



**Groundwater Sample Results,  
Level 4 Laboratory Report, Electronic Data Deliverable,  
Data Validation Report, and the Sample Location Report,  
SDG BSI24**

*Marine Corps Ballistics Base Barstow  
Barstow, California*

November 2019

## DoD Type I Data Package

**Prepared for:**

**Gutierrez Canales Engineering**

2655 Camino del Rio North  
Suite 100  
San Diego CA 92108

Project: Barstow Site Inspection  
Groundwater and Water Samples  
Collected on 12/04/18-12/05/18

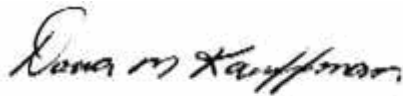
### SDG# BSI24

GROUP	SAMPLE NUMBERS
2015917	9927672-9927680

A2LA (DoD) Cert. # 0001.01  
PA Cert. # 36-00037  
NY Cert. # 10670  
NJ Cert. # PA011  
NC Cert. # 521  
TX Cert. # T104704194-18-27  
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by:



Date: 12/31/2018

Dana M. Kauffman  
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Lyssa Longenecker at (717) 556-7321.



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**Sample Reference List for SDG Number BSI24  
with a Data Package Type of I-DOD**

**43806 - Gutierrez Canales Engineering**  
Project: Barstow Site Inspection

<b>Lab Sample Number</b>	<b>Client Sample ID</b>	<b>Collection Date</b>	<b>Date Received</b>
9927672	OU1-YEP-3-01	12/04/2018 10:25	12/06/2018 10:30
9927673	OU1-YEP-3-W-01	12/04/2018 10:40	12/06/2018 10:30
9927674	OU1-YEP-3-W-02	12/04/2018 10:45	12/06/2018 10:30
9927675	OU1-YS35-4-01	12/04/2018 11:50	12/06/2018 10:30
9927676	OU1-YCW16-4-01	12/04/2018 13:21	12/06/2018 10:30
9927677	OU1-YCW16-2-01	12/04/2018 15:04	12/06/2018 10:30
9927678	OU1-Y4-2-01	12/05/2018 08:18	12/06/2018 10:30
9927679	OU1-Y4-2-W-01	12/05/2018 08:45	12/06/2018 10:30
9927680	OU1-Y4-2-W-02	12/05/2018 08:50	12/06/2018 10:30

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

**14434 PFAS in Water by LC/MS/MS-DoD****14465 PFAS Water Prep - DoD**

A 250 ml sample of water is extracted using a solid phase extraction (SPE) cartridge followed by dispersive cleanup of the extract using graphitized carbon. The resulting extract is analyzed by LC/MS/MS in negative electrospray ionization (ESI) mode.

Reference: Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LCMSMS), EPA 537 Version 1.1, September 2009, Modified. Department of Defense Quality System Manual Version 5.1, Table B-15.

# **Analysis Reports / Field Chain of Custody**



## ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental  
2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

Gutierrez Canales Engineering  
2655 Camino del Rio North  
Suite 100  
San Diego CA 92108

Report Date: December 24, 2018 12:30

### Project: Barstow Site Inspection

Account #: 43806  
Group Number: 2015917  
SDG: BSI24  
State of Sample Origin: CA

Electronic Copy To Gutierrez Canales Engineering

Attn: Jesse MacNeill

Respectfully Submitted,



Lyssa M. Longenecker  
Specialist

(717) 556-7321

To view our laboratory's current scopes of accreditation please go to <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. Historical copies may be requested through your project manager.



### SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
OU1-YEP-3-01 Grab Groundwater	12/04/2018 10:25	9927672
OU1-YEP-3-W-01 Grab Water	12/04/2018 10:40	9927673
OU1-YEP-3-W-02 Grab Water	12/04/2018 10:45	9927674
OU1-YS35-4-01 Grab Groundwater	12/04/2018 11:50	9927675
OU1-YCW16-4-01 Grab Groundwater	12/04/2018 13:21	9927676
OU1-YCW16-2-01 Grab Groundwater	12/04/2018 15:04	9927677
OU1-Y4-2-01 Grab Groundwater	12/05/2018 08:18	9927678
OU1-Y4-2-W-01 Grab Water	12/05/2018 08:45	9927679
OU1-Y4-2-W-02 Grab Water	12/05/2018 08:50	9927680

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.



Project Name: Barstow Site Inspection  
ELLE Group #: 2015917

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:****EPA 537 mod QSM 5.1 table B-15, LC/MS/MS Miscellaneous**

Sample #s: 9927675, 9927676

The following analytes were manually integrated due to incorrect integrations:  
Perfluorohexanoic acid, Perfluorohexanesulfonate

Sample #s: 9927677

The following analytes were manually integrated due to incorrect integrations:  
Perfluorooctanoic acid, Perfluorohexanesulfonate

Sample #s: 9927672, 9927678

The following analytes were manually integrated due to incorrect integrations:  
Perfluorooctanoic acid, Perfluorohexanesulfonate, Perfluoro-octanesulfonate

**Sample Description:** OU1-YEP-3-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927672  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 10:25  
SDG#: BSI24-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	5.0	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	1.5 J	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	2.4	0.34	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	14	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	0.81 J	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 13:53	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	2	18348012	12/14/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YEP-3-W-01 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927673  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 10:40  
SDG#: BSI24-02RB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 05:53	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YEP-3-W-02 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927674  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 10:45  
SDG#: BSI24-03BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:02	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YS35-4-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927675  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 11:50  
SDG#: BSI24-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	5.4	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.54 J	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	0.60 J	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	14	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:11	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YCW16-4-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927676  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 13:21  
SDG#: BSI24-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.95	2.3	2.8	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.95	2.3	2.8	1
14434	Perfluorobutanesulfonate	375-73-5	3.9	0.28	1.0	1.9	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.47	1.1	1.9	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.47	1.1	1.9	1
14434	Perfluoroheptanoic acid	375-85-9	0.69 J	0.38	1.1	1.9	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.38	1.0	1.9	1
14434	Perfluorohexanoic acid	307-24-4	8.0	0.47	1.1	1.9	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.38	1.1	1.9	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.47	1.1	1.9	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.47	1.1	1.9	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.57	1.1	1.9	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.57	1.1	1.9	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.47	1.1	1.9	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:20	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-YCW16-2-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927677  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 15:04  
SDG#: BSI24-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.96	2.3	2.9	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.96	2.3	2.9	1
14434	Perfluorobutanesulfonate	375-73-5	3.3	0.29	1.1	1.9	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.48	1.2	1.9	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.48	1.2	1.9	1
14434	Perfluoroheptanoic acid	375-85-9	0.77 J	0.38	1.2	1.9	1
14434	Perfluorohexanesulfonate	355-46-4	1.1 J	0.38	1.1	1.9	1
14434	Perfluorohexanoic acid	307-24-4	8.7	0.48	1.2	1.9	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.38	1.2	1.9	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.48	1.2	1.9	1
14434	Perfluorooctanoic acid	335-67-1	0.65 J	0.48	1.2	1.9	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.58	1.2	1.9	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.58	1.2	1.9	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.48	1.2	1.9	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:29	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-Y4-2-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927678  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/05/2018 08:18  
SDG#: BSI24-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	2.8	0.26	0.94	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	0.99 J	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	12	0.34	0.94	1.7	1
14434	Perfluorohexanoic acid	307-24-4	2.1	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	0.67 J	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	15	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	15	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:38	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-Y4-2-W-01 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927679  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submission Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/05/2018 08:45  
SDG#: BSI24-08RB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:56	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-Y4-2-W-02 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927680  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/05/2018 08:50  
SDG#: BSI24-09BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 07:05	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

## Quality Control Summary

Client Name: Gutierrez Canales Engineering  
Reported: 12/24/2018 12:30

Group Number: 2015917

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Method Blank

Analysis Name	Result ng/l	DL** ng/l	LOD ng/l	LOQ ng/l
Batch number: 18343003	Sample number(s): 9927673-9927680			
NEtFOSAA	N.D.	1.0	2.4	3.0
NMeFOSAA	N.D.	1.0	2.4	3.0
Perfluorobutanesulfonate	N.D.	0.30	1.1	2.0
Perfluorodecanoic acid	N.D.	0.50	1.2	2.0
Perfluorododecanoic acid	N.D.	0.50	1.2	2.0
Perfluoroheptanoic acid	N.D.	0.40	1.2	2.0
Perfluorohexanesulfonate	N.D.	0.40	1.1	2.0
Perfluorohexanoic acid	N.D.	0.50	1.2	2.0
Perfluorononanoic acid	N.D.	0.40	1.2	2.0
Perfluoro-octanesulfonate	N.D.	0.50	1.2	2.0
Perfluorooctanoic acid	N.D.	0.50	1.2	2.0
Perfluorotetradecanoic acid	N.D.	0.60	1.2	2.0
Perfluorotridecanoic acid	N.D.	0.60	1.2	2.0
Perfluoroundecanoic acid	N.D.	0.50	1.2	2.0
Batch number: 18348012	Sample number(s): 9927672			
NEtFOSAA	N.D.	1.0	2.4	3.0
NMeFOSAA	N.D.	1.0	2.4	3.0
Perfluorobutanesulfonate	N.D.	0.30	1.1	2.0
Perfluorodecanoic acid	N.D.	0.50	1.2	2.0
Perfluorododecanoic acid	N.D.	0.50	1.2	2.0
Perfluoroheptanoic acid	N.D.	0.40	1.2	2.0
Perfluorohexanesulfonate	N.D.	0.40	1.1	2.0
Perfluorohexanoic acid	N.D.	0.50	1.2	2.0
Perfluorononanoic acid	N.D.	0.40	1.2	2.0
Perfluoro-octanesulfonate	N.D.	0.50	1.2	2.0
Perfluorooctanoic acid	N.D.	0.50	1.2	2.0
Perfluorotetradecanoic acid	N.D.	0.60	1.2	2.0
Perfluorotridecanoic acid	N.D.	0.60	1.2	2.0
Perfluoroundecanoic acid	N.D.	0.50	1.2	2.0

### LCS/LCSD

Analysis Name	LCS Spike Added ng/l	LCS Conc ng/l	LCSD Spike Added ng/l	LCSD Conc ng/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
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\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

(3) The surrogate spike amount was less than the LOD.

## Quality Control Summary

Client Name: Gutierrez Canales Engineering  
Reported: 12/24/2018 12:30

Group Number: 2015917

### LCS/LCSD

Analysis Name	LCS Spike Added ng/l	LCS Conc ng/l	LCSD Spike Added ng/l	LCSD Conc ng/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 18343003	Sample number(s): 9927673-9927680								
NETFOSAA	5.44	4.53	5.44	5.32	83	98	60-131	16	30
NMeFOSAA	5.44	4.03	5.44	4.34	74	80	67-124	7	30
Perfluorobutanesulfonate	4.81	4.81	4.81	4.77	100	99	72-127	1	30
Perfluorodecanoic acid	5.44	5.51	5.44	5.02	101	92	67-141	9	30
Perfluorododecanoic acid	5.44	5.32	5.44	5.50	98	101	72-137	3	30
Perfluoroheptanoic acid	5.44	5.70	5.44	5.69	105	105	75-139	0	30
Perfluorohexanesulfonate	5.14	4.74	5.14	4.85	92	94	71-130	2	30
Perfluorohexanoic acid	5.44	6.06	5.44	5.78	111	106	77-132	5	30
Perfluorononanoic acid	5.44	4.79	5.44	4.81	88	88	73-144	0	30
Perfluoro-octanesulfonate	5.20	4.14	5.20	4.15	80	80	67-134	0	30
Perfluorooctanoic acid	5.44	5.43	5.44	5.94	100	109	76-136	9	30
Perfluorotetradecanoic acid	5.44	5.28	5.44	5.44	97	100	70-142	3	30
Perfluorotridecanoic acid	5.44	5.49	5.44	5.80	101	107	57-137	6	30
Perfluoroundecanoic acid	5.44	4.85	5.44	4.93	89	91	83-132	2	30
Batch number: 18348012	Sample number(s): 9927672								
NETFOSAA	5.44	6.66	5.44	7.03	122	129	60-131	5	30
NMeFOSAA	5.44	6.58	5.44	5.66	121	104	67-124	15	30
Perfluorobutanesulfonate	4.81	5.39	4.81	5.38	112	112	72-127	0	30
Perfluorodecanoic acid	5.44	5.35	5.44	5.66	98	104	67-141	6	30
Perfluorododecanoic acid	5.44	5.84	5.44	5.39	107	99	72-137	8	30
Perfluoroheptanoic acid	5.44	6.33	5.44	6.25	116	115	75-139	1	30
Perfluorohexanesulfonate	5.14	4.43	5.14	5.60	86	109	71-130	23	30
Perfluorohexanoic acid	5.44	6.02	5.44	5.88	111	108	77-132	2	30
Perfluorononanoic acid	5.44	5.71	5.44	5.89	105	108	73-144	3	30
Perfluoro-octanesulfonate	5.20	4.62	5.20	4.94	89	95	67-134	7	30
Perfluorooctanoic acid	5.44	5.85	5.44	6.04	108	111	76-136	3	30
Perfluorotetradecanoic acid	5.44	5.73	5.44	5.39	105	99	70-142	6	30
Perfluorotridecanoic acid	5.44	5.84	5.44	5.69	107	105	57-137	3	30
Perfluoroundecanoic acid	5.44	5.74	5.44	5.63	106	103	83-132	2	30

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

(3) The surrogate spike amount was less than the LOD.



## Quality Control Summary

Client Name: Gutierrez Canales Engineering  
Reported: 12/24/2018 12:30

Group Number: 2015917

### Labeled Isotope Quality Control

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: PFAS in Water by LC/MS/MS-DoD  
Batch number: 18343003

	13C3-PFBS		13C5-PFHxA		13C3-PFHxS		13C4-PFHpA		13C8-PFOA		13C8-PFOS	
	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)
9927673	65	9.0	74	1.8	74	9.0	75	1.8	83	1.8	79	9.0
9927674	72	8.8	75	1.8	77	8.8	80	1.8	85	1.8	86	8.8
9927675	68	8.9	77	1.8	77	8.9	75	1.8	89	1.8	80	8.9
9927676	77	9.5	78	1.9	69	9.5	76	1.9	79	1.9	81	9.5
9927677	83	9.6	86	1.9	81	9.6	83	1.9	88	1.9	90	9.6
9927678	69	8.6	72	1.7	74	8.6	76	1.7	80	1.7	83	8.6
9927679	75	9.1	84	1.8	78	9.1	86	1.8	95	1.8	86	9.1
9927680	74	8.9	82	1.8	80	8.9	81	1.8	91	1.8	89	8.9
Blank	68	10	73	2.0	74	10	78	2.0	84	2.0	87	10
LCS	69	10	74	2.0	75	10	79	2.0	87	2.0	85	10
LCSD	69	10	80	2.0	79	10	82	2.0	85	2.0	80	10

Limits: 50-150 50-150 50-150 50-150 50-150 50-150

	13C9-PFNA		13C6-PFDA		d3-NMeFOSAA		13C7-PFUnDA		d5-NEIFOSAA		13C2-PFDoDA	
	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)
9927673	95	1.8	78	1.8	99	7.2	96	3.6	73	7.2	88	4.5
9927674	103	1.8	82	1.8	110	7.1	89	3.5	73	7.1	74	4.4
9927675	88	1.8	76	1.8	97	7.1	85	3.6	75	7.1	67	4.5
9927676	98	1.9	69	1.9	98	7.6	79	3.8	70	7.6	65	4.7
9927677	110	1.9	88	1.9	112	7.7	92	3.8	82	7.7	77	4.8
9927678	96	1.7	74	1.7	94	6.9	75	3.4	72	6.9	65	4.3
9927679	104	1.8	83	1.8	115	7.3	121	3.7	101	7.3	86	4.6
9927680	104	1.8	84	1.8	111	7.1	96	3.6	83	7.1	75	4.5
Blank	99	2.0	79	2.0	105	8.0	88	4.0	76	8.0	69	5.0
LCS	102	2.0	79	2.0	97	8.0	84	4.0	73	8.0	64	5.0
LCSD	95	2.0	78	2.0	97	8.0	82	4.0	78	8.0	69	5.0

Limits: 50-150 50-150 50-150 50-150 50-150 50-150

	13C2-PFTeDA	
	%Rec	LOD (ng/l)
9927673	66	4.5
9927674	61	4.4
9927675	61	4.5
9927676	62	4.7
9927677	66	4.8

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

(3) The surrogate spike amount was less than the LOD.

## Quality Control Summary

Client Name: Gutierrez Canales Engineering  
Reported: 12/24/2018 12:30

Group Number: 2015917

### Labeled Isotope Quality Control (continued)

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: PFAS in Water by LC/MS/MS-DoD  
Batch number: 18343003

	13C2-PFTeDA	
	%Rec	LOD (ng/l)
9927678	63	4.3
9927679	75	4.6
9927680	63	4.5
Blank	60	5.0
LCS	55	5.0
LCSD	59	5.0

Limits: 50-150

Analysis Name: PFAS in Water by LC/MS/MS-DoD  
Batch number: 18348012

	13C3-PFBS		13C5-PFHxA		13C3-PFHxS		13C4-PFHpA		13C8-PFOA		13C8-PFOS	
	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)
9927672	88	8.6	91	1.7	98	8.6	87	1.7	96	1.7	95	8.6
Blank	89	10	96	2.0	102	10	92	2.0	105	2.0	91	10
LCS	83	10	88	2.0	97	10	87	2.0	94	2.0	87	10
LCSD	85	10	90	2.0	97	10	90	2.0	94	2.0	89	10

Limits: 50-150      50-150      50-150      50-150      50-150      50-150

	13C9-PFNA		13C6-PFDA		d3-NMeFOSAA		13C7-PFUnDA		d5-NEIFOSAA		13C2-PFDoDA	
	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)	%Rec	LOD (ng/l)
9927672	97	1.7	93	1.7	91	6.9	88	3.4	84	6.9	88	4.3
Blank	93	2.0	98	2.0	89	8.0	99	4.0	92	8.0	96	5.0
LCS	89	2.0	96	2.0	86	8.0	90	4.0	88	8.0	86	5.0
LCSD	86	2.0	91	2.0	96	8.0	86	4.0	86	8.0	90	5.0

Limits: 50-150      50-150      50-150      50-150      50-150      50-150

	13C2-PFTeDA	
	%Rec	LOD (ng/l)
9927672	75	4.3
Blank	86	5.0
LCS	84	5.0
LCSD	91	5.0

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

(3) The surrogate spike amount was less than the LOD.

## Quality Control Summary

Client Name: Gutierrez Canales Engineering  
Reported: 12/24/2018 12:30

Group Number: 2015917

### Labeled Isotope Quality Control (continued)

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: PFAS in Water by LC/MS/MS-DoD  
Batch number: 18348012

Limits: 50-150

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

(3) The surrogate spike amount was less than the LOD.

# Environmental Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # 43806 Group # 2015917 Sample # 9927672-80

**COC # 571781**

Client Information				Matrix			Analysis Requested										For Lab Use Only		
Client: <u>GCE</u>		Acct. #: <u>43806</u>		<input type="checkbox"/> Soil	<input type="checkbox"/> Sediment	<input type="checkbox"/> Tissue	Preservation and Filtration Codes										FSC: _____	SCR#: <u>235697</u>	
Project Name/ID: <u>146-CTA-006</u> <u>BARSTON PEAR SITE INSPECTION</u>		PWSID #: _____		<input type="checkbox"/> Potable	<input type="checkbox"/> Ground	<input type="checkbox"/> Surface											Preservation Codes		
Project Manager: <u>ERIC RIDER</u>		P.O. #: _____		<input type="checkbox"/> NPDES	<input type="checkbox"/> Other: <u>SOURCE WATER/REDSATE</u>	Total # of Containers											Remarks		
Sampler: <u>J. SANTINI</u>		Quote #: _____		State where samples were collected: <u>CA</u>		For Compliance: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>													
Sample Identification		Collected		Grab	Composite	Water	Soil	Other	Total # of Containers										
		Date	Time																
<u>001-4EP-3-01</u>		<u>12/4/18</u>	<u>1025</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<u>2</u>										
<u>001-4EP-3-W-01</u>		<u>12/4/18</u>	<u>1040</u>	<input checked="" type="checkbox"/>					<u>2</u>	<u>REINSTATE BLANK</u>									
<u>001-4EP-3-W-02</u>		<u>12/4/18</u>	<u>1045</u>	<input checked="" type="checkbox"/>					<u>2</u>	<u>SOURCE BLANK</u>									
<u>001-YS35-4-01</u>		<u>12/4/18</u>	<u>1150</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<u>2</u>										
<u>001-4CW16-4-01</u>		<u>12/4/18</u>	<u>1321</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<u>2</u>										
<u>001-4CW16-2-01</u>		<u>12/4/18</u>	<u>1504</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<u>2</u>										
<u>001-44-2-01</u>		<u>12/5/18</u>	<u>0818</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<u>2</u>										
<u>001-44-2-W-01</u>		<u>12/5/18</u>	<u>0845</u>	<input checked="" type="checkbox"/>					<u>2</u>	<u>REINSTATE BLANK</u>									
<u>001-44-2-W-02</u>		<u>12/5/18</u>	<u>0850</u>	<input checked="" type="checkbox"/>					<u>2</u>	<u>SOURCE BLANK</u>									

<b>Turnaround Time (TAT) Requested</b> (please circle) Standard <input checked="" type="radio"/> Rush <input type="radio"/> (Rush TAT is subject to laboratory approval and surcharge.)	Relinquished by: <u>[Signature]</u>	Date: <u>12-30-18</u>	Time: <u>1535</u>	Received by: <u>[Signature]</u>	Date: <u>12/5/18</u>	Time: _____
	Relinquished by: <u>[Signature]</u>	Date: <u>12/5/18</u>	Time: <u>1000</u>	Received by: _____	Date: _____	Time: _____
Requested TAT in business days: _____	Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
E-mail address: <u>JAMALMELU@NEAW.COM</u>	Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
<b>Data Package Options</b> (circle if required) Type I (EPA Level 3 Equivalent/non-CLP) <input checked="" type="radio"/> Type VI (Raw Data Only) <input type="radio"/> Type III (Reduced non-CLP) NJ DKQP TX TRRP-13 NYSDEC Category A or B MA MCP CT RCP	Relinquished by: _____	Date: _____	Time: _____	Received by: <u>[Signature]</u>	Date: <u>12/6/18</u>	Time: <u>0830</u>
	EDD Required? Yes <input checked="" type="radio"/> No <input type="radio"/> If yes, format: <u>NDD EDF</u>	Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other _____			Temperature upon receipt <u>15</u> °C	
Site-Specific QC (MS/MSD/Dup)? Yes <input type="radio"/> No <input checked="" type="radio"/> (If yes, indicate QC sample and submit triplicate sample volume.)						



Client: GCE

**Delivery and Receipt Information**

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>12/06/2018 10:30</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>CA</u>		

**Arrival Condition Summary**

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace $\geq$ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Ariel Garcia (15332) at 20:10 on 12/06/2018

**Samples Chilled Details**

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	1.5	DT	Wet	Y	Bagged	N

# Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>BMQL</b>	Below Minimum Quantitation Level	<b>mL</b>	milliliter(s)
<b>C</b>	degrees Celsius	<b>MPN</b>	Most Probable Number
<b>cfu</b>	colony forming units	<b>N.D.</b>	non-detect
<b>CP Units</b>	cobalt-chloroplatinate units	<b>ng</b>	nanogram(s)
<b>F</b>	degrees Fahrenheit	<b>NTU</b>	nephelometric turbidity units
<b>g</b>	gram(s)	<b>pg/L</b>	picogram/liter
<b>IU</b>	International Units	<b>RL</b>	Reporting Limit
<b>kg</b>	kilogram(s)	<b>TNTC</b>	Too Numerous To Count
<b>L</b>	liter(s)	<b>µg</b>	microgram(s)
<b>lb.</b>	pound(s)	<b>µL</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>umhos/cm</b>	micromhos/cm
<b>meq</b>	milliequivalents	<b>MCL</b>	Maximum Contamination Limit
<b>mg</b>	milligram(s)		
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



# Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value $\geq$ the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$ . The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$ . The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$ . The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# **PFAS by LC/MS/MS Data**

# **Case Narrative/Conformance Summary**

## **PFAS by LC/MS/MS**

## Case Narrative/Conformance Summary

**CLIENT: Gutierrez Canales Engineering**  
**SDG: BSI24**

### PFAS Group

Fraction: PFAS by LC/MS/MS

Sample #	Client ID	Matrix			Comments
		Liquid	Solid	DF	
9927672	OU1-YEP-3-01	X		1	
9927673	OU1-YEP-3-W-01	X		1	Material Rinse Blank
9927674	OU1-YEP-3-W-02	X		1	Blank
9927675	OU1-YS35-4-01	X		1	
9927676	OU1-YCW16-4-01	X		1	
9927677	OU1-YCW16-2-01	X		1	
9927678	OU1-Y4-2-01	X		1	
9927679	OU1-Y4-2-W-01	X		1	Material Rinse Blank
9927680	OU1-Y4-2-W-02	X		1	Blank

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.  
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

#### MS/MSD

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

## Case Narrative/Conformance Summary

**CLIENT: Gutierrez Canales Engineering**  
**SDG: BSI24**

### PFAS Group

Fraction: PFAS by LC/MS/MS

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

#### Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

# **Quality Control and Calibration Summary Forms**

## **PFAS by LC/MS/MS**

**Quality Control Reference List  
PFAS Group**

**CLIENT: Gutierrez Canales Engineering  
SDG: BSI24**

**Fraction: PFAS by LC/MS/MS**

<b>Analysis</b>	<b>Batch Number</b>	<b>Sample Number</b>	<b>Analysis Date</b>		
PFAS in Water by LC/MS/MS-DoD	18343003	BLK343003B	12/11/2018 05:17		
		LCS343003Q	12/11/2018 05:26		
		LCSDAY	12/11/2018 05:35		
		9927673	12/11/2018 05:53		
		9927674 BL	12/11/2018 06:02		
		9927675	12/11/2018 06:11		
		9927676	12/11/2018 06:20		
		9927677	12/11/2018 06:29		
		9927678	12/11/2018 06:38		
		9927679	12/11/2018 06:56		
		9927680 BL	12/11/2018 07:05		
		PFAS in Water by LC/MS/MS-DoD	18348012	BLK348012B	12/19/2018 13:26
				LCS348012Q	12/19/2018 13:35
LCSDAY	12/19/2018 13:44				
9927672	12/19/2018 13:53				

Fraction: PFAS by LC/MS/MS

18343003 / BLK343003B Analyte	Analysis Date	Blank Results	Units	DL	LOD	LOQ
Perfluorooctanoic acid	12/11/18	N.D.	ng/l	0.50	1.2	2.0
Perfluorononanoic acid	12/11/18	N.D.	ng/l	0.40	1.2	2.0
Perfluorodecanoic acid	12/11/18	N.D.	ng/l	0.50	1.2	2.0
Perfluoroundecanoic acid	12/11/18	N.D.	ng/l	0.50	1.2	2.0
Perfluorododecanoic acid	12/11/18	N.D.	ng/l	0.50	1.2	2.0
Perfluorotridecanoic acid	12/11/18	N.D.	ng/l	0.60	1.2	2.0
Perfluorotetradecanoic acid	12/11/18	N.D.	ng/l	0.60	1.2	2.0
Perfluorohexanoic acid	12/11/18	N.D.	ng/l	0.50	1.2	2.0
Perfluoroheptanoic acid	12/11/18	N.D.	ng/l	0.40	1.2	2.0
Perfluorobutanesulfonate	12/11/18	N.D.	ng/l	0.30	1.1	2.0
Perfluorohexanesulfonate	12/11/18	N.D.	ng/l	0.40	1.1	2.0
Perfluoro-octanesulfonate	12/11/18	N.D.	ng/l	0.50	1.2	2.0
NEtFOSAA	12/11/18	N.D.	ng/l	1.0	2.4	3.0
NMeFOSAA	12/11/18	N.D.	ng/l	1.0	2.4	3.0

18348012 / BLK348012B Analyte	Analysis Date	Blank Results	Units	DL	LOD	LOQ
Perfluorooctanoic acid	12/19/18	N.D.	ng/l	0.50	1.2	2.0
Perfluorononanoic acid	12/19/18	N.D.	ng/l	0.40	1.2	2.0
Perfluorodecanoic acid	12/19/18	N.D.	ng/l	0.50	1.2	2.0
Perfluoroundecanoic acid	12/19/18	N.D.	ng/l	0.50	1.2	2.0
Perfluorododecanoic acid	12/19/18	N.D.	ng/l	0.50	1.2	2.0
Perfluorotridecanoic acid	12/19/18	N.D.	ng/l	0.60	1.2	2.0
Perfluorotetradecanoic acid	12/19/18	N.D.	ng/l	0.60	1.2	2.0
Perfluorohexanoic acid	12/19/18	N.D.	ng/l	0.50	1.2	2.0
Perfluoroheptanoic acid	12/19/18	N.D.	ng/l	0.40	1.2	2.0
Perfluorobutanesulfonate	12/19/18	N.D.	ng/l	0.30	1.1	2.0
Perfluorohexanesulfonate	12/19/18	N.D.	ng/l	0.40	1.1	2.0
Perfluoro-octanesulfonate	12/19/18	N.D.	ng/l	0.50	1.2	2.0
NEtFOSAA	12/19/18	N.D.	ng/l	1.0	2.4	3.0
NMeFOSAA	12/19/18	N.D.	ng/l	1.0	2.4	3.0



SDG No.: BSI24  
Matrix: WATER

18343003		13C2-PFDODA	13C2-PFTEDA	13C3-PFBS	13C3-PFHXS	13C4-PFHPA
	<b>Limits</b>	50-150	50-150	50-150	50-150	50-150
LAB SAMPLE ID	DATE/TIME	% Recovery	% Recovery	% Recovery	% Recovery	% Recovery
BLK343003	12/11/18 05:17	69	60	68	74	78
LCS343003	12/11/18 05:26	64	55	69	75	79
LCSDA	12/11/18 05:35	69	59	69	79	82
9927673	12/11/18 05:53	88	66	65	74	75
9927674	12/11/18 06:02	74	61	72	77	80
9927675	12/11/18 06:11	67	61	68	77	75
9927676	12/11/18 06:20	65	62	77	69	76
9927677	12/11/18 06:29	77	66	83	81	83
9927678	12/11/18 06:38	65	63	69	74	76
9927679	12/11/18 06:56	86	75	75	78	86
9927680	12/11/18 07:05	75	63	74	80	81

\* Outside QC Limits

SDG No.: BSI24  
Matrix: WATER

18343003		13C5-PFHXA	13C6-PFDA	13C7-PFUNDA	13C8-PFOA	13C8-PFOS
	<b>Limits</b>	50-150	50-150	50-150	50-150	50-150
LAB SAMPLE ID	DATE/TIME	% Recovery	% Recovery	% Recovery	% Recovery	% Recovery
BLK343003	12/11/18 05:17	73	79	88	84	87
LCS343003	12/11/18 05:26	74	79	84	87	85
LCSDA	12/11/18 05:35	80	78	82	85	80
9927673	12/11/18 05:53	74	78	96	83	79
9927674	12/11/18 06:02	75	82	89	85	86
9927675	12/11/18 06:11	77	76	85	89	80
9927676	12/11/18 06:20	78	69	79	79	81
9927677	12/11/18 06:29	86	88	92	88	90
9927678	12/11/18 06:38	72	74	75	80	83
9927679	12/11/18 06:56	84	83	121	95	86
9927680	12/11/18 07:05	82	84	96	91	89

\* Outside QC Limits

SDG No.: BSI24  
Matrix: WATER

18343003		13C9-PFNA	D3-NMEFOSAA	D5-NETFOSAA
	<b>Limits</b>	50-150	50-150	50-150
LAB SAMPLE ID	DATE/TIME	% Recovery	% Recovery	% Recovery
BLK343003	12/11/18 05:17	99	105	76
LCS343003	12/11/18 05:26	102	97	73
LCSDA	12/11/18 05:35	95	97	78
9927673	12/11/18 05:53	95	99	73
9927674	12/11/18 06:02	103	110	73
9927675	12/11/18 06:11	88	97	75
9927676	12/11/18 06:20	98	98	70
9927677	12/11/18 06:29	110	112	82
9927678	12/11/18 06:38	96	94	72
9927679	12/11/18 06:56	104	115	101
9927680	12/11/18 07:05	104	111	83

\* Outside QC Limits

SDG No.: BSI24  
Matrix: WATER

18348012		13C2-PFDODA	13C2-PFTEDA	13C3-PFBS	13C3-PFHXS	13C4-PFHPA
<b>Limits</b>		50-150	50-150	50-150	50-150	50-150
<b>LAB SAMPLE ID</b>	<b>DATE/TIME</b>	<b>% Recovery</b>	<b>% Recovery</b>	<b>% Recovery</b>	<b>% Recovery</b>	<b>% Recovery</b>
BLK348012	12/19/18 13:26	96	86	89	102	92
LCS348012	12/19/18 13:35	86	84	83	97	87
LCSDA	12/19/18 13:44	90	91	85	97	90
9927672	12/19/18 13:53	88	75	88	98	87

\* Outside QC Limits

SDG No.: BSI24  
Matrix: WATER

18348012		13C5-PFHXA	13C6-PFDA	13C7-PFUNDA	13C8-PFOA	13C8-PFOS
<b>Limits</b>		50-150	50-150	50-150	50-150	50-150
<b>LAB SAMPLE ID</b>	<b>DATE/TIME</b>	<b>% Recovery</b>	<b>% Recovery</b>	<b>% Recovery</b>	<b>% Recovery</b>	<b>% Recovery</b>
BLK348012	12/19/18 13:26	96	98	99	105	91
LCS348012	12/19/18 13:35	88	96	90	94	87
LCSDA	12/19/18 13:44	90	91	86	94	89
9927672	12/19/18 13:53	91	93	88	96	95

\* Outside QC Limits

SDG No.: BSI24  
Matrix: WATER

18348012		13C9-PFNA	D3-NMEFOSAA	D5-NETFOSAA
	<b>Limits</b>	50-150	50-150	50-150
<b>LAB SAMPLE ID</b>	<b>DATE/TIME</b>	<b>% Recovery</b>	<b>% Recovery</b>	<b>% Recovery</b>
BLK348012	12/19/18 13:26	93	89	92
LCS348012	12/19/18 13:35	89	86	88
LCSDA	12/19/18 13:44	86	96	86
9927672	12/19/18 13:53	97	91	84

\* Outside QC Limits

SDG: BSI24  
Matrix: LIQUID

**PFAS Group**  
Fraction: PFAS by LC/MS/MS

LCS: LCS343003Q LCSD: LCSDAY  Analyte	Batch: <b>18343003</b> (Sample number(s): 9927673-9927680 )							
	Spike Added ng/l	LCS Conc ng/l	LCSD Conc ng/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Perfluorooctanoic acid	5.44	5.43	5.94	100	109	76-136	9	30
Perfluorononanoic acid	5.44	4.79	4.81	88	88	73-144	0	30
Perfluorodecanoic acid	5.44	5.51	5.02	101	92	67-141	9	30
Perfluoroundecanoic acid	5.44	4.85	4.93	89	91	83-132	2	30
Perfluorododecanoic acid	5.44	5.32	5.50	98	101	72-137	3	30
Perfluorotridecanoic acid	5.44	5.49	5.80	101	107	57-137	6	30
Perfluorotetradecanoic acid	5.44	5.28	5.44	97	100	70-142	3	30
Perfluorohexanoic acid	5.44	6.06	5.78	111	106	77-132	5	30
Perfluoroheptanoic acid	5.44	5.70	5.69	105	105	75-139	0	30
Perfluorobutanesulfonate	4.81	4.81	4.77	100	99	72-127	1	30
Perfluorohexanesulfonate	5.14	4.74	4.85	92	94	71-130	2	30
Perfluoro-octanesulfonate	5.20	4.14	4.15	80	80	67-134	0	30
NEtFOSAA	5.44	4.53	5.32	83	98	60-131	16	30
NMeFOSAA	5.44	4.03	4.34	74	80	67-124	7	30

LCS: LCS348012Q LCSD: LCSDAY  Analyte	Batch: <b>18348012</b> (Sample number(s): 9927672 )							
	Spike Added ng/l	LCS Conc ng/l	LCSD Conc ng/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Perfluorooctanoic acid	5.44	5.85	6.04	108	111	76-136	3	30
Perfluorononanoic acid	5.44	5.71	5.89	105	108	73-144	3	30
Perfluorodecanoic acid	5.44	5.35	5.66	98	104	67-141	6	30
Perfluoroundecanoic acid	5.44	5.74	5.63	106	103	83-132	2	30
Perfluorododecanoic acid	5.44	5.84	5.39	107	99	72-137	8	30
Perfluorotridecanoic acid	5.44	5.84	5.69	107	105	57-137	3	30
Perfluorotetradecanoic acid	5.44	5.73	5.39	105	99	70-142	6	30
Perfluorohexanoic acid	5.44	6.02	5.88	111	108	77-132	2	30
Perfluoroheptanoic acid	5.44	6.33	6.25	116	115	75-139	1	30
Perfluorobutanesulfonate	4.81	5.39	5.38	112	112	72-127	0	30
Perfluorohexanesulfonate	5.14	4.43	5.60	86	109	71-130	23	30
Perfluoro-octanesulfonate	5.20	4.62	4.94	89	95	67-134	7	30
NEtFOSAA	5.44	6.66	7.03	122	129	60-131	5	30
NMeFOSAA	5.44	6.58	5.66	121	104	67-124	15	30

Fraction: PFAS by LC/MS/MS

14434: PFAS in Water by LC/MS/MS- DoD Analyte Name	Default DL	Default LOD	Default LOQ	Units
Perfluorooctanoic acid	.5	1.2	2.0	ng/l
Perfluorononanoic acid	.4	1.2	2.0	ng/l
Perfluorodecanoic acid	.5	1.2	2.0	ng/l
Perfluoroundecanoic acid	.5	1.2	2.0	ng/l
Perfluorododecanoic acid	.5	1.2	2.0	ng/l
Perfluorotridecanoic acid	.6	1.2	2.0	ng/l
Perfluorotetradecanoic acid	.6	1.2	2.0	ng/l
Perfluorohexanoic acid	.5	1.2	2.0	ng/l
Perfluoroheptanoic acid	.4	1.2	2.0	ng/l
Perfluorobutanesulfonate	.3	1.1	2.0	ng/l
Perfluorohexanesulfonate	.4	1.1	2.0	ng/l
Perfluoro-octanesulfonate	.5	1.2	2.0	ng/l
NEtFOSAA	1	2.4	3.0	ng/l
NMeFOSAA	1	2.4	3.0	ng/l



SDG No. : BSI24

Instrument ID: 27631

Init. Calib. Date/Times: 12/06/2018 23:37 12/07/2018 00:31

Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

Perfluorobutanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.044	0.20	0.242	21.1	±30
CAL2	0.104	0.60	0.572	-4.6	±30
CAL3	0.410	2.00	2.261	13.1	±30
CAL4	1.453	8.00	8.019	0.2	±30
CAL5	3.739	20.00	20.632	3.2	±30
CAL6	8.895	50.00	49.074	-1.9	±30
CAL7	16.533	100.00	91.216	-8.8	±30

Perfluoropentanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.046	0.20	0.240	20.1	±30
CAL2	0.107	0.60	0.562	-6.3	±30
CAL3	0.422	2.00	2.219	10.9	±30
CAL4	1.520	8.00	7.998	0.0	±30
CAL5	3.953	20.00	20.794	4.0	±30
CAL6	9.312	50.00	48.987	-2.0	±30
CAL7	16.855	100.00	88.666	-11.3	±30

Perfluorobutanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.041	0.18	0.203	14.5	±30
CAL2	0.099	0.53	0.492	-7.4	±30
CAL3	0.398	1.77	1.973	11.5	±30
CAL4	1.422	7.08	7.048	-0.5	±30
CAL5	3.754	17.70	18.605	5.1	±30
CAL6	8.903	44.20	44.131	-0.2	±30
CAL7	17.634	88.40	87.407	-1.1	±30

4:2 fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.072	0.19	0.194	3.9	±30
CAL2	0.180	0.56	0.482	-14.0	±30
CAL3	0.833	1.87	2.232	19.4	±30
CAL4	2.783	7.47	7.460	-0.1	±30
CAL5	7.632	18.70	20.457	9.4	±30
CAL6	16.663	46.70	44.662	-4.4	±30
CAL7	30.866	93.40	82.731	-11.4	±30

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Instrument ID: 27631

Init. Calib. Date/Times: 12/06/2018 23:37 12/07/2018 00:31

Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

Perfluorohexanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.057	0.20	0.246	23.1	±30
CAL2	0.144	0.60	0.625	4.2	±30
CAL3	0.542	2.00	2.360	18.0	±30
CAL4	2.047	8.00	8.920	11.5	±30
CAL5	4.764	20.00	20.758	3.8	±30
CAL6	10.990	50.00	47.890	-4.2	±30
CAL7	20.126	100.00	87.699	-12.3	±30

Perfluoropentanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.023	0.19	0.223	18.5	±30
CAL2	0.054	0.56	0.531	-5.8	±30
CAL3	0.209	1.88	2.068	10.0	±30
CAL4	0.733	7.50	7.262	-3.2	±30
CAL5	1.985	18.80	19.660	4.6	±30
CAL6	4.804	46.90	47.573	1.4	±30
CAL7	9.323	93.80	92.314	-1.6	±30

Perfluoroheptanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.074	0.20	0.244	22.2	±30
CAL2	0.185	0.60	0.610	1.6	±30
CAL3	0.665	2.00	2.190	9.5	±30
CAL4	2.473	8.00	8.142	1.8	±30
CAL5	5.957	20.00	19.614	-1.9	±30
CAL6	13.370	50.00	44.021	-12.0	±30
CAL7	26.007	100.00	85.629	-14.4	±30

Perfluorohexanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.037	0.18	0.177	-2.6	±30
CAL2	0.095	0.55	0.450	-17.8	±30
CAL3	0.392	1.82	1.856	2.0	±30
CAL4	1.513	7.30	7.170	-1.8	±30
CAL5	3.621	18.20	17.156	-5.7	±30
CAL6	9.396	45.60	44.518	-2.4	±30
CAL7	19.738	91.20	93.522	2.5	±30

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Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

6:2 fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.078	0.19	0.194	2.2	±30
CAL2	0.251	0.57	0.623	9.5	±30
CAL3	0.832	1.90	2.066	8.7	±30
CAL4	3.077	7.58	7.641	0.8	±30
CAL5	7.777	19.00	19.310	1.6	±30
CAL6	18.849	47.40	46.805	-1.3	±30
CAL7	31.327	94.80	77.787	-17.9	±30

Perfluoroheptanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.034	0.19	0.185	-2.6	±30
CAL2	0.101	0.57	0.556	-2.6	±30
CAL3	0.381	1.90	2.093	10.2	±30
CAL4	1.481	7.61	8.129	6.8	±30
CAL5	3.428	19.00	18.817	-1.0	±30
CAL6	8.388	47.60	46.046	-3.3	±30
CAL7	17.533	95.20	96.244	1.1	±30

Perfluorooctanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.043	0.20	0.237	18.5	±30
CAL2	0.105	0.60	0.574	-4.4	±30
CAL3	0.415	2.00	2.267	13.4	±30
CAL4	1.543	8.00	8.430	5.4	±30
CAL5	3.983	20.00	21.765	8.8	±30
CAL6	9.470	50.00	51.751	3.5	±30
CAL7	17.525	100.00	95.776	-4.2	±30

Perfluoro-octanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.046	0.19	0.191	3.2	±30
CAL2	0.121	0.56	0.500	-9.8	±30
CAL3	0.458	1.85	1.901	2.8	±30
CAL4	1.669	7.40	6.922	-6.5	±30
CAL5	4.166	18.50	17.279	-6.6	±30
CAL6	11.163	46.30	46.302	0.0	±30
CAL7	22.734	92.60	94.295	1.8	±30

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Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

Perfluorononanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.059	0.20	0.219	9.3	±30
CAL2	0.141	0.60	0.520	-13.4	±30
CAL3	0.602	2.00	2.217	10.8	±30
CAL4	2.222	8.00	8.190	2.4	±30
CAL5	5.570	20.00	20.527	2.6	±30
CAL6	13.330	50.00	49.127	-1.7	±30
CAL7	24.314	100.00	89.607	-10.4	±30

Perfluoronanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.031	0.19	0.197	2.4	±30
CAL2	0.071	0.58	0.460	-20.1	±30
CAL3	0.334	1.92	2.147	11.8	±30
CAL4	1.216	7.68	7.826	1.9	±30
CAL5	3.031	19.20	19.506	1.6	±30
CAL6	7.636	48.00	49.137	2.4	±30
CAL7	14.654	96.00	94.295	-1.8	±30

Perfluorodecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.042	0.20	0.238	18.8	±30
CAL2	0.101	0.60	0.569	-5.2	±30
CAL3	0.404	2.00	2.277	13.8	±30
CAL4	1.491	8.00	8.392	4.9	±30
CAL5	3.933	20.00	22.139	10.7	±30
CAL6	8.941	50.00	50.325	0.7	±30
CAL7	17.208	100.00	96.860	-3.1	±30

8:2 fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.095	0.19	0.206	7.2	±30
CAL2	0.248	0.58	0.538	-6.5	±30
CAL3	0.896	1.92	1.941	1.1	±30
CAL4	3.465	7.66	7.509	-2.0	±30
CAL5	9.529	19.20	20.646	7.5	±30
CAL6	21.510	47.90	46.607	-2.7	±30
CAL7	37.236	95.80	80.681	-15.8	±30

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Instrument ID: 27631

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Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

Perfluorooctanesulfonamide	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.039	0.20	0.204	2.1	±30
CAL2	0.097	0.60	0.505	-15.9	±30
CAL3	0.430	2.00	2.231	11.5	±30
CAL4	1.564	8.00	8.114	1.4	±30
CAL5	4.040	20.00	20.959	4.8	±30
CAL6	10.068	50.00	52.230	4.5	±30
CAL7	18.612	100.00	96.557	-3.4	±30

NMeFOSAA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.031	0.20	0.206	3.0	±30
CAL2	0.091	0.60	0.602	0.4	±30
CAL3	0.339	2.00	2.241	12.1	±30
CAL4	1.316	8.00	8.707	8.8	±30
CAL5	3.284	20.00	21.719	8.6	±30
CAL6	7.328	50.00	48.469	-3.1	±30
CAL7	14.946	100.00	98.856	-1.1	±30

Perfluorodecanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.024	0.19	0.191	-1.1	±30
CAL2	0.059	0.58	0.481	-16.9	±30
CAL3	0.262	1.93	2.122	9.9	±30
CAL4	0.971	7.70	7.853	2.0	±30
CAL5	2.292	19.30	18.534	-4.0	±30
CAL6	6.089	48.20	49.234	2.1	±30
CAL7	11.847	96.30	95.786	-0.5	±30

Perfluoroundecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.079	0.20	0.242	21.2	±30
CAL2	0.194	0.60	0.593	-1.1	±30
CAL3	0.737	2.00	2.256	12.8	±30
CAL4	2.685	8.00	8.220	2.8	±30
CAL5	6.727	20.00	20.598	3.0	±30
CAL6	16.008	50.00	49.014	-2.0	±30
CAL7	32.619	100.00	99.876	-0.1	±30

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Instrument ID: 27631

Init. Calib. Date/Times: 12/06/2018 23:37 12/07/2018 00:31

Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

NetFOSAA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.051	0.20	0.256	27.9	±30
CAL2	0.100	0.60	0.504	-16.0	±30
CAL3	0.441	2.00	2.227	11.4	±30
CAL4	1.600	8.00	8.088	1.1	±30
CAL5	3.868	20.00	19.546	-2.3	±30
CAL6	9.929	50.00	50.179	0.4	±30
CAL7	18.727	100.00	94.646	-5.4	±30

Perfluorododecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.049	0.20	0.260	30.1*	±30
CAL2	0.098	0.60	0.517	-13.9	±30
CAL3	0.412	2.00	2.171	8.6	±30
CAL4	1.548	8.00	8.147	1.8	±30
CAL5	3.969	20.00	20.895	4.5	±30
CAL6	9.272	50.00	48.809	-2.4	±30
CAL7	17.549	100.00	92.376	-7.6	±30

10:2-fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.058	0.19	0.155	-19.8	±30
CAL2	0.194	0.58	0.515	-10.9	±30
CAL3	0.788	1.93	2.087	8.2	±30
CAL4	2.936	7.71	7.777	0.9	±30
CAL5	9.403	19.30	24.907	29.1	±30
CAL6	18.507	48.20	49.024	1.7	±30
CAL7	33.918	96.40	89.846	-6.8	±30

NMePFOSAE	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.053	0.20	0.230	14.9	±30
CAL2	0.131	0.60	0.568	-5.3	±30
CAL3	0.530	2.00	2.305	15.2	±30
CAL4	1.934	8.00	8.404	5.0	±30
CAL5	5.327	20.00	23.147	15.7	±30
CAL6	11.805	50.00	51.300	2.6	±30
CAL7	21.826	100.00	94.847	-5.2	±30

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Init. Calib. Date/Times: 12/06/2018 23:37 12/07/2018 00:31

Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

NMePFOSA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.043	0.20	0.218	9.0	±30
CAL2	0.106	0.60	0.534	-11.0	±30
CAL3	0.422	2.00	2.131	6.5	±30
CAL4	1.596	8.00	8.052	0.7	±30
CAL5	4.032	20.00	20.344	1.7	±30
CAL6	9.484	50.00	47.852	-4.3	±30
CAL7	20.150	100.00	101.669	1.7	±30

Perfluorododecanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.013	0.19	0.201	3.7	±30
CAL2	0.033	0.58	0.508	-12.6	±30
CAL3	0.134	1.94	2.042	5.2	±30
CAL4	0.495	7.74	7.539	-2.6	±30
CAL5	1.250	19.40	19.051	-1.8	±30
CAL6	3.190	48.40	48.634	0.5	±30
CAL7	6.368	96.80	97.080	0.3	±30

NEtPFOSAE	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.064	0.20	0.215	7.3	±30
CAL2	0.194	0.60	0.649	8.1	±30
CAL3	0.697	2.00	2.336	16.8	±30
CAL4	2.549	8.00	8.540	6.7	±30
CAL5	6.422	20.00	21.516	7.6	±30
CAL6	14.675	50.00	49.168	-1.7	±30
CAL7	29.362	100.00	98.377	-1.6	±30

NEtPFOSA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.037	0.20	0.179	-10.3	±30
CAL2	0.132	0.60	0.630	5.1	±30
CAL3	0.487	2.00	2.332	16.6	±30
CAL4	1.625	8.00	7.779	-2.8	±30
CAL5	4.515	20.00	21.615	8.1	±30
CAL6	10.541	50.00	50.462	0.9	±30
CAL7	20.430	100.00	97.801	-2.2	±30

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Init. Calib. Date/Times: 12/06/2018 23:37 12/07/2018 00:31

Lab File Names: CAL1= 18DEC06DCAL-25.WIFF; CAL2= 18DEC06DCAL-26.WIFF; CAL3=  
18DEC06DCAL-27.WIFF;  
CAL4= 18DEC06DCAL-28.WIFF; CAL5= 18DEC06DCAL-29.WIFF; CAL6=  
18DEC06DCAL-30.WIFF;  
CAL7= 18DEC06DCAL-31.WIFF; CAL8= ;

Perfluorotridecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.032	0.20	0.213	6.3	±30
CAL2	0.088	0.60	0.575	-4.2	±30
CAL3	0.358	2.00	2.342	17.1	±30
CAL4	1.337	8.00	8.755	9.4	±30
CAL5	3.242	20.00	21.232	6.2	±30
CAL6	7.280	50.00	47.684	-4.6	±30
CAL7	12.951	100.00	84.826	-15.2	±30

Perfluorotetradecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.040	0.20	0.228	14.2	±30
CAL2	0.103	0.60	0.592	-1.4	±30
CAL3	0.401	2.00	2.295	14.8	±30
CAL4	1.456	8.00	8.329	4.1	±30
CAL5	3.582	20.00	20.486	2.4	±30
CAL6	8.546	50.00	48.870	-2.3	±30
CAL7	16.858	100.00	96.401	-3.6	±30

Perfluorohexadecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.020	0.20	0.255	27.6	±30
CAL2	0.046	0.60	0.570	-5.0	±30
CAL3	0.186	2.00	2.334	16.7	±30
CAL4	0.624	8.00	7.816	-2.3	±30
CAL5	1.645	20.00	20.605	3.0	±30
CAL6	3.971	50.00	49.736	-0.5	±30
CAL7	7.944	100.00	99.483	-0.5	±30

Perfluorooctadecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.014	0.20	0.217	8.6	±30
CAL2	0.034	0.60	0.548	-8.6	±30
CAL3	0.131	2.00	2.098	4.9	±30
CAL4	0.469	8.00	7.528	-5.9	±30
CAL5	1.251	20.00	20.081	0.4	±30
CAL6	3.090	50.00	49.596	-0.8	±30
CAL7	6.275	100.00	100.731	0.7	±30



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Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

Perfluorobutanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.041	0.20	0.220	9.9	±30
CAL2	0.104	0.50	0.552	10.4	±30
CAL3	0.407	2.00	2.164	8.2	±30
CAL4	1.459	8.00	7.748	-3.2	±30
CAL5	3.770	20.00	20.017	0.1	±30
CAL6	8.555	50.00	45.420	-9.2	±30
CAL7	14.212	100.00	75.458	-24.5	±30

Perfluoropentanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.043	0.20	0.222	10.8	±30
CAL2	0.105	0.50	0.541	8.2	±30
CAL3	0.435	2.00	2.247	12.3	±30
CAL4	1.509	8.00	7.791	-2.6	±30
CAL5	3.855	20.00	19.899	-0.5	±30
CAL6	8.734	50.00	45.083	-9.8	±30
CAL7	15.123	100.00	78.065	-21.9	±30

Perfluorobutanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.040	0.18	0.197	11.5	±30
CAL2	0.097	0.44	0.478	7.9	±30
CAL3	0.397	1.77	1.959	10.7	±30
CAL4	1.481	7.08	7.312	3.3	±30
CAL5	3.582	17.70	17.683	-0.1	±30
CAL6	8.863	44.20	43.750	-1.0	±30
CAL7	17.905	88.40	88.391	0.0	±30

4:2 fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.074	0.19	0.195	4.5	±30
CAL2	0.199	0.47	0.523	12.0	±30
CAL3	0.732	1.87	1.921	2.7	±30
CAL4	2.858	7.47	7.497	0.4	±30
CAL5	7.591	18.70	19.917	6.5	±30
CAL6	17.282	46.70	45.341	-2.9	±30
CAL7	32.786	93.40	86.019	-7.9	±30

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Instrument ID: 27631

Init. Calib. Date/Times: 12/18/2018 23:34 12/19/2018 00:28

Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

Perfluorohexanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.053	0.20	0.220	9.8	±30
CAL2	0.136	0.50	0.558	11.7	±30
CAL3	0.495	2.00	2.039	1.9	±30
CAL4	1.954	8.00	8.050	0.6	±30
CAL5	4.814	20.00	19.833	-0.8	±30
CAL6	10.431	50.00	42.970	-14.1	±30
CAL7	18.976	100.00	78.171	-21.8	±30

Perfluoropentanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.021	0.19	0.211	12.0	±30
CAL2	0.050	0.47	0.514	9.6	±30
CAL3	0.205	1.88	2.092	11.3	±30
CAL4	0.771	7.50	7.851	4.7	±30
CAL5	1.924	18.80	19.589	4.2	±30
CAL6	4.645	46.90	47.288	0.8	±30
CAL7	9.036	93.80	91.992	-1.9	±30

Perfluoroheptanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.075	0.20	0.248	24.1	±30
CAL2	0.177	0.50	0.585	17.1	±30
CAL3	0.675	2.00	2.237	11.8	±30
CAL4	2.405	8.00	7.974	-0.3	±30
CAL5	5.928	20.00	19.655	-1.7	±30
CAL6	12.855	50.00	42.626	-14.7	±30
CAL7	23.089	100.00	76.560	-23.4	±30

Perfluorohexanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.037	0.18	0.180	-1.0	±30
CAL2	0.108	0.47	0.524	10.5	±30
CAL3	0.407	1.82	1.981	8.8	±30
CAL4	1.454	7.30	7.070	-3.2	±30
CAL5	3.840	18.20	18.679	2.6	±30
CAL6	9.281	45.60	45.142	-1.0	±30
CAL7	20.045	91.20	97.498	6.9	±30

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Instrument ID: 27631

Init. Calib. Date/Times: 12/18/2018 23:34 12/19/2018 00:28

Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

6:2 fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.098	0.19	0.243	28.1	±30
CAL2	0.228	0.47	0.568	19.9	±30
CAL3	0.869	1.90	2.164	13.9	±30
CAL4	3.369	7.58	8.386	10.6	±30
CAL5	7.423	19.00	18.478	-2.7	±30
CAL6	18.761	47.40	46.705	-1.5	±30
CAL7	35.195	94.80	87.615	-7.6	±30

Perfluoroheptanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.034	0.19	0.180	-5.5	±30
CAL2	0.102	0.48	0.540	13.5	±30
CAL3	0.417	1.90	2.208	16.2	±30
CAL4	1.452	7.61	7.680	0.9	±30
CAL5	3.683	19.00	19.481	2.5	±30
CAL6	8.968	47.60	47.444	-0.3	±30
CAL7	17.853	95.20	94.443	-0.8	±30

Perfluorooctanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.043	0.20	0.225	12.6	±30
CAL2	0.109	0.50	0.577	15.4	±30
CAL3	0.446	2.00	2.362	18.1	±30
CAL4	1.476	8.00	7.820	-2.3	±30
CAL5	3.960	20.00	20.977	4.9	±30
CAL6	9.200	50.00	48.740	-2.5	±30
CAL7	16.701	100.00	88.477	-11.5	±30

Perfluoro-octanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.044	0.19	0.191	3.4	±30
CAL2	0.108	0.46	0.471	1.8	±30
CAL3	0.480	1.85	2.101	13.6	±30
CAL4	1.587	7.40	6.950	-6.1	±30
CAL5	4.098	18.50	17.940	-3.0	±30
CAL6	10.760	46.30	47.111	1.8	±30
CAL7	21.135	92.60	92.533	-0.1	±30

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Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

Perfluorononanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.061	0.20	0.244	21.9	±30
CAL2	0.139	0.50	0.553	10.6	±30
CAL3	0.563	2.00	2.239	12.0	±30
CAL4	2.064	8.00	8.203	2.5	±30
CAL5	5.396	20.00	21.446	7.2	±30
CAL6	12.081	50.00	48.015	-4.0	±30
CAL7	21.159	100.00	84.094	-15.9	±30

Perfluorononanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.031	0.19	0.194	1.0	±30
CAL2	0.081	0.48	0.517	7.8	±30
CAL3	0.344	1.92	2.190	14.1	±30
CAL4	1.161	7.68	7.383	-3.9	±30
CAL5	2.912	19.20	18.519	-3.5	±30
CAL6	7.654	48.00	48.669	1.4	±30
CAL7	13.907	96.00	88.431	-7.9	±30

Perfluorodecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.045	0.20	0.235	17.3	±30
CAL2	0.106	0.50	0.546	9.1	±30
CAL3	0.389	2.00	2.011	0.6	±30
CAL4	1.513	8.00	7.816	-2.3	±30
CAL5	3.890	20.00	20.092	0.5	±30
CAL6	8.560	50.00	44.210	-11.6	±30
CAL7	15.748	100.00	81.331	-18.7	±30

8:2 fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.107	0.19	0.216	12.5	±30
CAL2	0.265	0.48	0.533	11.4	±30
CAL3	1.039	1.92	2.092	8.9	±30
CAL4	3.901	7.66	7.853	2.5	±30
CAL5	9.319	19.20	18.757	-2.3	±30
CAL6	20.932	47.90	42.130	-12.0	±30
CAL7	39.369	95.80	79.240	-17.3	±30

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Instrument ID: 27631

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Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

Perfluorooctanesulfonamide	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.043	0.20	0.213	6.6	±30
CAL2	0.112	0.50	0.563	12.5	±30
CAL3	0.420	2.00	2.102	5.1	±30
CAL4	1.547	8.00	7.738	-3.3	±30
CAL5	4.215	20.00	21.082	5.4	±30
CAL6	9.798	50.00	49.002	-2.0	±30
CAL7	18.434	100.00	92.193	-7.8	±30

NMeFOSAA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.030	0.20	0.187	-6.5	±30
CAL2	0.090	0.50	0.558	11.6	±30
CAL3	0.352	2.00	2.186	9.3	±30
CAL4	1.281	8.00	7.961	-0.5	±30
CAL5	3.412	20.00	21.205	6.0	±30
CAL6	7.820	50.00	48.603	-2.8	±30
CAL7	14.926	100.00	92.762	-7.2	±30

Perfluorodecanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.023	0.19	0.187	-2.9	±30
CAL2	0.062	0.48	0.509	5.6	±30
CAL3	0.260	1.93	2.136	10.7	±30
CAL4	0.979	7.70	8.036	4.4	±30
CAL5	2.286	19.30	18.770	-2.7	±30
CAL6	5.845	48.20	47.982	-0.5	±30
CAL7	11.753	96.30	96.485	0.2	±30

Perfluoroundecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.066	0.20	0.219	9.5	±30
CAL2	0.160	0.50	0.529	5.7	±30
CAL3	0.644	2.00	2.131	6.6	±30
CAL4	2.424	8.00	8.028	0.4	±30
CAL5	5.976	20.00	19.793	-1.0	±30
CAL6	12.525	50.00	41.480	-17.0	±30
CAL7	23.358	100.00	77.359	-22.6	±30

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Instrument ID: 27631

Init. Calib. Date/Times: 12/18/2018 23:34 12/19/2018 00:28

Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

NetFOSAA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.038	0.20	0.196	-2.2	±30
CAL2	0.087	0.50	0.444	-11.1	±30
CAL3	0.414	2.00	2.109	5.5	±30
CAL4	1.444	8.00	7.359	-8.0	±30
CAL5	4.220	20.00	21.510	7.5	±30
CAL6	10.081	50.00	51.380	2.8	±30
CAL7	19.170	100.00	97.702	-2.3	±30

Perfluorododecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.048	0.20	0.243	21.6	±30
CAL2	0.106	0.50	0.534	6.9	±30
CAL3	0.428	2.00	2.154	7.7	±30
CAL4	1.491	8.00	7.509	-6.1	±30
CAL5	4.022	20.00	20.259	1.3	±30
CAL6	8.676	50.00	43.704	-12.6	±30
CAL7	15.326	100.00	77.202	-22.8	±30

10:2-fluorotelomersulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.114	0.19	0.233	20.6	±30
CAL2	0.266	0.48	0.542	12.4	±30
CAL3	1.051	1.93	2.141	10.9	±30
CAL4	3.668	7.71	7.471	-3.1	±30
CAL5	9.441	19.30	19.229	-0.4	±30
CAL6	21.158	48.20	43.093	-10.6	±30
CAL7	44.110	96.40	89.839	-6.8	±30

NMePFOSAE	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.047	0.20	0.209	4.4	±30
CAL2	0.133	0.50	0.588	17.7	±30
CAL3	0.503	2.00	2.221	11.1	±30
CAL4	1.932	8.00	8.522	6.5	±30
CAL5	4.727	20.00	20.857	4.3	±30
CAL6	11.649	50.00	51.399	2.8	±30
CAL7	21.962	100.00	96.903	-3.1	±30

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Instrument ID: 27631

Init. Calib. Date/Times: 12/18/2018 23:34 12/19/2018 00:28

Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

NMePFOSA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.039	0.20	0.198	-0.9	±30
CAL2	0.115	0.50	0.582	16.5	±30
CAL3	0.430	2.00	2.170	8.5	±30
CAL4	1.537	8.00	7.758	-3.0	±30
CAL5	3.924	20.00	19.812	-0.9	±30
CAL6	9.940	50.00	50.180	0.4	±30
CAL7	18.357	100.00	92.669	-7.3	±30

Perfluorododecanesulfonate	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.012	0.19	0.184	-5.2	±30
CAL2	0.031	0.48	0.466	-3.2	±30
CAL3	0.129	1.94	1.949	0.5	±30
CAL4	0.475	7.74	7.201	-7.0	±30
CAL5	1.271	19.40	19.257	-0.7	±30
CAL6	3.318	48.40	50.267	3.9	±30
CAL7	6.312	96.80	95.631	-1.2	±30

NEtPFOSAE	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.069	0.20	0.226	12.8	±30
CAL2	0.174	0.50	0.567	13.4	±30
CAL3	0.644	2.00	2.105	5.2	±30
CAL4	2.274	8.00	7.430	-7.1	±30
CAL5	6.236	20.00	20.372	1.9	±30
CAL6	14.620	50.00	47.763	-4.5	±30
CAL7	24.864	100.00	81.230	-18.8	±30

NEtPFOSA	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.041	0.20	0.193	-3.6	±30
CAL2	0.110	0.50	0.514	2.8	±30
CAL3	0.474	2.00	2.217	10.9	±30
CAL4	1.819	8.00	8.510	6.4	±30
CAL5	4.244	20.00	19.852	-0.7	±30
CAL6	10.497	50.00	49.101	-1.8	±30
CAL7	21.446	100.00	100.313	0.3	±30

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Init. Calib. Date/Times: 12/18/2018 23:34 12/19/2018 00:28

Lab File Names: CAL1= 18DEC18DCAL-68.WIFF; CAL2= 18DEC18DCAL-69.WIFF; CAL3=  
18DEC18DCAL-70.WIFF;  
CAL4= 18DEC18DCAL-71.WIFF; CAL5= 18DEC18DCAL-72.WIFF; CAL6=  
18DEC18DCAL-73.WIFF;  
CAL7= 18DEC18DCAL-74.WIFF; CAL8= ;

Perfluorotridecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.041	0.20	0.213	6.3	±30
CAL2	0.106	0.50	0.542	8.4	±30
CAL3	0.398	2.00	2.042	2.1	±30
CAL4	1.476	8.00	7.573	-5.3	±30
CAL5	3.963	20.00	20.331	1.7	±30
CAL6	8.319	50.00	42.680	-14.6	±30
CAL7	13.839	100.00	70.998	-29.0	±30

Perfluorotetradecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.041	0.20	0.219	9.3	±30
CAL2	0.095	0.50	0.514	2.8	±30
CAL3	0.397	2.00	2.137	6.9	±30
CAL4	1.389	8.00	7.478	-6.5	±30
CAL5	3.780	20.00	20.352	1.8	±30
CAL6	8.375	50.00	45.100	-9.8	±30
CAL7	14.323	100.00	77.125	-22.9	±30

Perfluorohexadecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.022	0.20	0.237	18.6	±30
CAL2	0.048	0.50	0.525	5.0	±30
CAL3	0.208	2.00	2.289	14.4	±30
CAL4	0.766	8.00	8.406	5.1	±30
CAL5	1.926	20.00	21.151	5.8	±30
CAL6	4.379	50.00	48.092	-3.8	±30
CAL7	8.250	100.00	90.592	-9.4	±30

Perfluorooctadecanoic acid	Area Ratio	Specified Amount	Calculated Amount	% Difference	Limit
CAL1	0.014	0.20	0.206	3.0	±30
CAL2	0.035	0.50	0.508	1.6	±30
CAL3	0.154	2.00	2.220	11.0	±30
CAL4	0.566	8.00	8.139	1.7	±30
CAL5	1.447	20.00	20.791	4.0	±30
CAL6	3.399	50.00	48.836	-2.3	±30
CAL7	6.470	100.00	92.966	-7.0	±30



SDG No.: BSI24

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Init. Calib. Date/Times: 12/06/2018 23:37 12/07/2018 00:31

Lab File Names: CAL1=18DEC06DCAL-25.WIFF; CAL2=18DEC06DCAL-26.WIFF; CAL3=18DEC06DCAL-27.WIFF;  
CAL4=18DEC06DCAL-28.WIFF; CAL5=18DEC06DCAL-29.WIFF; CAL6=18DEC06DCAL-30.WIFF;  
CAL7=18DEC06DCAL-31.WIFF;

Analyte	RF							RF %RSD
	CAL1	CAL2	CAL3	CAL4	CAL5	CAL6	CAL7	
Perfluorobutanoic acid	1.098	0.864	1.025	0.908	0.935	0.889	---	9
Perfluoropentanoic acid	1.142	0.890	1.054	0.950	0.988	0.931	---	8
Perfluorobutanesulfonate	1.074	0.869	1.046	0.934	0.986	0.937	0.928	7
4:2 fluorotelomersulfonate	1.810	1.498	2.080	1.740	1.906	1.666	---	10
Perfluorohexanoic acid	1.413	1.196	1.354	1.279	1.191	1.099	---	8
Perfluoropentanesulfonate	0.557	0.443	0.517	0.455	0.491	0.476	0.462	8
Perfluoroheptanoic acid	1.855	1.543	1.663	1.546	1.489	---	---	8
Perfluorohexanesulfonate	0.972	0.820	1.018	0.981	0.941	0.975	1.024	7
6:2 fluorotelomersulfonate	1.956	2.095	2.080	1.928	1.944	1.889	---	4
Perfluoroheptanesulfonate	0.839	0.839	0.949	0.920	0.853	0.834	0.871	5
Perfluorooctanoic acid	1.084	0.875	1.037	0.964	0.996	0.947	0.876	7
Perfluoro-octanesulfonate	1.189	1.039	1.184	1.078	1.076	1.152	1.174	5
Perfluorononanoic acid	1.483	1.175	1.504	1.389	1.393	1.333	---	8
Perfluorononanesulfonate	0.761	0.593	0.831	0.757	0.755	0.760	0.730	9
Perfluorodecanoic acid	1.055	0.842	1.011	0.932	0.983	0.894	0.860	8
8:2 fluorotelomersulfonate	2.370	2.067	2.235	2.167	2.377	2.151	---	5
Perfluorooctanesulfonamide	0.984	0.811	1.075	0.978	1.010	1.007	0.931	8
NMeFOSAA	0.778	0.759	0.847	0.823	0.821	0.733	0.747	5
Perfluorodecanesulfonate	0.585	0.491	0.650	0.603	0.568	0.604	0.588	8
Perfluoroundecanoic acid	1.980	1.615	1.842	1.678	1.682	1.601	1.631	8
NEtFOSAA	1.266	0.831	1.102	1.000	0.967	0.993	---	13
Perfluorododecanoic acid	1.236	0.818	1.031	0.967	0.992	0.927	---	13
10:2-fluorotelomersulfonate	1.450	1.610	1.956	1.824	2.334	1.839	1.685	14
NMePFOSAE	1.322	1.090	1.326	1.209	1.332	1.181	1.091	8
NMePFOSA	1.080	0.882	1.056	0.997	1.008	0.948	1.007	6
Perfluorododecanesulfonate	0.325	0.274	0.330	0.305	0.308	0.315	0.314	5
NEtPFOSAE	1.601	1.613	1.743	1.593	1.605	1.468	1.468	6
NEtPFOSA	0.937	1.097	1.218	1.016	1.129	1.054	1.022	8
Perfluorotridecanoic acid	0.811	0.731	0.894	0.836	0.810	0.728	---	7
Perfluorotetradecanoic acid	0.998	0.862	1.003	0.910	0.896	0.855	---	6
Perfluorohexadecanoic acid	0.509	0.379	0.466	0.390	0.411	0.397	0.397	11
Perfluorooctadecanoic acid	0.338	0.285	0.327	0.293	0.313	0.309	0.314	5

--- Calibration point does not apply

\* = % RSD > 20

SDG No.: BSI24

Instrument ID: 27631

Init. Calib. Date/Times: 12/18/2018 23:34 12/19/2018 00:28

Lab File Names: CAL1=18DEC18DCAL-68.WIFF; CAL2=18DEC18DCAL-69.WIFF; CAL3=18DEC18DCAL-70.WIFF;  
CAL4=18DEC18DCAL-71.WIFF; CAL5=18DEC18DCAL-72.WIFF; CAL6=18DEC18DCAL-73.WIFF;  
CAL7=18DEC18DCAL-74.WIFF;

Analyte	RF							RF %RSD
	CAL1	CAL2	CAL3	CAL4	CAL5	CAL6	CAL7	
Perfluorobutanoic acid	1.035	1.039	1.019	0.912	0.943	---	---	5
Perfluoropentanoic acid	1.073	1.048	1.088	0.943	0.964	---	---	6
Perfluorobutanesulfonate	1.050	1.017	1.043	0.973	0.941	0.932	0.942	5
4:2 fluorotelomersulfonate	1.860	1.994	1.828	1.786	1.896	1.728	---	5
Perfluorohexanoic acid	1.333	1.356	1.237	1.221	1.204	---	---	5
Perfluoropentanesulfonate	0.512	0.501	0.508	0.478	0.476	0.461	0.448	5
Perfluoroheptanoic acid	1.871	1.766	1.686	1.503	1.482	---	---	9
Perfluorohexanesulfonate	0.963	1.075	1.058	0.942	0.998	0.963	---	5
6:2 fluorotelomersulfonate	2.445	2.288	2.173	2.111	1.856	1.880	---	10
Perfluoroheptanesulfonate	0.845	1.015	1.039	0.902	0.917	0.891	0.887	7
Perfluorooctanoic acid	1.063	1.089	1.115	0.923	0.990	0.920	---	8
Perfluoro-octanesulfonate	1.129	1.112	1.240	1.025	1.059	1.111	1.091	6
Perfluorononanoic acid	1.534	1.391	1.409	1.290	1.349	1.208	---	7
Perfluorononanesulfonate	0.760	0.810	0.858	0.723	0.725	0.762	---	6
Perfluorodecanoic acid	1.136	1.056	0.974	0.946	0.973	---	---	7
8:2 fluorotelomersulfonate	2.678	2.650	2.593	2.440	2.325	---	---	5
Perfluorooctanesulfonamide	1.066	1.125	1.051	0.967	1.054	0.980	---	5
NMeFOSAA	0.752	0.898	0.879	0.801	0.853	0.782	---	6
Perfluorodecanesulfonate	0.565	0.615	0.644	0.608	0.566	0.580	0.583	5
Perfluoroundecanoic acid	1.652	1.596	1.609	1.515	1.494	---	---	4
NEtFOSAA	0.959	0.872	1.035	0.902	1.055	1.008	0.958	6
Perfluorododecanoic acid	1.207	1.061	1.069	0.932	1.005	---	---	9
10:2-fluorotelomersulfonate	2.837	2.644	2.609	2.279	2.343	---	---	8
NMePFOSAE	1.183	1.333	1.259	1.207	1.182	1.165	1.098	6
NMePFOSA	0.981	1.153	1.075	0.960	0.981	0.994	---	7
Perfluorododecanesulfonate	0.299	0.305	0.317	0.294	0.313	0.328	0.312	3
NEtPFOSAE	1.727	1.736	1.611	1.421	1.559	---	---	7
NEtPFOSA	1.031	1.099	1.185	1.137	1.061	1.050	1.072	5
Perfluorotridecanoic acid	1.036	1.057	0.995	0.923	0.991	---	---	5
Perfluorotetradecanoic acid	1.015	0.955	0.992	0.868	0.945	---	---	5
Perfluorohexadecanoic acid	0.540	0.478	0.521	0.478	0.482	0.438	---	7
Perfluorooctadecanoic acid	0.358	0.354	0.386	0.354	0.362	0.340	---	4

--- Calibration point does not apply

\* = % RSD > 20

SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC06DCAL-35.WIFF

Date/Time Analyzed: 12/07/2018 01:07

Lab Sample ID: CCV1\_CAL3

Init. Calib. Date/Times: 12/06/2018 23:37

12/07/2018 00:31

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	2.00	2.26	13.01	±30
Perfluoropentanoic acid	2.00	2.34	17.18	±30
Perfluorobutanesulfonate	1.77	2.03	14.42	±30
4:2 fluorotelomersulfonate	1.87	2.07	10.81	±30
Perfluorohexanoic acid	2.00	2.42	20.92	±30
Perfluoropentanesulfonate	1.88	2.13	13.42	±30
Perfluoroheptanoic acid	2.00	2.25	12.69	±30
Perfluorohexanesulfonate	1.82	1.87	2.97	±30
6:2 fluorotelomersulfonate	1.90	1.93	1.39	±30
Perfluoroheptanesulfonate	1.90	2.05	7.79	±30
Perfluorooctanoic acid	2.00	2.44	21.81	±30
Perfluoro-octanesulfonate	1.85	1.90	2.64	±30
Perfluorononanoic acid	2.00	2.33	16.44	±30
Perfluorononanesulfonate	1.92	2.12	10.20	±30
Perfluorodecanoic acid	2.00	2.34	16.87	±30
8:2 fluorotelomersulfonate	1.92	2.15	12.06	±30
Perfluorooctanesulfonamide	2.00	2.10	4.99	±30
NMeFOSAA	2.00	2.41	20.52	±30
Perfluorodecanesulfonate	1.93	2.01	4.34	±30
Perfluoroundecanoic acid	2.00	2.37	18.57	±30
NEtFOSAA	2.00	2.28	13.96	±30
Perfluorododecanoic acid	2.00	2.29	14.51	±30
10:2-fluorotelomersulfonate	1.93	2.27	17.55	±30
NMePFOSAE	2.00	2.27	13.73	±30
NMePFOSA	2.00	2.16	8.02	±30
Perfluorododecanesulfonate	1.94	2.09	7.87	±30
NEtPFOSAE	2.00	2.29	14.59	±30
NEtPFOSA	2.00	2.15	7.52	±30
Perfluorotridecanoic acid	2.00	2.46	23.04	±30
Perfluorotetradecanoic acid	2.00	2.39	19.54	±30
Perfluorohexadecanoic acid	2.00	2.33	16.54	±30
Perfluorooctadecanoic acid	2.00	2.19	9.65	±30

SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC11D-01.WIFF

Date/Time Analyzed: 12/11/2018 04:59

Lab Sample ID: CCV1\_ISC\_CAL2

Init. Calib. Date/Times: 12/06/2018 23:37

12/07/2018 00:31

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	0.60	0.58	-3.41	±30
Perfluoropentanoic acid	0.60	0.59	-2.14	±30
Perfluorobutanesulfonate	0.53	0.52	-1.80	±30
4:2 fluorotelomersulfonate	0.56	0.54	-4.43	±30
Perfluorohexanoic acid	0.60	0.60	0.58	±30
Perfluoropentanesulfonate	0.56	0.52	-7.98	±30
Perfluoroheptanoic acid	0.60	0.55	-7.84	±30
Perfluorohexanesulfonate	0.55	0.50	-9.42	±30
6:2 fluorotelomersulfonate	0.57	0.41	-28.50	±30
Perfluoroheptanesulfonate	0.57	0.50	-13.28	±30
Perfluorooctanoic acid	0.60	0.63	4.35	±30
Perfluoro-octanesulfonate	0.56	0.46	-16.25	±30
Perfluorononanoic acid	0.60	0.54	-9.56	±30
Perfluorononanesulfonate	0.58	0.50	-12.49	±30
Perfluorodecanoic acid	0.60	0.59	-1.67	±30
8:2 fluorotelomersulfonate	0.58	0.52	-8.73	±30
Perfluorooctanesulfonamide	0.60	0.53	-11.61	±30
NMeFOSAA	0.60	0.50	-16.45	±30
Perfluorodecanesulfonate	0.58	0.49	-14.94	±30
Perfluoroundecanoic acid	0.60	0.53	-11.27	±30
NEtFOSAA	0.60	0.59	-1.97	±30
Perfluorododecanoic acid	0.60	0.59	-2.17	±30
10:2-fluorotelomersulfonate	0.58	0.40	-31.05 *	±30
NMePFOSAE	0.60	0.58	-4.13	±30
NMePFOSA	0.60	0.51	-15.50	±30
Perfluorododecanesulfonate	0.58	0.53	-8.80	±30
NEtPFOSAE	0.60	0.57	-4.92	±30
NEtPFOSA	0.60	0.52	-12.81	±30
Perfluorotridecanoic acid	0.60	0.61	2.07	±30
Perfluorotetradecanoic acid	0.60	0.56	-6.68	±30
Perfluorohexadecanoic acid	0.60	0.61	1.03	±30
Perfluorooctadecanoic acid	0.60	0.55	-8.23	±30

SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC11D-13.WIFF

Date/Time Analyzed: 12/11/2018 06:47

Lab Sample ID: CCV2\_CAL3

Init. Calib. Date/Times: 12/06/2018 23:37

12/07/2018 00:31

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	2.00	2.30	14.98	±30
Perfluoropentanoic acid	2.00	2.21	10.35	±30
Perfluorobutanesulfonate	1.77	1.92	8.43	±30
4:2 fluorotelomersulfonate	1.87	2.03	8.60	±30
Perfluorohexanoic acid	2.00	2.29	14.48	±30
Perfluoropentanesulfonate	1.88	2.12	12.80	±30
Perfluoroheptanoic acid	2.00	2.29	14.26	±30
Perfluorohexanesulfonate	1.82	1.85	1.88	±30
6:2 fluorotelomersulfonate	1.90	2.04	7.20	±30
Perfluoroheptanesulfonate	1.90	2.07	8.85	±30
Perfluorooctanoic acid	2.00	2.25	12.28	±30
Perfluoro-octanesulfonate	1.85	1.72	-6.94	±30
Perfluorononanoic acid	2.00	2.14	6.86	±30
Perfluorononanesulfonate	1.92	2.03	5.58	±30
Perfluorodecanoic acid	2.00	2.32	15.99	±30
8:2 fluorotelomersulfonate	1.92	2.31	20.30	±30
Perfluorooctanesulfonamide	2.00	2.11	5.42	±30
NMeFOSAA	2.00	2.13	6.52	±30
Perfluorodecanesulfonate	1.93	1.87	-3.15	±30
Perfluoroundecanoic acid	2.00	2.11	5.41	±30
NEtFOSAA	2.00	2.07	3.69	±30
Perfluorododecanoic acid	2.00	2.28	13.99	±30
10:2-fluorotelomersulfonate	1.93	1.89	-2.01	±30
NMePFOSAE	2.00	2.26	12.86	±30
NMePFOSA	2.00	2.19	9.55	±30
Perfluorododecanesulfonate	1.94	1.98	1.92	±30
NEtPFOSAE	2.00	2.36	17.75	±30
NEtPFOSA	2.00	2.20	9.88	±30
Perfluorotridecanoic acid	2.00	2.36	17.89	±30
Perfluorotetradecanoic acid	2.00	2.25	12.50	±30
Perfluorohexadecanoic acid	2.00	2.33	16.29	±30
Perfluorooctadecanoic acid	2.00	2.12	5.81	±30

SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC11D-25.WIFF

Date/Time Analyzed: 12/11/2018 08:35

Lab Sample ID: CCV3\_CAL4

Init. Calib. Date/Times: 12/06/2018 23:37

12/07/2018 00:31

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	8.00	8.14	1.77	±30
Perfluoropentanoic acid	8.00	7.91	-1.12	±30
Perfluorobutanesulfonate	7.08	7.14	0.80	±30
4:2 fluorotelomersulfonate	7.47	7.79	4.27	±30
Perfluorohexanoic acid	8.00	8.41	5.13	±30
Perfluoropentanesulfonate	7.50	7.58	1.06	±30
Perfluoroheptanoic acid	8.00	8.30	3.73	±30
Perfluorohexanesulfonate	7.30	6.89	-5.61	±30
6:2 fluorotelomersulfonate	7.58	7.85	3.50	±30
Perfluoroheptanesulfonate	7.61	8.05	5.82	±30
Perfluorooctanoic acid	8.00	8.46	5.79	±30
Perfluoro-octanesulfonate	7.40	6.50	-12.18	±30
Perfluorononanoic acid	8.00	7.37	-7.86	±30
Perfluorononanesulfonate	7.68	7.24	-5.69	±30
Perfluorodecanoic acid	8.00	8.17	2.07	±30
8:2 fluorotelomersulfonate	7.66	7.87	2.73	±30
Perfluorooctanesulfonamide	8.00	8.01	0.17	±30
NMeFOSAA	8.00	8.26	3.29	±30
Perfluorodecanesulfonate	7.70	7.28	-5.51	±30
Perfluoroundecanoic acid	8.00	8.24	3.03	±30
NEtFOSAA	8.00	8.42	5.26	±30
Perfluorododecanoic acid	8.00	8.04	0.47	±30
10:2-fluorotelomersulfonate	7.71	8.01	3.91	±30
NMePFOSAE	8.00	7.98	-0.26	±30
NMePFOSA	8.00	7.87	-1.66	±30
Perfluorododecanesulfonate	7.74	6.99	-9.72	±30
NEtPFOSAE	8.00	8.44	5.53	±30
NEtPFOSA	8.00	7.66	-4.22	±30
Perfluorotridecanoic acid	8.00	8.66	8.27	±30
Perfluorotetradecanoic acid	8.00	8.18	2.30	±30
Perfluorohexadecanoic acid	8.00	8.01	0.09	±30
Perfluorooctadecanoic acid	8.00	7.50	-6.26	±30

SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC18DCAL-78.WIFF

Date/Time Analyzed: 12/19/2018 01:05

Lab Sample ID: CCV1\_CAL3

Init. Calib. Date/Times: 12/18/2018 23:34

12/19/2018 00:28

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	2.00	2.19	9.38	±30
Perfluoropentanoic acid	2.00	2.17	8.68	±30
Perfluorobutanesulfonate	1.77	2.00	12.99	±30
4:2 fluorotelomersulfonate	1.87	2.15	14.96	±30
Perfluorohexanoic acid	2.00	2.27	13.66	±30
Perfluoropentanesulfonate	1.88	2.10	11.47	±30
Perfluoroheptanoic acid	2.00	2.30	15.10	±30
Perfluorohexanesulfonate	1.82	1.92	5.45	±30
6:2 fluorotelomersulfonate	1.90	2.20	15.95	±30
Perfluoroheptanesulfonate	1.90	2.05	8.03	±30
Perfluorooctanoic acid	2.00	2.22	11.16	±30
Perfluoro-octanesulfonate	1.85	1.98	6.85	±30
Perfluorononanoic acid	2.00	2.55	27.45	±30
Perfluorononanesulfonate	1.92	2.02	4.96	±30
Perfluorodecanoic acid	2.00	2.16	8.09	±30
8:2 fluorotelomersulfonate	1.92	2.18	13.60	±30
Perfluorooctanesulfonamide	2.00	1.97	-1.29	±30
NMeFOSAA	2.00	2.23	11.47	±30
Perfluorodecanesulfonate	1.93	2.08	7.52	±30
Perfluoroundecanoic acid	2.00	2.19	9.51	±30
NEtFOSAA	2.00	2.13	6.52	±30
Perfluorododecanoic acid	2.00	2.35	17.48	±30
10:2-fluorotelomersulfonate	1.93	2.23	15.48	±30
NMePFOSAE	2.00	2.19	9.71	±30
NMePFOSA	2.00	2.25	12.54	±30
Perfluorododecanesulfonate	1.94	2.10	8.27	±30
NEtPFOSAE	2.00	2.12	5.79	±30
NEtPFOSA	2.00	2.21	10.47	±30
Perfluorotridecanoic acid	2.00	2.21	10.52	±30
Perfluorotetradecanoic acid	2.00	2.16	7.76	±30
Perfluorohexadecanoic acid	2.00	2.25	12.66	±30
Perfluorooctadecanoic acid	2.00	2.22	10.89	±30

SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC19D-05.WIFF

Date/Time Analyzed: 12/19/2018 10:43

Lab Sample ID: CCV1\_ISC\_CAL2

Init. Calib. Date/Times: 12/18/2018 23:34

12/19/2018 00:28

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	0.50	0.55	10.64	±30
Perfluoropentanoic acid	0.50	0.59	17.42	±30
Perfluorobutanesulfonate	0.44	0.48	9.09	±30
4:2 fluorotelomersulfonate	0.47	0.50	7.19	±30
Perfluorohexanoic acid	0.50	0.58	16.10	±30
Perfluoropentanesulfonate	0.47	0.49	5.23	±30
Perfluoroheptanoic acid	0.50	0.57	13.84	±30
Perfluorohexanesulfonate	0.46	0.49	7.15	±30
6:2 fluorotelomersulfonate	0.47	0.60	26.57	±30
Perfluoroheptanesulfonate	0.48	0.52	8.98	±30
Perfluorooctanoic acid	0.50	0.57	14.87	±30
Perfluoro-octanesulfonate	0.46	0.52	12.22	±30
Perfluorononanoic acid	0.50	0.57	13.21	±30
Perfluorononanesulfonate	0.48	0.50	4.09	±30
Perfluorodecanoic acid	0.50	0.53	5.82	±30
8:2 fluorotelomersulfonate	0.48	0.56	16.52	±30
Perfluorooctanesulfonamide	0.50	0.54	8.45	±30
NMeFOSAA	0.50	0.53	5.90	±30
Perfluorodecanesulfonate	0.48	0.52	8.18	±30
Perfluoroundecanoic acid	0.50	0.53	6.67	±30
NEtFOSAA	0.50	0.50	0.08	±30
Perfluorododecanoic acid	0.50	0.50	0.44	±30
10:2-fluorotelomersulfonate	0.48	0.49	1.48	±30
NMePFOSAE	0.50	0.55	10.26	±30
NMePFOSA	0.50	0.57	14.83	±30
Perfluorododecanesulfonate	0.48	0.44	-9.27	±30
NEtPFOSAE	0.50	0.51	1.63	±30
NEtPFOSA	0.50	0.57	13.73	±30
Perfluorotridecanoic acid	0.50	0.54	7.01	±30
Perfluorotetradecanoic acid	0.50	0.54	7.23	±30
Perfluorohexadecanoic acid	0.50	0.57	14.19	±30
Perfluorooctadecanoic acid	0.50	0.56	11.66	±30



SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC19D-17.WIFF

Date/Time Analyzed: 12/19/2018 12:32

Lab Sample ID: CCV2\_CAL3

Init. Calib. Date/Times: 12/18/2018 23:34

12/19/2018 00:28

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	2.00	2.16	7.82	±30
Perfluoropentanoic acid	2.00	2.16	8.25	±30
Perfluorobutanesulfonate	1.77	1.98	11.86	±30
4:2 fluorotelomersulfonate	1.87	2.03	8.36	±30
Perfluorohexanoic acid	2.00	2.29	14.44	±30
Perfluoropentanesulfonate	1.88	2.03	8.07	±30
Perfluoroheptanoic acid	2.00	2.42	21.13	±30
Perfluorohexanesulfonate	1.82	1.86	2.35	±30
6:2 fluorotelomersulfonate	1.90	2.33	22.68	±30
Perfluoroheptanesulfonate	1.90	2.03	6.60	±30
Perfluorooctanoic acid	2.00	2.23	11.41	±30
Perfluoro-octanesulfonate	1.85	1.87	1.02	±30
Perfluorononanoic acid	2.00	2.40	19.85	±30
Perfluorononanesulfonate	1.92	1.92	-0.12	±30
Perfluorodecanoic acid	2.00	2.19	9.68	±30
8:2 fluorotelomersulfonate	1.92	1.90	-0.93	±30
Perfluorooctanesulfonamide	2.00	2.09	4.26	±30
NMeFOSAA	2.00	2.19	9.42	±30
Perfluorodecanesulfonate	1.93	2.04	5.58	±30
Perfluoroundecanoic acid	2.00	2.17	8.75	±30
NEtFOSAA	2.00	2.14	7.03	±30
Perfluorododecanoic acid	2.00	2.32	15.95	±30
10:2-fluorotelomersulfonate	1.93	1.81	-6.28	±30
NMePFOSAE	2.00	2.61	30.56 *	±30
NMePFOSA	2.00	2.16	7.82	±30
Perfluorododecanesulfonate	1.94	1.93	-0.41	±30
NEtPFOSAE	2.00	2.08	3.86	±30
NEtPFOSA	2.00	2.39	19.31	±30
Perfluorotridecanoic acid	2.00	2.11	5.58	±30
Perfluorotetradecanoic acid	2.00	2.15	7.66	±30
Perfluorohexadecanoic acid	2.00	2.14	7.02	±30
Perfluorooctadecanoic acid	2.00	2.17	8.27	±30

SDG No.: BSI24

Instrument ID: 27631

Lab File ID: 18DEC19D-29.WIFF

Date/Time Analyzed: 12/19/2018 14:20

Lab Sample ID: CCV3\_CAL4

Init. Calib. Date/Times: 12/18/2018 23:34

12/19/2018 00:28

Analytes	Specified Amount	Calculated Amount	% Difference	Limit
Perfluorobutanoic acid	8.00	7.82	-2.29	±30
Perfluoropentanoic acid	8.00	7.83	-2.13	±30
Perfluorobutanesulfonate	7.08	7.08	-0.05	±30
4:2 fluorotelomersulfonate	7.47	7.30	-2.33	±30
Perfluorohexanoic acid	8.00	7.51	-6.08	±30
Perfluoropentanesulfonate	7.50	7.43	-0.99	±30
Perfluoroheptanoic acid	8.00	8.13	1.58	±30
Perfluorohexanesulfonate	7.30	6.77	-7.25	±30
6:2 fluorotelomersulfonate	7.58	7.18	-5.26	±30
Perfluoroheptanesulfonate	7.61	7.28	-4.29	±30
Perfluorooctanoic acid	8.00	7.90	-1.19	±30
Perfluoro-octanesulfonate	7.40	6.98	-5.62	±30
Perfluorononanoic acid	8.00	8.82	10.30	±30
Perfluorononanesulfonate	7.68	7.35	-4.25	±30
Perfluorodecanoic acid	8.00	7.59	-5.08	±30
8:2 fluorotelomersulfonate	7.66	7.92	3.34	±30
Perfluorooctanesulfonamide	8.00	7.51	-6.17	±30
NMeFOSAA	8.00	8.50	6.24	±30
Perfluorodecanesulfonate	7.70	8.04	4.37	±30
Perfluoroundecanoic acid	8.00	8.06	0.69	±30
NEtFOSAA	8.00	7.37	-7.93	±30
Perfluorododecanoic acid	8.00	8.10	1.29	±30
10:2-fluorotelomersulfonate	7.71	7.78	0.95	±30
NMePFOSAE	8.00	8.58	7.30	±30
NMePFOSA	8.00	7.88	-1.49	±30
Perfluorododecanesulfonate	7.74	7.37	-4.75	±30
NEtPFOSAE	8.00	7.47	-6.58	±30
NEtPFOSA	8.00	7.50	-6.19	±30
Perfluorotridecanoic acid	8.00	7.25	-9.33	±30
Perfluorotetradecanoic acid	8.00	7.66	-4.28	±30
Perfluorohexadecanoic acid	8.00	7.91	-1.06	±30
Perfluorooctadecanoic acid	8.00	7.88	-1.56	±30



SDG No.: BSI24  
Matrix: WATER

Batch: 18343003		13C2-PFDA	13C2-PFOA	13C3-PFBA	13C4-PFOS
File Name:18DEC11D-01.WIFF		Area	Area	Area	Area
<b>CAL3 Area/ CCV Area</b>		419041	500971	953492	310746
<b>LOWER LIMIT</b>		209521	250486	476746	155373
<b>UPPER LIMIT</b>		628562	751457	1430238	466119
<b>LAB SAMPLE ID</b>	<b>DATE ANALYZED</b>				
BLK343003	12/11/18 05:17	391317	508879	947090	289677
LCS343003	12/11/18 05:26	392473	502207	921292	283243
LCSDA	12/11/18 05:35	397883	470006	931347	291752
9927673	12/11/18 05:53	399927	503729	958125	300763
9927674	12/11/18 06:02	404533	541897	951736	307822
9927675	12/11/18 06:11	402579	494658	924584	309316
9927676	12/11/18 06:20	419282	520014	776612	286922
9927677	12/11/18 06:29	401288	527259	839883	286981
9927678	12/11/18 06:38	405421	504125	896385	288688
9927679	12/11/18 06:56	399040	493598	935764	302386
9927680	12/11/18 07:05	396051	526229	942680	298546

AREA: Upper limit: 150% of the internal standard area.  
Lower Limit: 50% of the internal standard area.

\* Outside QC Limits



SDG No.: BSI24  
Matrix: WATER

Batch: 18348012		13C2-PFDA	13C2-PFOA	13C3-PFBA	13C4-PFOS
File Name:18DEC19D-05.WIFF		Area	Area	Area	Area
<b>CAL3 Area/ CCV Area</b>		487375	520268	942676	307969
<b>LOWER LIMIT</b>		243688	260134	471338	153985
<b>UPPER LIMIT</b>		731063	780402	1414014	461954
<b>LAB SAMPLE ID</b>	<b>DATE ANALYZED</b>				
BLK348012	12/19/18 13:26	485985	493650	941733	300947
LCS348012	12/19/18 13:35	502428	525286	974508	316213
LCSDA	12/19/18 13:44	487604	505247	960260	303367
9927672	12/19/18 13:53	496384	543702	958417	304946

AREA: Upper limit: 150% of the internal standard area.  
Lower Limit: 50% of the internal standard area.

\* Outside QC Limits

**Sample Data**

**PFAS by LC/MS/MS**

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 10:04:26 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927672	Data File:	18DEC19D-26.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18348012 OU1-YEP-3-01 Grab Groundwater	Acquis Date:	2018-12-19T13:53:11
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	77	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18348012
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	18348012	Operator:	MM26157
Sample Wt.:	0.29085	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	958417.2	942675.8	2	50	
13C2-PFOA	5.0	543702.5	520268.5	5	50	
13C4-PFOS	4.8	304946.2	307968.9	-1	50	
13C2-PFDA	5.0	496384.3	487375.3	2	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	404539.1	13C3-PFBA	958417.2	0.422	15.988	14.131	88	50-150	
E13C5-PFHxA	689539.8	13C2-PFOA	543702.5	1.268	17.191	15.597	91	50-150	
E13C3-PFHxS	332025.6	13C2-PFOA	543702.5	0.611	16.263	15.888	98	50-150	
E13C4-PFHpA	544429.7	13C2-PFOA	543702.5	1.001	17.191	14.871	87	50-150	
E13C8-PFOA	949600.5	13C2-PFOA	543702.5	1.747	17.191	16.512	96	50-150	
E13C8-PFOS	310445.5	13C4-PFOS	304946.2	1.018	16.435	15.653	95	50-150	
E13C9-PFNA	646903.0	13C4-PFOS	304946.2	2.121	17.191	16.593	97	50-150	
E13C6-PFDA	812118.8	13C2-PFDA	496384.3	1.636	17.191	16.023	93	50-150	
Ed3-NMeFOSAA	205249.0	13C2-PFDA	496384.3	0.413	17.191	15.641	91	50-150	
E13C7-PFUnDA	520503.7	13C2-PFDA	496384.3	1.049	17.191	15.091	88	50-150	
Ed5-NEtFOSAA	141012.0	13C2-PFDA	496384.3	0.284	17.191	14.389	84	50-150	
E13C2-PFDoDA	1038747.3	13C2-PFDA	496384.3	2.093	17.191	15.137	88	50-150	
E13C2-PFTeDA	656896.8	13C2-PFDA	496384.3	1.323	17.191	12.822	75	50-150	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 10:04:26 AM  
Acquisition Method: 18AUG13\_3uL.dam

Analyte Quantitation Peak Table

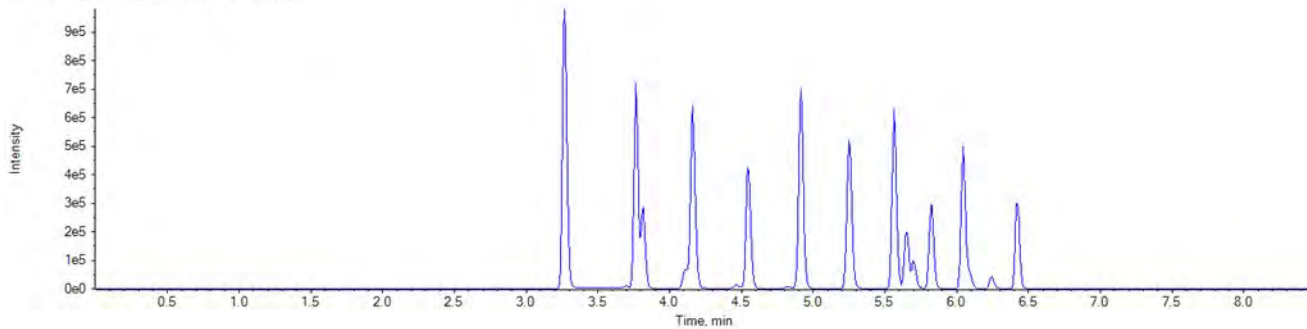
Sample Name: 9927672 Instrument Name: LM27631 File Name: 18DEC19D-26.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.29085	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	3.81	1.000	119520.6		A	13C3-PFBS	3.82	404539.1	0.295	5.015
PFHxA	4.16	1.000	658033.3		A	13C5-PFHxA	4.16	689539.8	0.954	13.517
PFHpA	4.55	1.000	71237.5		A	13C4-PFHpA	4.55	544429.7	0.131	1.492
PFHxS	4.55	1.000	46998.1		M	13C3-PFHxS	4.55	332025.6	0.142	2.367
PFOA	4.91	1.000	42299.9		M	13C8-PFOA	4.91	949600.5	0.045	0.811
PFOS	5.25	1.000	5500.2		M	13C8-PFOS	5.24	310445.5	0.018	0.267
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	646903.0	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.56	812118.8	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.70	205249.0	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.82	520503.7	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.83	141012.0	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.05	1038747.3	N/A	
PFTTrDA	N/A	N/A	N/A		A	13C2-PFTTrDA	6.05	1038747.3	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	656896.8	N/A	

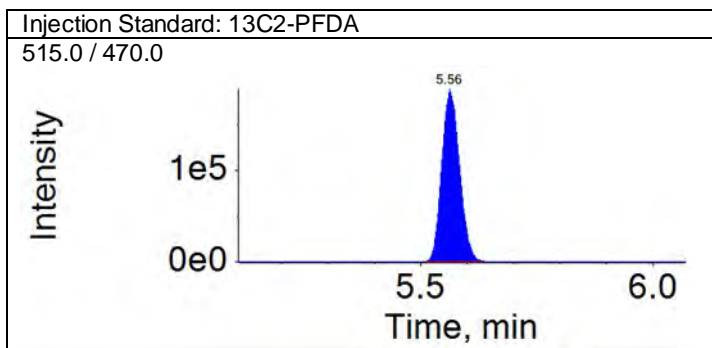
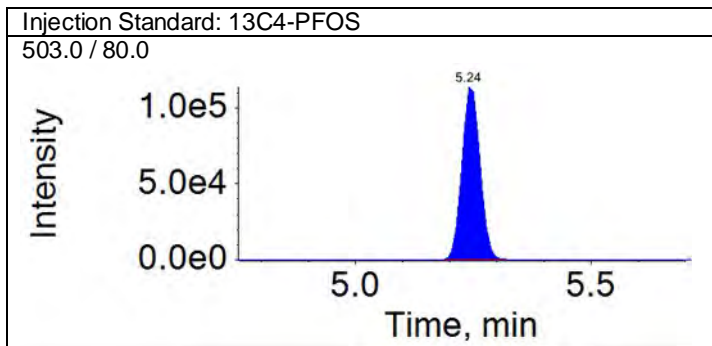
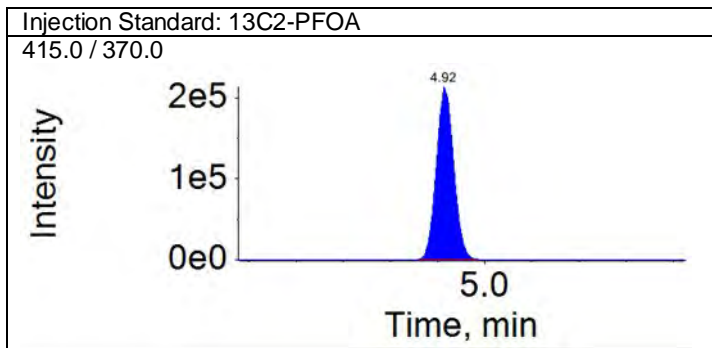
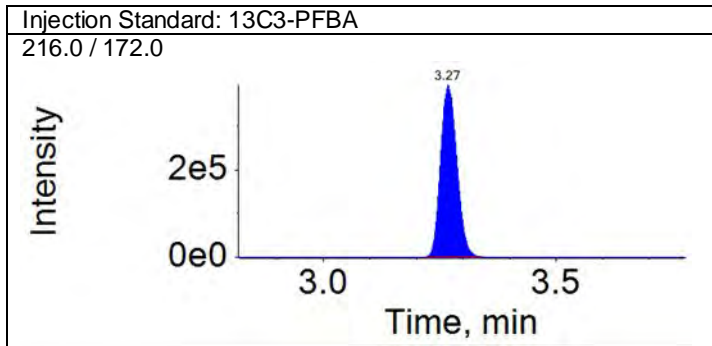
Total Ion Chromatogram

TIC from 18DEC19D-26.wiff (sample 1) - 9927672



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

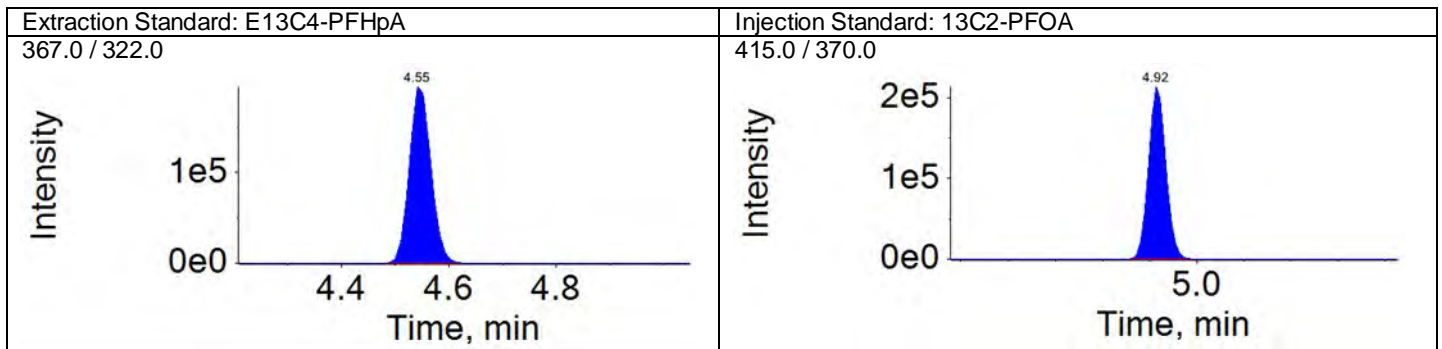
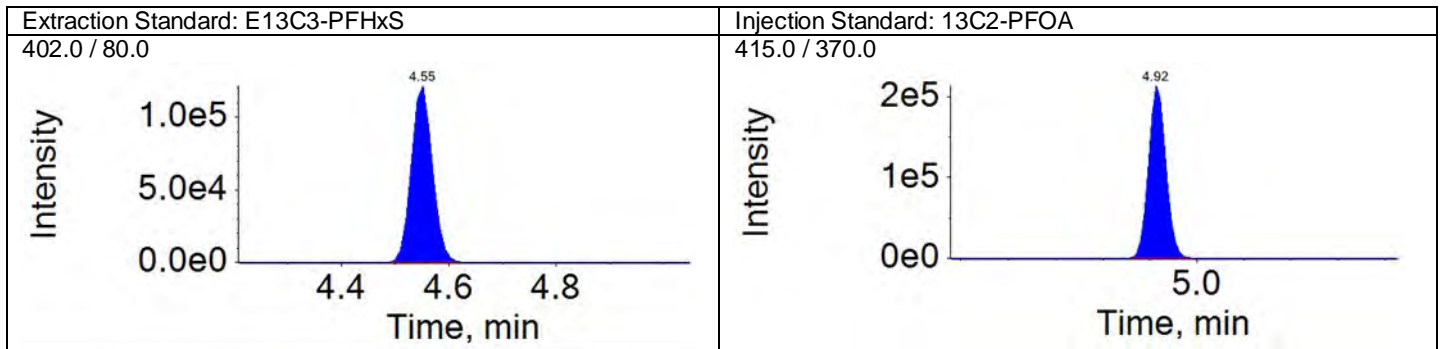
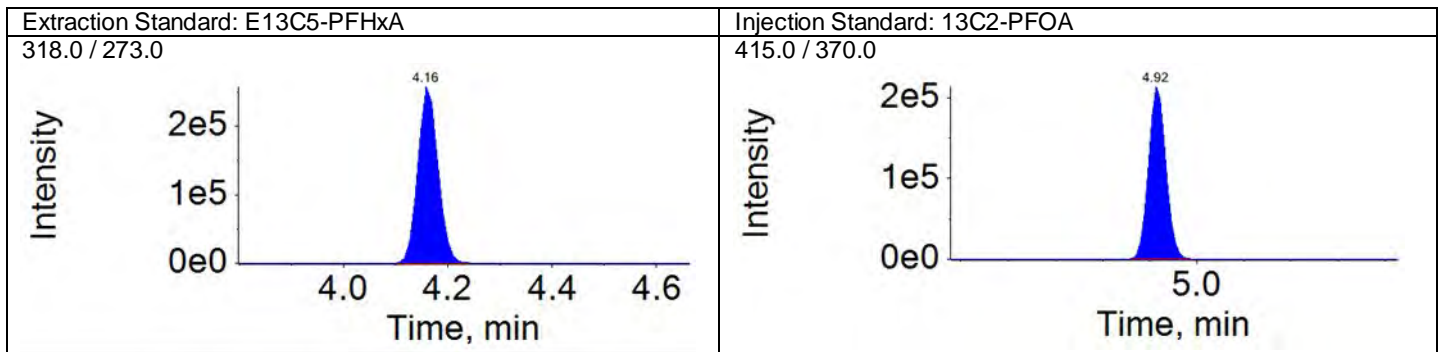
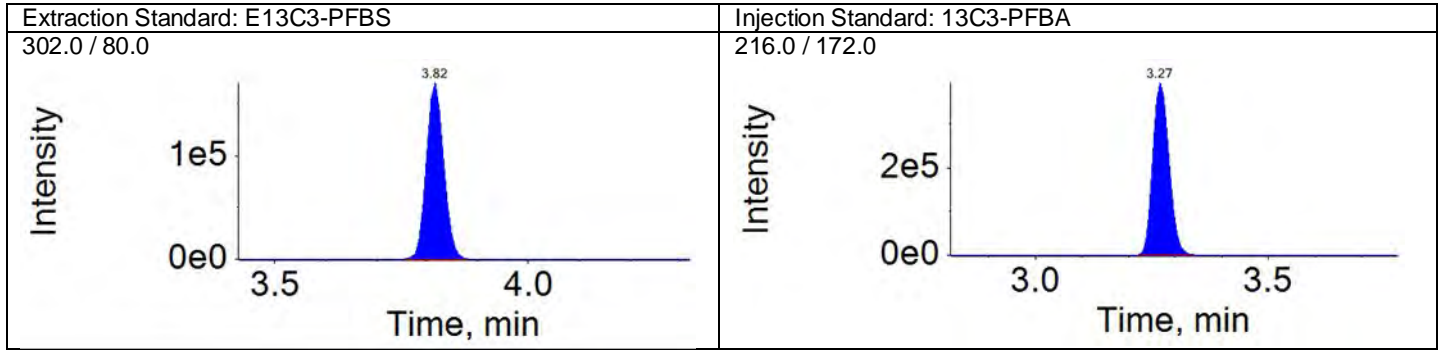
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Acquisition Method: 18AUG13\_3uL.dam





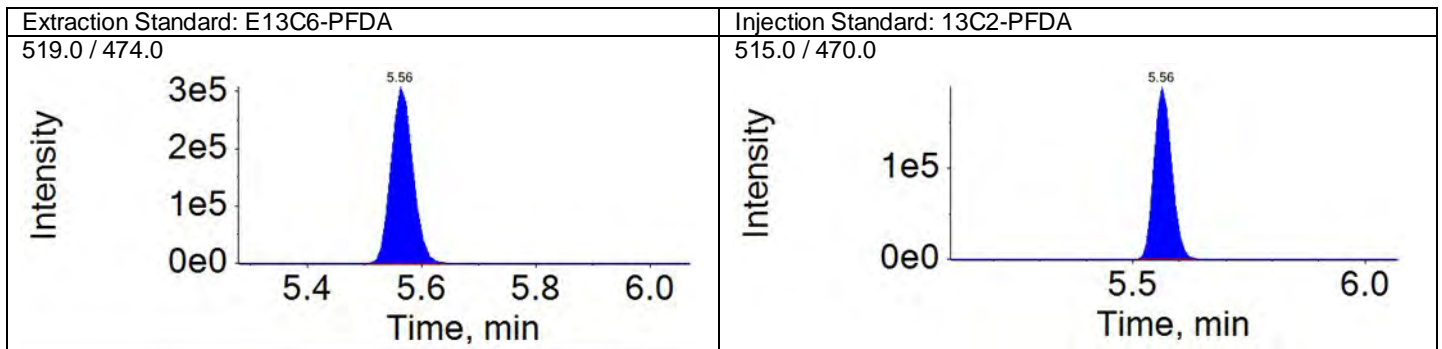
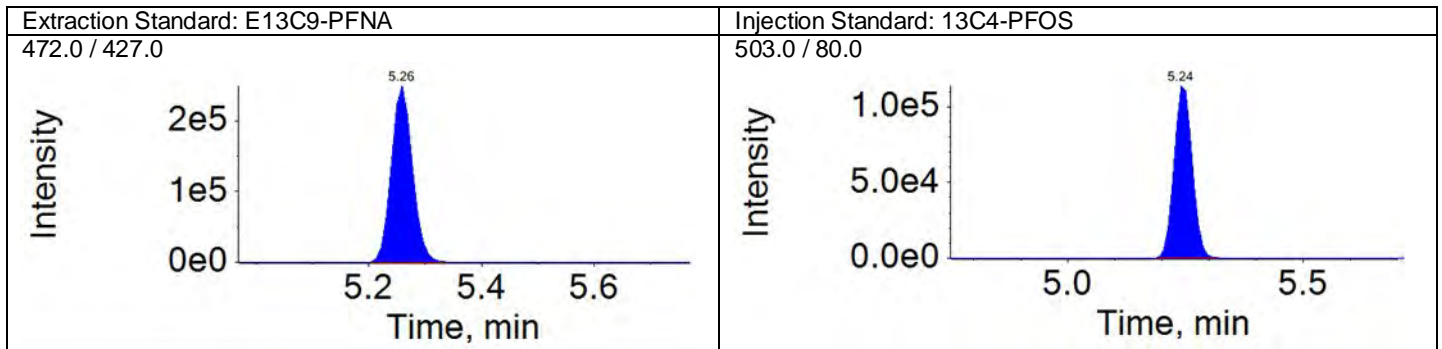
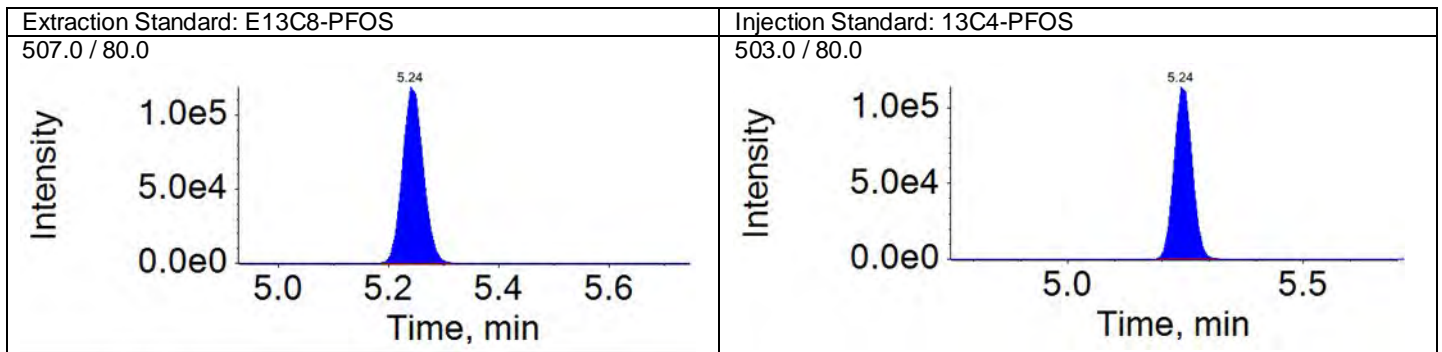
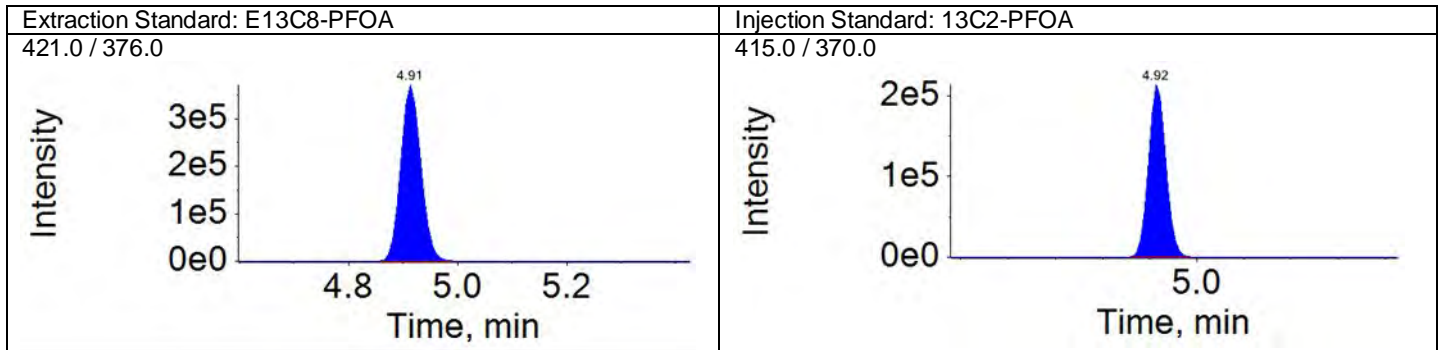
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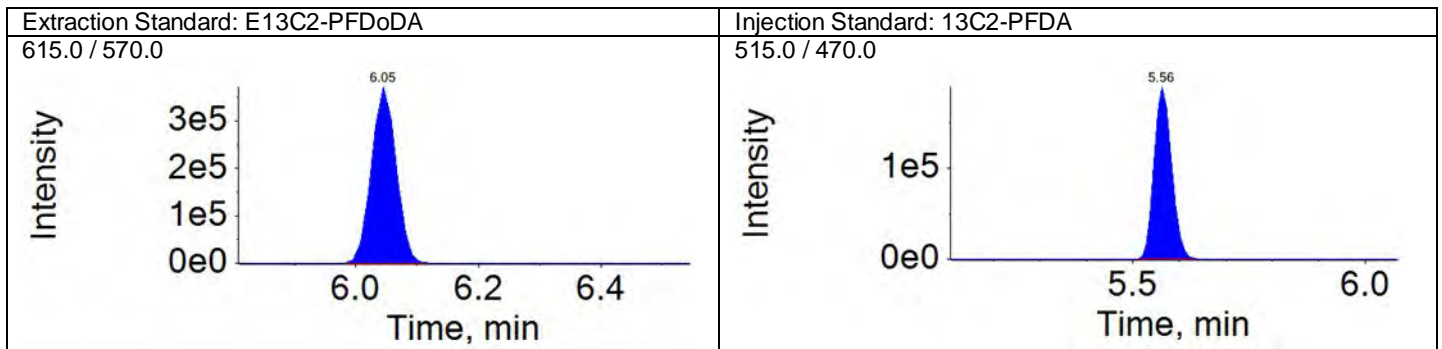
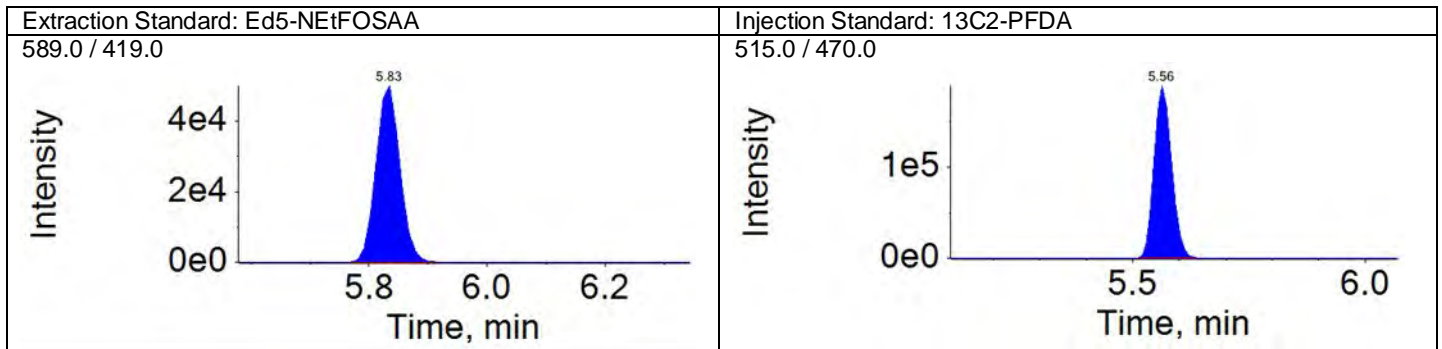
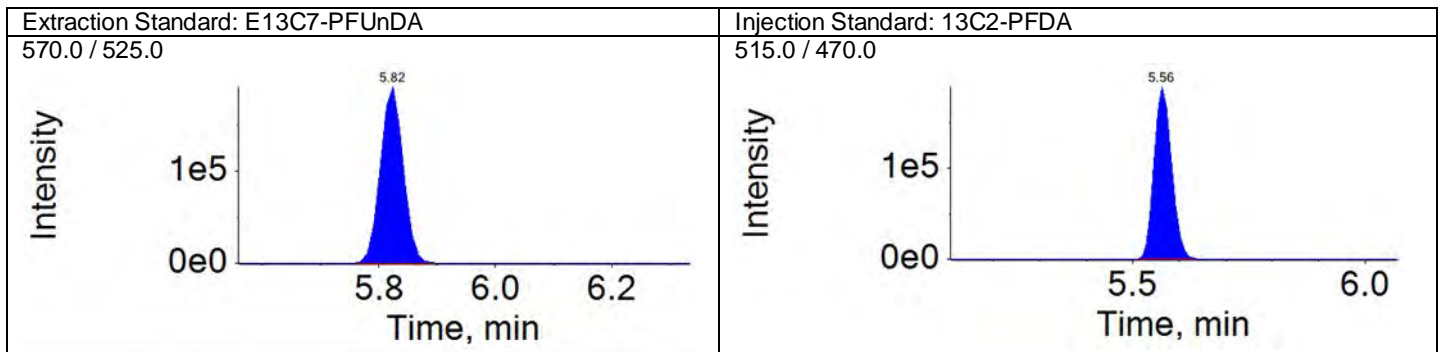
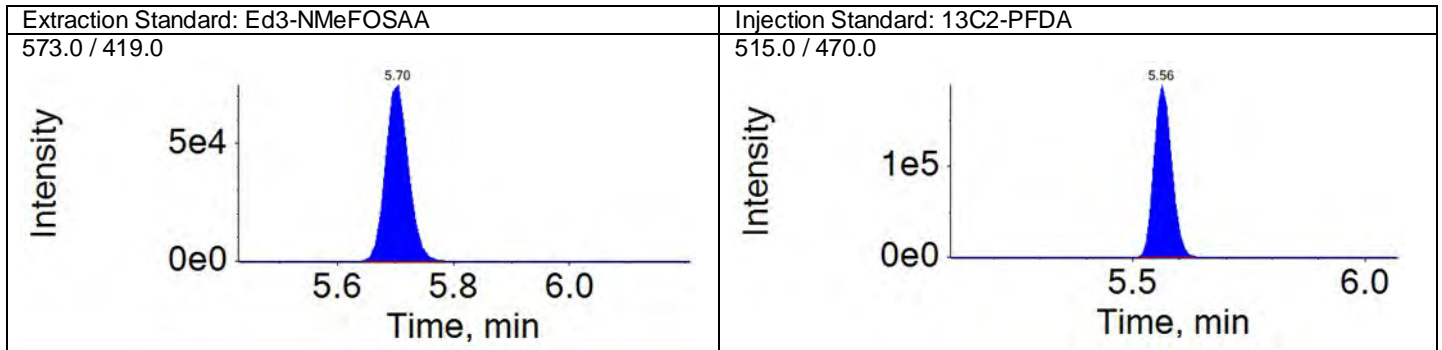
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Result Table: 18348012 12/20/2018 10:04:26 AM  
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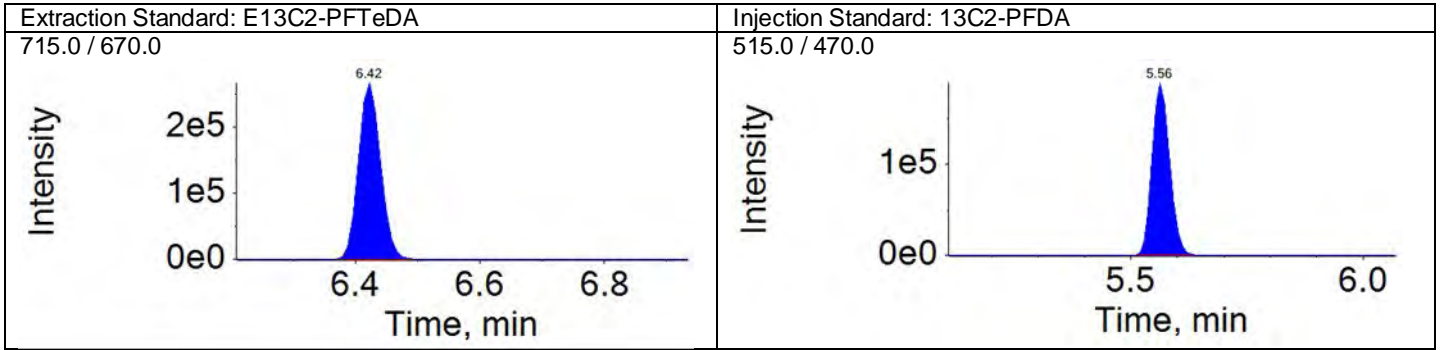
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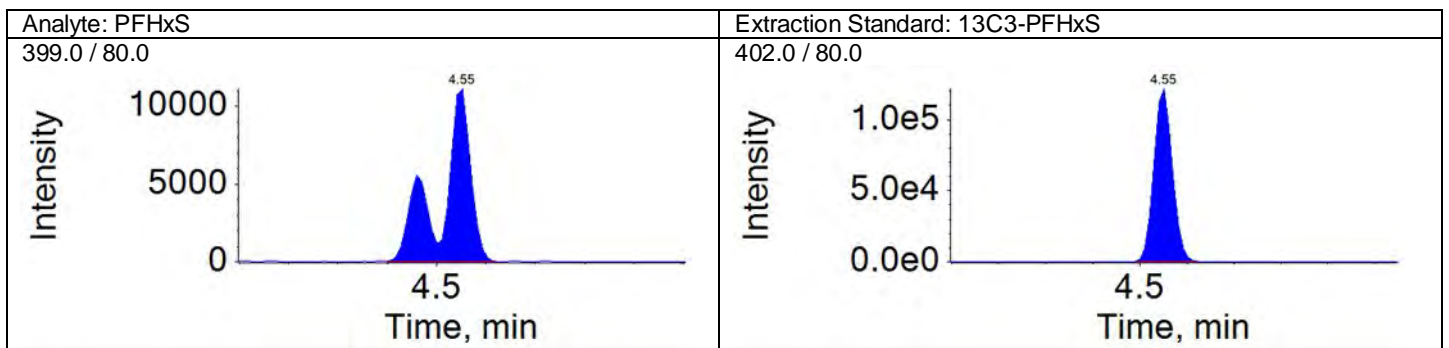
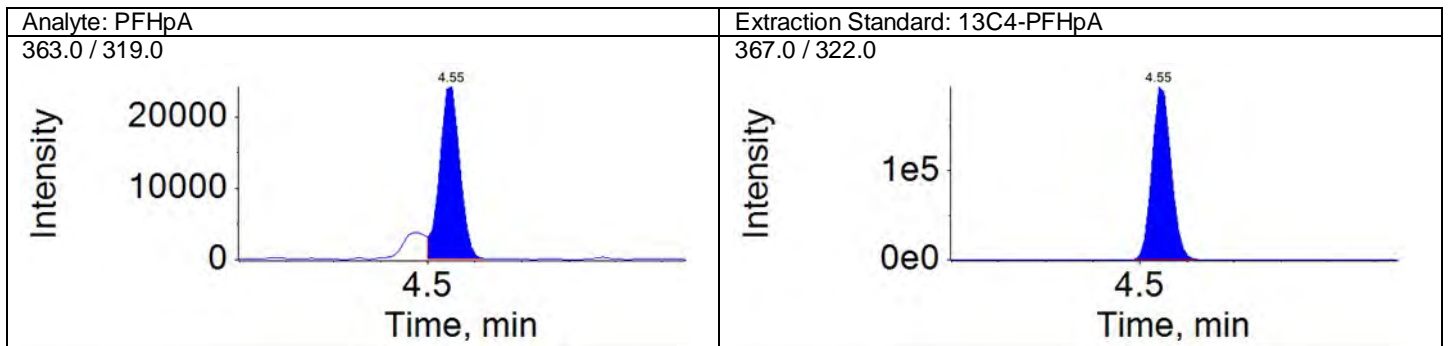
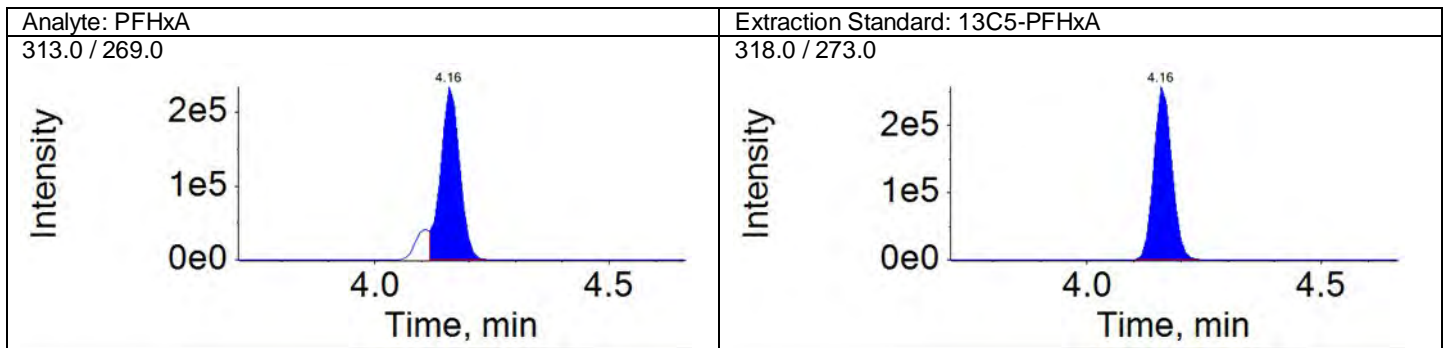
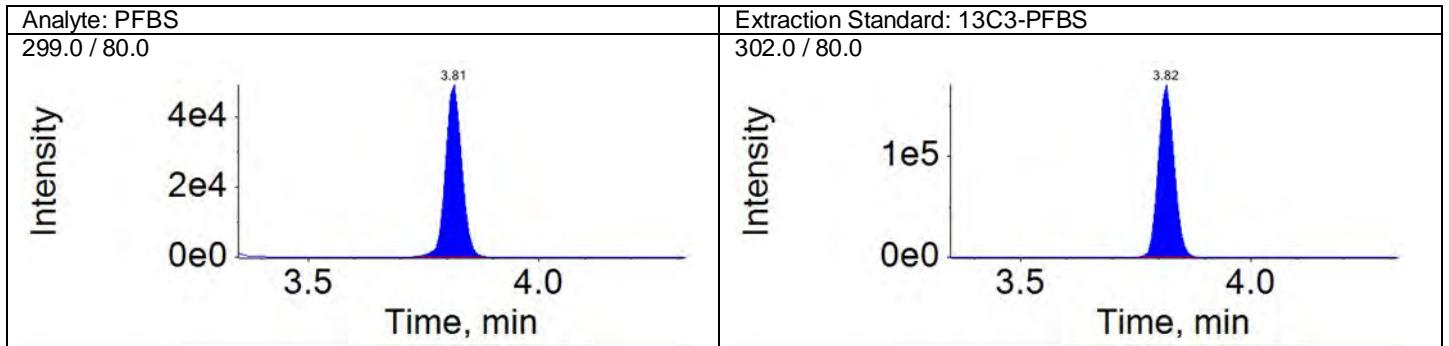
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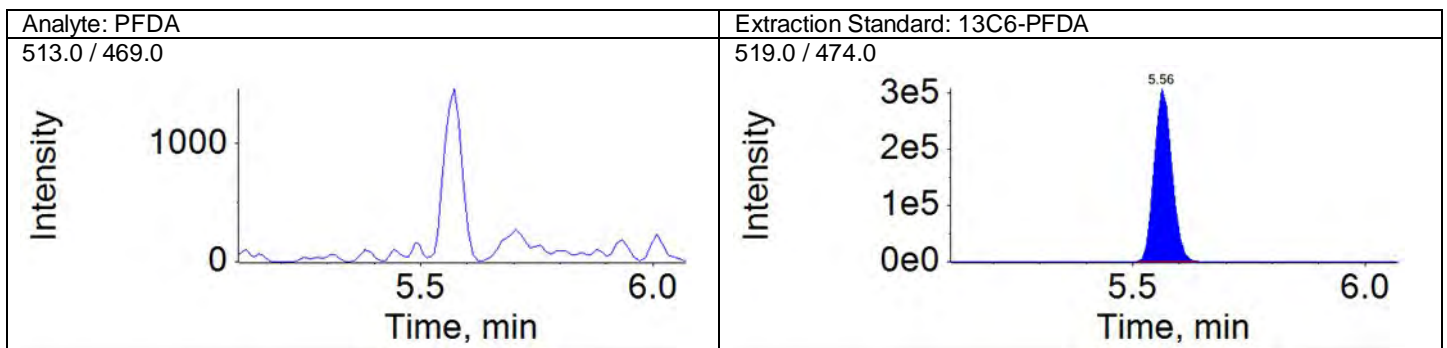
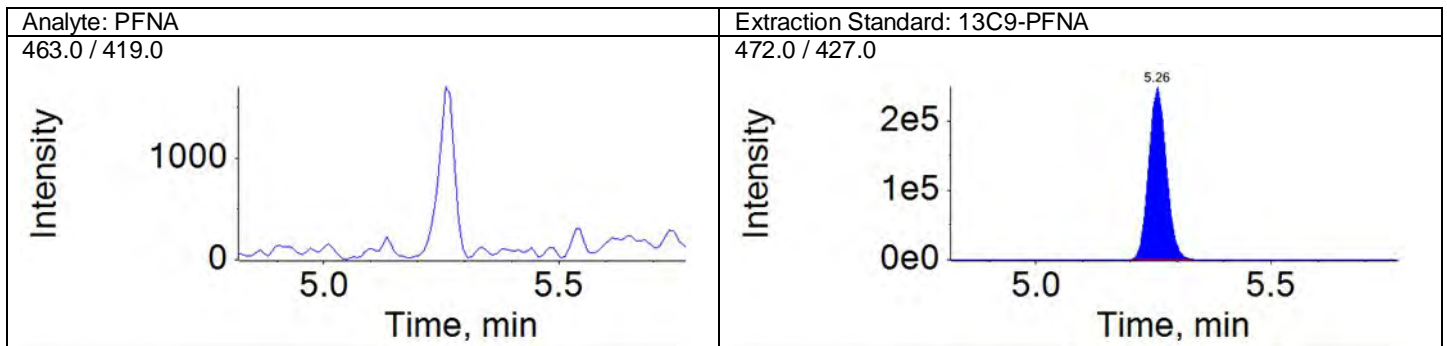
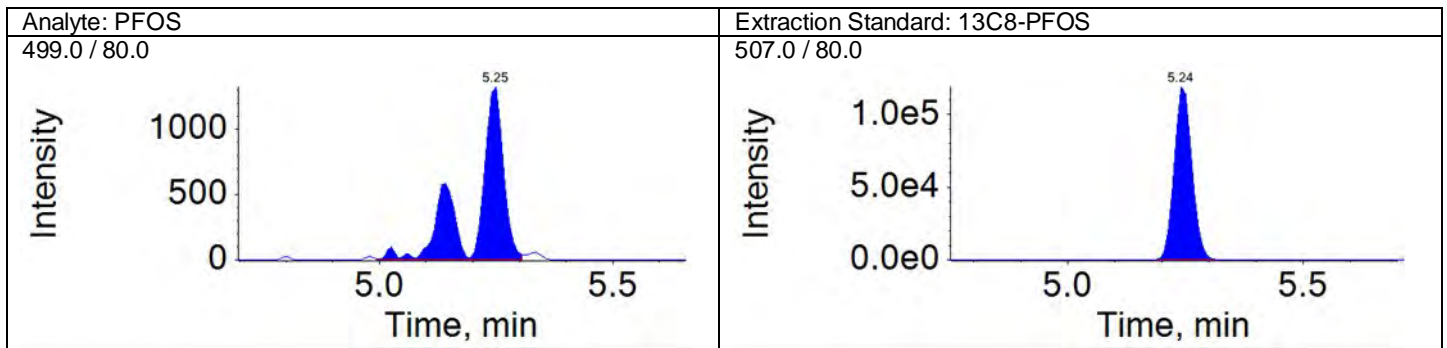
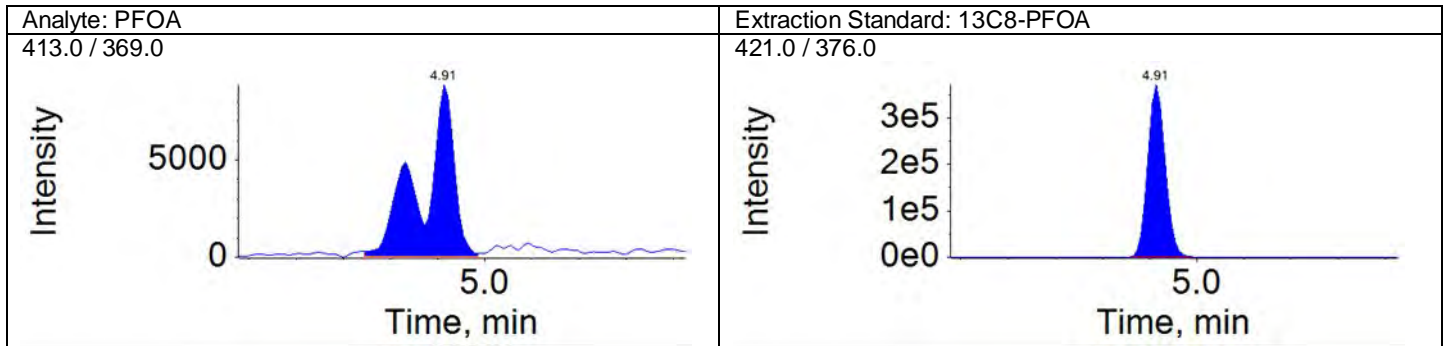
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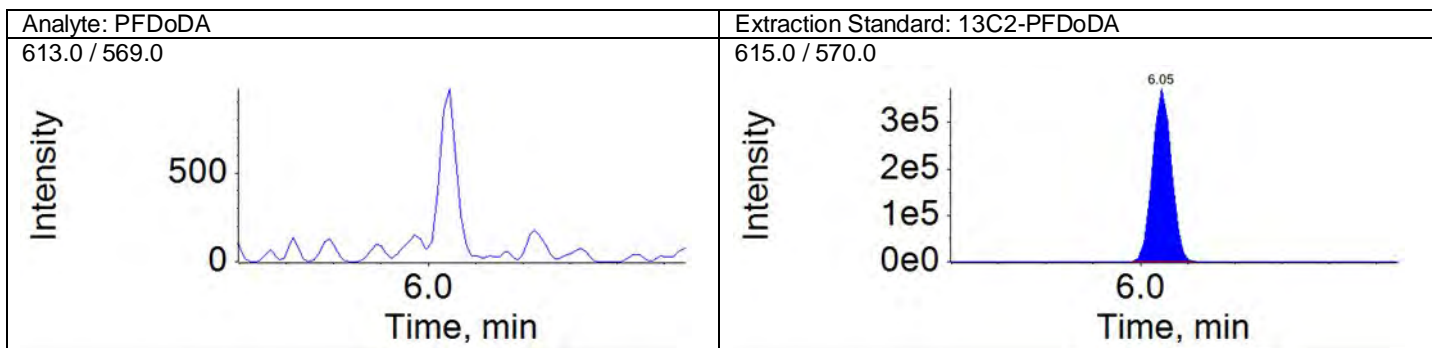
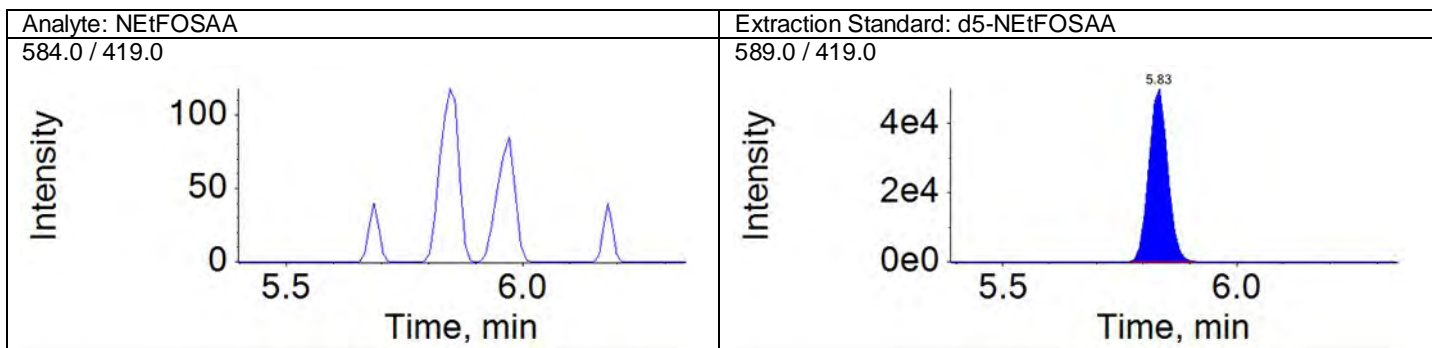
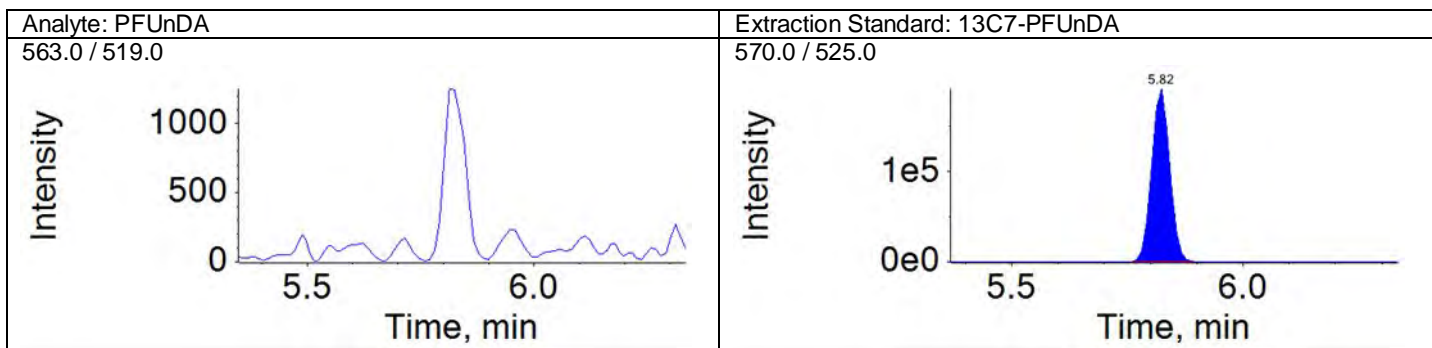
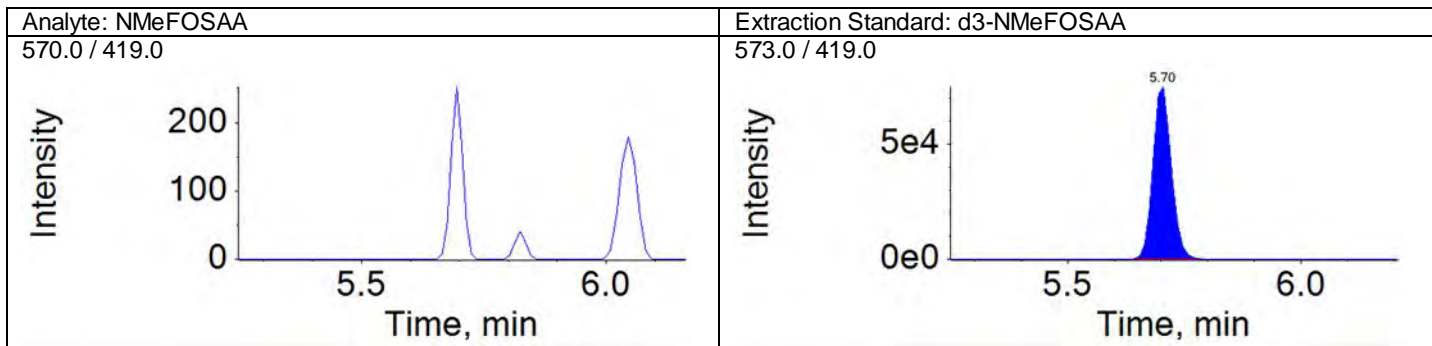
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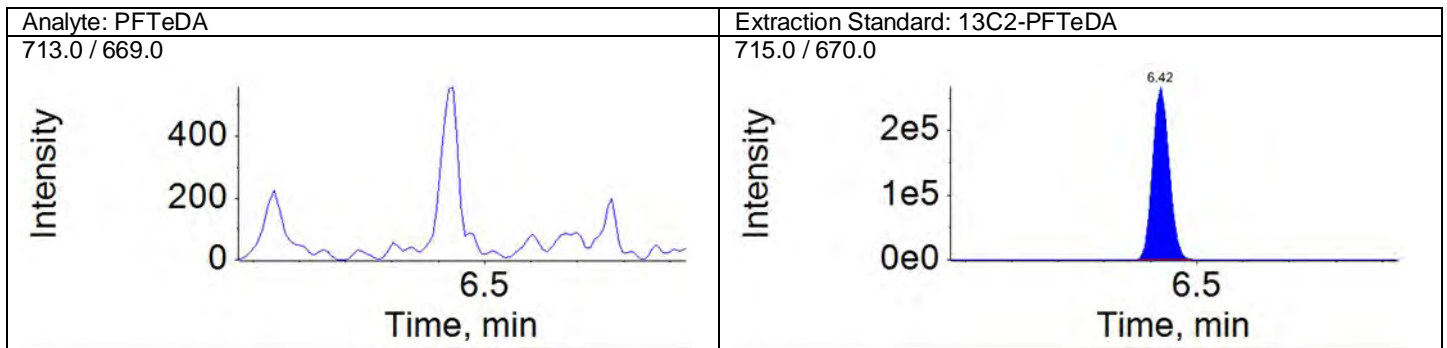
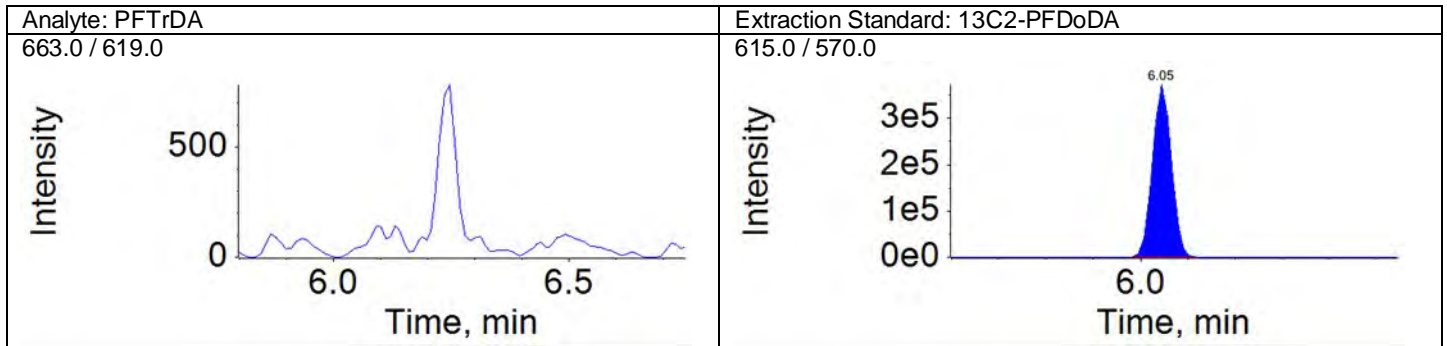
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QMethod Name: 18AUG20QM

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QMethod Name: 18AUG20QM

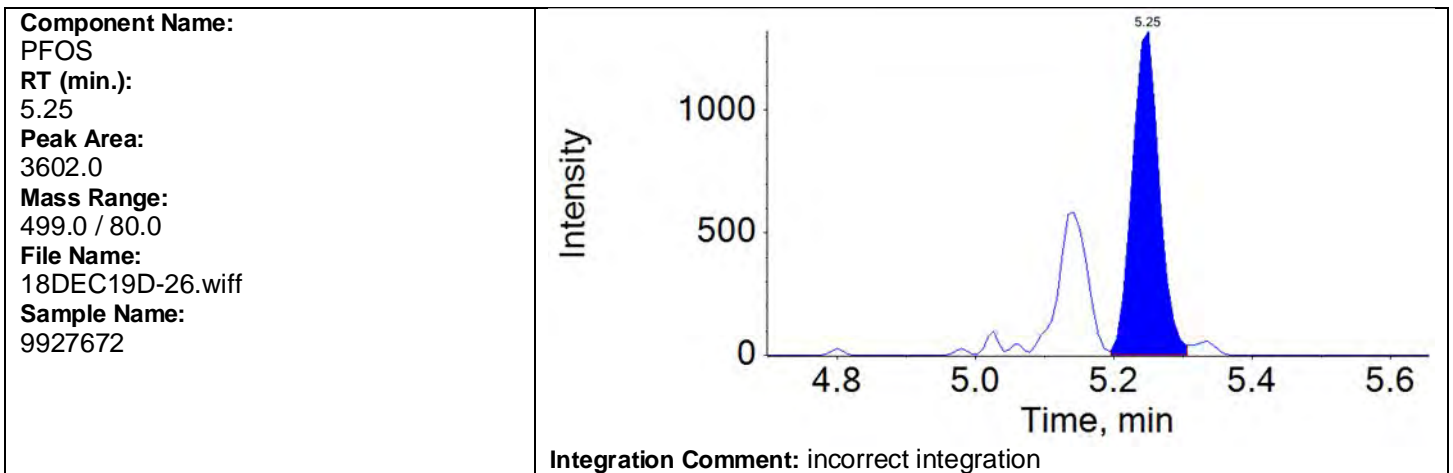
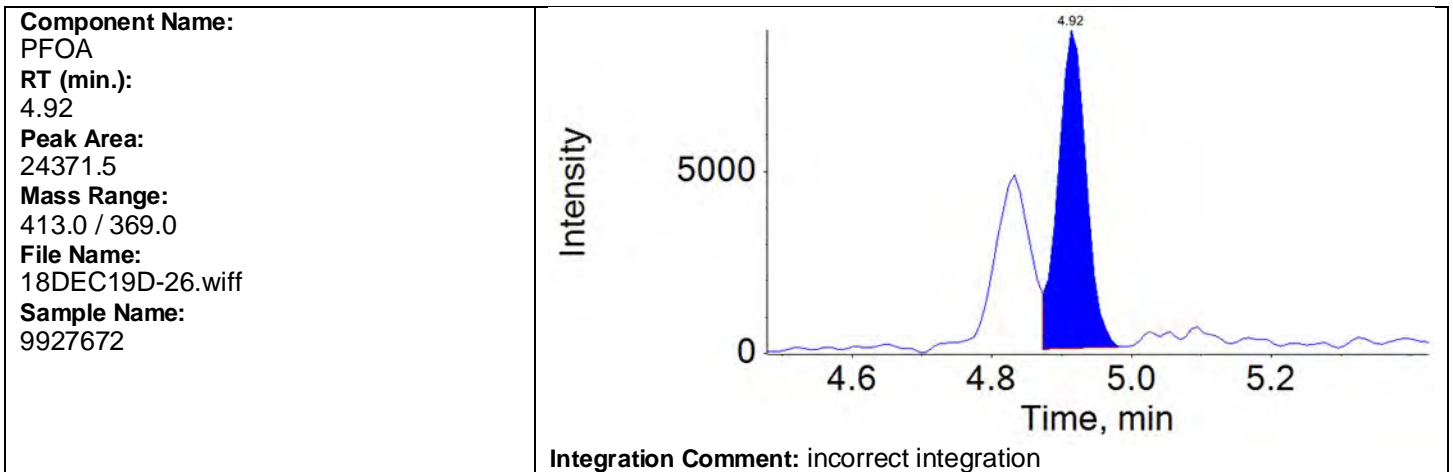
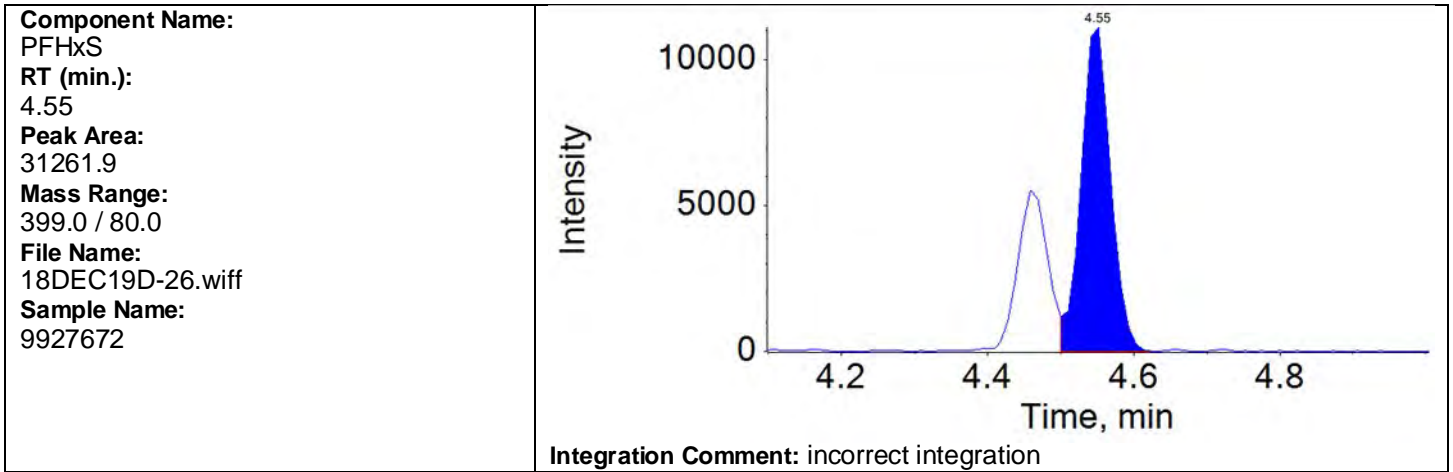
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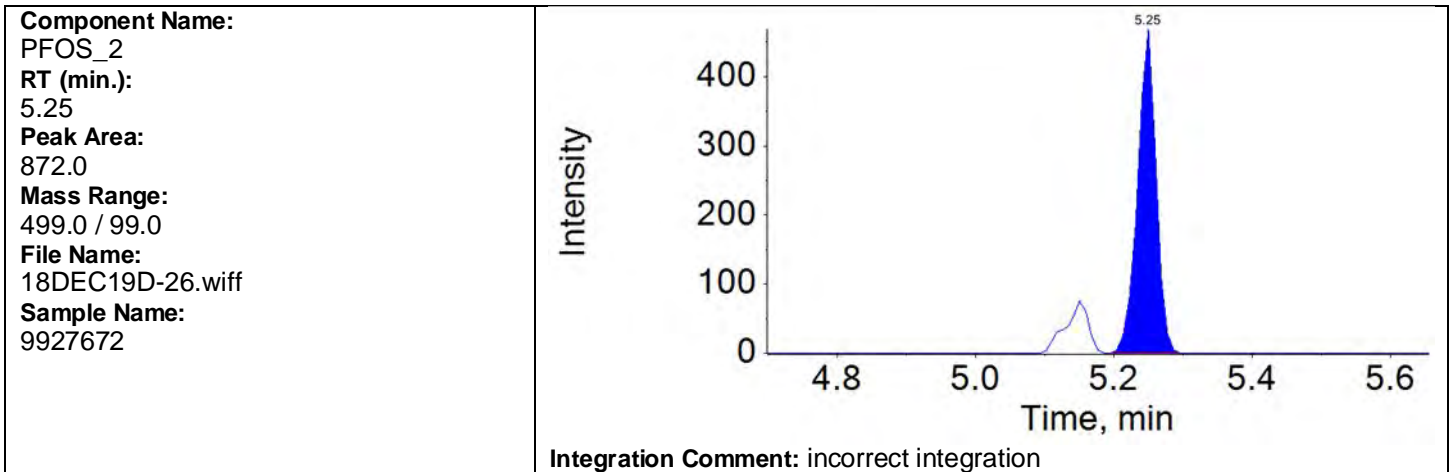
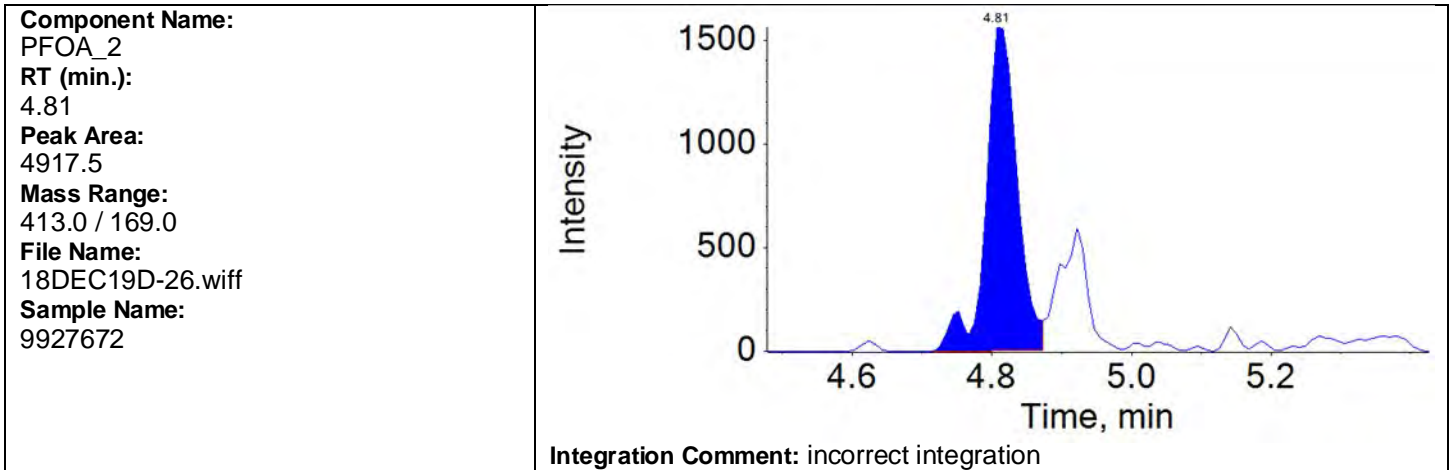
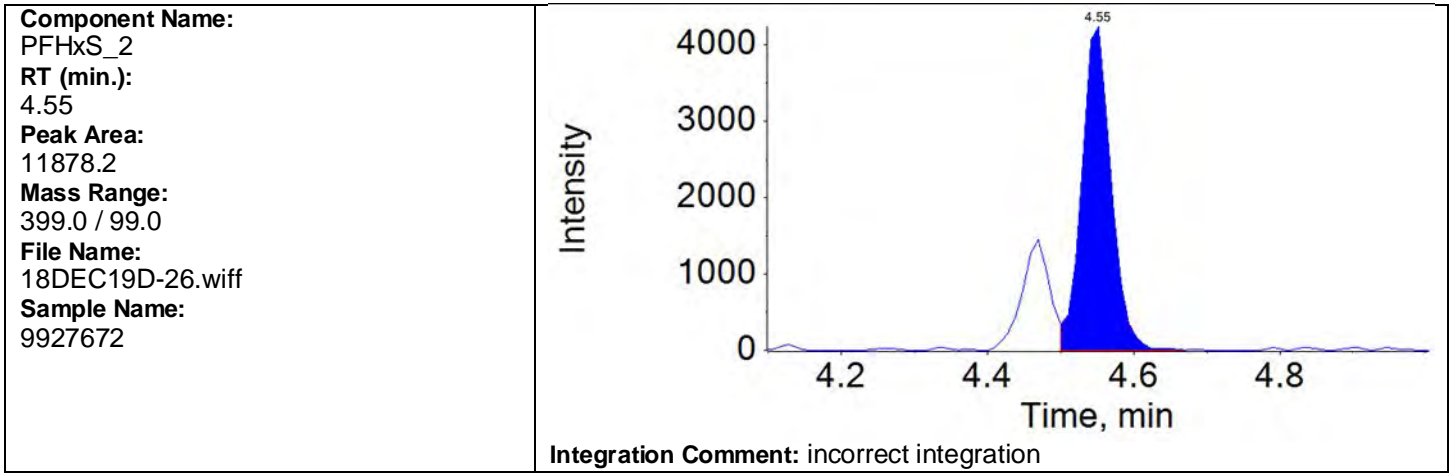
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Results Table Date: 12/20/2018 9:25:03 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18348012  
Results Table Date: 12/20/2018 9:25:03 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



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Results Table Date: 12/20/2018 9:25:03 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

