 6.01 Sample Type: (Quality Control)	
PFOA 2 (413.100/169.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 13.5 µg/L Area Ratio: 2.40 Sample Type: (Quality Control)	
PFOS 1 (498.900/79.900 Da) RT (Exp. RT): 1.97 (1.96) min Calculated Conc: 11.3 µg/L Area Ratio: 5.59 Sample Type: (Quality Control)	
PFOS 2 (498.900/98.900 Da) RT (Exp. RT): 1.97 (1.96) min Calculated Conc: 10.8 µg/L Area Ratio: 1.73 Sample Type: (Quality Control)	

13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 110. µg/L Area Ratio: 0.294 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 121. µg/L Area Ratio: 0.153 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 114. µg/L Area Ratio: 0.328 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 87.8 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 95.0 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

Sample ID	CCV	**Injection Volume (µL)**	1
Sample Type	Quality Control	**Injection Vial**	5
Acquisition Date	2017/05/19 10:26:44 PM	**Dilution Factor**	1.00
Acquisition Method	PFC_Water_Low.dam	**Instrument Name**	LCMS03
Project	Enviro\PFOS	**Algorithm Used**	Analyst Classic
Data File	PFC_170519A\WS#4989765.wiff		
Result Table	PFC_Water_170519_4989765_EMAX.rdb		
Samples Annotation	-		

Internal Standard	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)
MPFHxS	96800.	1.67	1.00	-
MPFOA	302000.	1.85	1.00	-
MPFOS	139000.	1.97	1.00	-
13C6-PFHxA IS	1050000.	1.40	1.00	-
13C9-PFDA IS	1000000.	2.11	1.00	-
N/A	N/A	N/A	N/A	-
N/A	N/A	N/A	N/A	-

Target Analyte	Area (cps)	RT (min)	Target Conc. (ug/L)	Calc. Conc. (ug/L)	Accuracy (%)
PFBS 1	1420000	1.10	12.5	13.3	107.0
PFBS 2	694000	1.10	12.5	12.7	102.0
PFOA 1	1680000	1.85	12.5	12.7	101.0
PFOA 2	691000	1.85	12.5	12.9	103.0
PFOS 1	852000	1.97	12.5	12.3	98.6
PFOS 2	265000	1.96	12.5	11.8	94.8
13C4-PFOA	302000	1.85	100.	107.	107.0
13C4-PFOS	139000	1.97	100.	105.	105.0
13C8-PFOSA	307000	2.46	100.	106.	106.0
13C6-PFHxA	1050000	1.40	100.	92.4	92.4
13C9-PFDA	1000000	2.11	100.	93.5	93.5

MPFHxS (Internal Standard) RT (Exp. RT): 1.67(1.77) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOA (Internal Standard) RT (Exp. RT): 1.85(1.85) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
MPFOS (Internal Standard) RT (Exp. RT): 1.97(1.97) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C6-PFHxA IS (Internal Standard) RT (Exp. RT): 1.40(1.40) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
13C9-PFDA IS (Internal Standard) RT (Exp. RT): 2.11(2.11) min Concentration: 1.00 ug/L Sample Type: (Quality Control)	
N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

N/A (Internal Standard) RT (Exp. RT): N/A(N/A) min Concentration: N/A N/A Sample Type: (Quality Control)	This image is not available

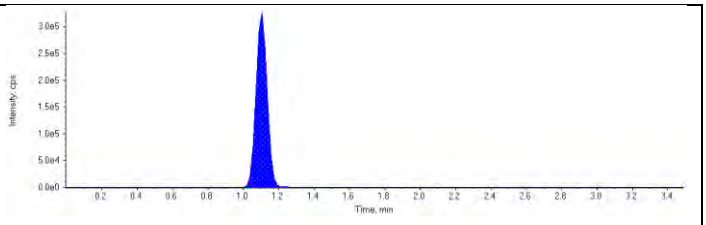
PFBS 1 (298.900/79.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 13.3 µg/L

Area Ratio: 14.7

Sample Type: (Quality Control)



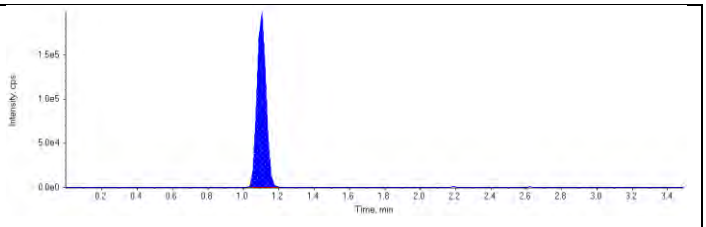
PFBS 2 (298.900/98.900 Da)

RT (Exp. RT): 1.10 (1.11) min

Calculated Conc: 12.7 µg/L

Area Ratio: 7.17

Sample Type: (Quality Control)



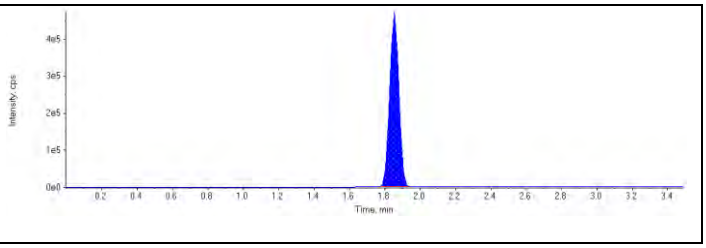
PFOA 1 (413.100/369.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 12.7 µg/L

Area Ratio: 5.57

Sample Type: (Quality Control)



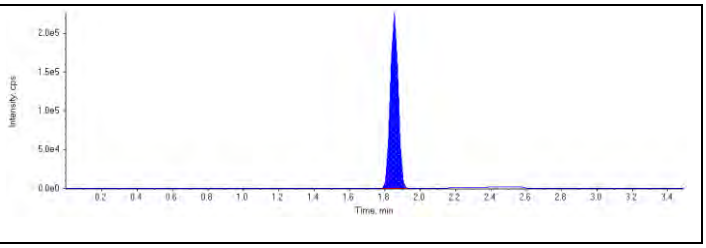
PFOA 2 (413.100/169.000 Da)

RT (Exp. RT): 1.85 (1.85) min

Calculated Conc: 12.9 µg/L

Area Ratio: 2.29

Sample Type: (Quality Control)



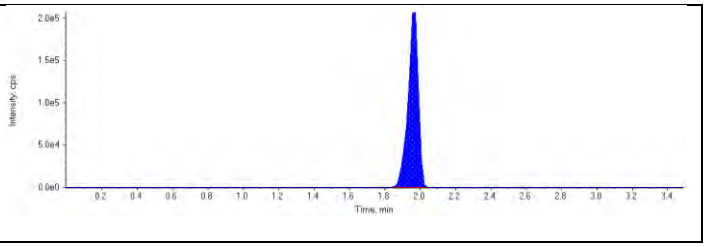
PFOS 1 (498.900/79.900 Da)