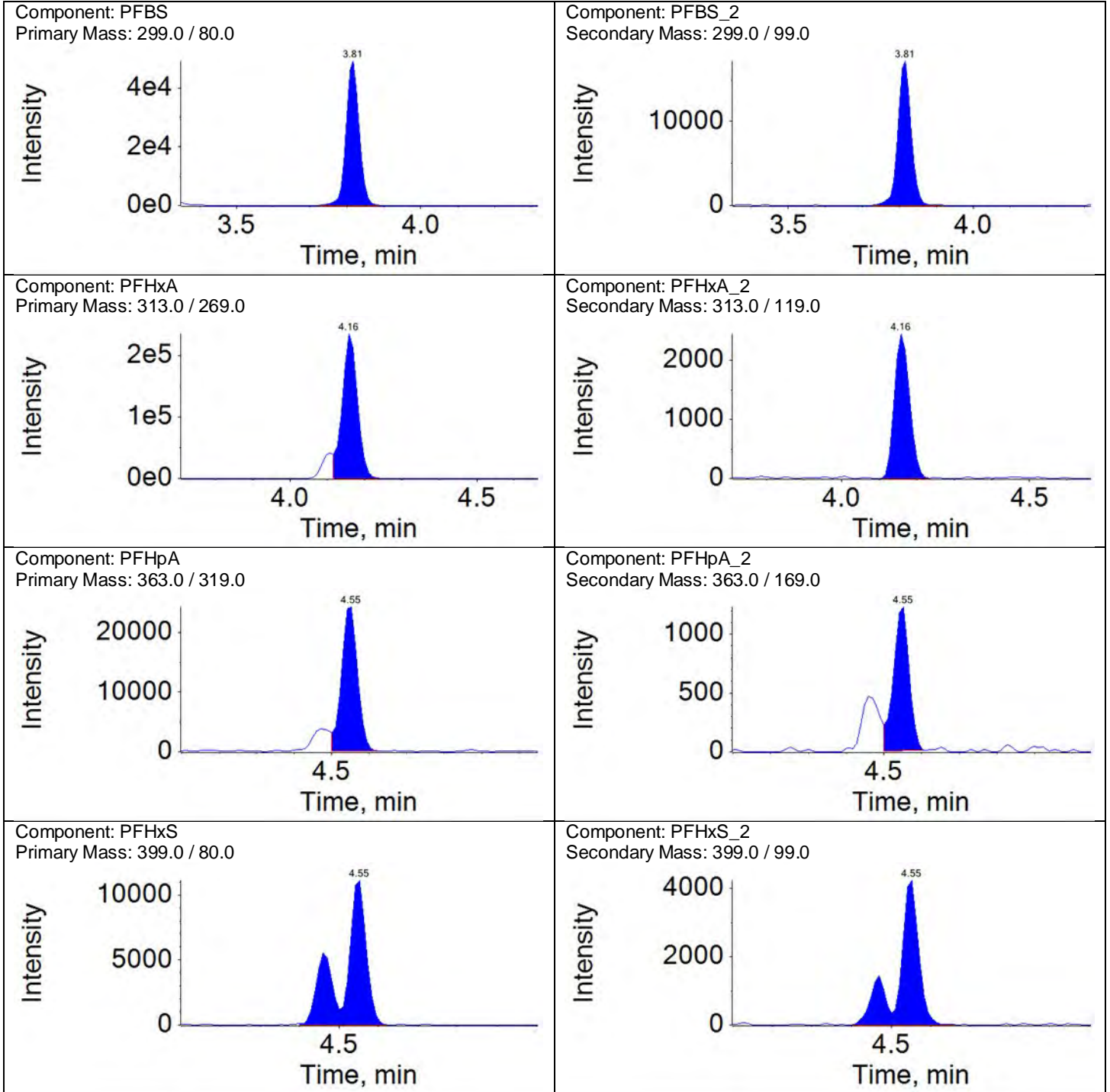
Ion Ratio Report

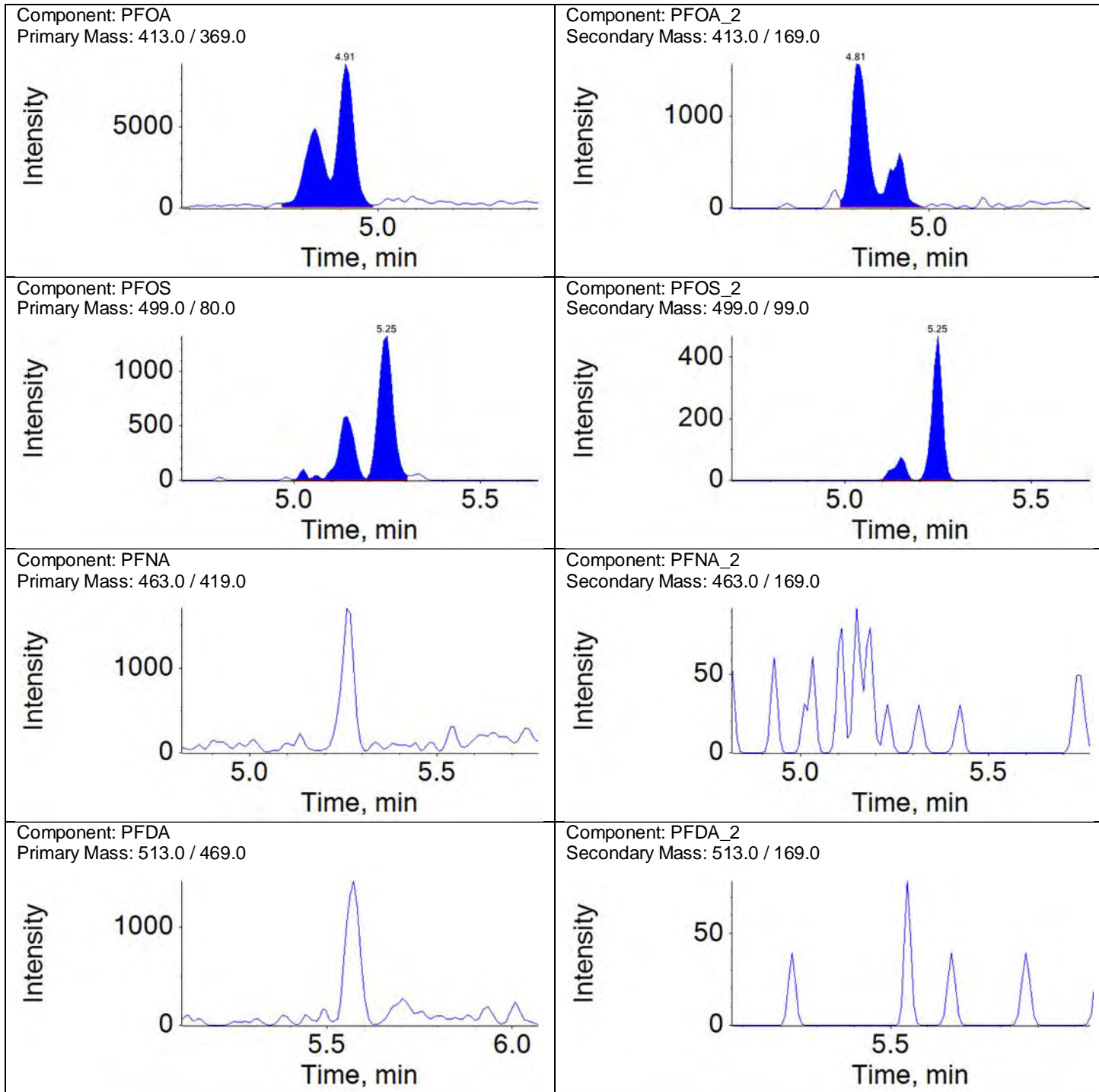
Sample Name: 9927672

Instrument Name: LM27631

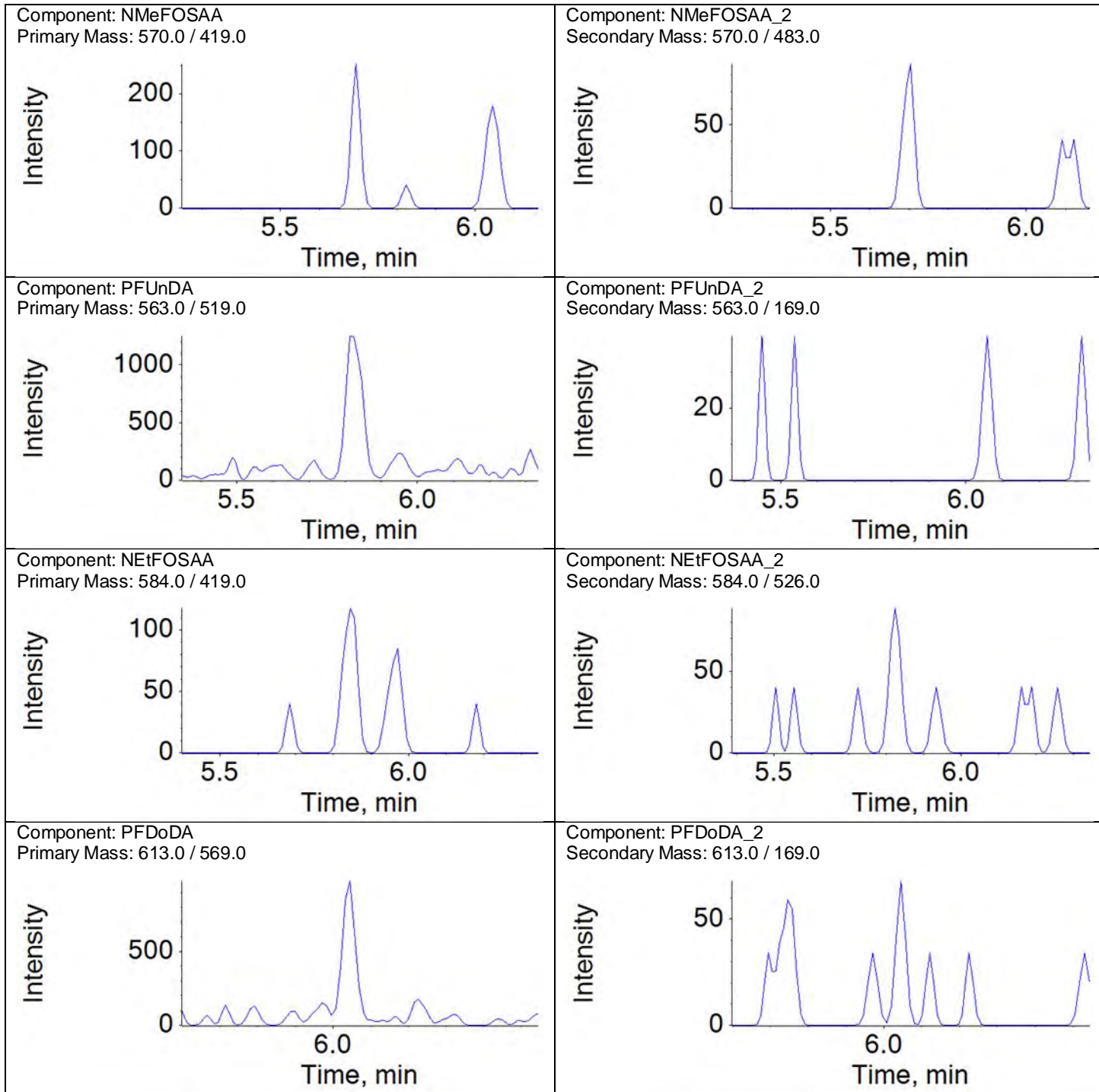
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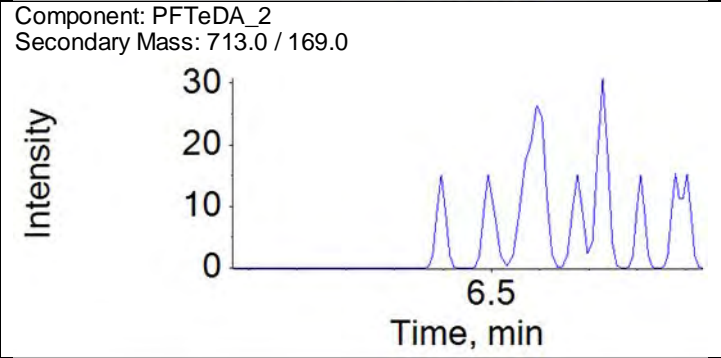
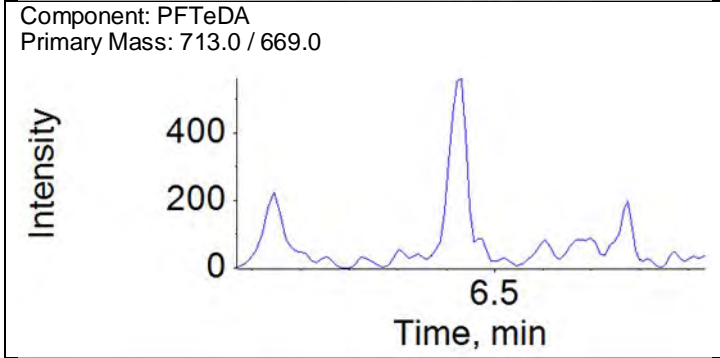
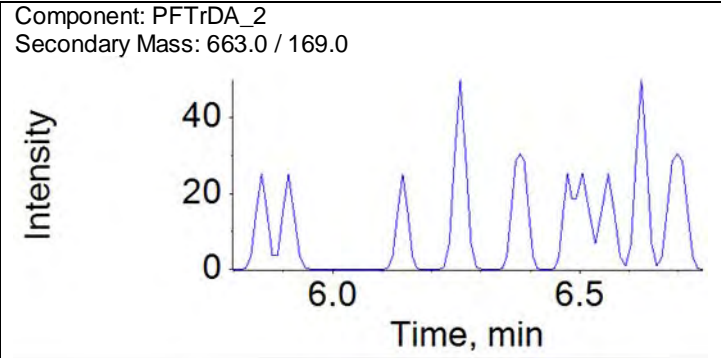
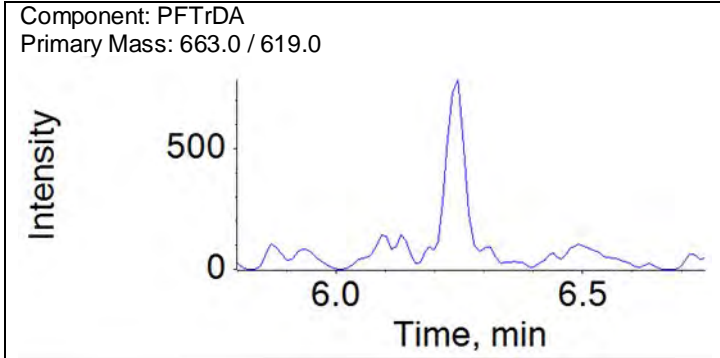
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	119520.6	A	N/A	1.0000			
PFBS_2	3.81	1.00	42593.9	A	N/A	0.3564	-3	50	
PFHxA	4.16	1.00	658033.3	A	N/A	1.0000			
PFHxA_2	4.16	1.00	6867.8	A	N/A	0.0104	-9	50	
PFHpA	4.55	1.00	71237.5	A	N/A	1.0000			
PFHpA_2	4.55	1.00	3541.4	A	N/A	0.0497	-9	50	
PFHxS	4.55	1.00	46998.1	M	N/A	1.0000			
PFHxS_2	4.55	1.00	15737.8	M	N/A	0.3349	0	50	
PFOA	4.91	1.00	42299.9	M	N/A	1.0000			
PFOA_2	4.81	0.98	6260.3	M	N/A	0.1480	151	50	OOS
PFOS	5.25	1.00	5500.2	M	N/A	1.0000			
PFOS_2	5.25	1.00	1046.9	M	N/A	0.1903	-36	50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDoDA	N/A	N/A	N/A	A	N/A	N/A			
PFDoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTTrDA	N/A	N/A	N/A	A	N/A	N/A			
PFTTrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTeDA	N/A	N/A	N/A	A	N/A	N/A			
PFTeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	













ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927673	Data File:	18DEC11D-07.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-4EP-3-W-01 Grab Water	Acquis Date:	2018-12-11T05:53:16
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	27	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.27783	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	958124.9	953492.0	0	50	
13C2-PFOA	5.0	503729.3	500971.3	1	50	
13C4-PFOS	4.8	300763.2	310746.2	-3	50	
13C2-PFDA	5.0	399927.4	419040.9	-5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	341172.1	13C3-PFBA	958124.9	0.356	16.737	10.864	65	50-150	
E13C5-PFHxA	557846.6	13C2-PFOA	503729.3	1.107	17.997	13.383	74	50-150	
E13C3-PFHxS	276394.0	13C2-PFOA	503729.3	0.549	17.025	12.667	74	50-150	
E13C4-PFHpA	445314.1	13C2-PFOA	503729.3	0.884	17.997	13.527	75	50-150	
E13C8-PFOA	738474.7	13C2-PFOA	503729.3	1.466	17.997	14.916	83	50-150	
E13C8-PFOS	252778.2	13C4-PFOS	300763.2	0.840	17.205	13.576	79	50-150	
E13C9-PFNA	505811.5	13C4-PFOS	300763.2	1.682	17.997	17.105	95	50-150	
E13C6-PFDA	589281.6	13C2-PFDA	399927.4	1.473	17.997	14.054	78	50-150	
Ed3-NMeFOSAA	111149.6	13C2-PFDA	399927.4	0.278	17.997	17.727	99	50-150	
E13C7-PFUnDA	393070.9	13C2-PFDA	399927.4	0.983	17.997	17.354	96	50-150	
Ed5-NEtFOSAA	65718.4	13C2-PFDA	399927.4	0.164	17.997	13.057	73	50-150	
E13C2-PFDoDA	835758.3	13C2-PFDA	399927.4	2.090	17.997	15.785	88	50-150	
E13C2-PFTeDA	445518.0	13C2-PFDA	399927.4	1.114	17.997	11.901	66	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

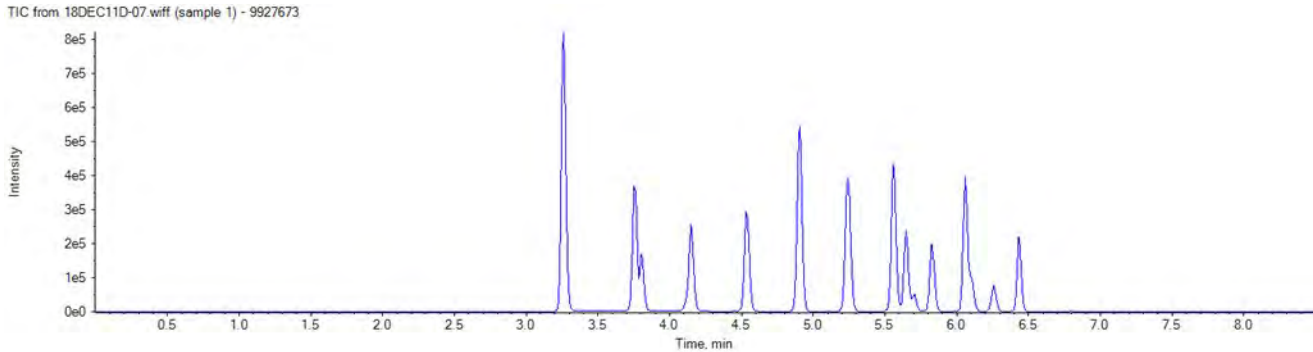
**Analyte Quantitation Peak Table**

Sample Name: 9927673 Instrument Name: LM27631 File Name: 18DEC11D-07.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.27783	1.000	1.00	1.000

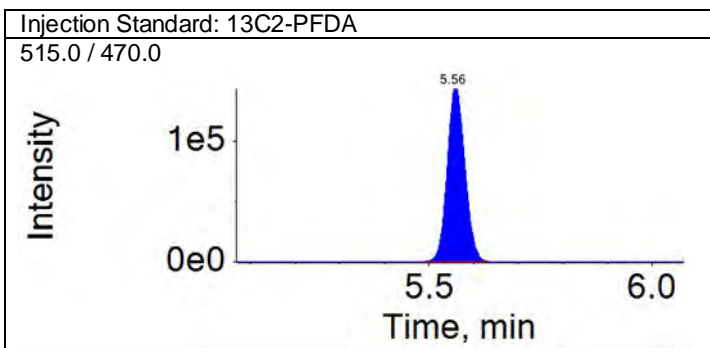
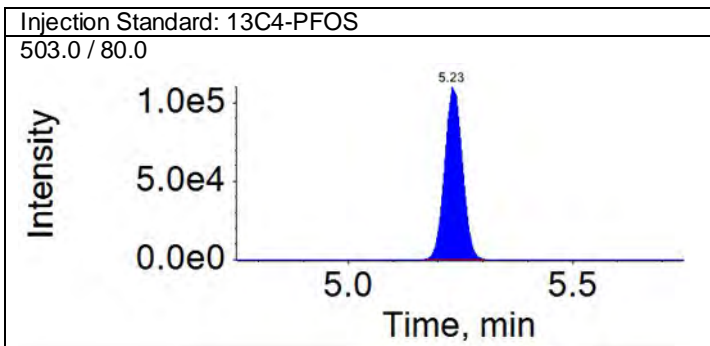
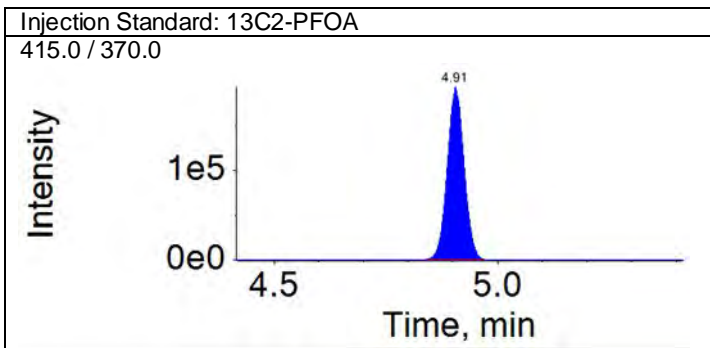
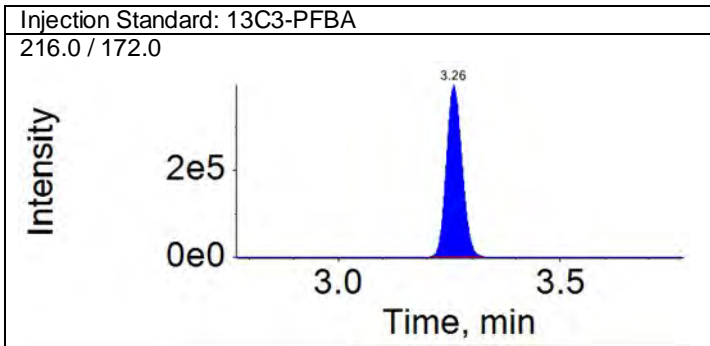
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.80	341172.1	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.15	557846.6	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.54	445314.1	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.54	276394.0	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.90	738474.7	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.23	252778.2	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.25	505811.5	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.56	589281.6	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.70	111149.6	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.83	393070.9	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.84	65718.4	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.06	835758.3	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	445518.0	N/A	

**Total Ion Chromatogram**



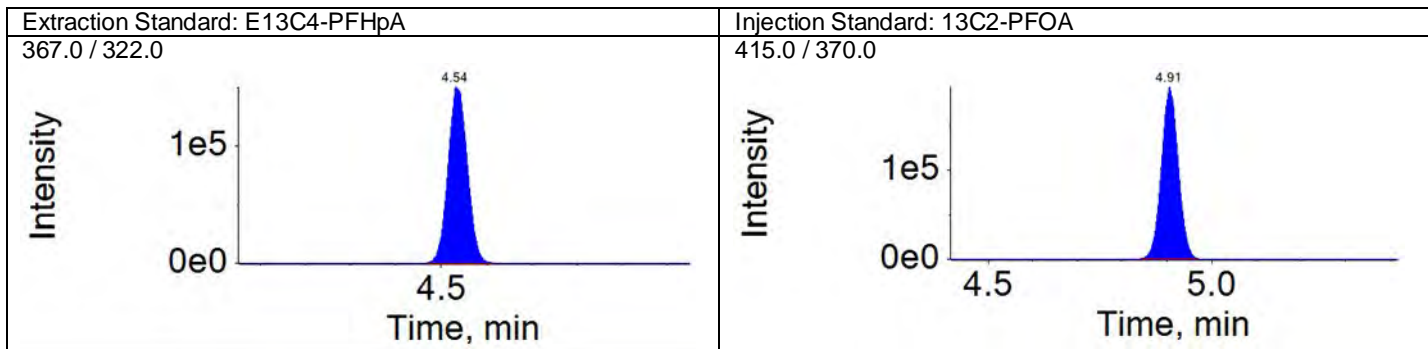
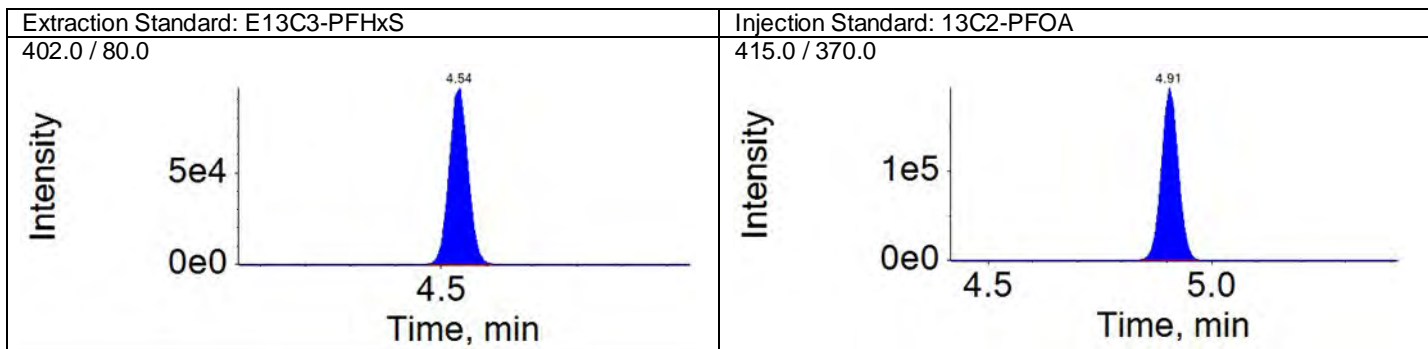
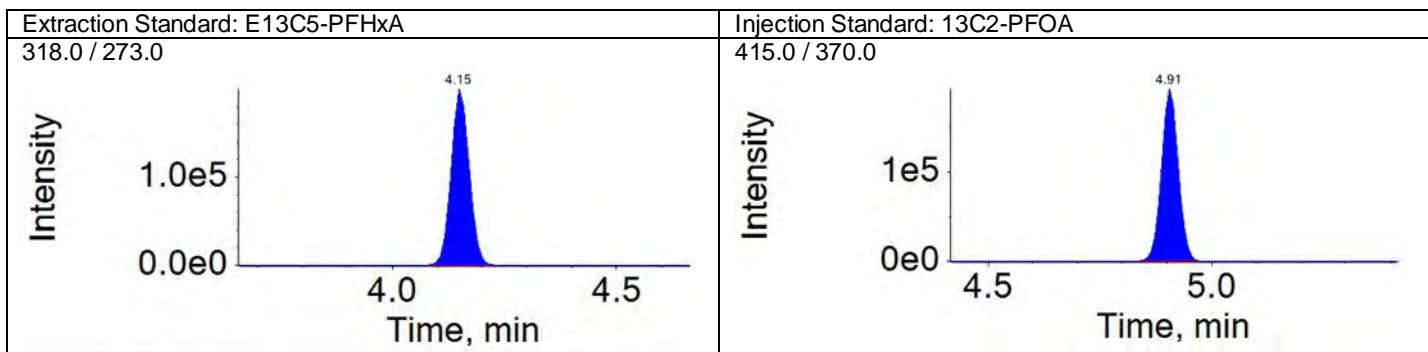
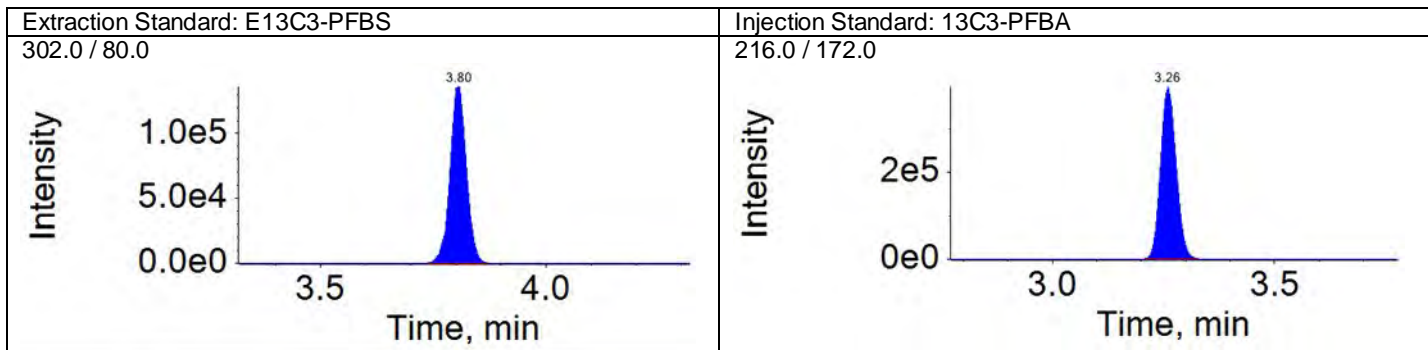
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



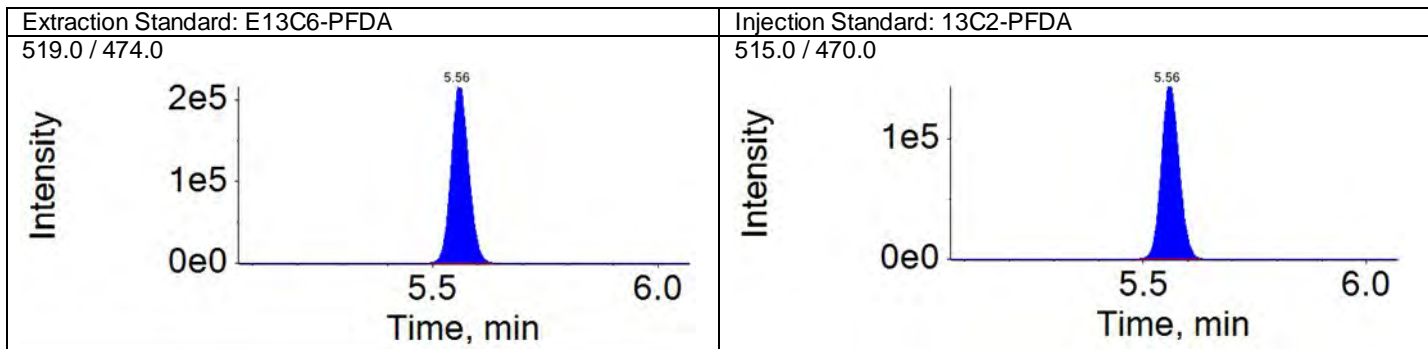
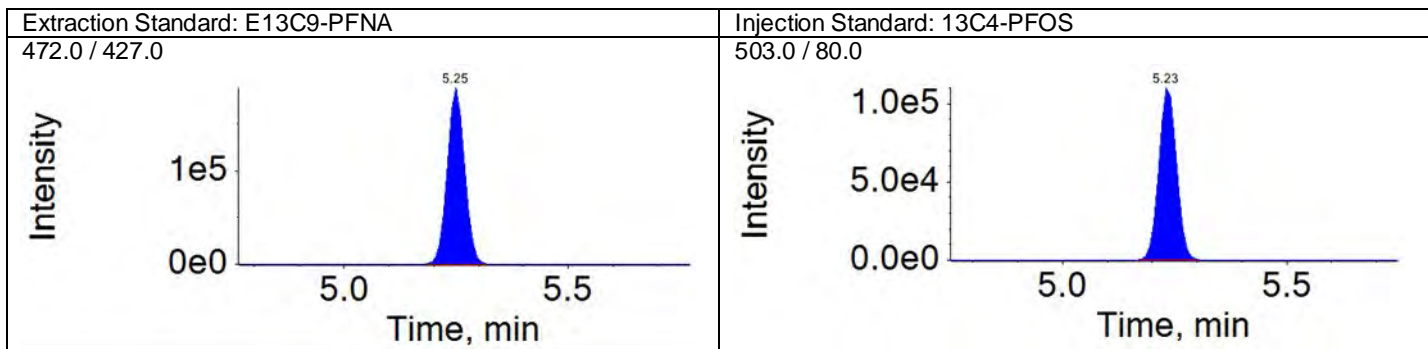
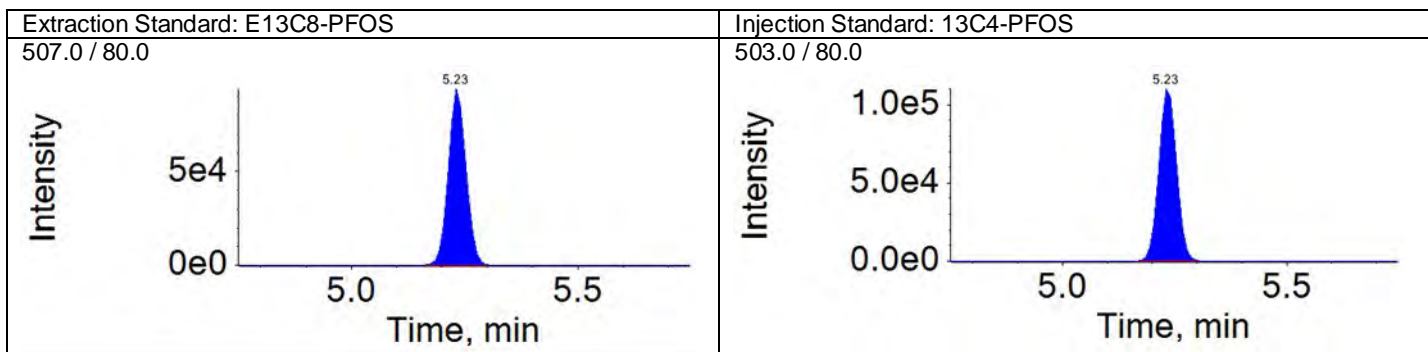
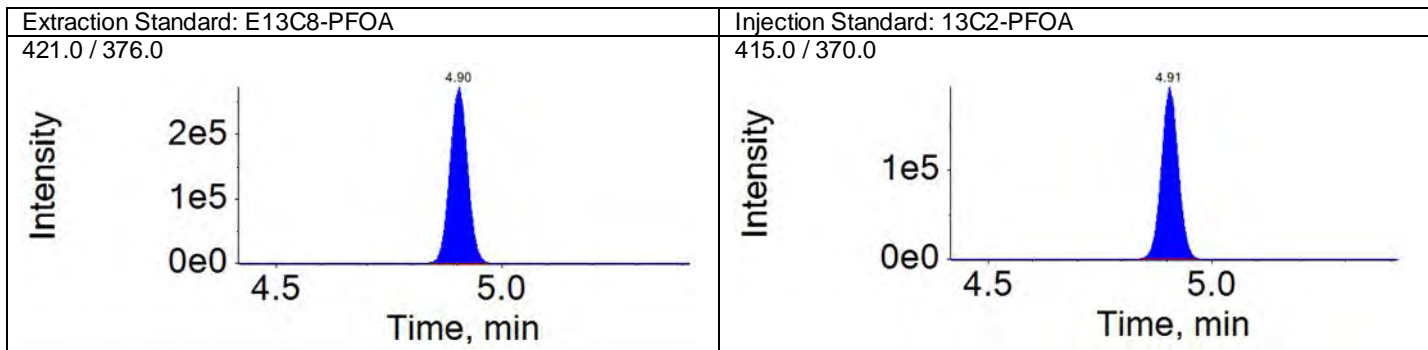
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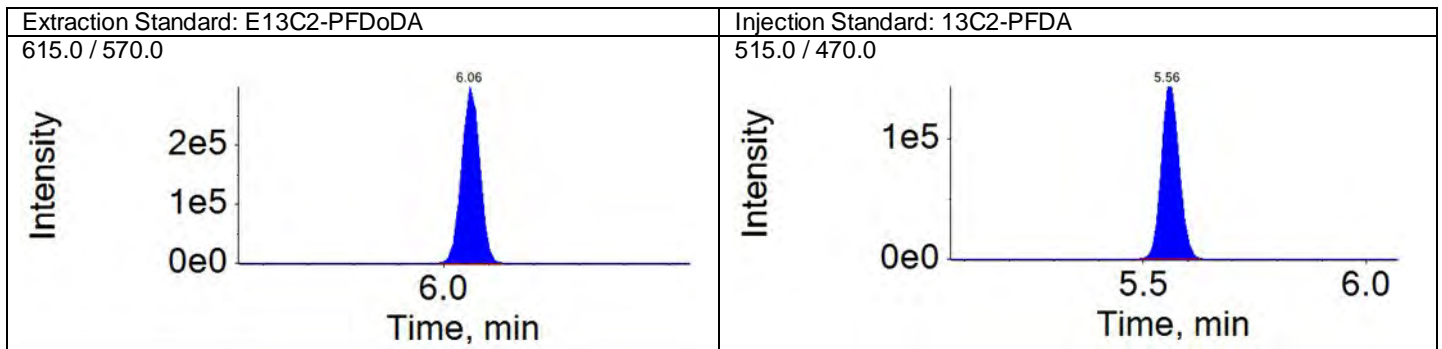
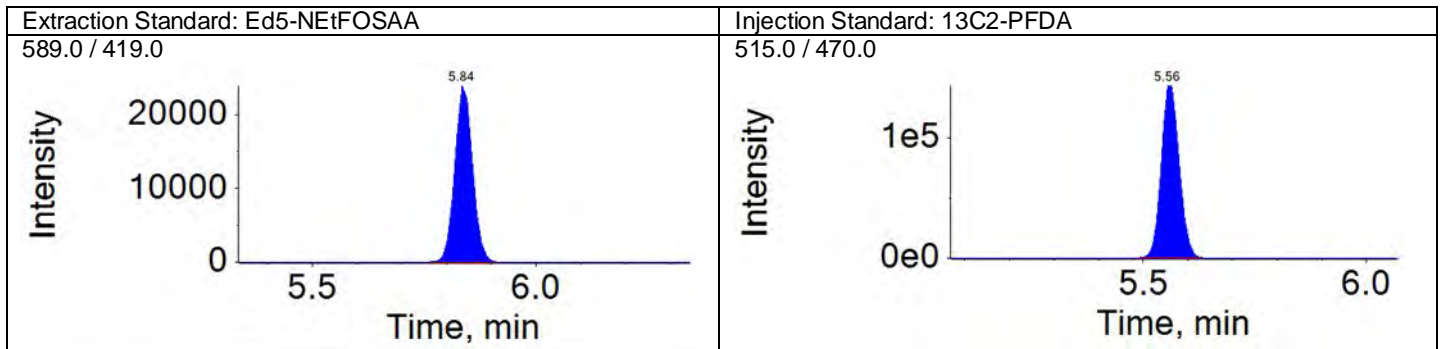
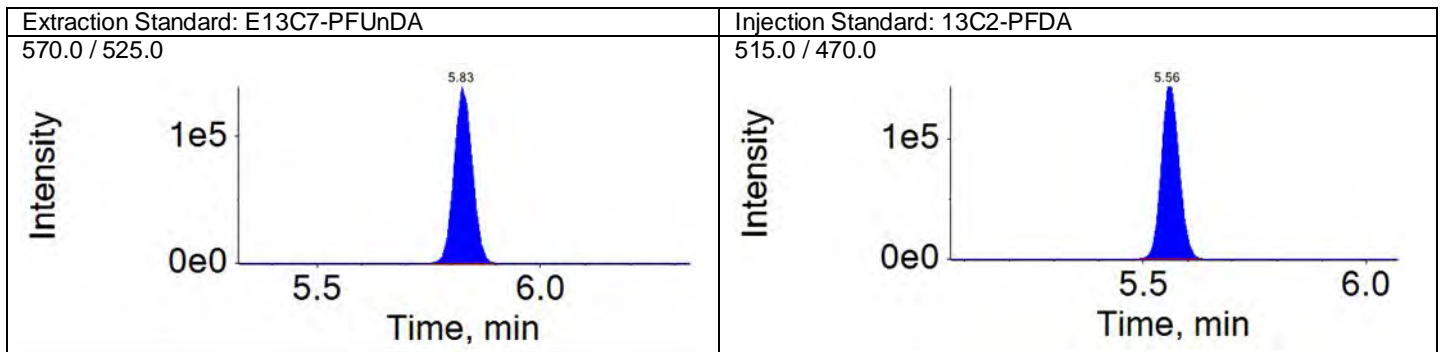
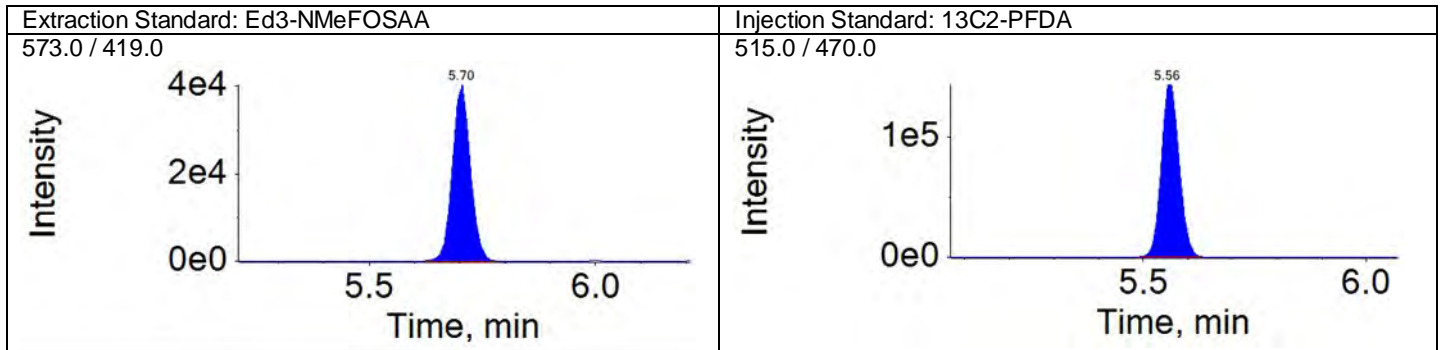
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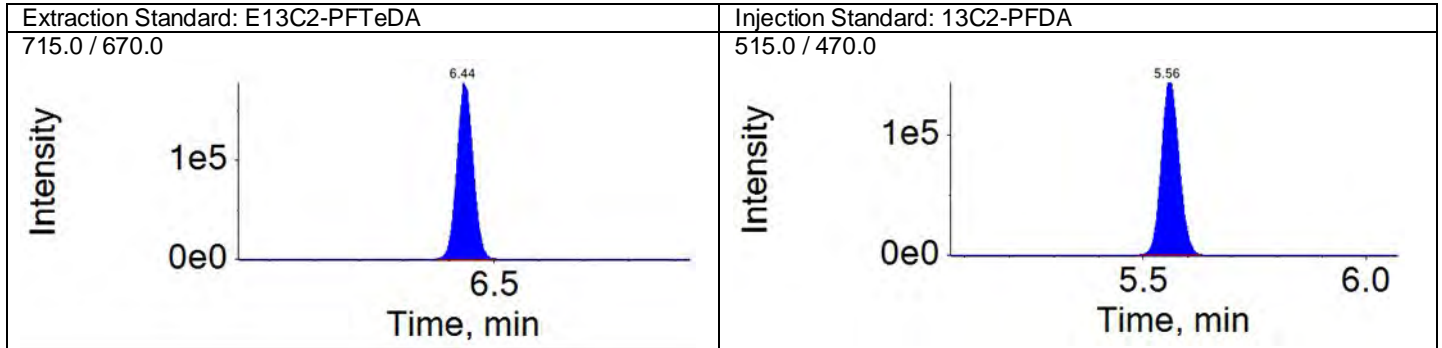
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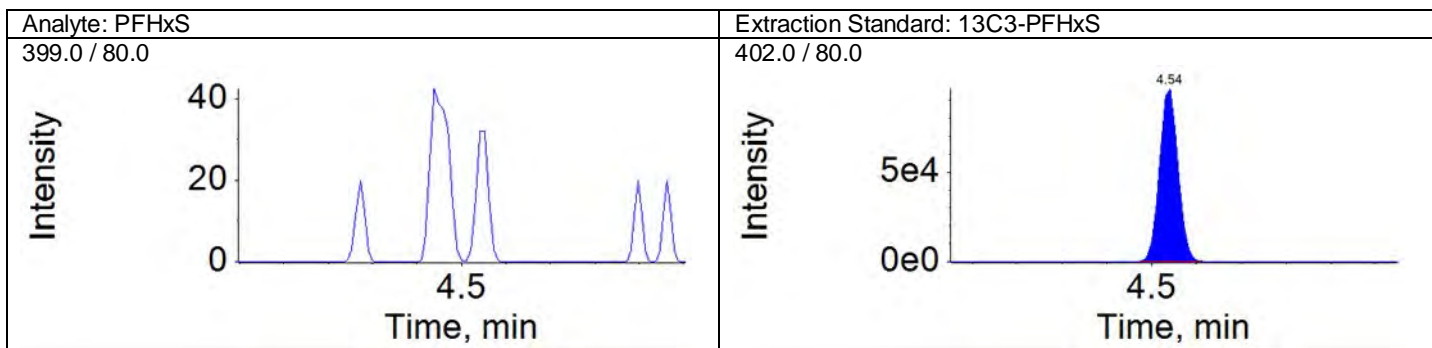
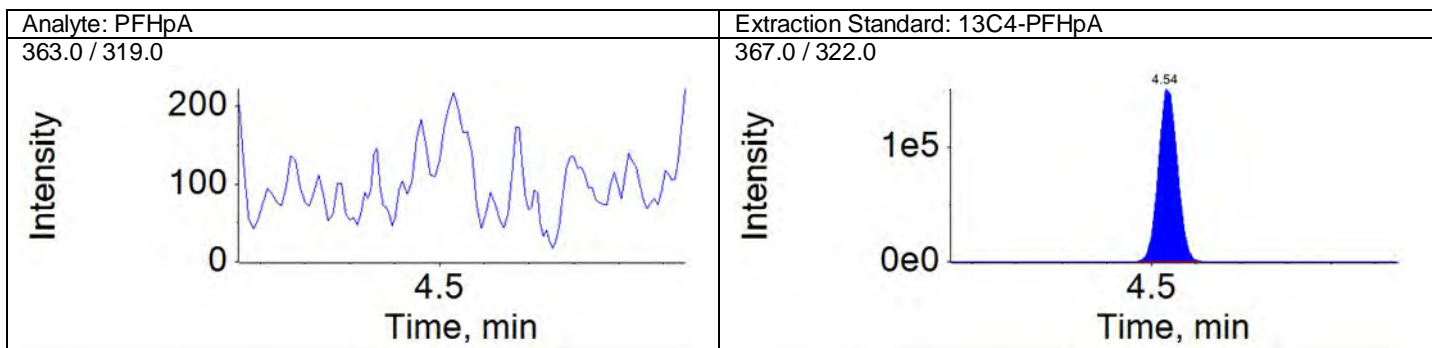
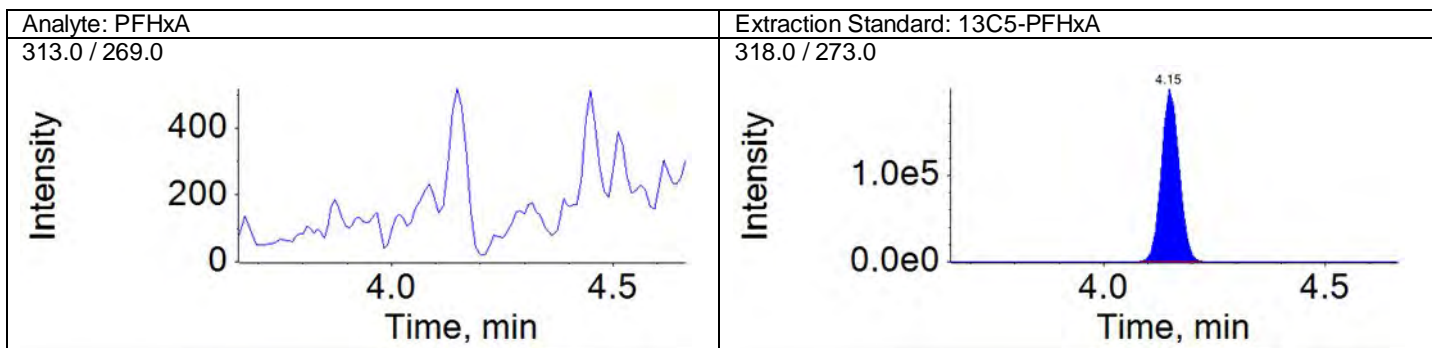
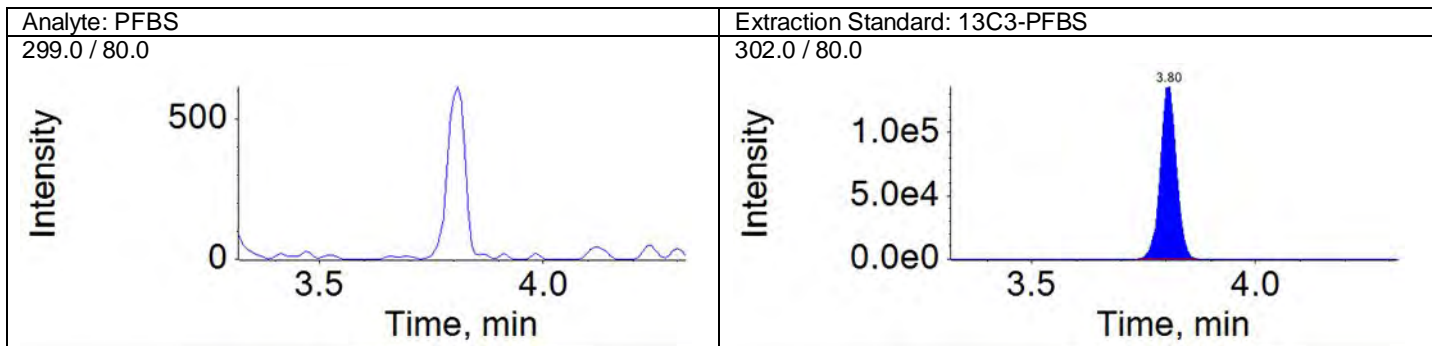
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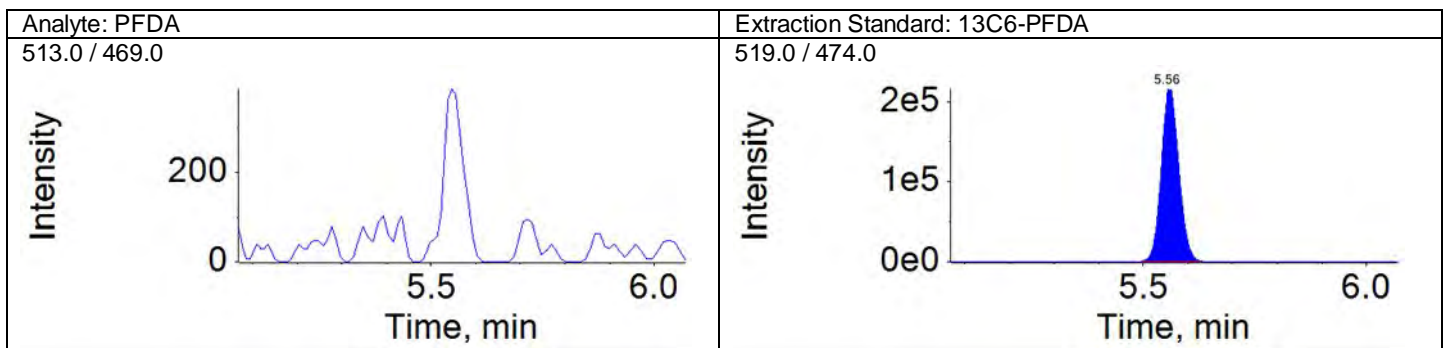
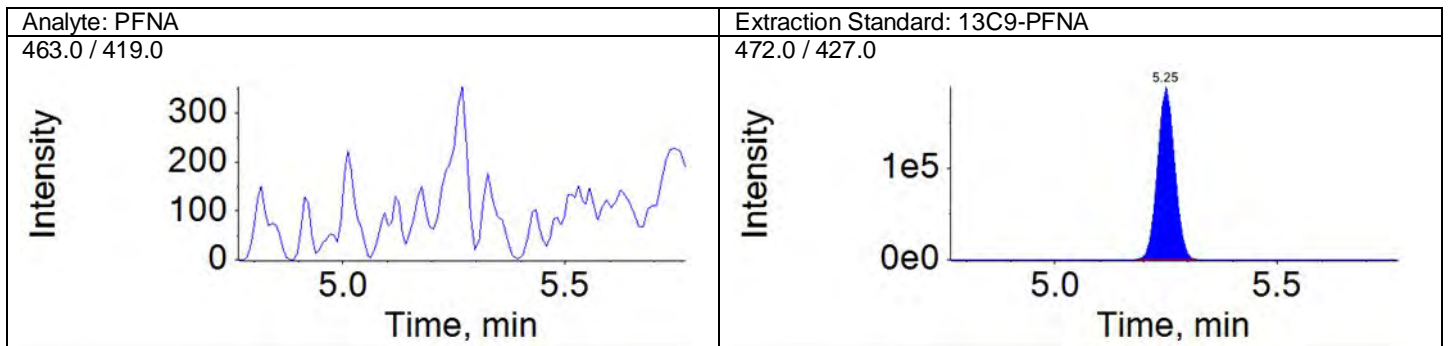
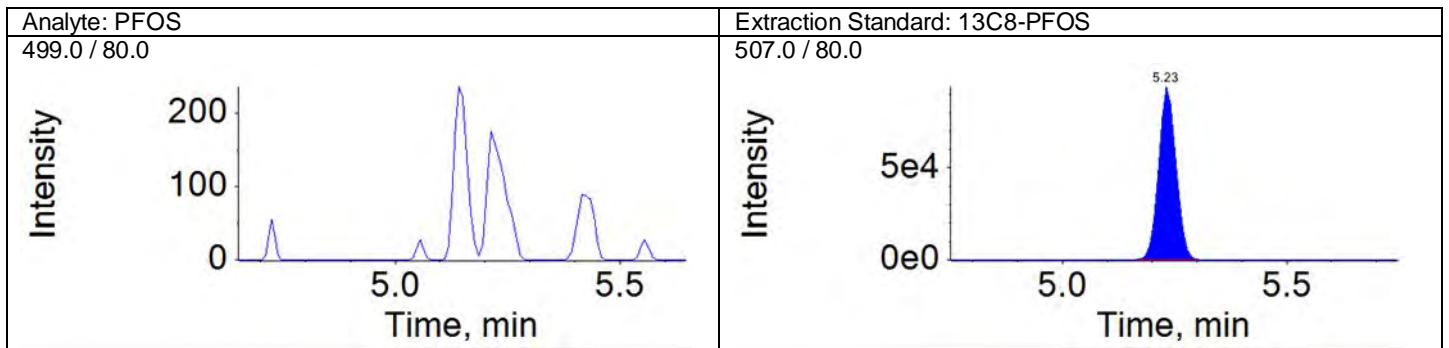
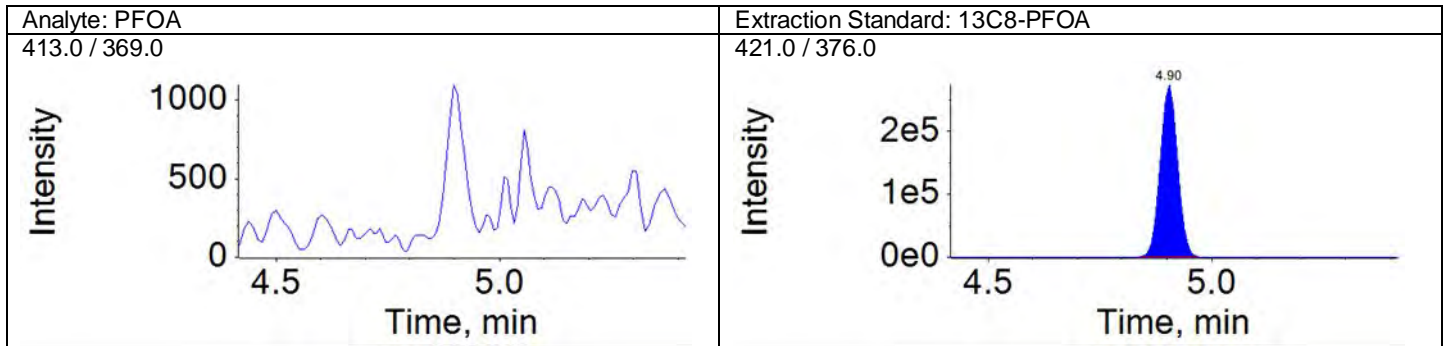
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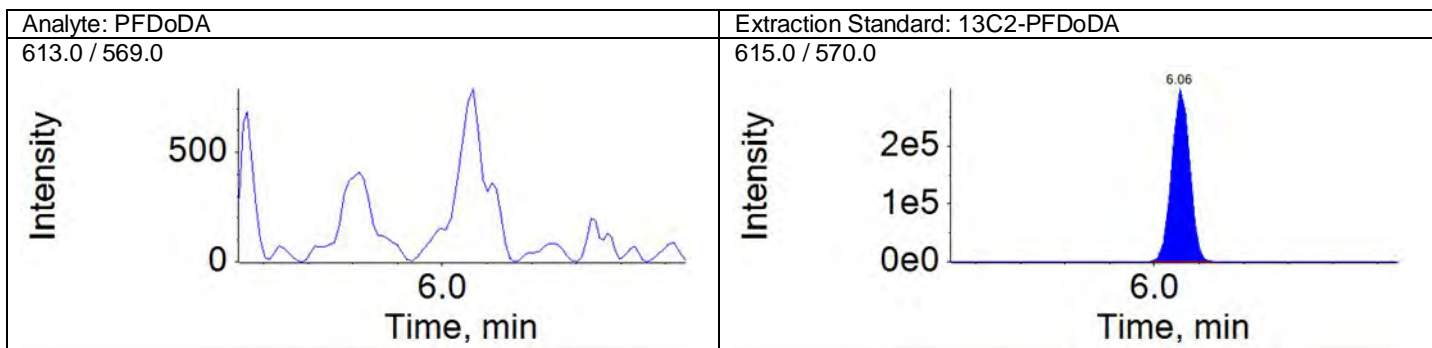
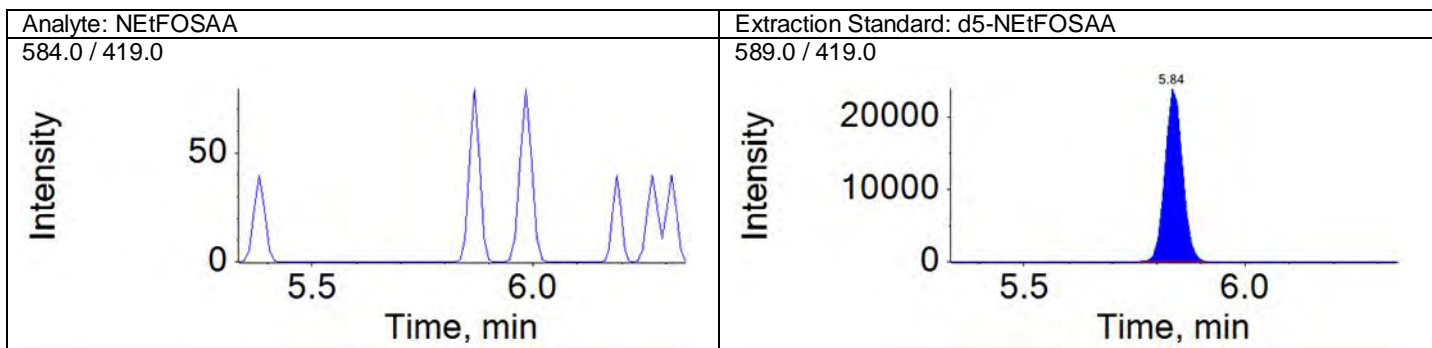
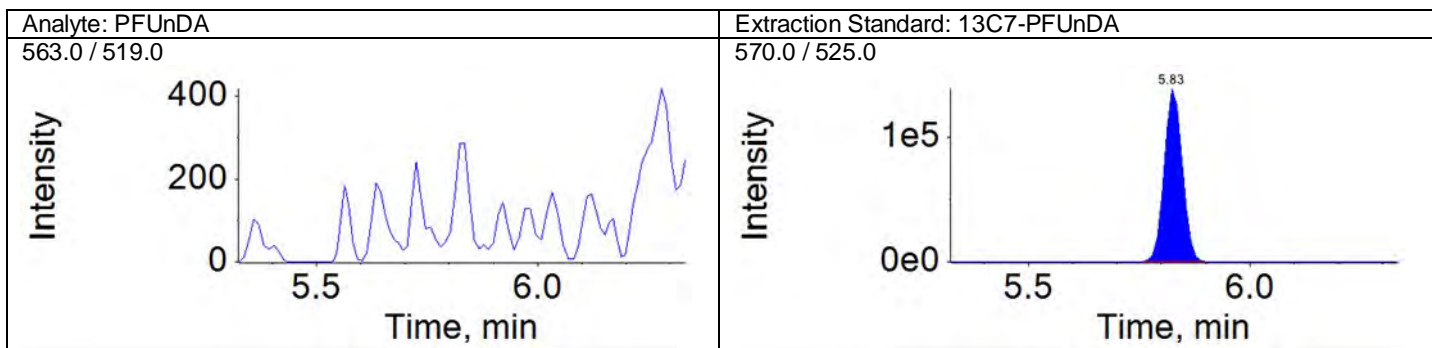
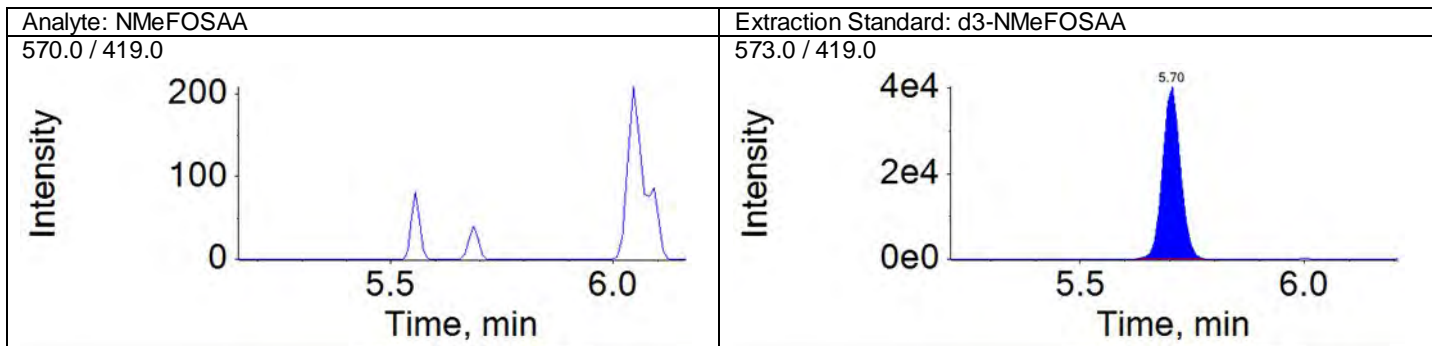
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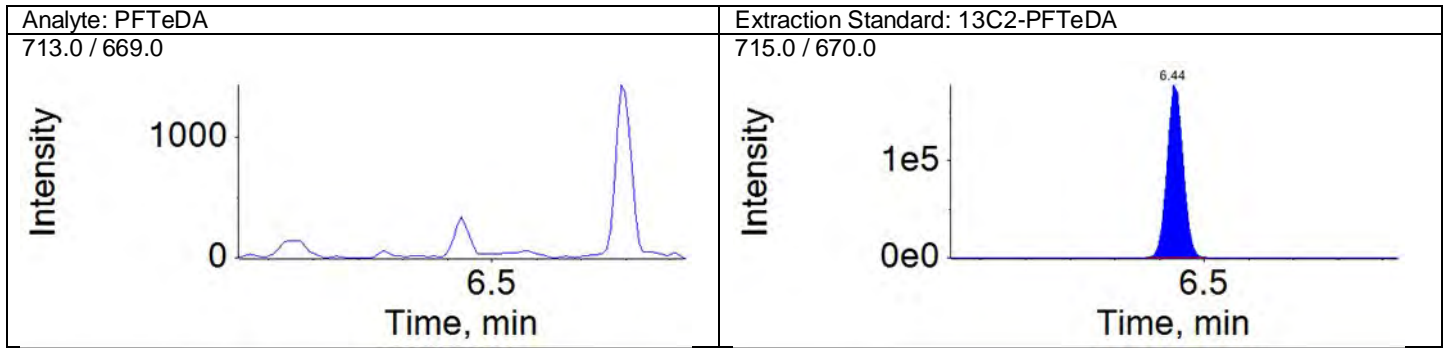
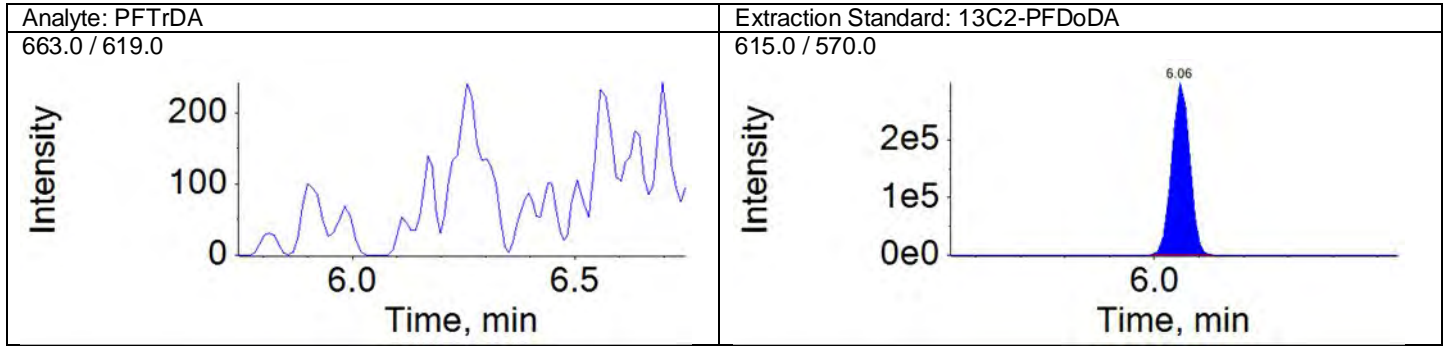
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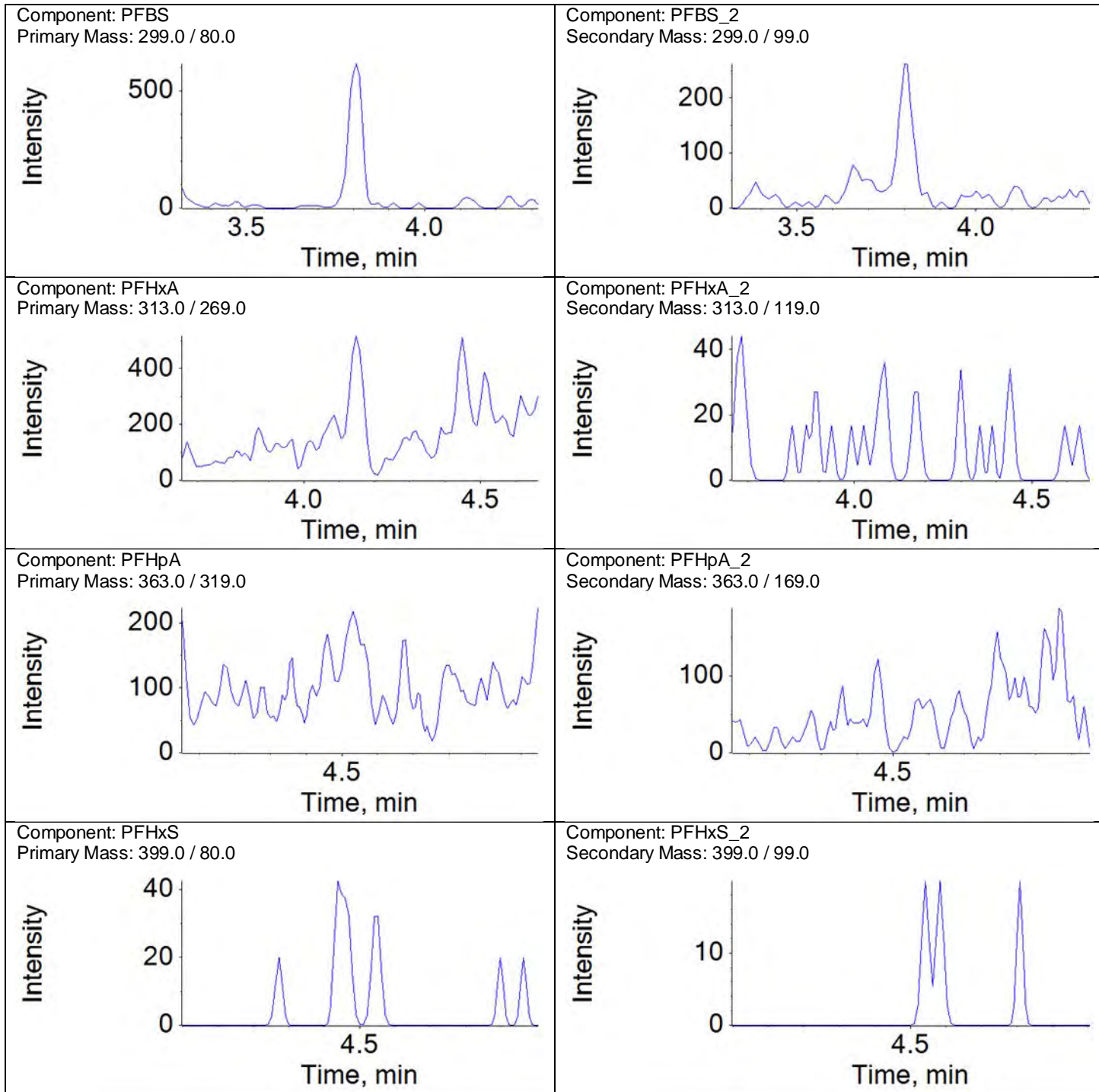
Ion Ratio Report

Sample Name: 9927673

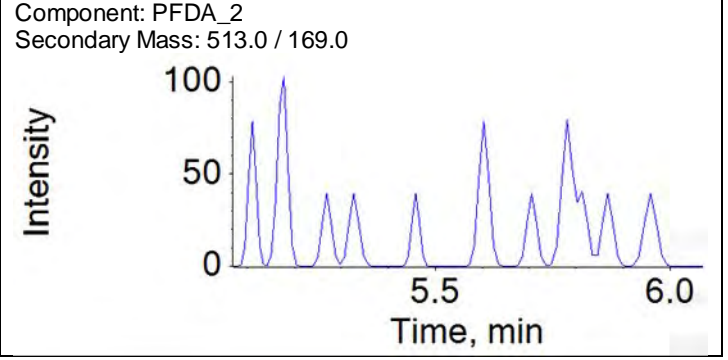
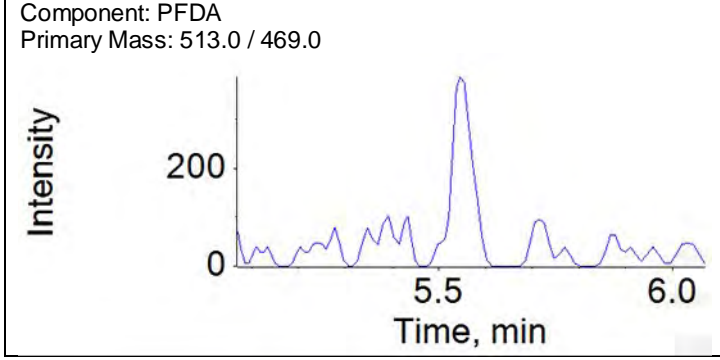
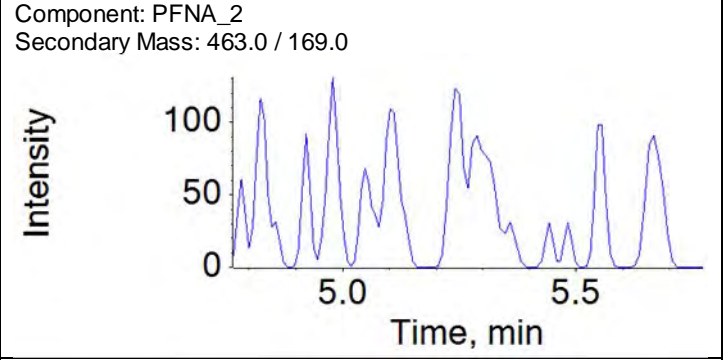
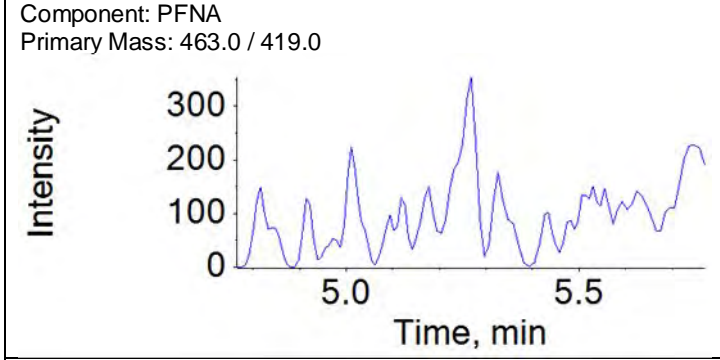
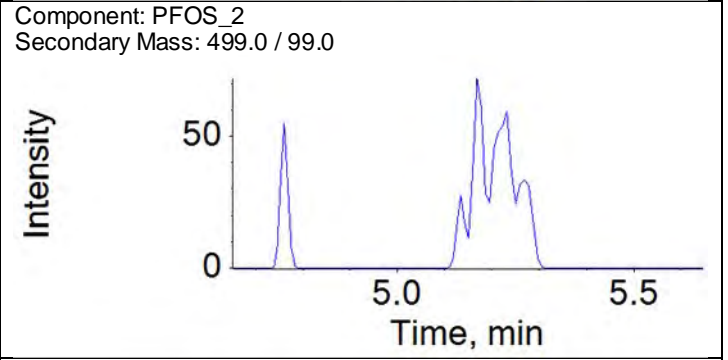
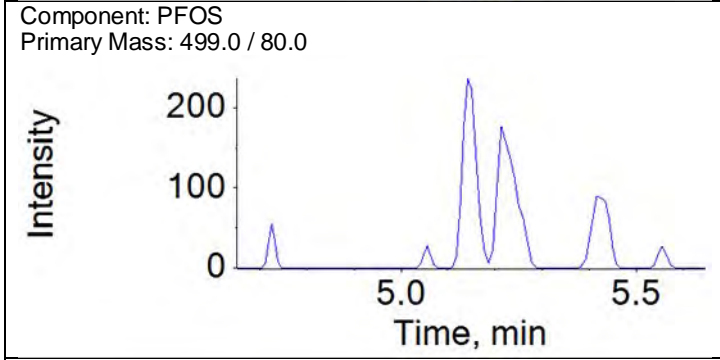
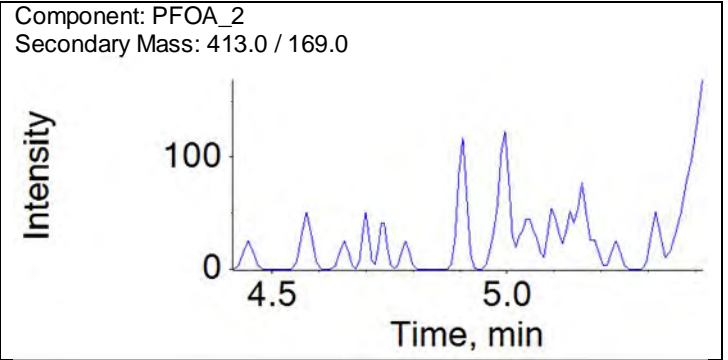
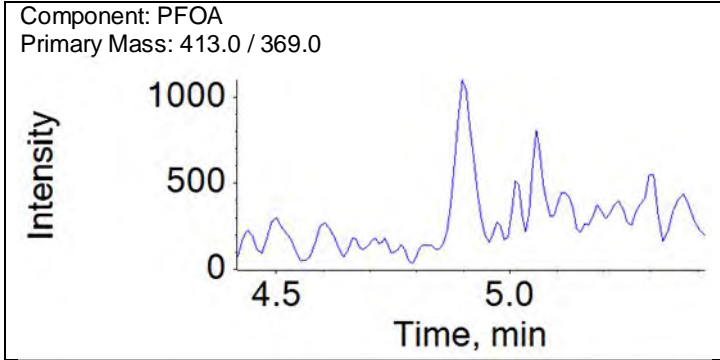
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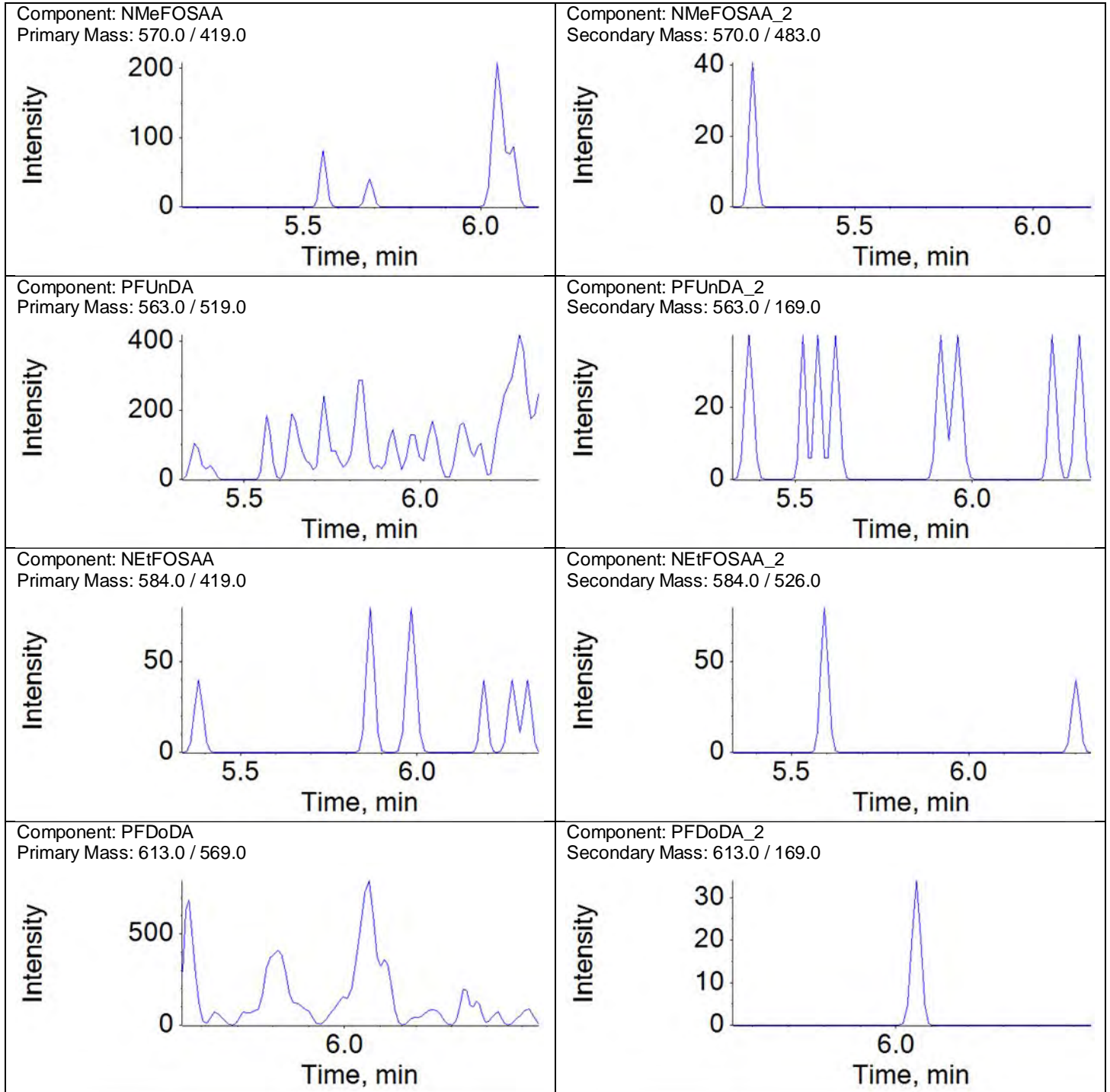
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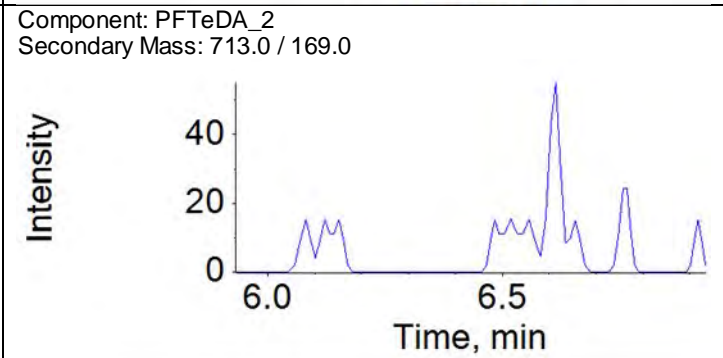
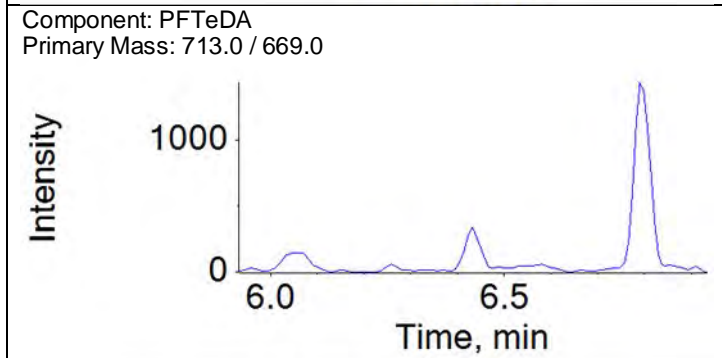
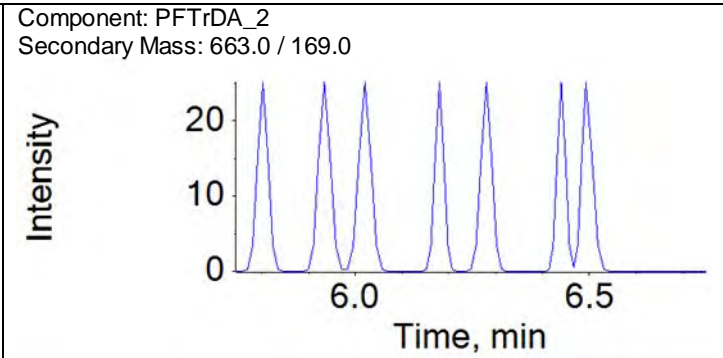
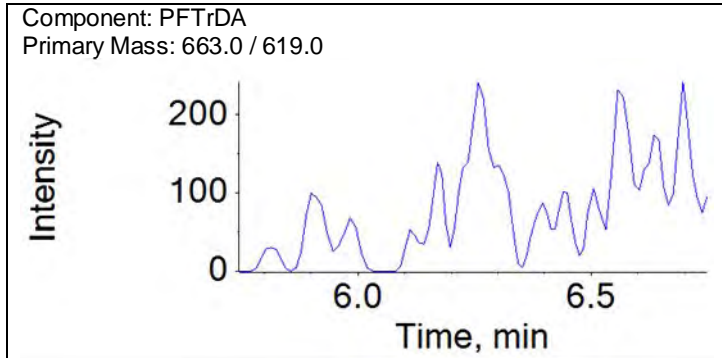
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
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PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDoDA	N/A	N/A	N/A	A	N/A	N/A			
PFDoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTTrDA	N/A	N/A	N/A	A	N/A	N/A			
PFTTrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTeDA	N/A	N/A	N/A	A	N/A	N/A			
PFTeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	













ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927674	Data File:	18DEC11D-08.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-4EP-3-W-02 Grab Water	Acquis Date:	2018-12-11T06:02:19
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	28	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.28270	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	951735.8	953492.0	0	50	
13C2-PFOA	5.0	541897.0	500971.3	8	50	
13C4-PFOS	4.8	307821.8	310746.2	-1	50	
13C2-PFDA	5.0	404533.1	419040.9	-3	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	377095.7	13C3-PFBA	951735.8	0.396	16.449	11.880	72	50-150	
E13C5-PFHxA	606543.0	13C2-PFOA	541897.0	1.119	17.687	13.293	75	50-150	
E13C3-PFHxS	306200.7	13C2-PFOA	541897.0	0.565	16.732	12.820	77	50-150	
E13C4-PFHpA	506802.5	13C2-PFOA	541897.0	0.935	17.687	14.064	80	50-150	
E13C8-PFOA	818034.6	13C2-PFOA	541897.0	1.510	17.687	15.094	85	50-150	
E13C8-PFOS	281587.8	13C4-PFOS	307821.8	0.915	16.908	14.522	86	50-150	
E13C9-PFNA	558580.3	13C4-PFOS	307821.8	1.815	17.687	18.139	103	50-150	
E13C6-PFDA	623758.9	13C2-PFDA	404533.1	1.542	17.687	14.454	82	50-150	
Ed3-NMeFOSAA	125227.5	13C2-PFDA	404533.1	0.310	17.687	19.405	110	50-150	
E13C7-PFUnDA	365420.6	13C2-PFDA	404533.1	0.903	17.687	15.674	89	50-150	
Ed5-NEtFOSAA	66687.3	13C2-PFDA	404533.1	0.165	17.687	12.873	73	50-150	
E13C2-PFDoDA	710263.4	13C2-PFDA	404533.1	1.756	17.687	13.033	74	50-150	
E13C2-PFTeDA	414169.6	13C2-PFDA	404533.1	1.024	17.687	10.749	61	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Analyte Quantitation Peak Table

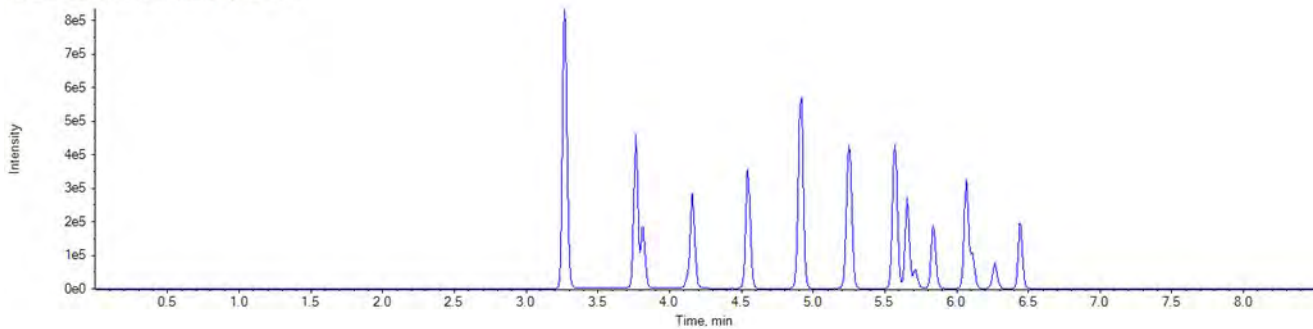
Sample Name: 9927674 Instrument Name: LM27631 File Name: 18DEC11D-08.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.28270	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.81	377095.7	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	606543.0	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.54	506802.5	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	306200.7	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	818034.6	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	281587.8	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	558580.3	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	623758.9	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	125227.5	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.84	365420.6	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.85	66687.3	N/A	
PFDODA	N/A	N/A	N/A		A	13C2-PFDODA	6.07	710263.4	N/A	
PFTTrDA	N/A	N/A	N/A		A	13C2-PFTTrDA	6.07	710263.4	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	414169.6	N/A	

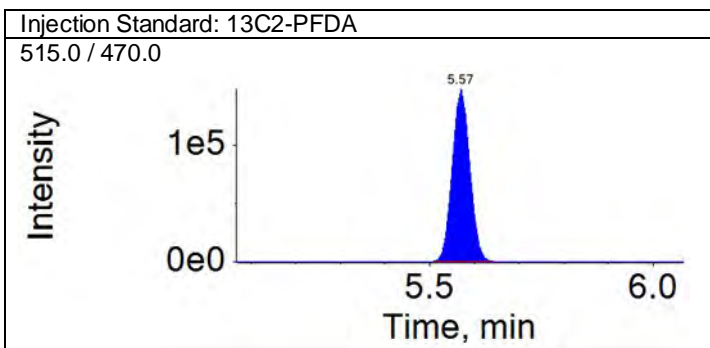
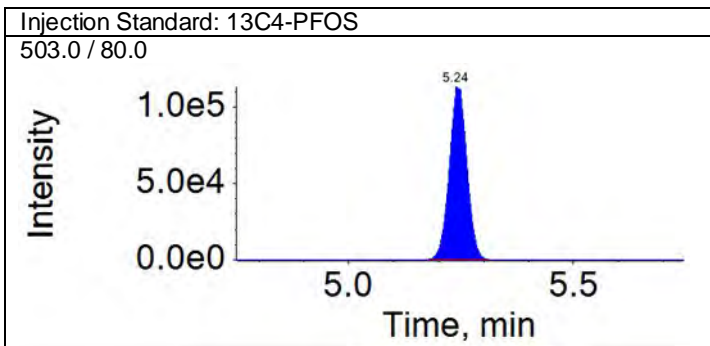
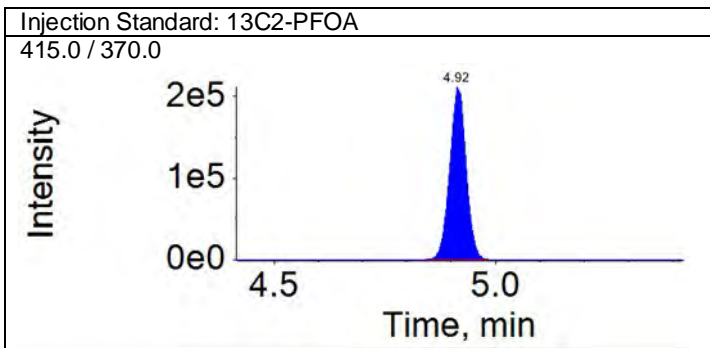
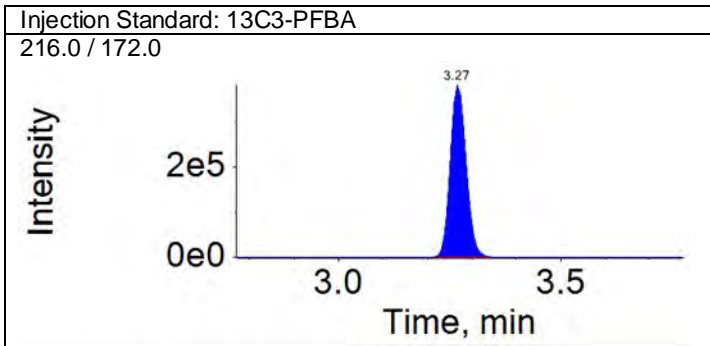
Total Ion Chromatogram

TIC from 18DEC11D-08.wiff (sample 1) - 9927674



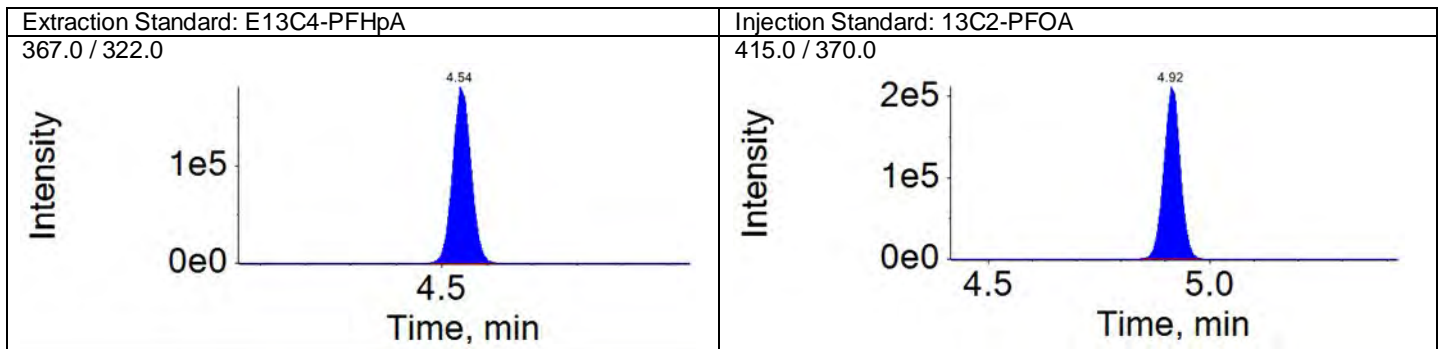
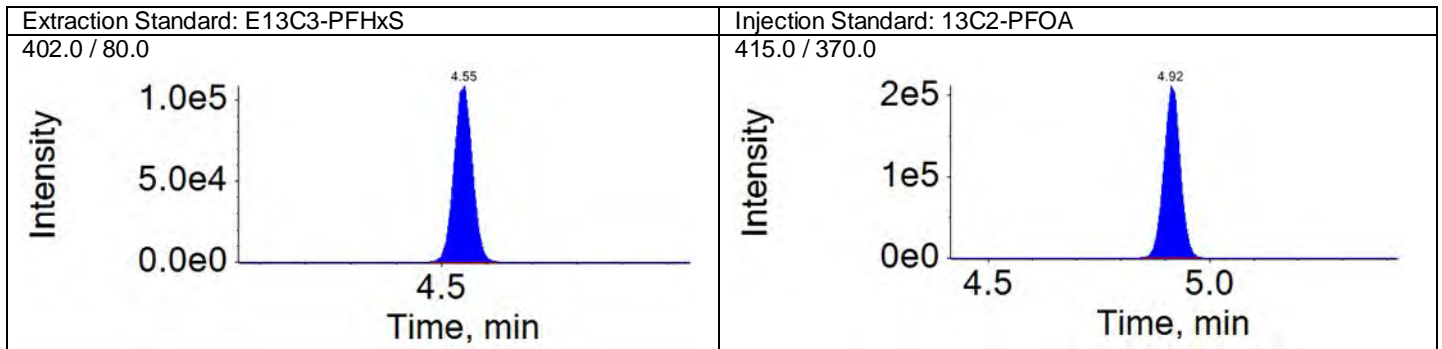
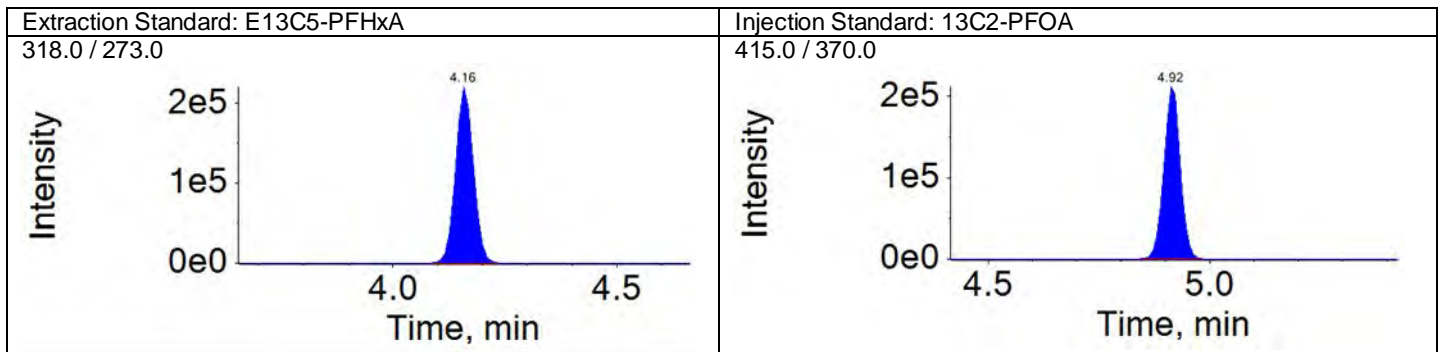
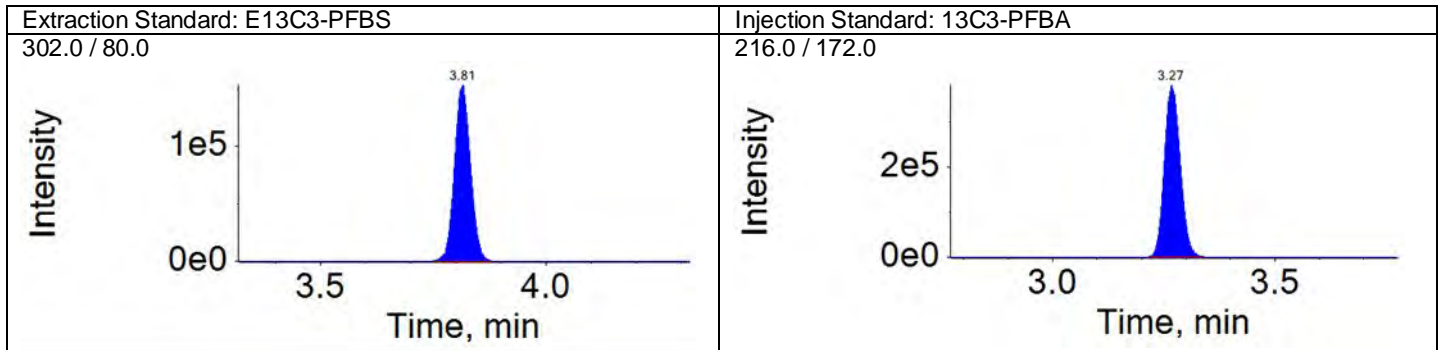
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



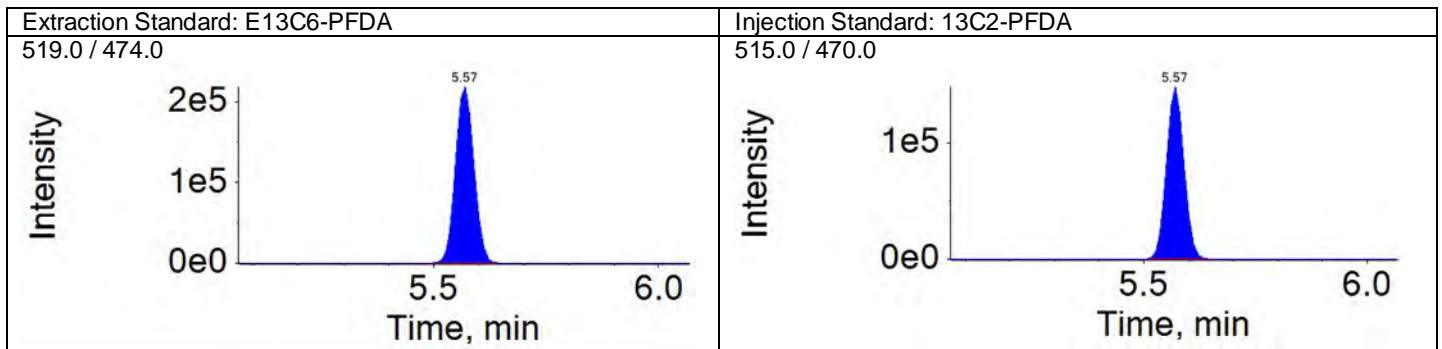
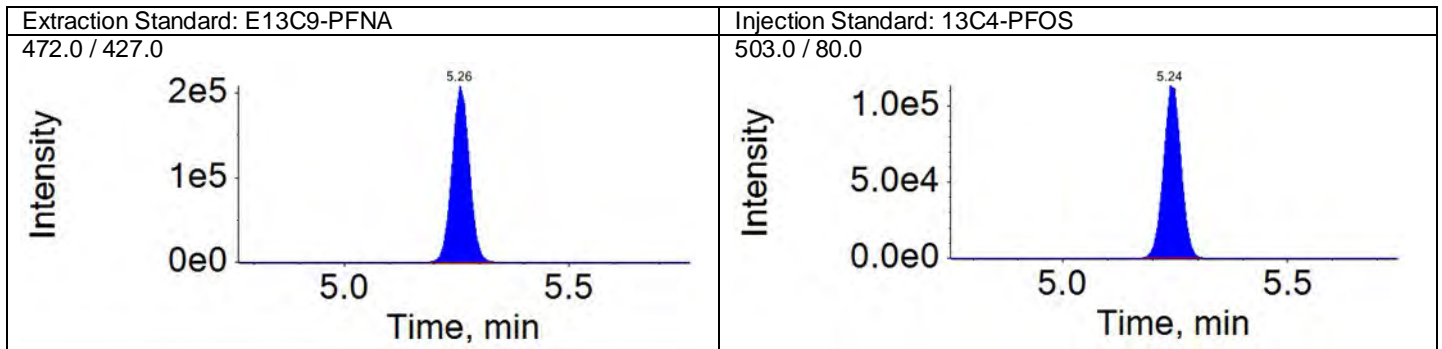
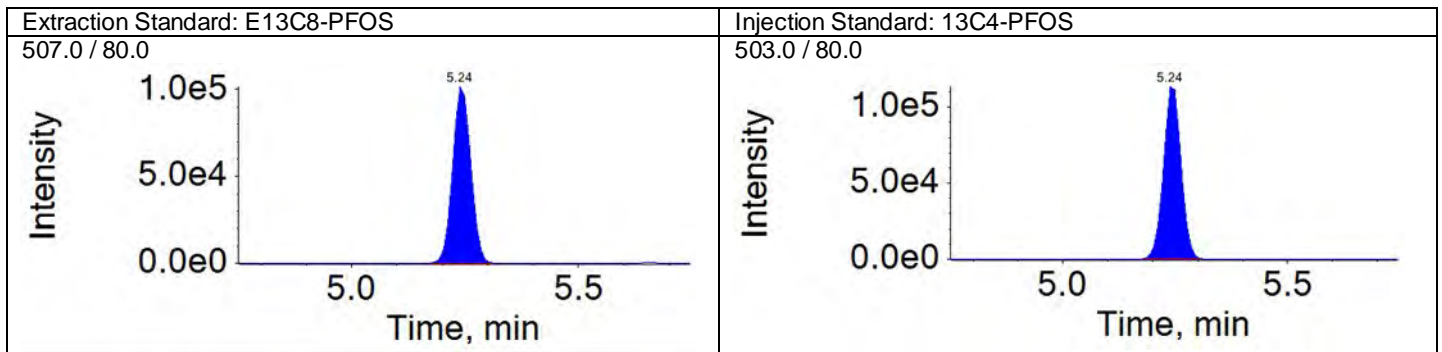
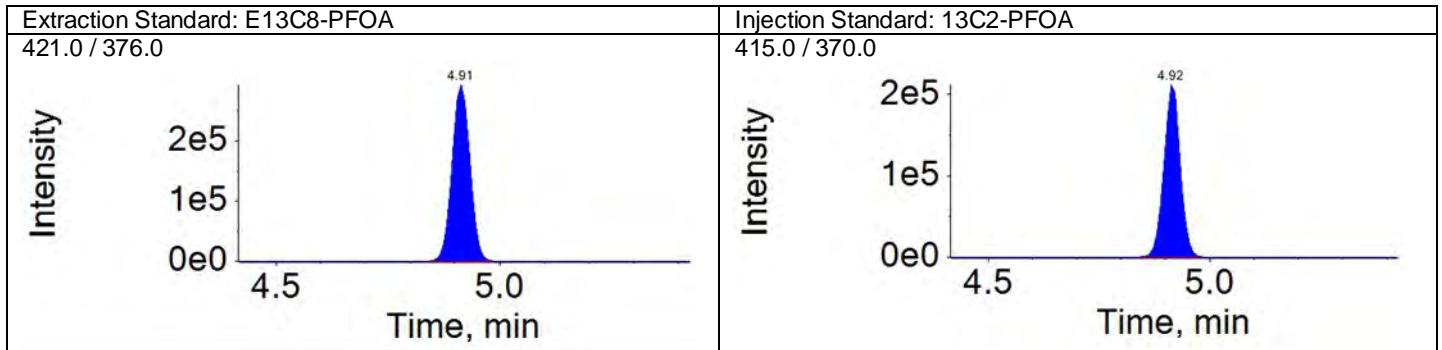
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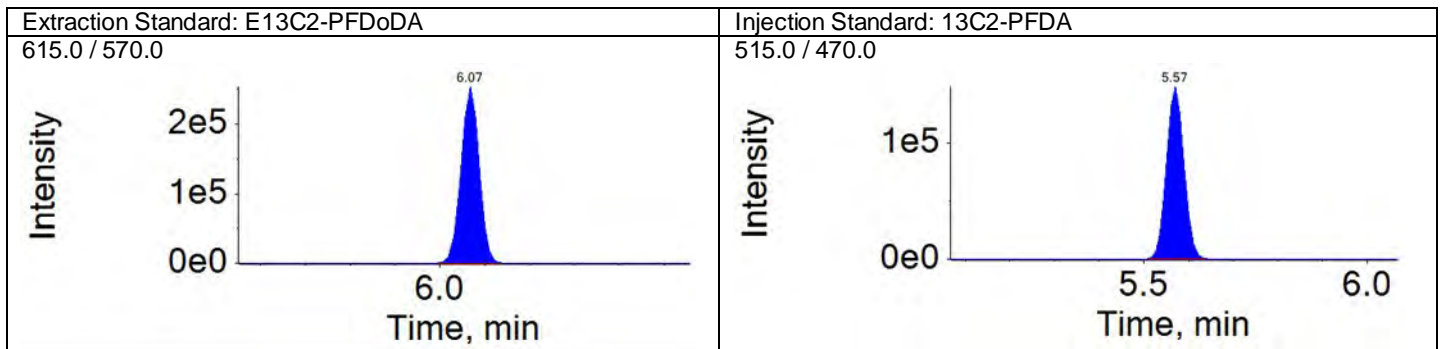
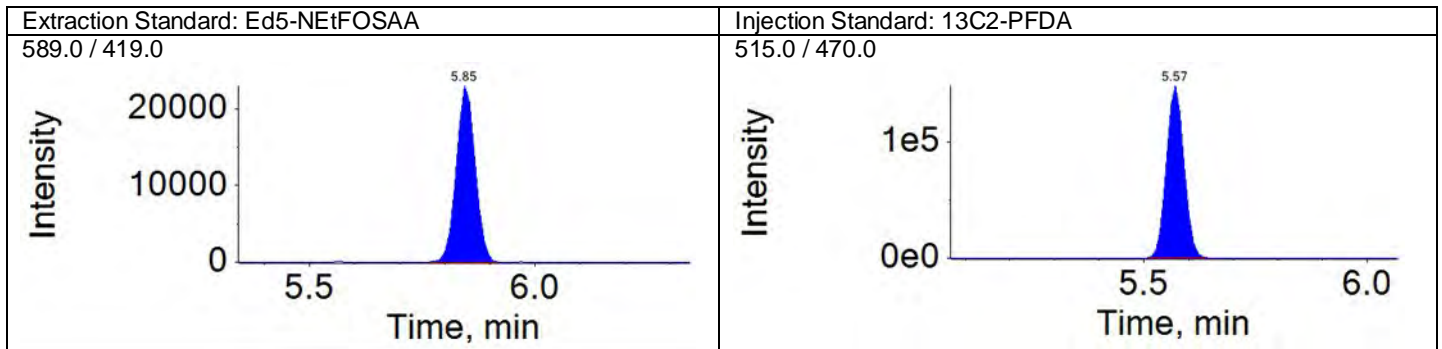
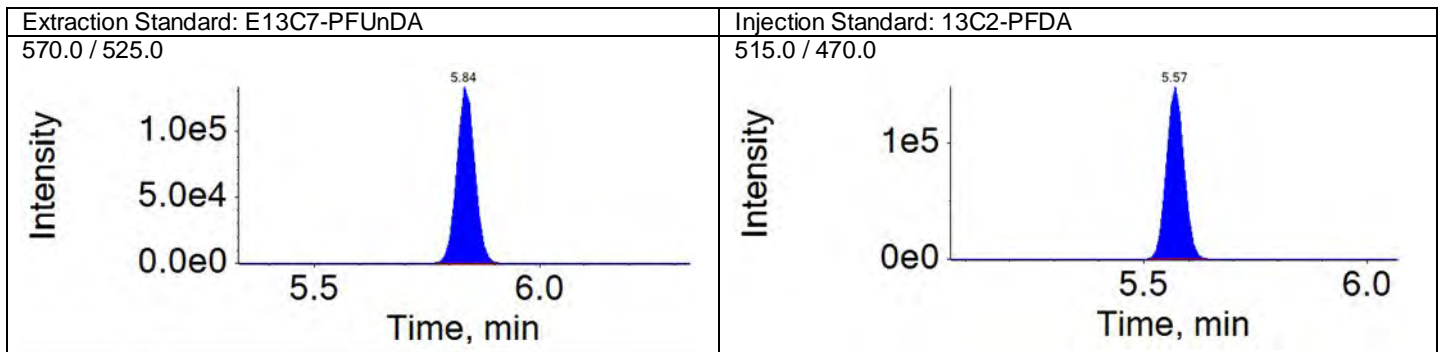
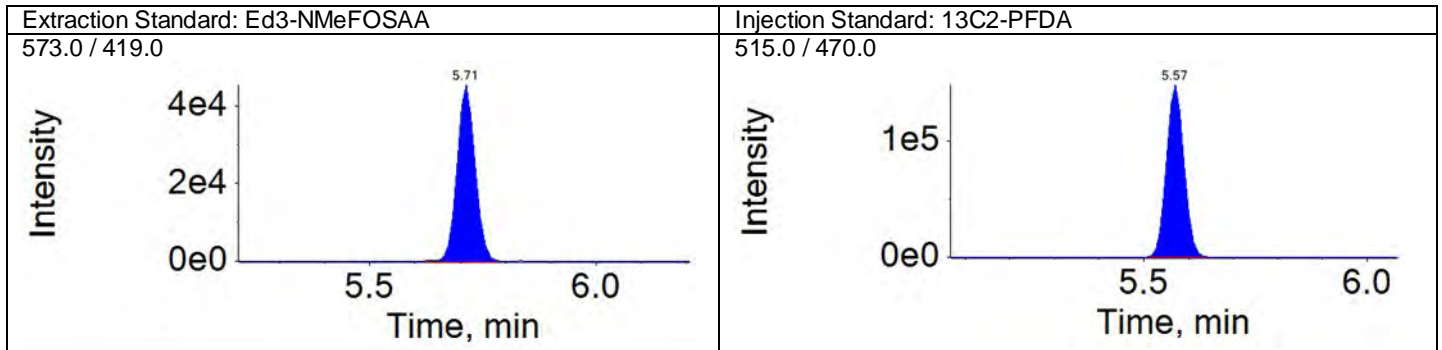
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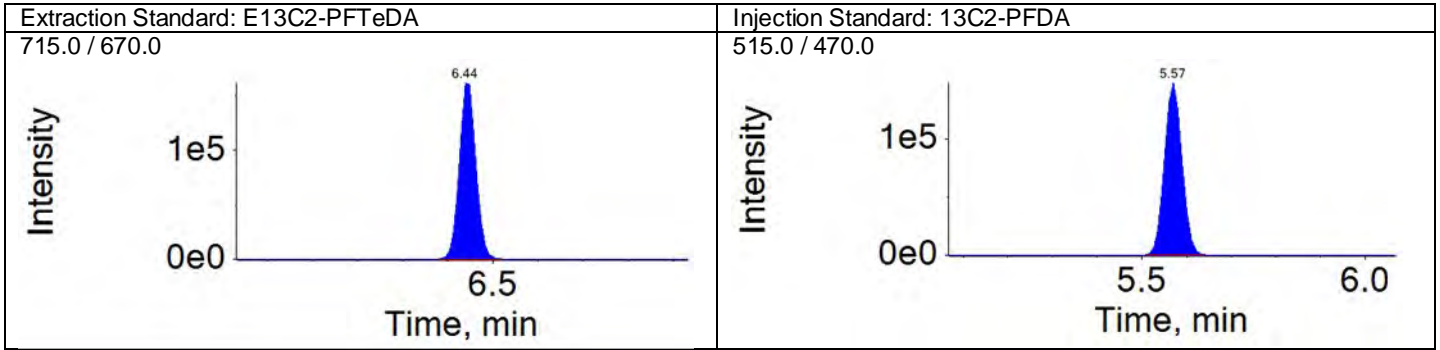
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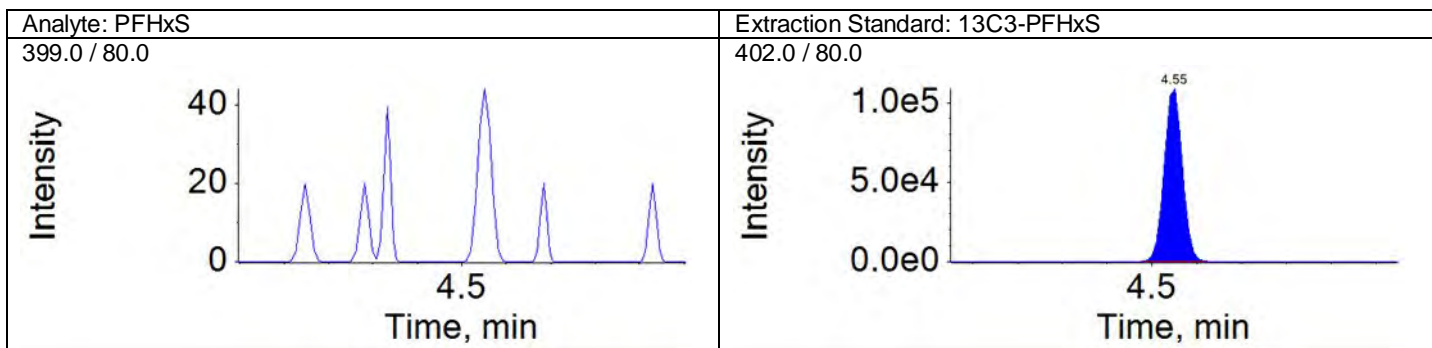
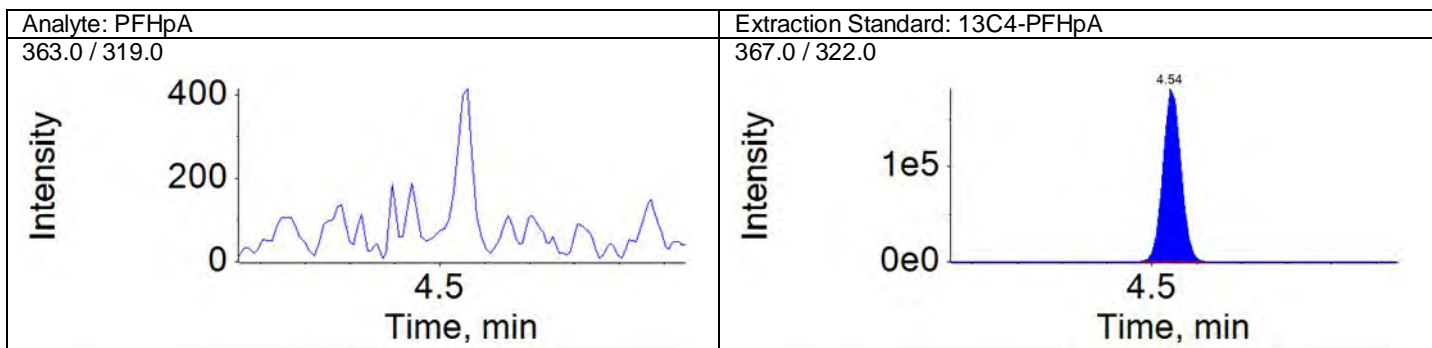
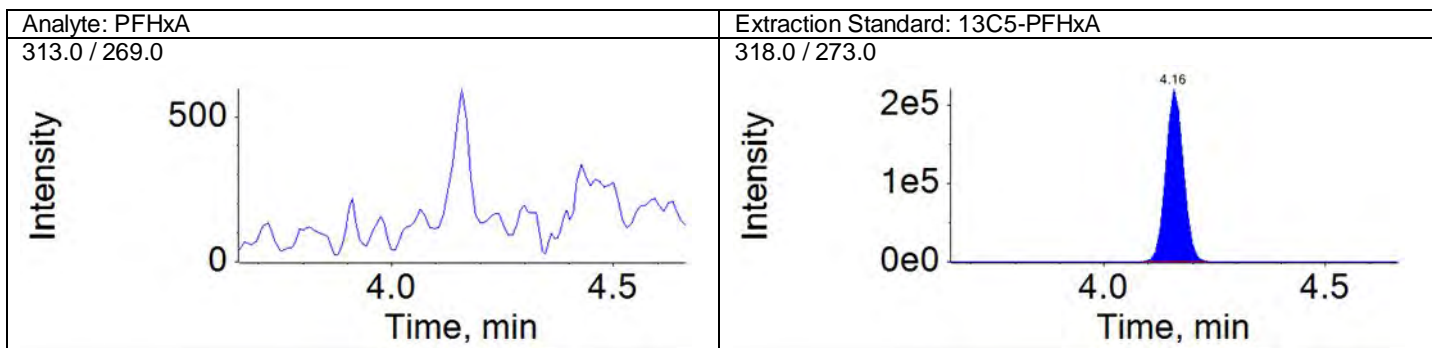
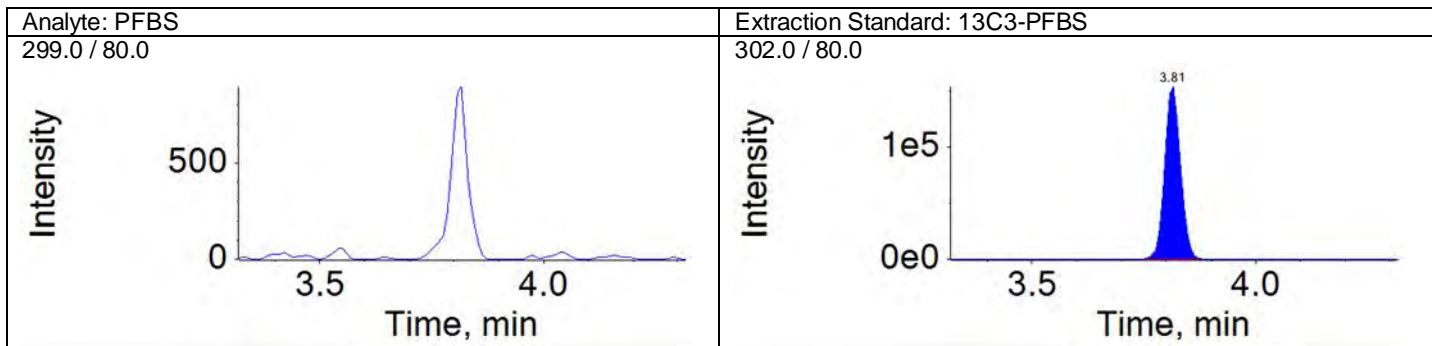
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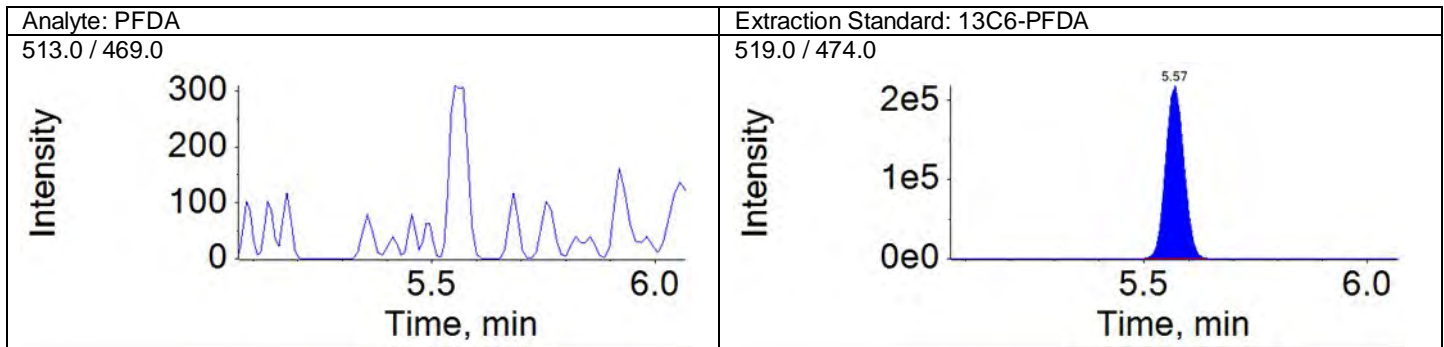
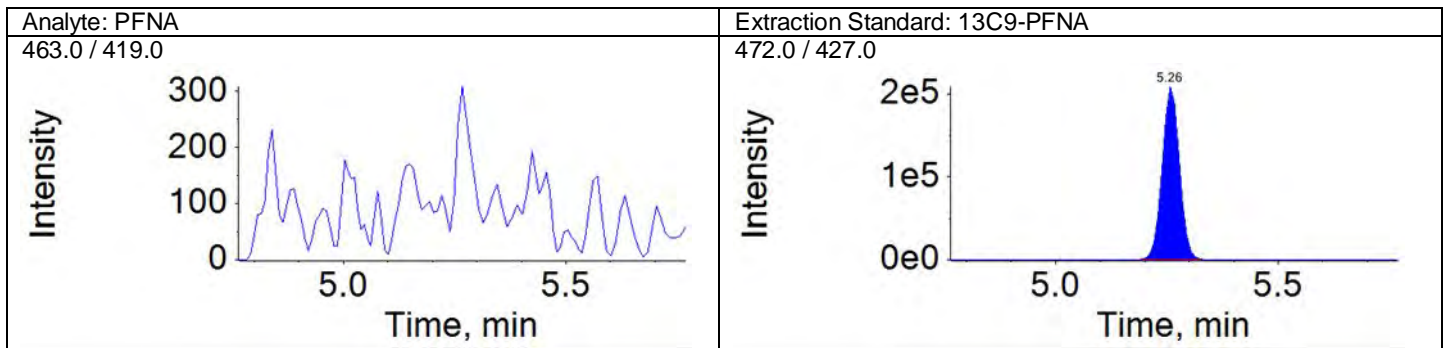
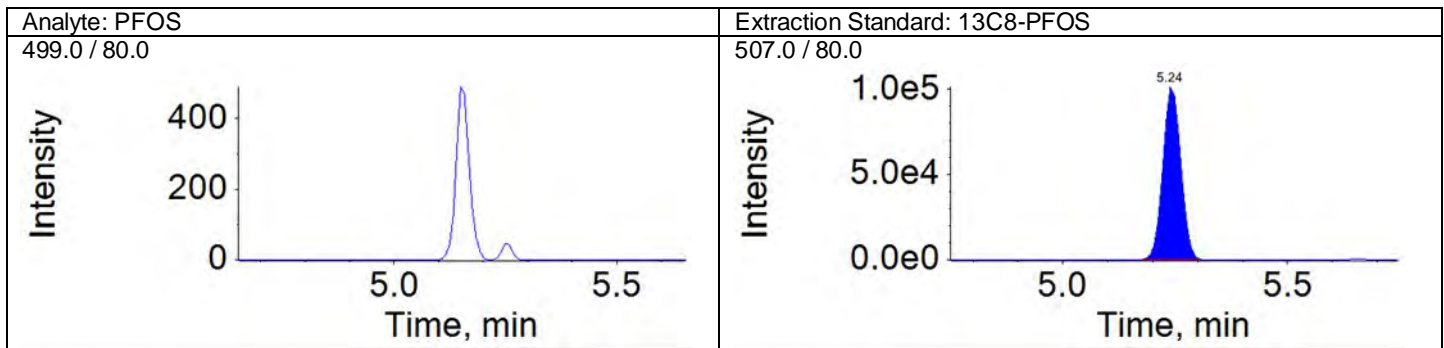
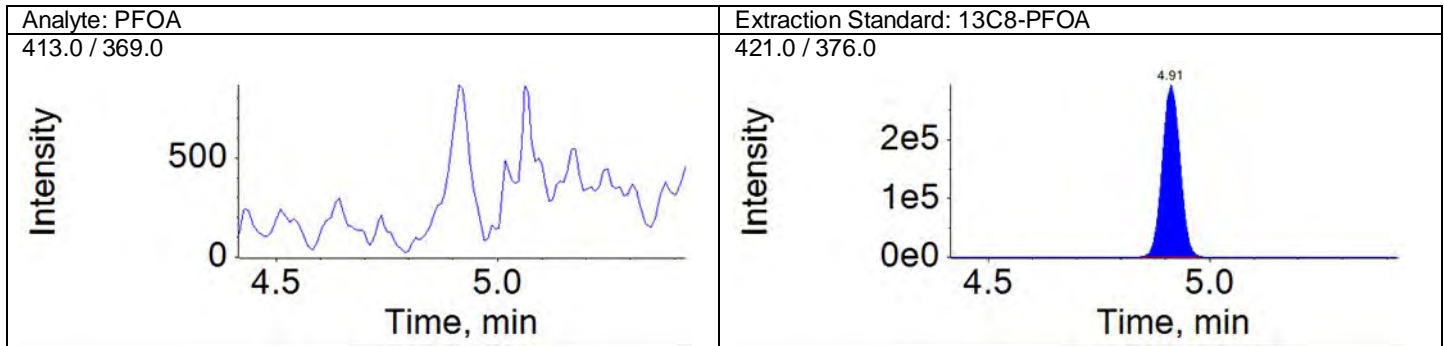
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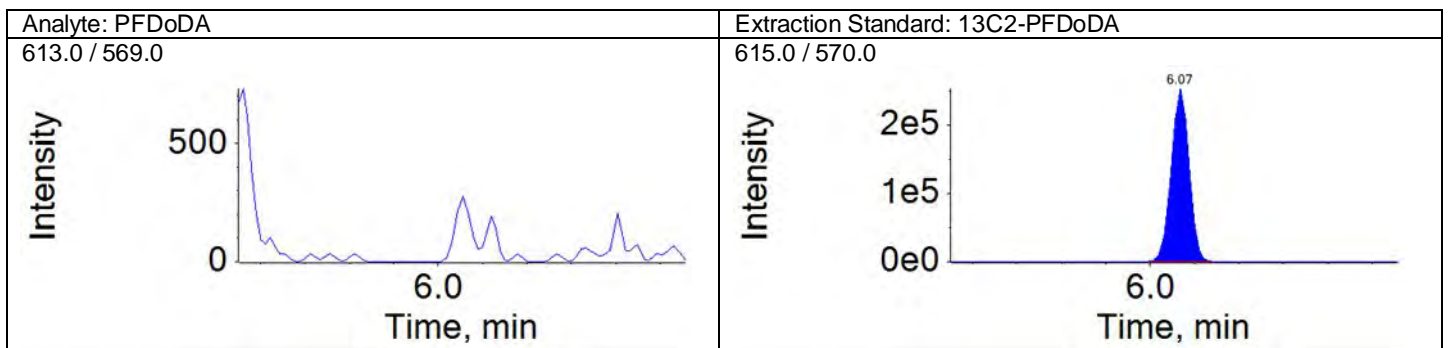
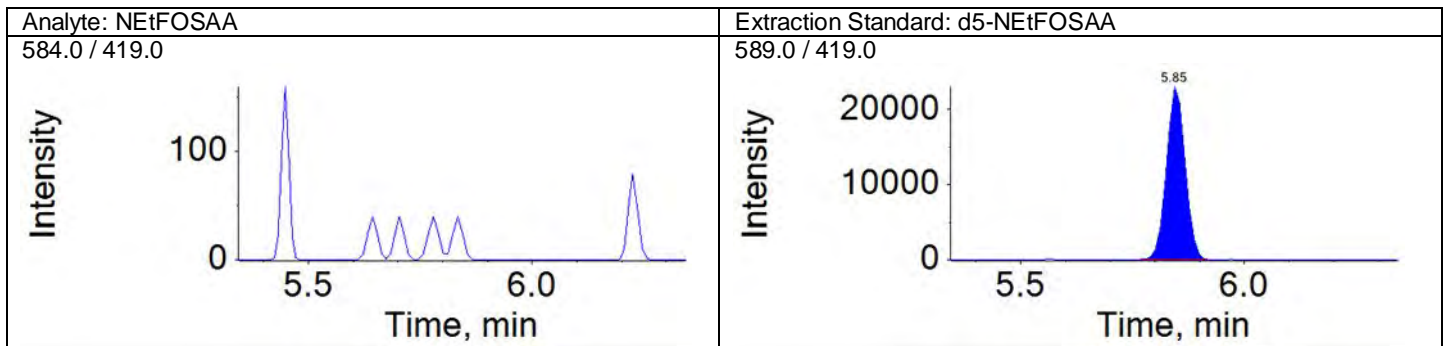
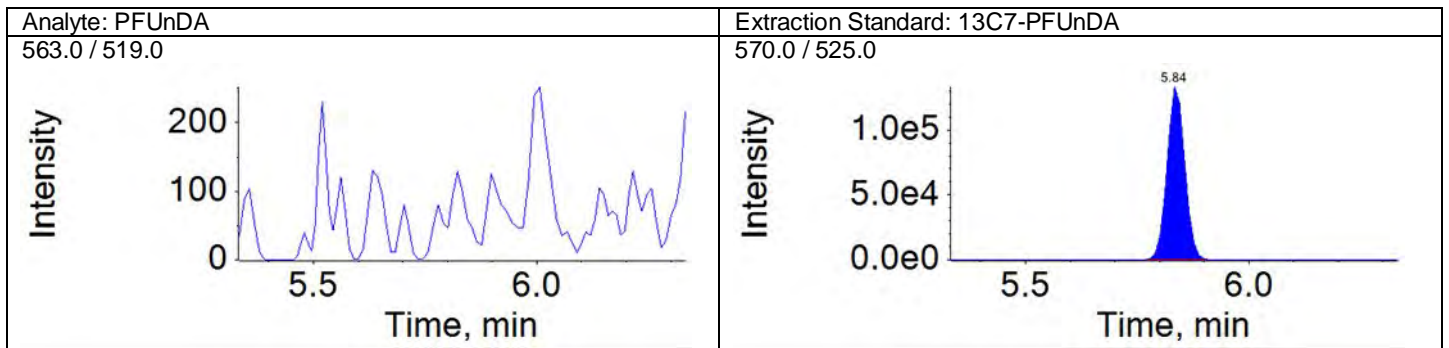
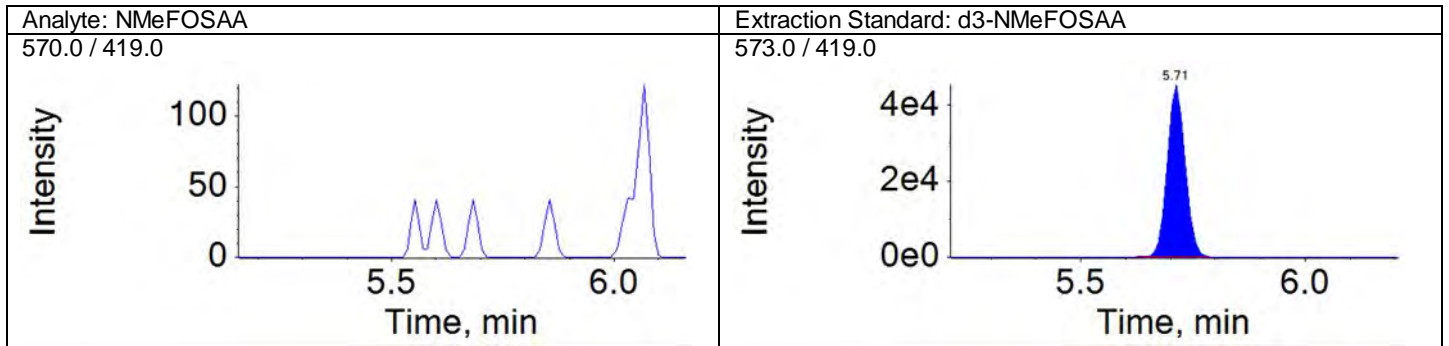
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



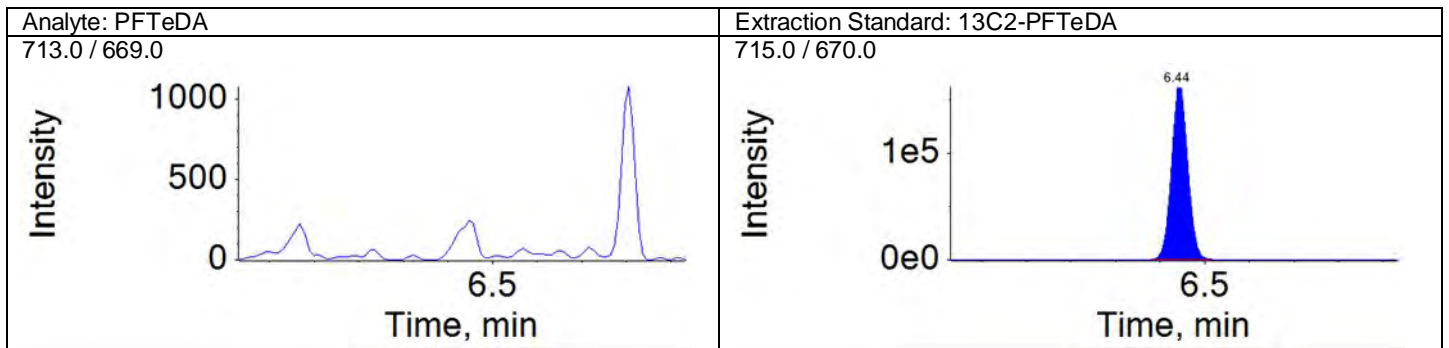
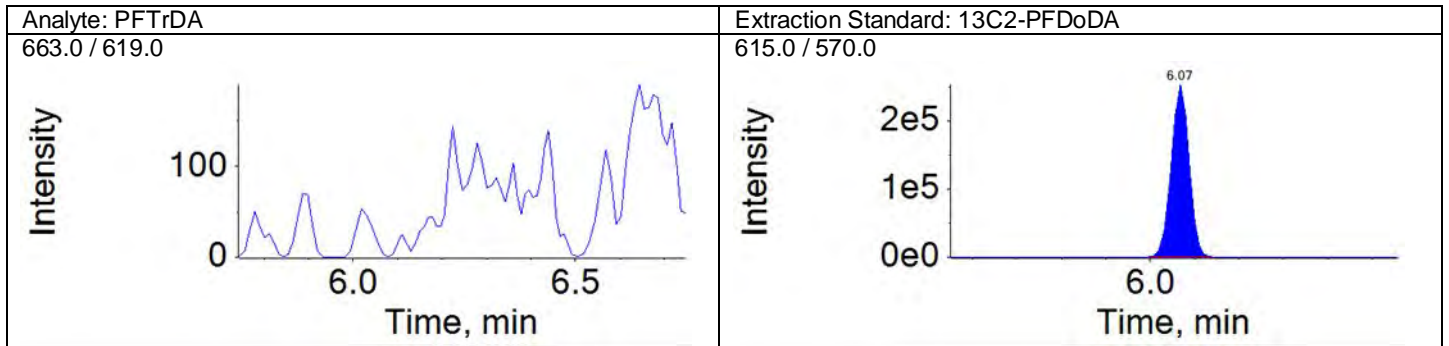
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Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



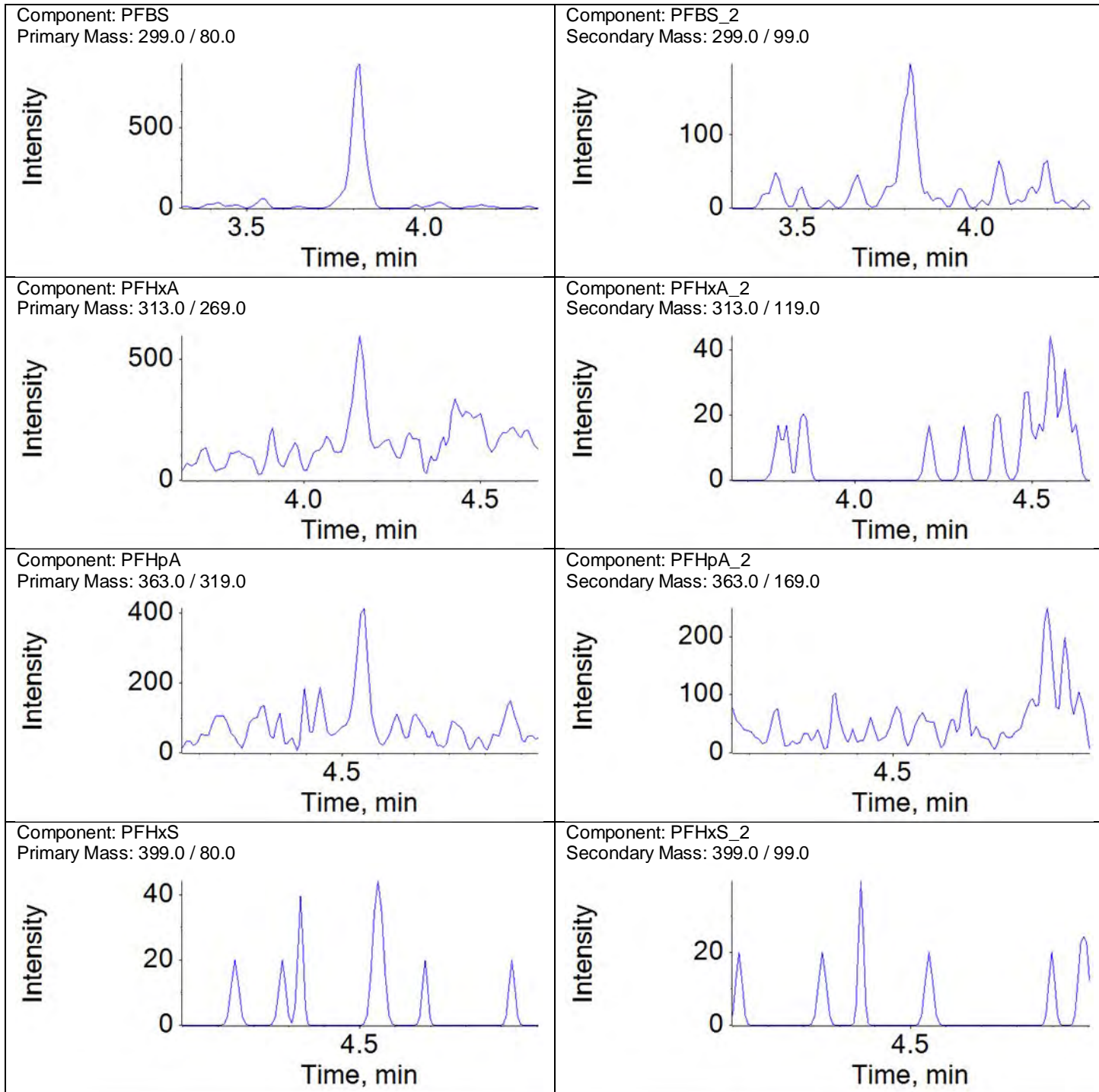
Ion Ratio Report

Sample Name: 9927674

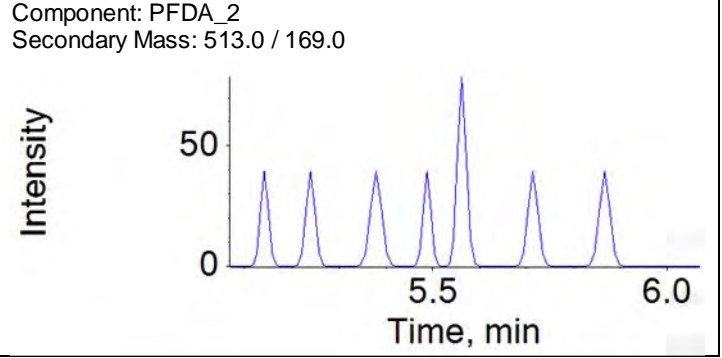
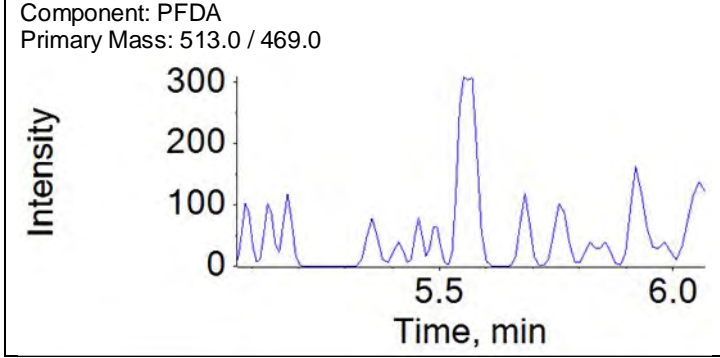
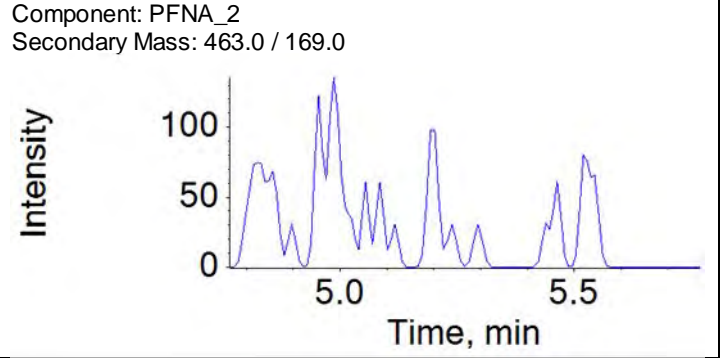
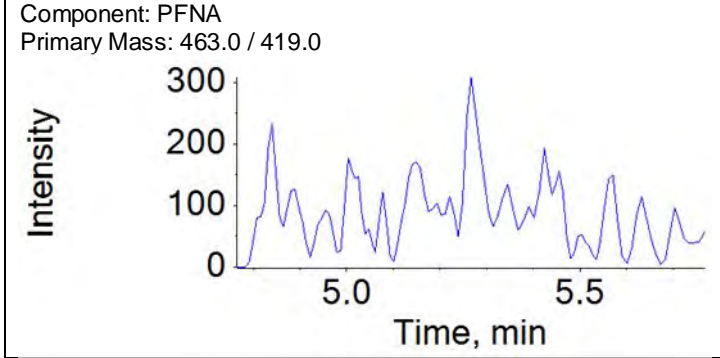
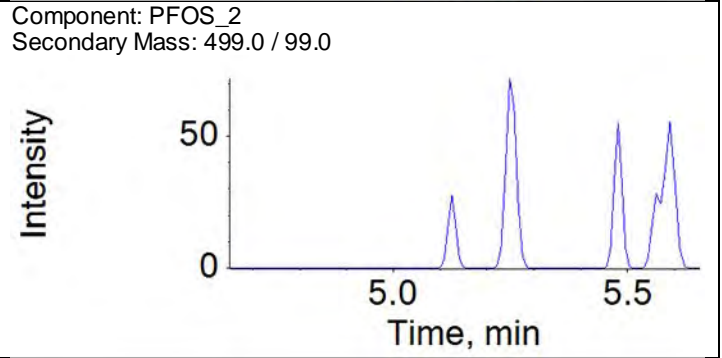
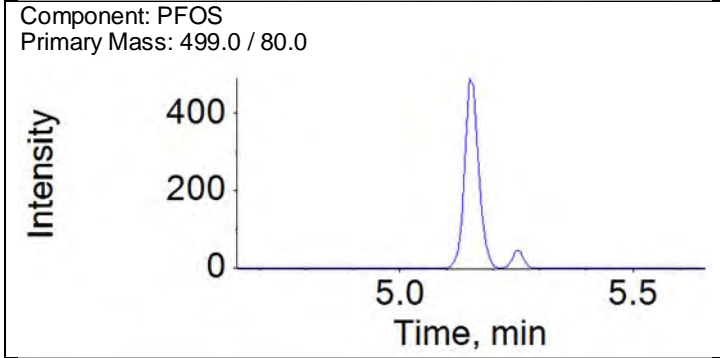
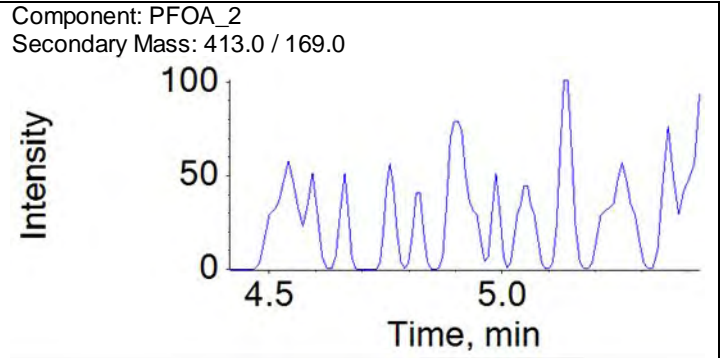
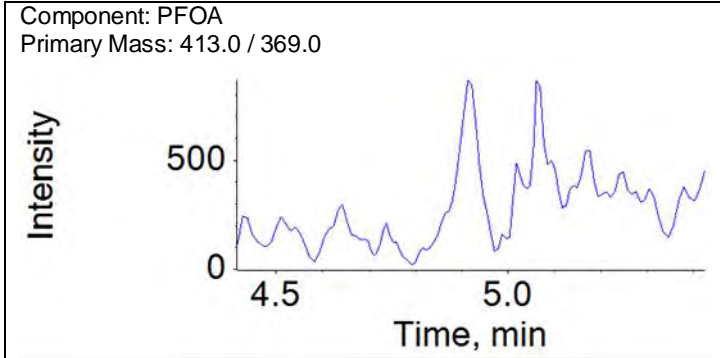
Instrument Name: LM27631

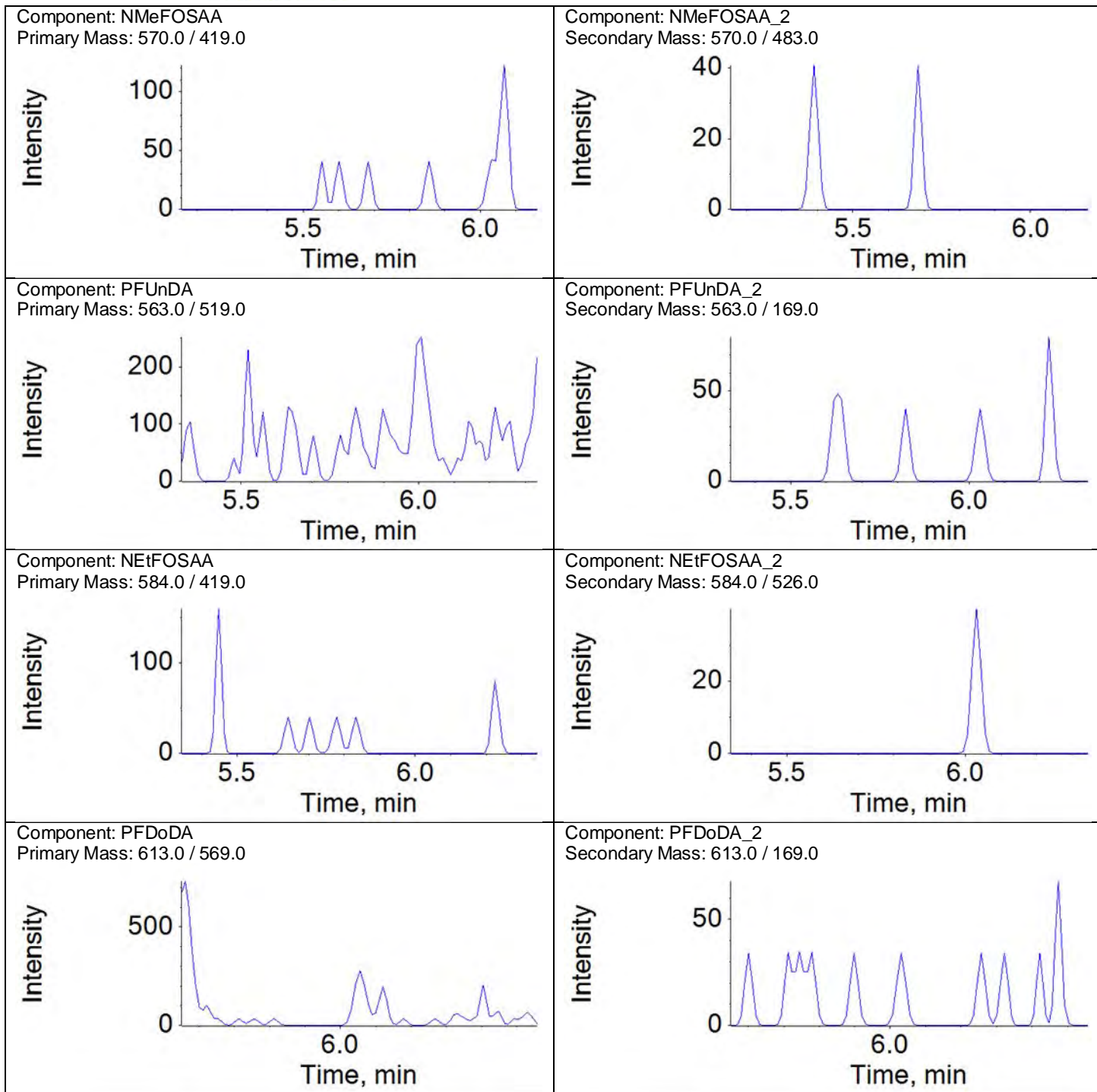
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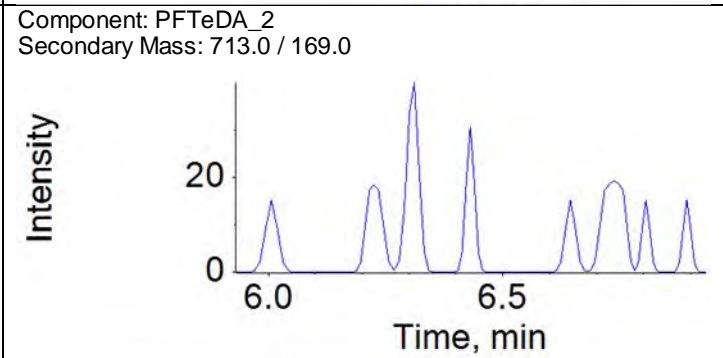
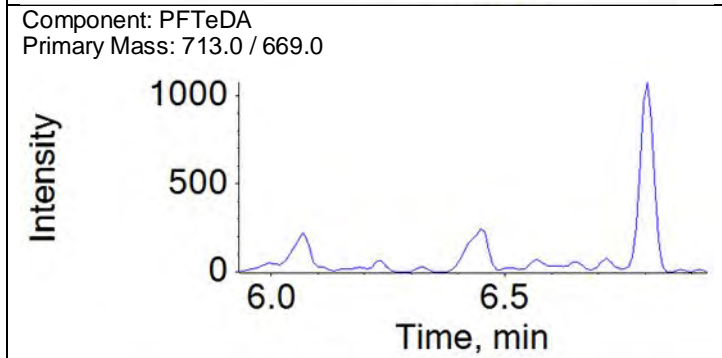
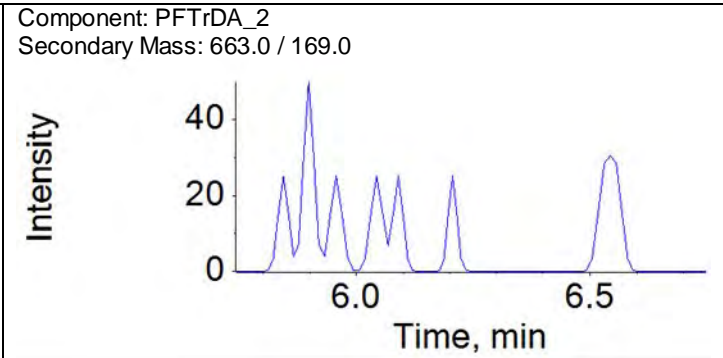
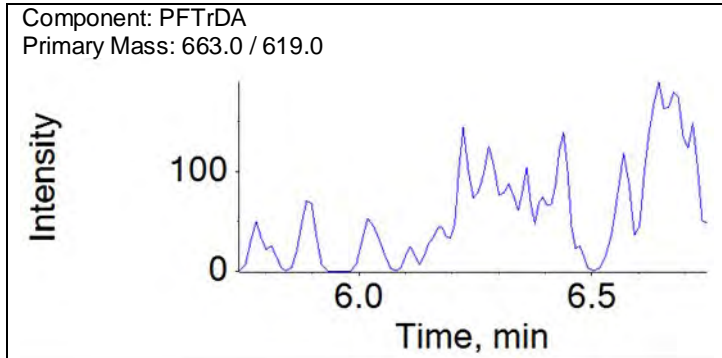
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	N/A	N/A			
PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDoDA	N/A	N/A	N/A	A	N/A	N/A			
PFDoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTTrDA	N/A	N/A	N/A	A	N/A	N/A			
PFTTrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTeDA	N/A	N/A	N/A	A	N/A	N/A			
PFTeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	













ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927675	Data File:	18DEC11D-09.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-4S35-4-01 Grab Groundwater	Acquis Date:	2018-12-11T06:11:22
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	29	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.28052	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	924584.1	953492.0	-3	50	
13C2-PFOA	5.0	494657.7	500971.3	-1	50	
13C4-PFOS	4.8	309316.2	310746.2	0	50	
13C2-PFDA	5.0	402578.8	419040.9	-4	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	344655.4	13C3-PFBA	924584.1	0.373	16.576	11.264	68	50-150	
E13C5-PFHxA	567219.6	13C2-PFOA	494657.7	1.147	17.824	13.724	77	50-150	
E13C3-PFHxS	280620.7	13C2-PFOA	494657.7	0.567	16.862	12.971	77	50-150	
E13C4-PFHpA	438383.8	13C2-PFOA	494657.7	0.886	17.824	13.431	75	50-150	
E13C8-PFOA	779592.2	13C2-PFOA	494657.7	1.576	17.824	15.881	89	50-150	
E13C8-PFOS	262286.0	13C4-PFOS	309316.2	0.848	17.040	13.566	80	50-150	
E13C9-PFNA	482675.6	13C4-PFOS	309316.2	1.560	17.824	15.719	88	50-150	
E13C6-PFDA	576645.4	13C2-PFDA	402578.8	1.432	17.824	13.531	76	50-150	
Ed3-NMeFOSAA	110187.8	13C2-PFDA	402578.8	0.274	17.824	17.291	97	50-150	
E13C7-PFUnDA	347933.3	13C2-PFDA	402578.8	0.864	17.824	15.113	85	50-150	
Ed5-NEtFOSAA	67983.2	13C2-PFDA	402578.8	0.169	17.824	13.289	75	50-150	
E13C2-PFDoDA	641553.1	13C2-PFDA	402578.8	1.594	17.824	11.921	67	50-150	
E13C2-PFTeDA	416235.8	13C2-PFDA	402578.8	1.034	17.824	10.939	61	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

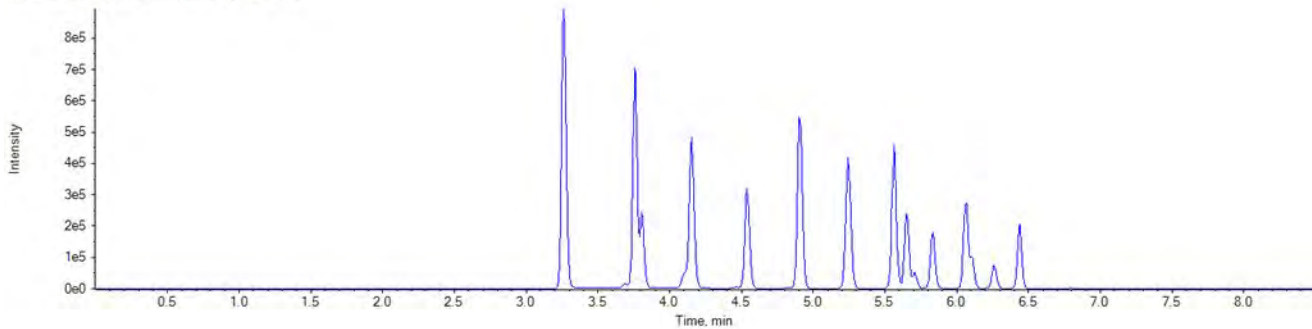
Sample Name: 9927675 Instrument Name: LM27631 File Name: 18DEC11D-09.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.28052	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	3.81	1.000	104509.3		A	13C3-PFBS	3.81	344655.4	0.303	5.358
PFHxA	4.15	1.000	518790.5		M	13C5-PFHxA	4.15	567219.6	0.915	14.207
PFHpA	4.54	1.000	19998.7		A	13C4-PFHpA	4.54	438383.8	0.046	0.535
PFHxS	4.53	1.000	9915.3		M	13C3-PFHxS	4.54	280620.7	0.035	0.597
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	779592.2	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	262286.0	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.25	482675.6	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.56	576645.4	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	110187.8	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.83	347933.3	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.84	67983.2	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.06	641553.1	N/A	
PFTTrDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.06	641553.1	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	416235.8	N/A	

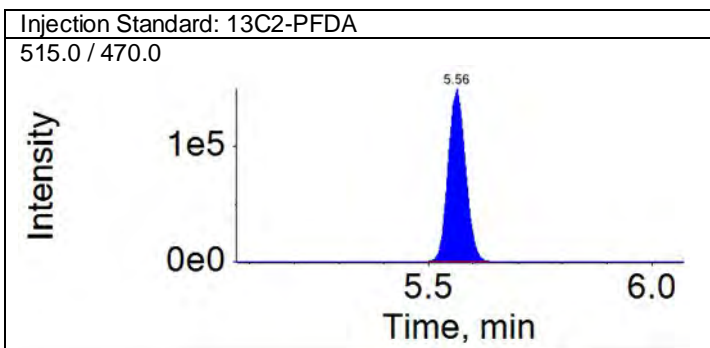
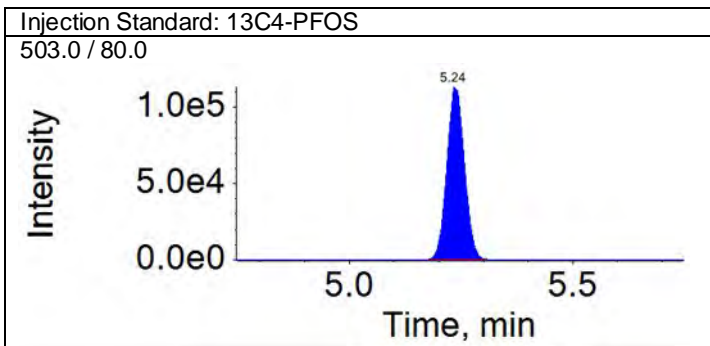
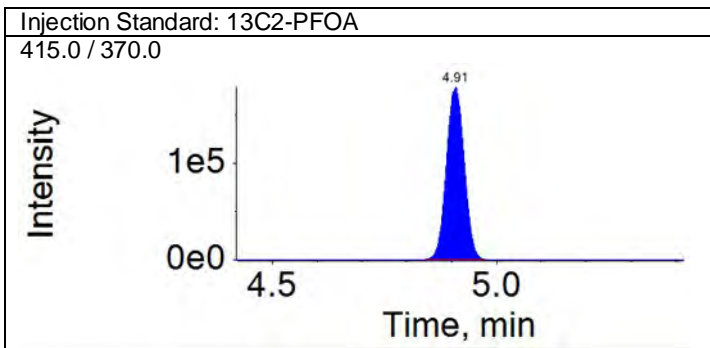
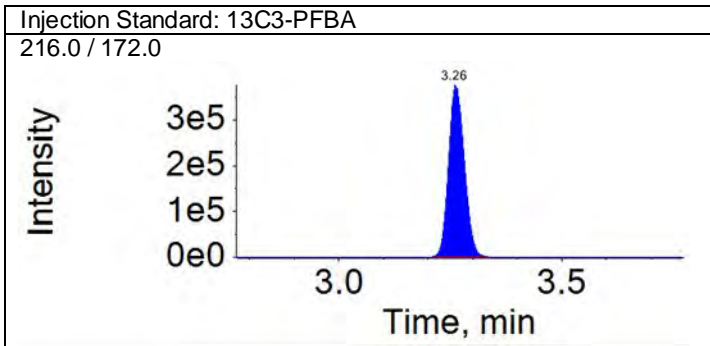
**Total Ion Chromatogram**

TIC from 18DEC11D-09.wiff (sample 1) - 9927675



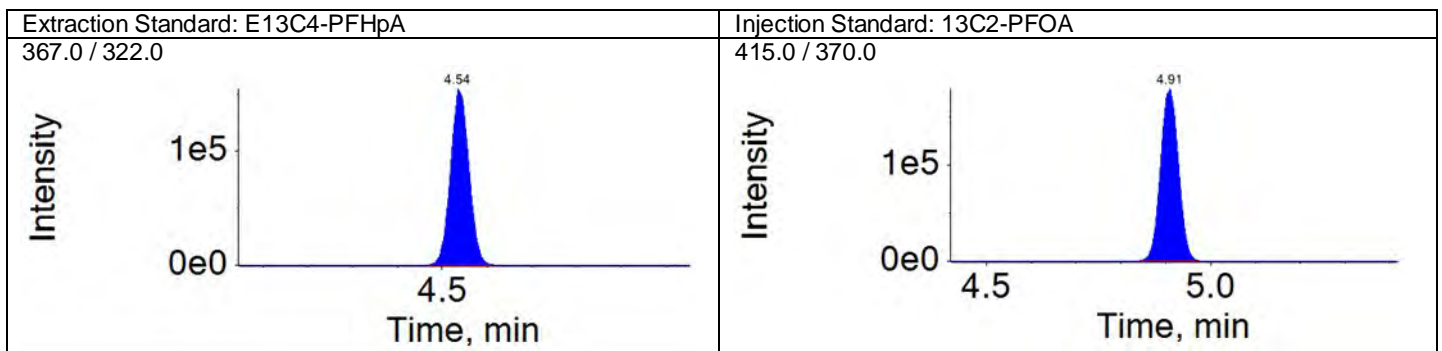
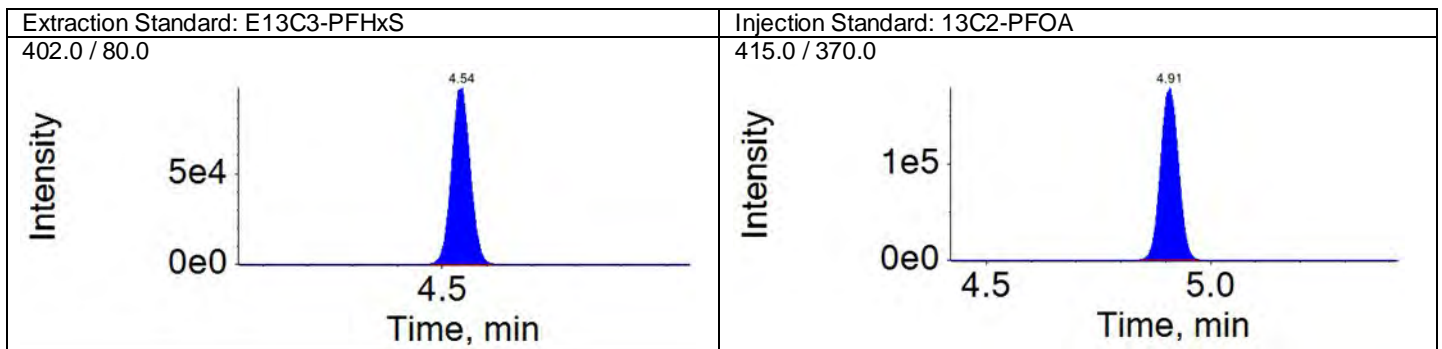
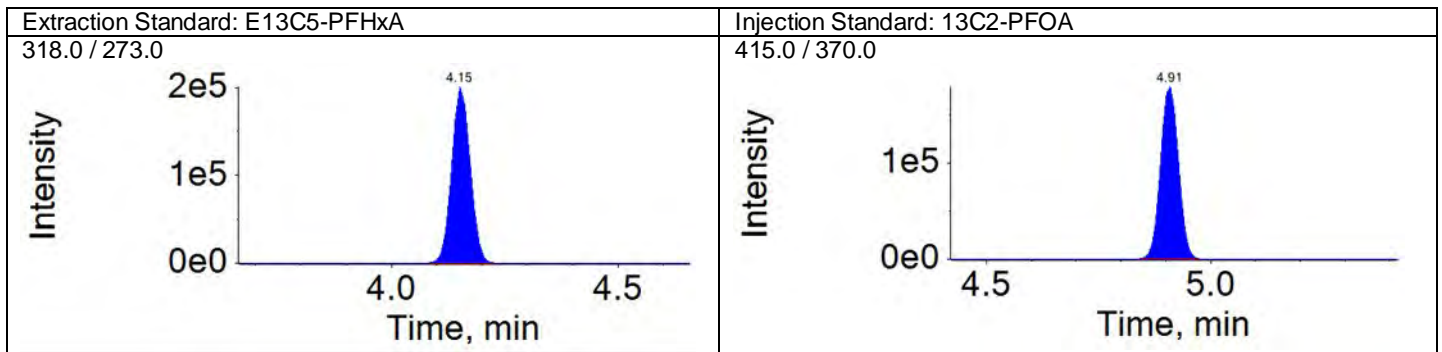
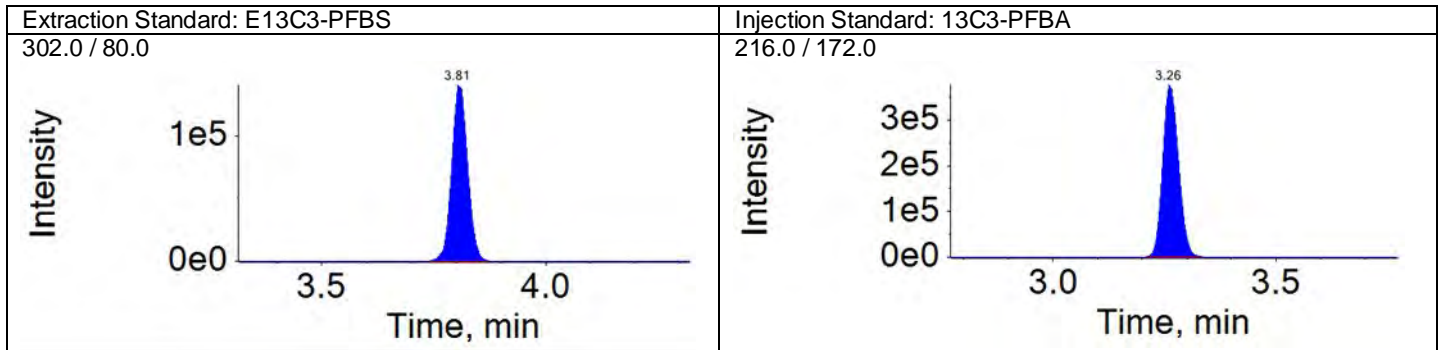
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



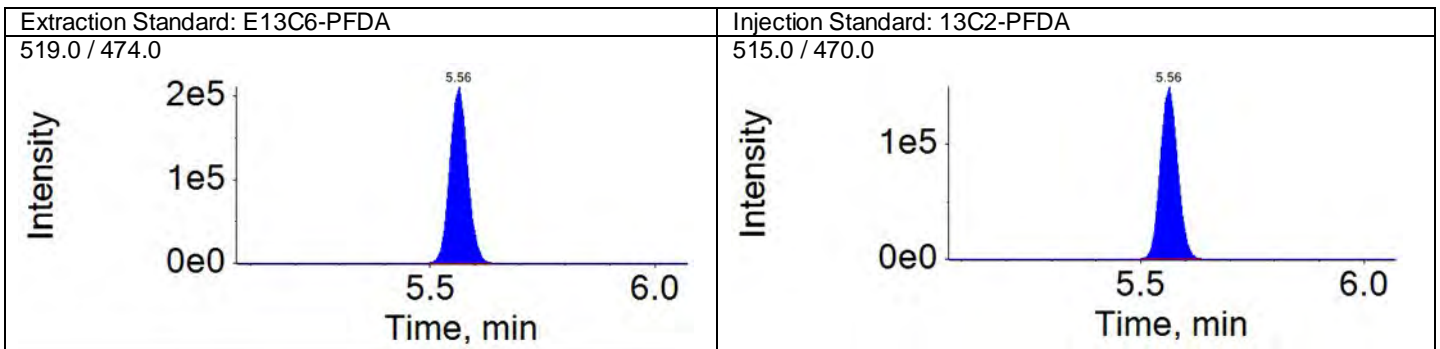
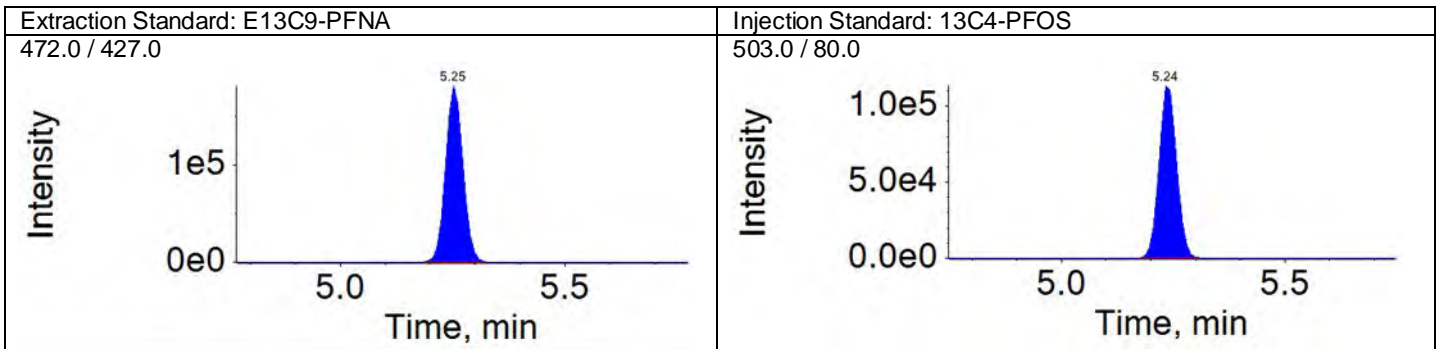
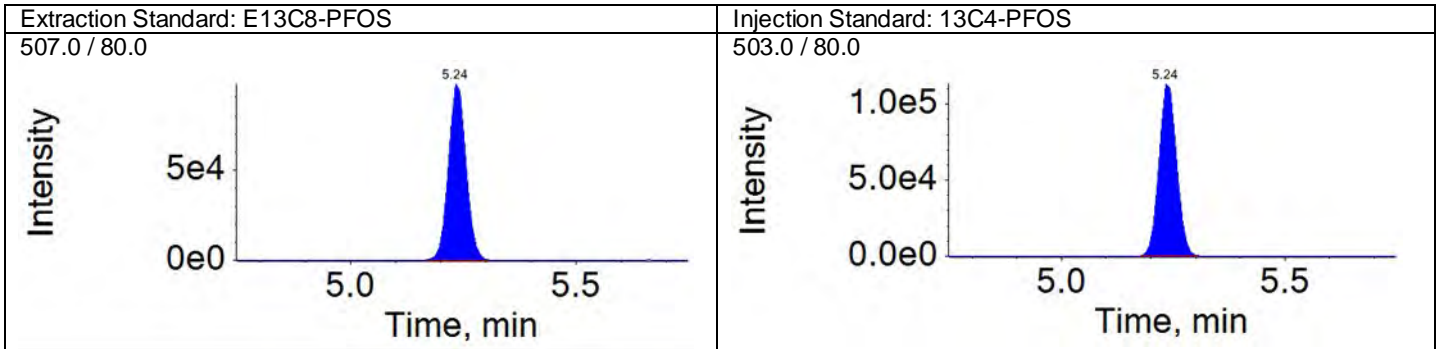
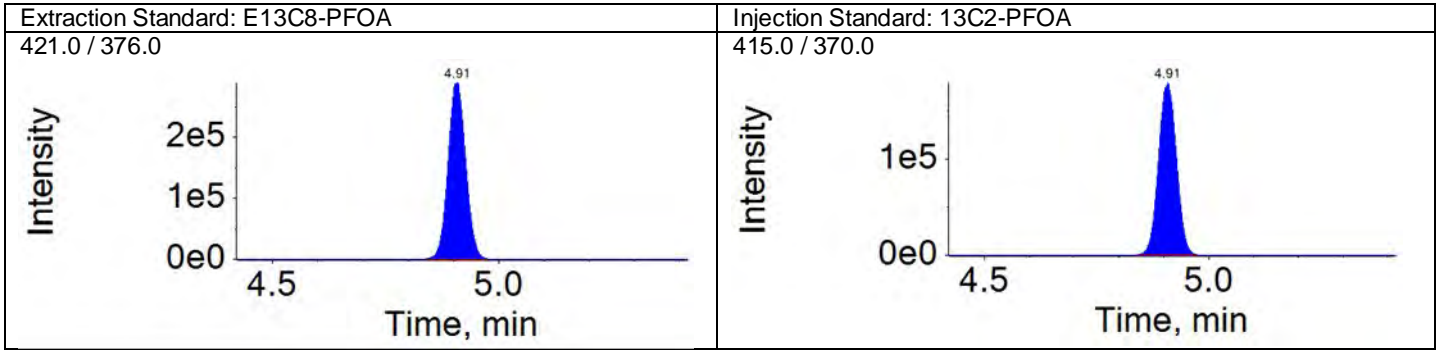
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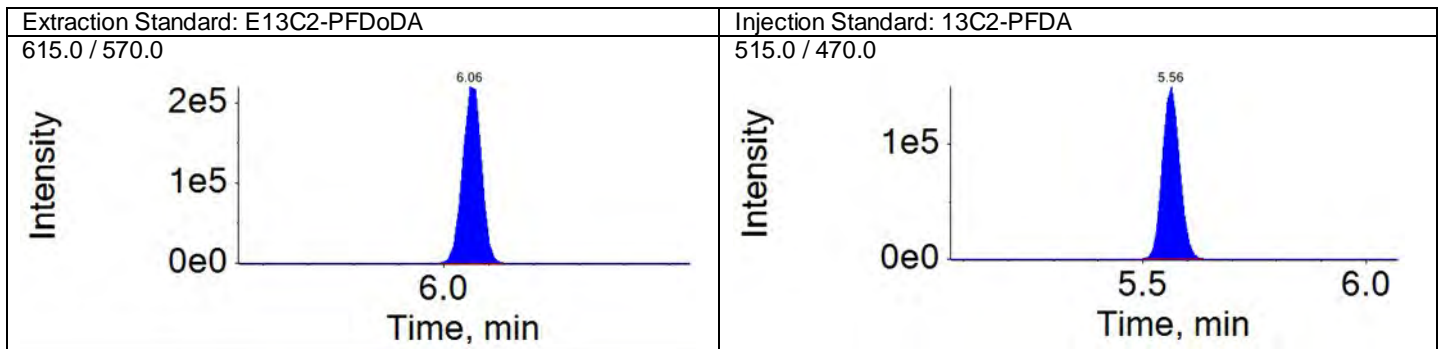
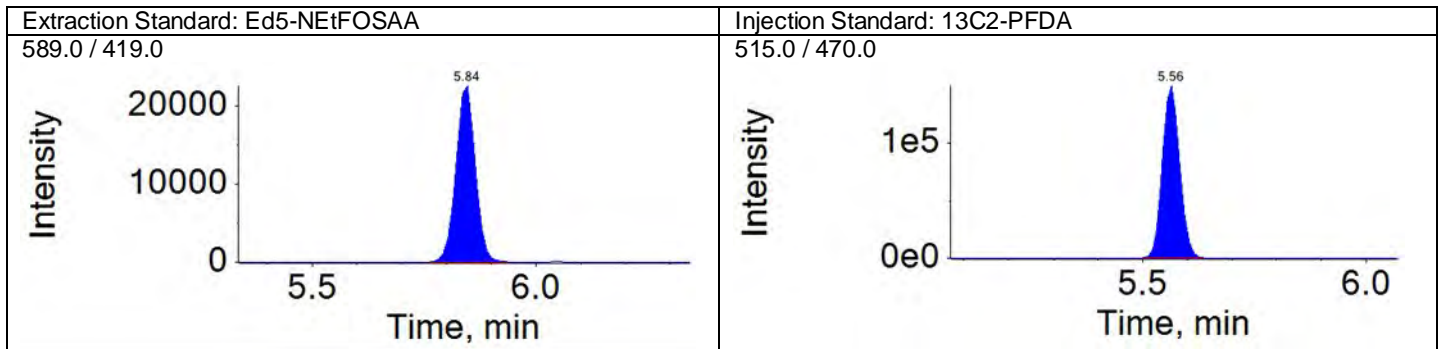
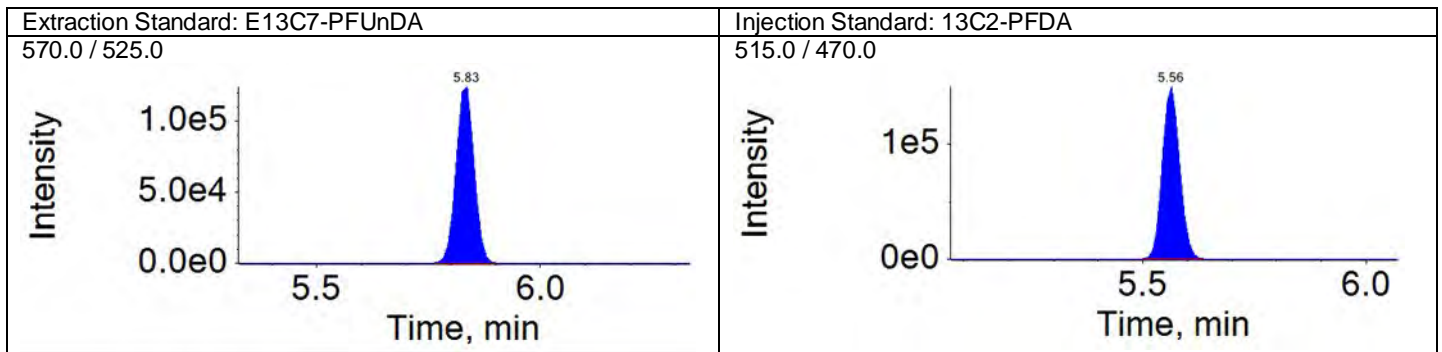
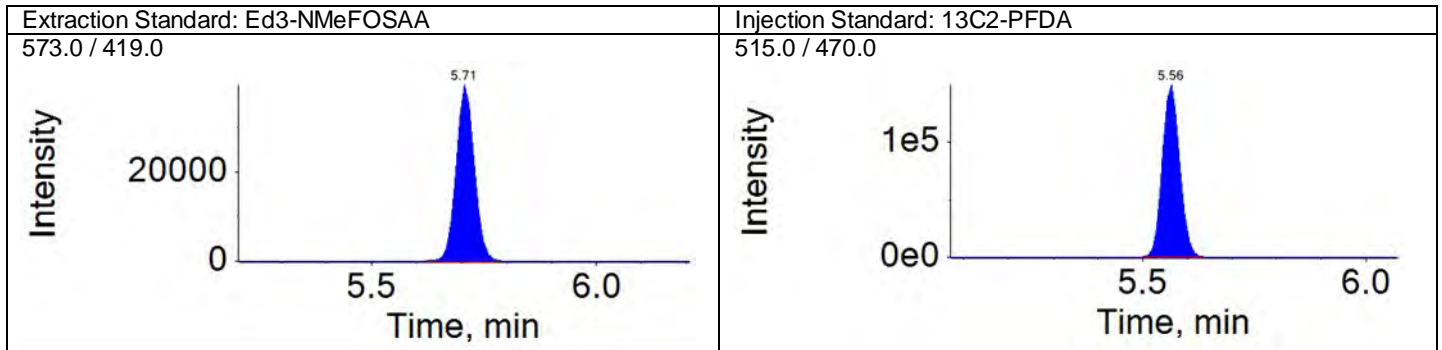
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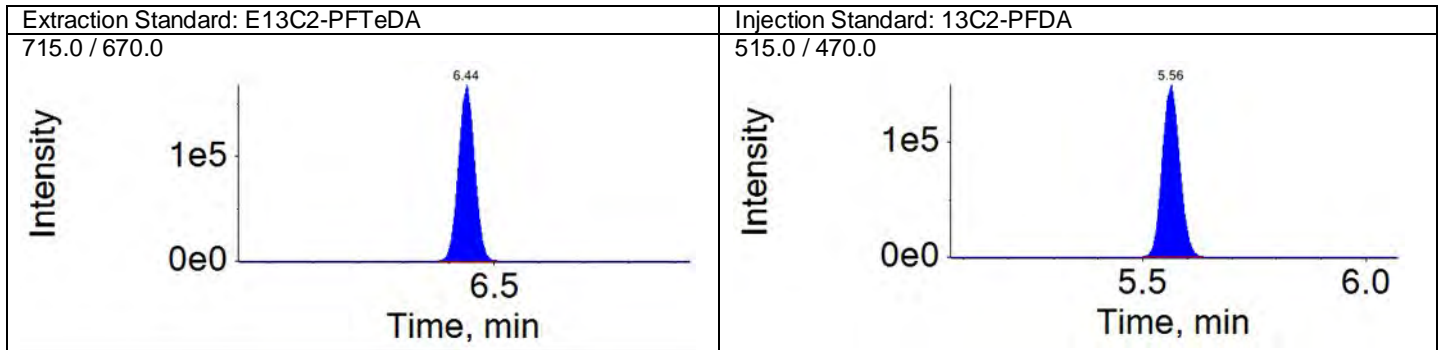
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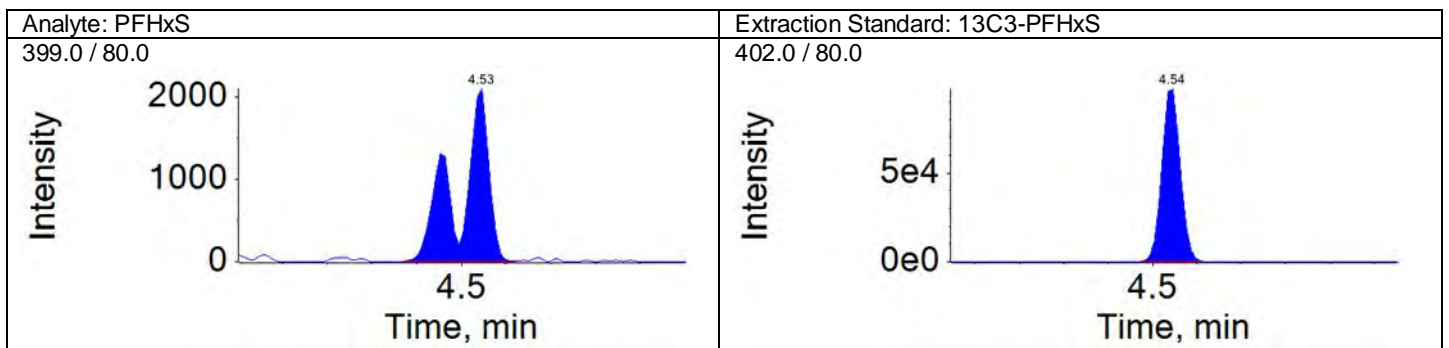
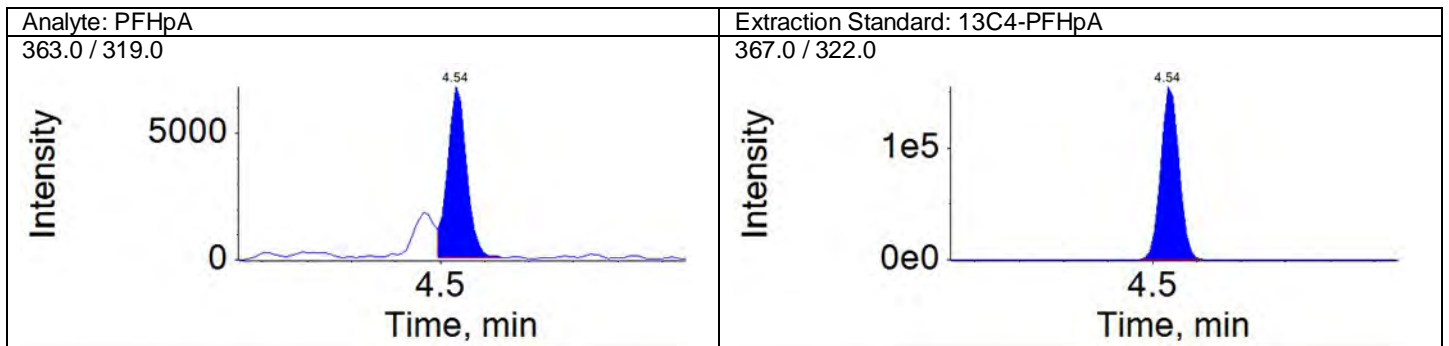
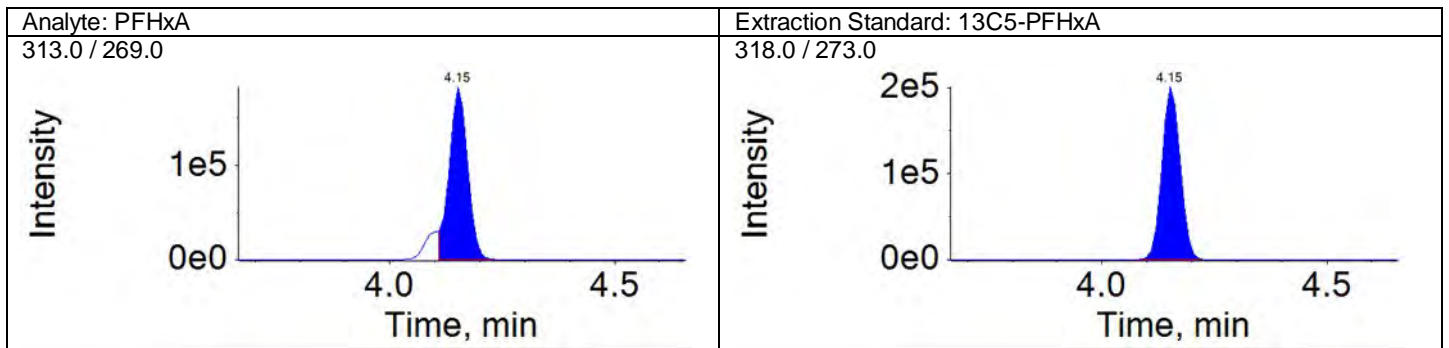
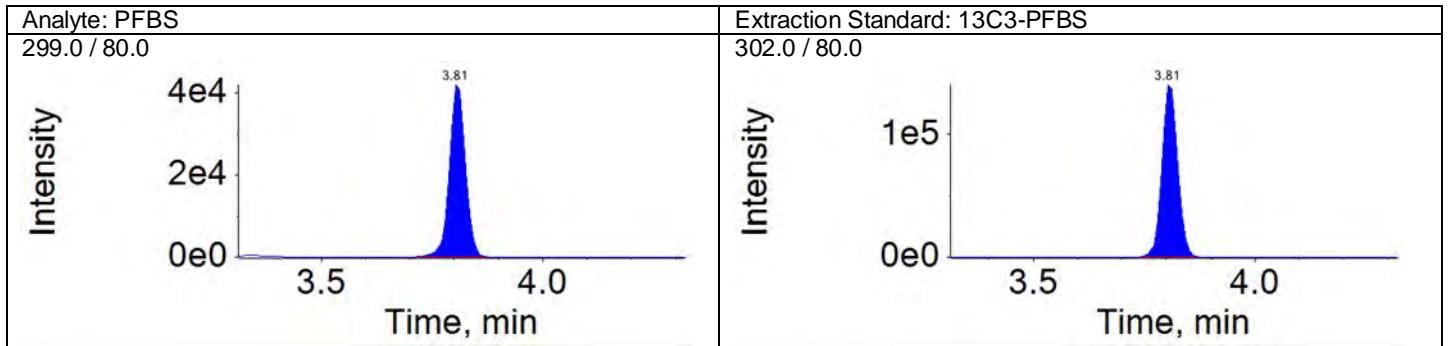
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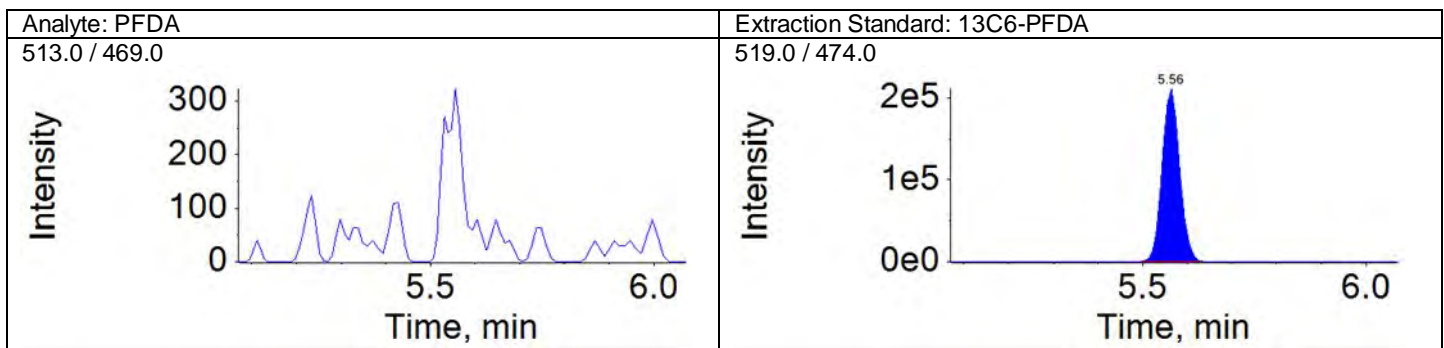
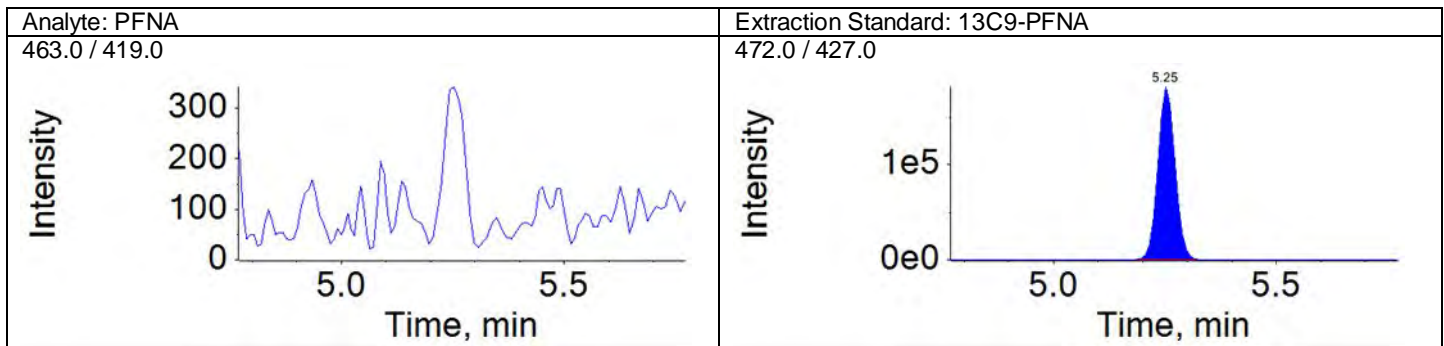
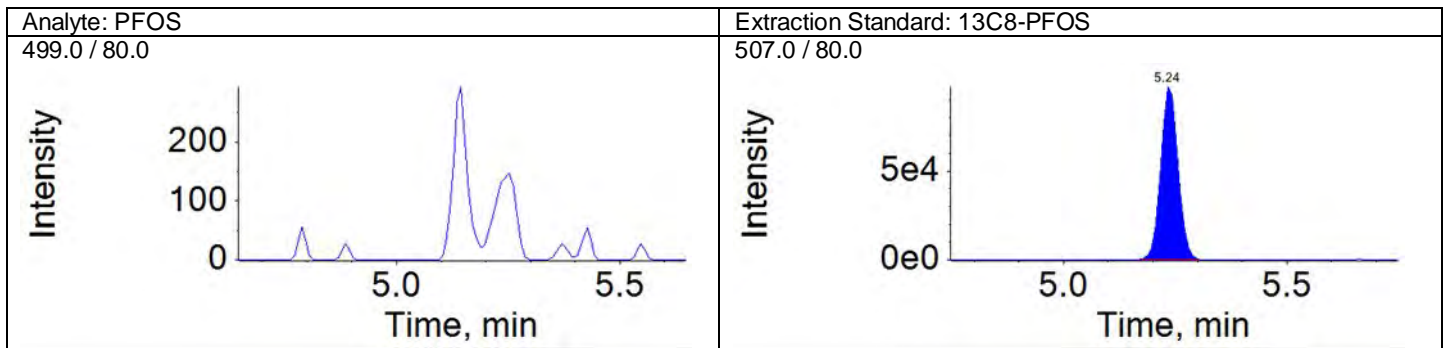
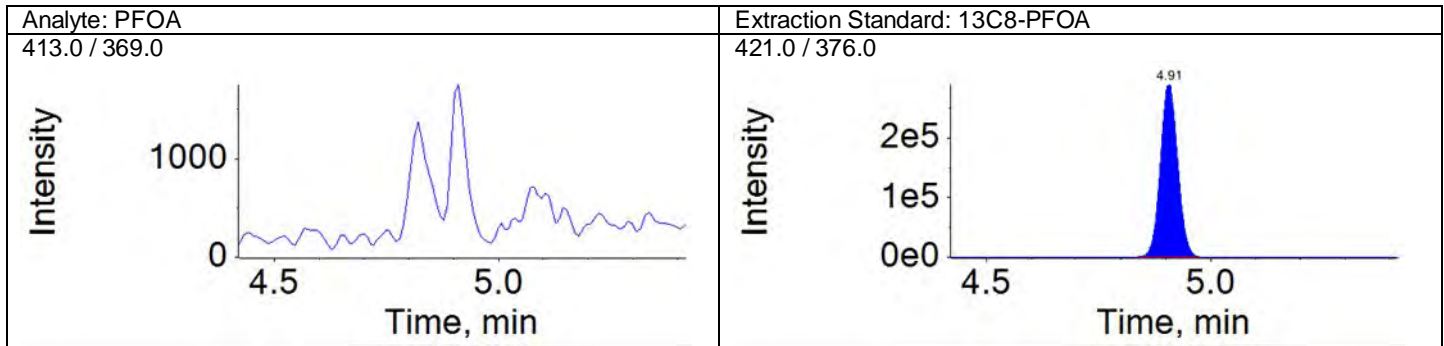
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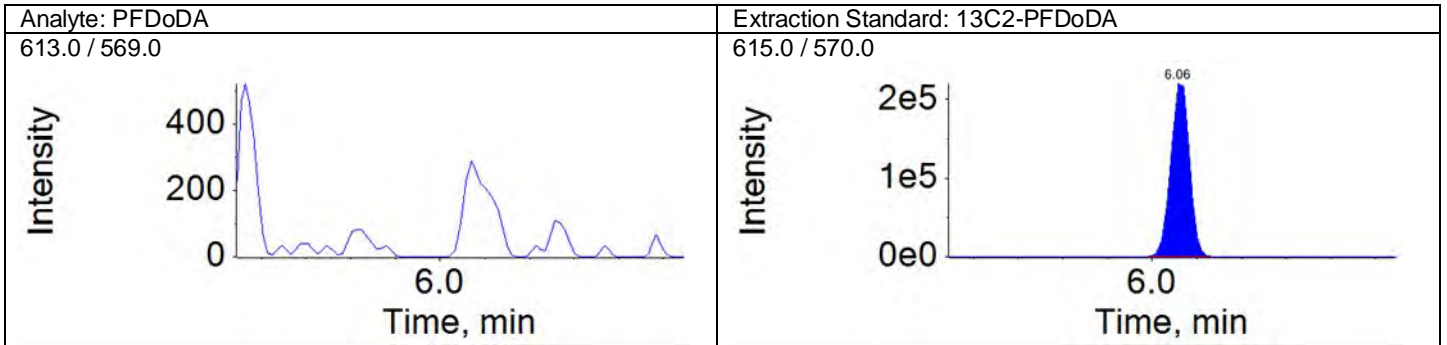
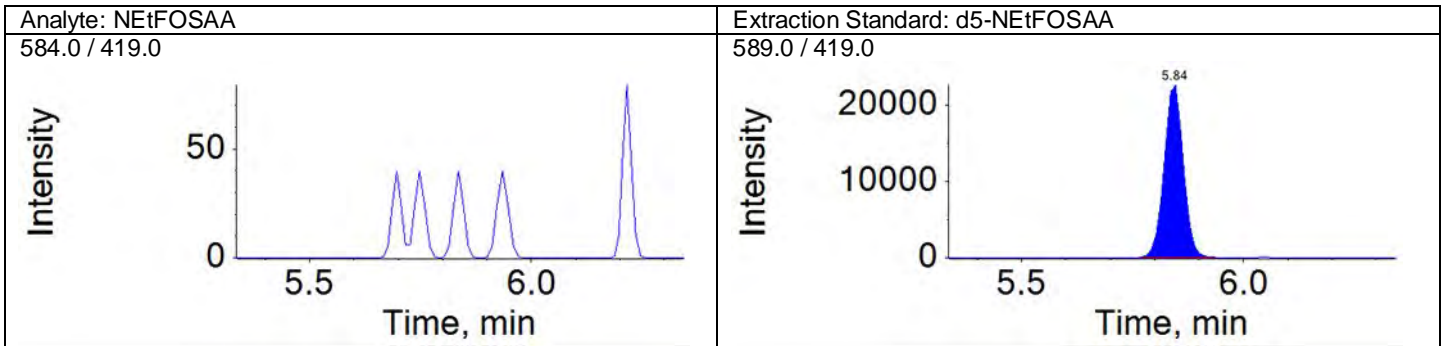
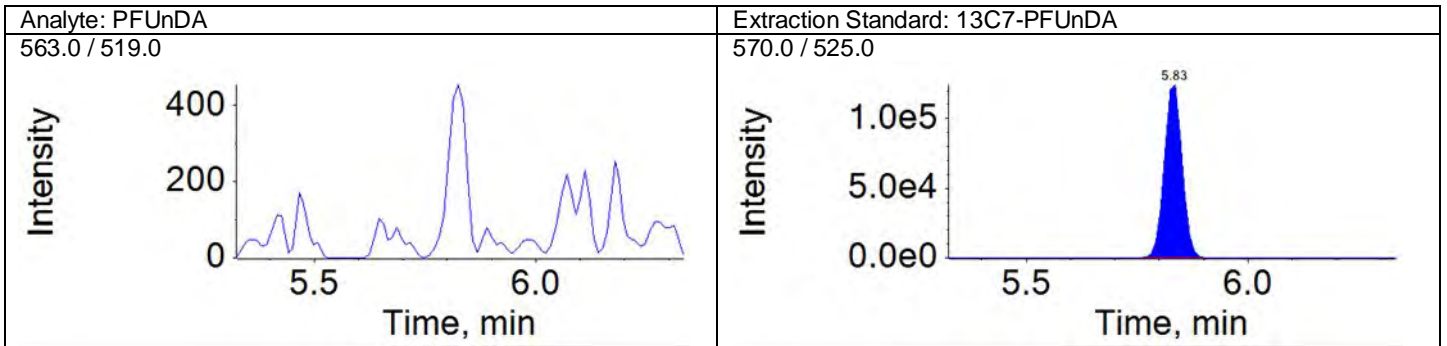
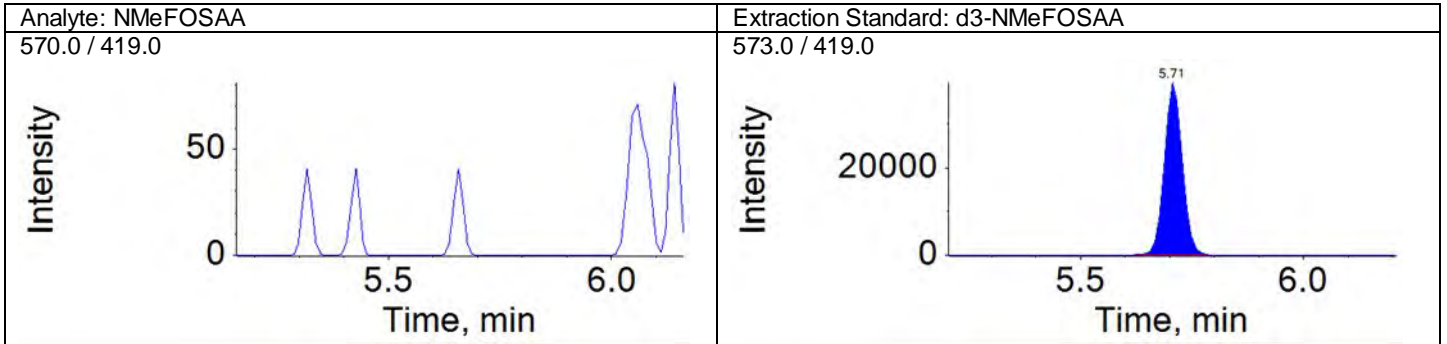
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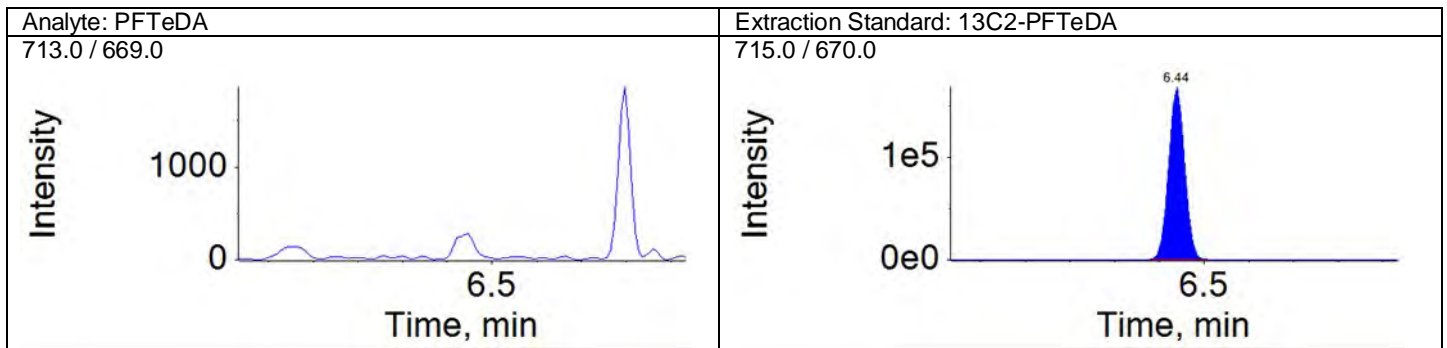
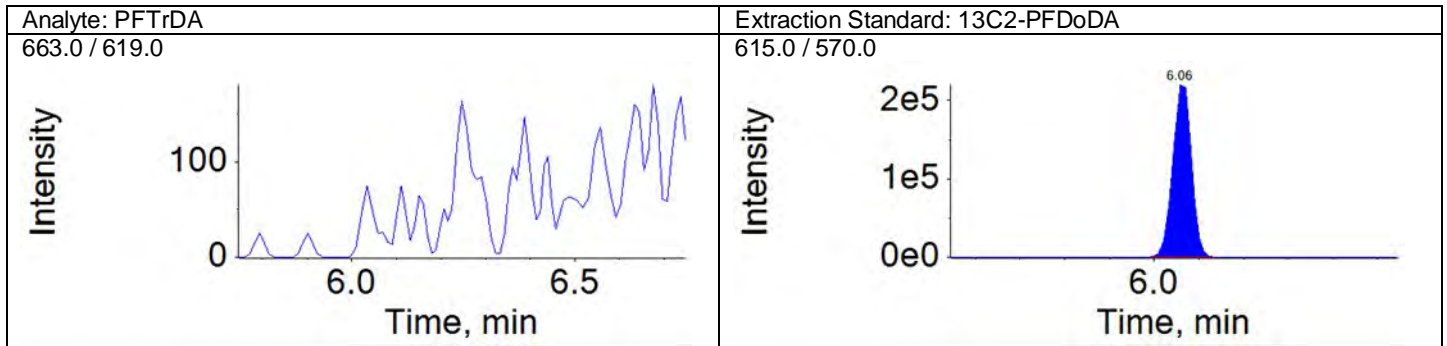
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Result Table: 18343003 12/13/2018 5:21:28 PM  
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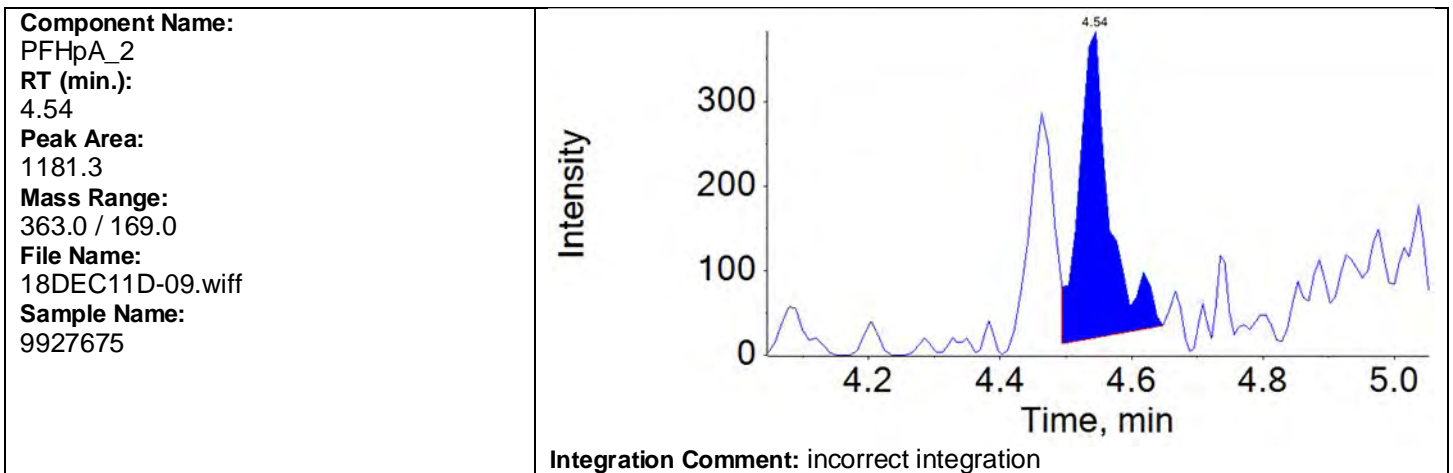
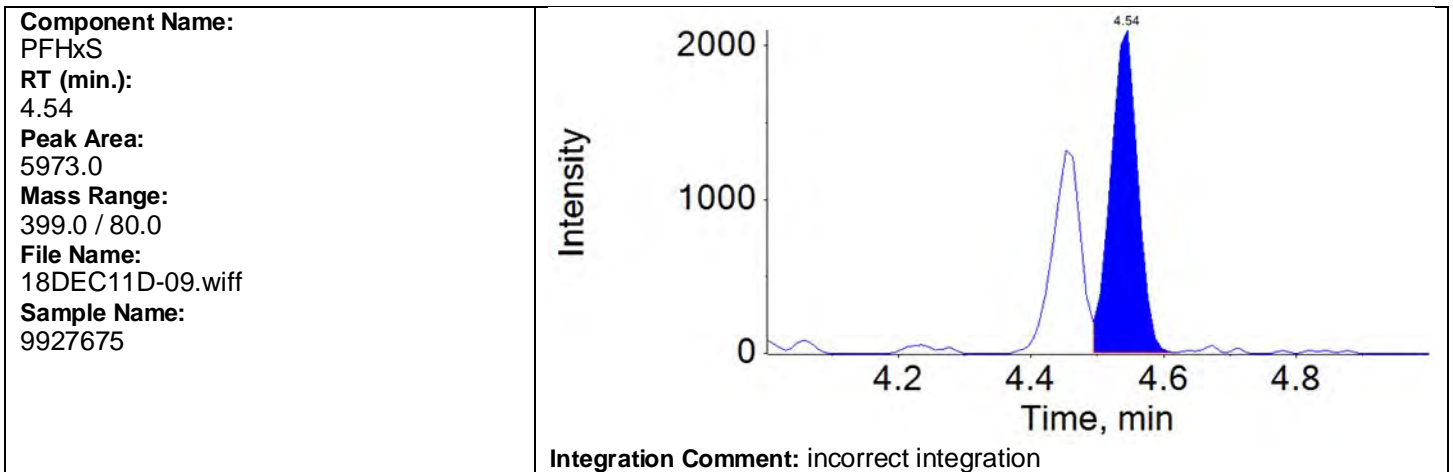
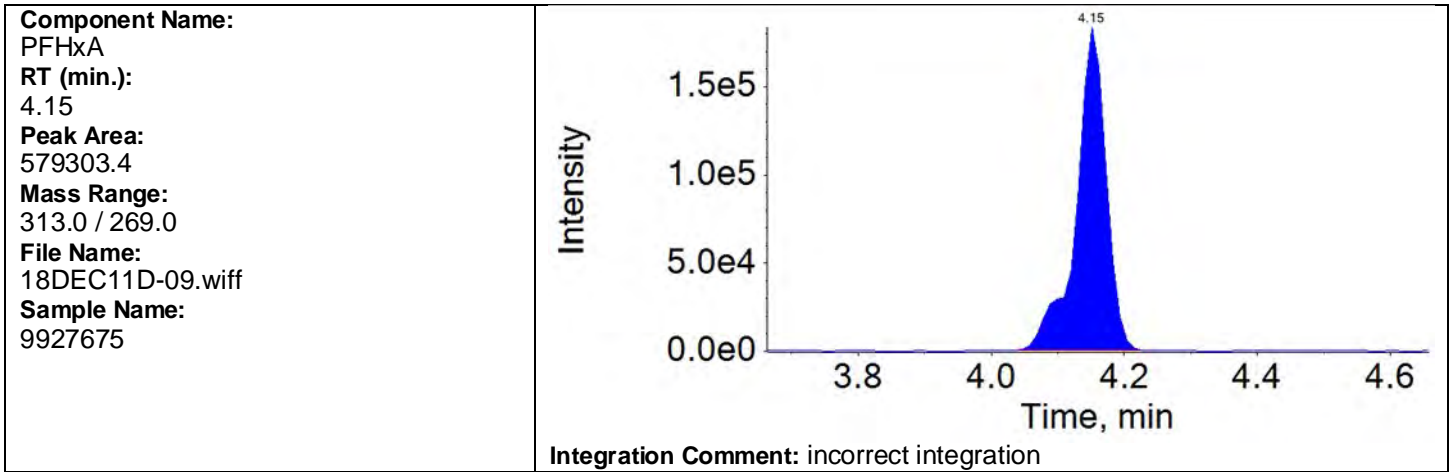
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Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**Component Name:**

PFHxS\_2

**RT (min.):**

4.54

**Peak Area:**

2059.6

**Mass Range:**

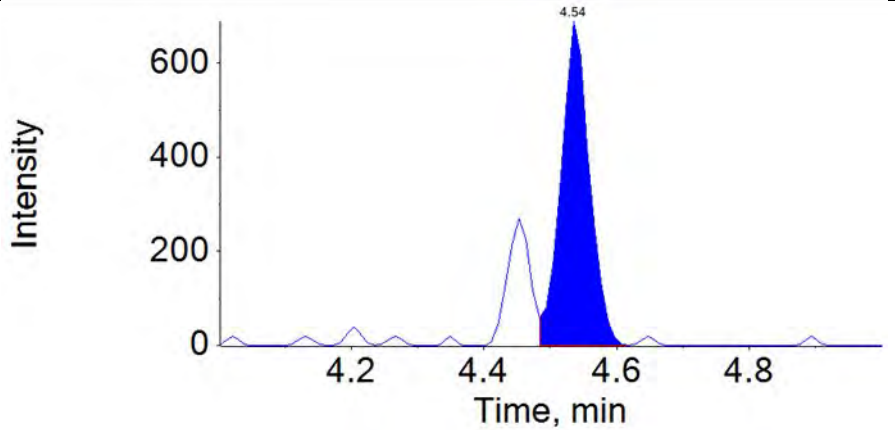
399.0 / 99.0

**File Name:**

18DEC11D-09.wiff

**Sample Name:**

9927675



Integration Comment: incorrect integration

Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MCD at 5:30 pm, 12/13/18

**REVIEWED**  
By umar at 11:20 am, 12/16/18



Ion Ratio Report

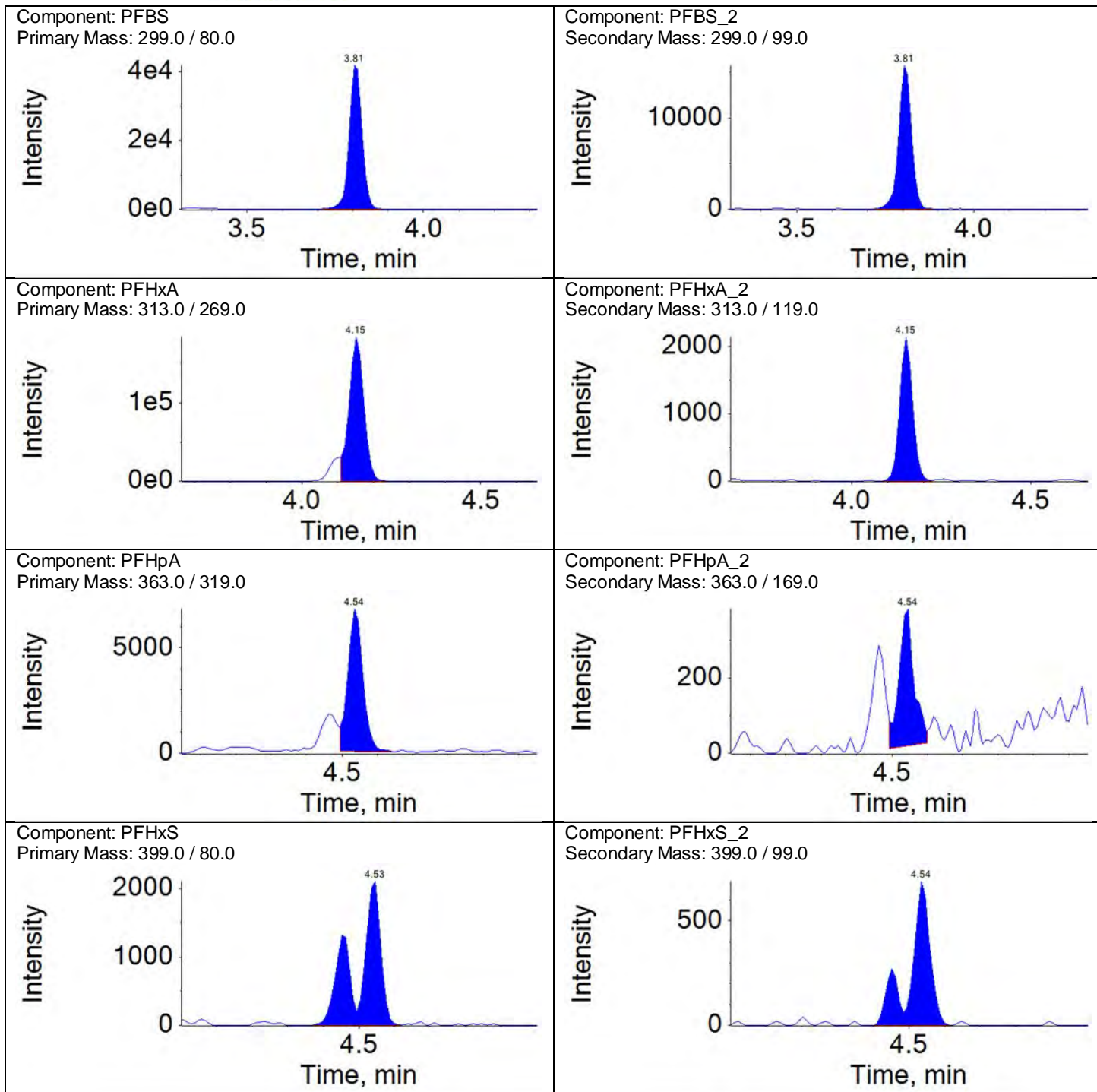
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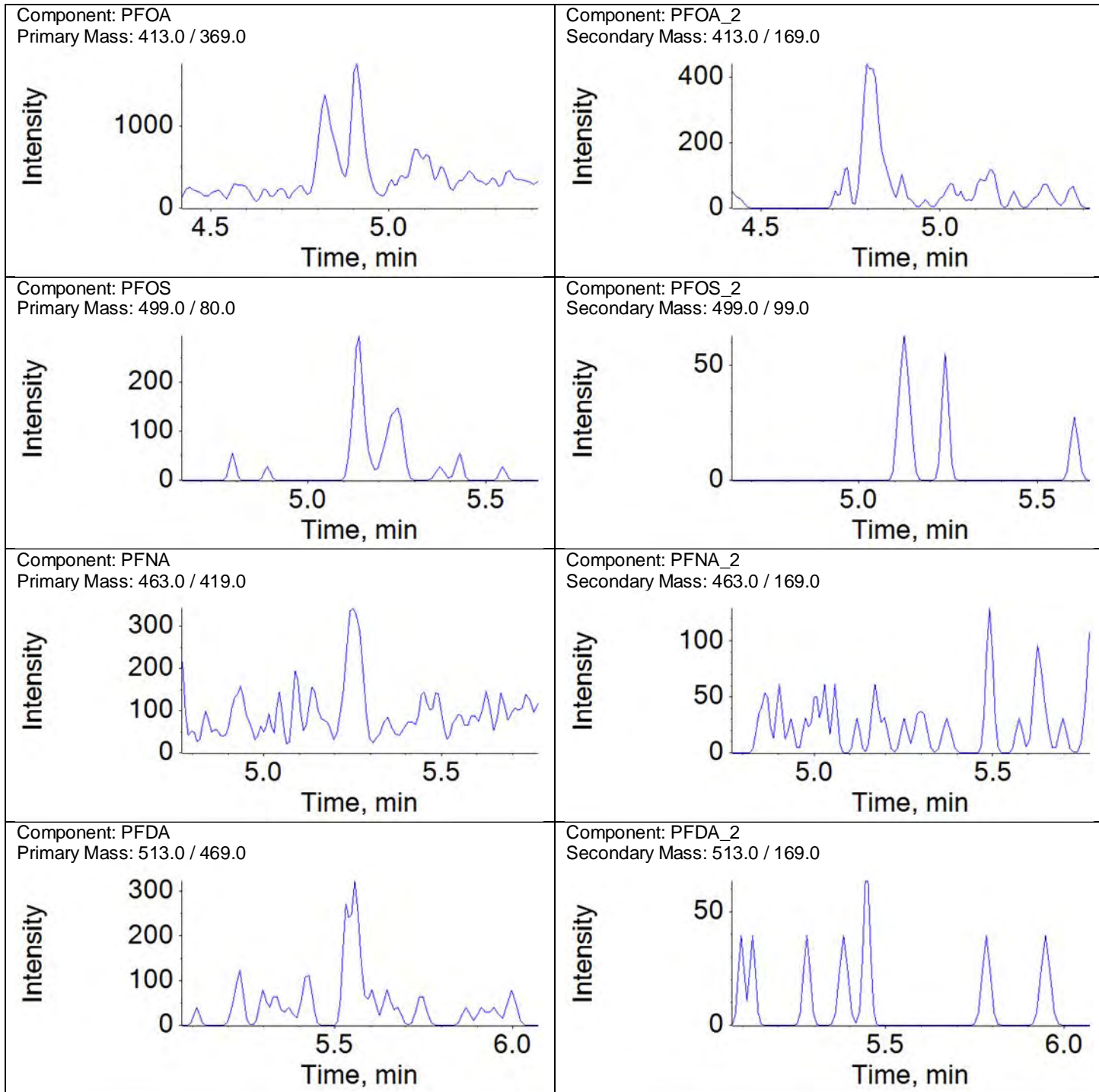
Instrument Name: LM27631

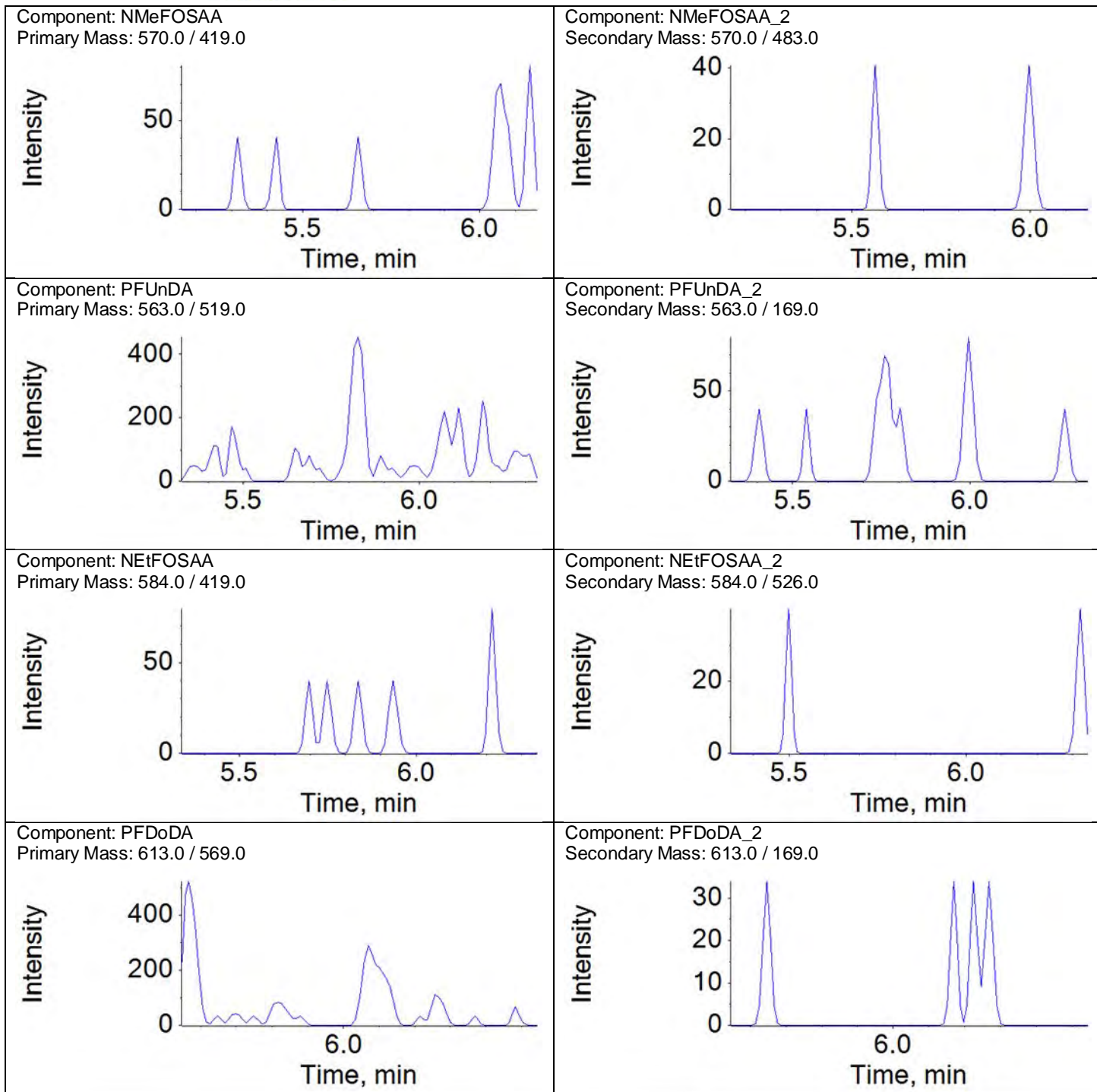
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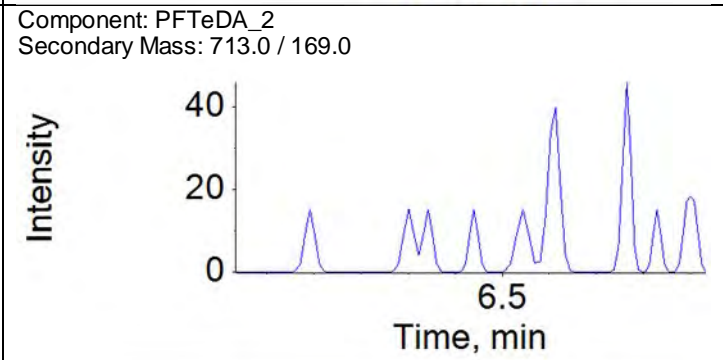
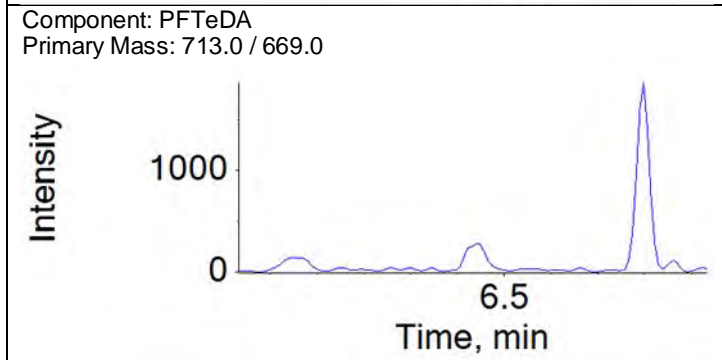
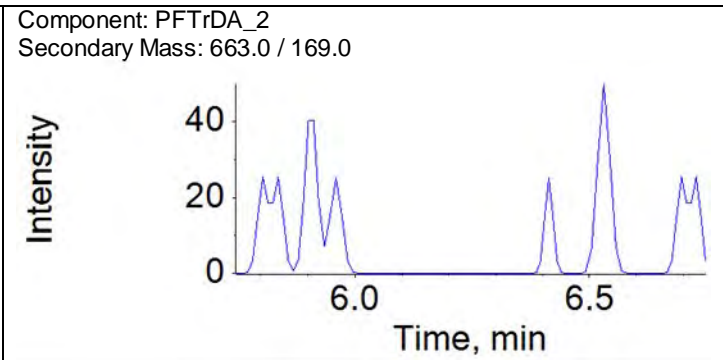
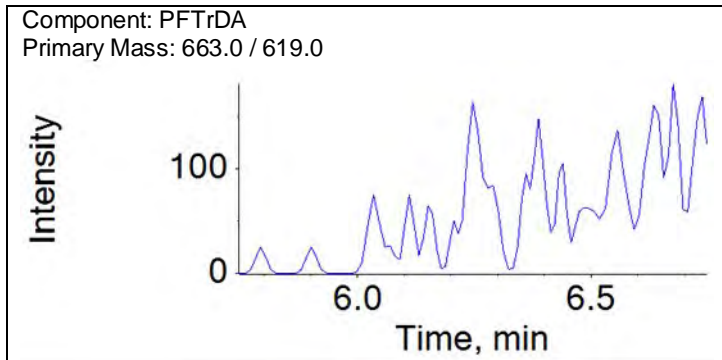
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	104509.3	A	N/A	0.3768			
PFBS_2	3.81	1.00	39379.4	A	N/A	0.3768	5	50	
PFHxA	4.15	1.00	518790.5	M	N/A	0.0102			
PFHxA_2	4.15	1.00	5278.0	A	N/A	0.0102	14	50	
PFHpA	4.54	1.00	19998.7	A	N/A	0.0540			
PFHpA_2	4.54	1.00	1080.7	M	N/A	0.0540	-3	50	
PFHxS	4.53	1.00	9915.3	M	N/A	0.2732			
PFHxS_2	4.54	1.00	2708.8	M	N/A	0.2732	-26	50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
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PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
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NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFADoDA	N/A	N/A	N/A	A	N/A	N/A			
PFADoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFATrDA	N/A	N/A	N/A	A	N/A	N/A			
PFATrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFATeDA	N/A	N/A	N/A	A	N/A	N/A			
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927676	Data File:	18DEC11D-10.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-4CW16-4-01 Grab Groundwater	Acquis Date:	2018-12-11T06:20:25
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	30	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.26363	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	776612.2	953492.0	-19	50	
13C2-PFOA	5.0	520013.6	500971.3	4	50	
13C4-PFOS	4.8	286922.0	310746.2	-8	50	
13C2-PFDA	5.0	419282.4	419040.9	0	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	326135.9	13C3-PFBA	776612.2	0.420	17.638	13.502	77	50-150	
E13C5-PFHxA	603345.6	13C2-PFOA	520013.6	1.160	18.966	14.776	78	50-150	
E13C3-PFHxS	265851.7	13C2-PFOA	520013.6	0.511	17.942	12.438	69	50-150	
E13C4-PFHpA	462451.7	13C2-PFOA	520013.6	0.889	18.966	14.341	76	50-150	
E13C8-PFOA	723929.0	13C2-PFOA	520013.6	1.392	18.966	14.927	79	50-150	
E13C8-PFOS	249025.8	13C4-PFOS	286922.0	0.868	18.131	14.775	81	50-150	
E13C9-PFNA	497445.1	13C4-PFOS	286922.0	1.734	18.966	18.584	98	50-150	
E13C6-PFDA	547804.8	13C2-PFDA	419282.4	1.307	18.966	13.133	69	50-150	
Ed3-NMeFOSAA	116207.0	13C2-PFDA	419282.4	0.277	18.966	18.631	98	50-150	
E13C7-PFUnDA	335517.4	13C2-PFDA	419282.4	0.800	18.966	14.890	79	50-150	
Ed5-NEtFOSAA	66705.7	13C2-PFDA	419282.4	0.159	18.966	13.322	70	50-150	
E13C2-PFDoDA	651926.6	13C2-PFDA	419282.4	1.555	18.966	12.377	65	50-150	
E13C2-PFTeDA	438264.5	13C2-PFDA	419282.4	1.045	18.966	11.768	62	50-150	



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

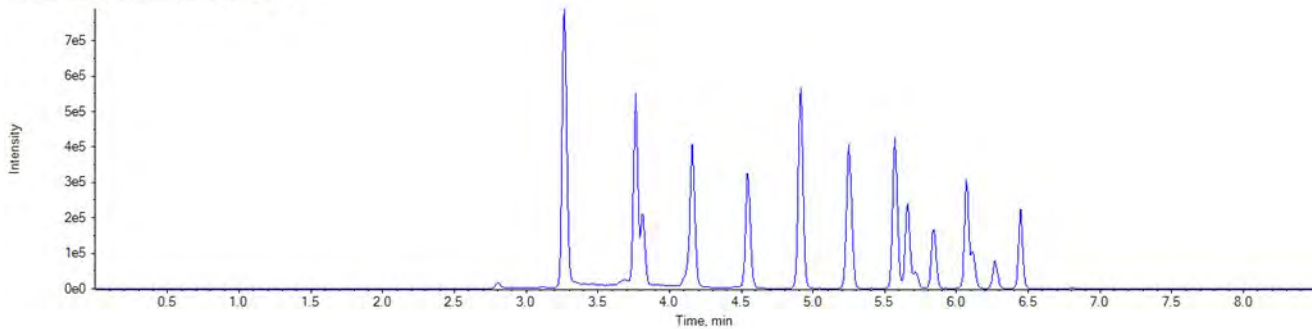
Sample Name: 9927676 Instrument Name: LM27631 File Name: 18DEC11D-10.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.26363	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	3.81	1.000	68090.2		A	13C3-PFBS	3.81	326135.9	0.209	3.925
PFHxA	4.16	1.000	292149.8		M	13C5-PFHxA	4.16	603345.6	0.484	8.004
PFHpA	4.55	1.000	25464.1		A	13C4-PFHpA	4.55	462451.7	0.055	0.688
PFHxS	4.52	0.990	5099.9		M	13C3-PFHxS	4.55	265851.7	0.019	0.345
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	723929.0	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	249025.8	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	497445.1	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	547804.8	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.72	116207.0	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.84	335517.4	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.85	66705.7	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.07	651926.6	N/A	
PFTTrDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.07	651926.6	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	438264.5	N/A	

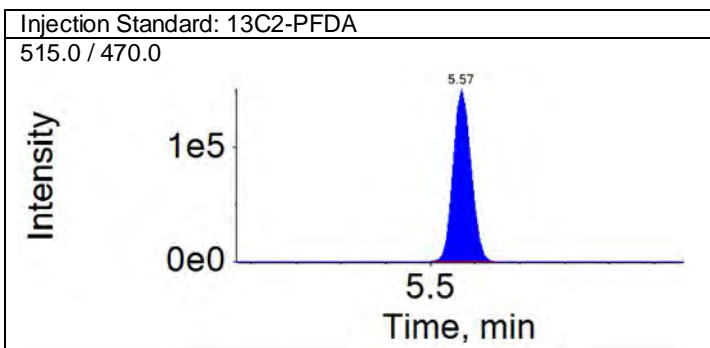
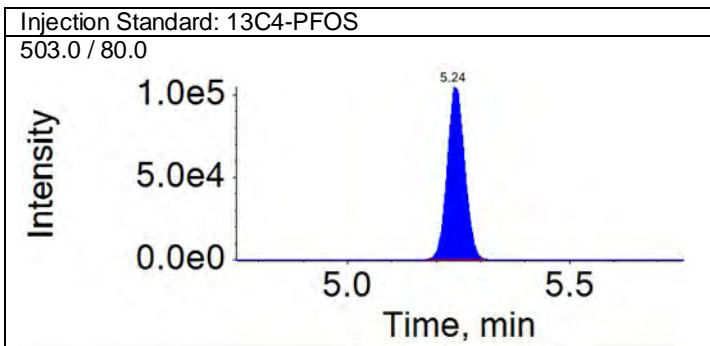
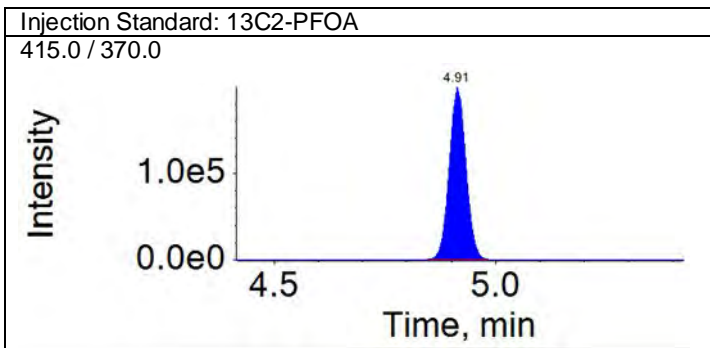
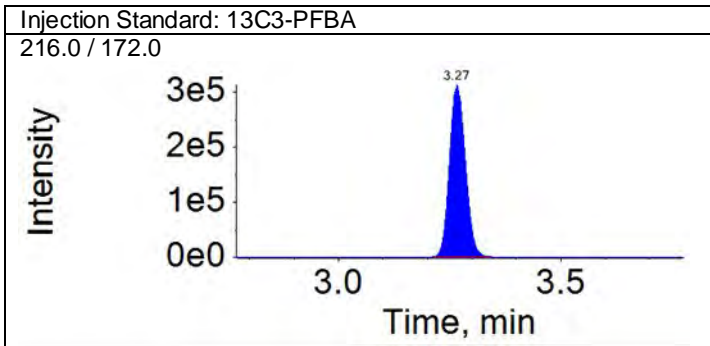
**Total Ion Chromatogram**

TIC from 18DEC11D-10.wiff (sample 1) - 9927676



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

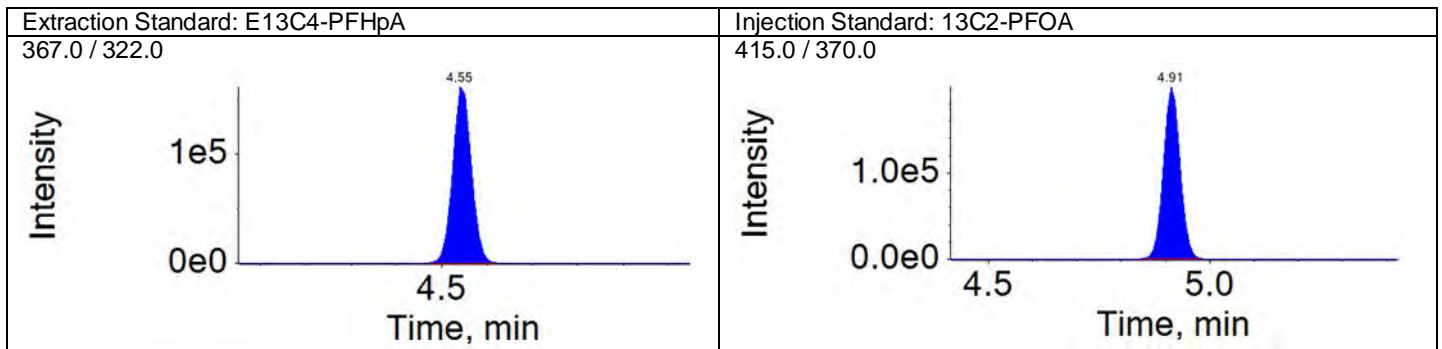
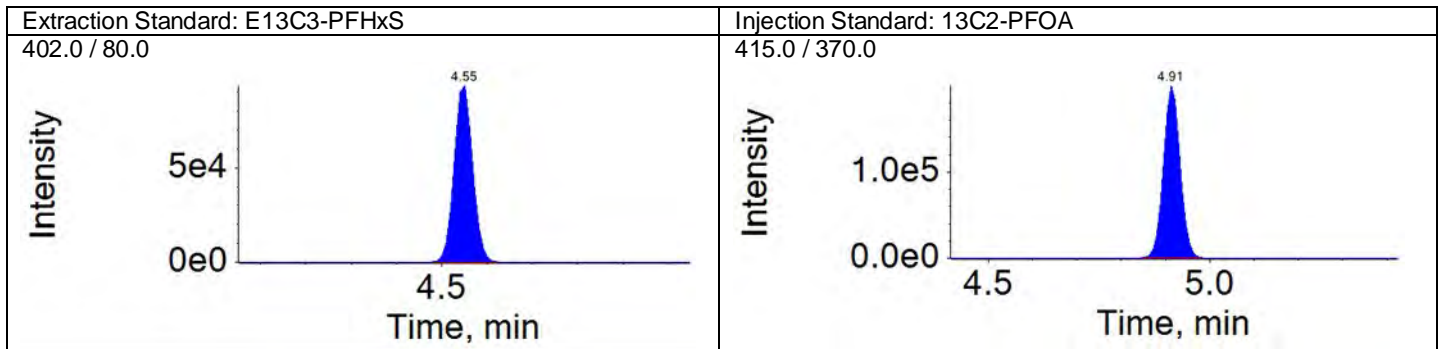
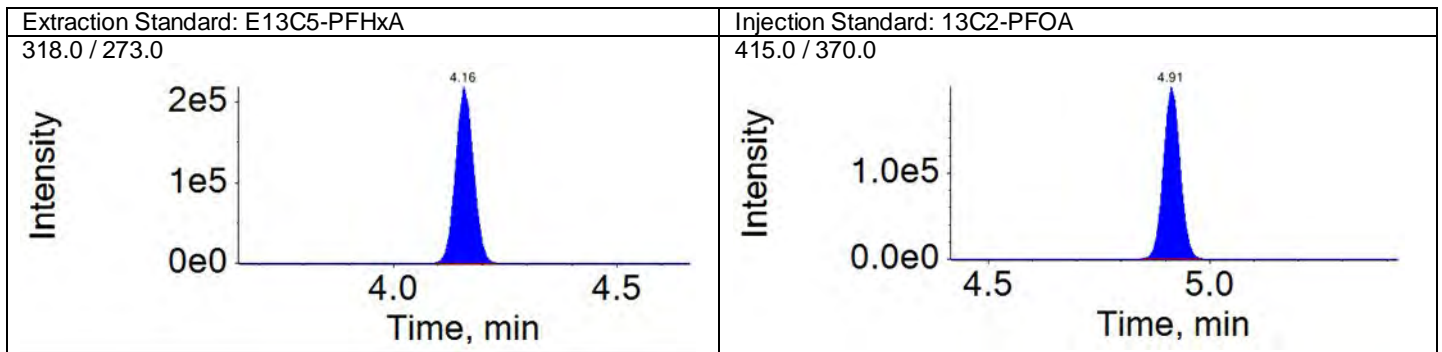
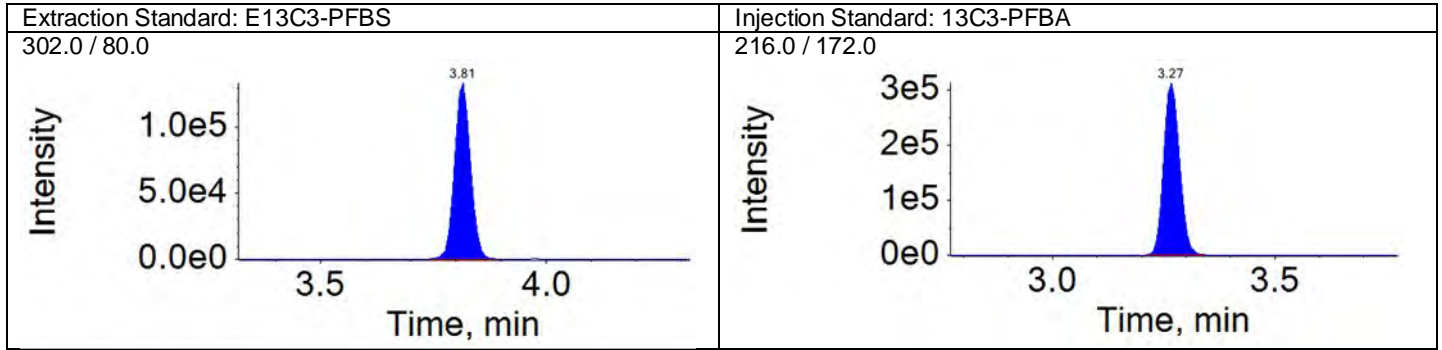
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Acquisition Method: 18AUG13\_3uL.dam





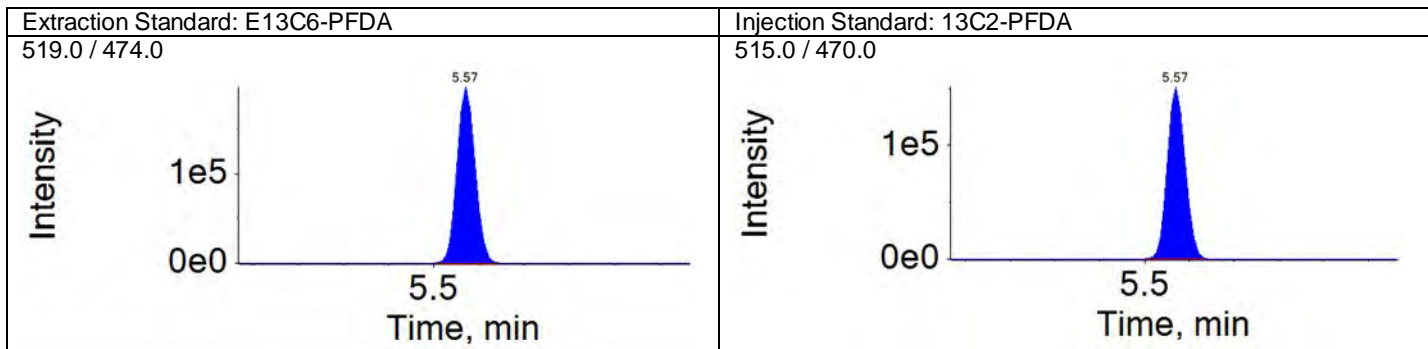
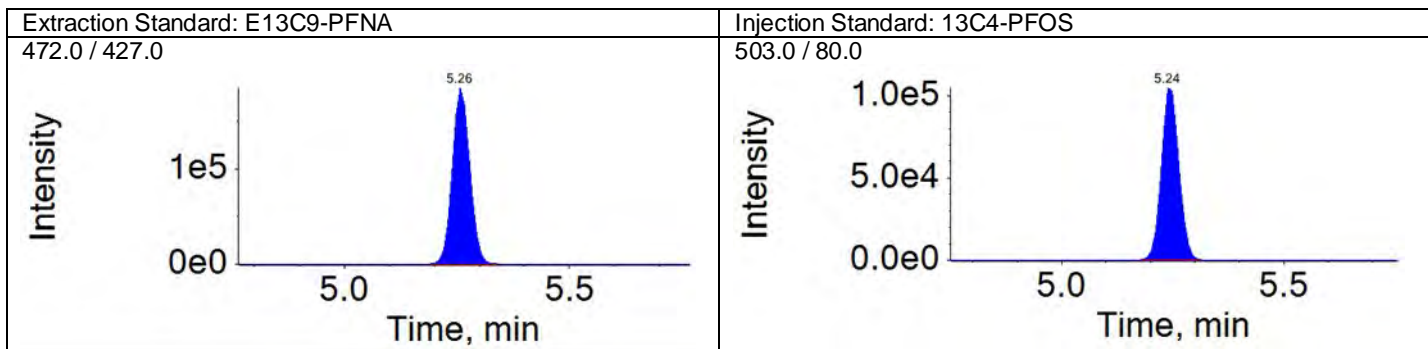
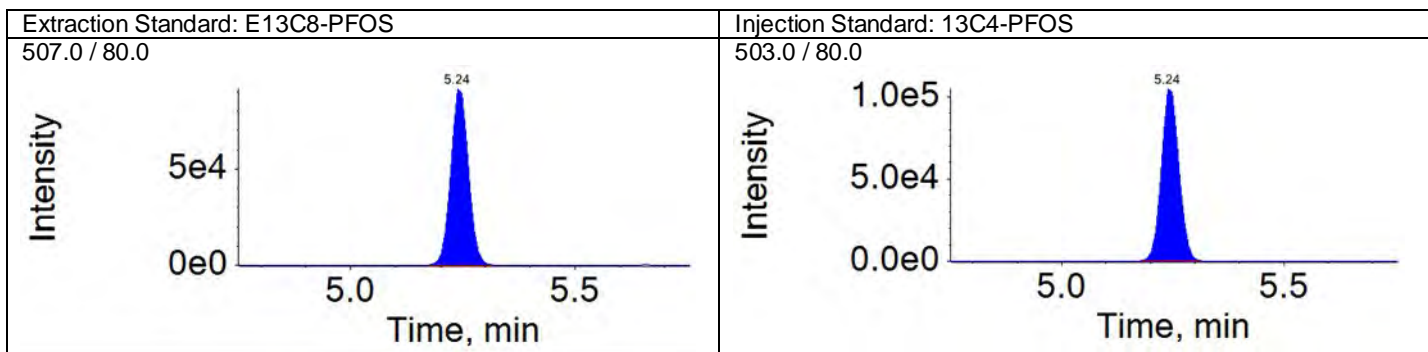
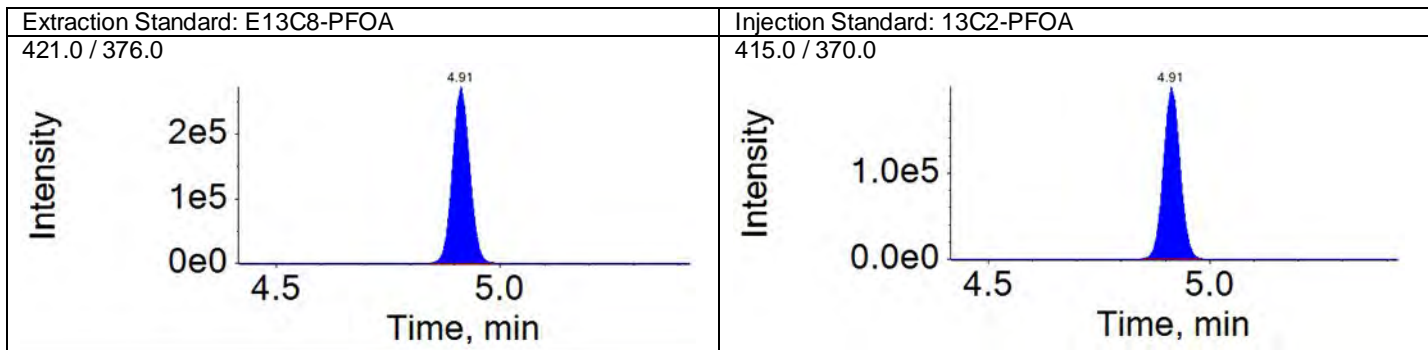
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