RT (Exp. RT): 1.97 (1.96) min

Calculated Conc: 12.3 µg/L

Area Ratio: 6.13

Sample Type: (Quality Control)



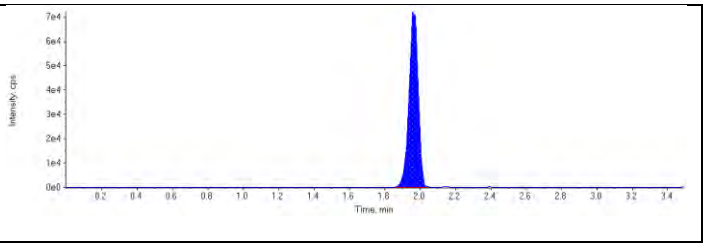
PFOS 2 (498.900/98.900 Da)

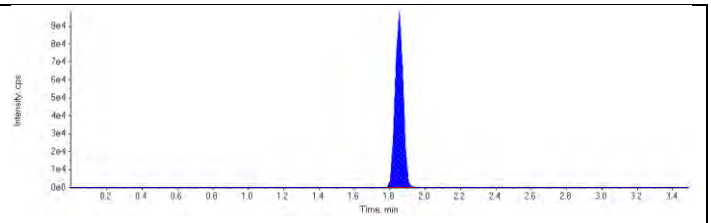
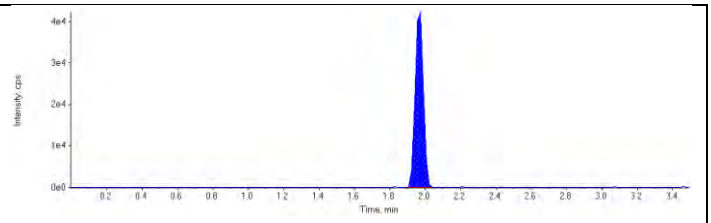
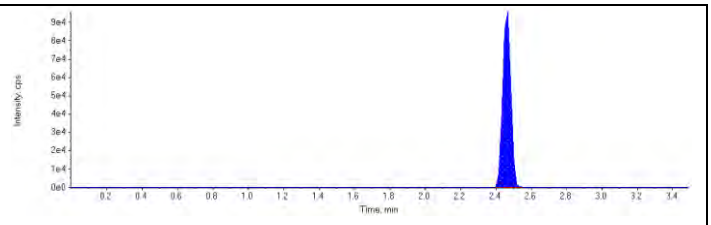
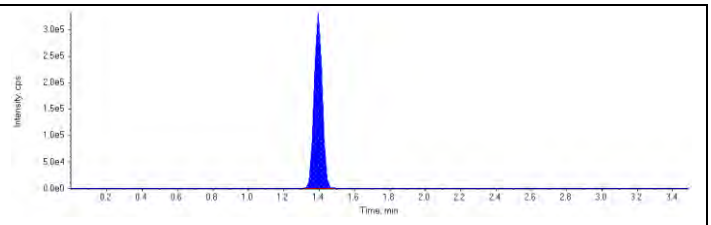
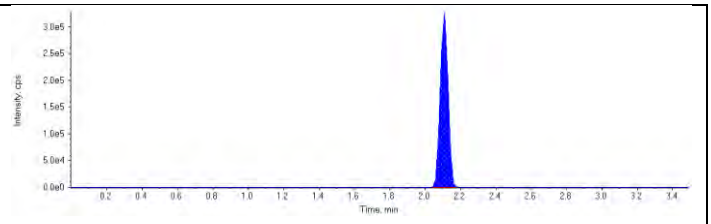
RT (Exp. RT): 1.96 (1.96) min

Calculated Conc: 11.8 µg/L

Area Ratio: 1.90

Sample Type: (Quality Control)



13C4-PFOA (416.900/372.000 Da) RT (Exp. RT): 1.85 (1.85) min Calculated Conc: 107. µg/L Area Ratio: 0.288 Sample Type: (Quality Control)	
13C4-PFOS (502.900/79.900 Da) RT (Exp. RT): 1.97 (1.97) min Calculated Conc: 105. µg/L Area Ratio: 0.133 Sample Type: (Quality Control)	
13C8-PFOSA (505.800/77.900 Da) RT (Exp. RT): 2.46 (2.50) min Calculated Conc: 106. µg/L Area Ratio: 0.306 Sample Type: (Quality Control)	
13C6-PFHxA (318.900/274.000 Da) RT (Exp. RT): 1.40 (1.40) min Calculated Conc: 92.4 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	
13C9-PFDA (521.900/477.100 Da) RT (Exp. RT): 2.11 (2.11) min Calculated Conc: 93.5 µg/L Area Ratio: 0.00 Sample Type: (Quality Control)	