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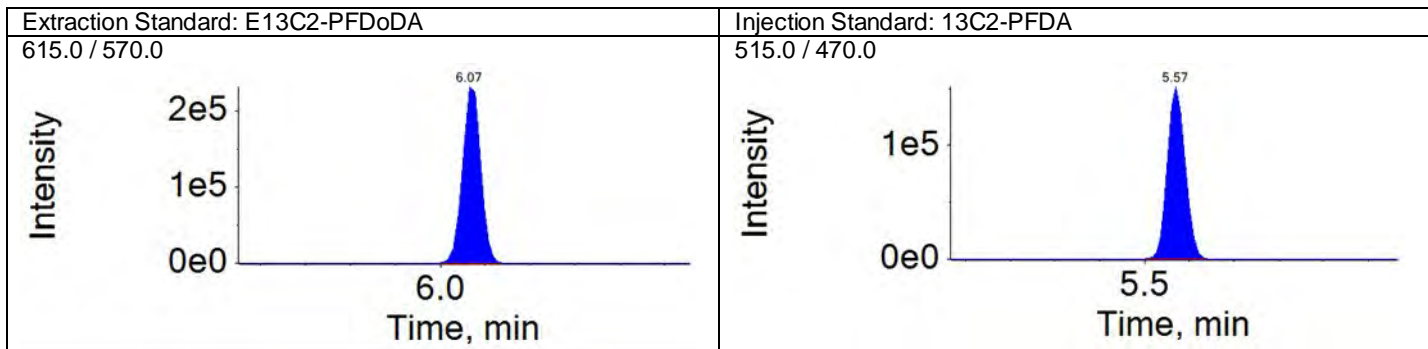
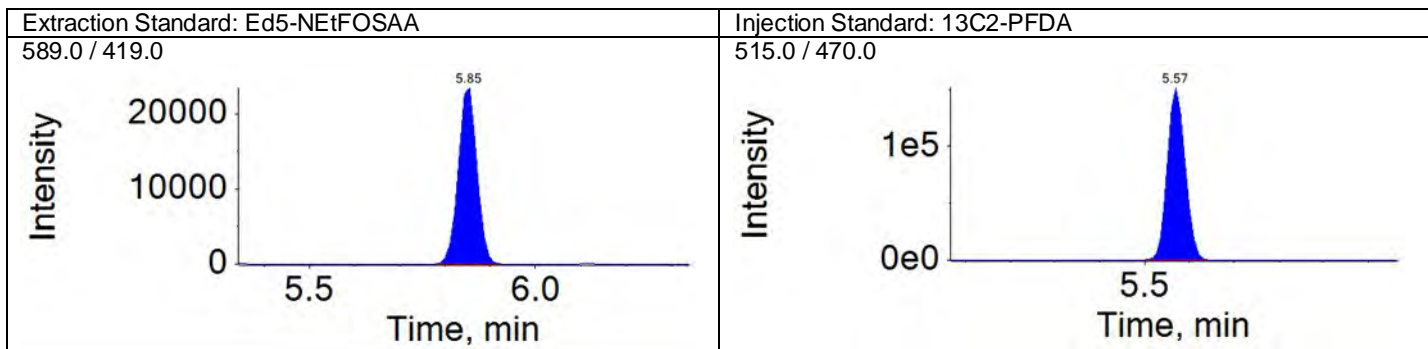
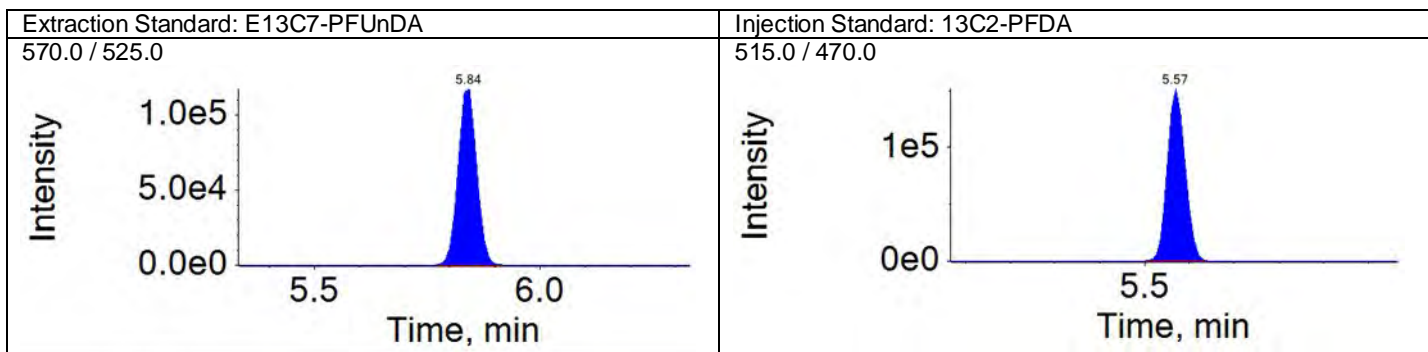
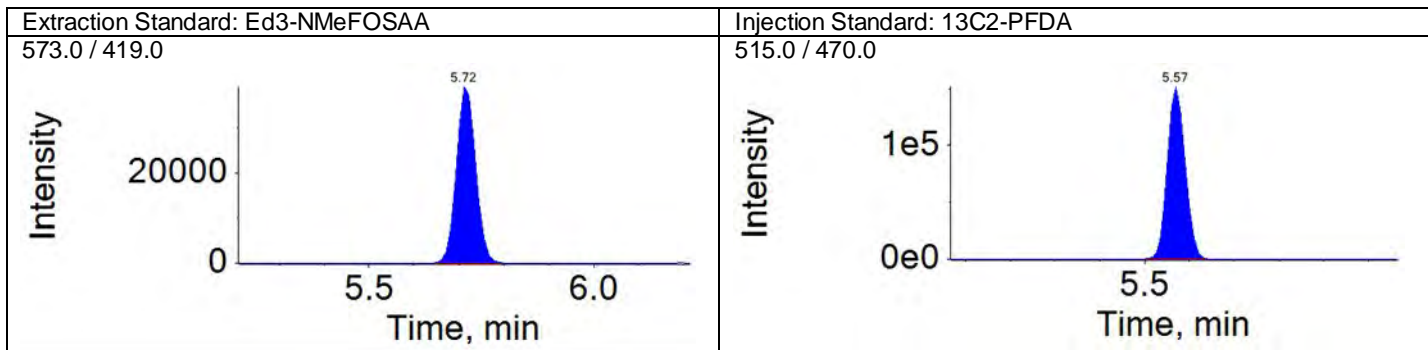
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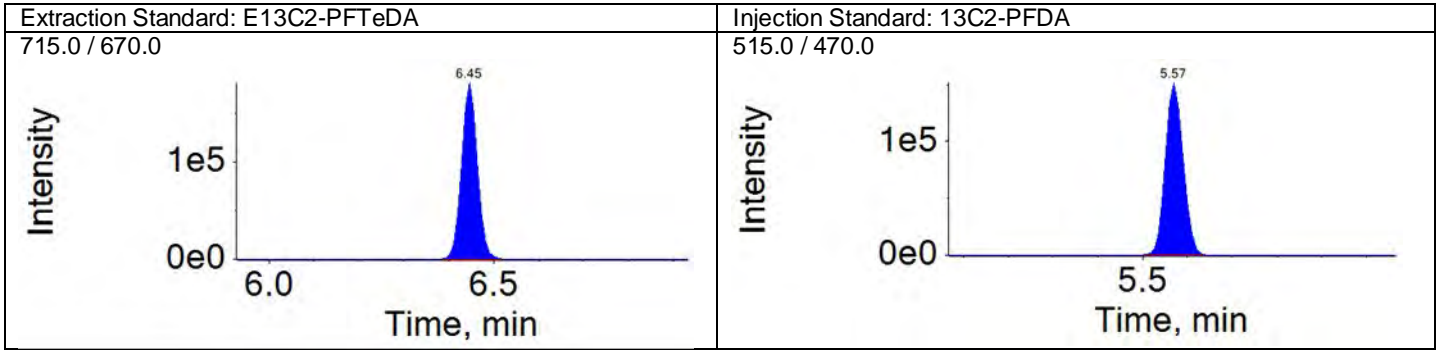
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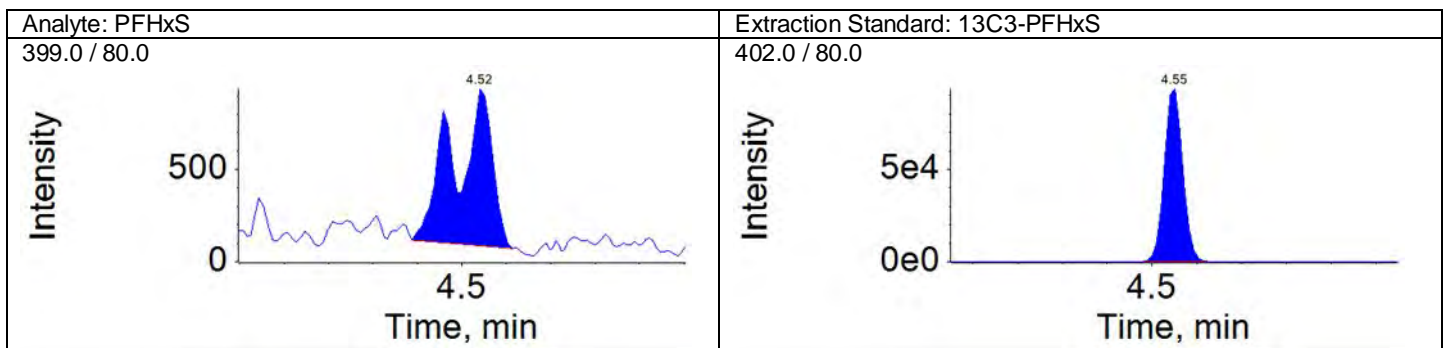
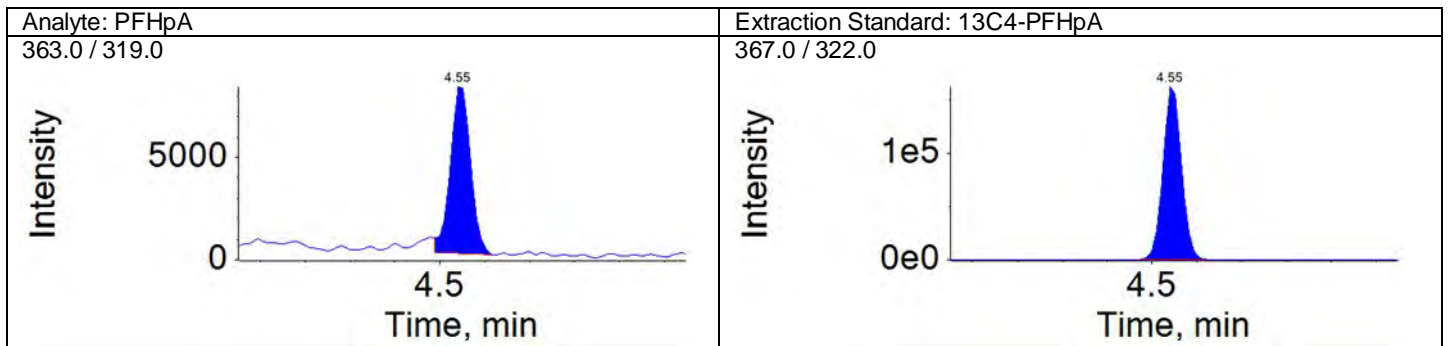
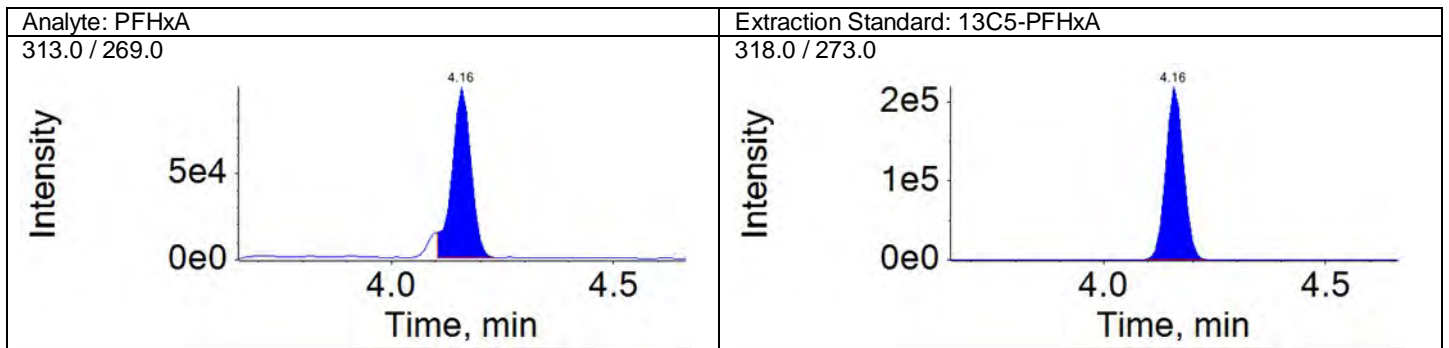
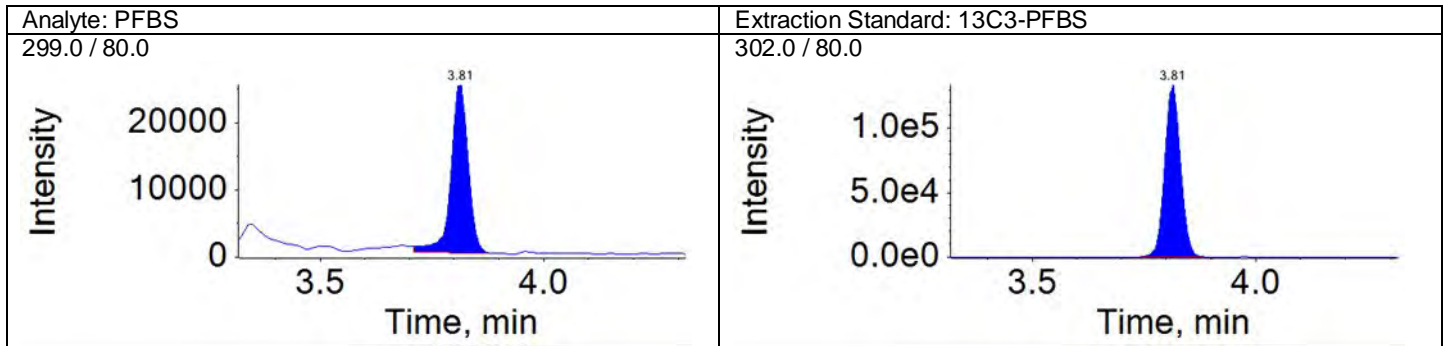
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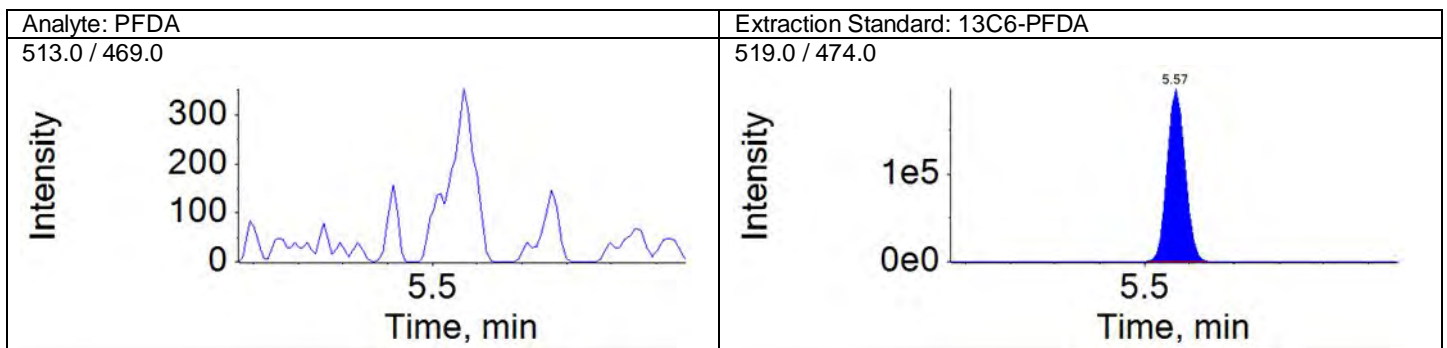
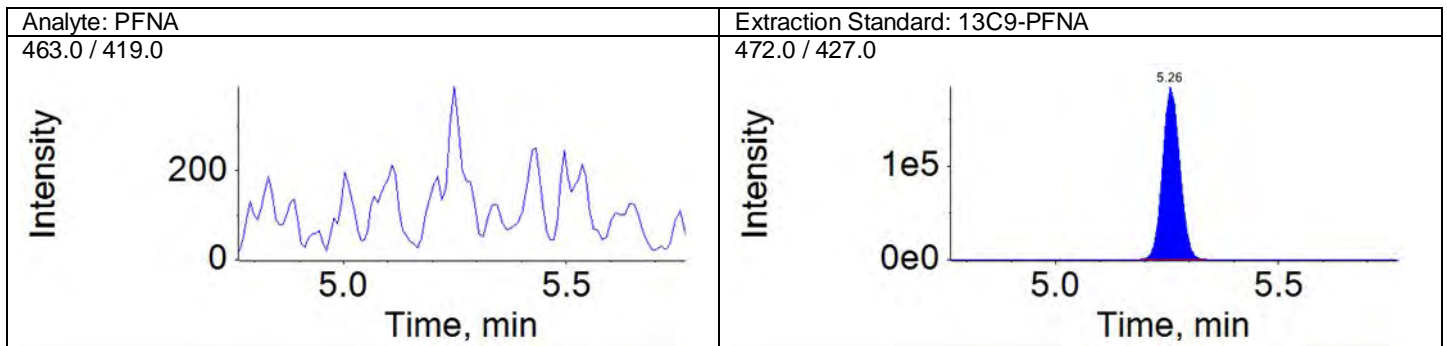
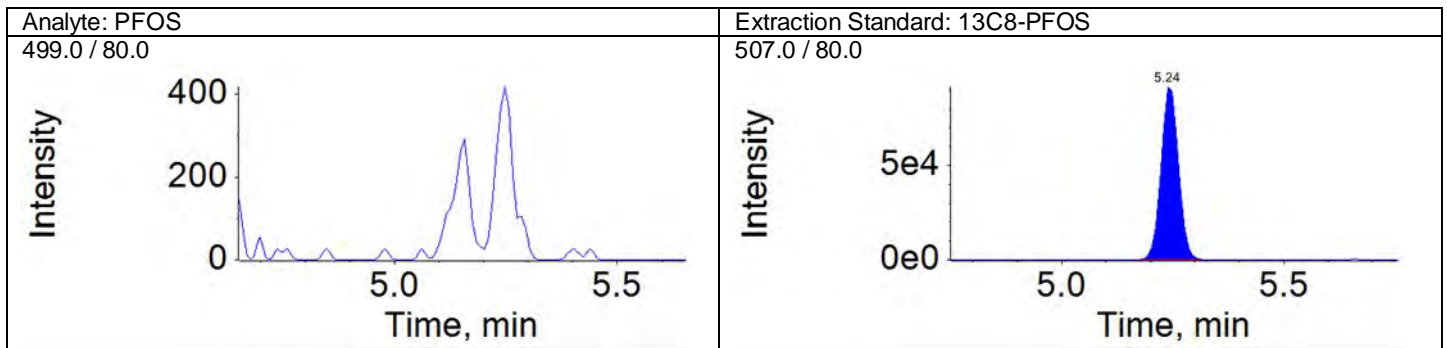
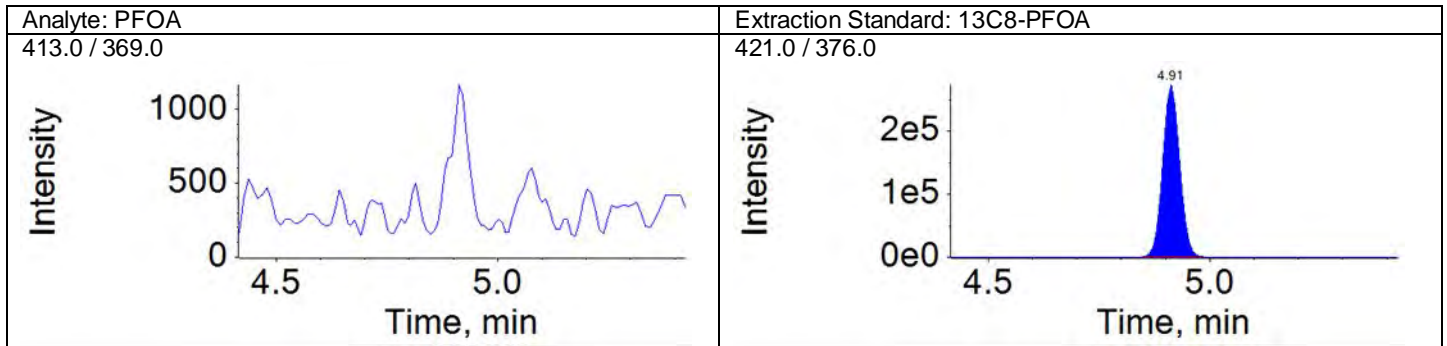
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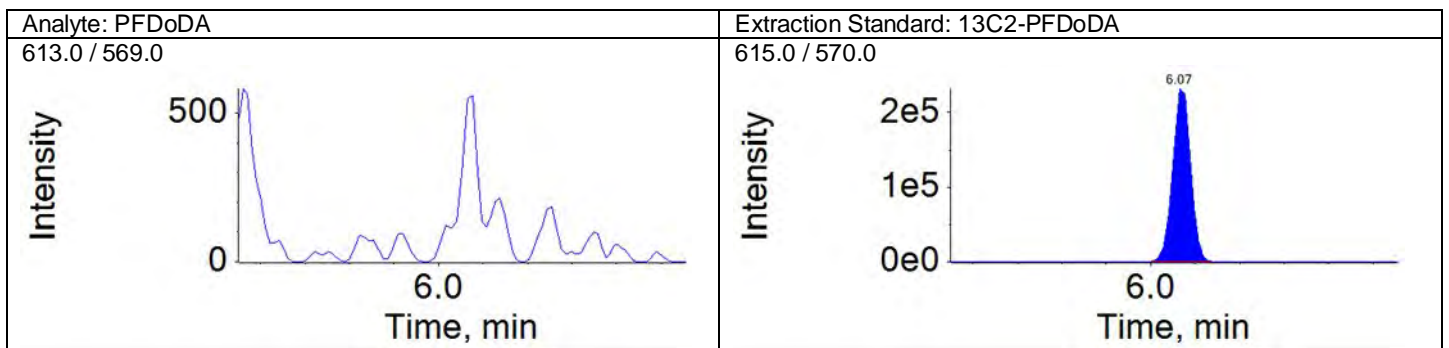
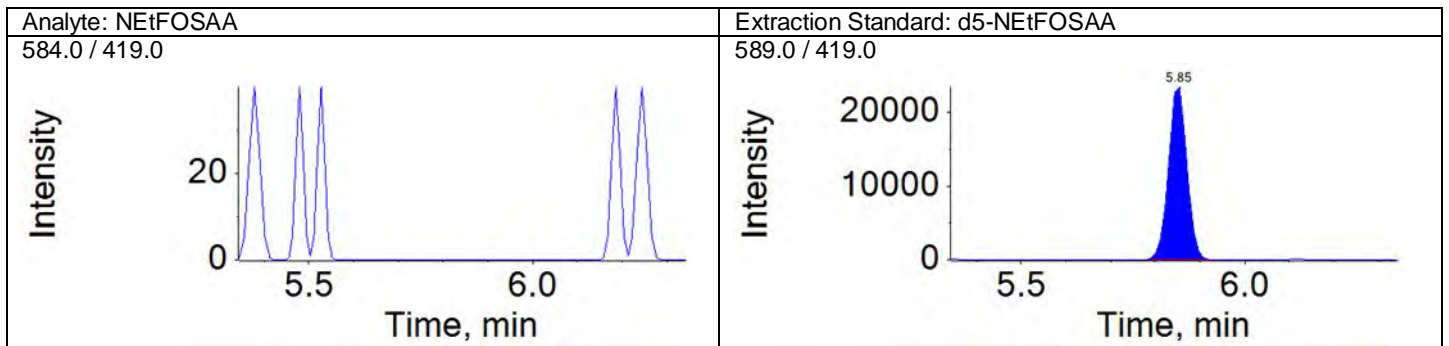
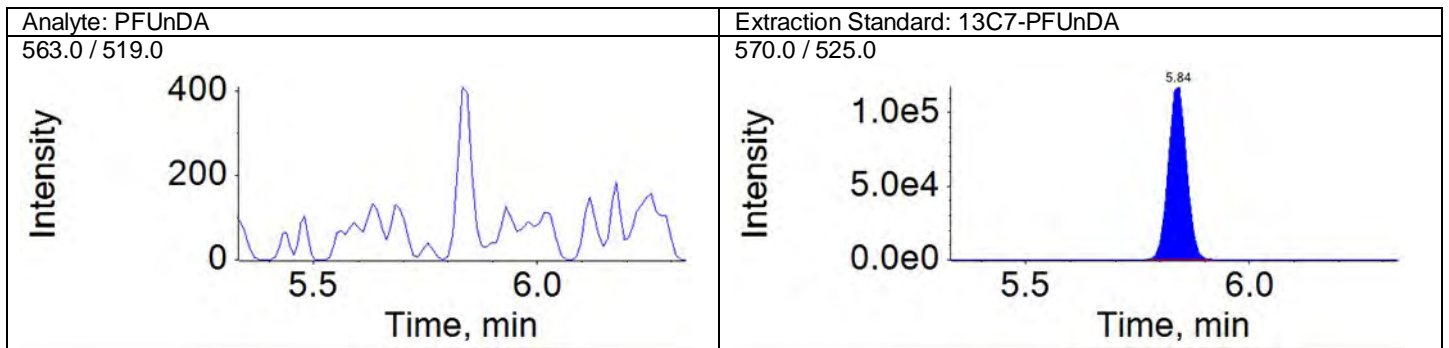
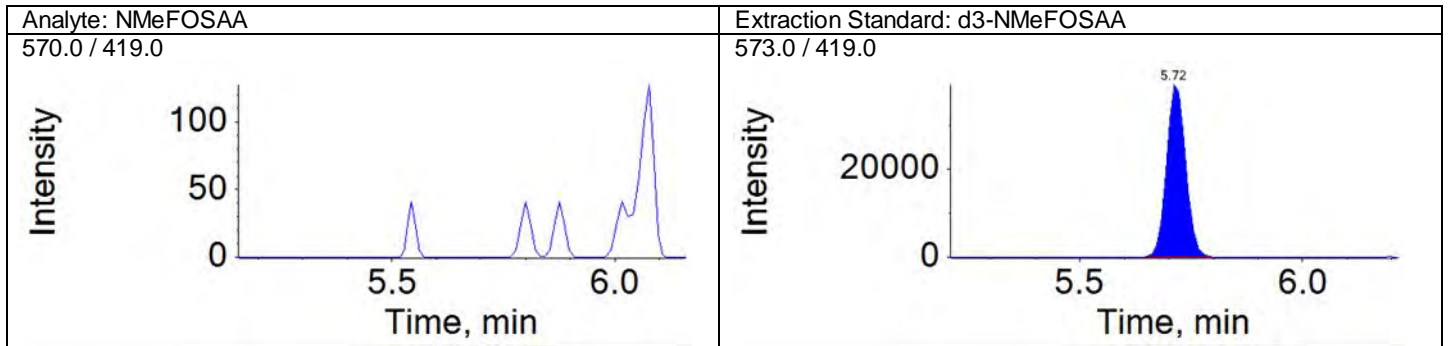
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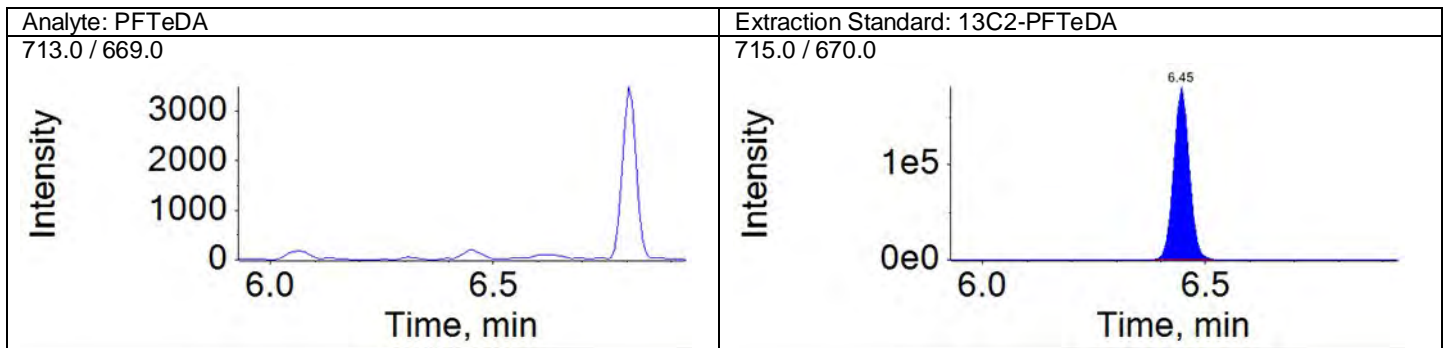
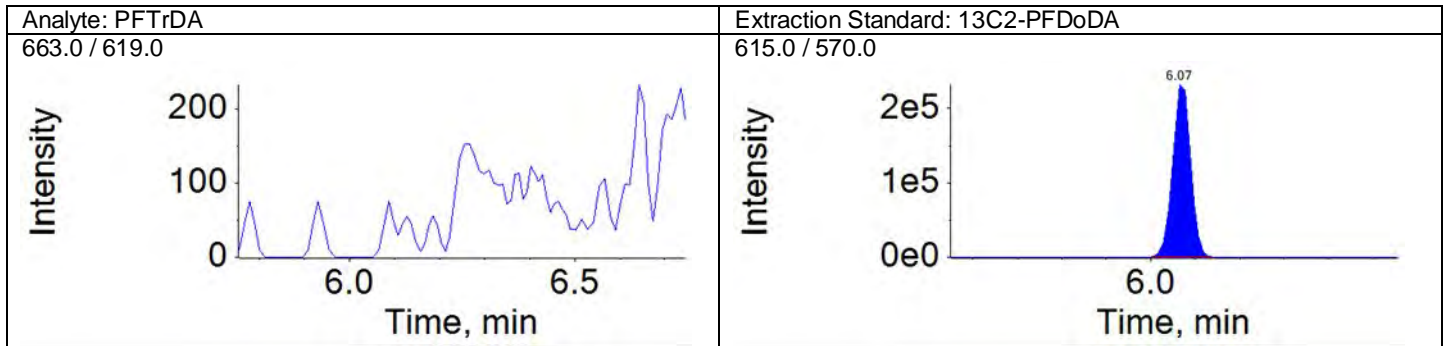
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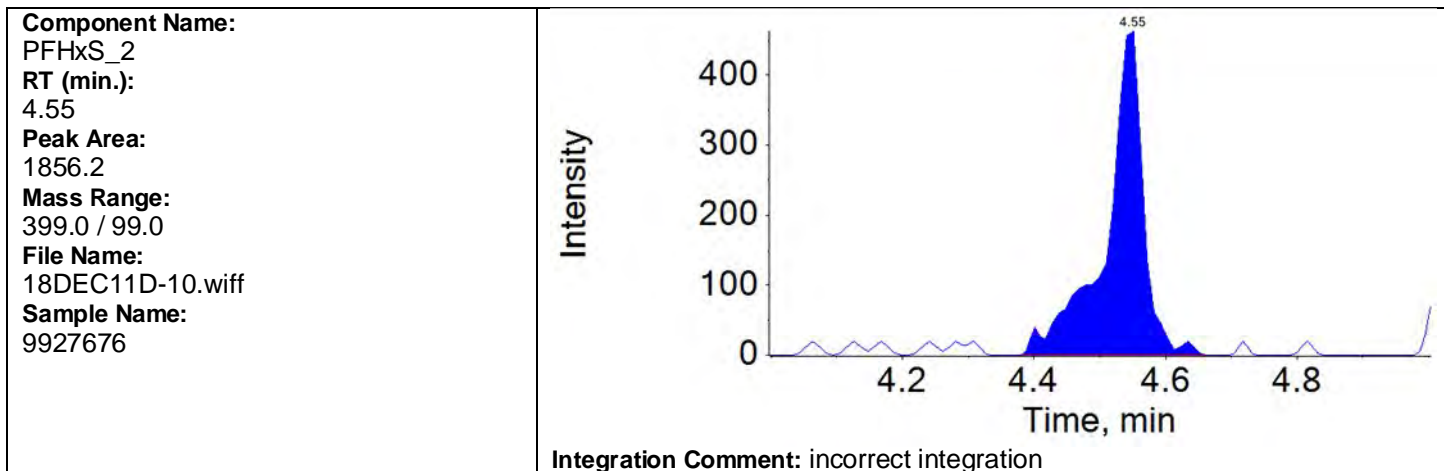
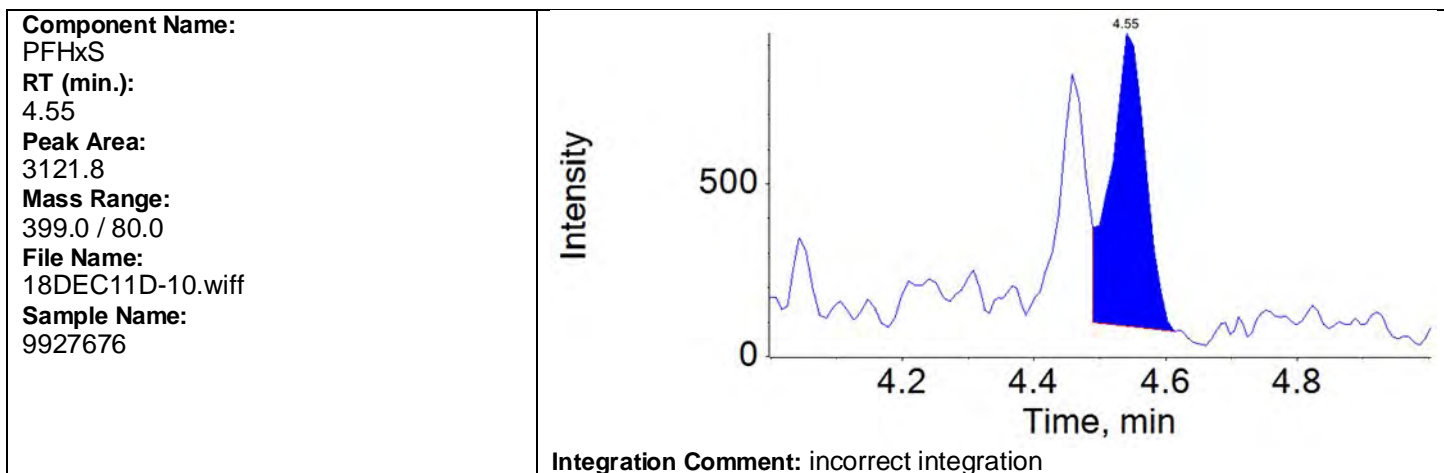
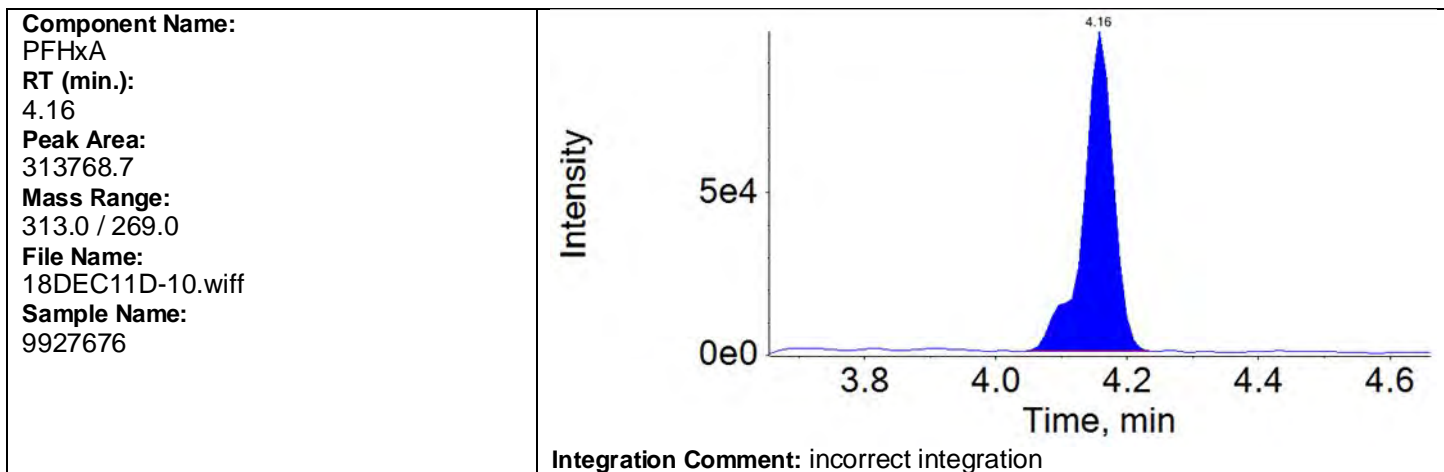
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
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Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MCD at 5:30 pm, 12/13/18

**REVIEWED**  
By umar at 11:20 am, 12/16/18

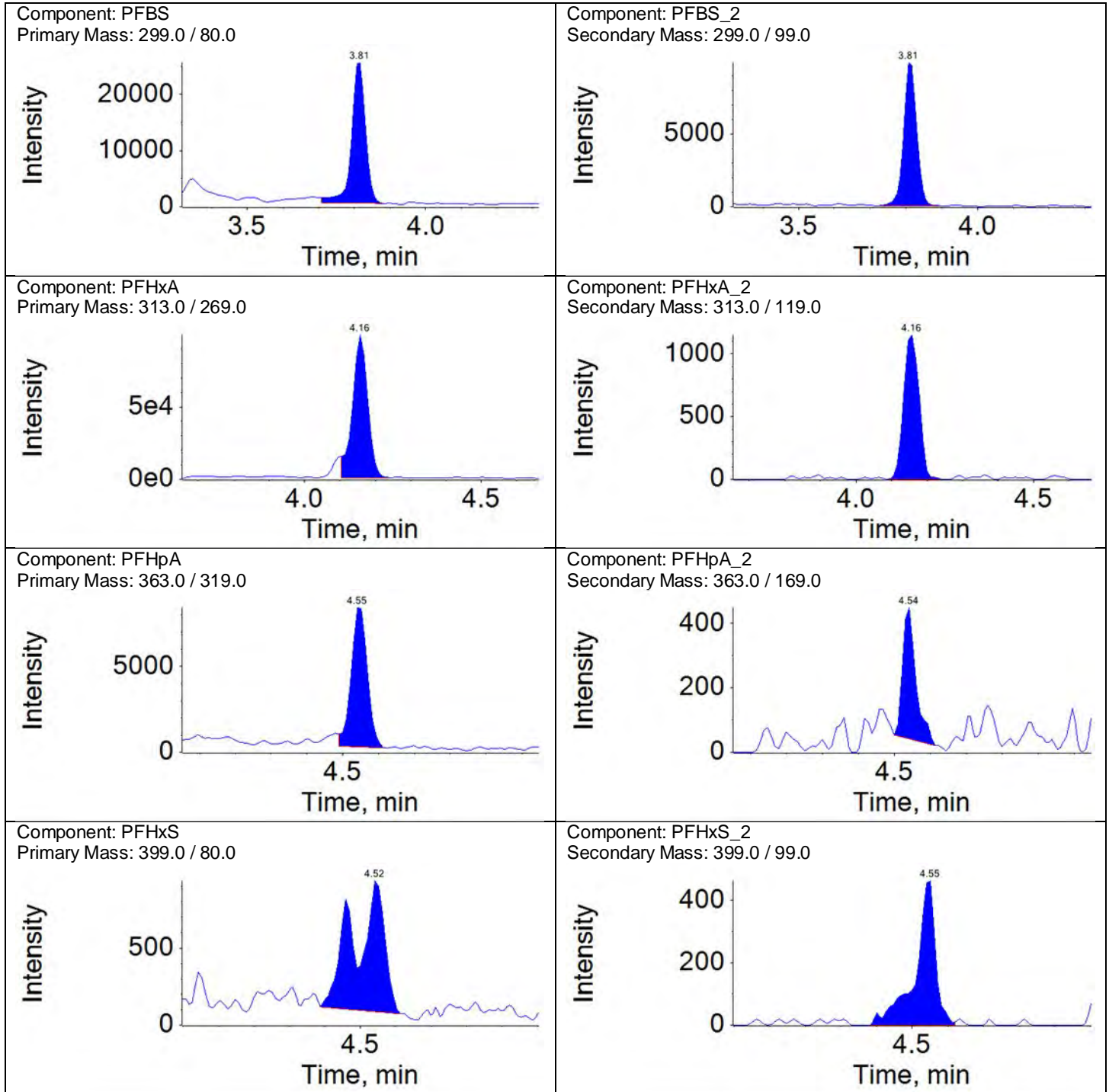
Ion Ratio Report

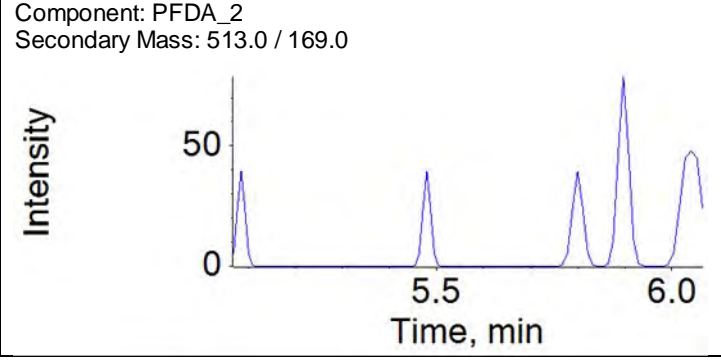
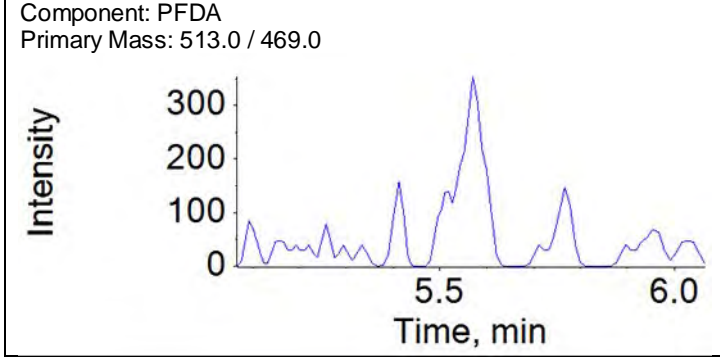
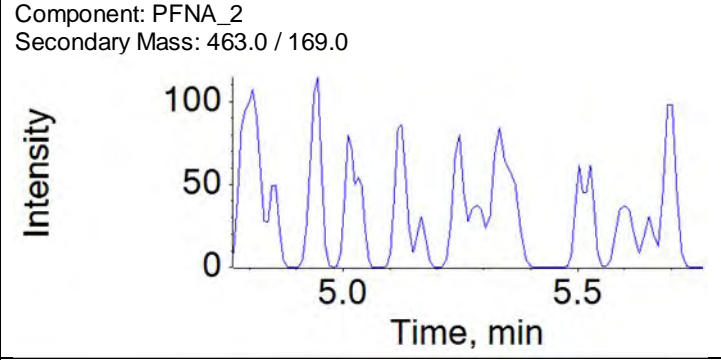
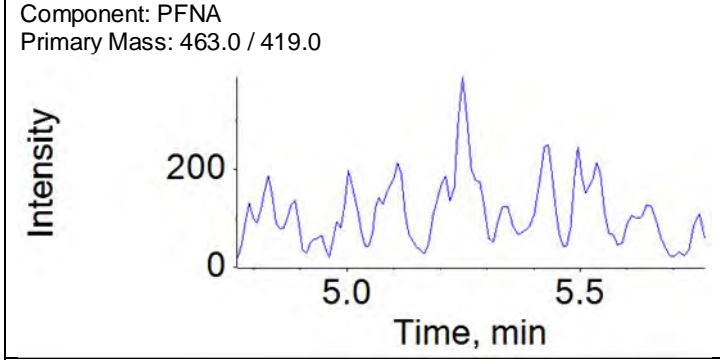
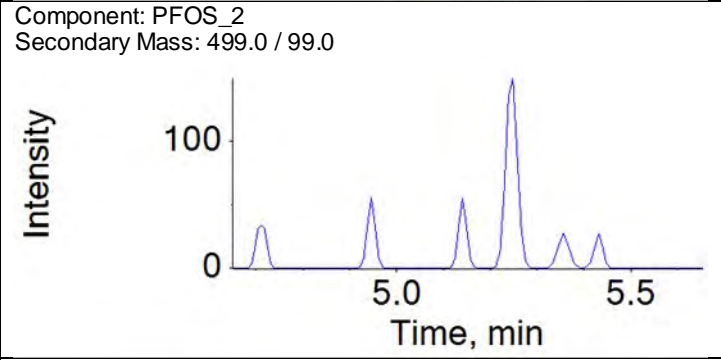
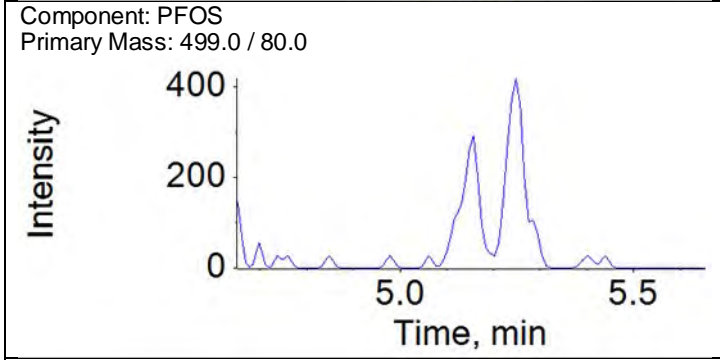
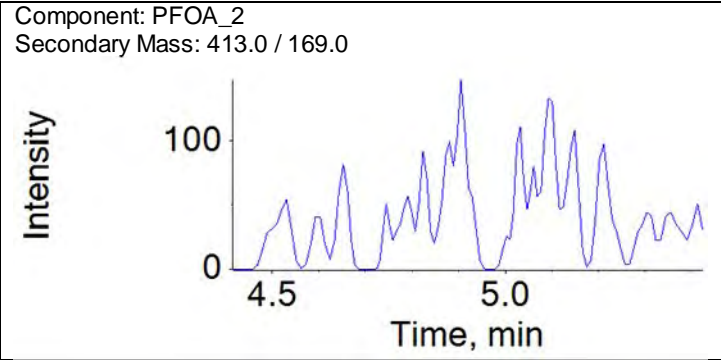
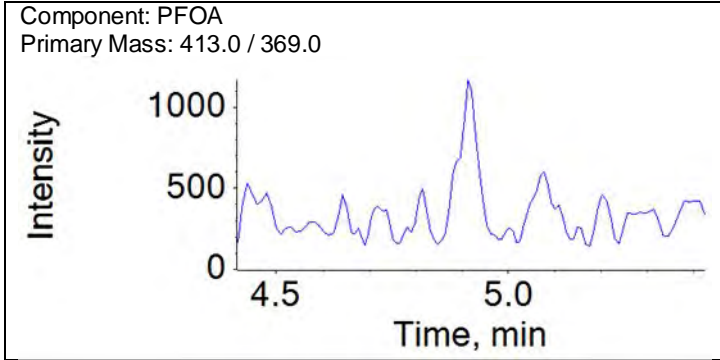
Sample Name: 9927676

Instrument Name: LM27631

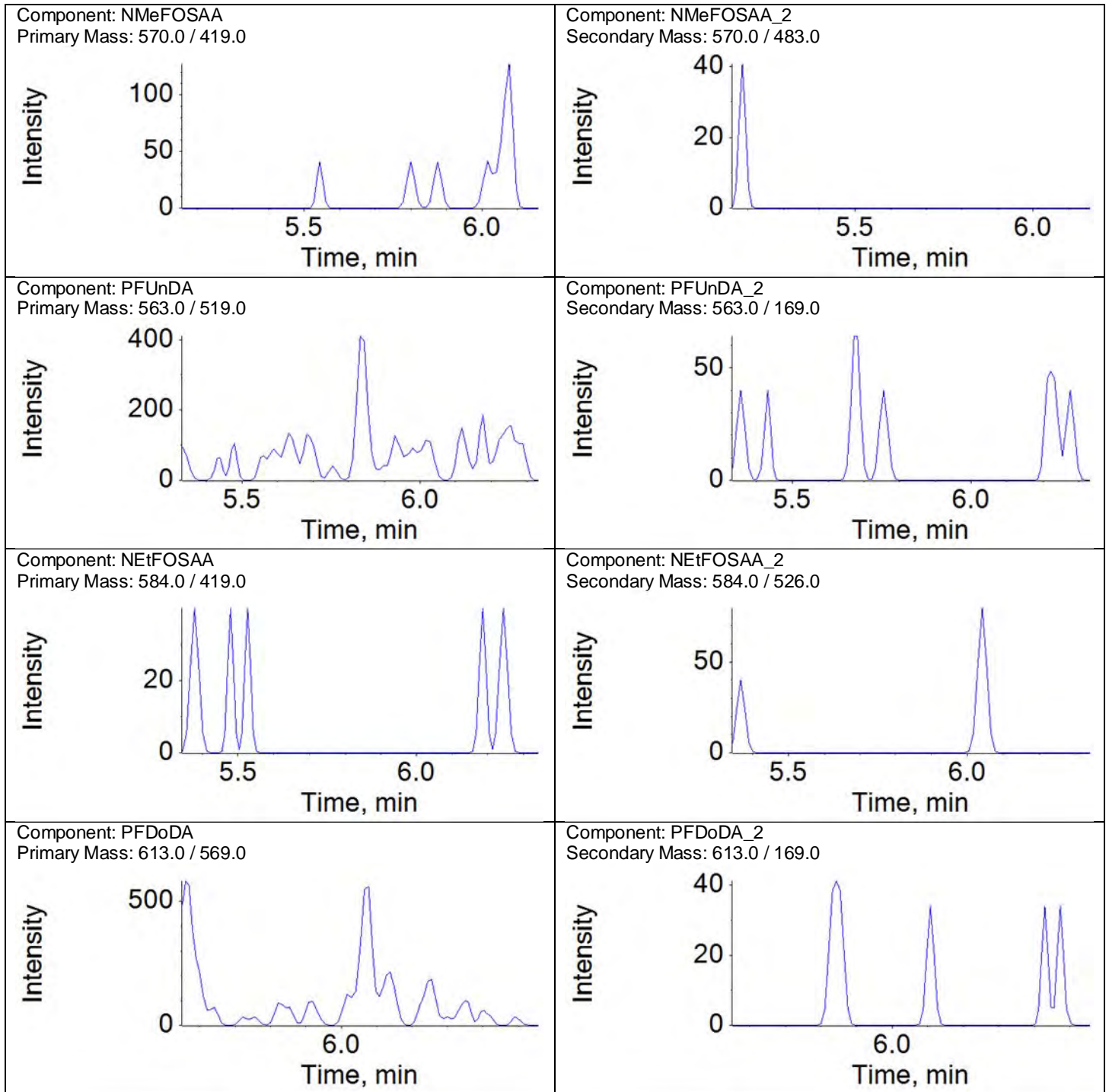
File Name: 18DEC11D-10.wiff

Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	68090.2	A	N/A	0.3623			
PFBS_2	3.81	1.00	24665.8	A	N/A	0.3623	1	50	
PFHxA	4.16	1.00	292149.8	M	N/A	0.0119			
PFHxA_2	4.16	1.00	3473.2	A	N/A	0.0119	33	50	
PFHpA	4.55	1.00	25464.1	A	N/A	0.0412			
PFHpA_2	4.54	1.00	1049.0	A	N/A	0.0412	-26	50	
PFHxS	4.52	0.99	5099.9	M	N/A	0.3589			
PFHxS_2	4.55	1.00	1830.5	M	N/A	0.3589	-3	50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDoDA	N/A	N/A	N/A	A	N/A	N/A			
PFDoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTTrDA	N/A	N/A	N/A	A	N/A	N/A			
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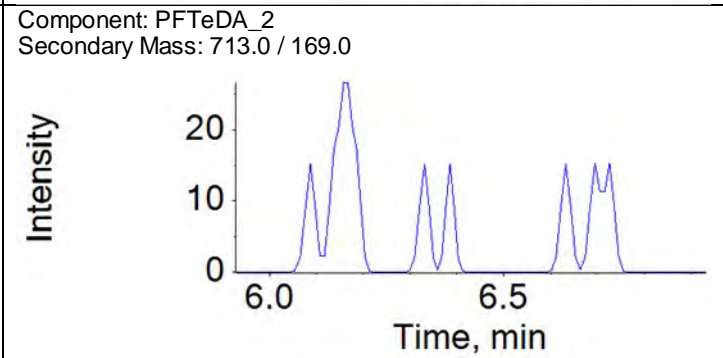
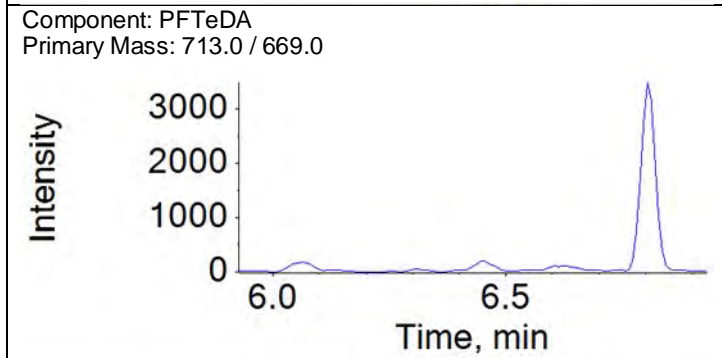
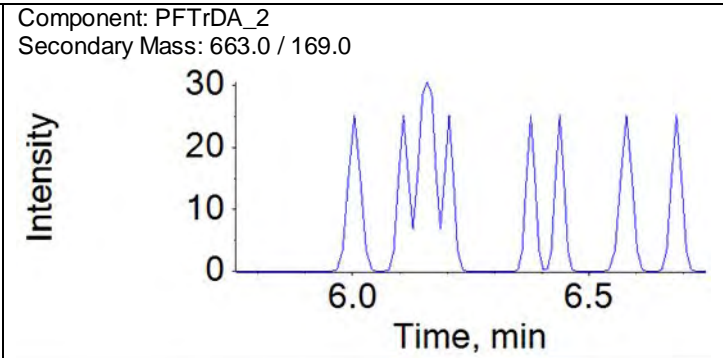
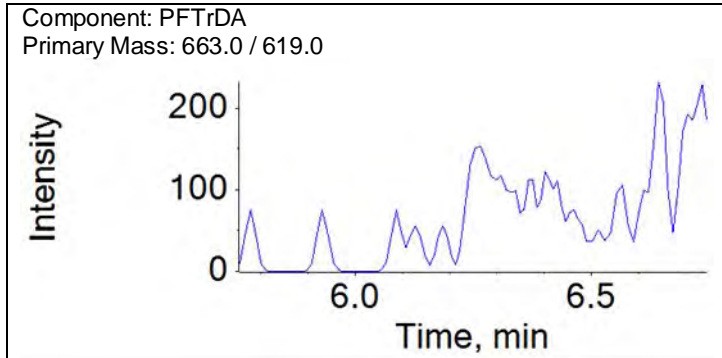












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927677	Data File:	18DEC11D-11.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-4CW16-2-01 Grab Groundwater	Acquis Date:	2018-12-11T06:29:28
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	31	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.26014	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	839882.8	953492.0	-12	50	
13C2-PFOA	5.0	527258.9	500971.3	5	50	
13C4-PFOS	4.8	286981.4	310746.2	-8	50	
13C2-PFDA	5.0	401287.5	419040.9	-4	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	383910.9	13C3-PFBA	839882.8	0.457	17.875	14.894	83	50-150	
E13C5-PFHxA	674826.0	13C2-PFOA	527258.9	1.280	19.220	16.518	86	50-150	
E13C3-PFHxS	313496.5	13C2-PFOA	527258.9	0.595	18.183	14.660	81	50-150	
E13C4-PFHpA	514108.3	13C2-PFOA	527258.9	0.975	19.220	15.935	83	50-150	
E13C8-PFOA	817878.7	13C2-PFOA	527258.9	1.551	19.220	16.855	88	50-150	
E13C8-PFOS	274881.7	13C4-PFOS	286981.4	0.958	18.375	16.524	90	50-150	
E13C9-PFNA	558497.1	13C4-PFOS	286981.4	1.946	19.220	21.140	110	50-150	
E13C6-PFDA	666276.4	13C2-PFDA	401287.5	1.660	19.220	16.914	88	50-150	
Ed3-NMeFOSAA	126388.9	13C2-PFDA	401287.5	0.315	19.220	21.456	112	50-150	
E13C7-PFUnDA	375312.3	13C2-PFDA	401287.5	0.935	19.220	17.636	92	50-150	
Ed5-NEtFOSAA	74335.8	13C2-PFDA	401287.5	0.185	19.220	15.719	82	50-150	
E13C2-PFDoDA	736354.6	13C2-PFDA	401287.5	1.835	19.220	14.803	77	50-150	
E13C2-PFTeDA	448225.2	13C2-PFDA	401287.5	1.117	19.220	12.744	66	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

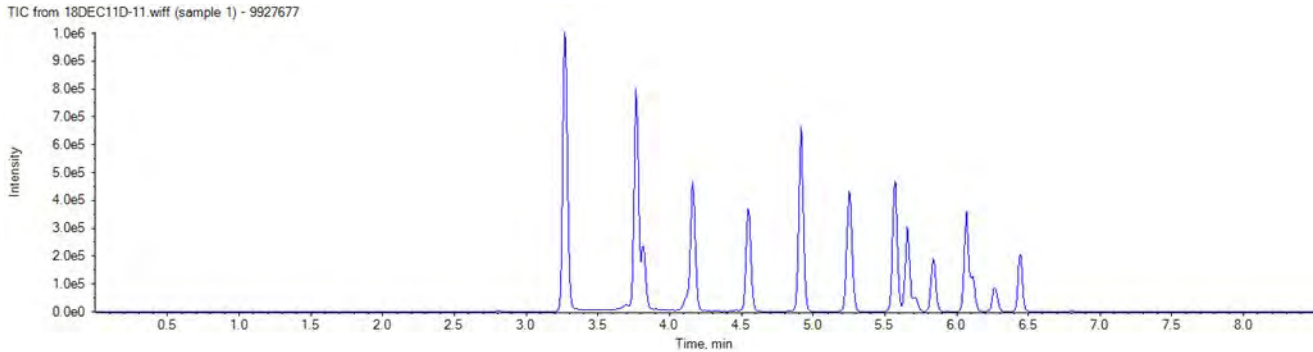
**Analyte Quantitation Peak Table**

Sample Name: 9927677 Instrument Name: LM27631 File Name: 18DEC11D-11.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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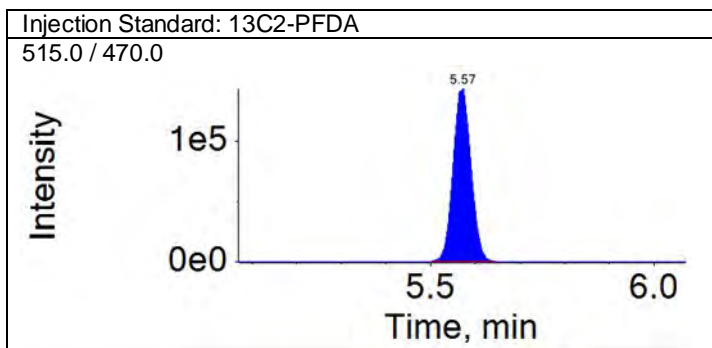
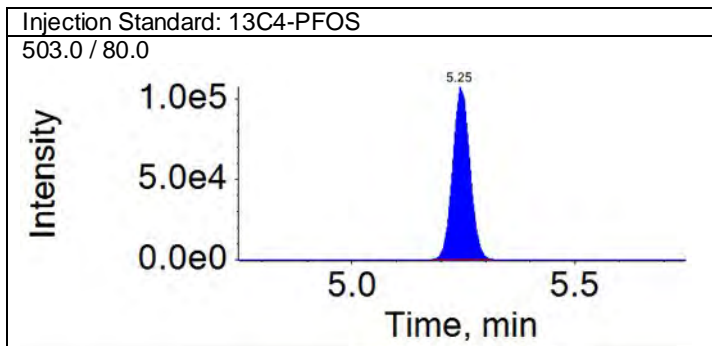
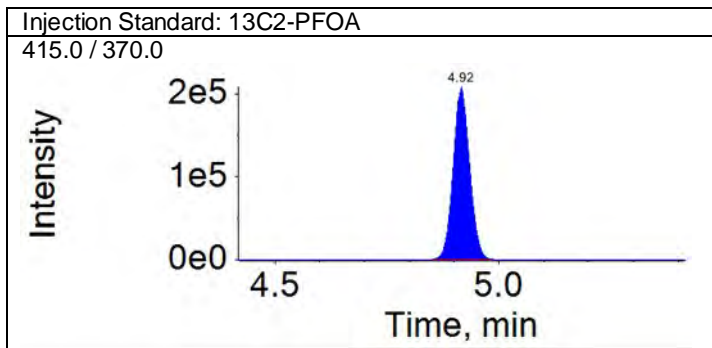
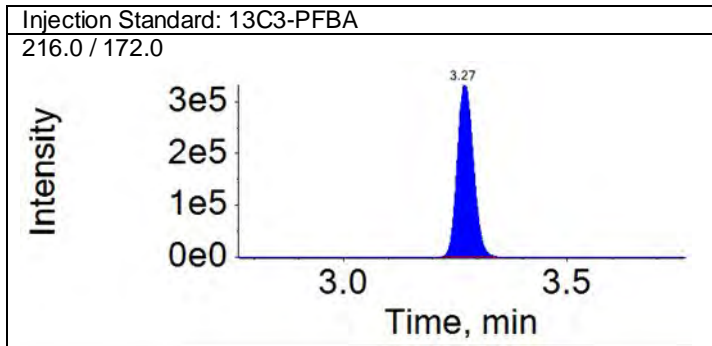
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	3.82	1.000	66274.6		A	13C3-PFBS	3.82	383910.9	0.173	3.289
PFHxA	4.16	1.000	352072.5		A	13C5-PFHxA	4.16	674826.0	0.522	8.739
PFHpA	4.55	1.000	31092.2		A	13C4-PFHpA	4.55	514108.3	0.060	0.765
PFHxS	4.55	1.000	18990.2		M	13C3-PFHxS	4.55	313496.5	0.061	1.103
PFOA	4.92	1.000	25436.0		M	13C8-PFOA	4.92	817878.7	0.031	0.653
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.25	274881.7	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	558497.1	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	666276.4	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	126388.9	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.84	375312.3	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.85	74335.8	N/A	
PFDODA	N/A	N/A	N/A		A	13C2-PFDODA	6.07	736354.6	N/A	
PFTTrDA	N/A	N/A	N/A		A	13C2-PFDODA	6.07	736354.6	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	448225.2	N/A	

**Total Ion Chromatogram**



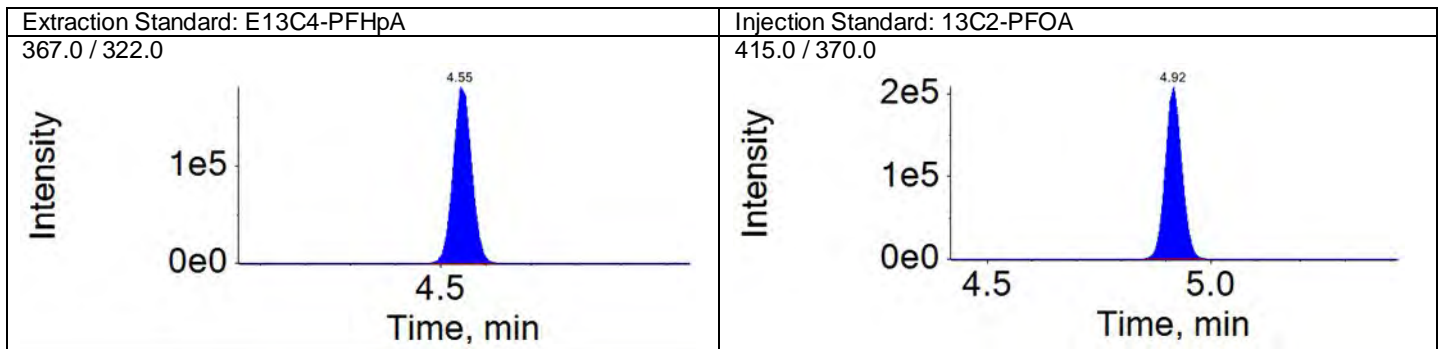
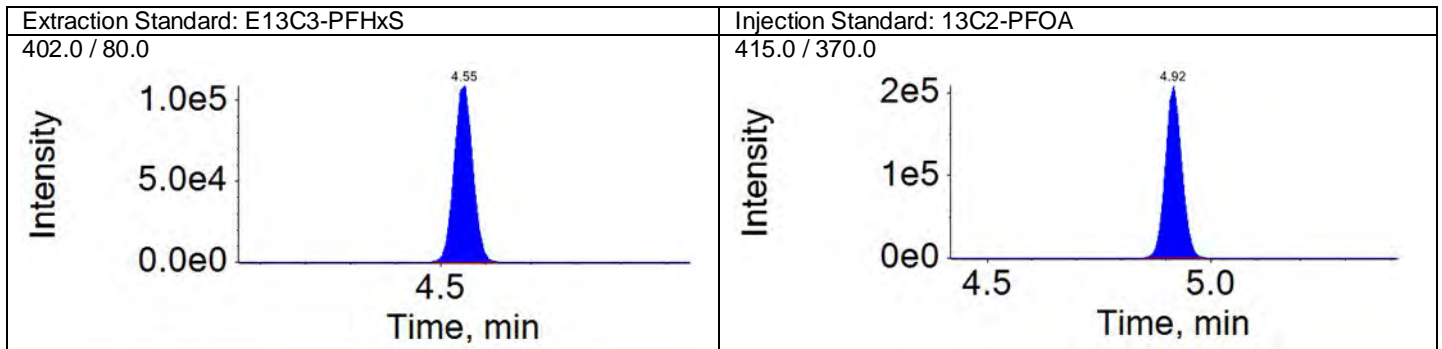
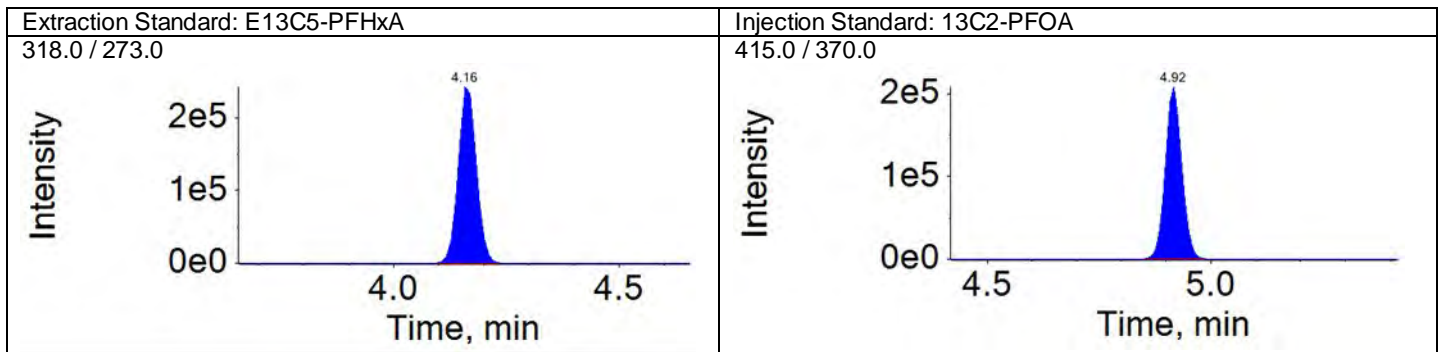
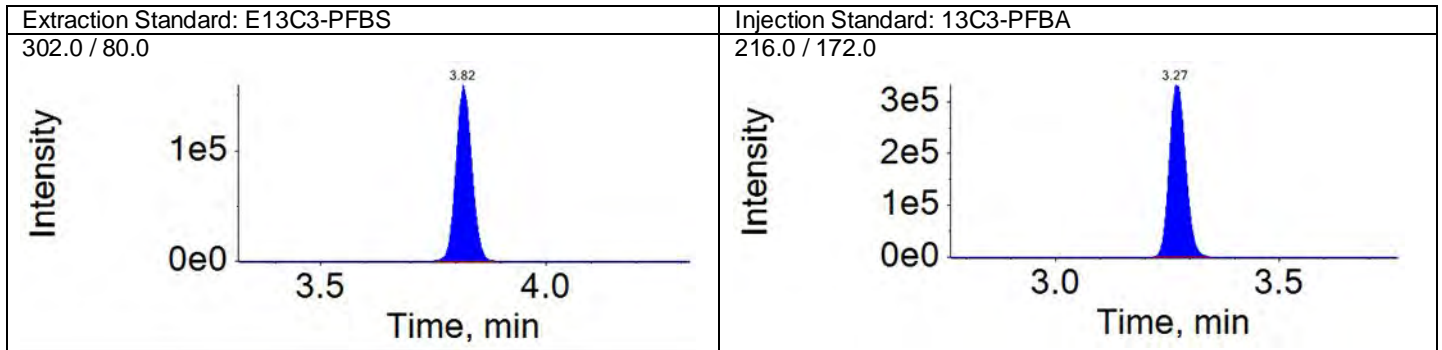
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

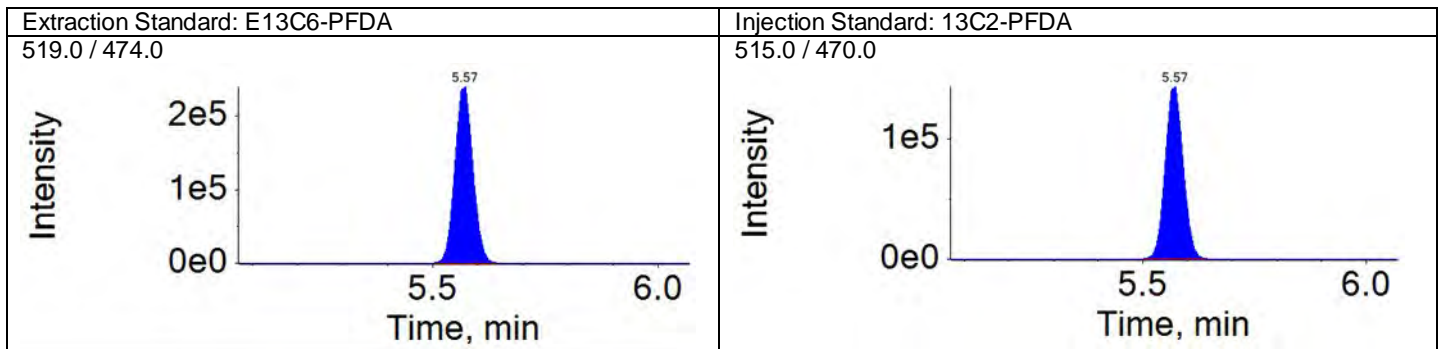
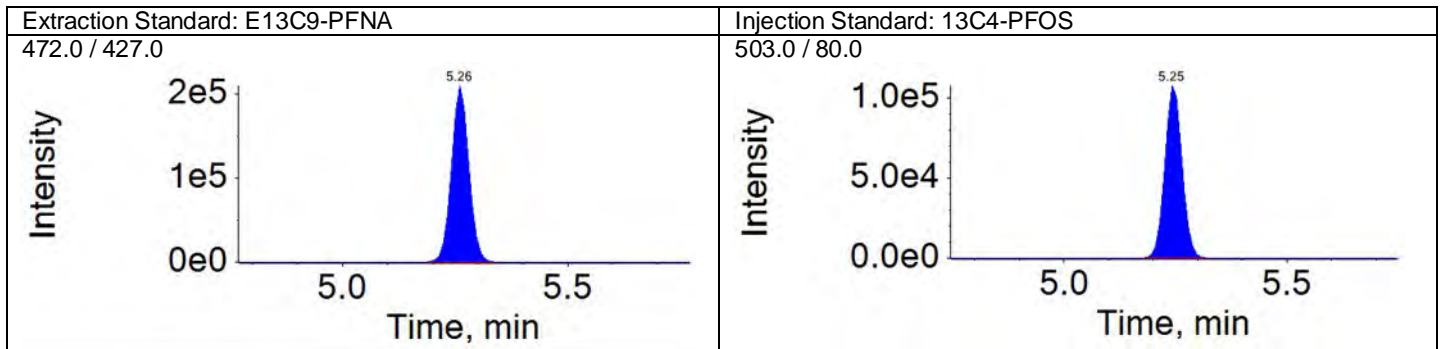
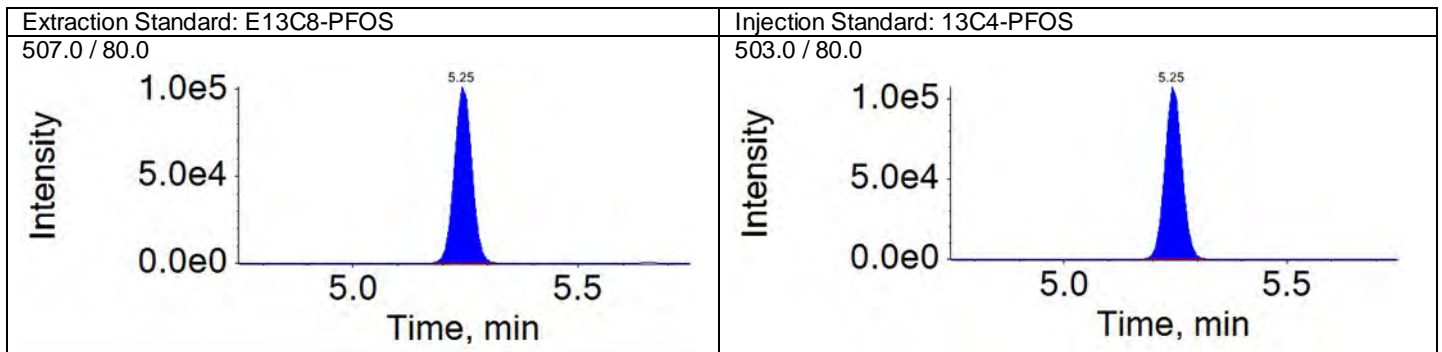
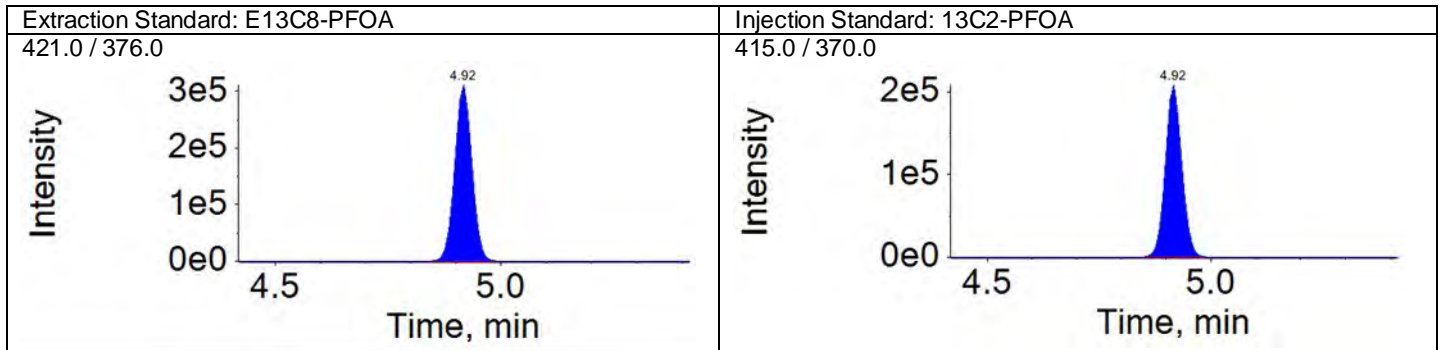
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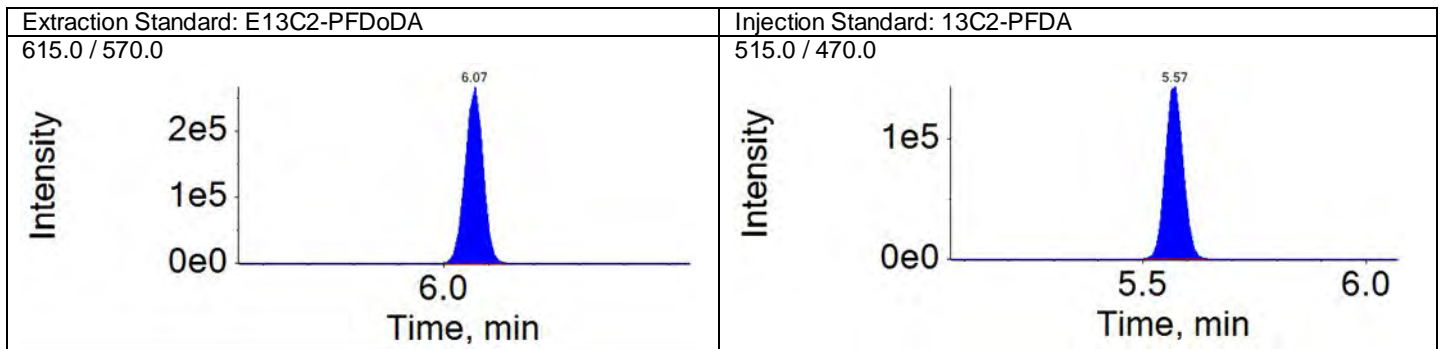
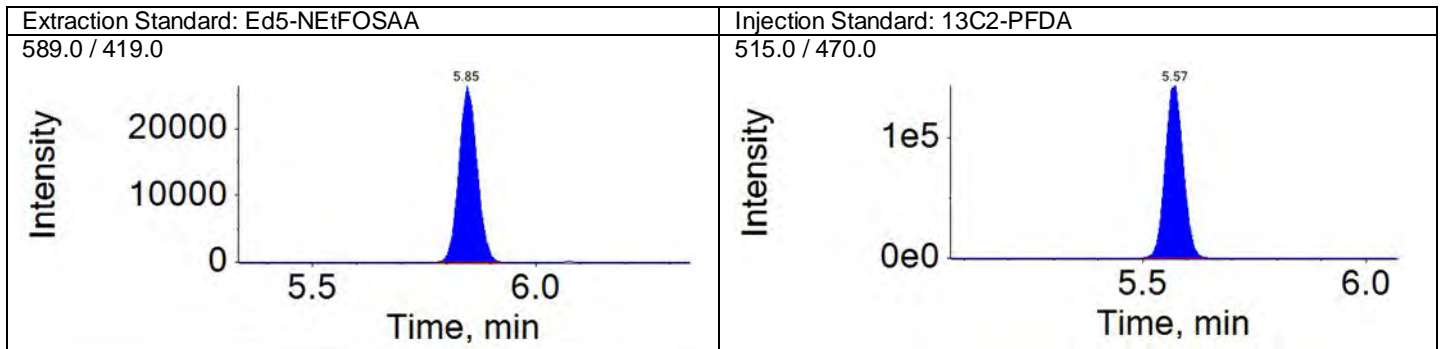
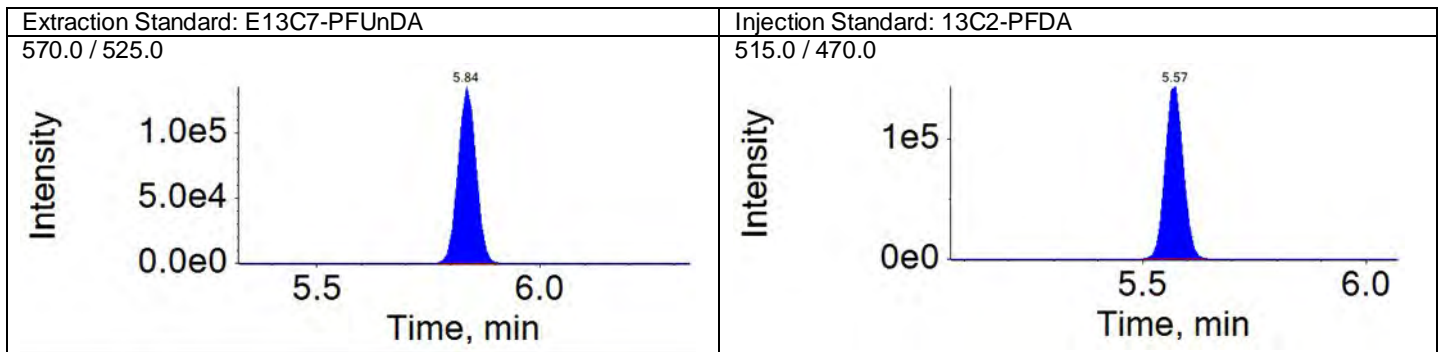
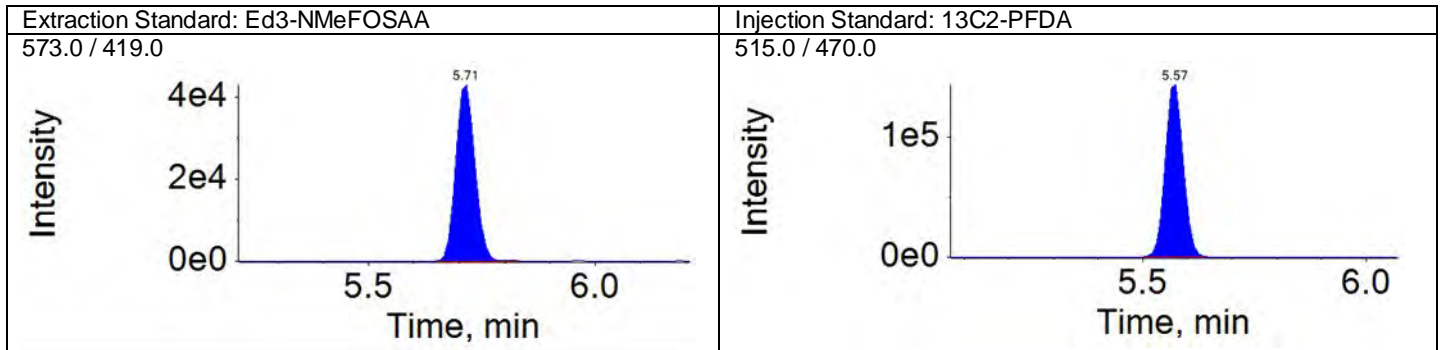
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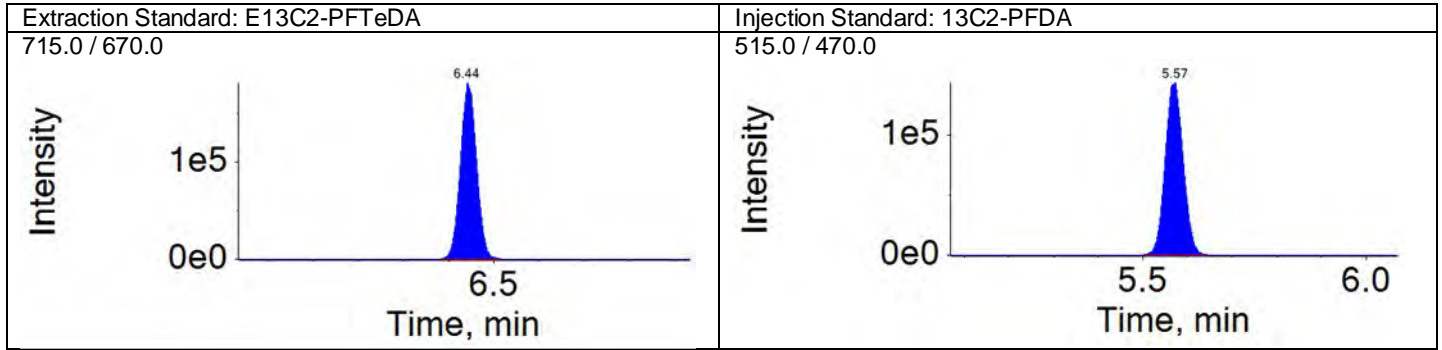
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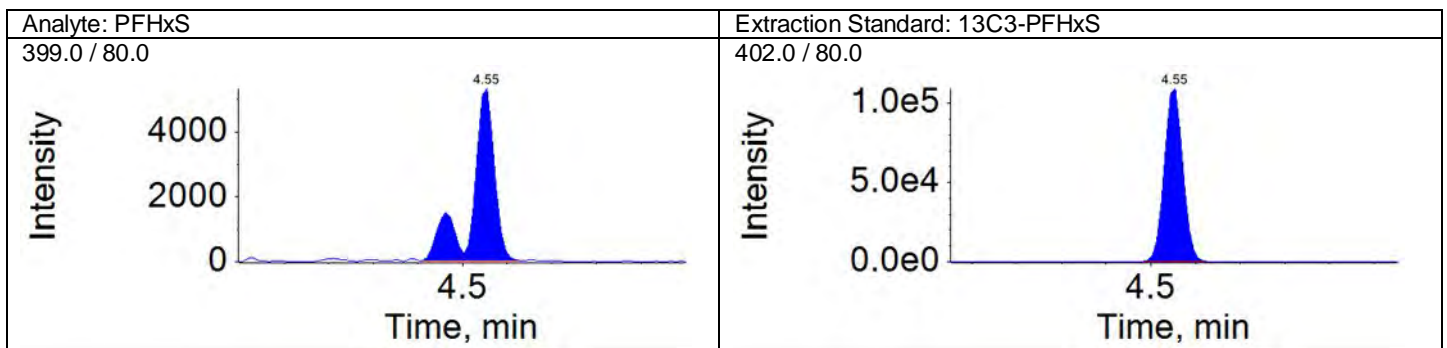
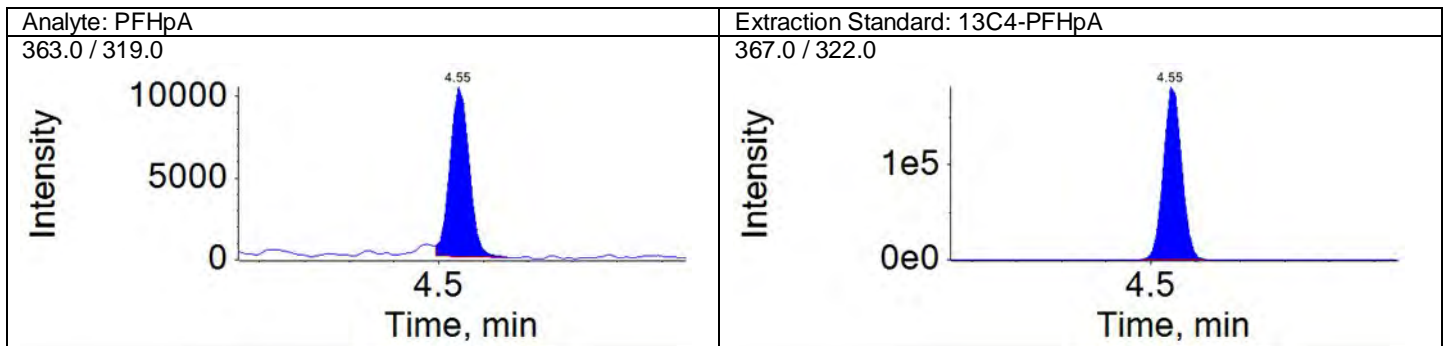
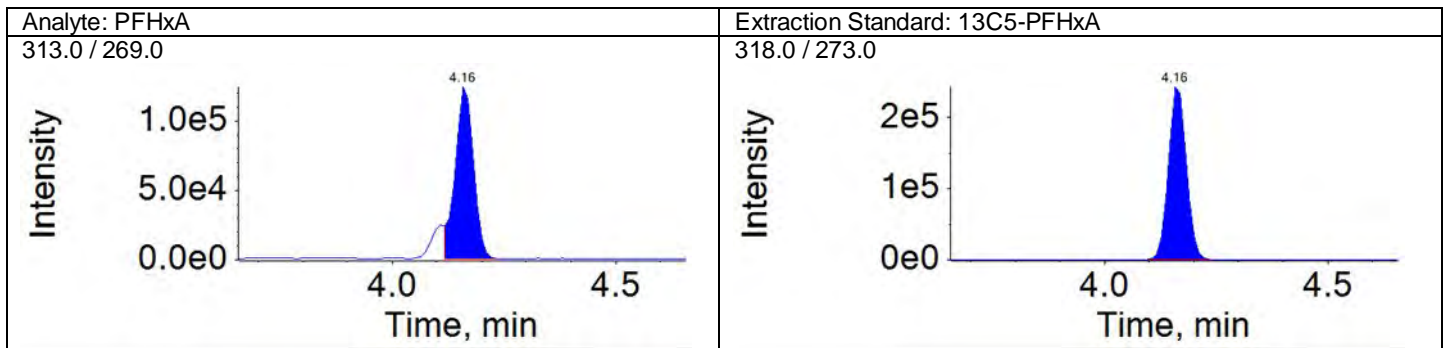
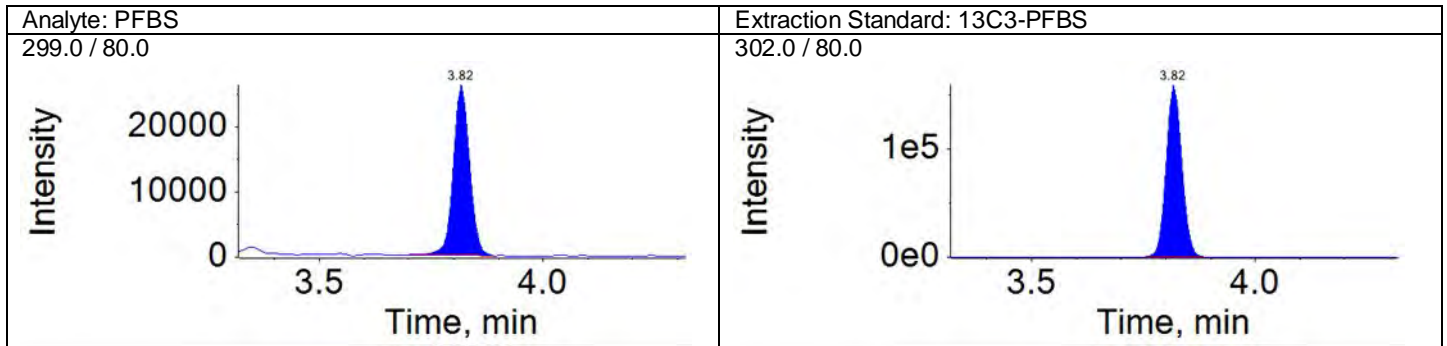
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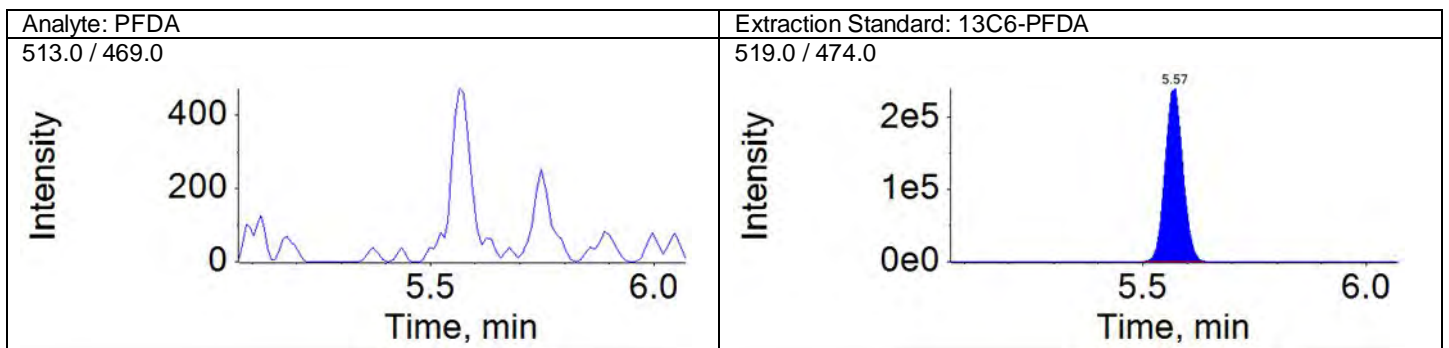
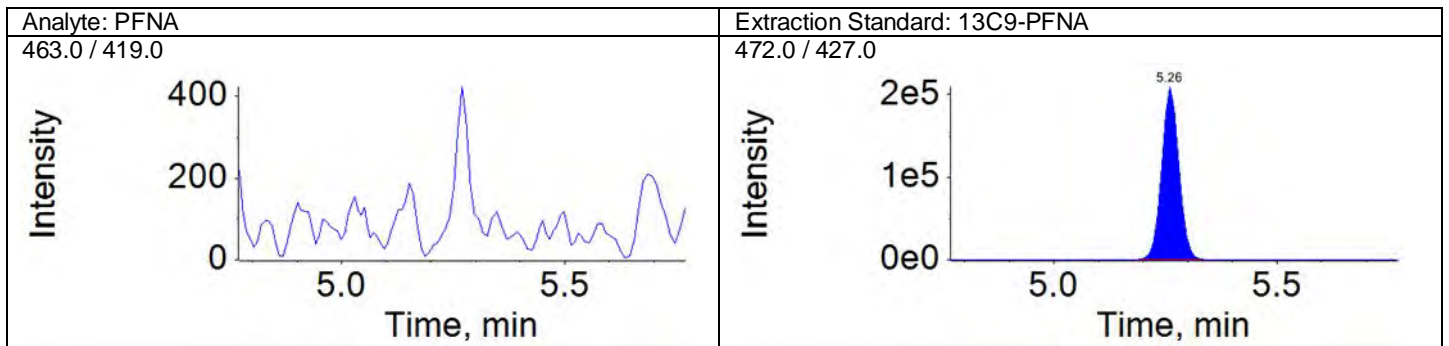
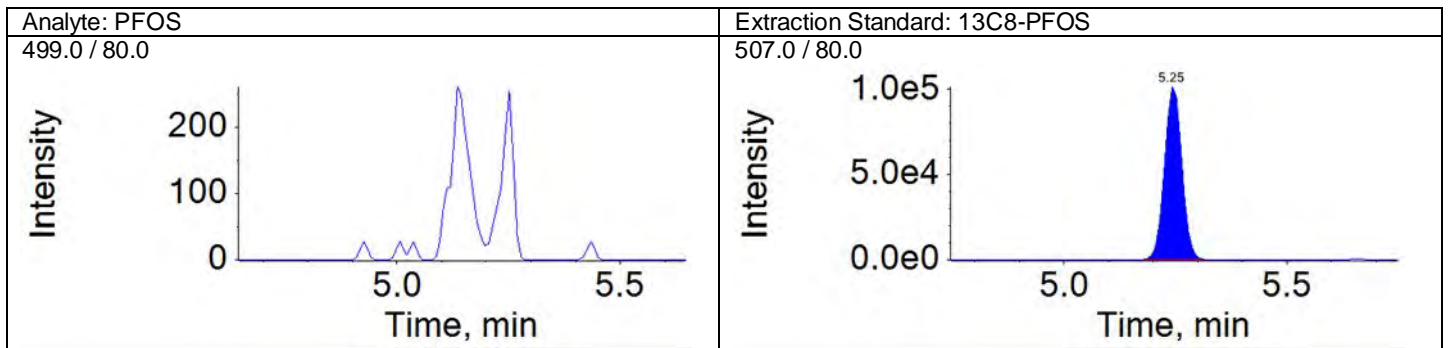
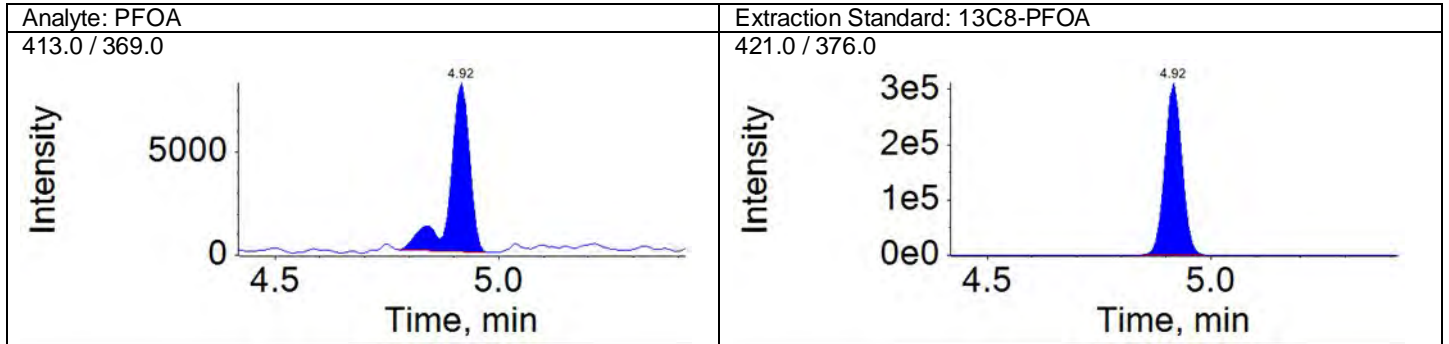
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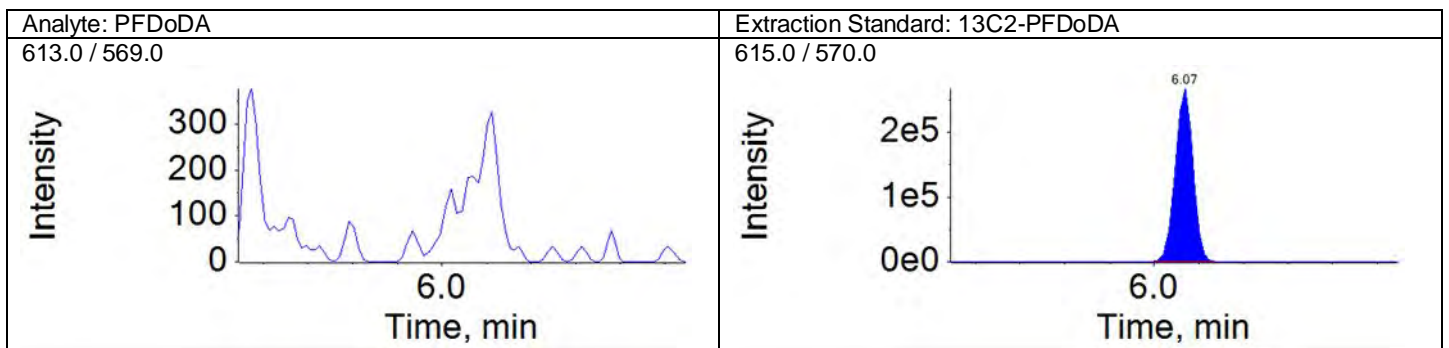
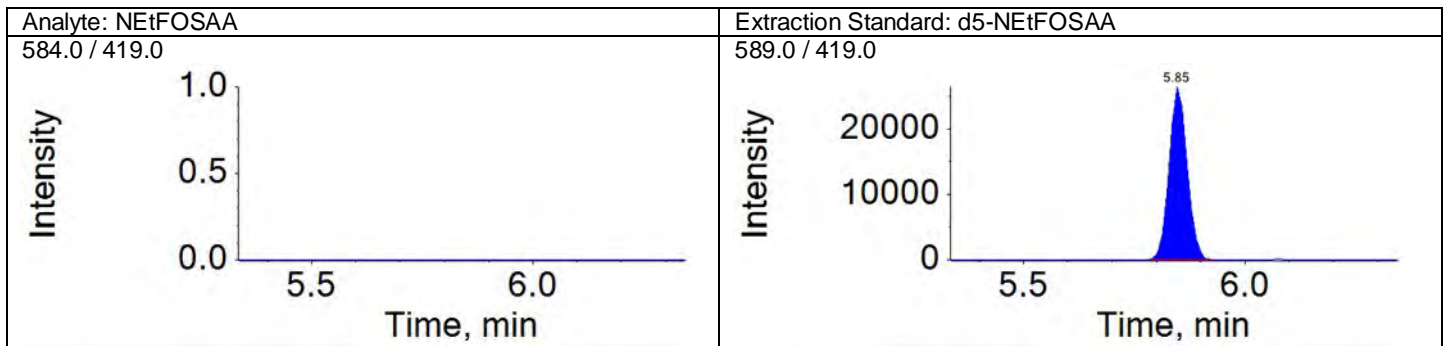
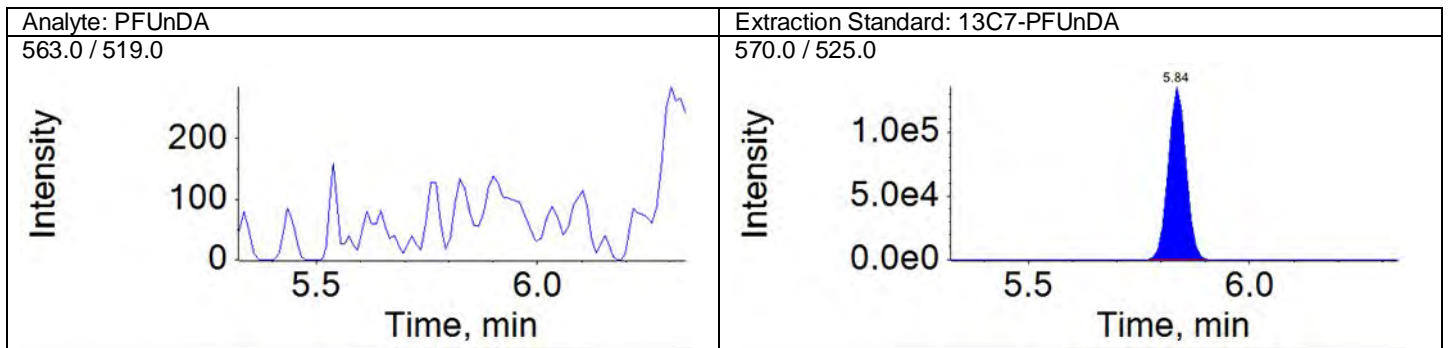
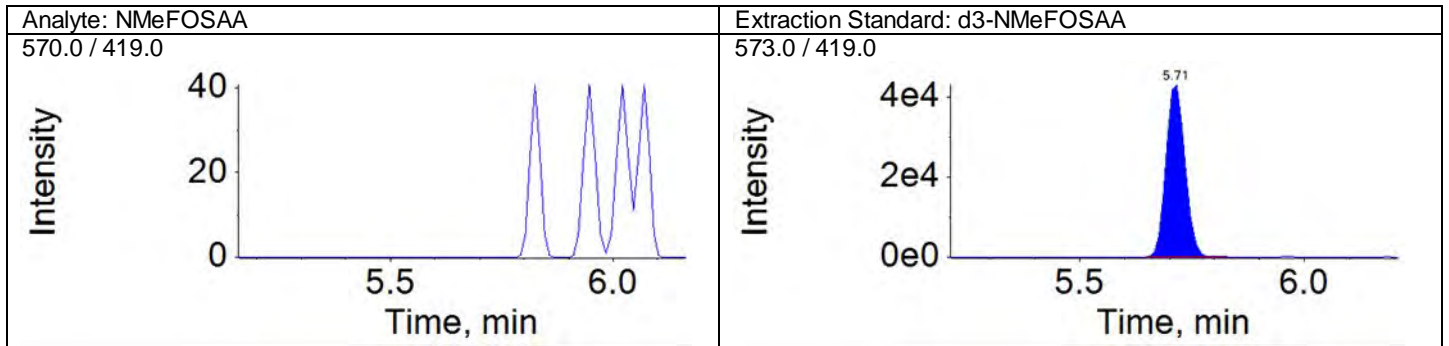
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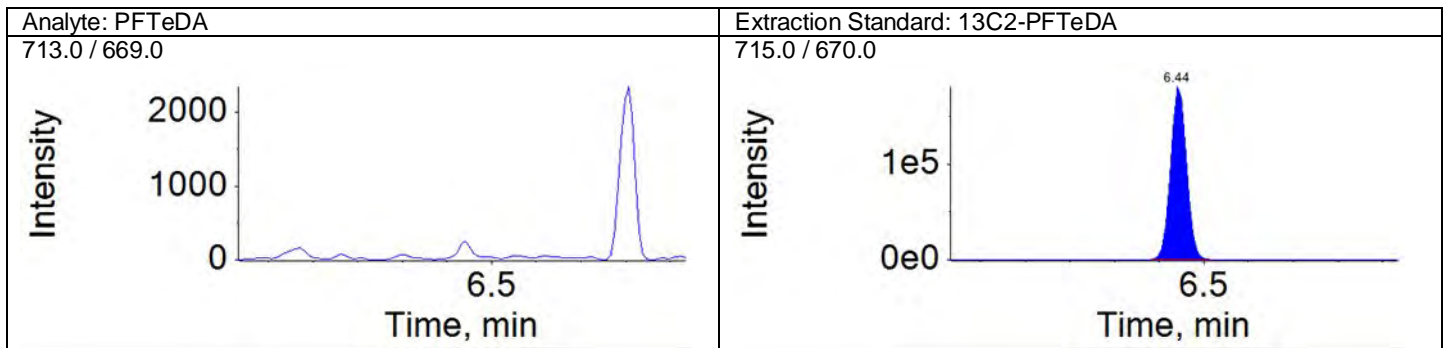
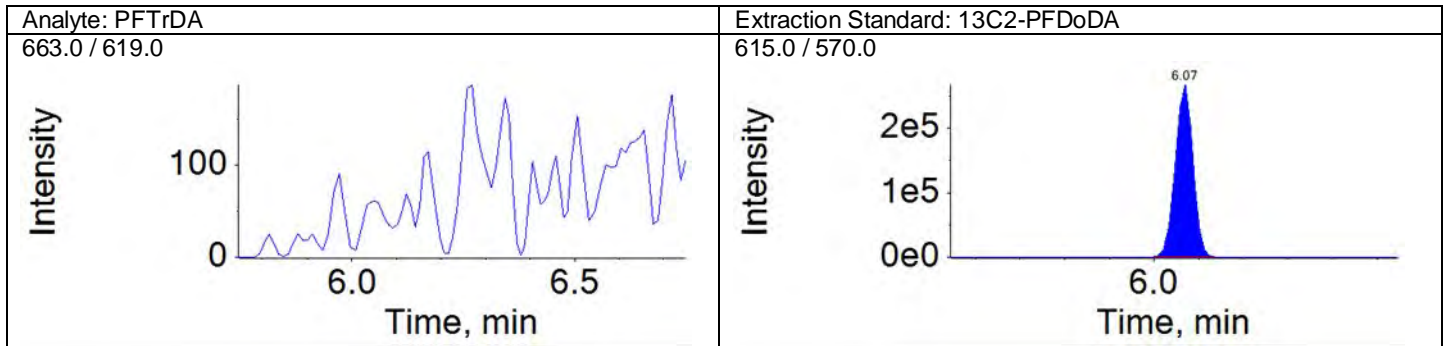
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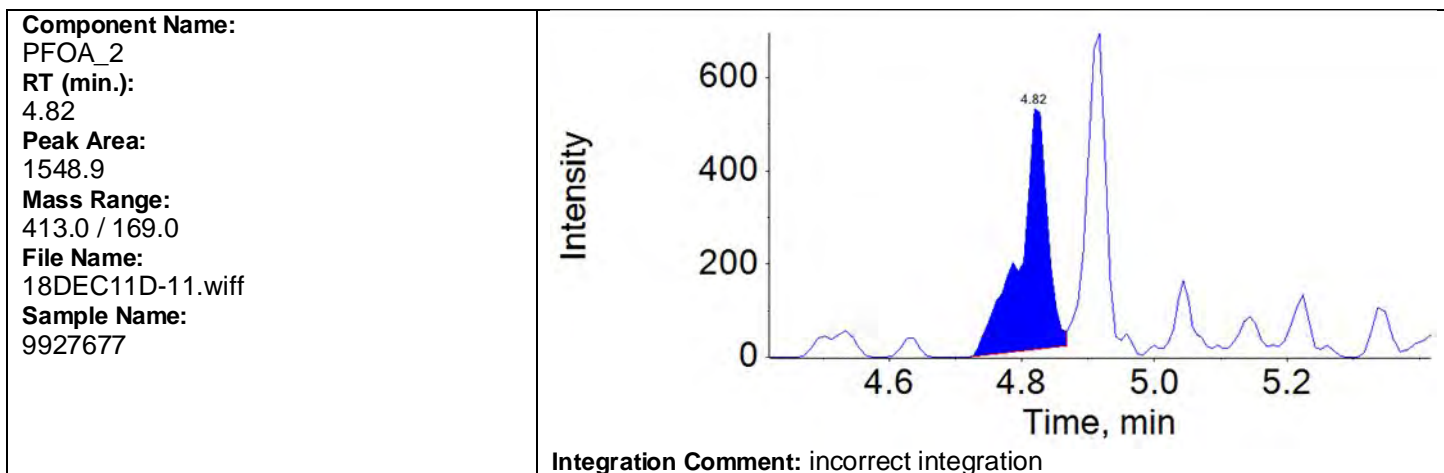
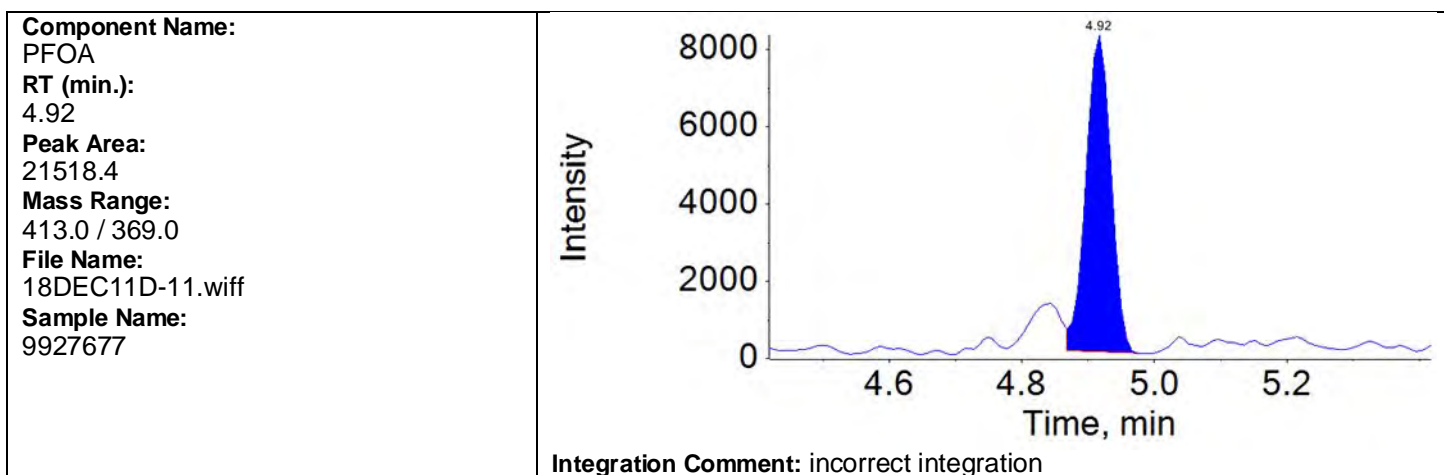
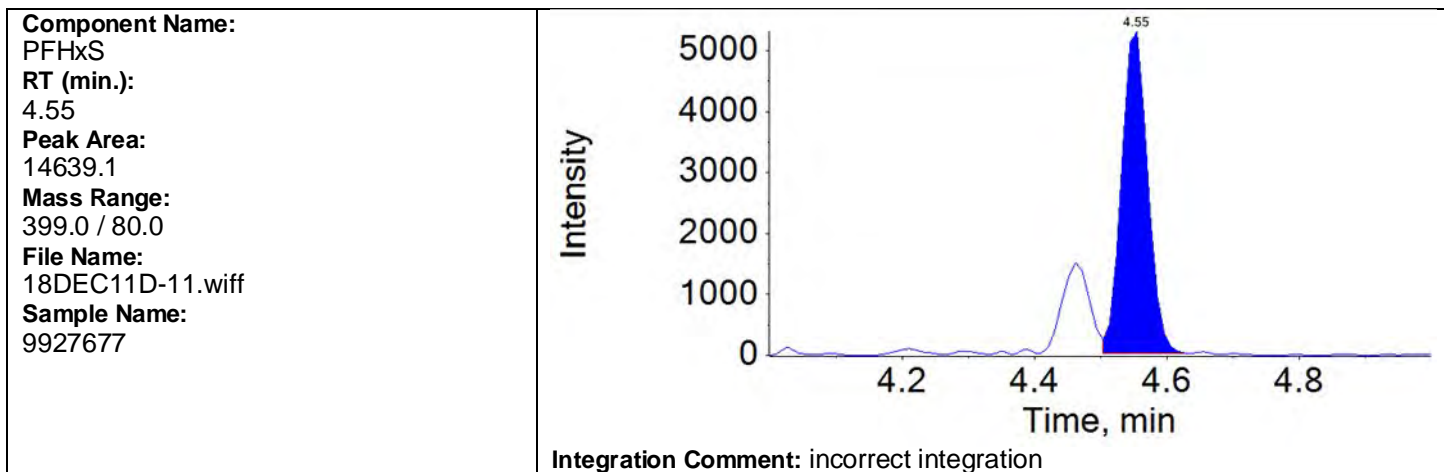
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Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MCD at 5:30 pm, 12/13/18

**REVIEWED**  
By umar at 11:20 am, 12/16/18



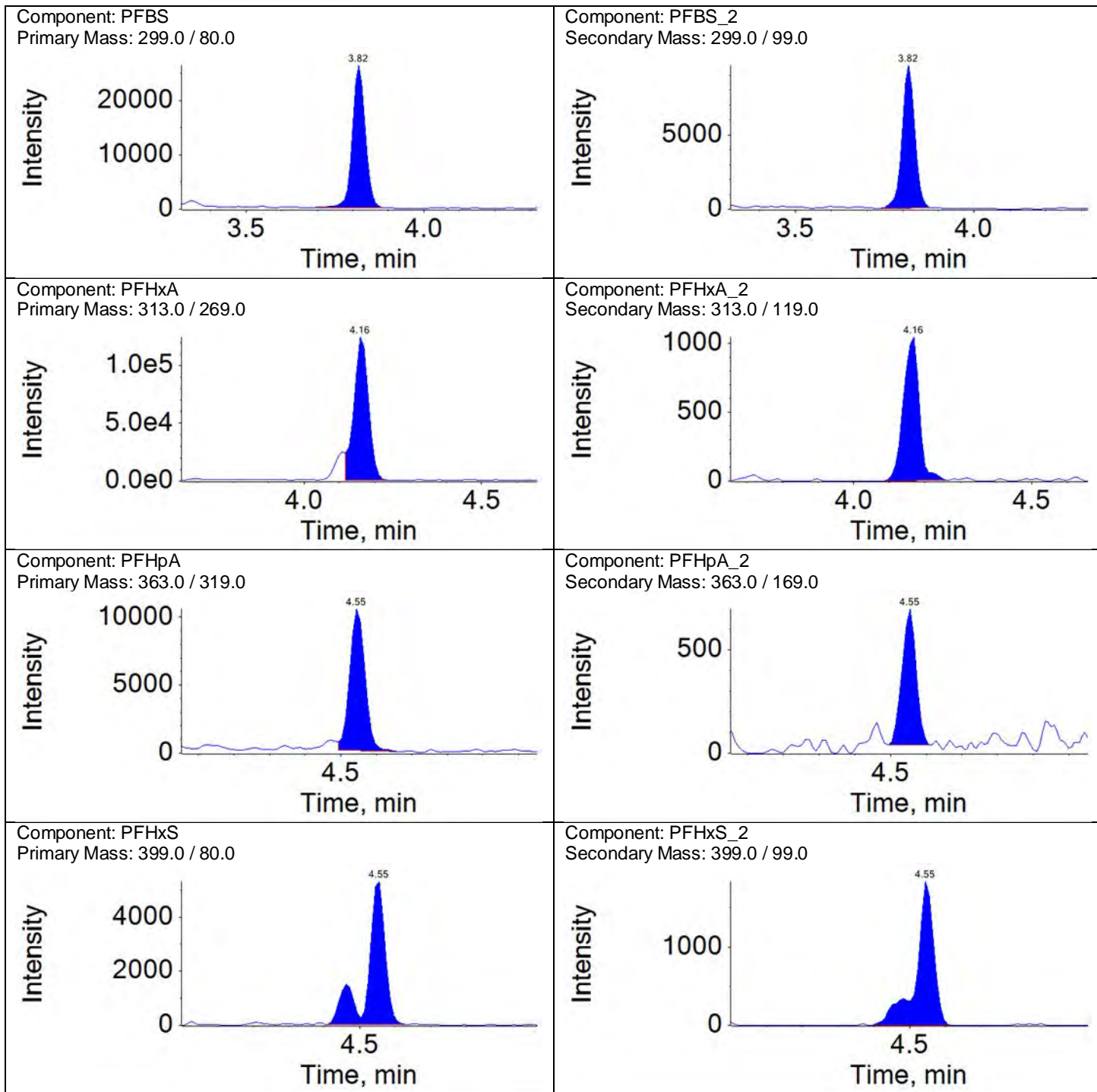
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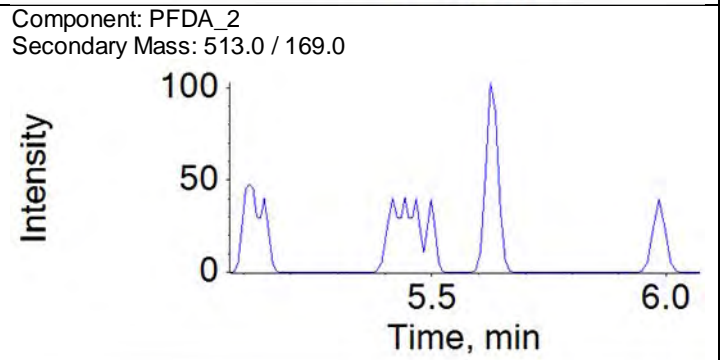
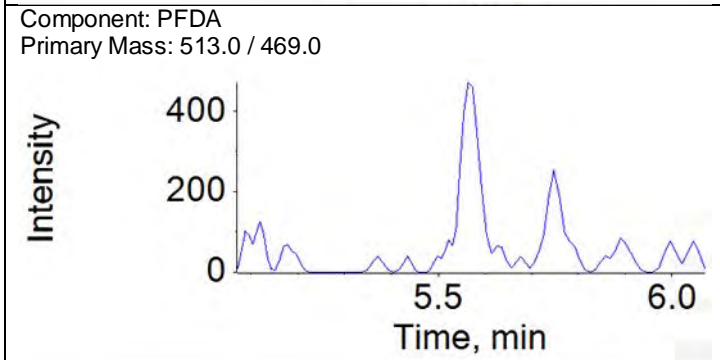
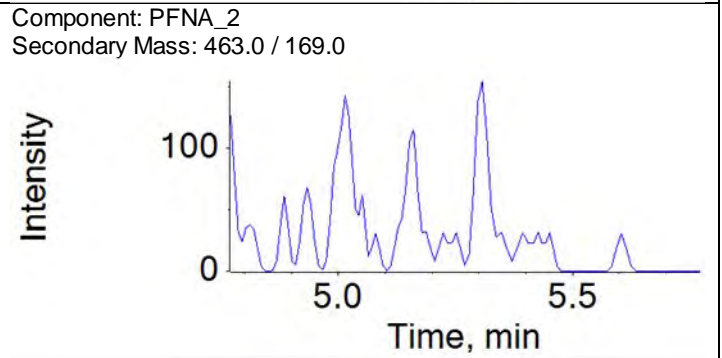
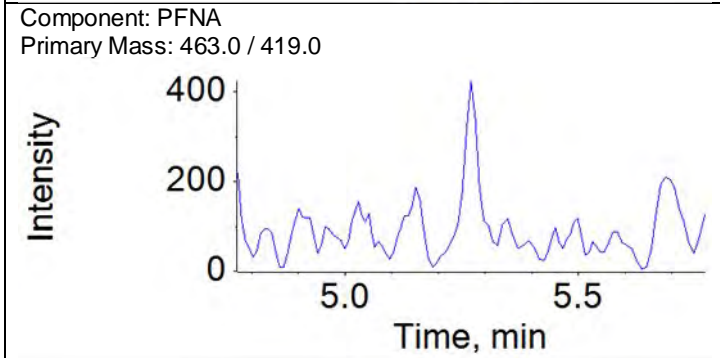
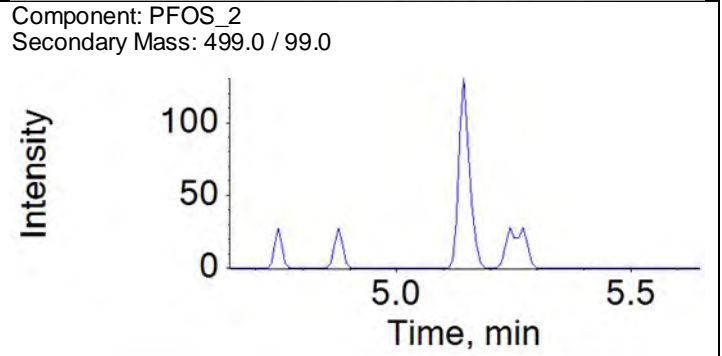
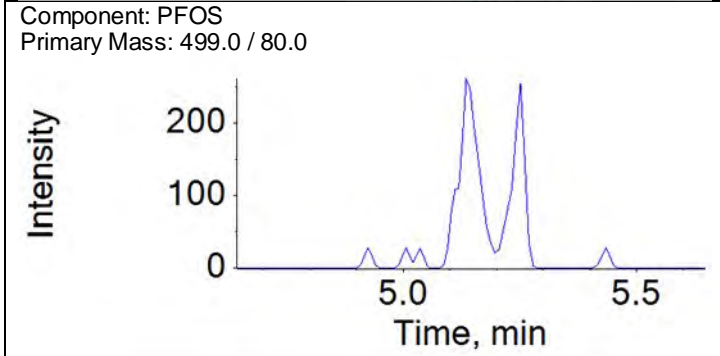
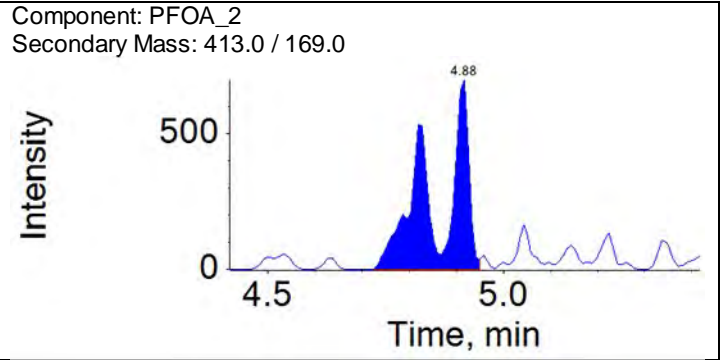
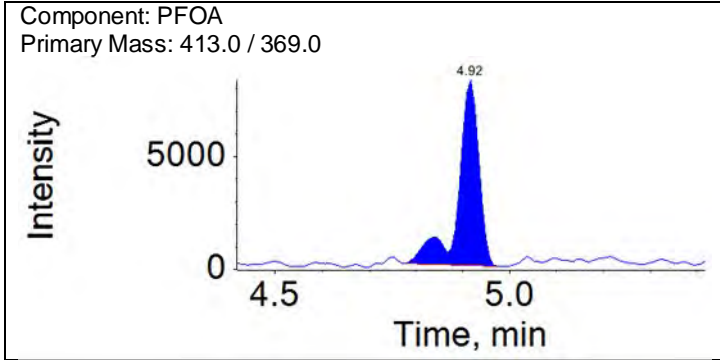
Sample Name: 9927677

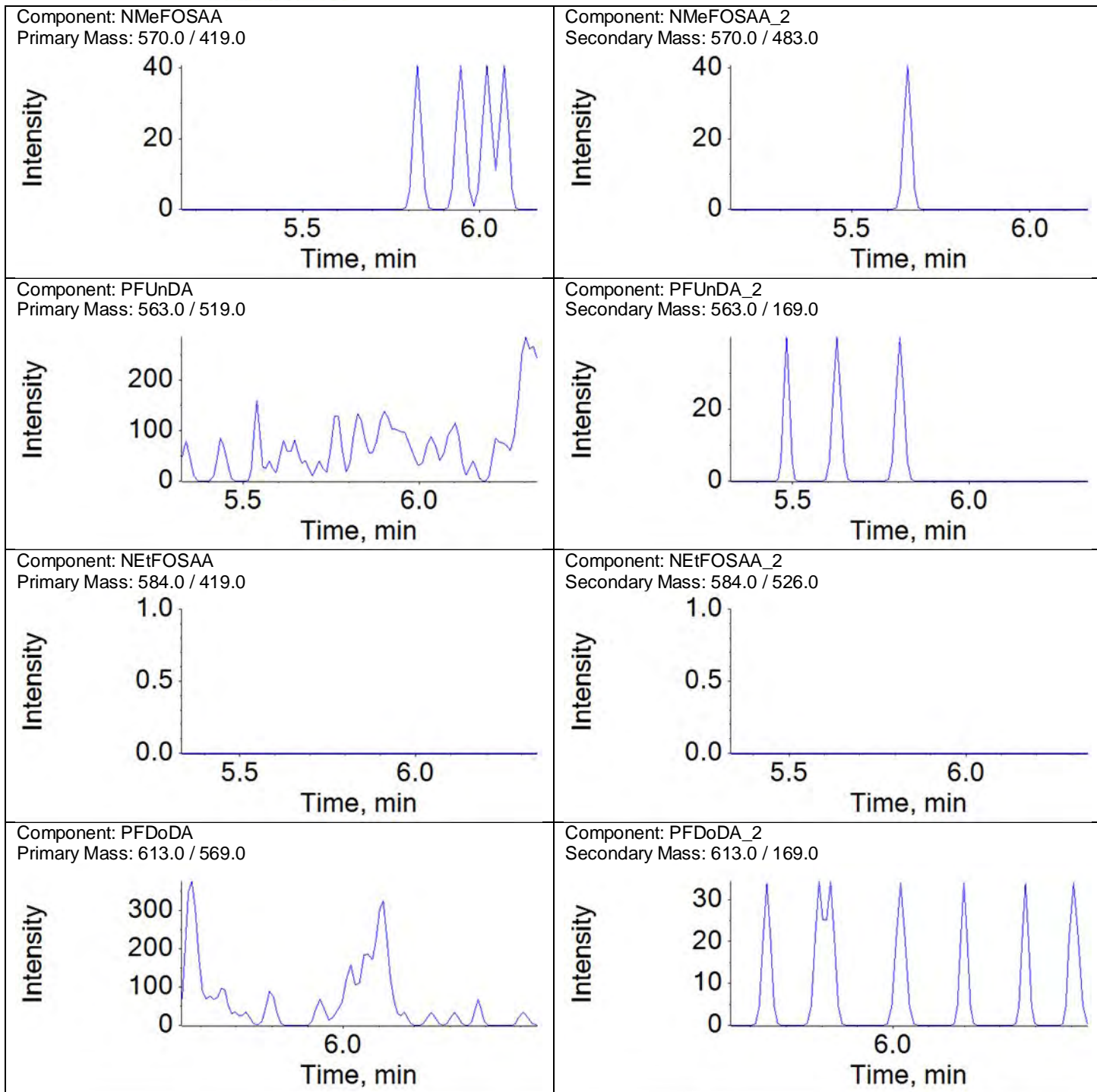
Instrument Name: LM27631

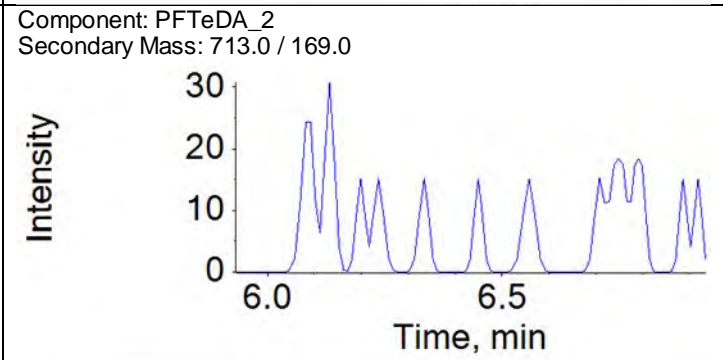
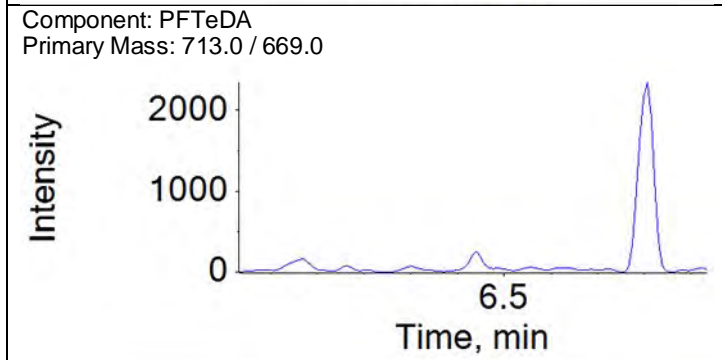
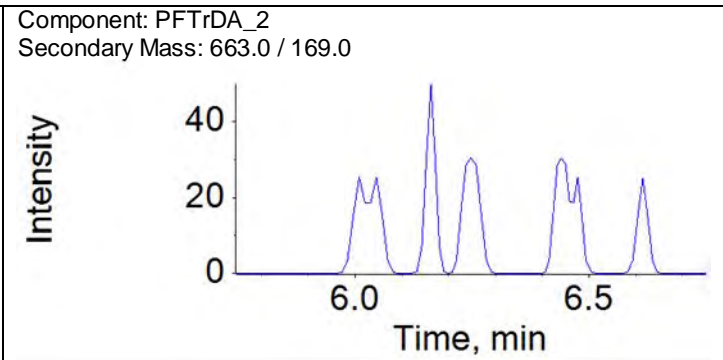
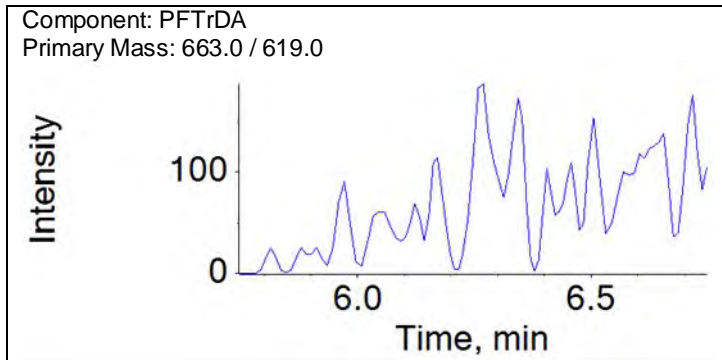
File Name: 18DEC11D-11.wiff

Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	66274.6	A	N/A	0.3552			
PFBS_2	3.82	1.00	23539.3	A	N/A	0.3552	-1	50	
PFHxA	4.16	1.00	352072.5	A	N/A	0.0092			
PFHxA_2	4.16	1.00	3249.4	A	N/A	0.0092	4	50	
PFHpA	4.55	1.00	31092.2	A	N/A	0.0582			
PFHpA_2	4.55	1.00	1808.3	A	N/A	0.0582	4	50	
PFHxS	4.55	1.00	18990.2	M	N/A	0.3367			
PFHxS_2	4.55	1.00	6394.8	A	N/A	0.3367	-9	50	
PFOA	4.92	1.00	25436.0	M	N/A	0.1212			
PFOA_2	4.88	0.99	3084.1	M	N/A	0.1212	96	50	OOS
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAcDA	N/A	N/A	N/A	A	N/A	N/A			
PFAcDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDoDA	N/A	N/A	N/A	A	N/A	N/A			
PFDoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTTrDA	N/A	N/A	N/A	A	N/A	N/A			
PFTTrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTeDA	N/A	N/A	N/A	A	N/A	N/A			
PFTeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	











ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927678	Data File:	18DEC11D-12.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-44-2-01 Grab Groundwater	Acquis Date:	2018-12-11T06:38:28
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	32	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.29163	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	896384.9	953492.0	-6	50	
13C2-PFOA	5.0	504124.6	500971.3	1	50	
13C4-PFOS	4.8	288687.9	310746.2	-7	50	
13C2-PFDA	5.0	405420.8	419040.9	-3	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	338473.5	13C3-PFBA	896384.9	0.378	15.945	10.975	69	50-150	
E13C5-PFHxA	542538.5	13C2-PFOA	504124.6	1.076	17.145	12.390	72	50-150	
E13C3-PFHxS	274367.7	13C2-PFOA	504124.6	0.544	16.219	11.970	74	50-150	
E13C4-PFHpA	448940.6	13C2-PFOA	504124.6	0.891	17.145	12.982	76	50-150	
E13C8-PFOA	714492.4	13C2-PFOA	504124.6	1.417	17.145	13.738	80	50-150	
E13C8-PFOS	254014.9	13C4-PFOS	288687.9	0.880	16.391	13.540	83	50-150	
E13C9-PFNA	490547.3	13C4-PFOS	288687.9	1.699	17.145	16.465	96	50-150	
E13C6-PFDA	565813.9	13C2-PFDA	405420.8	1.396	17.145	12.682	74	50-150	
Ed3-NMeFOSAA	107320.9	13C2-PFDA	405420.8	0.265	17.145	16.086	94	50-150	
E13C7-PFUnDA	310466.0	13C2-PFDA	405420.8	0.766	17.145	12.881	75	50-150	
Ed5-NEtFOSAA	66220.9	13C2-PFDA	405420.8	0.163	17.145	12.364	72	50-150	
E13C2-PFDoDA	630515.4	13C2-PFDA	405420.8	1.555	17.145	11.191	65	50-150	
E13C2-PFTeDA	428719.4	13C2-PFDA	405420.8	1.057	17.145	10.762	63	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

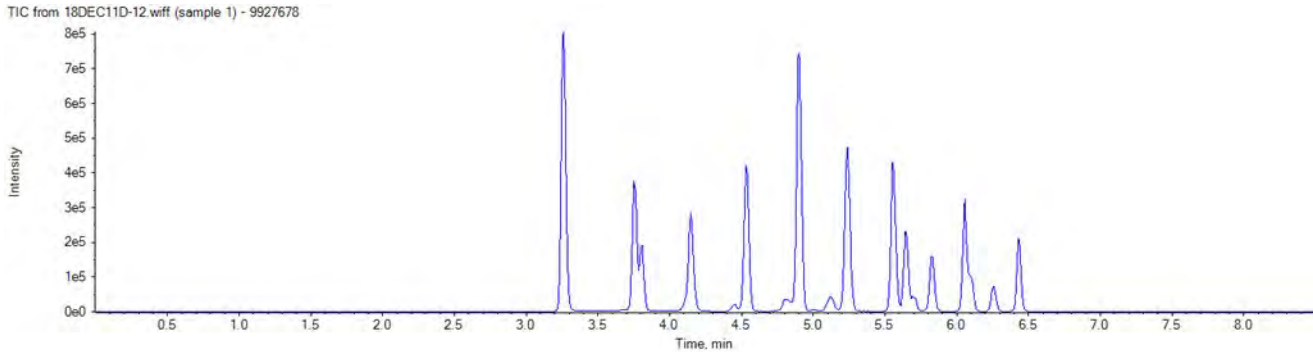
**Analyte Quantitation Peak Table**

Sample Name: 9927678 Instrument Name: LM27631 File Name: 18DEC11D-12.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.29163	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	3.80	1.000	55737.7		A	13C3-PFBS	3.80	338473.5	0.165	2.799
PFHxA	4.15	1.000	76451.8		A	13C5-PFHxA	4.15	542538.5	0.141	2.106
PFHpA	4.53	1.000	39471.7		A	13C4-PFHpA	4.53	448940.6	0.088	0.993
PFHxS	4.54	1.000	210818.1		M	13C3-PFHxS	4.54	274367.7	0.768	12.484
PFOA	4.90	1.000	586062.4		M	13C8-PFOA	4.90	714492.4	0.820	15.371
PFOS	5.20	0.990	273768.1		M	13C8-PFOS	5.23	254014.9	1.078	15.329
PFNA	5.25	1.000	26081.9		A	13C9-PFNA	5.25	490547.3	0.053	0.672
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.56	565813.9	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.70	107320.9	N/A	
PFUnDA	5.83	1.000	10803.0		A	13C7-PFUnDA	5.83	310466.0	0.035	0.365
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.84	66220.9	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.06	630515.4	N/A	
PFTTrDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.06	630515.4	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.43	428719.4	N/A	

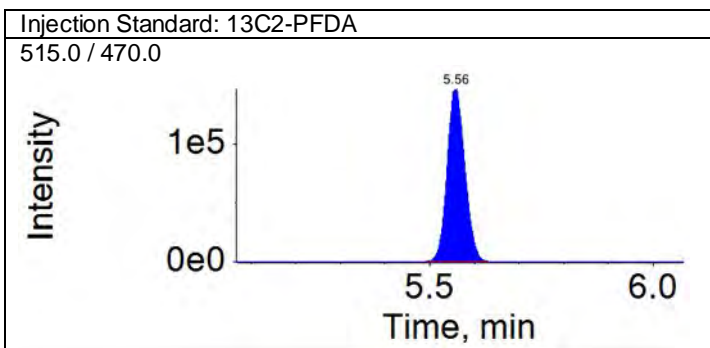
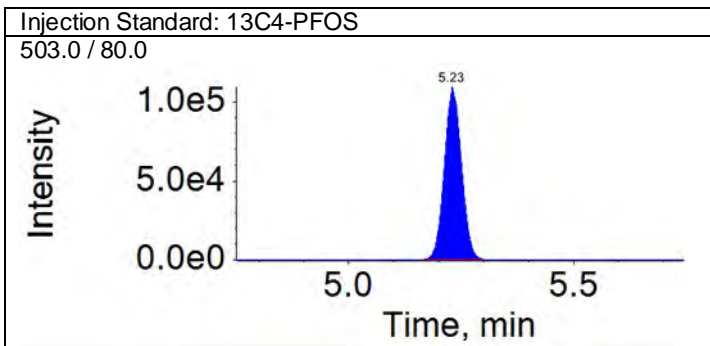
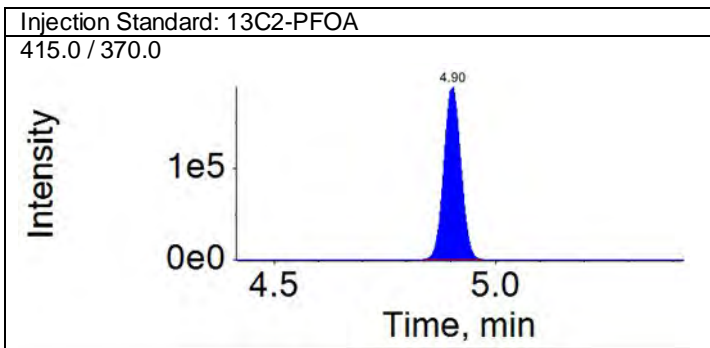
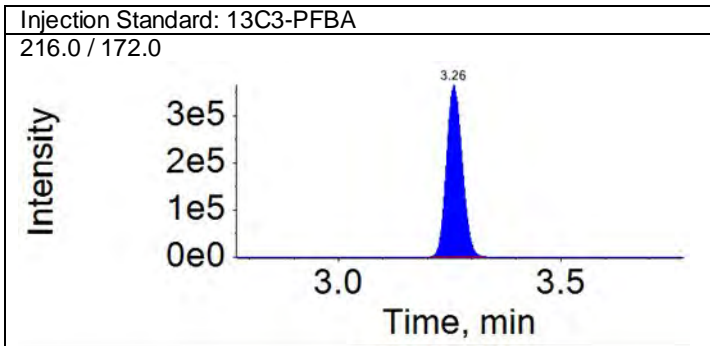
**Total Ion Chromatogram**





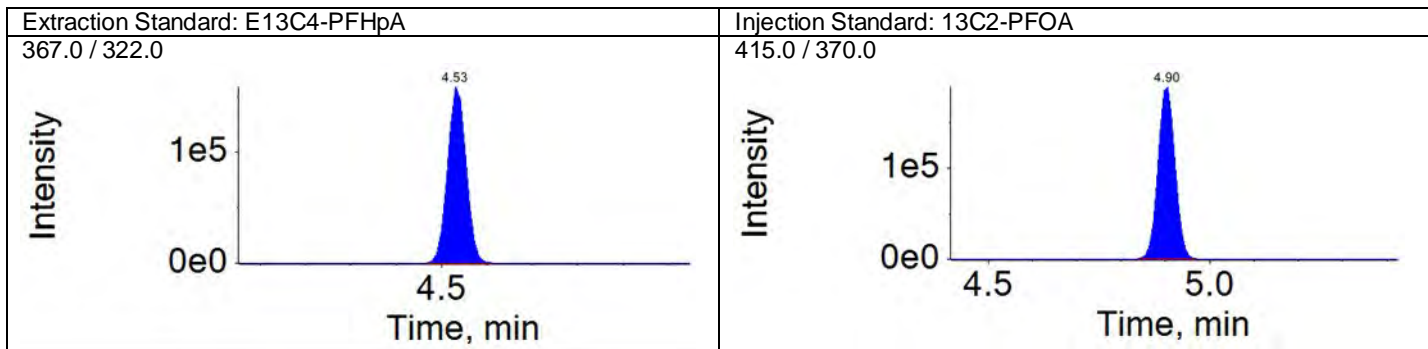
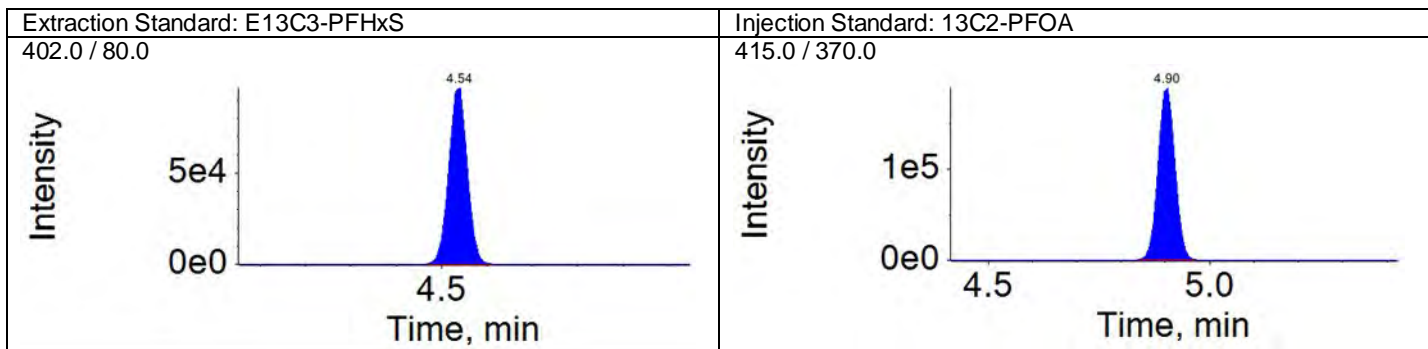
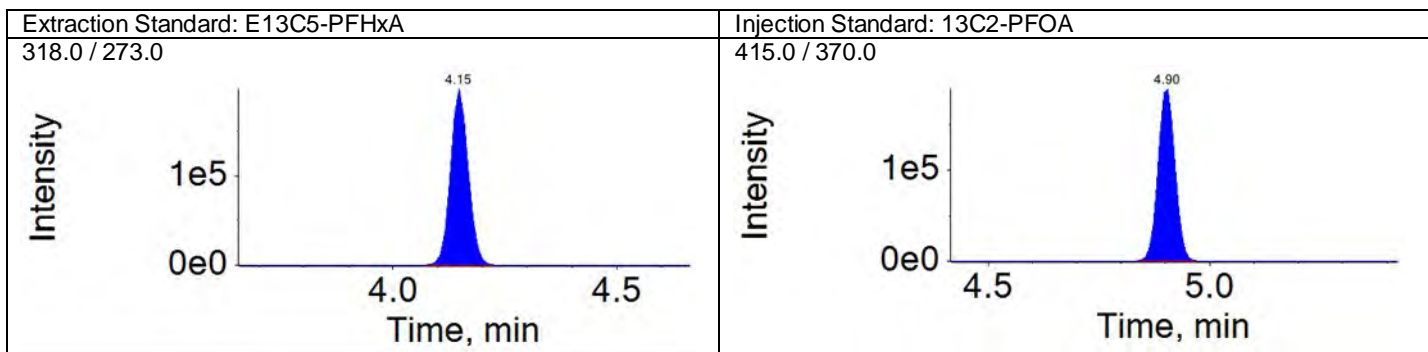
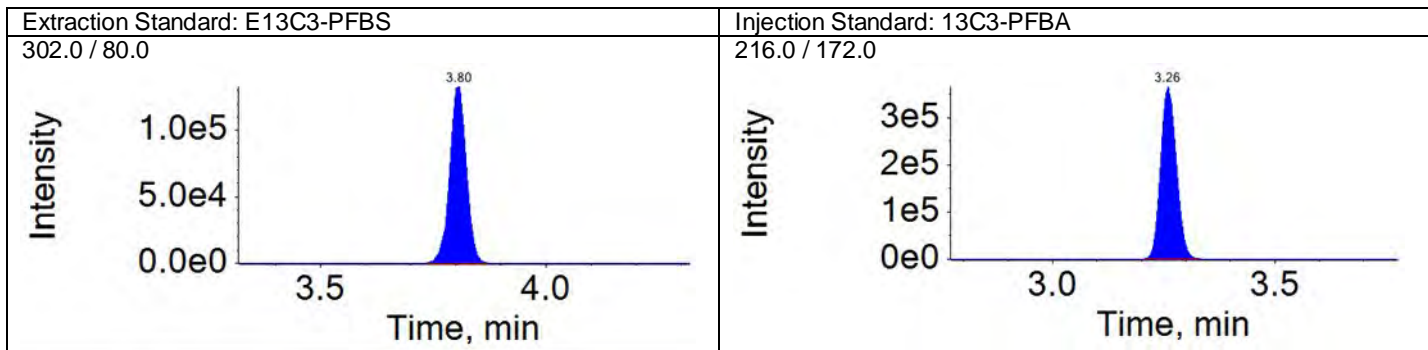
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