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CONTRACT_ID|DO_CTO_NUMBER|PHASE|INSTALLATION_ID|SAMPLE_NAME|ANALYTICAL_METHOD|LAB_NAME|CONTRACTOR_NAME|LEACHATE_METHOD|SAMPLE_BASIS|EXTRACTION_METHOD|RESULT_TYPE|SAMPLE_MEDIUM|CLEANUP_METHOD|QC_LEVEL|LEACHATE_DATE|LEACHATE_TIME|EXTRACTION_DATE|EXTRACTION_TIME|ANALYSIS_DATE|ANALYSIS_TIME|LAB_SAMPLE_ID|LAB_REPORT_DATE|LAB_REPORT_NUMBER|FILTER_SIZE|DILUTION|RUN_NUMBER|PERCENT_MOISTURE|PERCENT_LIPID|ANALYTE_ID|ANALYTE_VALUE|ORIGINAL_ANALYTE_VALUE|RESULT_UNITS|LAB_QUALIFIER|VALIDATOR_QUALIFIER|FINAL_QUALIFIER|DETECTED|GC_COLUMN_TYPE|ANALYSIS_RESULT_TYPE|RADIOLOGICAL_ERROR|RESULT_NARRATIVE|RETENTION_TIME|QC_CONTROL_LIMIT_CODE|QC_ACCURACY_UPPER|QC_ACCURACY_LOWER|CONTROL_LIMIT_DATE|RELATIVE_PCT_DIFF|QC_NARRATIVE|MDL|CDL|IDL|PQL|CRQL|DETECTION_LIMIT|VALIDATOR_DET_LIMIT|VALIDATOR_MDL|DL|LOD|LOQ|SDG|LEACH_LOT|METHOD_BATCH|PREP_BATCH|RUN_BATCH|ANALYSIS_BATCH|VALIDATOR_NAME|VALIDATION_QC|VAL_DATE|REPORTABLE_RESULT
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|12:49:00|17E075-03||||1|1|||-3527|260|260|UG_L|J||J|Y||TRG|||||||||||||||27|54|540|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|12:49:00|17E075-03||||1|1|||-3546|240|240|UG_L|J||J|Y||TRG|||||||||||||||27|54|540|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:06:00|17E075-08||||1|1|||-3527|56|56|UG_L|U||U|N||TRG|||||||||||||||28|56|560|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:06:00|17E075-08||||1|1|||-3546|56|56|UG_L|U||U|N||TRG|||||||||||||||28|56|560|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:23:00|17E075-09||||1|1|||-3527|130|130|UG_L|J||J|Y||TRG|||||||||||||||31|62|620|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:23:00|17E075-09||||1|1|||-3546|290|290|UG_L|J||J|Y||TRG|||||||||||||||31|62|620|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:40:00|17E075-10||||1|1|||-3527|1600|1600|UG_L|||=|Y||TRG|||||||||||||||29|57|580|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:40:00|17E075-10||||1|1|||-3546|530|530|UG_L|J||J|Y||TRG|||||||||||||||29|57|580|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:56:00|17E075-11||||1|1|||-3527|59|59|UG_L|U||U|N||TRG|||||||||||||||29|59|590|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|8015B|EMAX LABORATORIES||NONE|NA|SW3520C|000|||3|||20170515|12:15:00|20170516|13:56:00|17E075-11||||1|1|||-3546|59|59|UG_L|U||U|N||TRG|||||||||||||||29|59|590|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|8015B|EMAX LABORATORIES||NONE|NA|SW5030B|000|||3|||20170511|14:46:00|20170511|14:57:00|17E075-03||||1|1|||-3534|7.3|7.3|UG_L|J||J|Y||TRG|||||||||||||||5.0|10|100|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|8015B|EMAX LABORATORIES||NONE|NA|SW5030B|000|||3|||20170511|15:23:00|20170511|15:34:00|17E075-08||||1|1|||-3534|8.5|8.5|UG_L|J||J|Y||TRG|||||||||||||||5.0|10|100|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|8015B|EMAX LABORATORIES||NONE|NA|SW5030B|000|||3|||20170511|16:01:00|20170511|16:12:00|17E075-09||||1|1|||-3534|5.1|5.1|UG_L|J||J|Y||TRG|||||||||||||||5.0|10|100|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|8015B|EMAX LABORATORIES||NONE|NA|SW5030B|000|||3|||20170511|16:38:00|20170511|16:49:00|17E075-

10||||1|1|||-3534|10|10|UG_L|U||U|N||TRG|||||||||||||||||5.0|10|100|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|8015B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170511|14:09:00|20170511|14:20:00|17E075-
11||||1|1|||-3534|8.8|8.8|UG_L|J||J|Y||TRG|||||||||||||||||5.0|10|100|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCTB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:26:00|20170516|19:37:00|17E075-02||||1|1|||79-00-
5|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCTB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:26:00|20170516|19:37:00|17E075-02||||1|1|||71-43-
2|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCTB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:26:00|20170516|19:37:00|17E075-02||||1|1|||100-41-
4|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCTB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:26:00|20170516|19:37:00|17E075-02||||1|1|||91-20-
3|1.0|1.0|UG_L|U||U|N||TRG|||||||||||||||||0.50|1.0|2.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:52:00|20170516|20:03:00|17E075-03||||1|1|||79-00-
5|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:52:00|20170516|20:03:00|17E075-03||||1|1|||71-43-
2|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:52:00|20170516|20:03:00|17E075-03||||1|1|||100-41-
4|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|19:52:00|20170516|20:03:00|17E075-03||||1|1|||91-20-
3|1.0|1.0|UG_L|U||U|N||TRG|||||||||||||||||0.50|1.0|2.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:17:00|20170516|20:28:00|17E075-08||||1|1|||79-00-
5|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:17:00|20170516|20:28:00|17E075-08||||1|1|||71-43-
2|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:17:00|20170516|20:28:00|17E075-08||||1|1|||100-41-
4|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:17:00|20170516|20:28:00|17E075-08||||1|1|||91-20-
3|1.0|1.0|UG_L|U||U|N||TRG|||||||||||||||||0.50|1.0|2.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:42:00|20170516|20:53:00|17E075-09||||1|1|||79-00-
5|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:42:00|20170516|20:53:00|17E075-09||||1|1|||71-43-
2|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:42:00|20170516|20:53:00|17E075-09||||1|1|||100-41-
4|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|20:42:00|20170516|20:53:00|17E075-09||||1|1|||91-20-
3|1.0|1.0|UG_L|U||U|N||TRG|||||||||||||||||0.50|1.0|2.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:07:00|20170516|21:18:00|17E075-10||||1|1|||79-00-

5|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:07:00|20170516|21:18:00|17E075-10||||1|1|||71-43-
2|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:07:00|20170516|21:18:00|17E075-10||||1|1|||100-41-
4|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:07:00|20170516|21:18:00|17E075-10||||1|1|||91-20-
3|1.0|1.0|UG_L|U||U|N||TRG|||||||||||||||||0.50|1.0|2.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:32:00|20170516|21:43:00|17E075-11||||1|1|||79-00-
5|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:32:00|20170516|21:43:00|17E075-11||||1|1|||71-43-
2|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:32:00|20170516|21:43:00|17E075-11||||1|1|||100-41-
4|0.20|0.20|UG_L|U||U|N||TRG|||||||||||||||||0.10|0.20|1.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|8260B|EMAX
LABORATORIES||NONE|NA|SW5030B|000|||3|||20170516|21:32:00|20170516|21:43:00|17E075-11||||1|1|||91-20-
3|1.0|1.0|UG_L|U||U|N||TRG|||||||||||||||||0.50|1.0|2.0|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:44:00|17E075-03||||1|1|||7440-38-
2|12.0|12.0|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW36-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:44:00|17E075-03||||1|1|||7439-96-
5|266|266|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:48:00|17E075-08||||1|1|||7440-38-
2|23.9|23.9|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW33-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:48:00|17E075-08||||1|1|||7439-96-
5|135|135|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:53:00|17E075-09||||1|1|||7440-38-
2|20.8|20.8|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW35-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:53:00|17E075-09||||1|1|||7439-96-
5|58.7|58.7|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:57:00|17E075-10||||1|1|||7440-38-
2|5.78|5.78|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|06-MW32-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|21:57:00|17E075-10||||1|1|||7439-96-
5|326|326|UG_L|||=|Y||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|22:02:00|17E075-11||||1|1|||7440-38-
2|0.200|0.200|UG_L|U||U|N||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y
N6247316C2018|0000|QTR12017|SITE 00006|QCEB-0517|6020A|EMAX
LABORATORIES||NONE|NA|FLDFLT|000|||3|||20170516|11:50:00|20170516|22:02:00|17E075-11||||1|1|||7439-96-
5|0.200|0.200|UG_L|U||U|N||TRG|||||||||||||||||0.100|0.200|1.00|17E075|||||EMAX|VERIFICATION||Y

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

NOREAS, Inc.
16501 Scientific Way
Irvine, CA 92618
ATTN: Ms. Sevda Aleckson

February 7, 2018

SUBJECT: Treasure Island, IR Site 6, Data Validation

Dear Ms. Aleckson,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on May 31, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #38815:

SDG #	Fraction:
17E075/B799808	Volatiles, Dissolved Metals, TPH as Gasoline, TPH as Extractables, Perfluorinated Alkyl Acids

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final SAP, Field Sampling Plan and Quality Assurance Project Plan, Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, 24, Former Naval Station Treasure Island, San Francisco, CA, April 2017
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, National Functional Guidelines for Superfund Organic Methods Data Review, August 2014
- USEPA, National Functional Guidelines for Inorganic Superfund Data Review, August 2014
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

HC Client Select

Attachment 1

NEDD/NIRIS

LDC #38815 (Noreas, Inc.-Irvine, CA/ Treasure Island, IR Site 6)

LDC	SDG#	DATE REC'D	(3) DATE DUE	(4) VOA (8260B)		Diss. As,Mn (6020A)		TPH-G (8015B)		TPH-E (8015B)		PFAs (537M)																							
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	17E075/ B799808	05/31/17	06/21/17	6	0	5	0	5	0	5	0	4	0																						
A	17E075/ B799808	05/31/17	06/21/17	0	0	0	0	0	0	0	0	1	0																						
Total	T/PG			6	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Noreas\Treasure Island\38815ST-Site 6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Treasure Island, IR Site 6

LDC Report Date: June 20, 2017

Parameters: Volatiles

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 17E075

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
QCTB-0517	17E075-02	Water	05/09/17
06-MW36-0517	17E075-03	Water	05/09/17
06-MW33-0517	17E075-08	Water	05/09/17
06-MW35-0517	17E075-09	Water	05/09/17
06-MW32-0517	17E075-10	Water	05/09/17
QCEB-0517	17E075-11	Water	05/09/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California (April 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Codes

1	Holding Times Exceeded
2	Sample Preservation / Cooler Temperature Exceeded Acceptance Criteria
3	Sample Custody Potentially Compromised Sample Integrity
4	Missing/Incomplete Deliverables
5	Calibration Did Not Meet Method Criteria
6	Equipment/Field Blank Contamination
7	Laboratory Method or Calibration Blank Contamination
8	Matrix Spike % Recovery Exceeded Acceptance Criteria
9	Matrix Spike Duplicate (RPD or Duplicate Sample Analysis) Exceeded Acceptance Criteria
10A	Laboratory Control Sample % Recovery Exceeded Acceptance Criteria
10B	Laboratory Control Sample Duplicate (RPD) Exceeded Acceptance Criteria
11	ICP Interference Check Analysis Exceeded Method Criteria
12	RPD Between Two Columns (Pesticides/PCBs only)
13	Surrogate Recoveries Exceeded Acceptance Criteria
14	Field Duplicates RPD Exceeded Project Criteria
15	Peak Resolution did not meet method criteria
16	Serial Dilution Analysis Exceeded Method Criteria
17	Chemical Recoveries Exceeded Acceptance Criteria
18	Trip Blank Contamination
19	Internal Standards Did Not Meet Method Criteria
20	Calibration Range exceeded Method Criteria
21	Potential False Positives
22	Do not use, other result more technically sound (overall assessment)
23	Estimated Maximum Possible Concentration
24	Trace Detection Below the LOQ (RL) and Above the DL (MDL)
25	Other

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample QCTB-0517 was identified as a trip blank. No contaminants were found.

Sample QCEB-0517 was identified as an equipment blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Treasure Island, IR Site 6
Volatiles - Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Volatiles - Laboratory Blank Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Volatiles - Field Blank Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

LDC #: 38815A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/8/17
SDG #: 17E075 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: JVG

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration / Endrins	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	N/D	TB=1. EB=6
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	QCTB-0517	17E075-02	Water	05/09/17
2	06-MW36-0517	17E075-03	Water	05/09/17
3	06-MW33-0517	17E075-08	Water	05/09/17
4	06-MW35-0517	17E075-09	Water	05/09/17
5	06-MW32-0517	17E075-10	Water	05/09/17
6	QCEB-0517	17E075-11	Water	05/09/17
7				
8				
9				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Treasure Island, IR Site 6

LDC Report Date: June 21, 2017

Parameters: Dissolved Metals

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 17E075

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
06-MW36-0517	17E075-03	Water	05/09/17
06-MW33-0517	17E075-08	Water	05/09/17
06-MW35-0517	17E075-09	Water	05/09/17
06-MW32-0517	17E075-10	Water	05/09/17
QCEB-0517	17E075-11	Water	05/09/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California (April 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Arsenic and Manganese by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Codes

1	Holding Times Exceeded
2	Sample Preservation / Cooler Temperature Exceeded Acceptance Criteria
3	Sample Custody Potentially Compromised Sample Integrity
4	Missing/Incomplete Deliverables
5	Calibration Did Not Meet Method Criteria
6	Equipment/Field Blank Contamination
7	Laboratory Method or Calibration Blank Contamination
8	Matrix Spike % Recovery Exceeded Acceptance Criteria
9	Matrix Spike Duplicate (RPD or Duplicate Sample Analysis) Exceeded Acceptance Criteria
10A	Laboratory Control Sample % Recovery Exceeded Acceptance Criteria
10B	Laboratory Control Sample Duplicate (RPD) Exceeded Acceptance Criteria
11	ICP Interference Check Analysis Exceeded Method Criteria
12	RPD Between Two Columns (Pesticides/PCBs only)
13	Surrogate Recoveries Exceeded Acceptance Criteria
14	Field Duplicates RPD Exceeded Project Criteria
15	Peak Resolution did not meet method criteria
16	Serial Dilution Analysis Exceeded Method Criteria
17	Chemical Recoveries Exceeded Acceptance Criteria
18	Trip Blank Contamination
19	Internal Standards Did Not Meet Method Criteria
20	Calibration Range exceeded Method Criteria
21	Potential False Positives
22	Do not use, other result more technically sound (overall assessment)
23	Estimated Maximum Possible Concentration
24	Trace Detection Below the LOQ (RL) and Above the DL (MDL)
25	Other

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the methods.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Manganese	0.118 ug/L	All samples in SDG 17E075

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Sample QCEB-0517 was identified as an equipment blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Raw data were not reviewed for Level III validation.

XIII. Sample Result Verification

Raw data were not reviewed for Level III validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Treasure Island, IR Site 6
Dissolved Metals - Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Dissolved Metals - Field Blank Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

LDC #: 38815A4a

SDG #: 17E075

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 6-13-17

Page: 1 of 1

Reviewer: MG

2nd Reviewer:

METHOD: Dissolved As & Mn (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	ND	EB = 5
VII.	Matrix Spike/Matrix Spike Duplicates	N	client specified
VIII.	Duplicate sample analysis	N	" "
IX.	Serial Dilution	N	not performed
X.	Laboratory control samples	A	LCS/LCSD
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	not reviewed for Level III
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	06-MW36-0517	17E075-03	Water	05/09/17
2	06-MW33-0517	17E075-08	Water	05/09/17
3	06-MW35-0517	17E075-09	Water	05/09/17
4	06-MW32-0517	17E075-10	Water	05/09/17
5	QCEB-0517	17E075-11	Water	05/09/17
6				
7				
8				
9				
10				
11				
12				
13	PBW			

Notes:

LDC #: 38815A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MG
2nd reviewer: [signature]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1 → 5	W	Al, Sb, (As), Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, (Mn), Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
ICP-MS	W	Al, Sb, (As), Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, (Mn), Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-

Comments: Mercury by CVAA if performed

ELEMENTS.4

LDC #: 38815A4a
SDG #: See Cover
METHOD: Trace metals (EPA SW 864 Method 6020A)
Sample Concentration units, unless otherwise noted: ug/L

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES
Soil preparation factor applied: NA
Associated Samples: all (>5x or ND)

Reviewer: MG
2nd Reviewer:

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	No Qual's.									
Mn		0.118		0.590										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Treasure Island, IR Site 6

LDC Report Date: June 20, 2017

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 17E075

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
06-MW36-0517	17E075-03	Water	05/09/17
06-MW33-0517	17E075-08	Water	05/09/17
06-MW35-0517	17E075-09	Water	05/09/17
06-MW32-0517	17E075-10	Water	05/09/17
QCEB-0517	17E075-11	Water	05/09/17
06-MW32-0517MS	17E075-10MS	Water	05/09/17
06-MW32-0517MSD	17E075-10MSD	Water	05/09/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California (April 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Petroleum Hydrocarbons (TPH) as Gasoline by Environmental Protection Agency (EPA) SW 846 Method 8015B

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Codes

1	Holding Times Exceeded
2	Sample Preservation / Cooler Temperature Exceeded Acceptance Criteria
3	Sample Custody Potentially Compromised Sample Integrity
4	Missing/Incomplete Deliverables
5	Calibration Did Not Meet Method Criteria
6	Equipment/Field Blank Contamination
7	Laboratory Method or Calibration Blank Contamination
8	Matrix Spike % Recovery Exceeded Acceptance Criteria
9	Matrix Spike Duplicate (RPD or Duplicate Sample Analysis) Exceeded Acceptance Criteria
10A	Laboratory Control Sample % Recovery Exceeded Acceptance Criteria
10B	Laboratory Control Sample Duplicate (RPD) Exceeded Acceptance Criteria
11	ICP Interference Check Analysis Exceeded Method Criteria
12	RPD Between Two Columns (Pesticides/PCBs only)
13	Surrogate Recoveries Exceeded Acceptance Criteria
14	Field Duplicates RPD Exceeded Project Criteria
15	Peak Resolution did not meet method criteria
16	Serial Dilution Analysis Exceeded Method Criteria
17	Chemical Recoveries Exceeded Acceptance Criteria
18	Trip Blank Contamination
19	Internal Standards Did Not Meet Method Criteria
20	Calibration Range exceeded Method Criteria
21	Potential False Positives
22	Do not use, other result more technically sound (overall assessment)
23	Estimated Maximum Possible Concentration
24	Trace Detection Below the LOQ (RL) and Above the DL (MDL)
25	Other

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0%.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample QCEB-0517 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples
QCEB-0517	05/09/17	TPH as gasoline	8.8 ug/L	06-MW36-0517 06-MW33-0517 06-MW35-0517 06-MW32-0517

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
06-MW36-0517	TPH as gasoline	7.3 ug/L	10U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
06-MW33-0517	TPH as gasoline	8.5 ug/L	10U ug/L
06-MW35-0517	TPH as gasoline	5.1 ug/L	10U ug/L

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

Raw data were not reviewed for Level III validation.

XI. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to equipment blank contamination, data were qualified as not detected in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

Treasure Island, IR Site 6
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 17E075

Sample	Compound	Modified Final Concentration	A or P	Code
06-MW36-0517	TPH as gasoline	10U ug/L	A	6
06-MW33-0517	TPH as gasoline	10U ug/L	A	6
06-MW35-0517	TPH as gasoline	10U ug/L	A	6

LDC #: 38815A7 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/8/17

SDG #: 17E075 Level III Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: O

2nd Reviewer: NO

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	RSD ≤ 20%. ICV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	A	
V.	Field blanks	AW	EB=5
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	06-MW36-0517	17E075-03	Water	05/09/17
2	06-MW33-0517	17E075-08	Water	05/09/17
3	06-MW35-0517	17E075-09	Water	05/09/17
4	06-MW32-0517	17E075-10	Water	05/09/17
5	QCEB-0517	17E075-11	Water	05/09/17
6	06-MW32-0517MS	17E075-10MS	Water	05/09/17
7	06-MW32-0517MSD	17E075-10MSD	Water	05/09/17
8				
9				
10				
11				
12				

Notes:

LDC #: 38815A7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CA
2nd Reviewer: JM

METHOD: GC/HPLC

Y N N/A Field blanks were identified in this SDG.
Y N N/A Were target compounds detected in the field blanks?

Blank units: MS/L **Associated sample units:** MS/L
Sampling date: 5/9/17
Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples: 1-4

Compound	Blank ID	Sample Identification								
	5		1	2	3					
Gasoline	8.8		7.3/104	8.5/104	5.1/104					

Blank units:_____ **Associated sample units:**_____
Sampling date:_____
Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Treasure Island, IR Site 6

LDC Report Date: June 20, 2017

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 17E075

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
06-MW36-0517	17E075-03	Water	05/09/17
06-MW33-0517	17E075-08	Water	05/09/17
06-MW35-0517	17E075-09	Water	05/09/17
06-MW32-0517	17E075-10	Water	05/09/17
QCEB-0517	17E075-11	Water	05/09/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California (April 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Petroleum Hydrocarbons (TPH) as Extractables by Environmental Protection Agency (EPA) SW 846 Method 8015B

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Codes

1	Holding Times Exceeded
2	Sample Preservation / Cooler Temperature Exceeded Acceptance Criteria
3	Sample Custody Potentially Compromised Sample Integrity
4	Missing/Incomplete Deliverables
5	Calibration Did Not Meet Method Criteria
6	Equipment/Field Blank Contamination
7	Laboratory Method or Calibration Blank Contamination
8	Matrix Spike % Recovery Exceeded Acceptance Criteria
9	Matrix Spike Duplicate (RPD or Duplicate Sample Analysis) Exceeded Acceptance Criteria
10A	Laboratory Control Sample % Recovery Exceeded Acceptance Criteria
10B	Laboratory Control Sample Duplicate (RPD) Exceeded Acceptance Criteria
11	ICP Interference Check Analysis Exceeded Method Criteria
12	RPD Between Two Columns (Pesticides/PCBs only)
13	Surrogate Recoveries Exceeded Acceptance Criteria
14	Field Duplicates RPD Exceeded Project Criteria
15	Peak Resolution did not meet method criteria
16	Serial Dilution Analysis Exceeded Method Criteria
17	Chemical Recoveries Exceeded Acceptance Criteria
18	Trip Blank Contamination
19	Internal Standards Did Not Meet Method Criteria
20	Calibration Range exceeded Method Criteria
21	Potential False Positives
22	Do not use, other result more technically sound (overall assessment)
23	Estimated Maximum Possible Concentration
24	Trace Detection Below the LOQ (RL) and Above the DL (MDL)
25	Other

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample QCEB-0517 was identified as an equipment blank. No contaminants were found.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

Raw data were not reviewed for Level III validation.

XI. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Treasure Island, IR Site 6
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 17E075

No Sample Data Qualified in this SDG

LDC #: 38815A8

SDG #: 17E075

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 6/8/17

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: SVG

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	RSD ≤ 20% · ICV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	EB = 5
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	06-MW36-0517	17E075-03	Water	05/09/17
2	06-MW33-0517	17E075-08	Water	05/09/17
3	06-MW35-0517	17E075-09	Water	05/09/17
4	06-MW32-0517	17E075-10	Water	05/09/17
5	QCEB-0517	17E075-11	Water	05/09/17
6				
7				
8				
9				
10				
11				
12				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Treasure Island, IR Site 6

LDC Report Date: June 21, 2017

Parameters: Perfluorinated Alkyl Acids

Validation Level: Level III & IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 17E075/B799808

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
QCFB-0517	17E075-01/EJU281	Water	05/09/17
06-MW30-0517**	17E075-04/EJU282**	Water	05/09/17
06-MW30-0517-Dup	17E075-05/EJU283	Water	05/09/17
06-MW25-0517	17E075-06/EJU284	Water	05/09/17
06-MW26-0517	17E075-07/EJU285	Water	05/09/17
06-MW25-0517MS	17E075-06/EJU284MS	Water	05/09/17
06-MW25-0517MSD	17E075-06/EJU284MSD	Water	05/09/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California (April 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Level IV data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Qualification Codes

1	Holding Times Exceeded
2	Sample Preservation / Cooler Temperature Exceeded Acceptance Criteria
3	Sample Custody Potentially Compromised Sample Integrity
4	Missing/Incomplete Deliverables
5	Calibration Did Not Meet Method Criteria
6	Equipment/Field Blank Contamination
7	Laboratory Method or Calibration Blank Contamination
8	Matrix Spike % Recovery Exceeded Acceptance Criteria
9	Matrix Spike Duplicate (RPD or Duplicate Sample Analysis) Exceeded Acceptance Criteria
10A	Laboratory Control Sample % Recovery Exceeded Acceptance Criteria
10B	Laboratory Control Sample Duplicate (RPD) Exceeded Acceptance Criteria
11	ICP Interference Check Analysis Exceeded Method Criteria
12	RPD Between Two Columns (Pesticides/PCBs only)
13	Surrogate Recoveries Exceeded Acceptance Criteria
14	Field Duplicates RPD Exceeded Project Criteria
15	Peak Resolution did not meet method criteria
16	Serial Dilution Analysis Exceeded Method Criteria
17	Chemical Recoveries Exceeded Acceptance Criteria
18	Trip Blank Contamination
19	Internal Standards Did Not Meet Method Criteria
20	Calibration Range exceeded Method Criteria
21	Potential False Positives
22	Do not use, other result more technically sound (overall assessment)
23	Estimated Maximum Possible Concentration
24	Trace Detection Below the LOQ (RL) and Above the DL (MDL)
25	Other

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked as applicable.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 25.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 25.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample QCFB-0517 was identified as a field blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were not within the QC limits for 06-MW25-0517MS/MSD. No data were qualified since the parent sample results were greater than 4X the spiked concentration. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples 06-MW30-0517** and 06-MW30-0517-Dup were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	06-MW30-0517**	06-MW30-0517-Dup			
Perfluorobutane Sulfonate	0.0060	0.0065	8 (≤30)	-	-
Perfluoro-n-Octanoic Acid	0.032	0.033	3 (≤30)	-	-
Perfluorooctane Sulfonate	0.13	0.17	27 (≤30)	-	-

XI. Internal Standards

All internal standard percent recoveries (%R) were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level III validation.

XIV. System Performance

The system performance was acceptable for samples which underwent Level IV validation. Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Treasure Island, IR Site 6
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 17E075/B799808

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG 17E075/B799808

No Sample Data Qualified in this SDG

Treasure Island, IR Site 6
Perfluorinated Alkyl Acids - Field Blank Data Qualification Summary - SDG 17E075/B799808

No Sample Data Qualified in this SDG

LDC #: 38815A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/8/17

SDG #: 17E075/B799808 Level III/IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc./Maxxam Reviewer: ___

2nd Reviewer: ___

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537 Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	~~RSD ≤ 25%~~ r^2, ICV ≤ 25%
IV.	Continuing calibration	A	CCV ≤ 25%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	~~EB=1~~ FB = 1
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	%R out > 4x SA
IX.	Laboratory control samples	A	LCS, ICS
X.	Field duplicates	SW	D = 2+3
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for Level III validation.
XIII.	Target compound identification	A	Not reviewed for Level III validation.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample was underwent Level IV review

	Client ID	Sub Lab ID	Lab ID	Matrix	Date
1	QCFB-0517	ZJU281	17E075-01	Water	05/09/17
2	06-MW30-0517**	282	17E075-04**	Water	05/09/17
3	06-MW30-0517-Dup	283	17E075-05	Water	05/09/17
4	06-MW25-0517	284	17E075-06	Water	05/09/17
5	06-MW26-0517	285	17E075-07	Water	05/09/17
6	06-MW25-0517MS	284 MS	17E075-06MS	Water	05/09/17
7	06-MW25-0517MSD	284 MSD	17E075-06MSD	Water	05/09/17
8					
9					
10					

Notes:

	1989765 MB						

LDC #: 38816A96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 3
Reviewer: Q
2nd Reviewer:

Method: LCMS (EPA Method 537)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?		✓		
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 15%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of > 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ ~~15~~ 25%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ ~~15~~ 25%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			

LDC #: 38815A96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: CL
2nd Reviewer: _____

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?.	✓			
XI. Internal standards				
Were internal standard area counts within ± 50% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

PFCs:

A.	Perfluorobutane Sulfonate	(PFBS)
B.	Perfluoro-n-Octanoic Acid	(PFOA)
C.	Perfluorooctane Sulfonate	(PFOS)

LDC#: 38815A96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: 9
2nd Reviewer: _____

METHOD: PFCs (Method 537 mod)

Compound	Concentration (ug/L)		(≤30) RPD	Qual
	2	3		
A	0.0060	0.0065	8	
B	0.032	0.033	3	
C	0.13	0.17	27	

LDC#: 38815A96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer:

Method: LC/MS/MS PFCs

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
5/19/2017	LCMS03	PFOA	0	0.3562500	0.83
			s1	0.7114754	1.70
			s2	2.2020547	5.00
			s3	5.7377049	12.50
			s4	10.878378	25.00
			s8	18.289473	41.70

Regression Output		***Reported***
Constant	*0.033312*	*-0.011200*
Std Err of Y Est		
R Squared	*0.999717*	*0.999800*
Degrees of Freedom		
X Coefficient(s)	*0.437858*	*0.440000*
Std Err of Coef.		
Correlation Coefficient	*0.999859*	
Coefficient of Determination (r^2)	*0.999717*	*0.999800*

LDC #: 38875A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: Q
2nd Reviewer: ______

METHOD: GC ______ ✓ HPLC / MS

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported ~~%D~~ %R	Recalculated ~~%D~~ %R
1	CCV	5/19/17 (20:35)	PFOA	12.5	12.1	12.1	96.9	96.5
2								
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 38815A76

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: Q
2nd reviewer:

METHOD: __ GC _√_ HPLC/MS

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
13C4-PFOS		100	86.8	87	87	
13C4-PFOA		↓	92.4	92	92	
1802PFHxS				~~92~~ 91		

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 35815A96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer:

METHOD: __ GC __HPLC/MS

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SA = Spike added SC = Sample concentration

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 6/7

Compound	Spike Added (ug/L)		Sample Conc (ug/L)	Spike Sample Concentration ( )		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
PBS	0.500	0.500	0.12	0.649	0.632	106	106	103	102	33	2.7

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 0.0% of the recalculated results.

LDC #: 38815A96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: _____

METHOD: __ GC ✓ HPLC (MS)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

RPD = | SSCLCS - SSCLCSD | * 2/(SSCLCS + SSCLCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 498976S

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
PFBS	0.500	NA	0.459	NA	92	92				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 38815A96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: Q
2nd Reviewer: _____

METHOD: ~~GC~~ GC ✓ HPLC/MS

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 2 Compound Name PFOA

Concentration = $\frac{\left(\frac{169000}{296000} + 0.0112\right)(3)}{(0.44)(125}$

$= 0.0317$ µg/L

#	Sample ID	Compound	Reported Concentrations (µg/L)	Recalculated Results Concentrations ( )	Qualifications
	2	PFOA	0.032		

Comments: _____

Treasure Island, IR Site 6 - LDC 38815

SDG: 17E075

Sample ID	06-MW32-0517									
Method	Chemical Name	Sampling Date	Anal Date	Final Result	Units	Lab Qual	Val Qual	Reason Code	LOD	DL
6020A	ARSENIC	20170509	20170516	5.78	UG_L				0.200	0.100
6020A	MANGANESE	20170509	20170516	326	UG_L				0.200	0.100
8015B	TPH-GASOLINE RANGE C6-C10	20170509	20170511	10	UG_L	U	U		10	5.0
8015B	TPH-DIESEL RANGE	20170509	20170516	1600	UG_L				57	29
8015B	TPH-OIL RANGE	20170509	20170516	530	UG_L	J	J		57	29
8260B	1,1,2-TRICHLOROETHANE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	BENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	ETHYLBENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	NAPHTHALENE	20170509	20170516	1.0	UG_L	U	U		1.0	0.50

Sample ID	06-MW33-0517									
Method	Chemical Name	Sampling Date	Anal Date	Final Result	Units	Lab Qual	Val Qual	Reason Code	LOD	DL
6020A	ARSENIC	20170509	20170516	23.9	UG_L				0.200	0.100
6020A	MANGANESE	20170509	20170516	135	UG_L				0.200	0.100
8015B	TPH-GASOLINE RANGE C6-C10	20170509	20170511	10	UG_L	J	U	6	10	5.0
8015B	TPH-DIESEL RANGE	20170509	20170516	56	UG_L	U	U		56	28
8015B	TPH-OIL RANGE	20170509	20170516	56	UG_L	U	U		56	28
8260B	1,1,2-TRICHLOROETHANE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	BENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	ETHYLBENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	NAPHTHALENE	20170509	20170516	1.0	UG_L	U	U		1.0	0.50

Sample ID	06-MW35-0517									
Method	Chemical Name	Sampling Date	Anal Date	Final Result	Units	Lab Qual	Val Qual	Reason Code	LOD	DL
6020A	ARSENIC	20170509	20170516	20.8	UG_L				0.200	0.100
6020A	MANGANESE	20170509	20170516	58.7	UG_L				0.200	0.100
8015B	TPH-GASOLINE RANGE C6-C10	20170509	20170511	10	UG_L	J	U	6	10	5.0

SDG: 17E075

Sample ID	06-MW35-0517									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
8015B	TPH-DIESEL RANGE	20170509	20170516	130	UG_L	J	J		62	31
8015B	TPH-OIL RANGE	20170509	20170516	290	UG_L	J	J		62	31
8260B	1,1,2-TRICHLOROETHANE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	BENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	ETHYLBENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	NAPHTHALENE	20170509	20170516	1.0	UG_L	U	U		1.0	0.50

Sample ID	06-MW36-0517									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
6020A	ARSENIC	20170509	20170516	12.0	UG_L				0.200	0.100
6020A	MANGANESE	20170509	20170516	266	UG_L				0.200	0.100
8015B	TPH-GASOLINE RANGE C6-C10	20170509	20170511	10	UG_L	J	U	6	10	5.0
8015B	TPH-DIESEL RANGE	20170509	20170516	260	UG_L	J	J		54	27
8015B	TPH-OIL RANGE	20170509	20170516	240	UG_L	J	J		54	27
8260B	1,1,2-TRICHLOROETHANE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	BENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	ETHYLBENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	NAPHTHALENE	20170509	20170516	1.0	UG_L	U	U		1.0	0.50

Sample ID	QCEB-0517									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
6020A	ARSENIC	20170509	20170516	0.200	UG_L	U	U		0.200	0.100
6020A	MANGANESE	20170509	20170516	0.200	UG_L	U	U		0.200	0.100
8015B	TPH-GASOLINE RANGE C6-C10	20170509	20170511	8.8	UG_L	J	J		10	5.0
8015B	TPH-DIESEL RANGE	20170509	20170516	59	UG_L	U	U		59	29
8015B	TPH-OIL RANGE	20170509	20170516	59	UG_L	U	U		59	29
8260B	1,1,2-TRICHLOROETHANE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	BENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
8260B	ETHYLBENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10

SDG: 17E075

Sample ID	Method	Chemical Name	Sampling Date	Anal Date	Final Result	Units	Lab Qual	Val Qual	Reason Code	LOD	DL
QCEB-0517	8260B	NAPHTHALENE	20170509	20170516	1.0	UG_L	U	U		1.0	0.50
QCTB-0517	8260B	1,1,2-TRICHLOROETHANE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
	8260B	BENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
	8260B	ETHYLBENZENE	20170509	20170516	0.20	UG_L	U	U		0.20	0.10
	8260B	NAPHTHALENE	20170509	20170516	1.0	UG_L	U	U		1.0	0.50

SDG: B799808

Sample ID	06-MW25-0517									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
EPA537m	PERFLUOROBUTANESULFONIC ACID (PFBS)	20170509	20170519	0.12	UG_L				0.010	0.020
EPA537m	PERFLUOROOCTANE SULFONIC ACID	20170509	20170519	7.1	UG_L				0.20	0.40
EPA537m	PERFLUOROOCTANOIC ACID (PFOA)	20170509	20170519	7.3	UG_L				0.20	0.40

Sample ID	06-MW26-0517									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
EPA537m	PERFLUOROBUTANESULFONIC ACID (PFBS)	20170509	20170519	0.038	UG_L				0.010	0.020
EPA537m	PERFLUOROOCTANE SULFONIC ACID	20170509	20170519	10	UG_L				0.20	0.40
EPA537m	PERFLUOROOCTANOIC ACID (PFOA)	20170509	20170519	0.75	UG_L				0.010	0.020

Sample ID	06-MW30-0517									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
EPA537m	PERFLUOROBUTANESULFONIC ACID (PFBS)	20170509	20170519	0.0060	UG_L	J	J		0.010	0.020
EPA537m	PERFLUOROOCTANE SULFONIC ACID	20170509	20170519	0.13	UG_L				0.010	0.020
EPA537m	PERFLUOROOCTANOIC ACID (PFOA)	20170509	20170519	0.032	UG_L				0.010	0.020

Sample ID	06-MW30-0517DUP									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
EPA537m	PERFLUOROBUTANESULFONIC ACID (PFBS)	20170509	20170519	0.0065	UG_L	J	J		0.010	0.020
EPA537m	PERFLUOROOCTANE SULFONIC ACID	20170509	20170519	0.17	UG_L				0.010	0.020
EPA537m	PERFLUOROOCTANOIC ACID (PFOA)	20170509	20170519	0.033	UG_L				0.010	0.020

Sample ID	QCFB-0517									
Method	**Chemical Name**	**Sampling Date**	**Anal Date**	**Final Result**	**Units**	**Lab Qual**	**Val Qual**	**Reason Code**	**LOD**	**DL**
EPA537m	PERFLUOROBUTANESULFONIC ACID (PFBS)	20170509	20170519	0.010	UG_L	U	U		0.010	0.020
EPA537m	PERFLUOROOCTANE SULFONIC ACID	20170509	20170519	0.010	UG_L	U	U		0.010	0.020
EPA537m	PERFLUOROOCTANOIC ACID (PFOA)	20170509	20170519	0.010	UG_L	U	U		0.010	0.020

LDC #: 38815

EDD POPULATION COMPLETENESS WORKSHEET

Date: 6/22

2nd Reviewer: AG

The LDC job number listed above was entered by JE.

	EDD Process		Comments/Action
I.	EDD Completeness	-	
Ia.	- All methods present?	Y	
Ib.	- All samples present/match report?	Y	
Ic.	- All reported analytes present?	Y	
Id.	- 10% or 100% verification of EDD?	Y	
II.	EDD Preparation/Entry	-	
IIa.	- Carryover U/J?	Y	
IIb.	- Reason Codes used? If so, note which codes.	Y	client
IIc.	- Additional Information (QC Level, Validator, Validated Y/N, etc.)	Y	
III.	Reasonableness Checks	-	
IIIa.	- Do all qualified ND results have ND qualifier (e.g. UJ)?	Y	
IIIb.	- Do all qualified detect results have detect qualifier (e.g. J)?	Y	
IIIc.	- If reason codes are used, do all qualified results have reason code field populated, and vice versa?	Y	
IIId.	-Does the detect flag require changing for blank qualifier? If so, are all U results marked ND?	Y/Y	
IIIe.	- Do blank concentrations in report match EDD where data was qualified due to blank contamination?	Y	
IIIf.	- Were multiple results reported due to dilutions/reanalysis? If so, were results qualified appropriately?	+	
IIIg.	-Are there any discrepancies between the data packet and the EDD?	N	

Notes: *see discrepancy sheet

INSTALLATION_ID	SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	SAMPLE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC	SDG
NAVSTA TI	SITE 00006	06-MW30	Monitoring Well	6021164.04	2130315.21	06-MW30-0517	Groundwater	Normal (Regular)	9-May-17	Perfluoroalkyl Compounds	17E075
NAVSTA TI	SITE 00006	06-MW30	Monitoring Well	6021164.04	2130315.21	06-MW30-0517 DUP	Groundwater	Field duplicate	9-May-17	Perfluoroalkyl Compounds	17E075
NAVSTA TI	SITE 00006	06-MW25	Monitoring Well	6021164.38	2130489.47	06-MW25-0517	Groundwater	Normal (Regular)	9-May-17	Perfluoroalkyl Compounds	17E075
NAVSTA TI	SITE 00006	06-MW26	Monitoring Well	6021167.06	2130576.16	06-MW26-0517	Groundwater	Normal (Regular)	9-May-17	Perfluoroalkyl Compounds	17E075