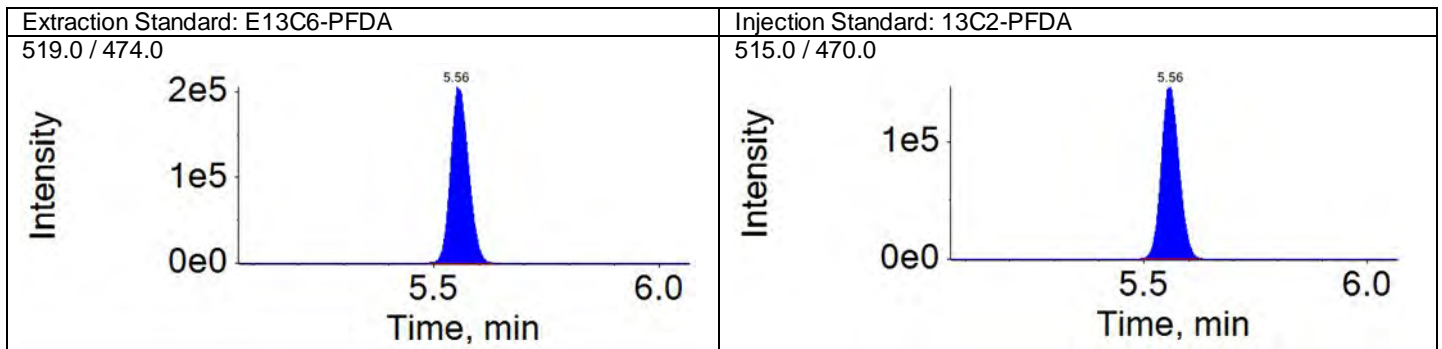
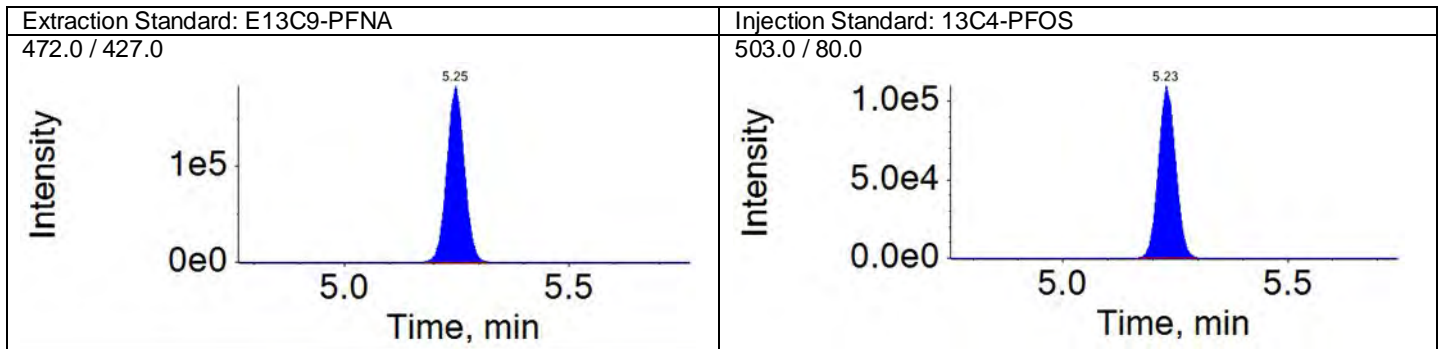
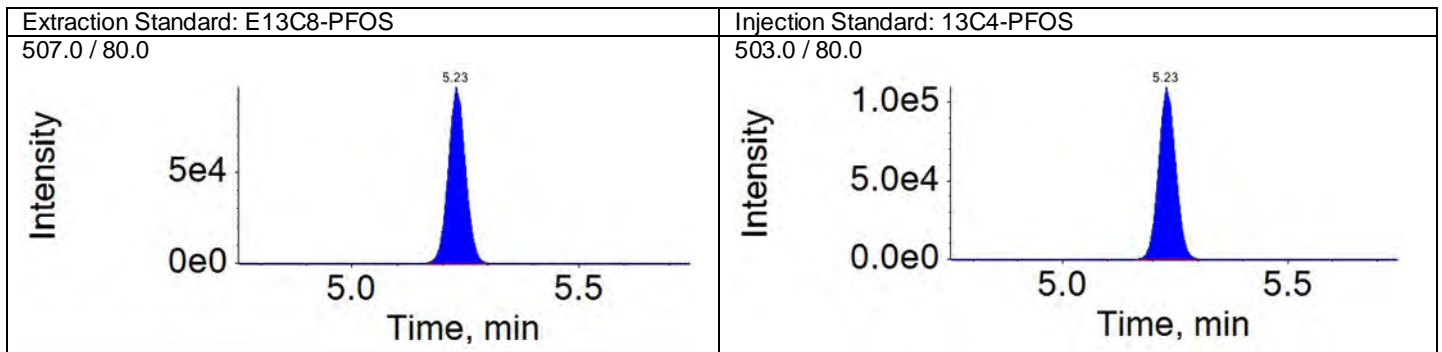
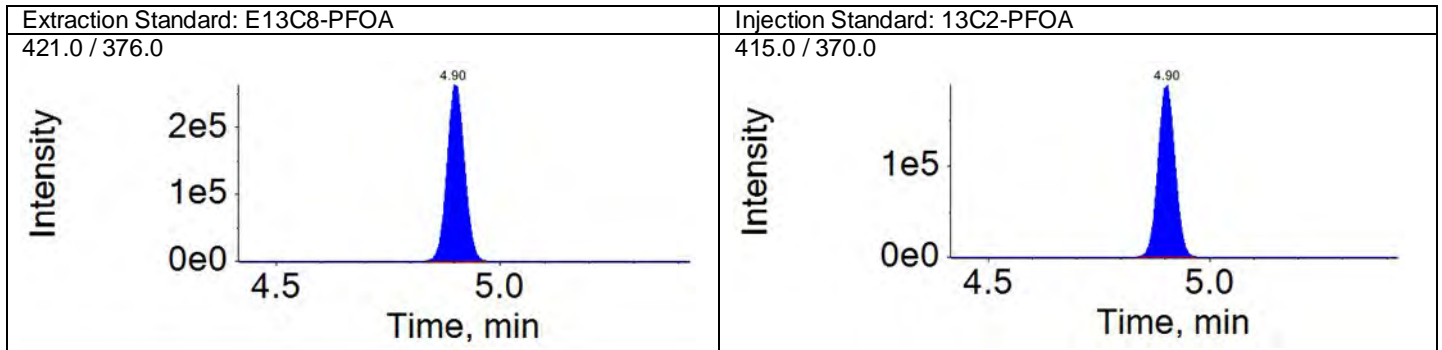
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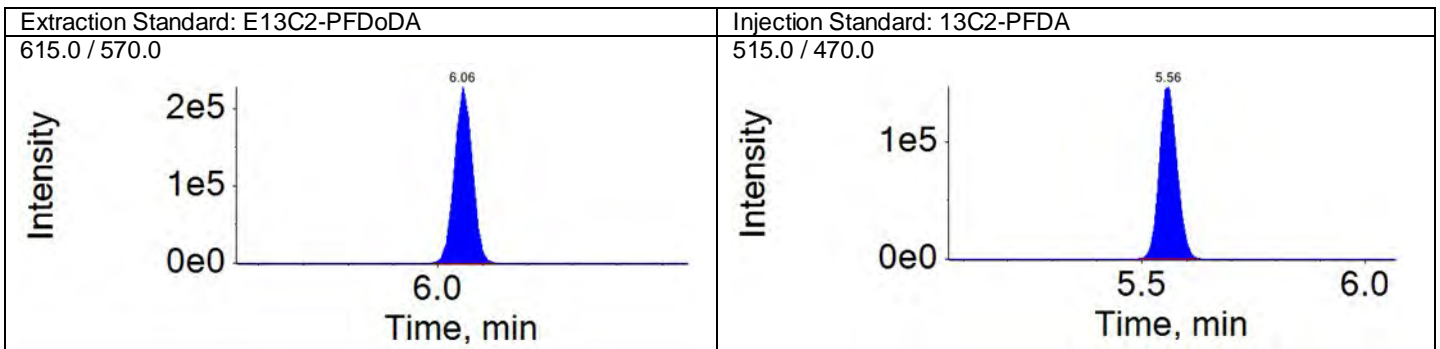
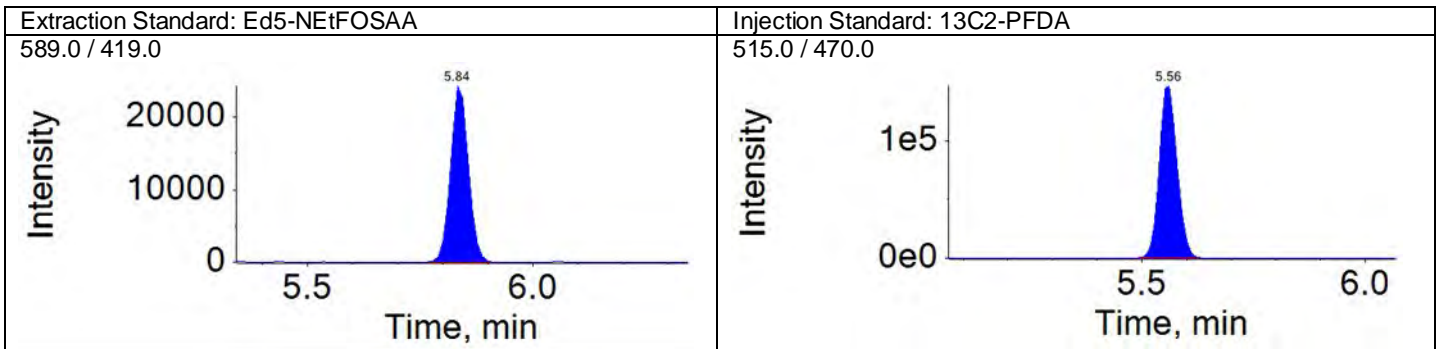
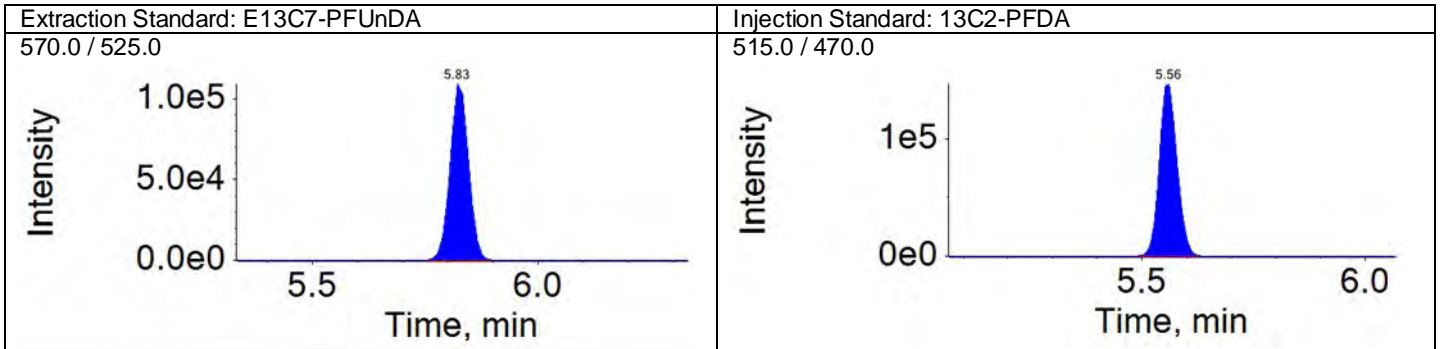
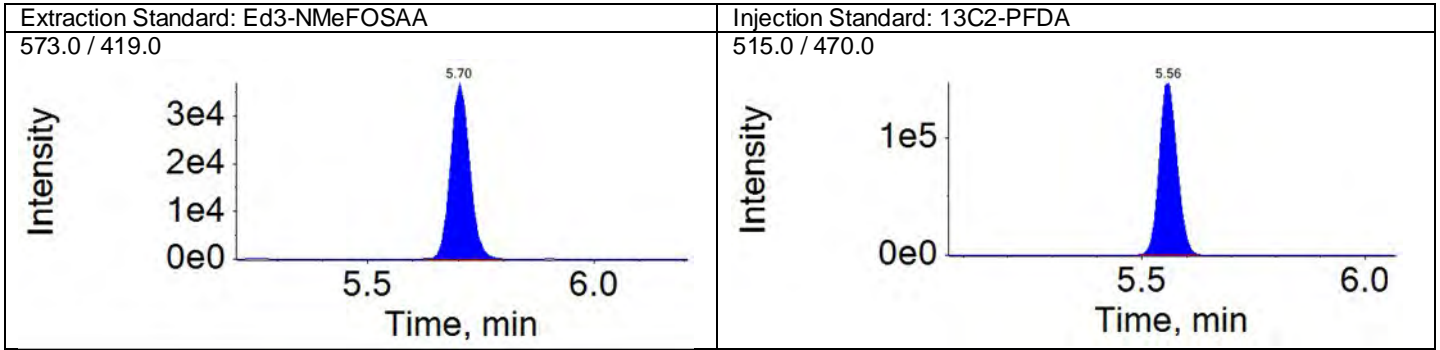
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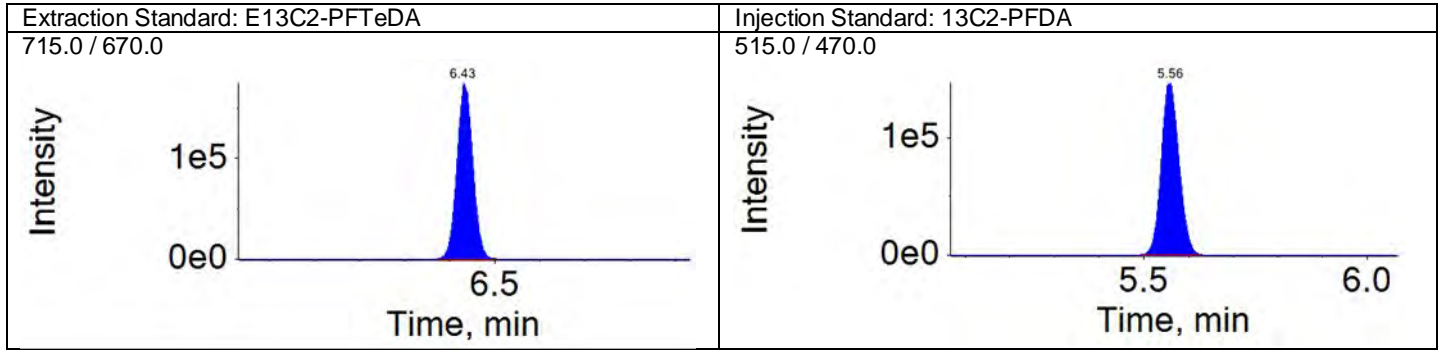
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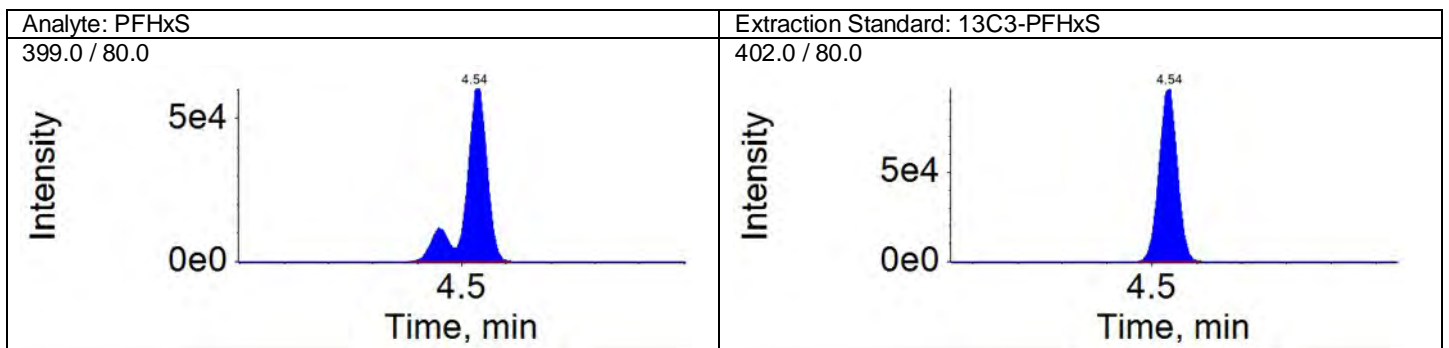
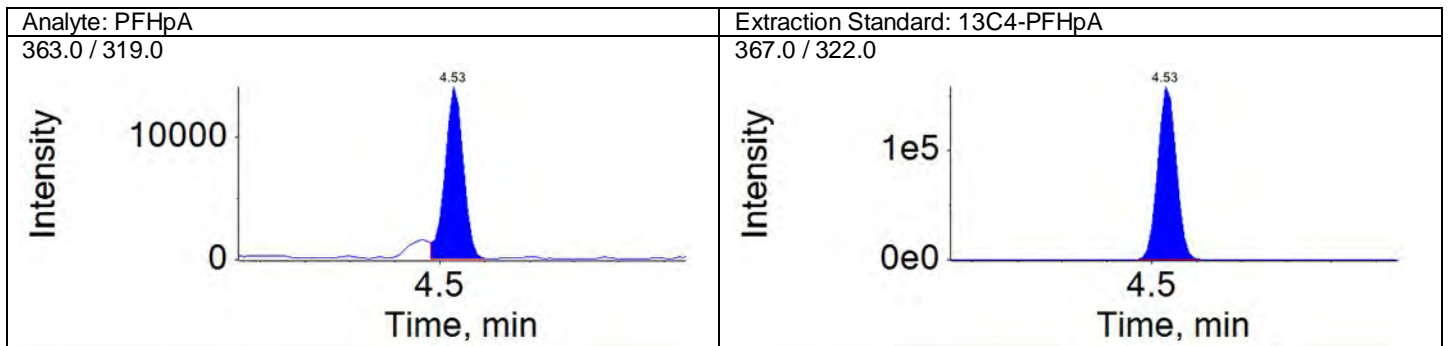
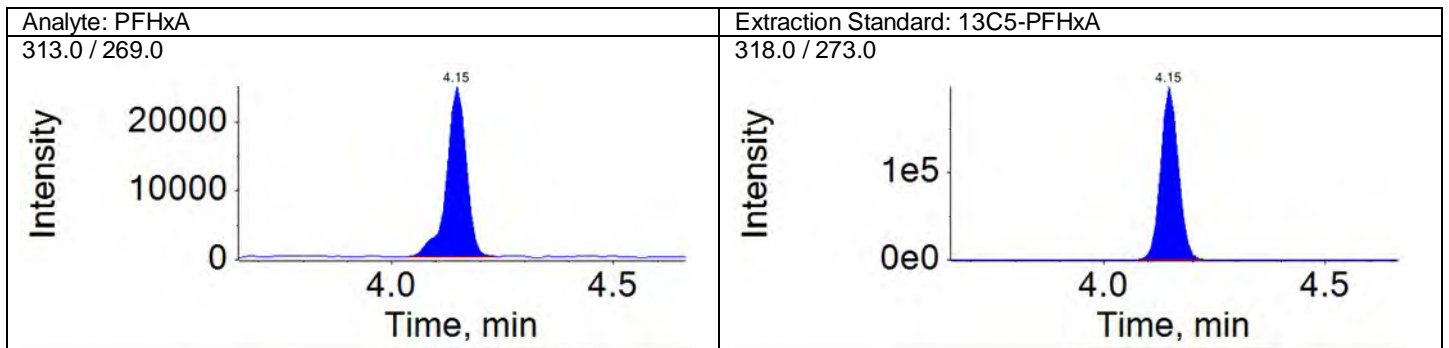
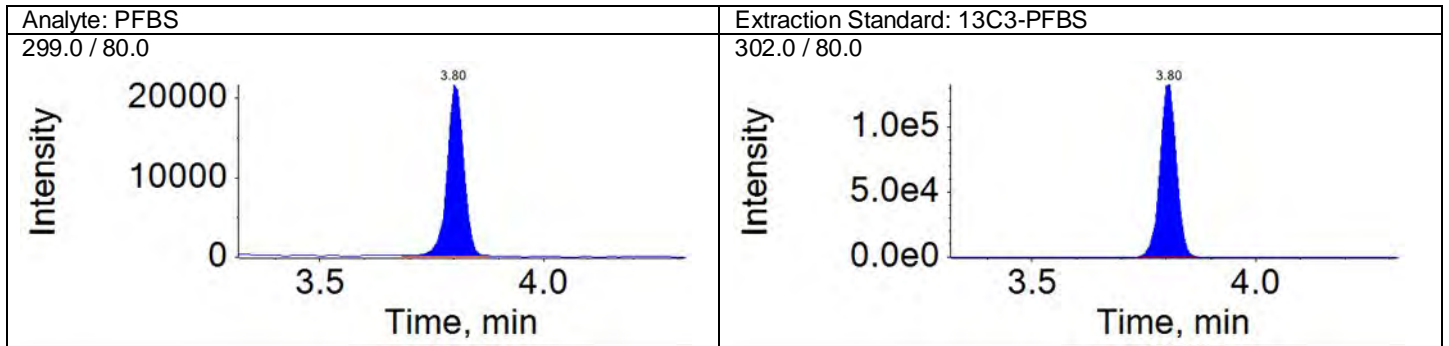
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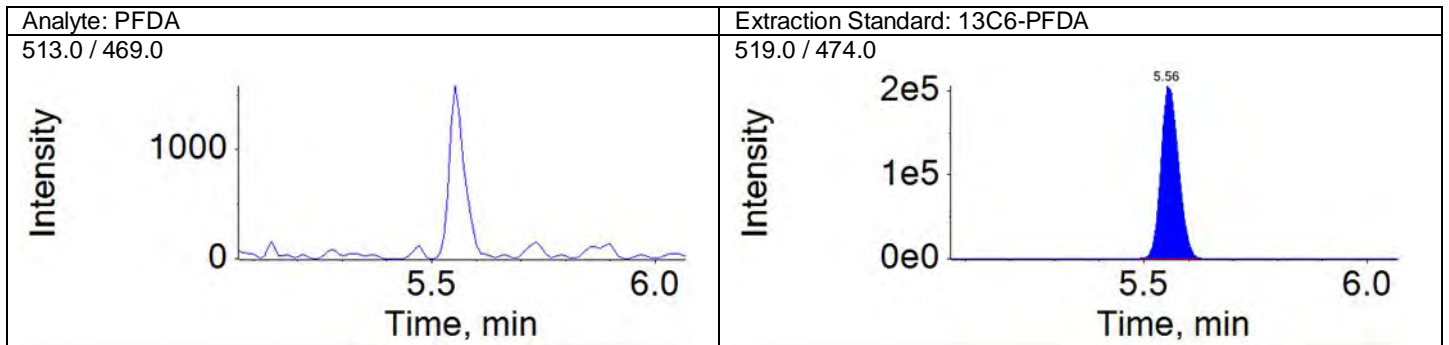
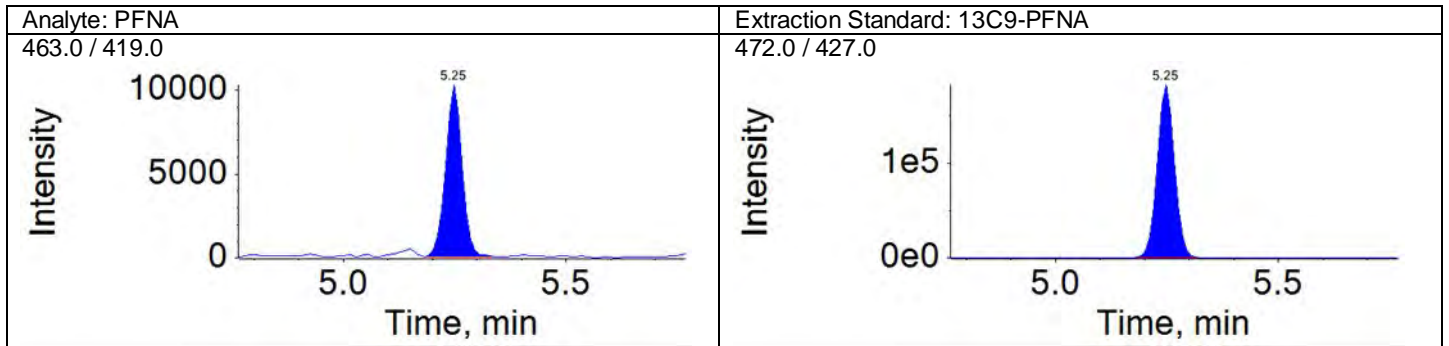
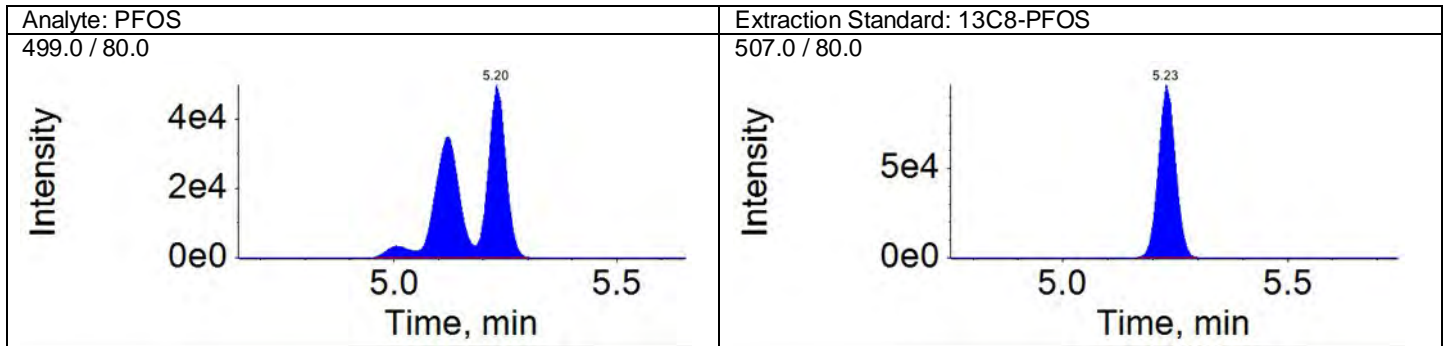
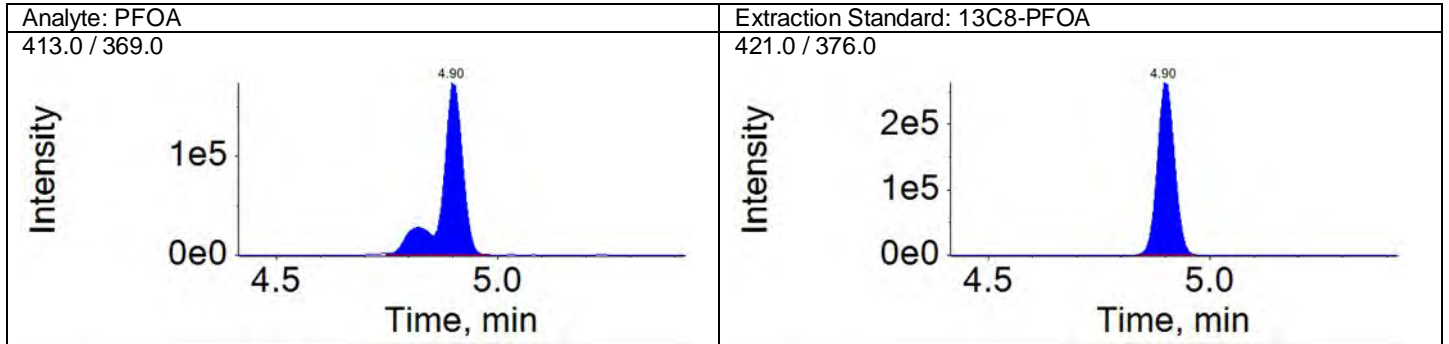
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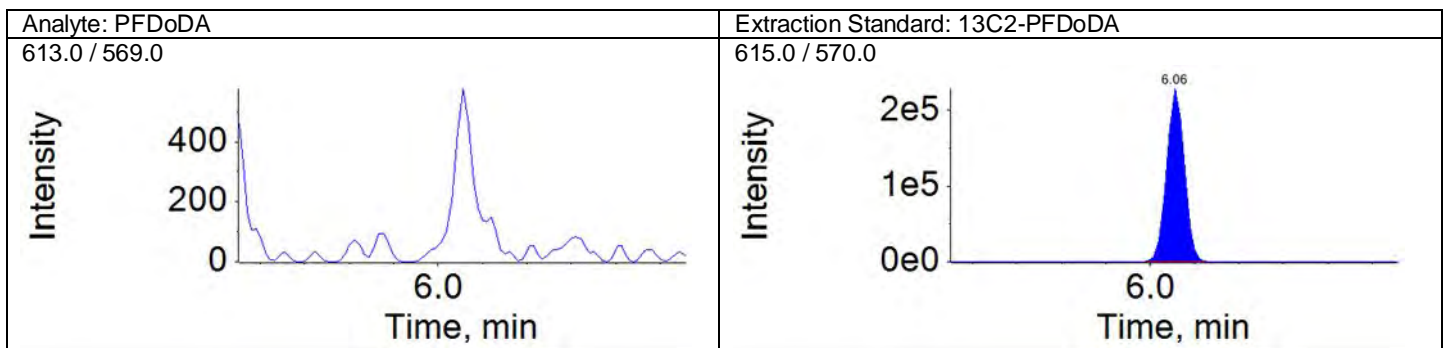
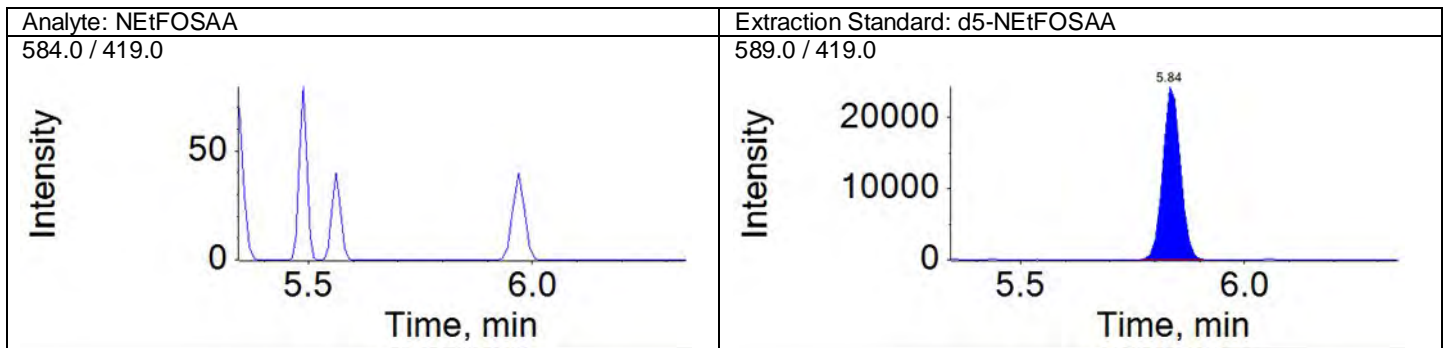
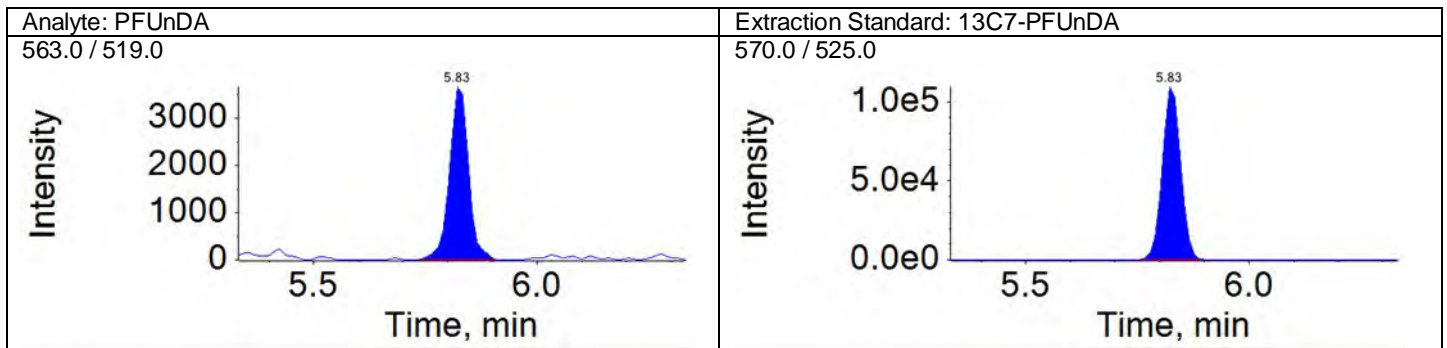
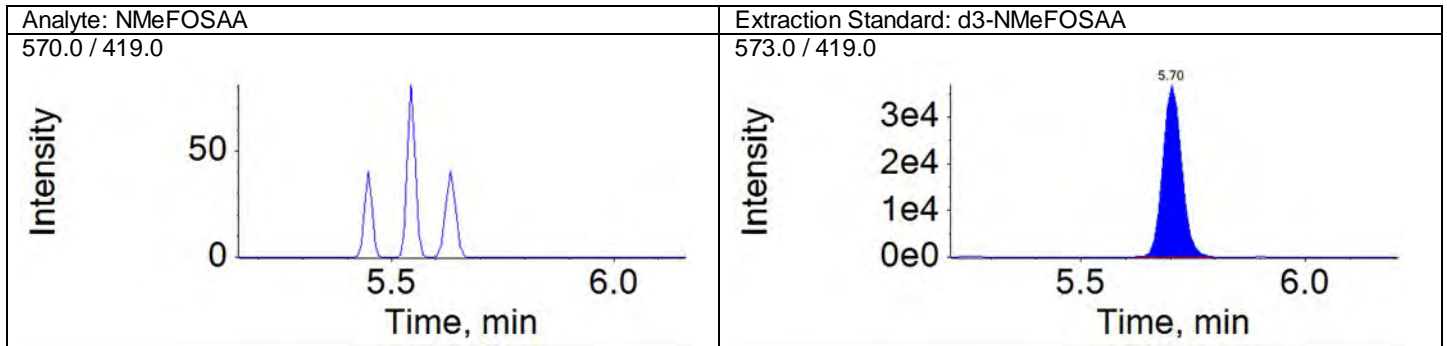
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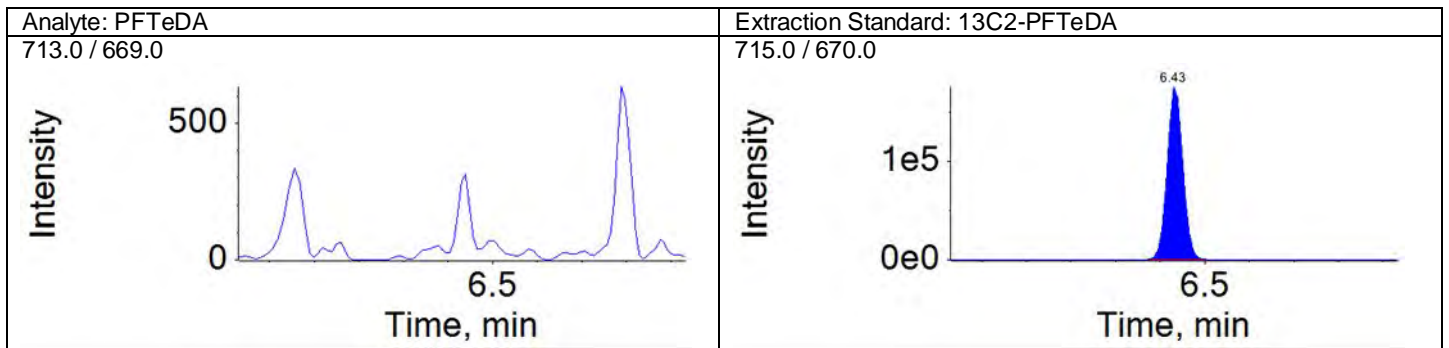
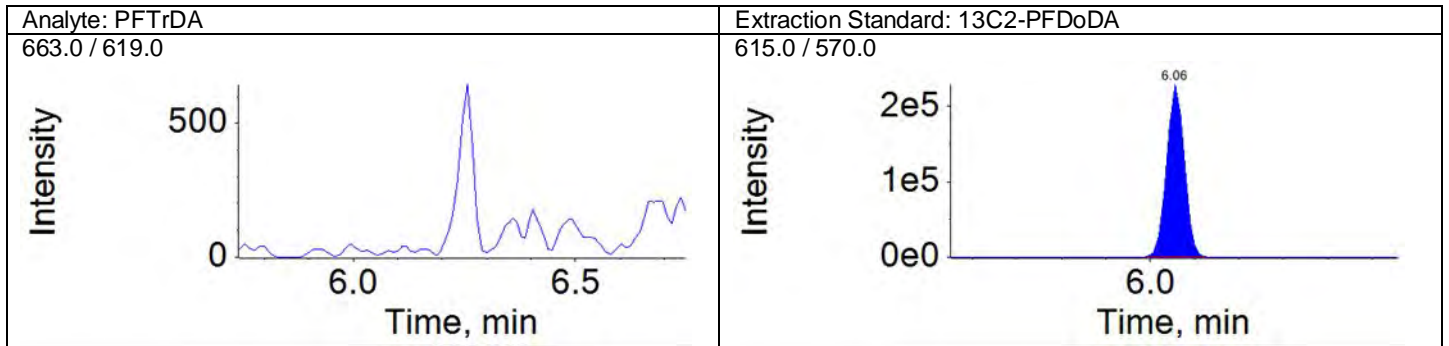
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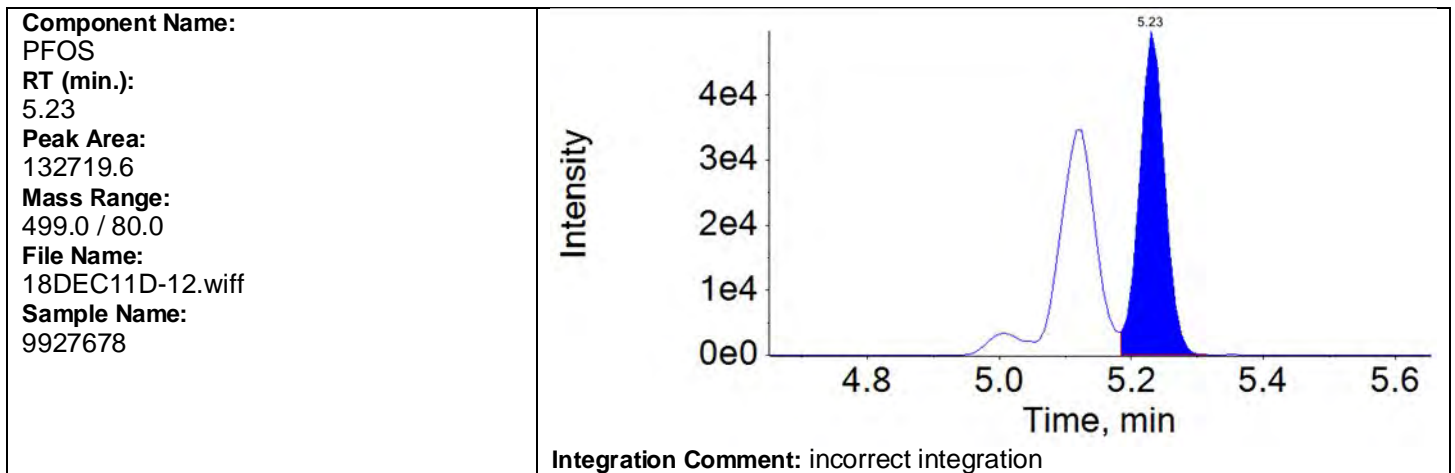
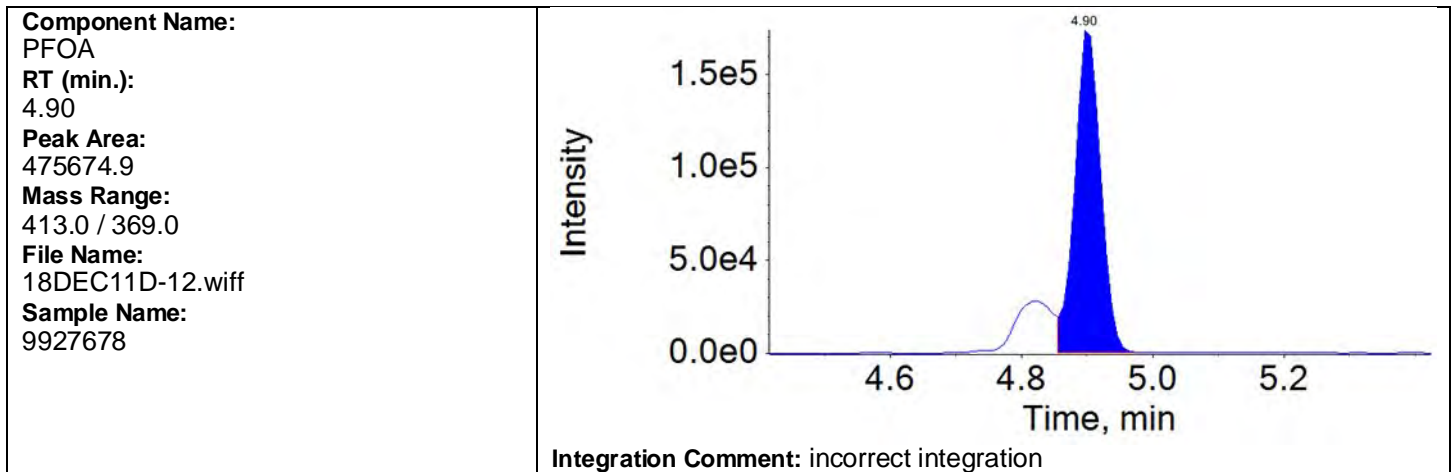
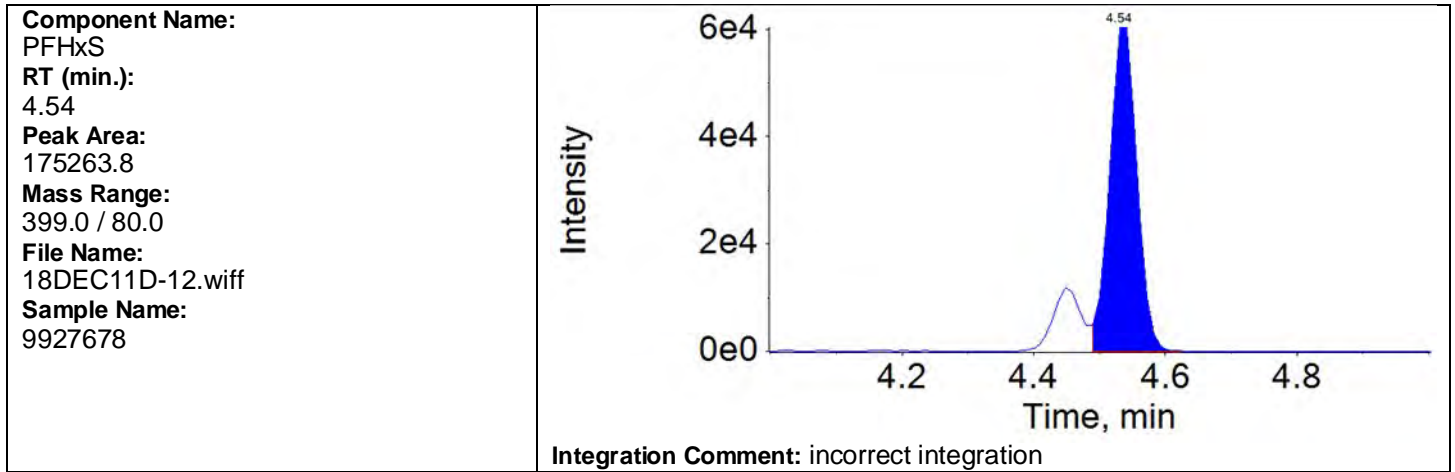
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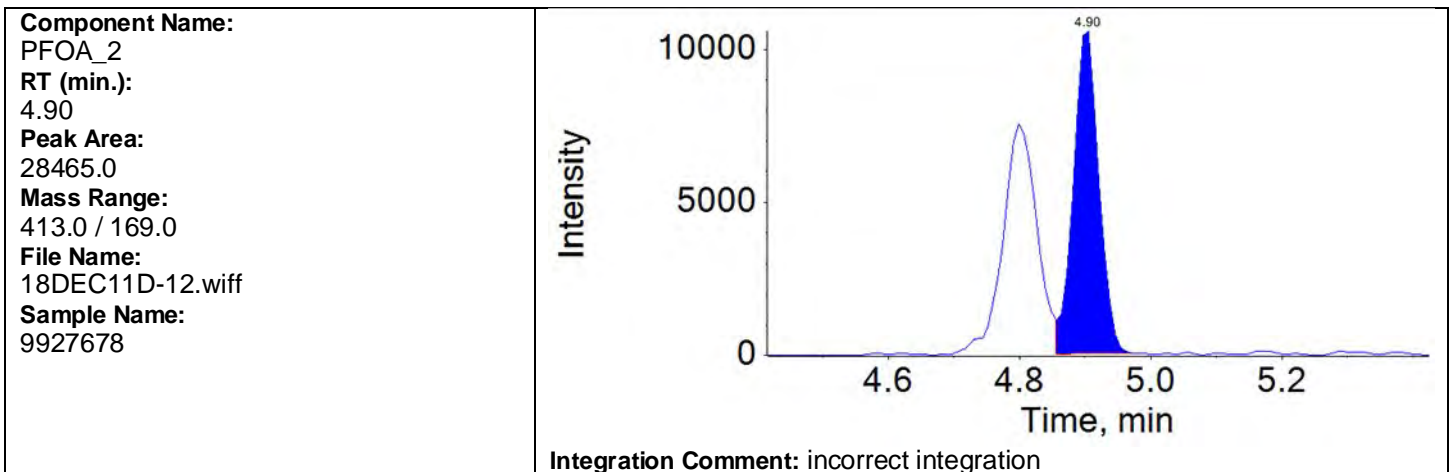
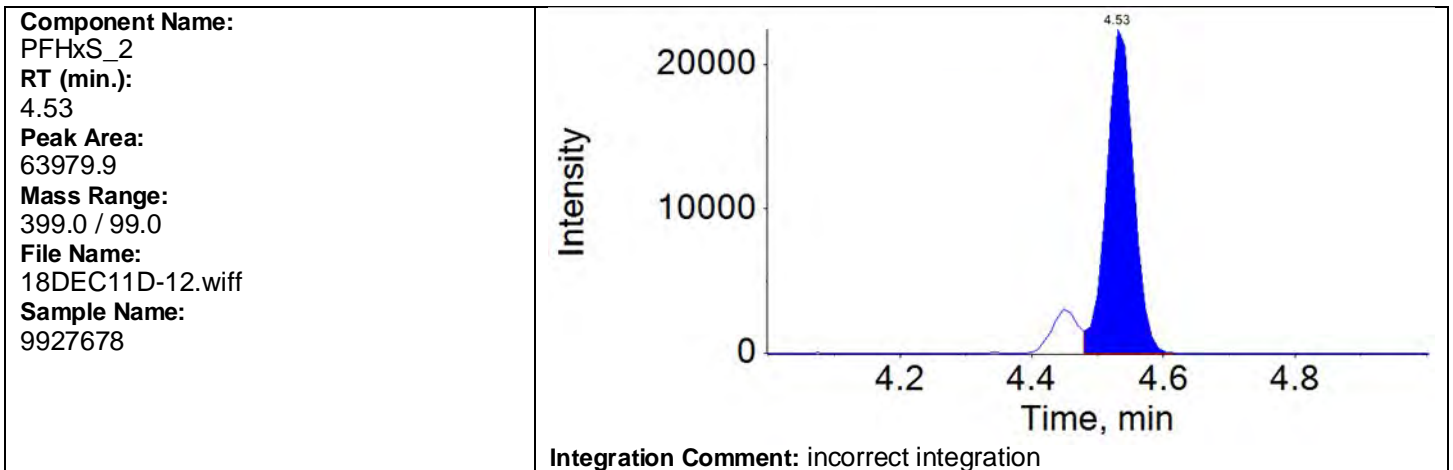
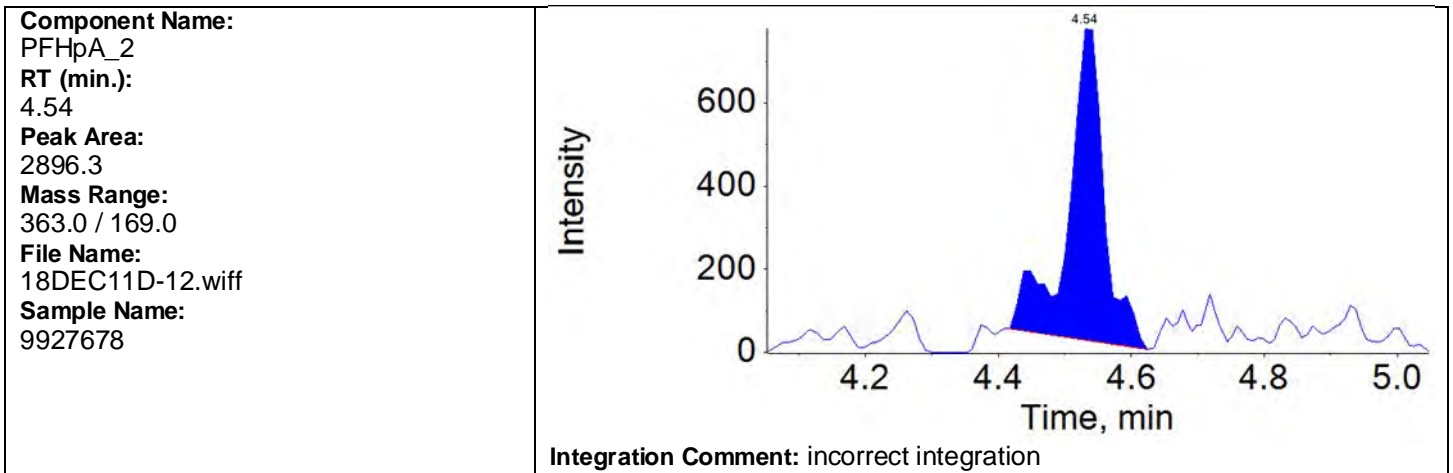
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QMethod File: 18AUG20QM



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Results Table Date: 12/13/2018 5:21:28 PM

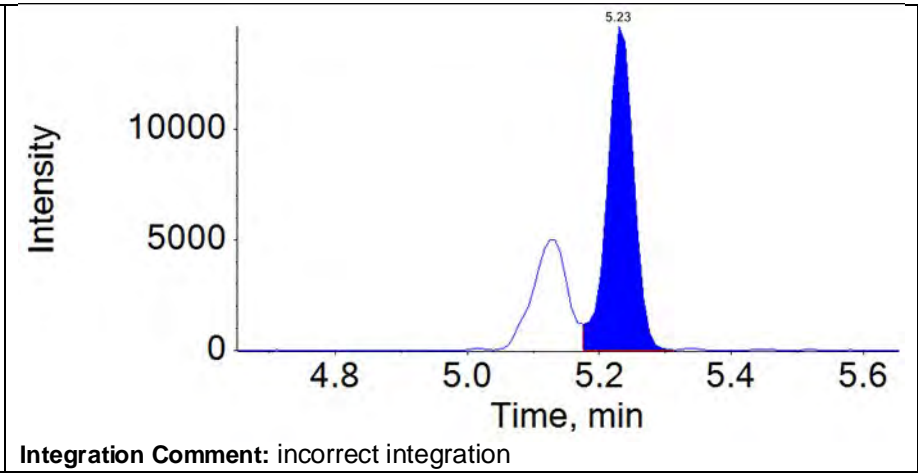
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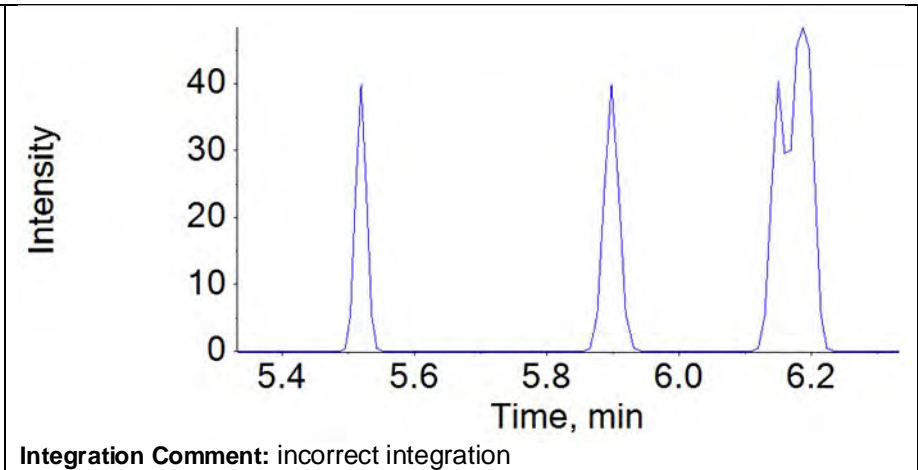
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Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**Component Name:**  
PFOS\_2  
**RT (min.):**  
5.23  
**Peak Area:**  
40398.8  
**Mass Range:**  
499.0 / 99.0  
**File Name:**  
18DEC11D-12.wiff  
**Sample Name:**  
9927678



**Component Name:**  
PUnDA\_2  
**RT (min.):**  
N/A  
**Peak Area:**  
N/A  
**Mass Range:**  
563.0 / 169.0  
**File Name:**  
18DEC11D-12.wiff  
**Sample Name:**  
9927678



Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MCD at 5:30 pm, 12/13/18

**REVIEWED**  
By umar at 11:20 am, 12/16/18



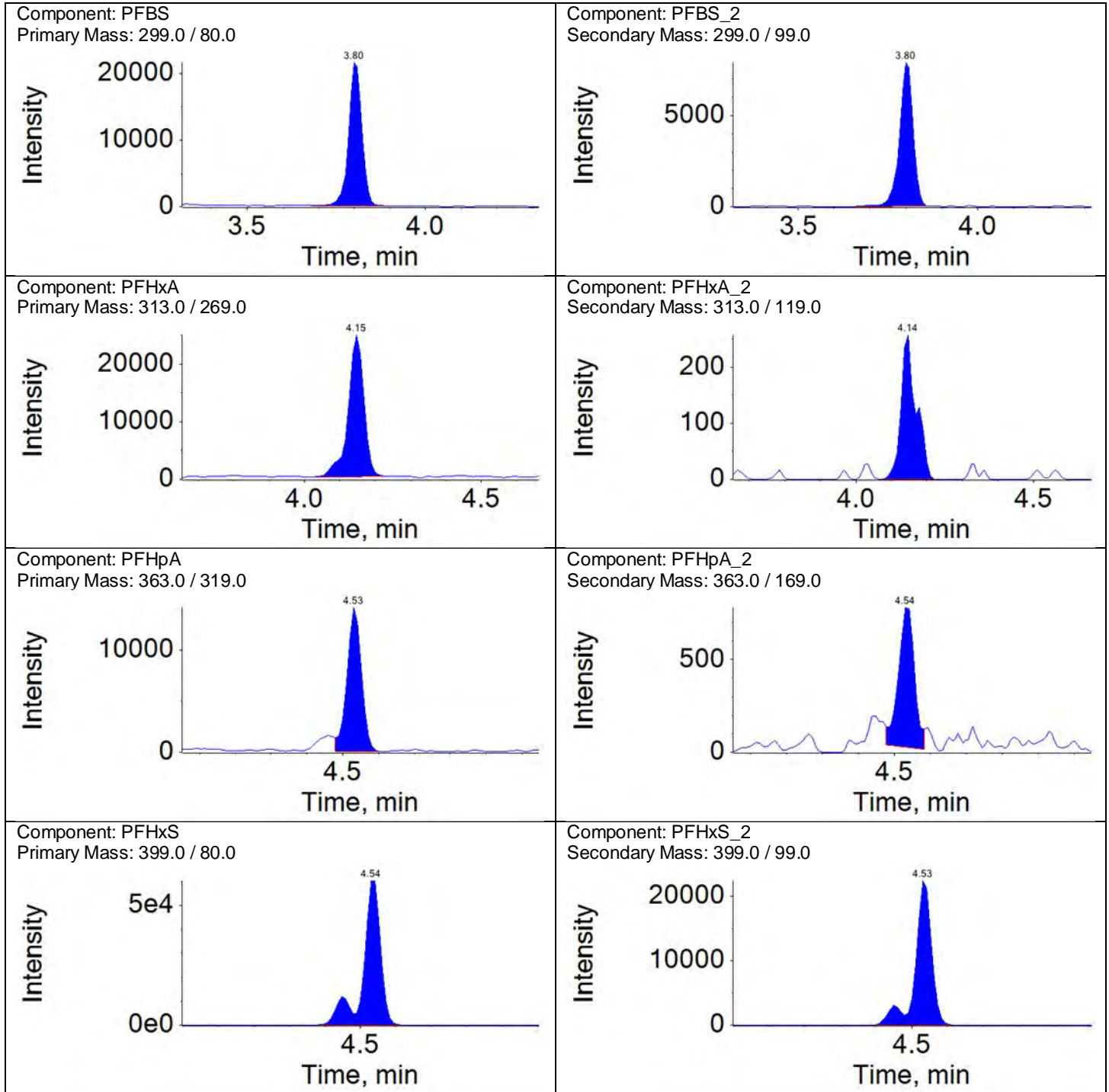
Ion Ratio Report

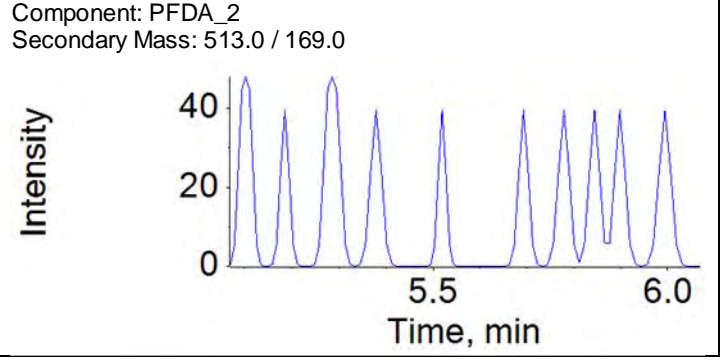
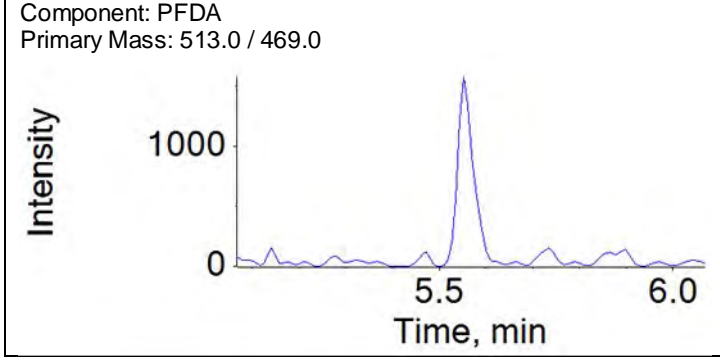
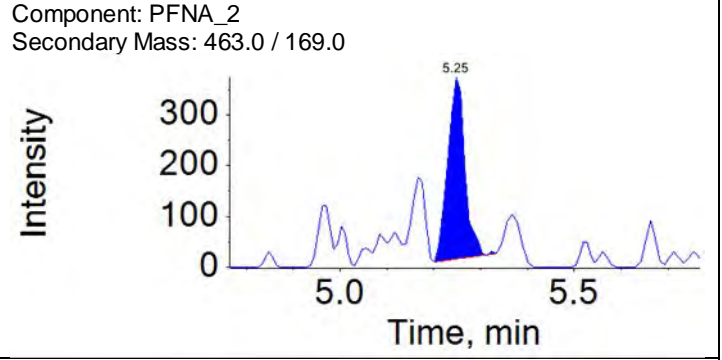
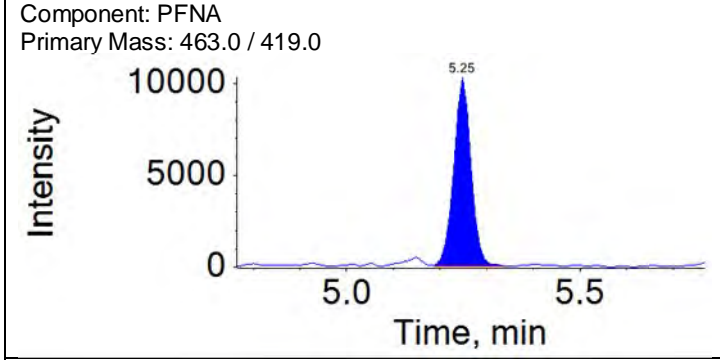
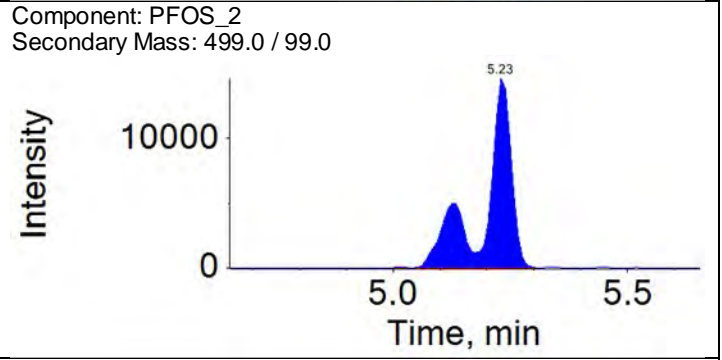
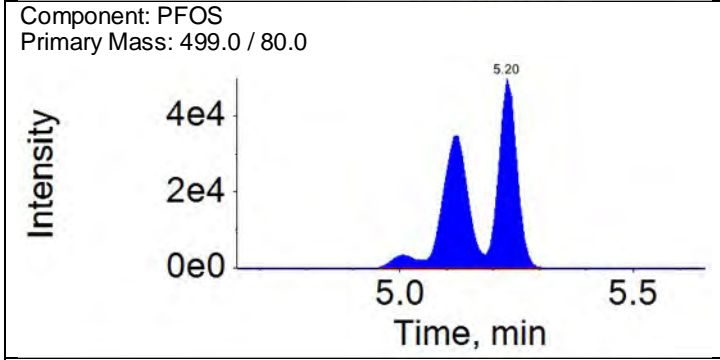
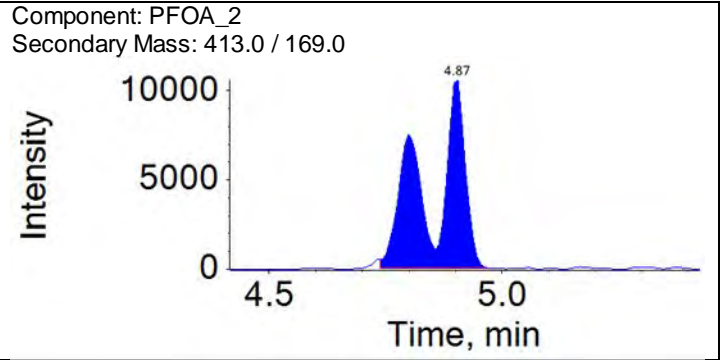
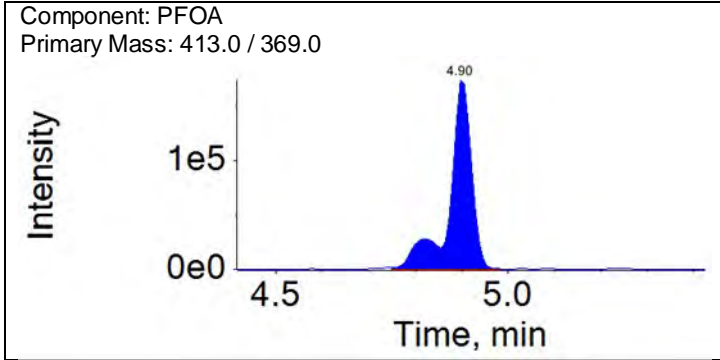
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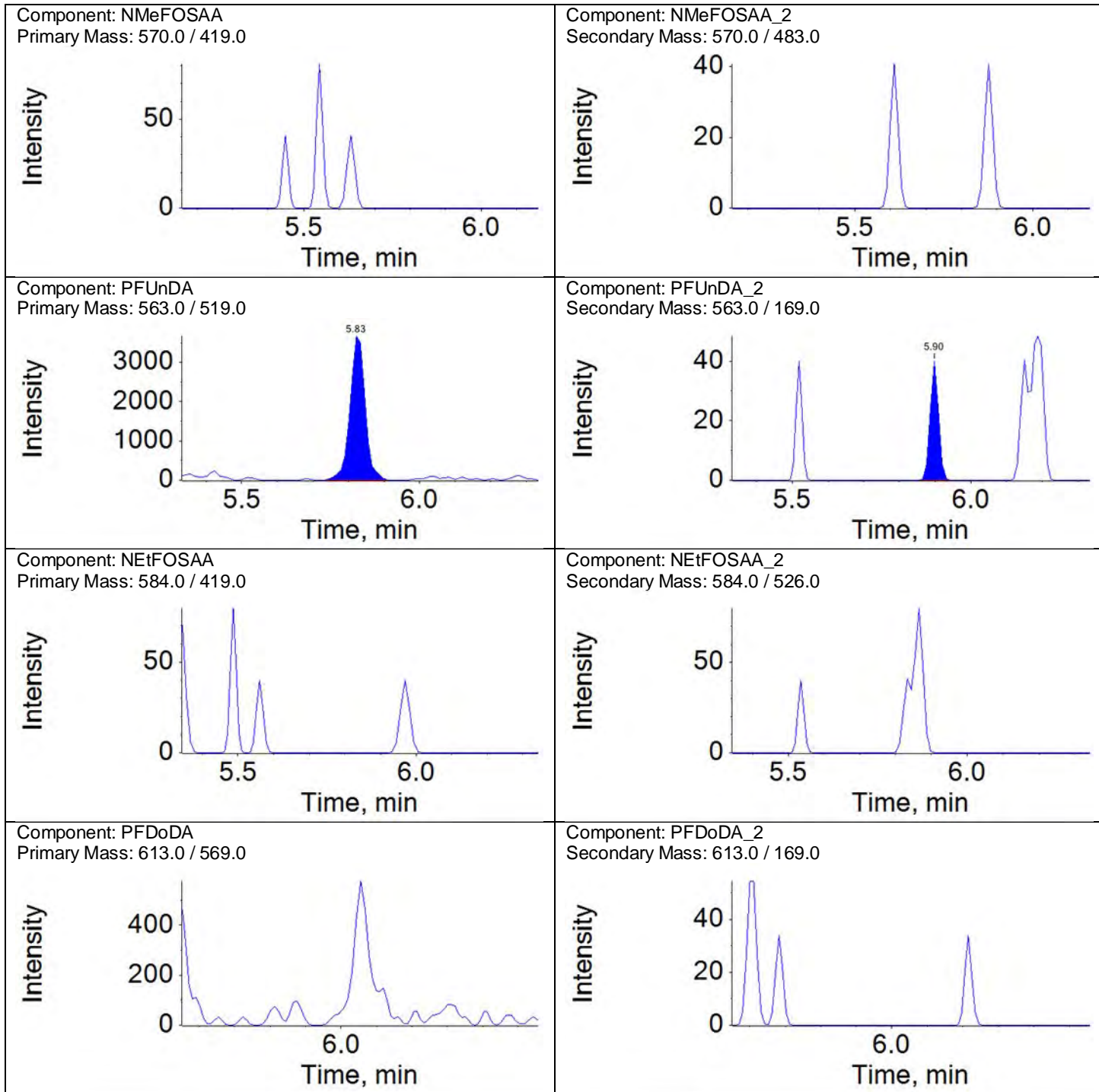
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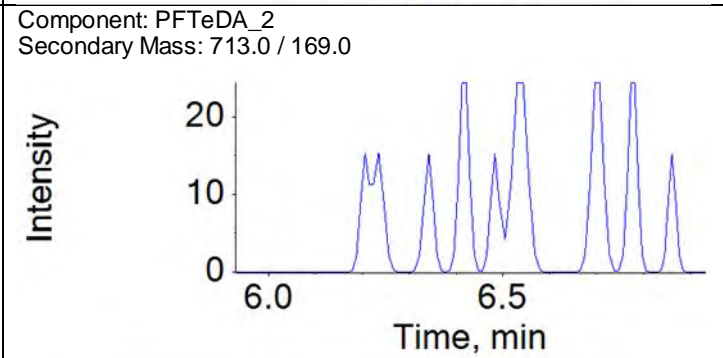
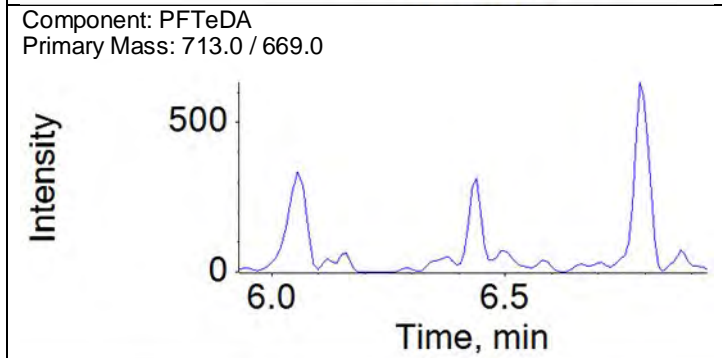
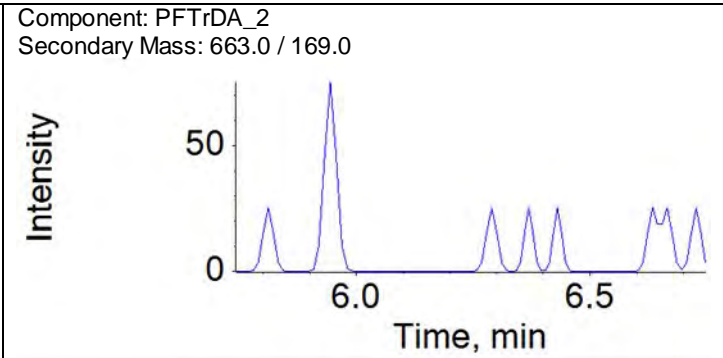
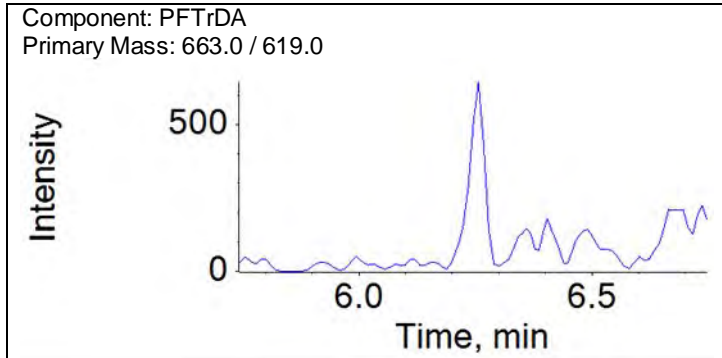
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Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.80	1.00	55737.7	A	N/A	0.3731			
PFBS_2	3.80	1.00	20794.6	A	N/A	0.3731	4	50	
PFHxA	4.15	1.00	76451.8	A	N/A	0.0100			
PFHxA_2	4.14	1.00	766.0	A	N/A	0.0100	12	50	
PFHpA	4.53	1.00	39471.7	A	N/A	0.0595			
PFHpA_2	4.54	1.00	2346.7	M	N/A	0.0595	6	50	
PFHxS	4.54	1.00	210818.1	M	N/A	0.3432			
PFHxS_2	4.53	1.00	72343.0	M	N/A	0.3432	-7	50	
PFOA	4.90	1.00	586062.4	M	N/A	0.0938			
PFOA_2	4.87	0.99	54987.7	M	N/A	0.0938	52	50	OOS
PFOS	5.20	0.99	273768.1	M	N/A	0.2166			
PFOS_2	5.23	1.00	59286.9	M	N/A	0.2166	-28	50	
PFNA	5.25	1.00	26081.9	A	N/A	0.0348			
PFNA_2	5.25	1.00	907.7	A	N/A	0.0348	86	50	OOS
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	5.83	1.00	10803.0	A	N/A	0.0060			
PFAUnDA_2	5.90	1.01	65.2	M	N/A	0.0060	45	50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFADoDA	N/A	N/A	N/A	A	N/A	N/A			
PFADoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFATrDA	N/A	N/A	N/A	A	N/A	N/A			
PFATrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFATeDA	N/A	N/A	N/A	A	N/A	N/A			
PFATeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	











ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927679	Data File:	18DEC11D-14.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-44-2-W-01 Grab Water	Acquis Date:	2018-12-11T06:56:31
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	33	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.27383	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	935763.5	953492.0	-2	50	
13C2-PFOA	5.0	493598.2	500971.3	-1	50	
13C4-PFOS	4.8	302385.5	310746.2	-3	50	
13C2-PFDA	5.0	399039.8	419040.9	-5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	383240.9	13C3-PFBA	935763.5	0.410	16.981	12.678	75	50-150	
E13C5-PFHxA	619533.8	13C2-PFOA	493598.2	1.255	18.260	15.389	84	50-150	
E13C3-PFHxS	284237.8	13C2-PFOA	493598.2	0.576	17.273	13.488	78	50-150	
E13C4-PFHpA	501868.9	13C2-PFOA	493598.2	1.017	18.260	15.785	86	50-150	
E13C8-PFOA	832569.5	13C2-PFOA	493598.2	1.687	18.260	17.412	95	50-150	
E13C8-PFOS	278482.8	13C4-PFOS	302385.5	0.921	17.456	15.093	86	50-150	
E13C9-PFNA	554187.2	13C4-PFOS	302385.5	1.833	18.260	18.913	104	50-150	
E13C6-PFDA	627312.5	13C2-PFDA	399039.8	1.572	18.260	15.214	83	50-150	
Ed3-NMeFOSAA	129910.3	13C2-PFDA	399039.8	0.326	18.260	21.069	115	50-150	
E13C7-PFUnDA	490748.1	13C2-PFDA	399039.8	1.230	18.260	22.031	121	50-150	
Ed5-NEtFOSAA	90911.1	13C2-PFDA	399039.8	0.228	18.260	18.366	101	50-150	
E13C2-PFDoDA	814758.2	13C2-PFDA	399039.8	2.042	18.260	15.647	86	50-150	
E13C2-PFTeDA	503894.3	13C2-PFDA	399039.8	1.263	18.260	13.687	75	50-150	



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

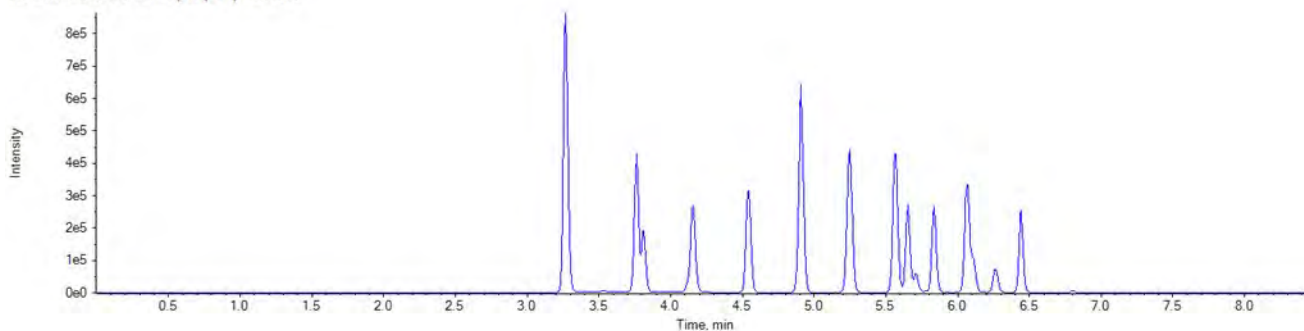
Sample Name: 9927679 Instrument Name: LM27631 File Name: 18DEC11D-14.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.27383	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.81	383240.9	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	619533.8	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.54	501868.9	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.54	284237.8	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	832569.5	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	278482.8	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.25	554187.2	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	627312.5	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	129910.3	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.83	490748.1	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.84	90911.1	N/A	
PFDODA	N/A	N/A	N/A		A	13C2-PFDODA	6.07	814758.2	N/A	
PFTTrDA	N/A	N/A	N/A		A	13C2-PFDODA	6.07	814758.2	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	503894.3	N/A	

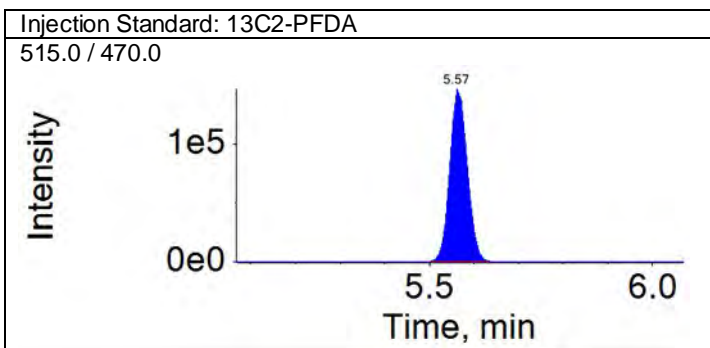
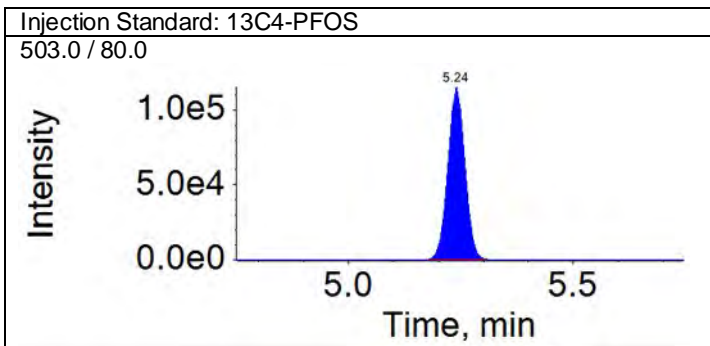
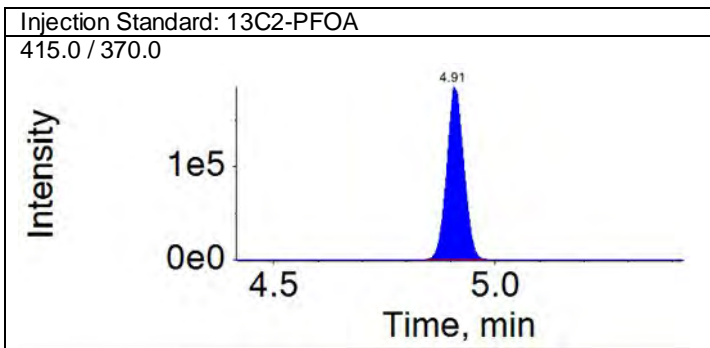
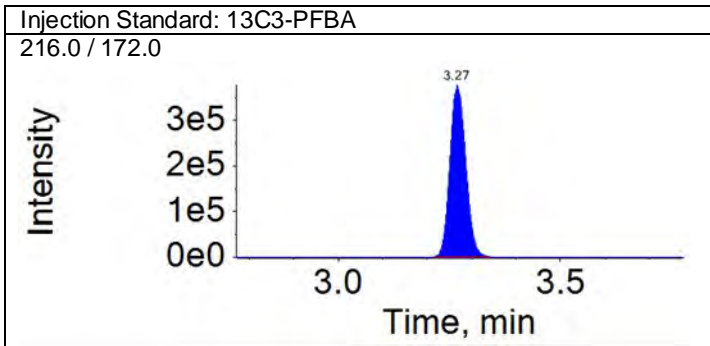
**Total Ion Chromatogram**

TIC from 18DEC11D-14.wiff (sample 1) - 9927679



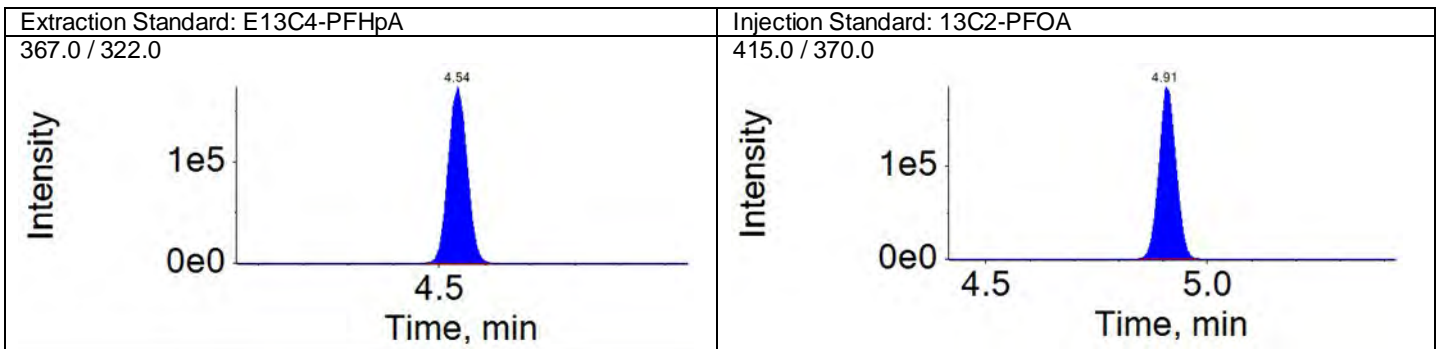
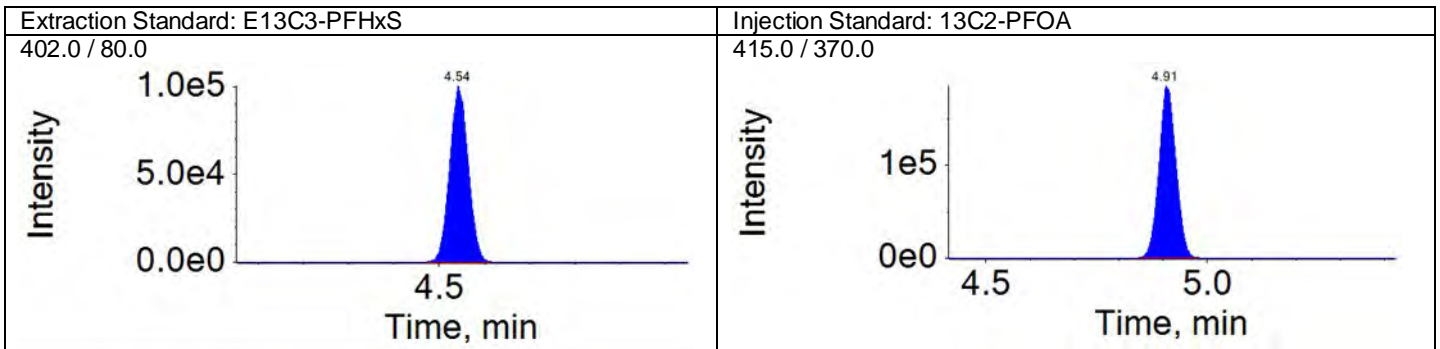
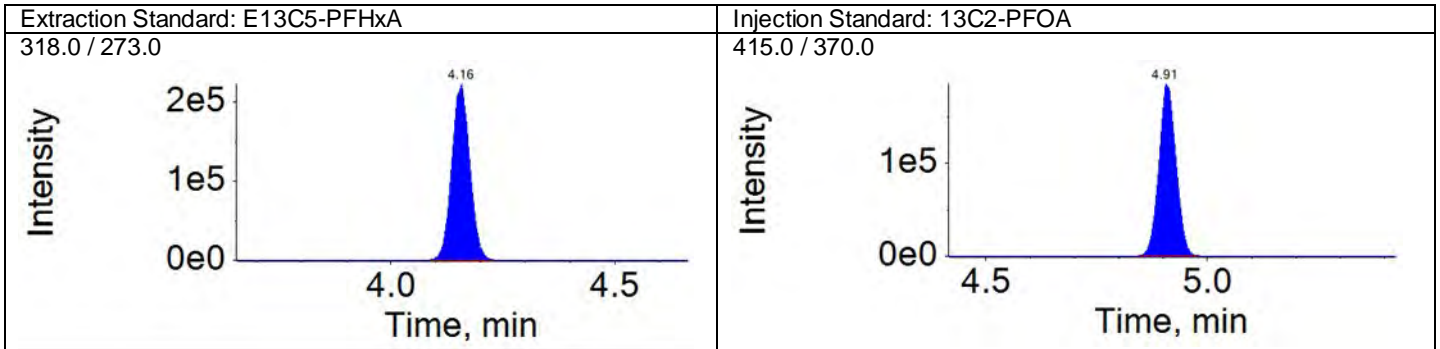
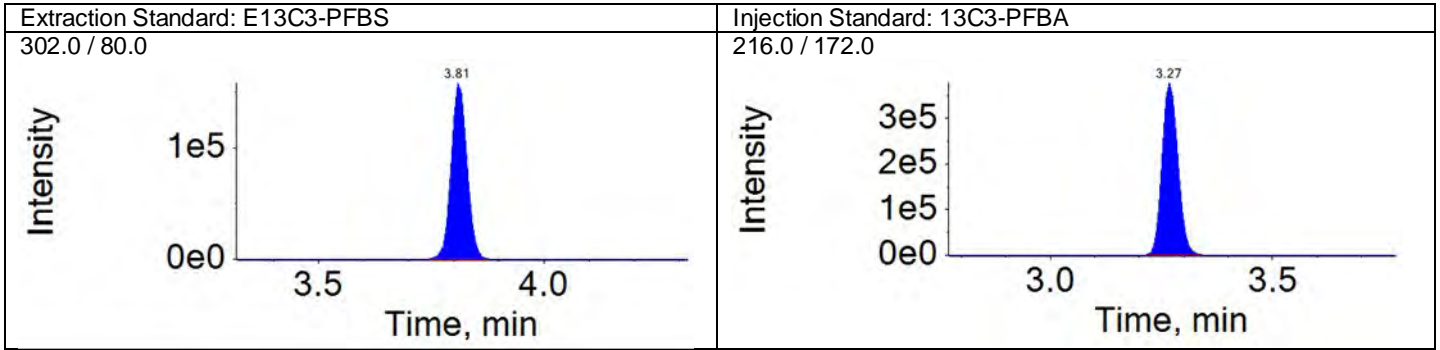
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



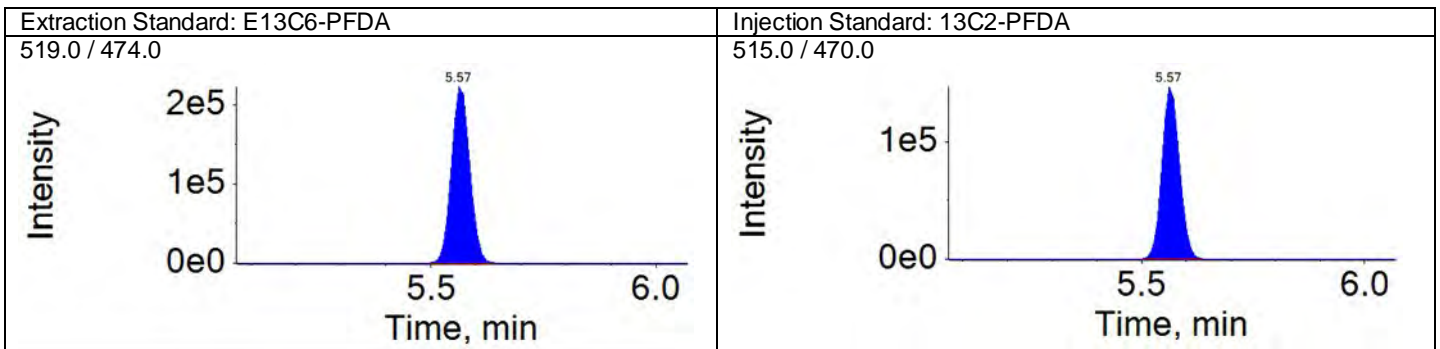
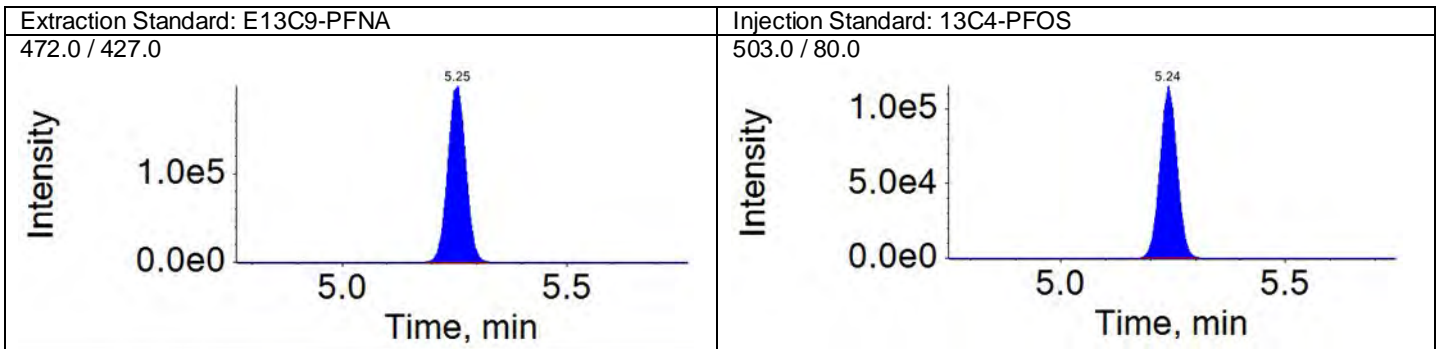
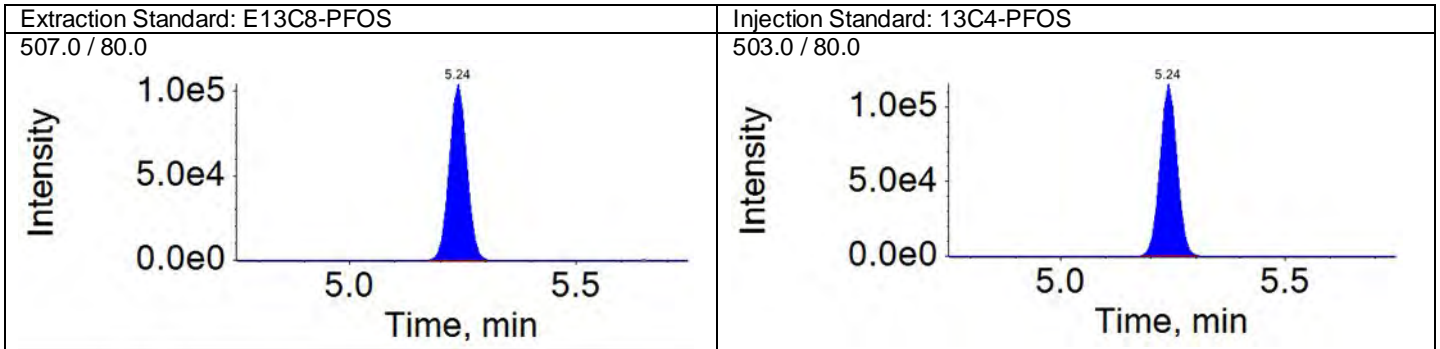
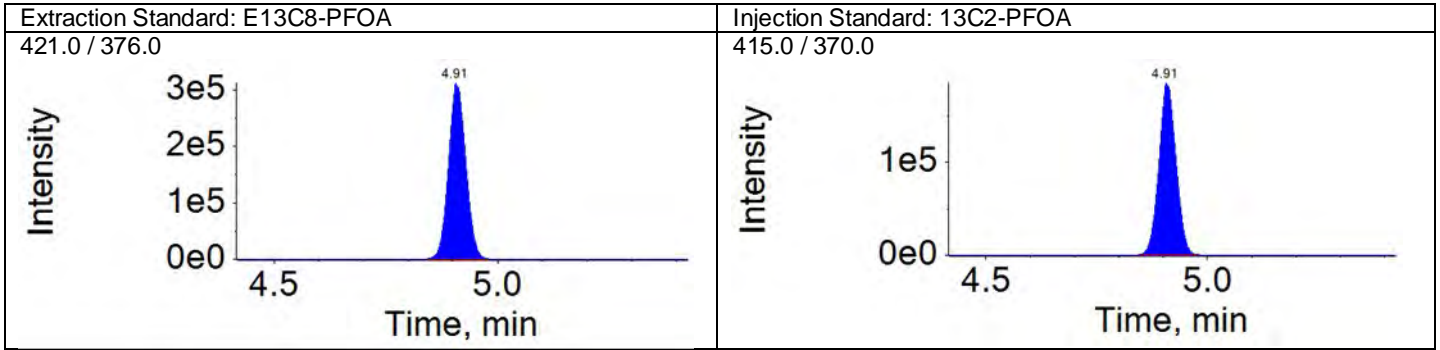
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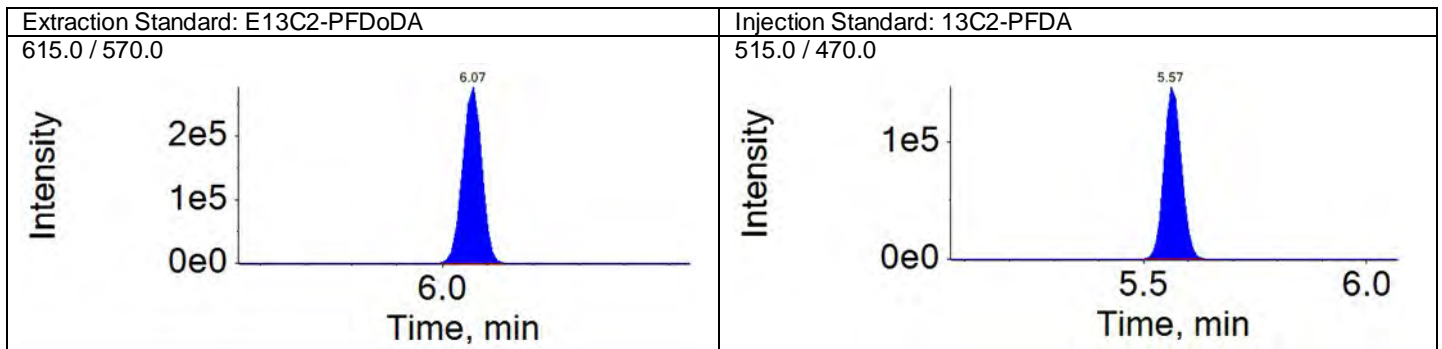
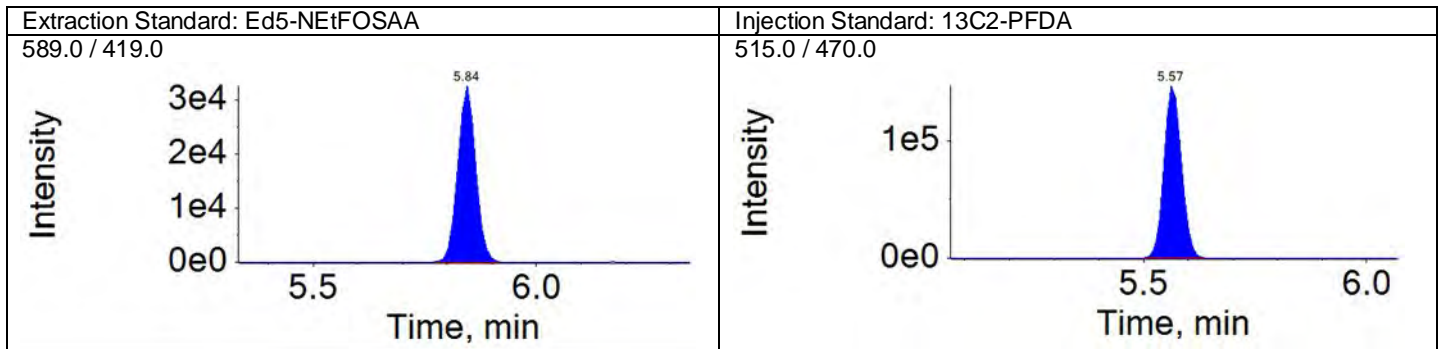
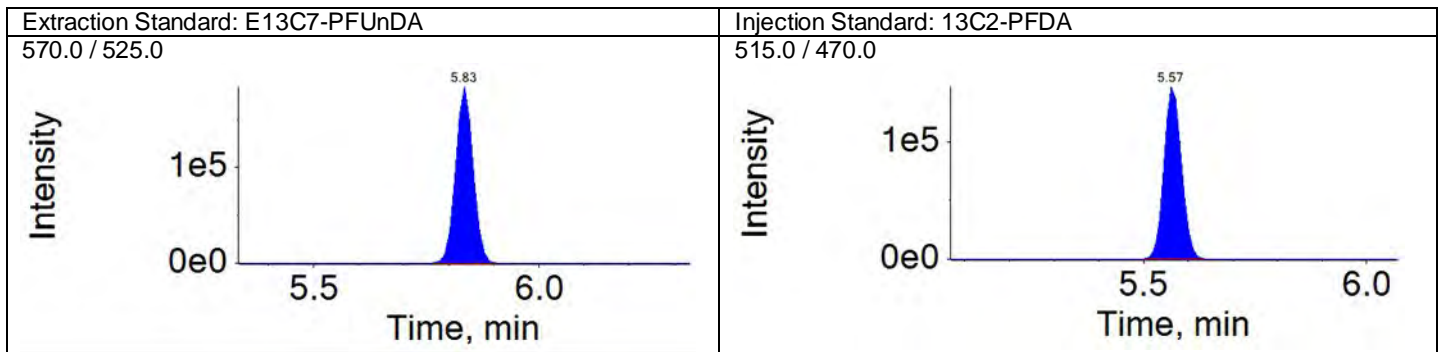
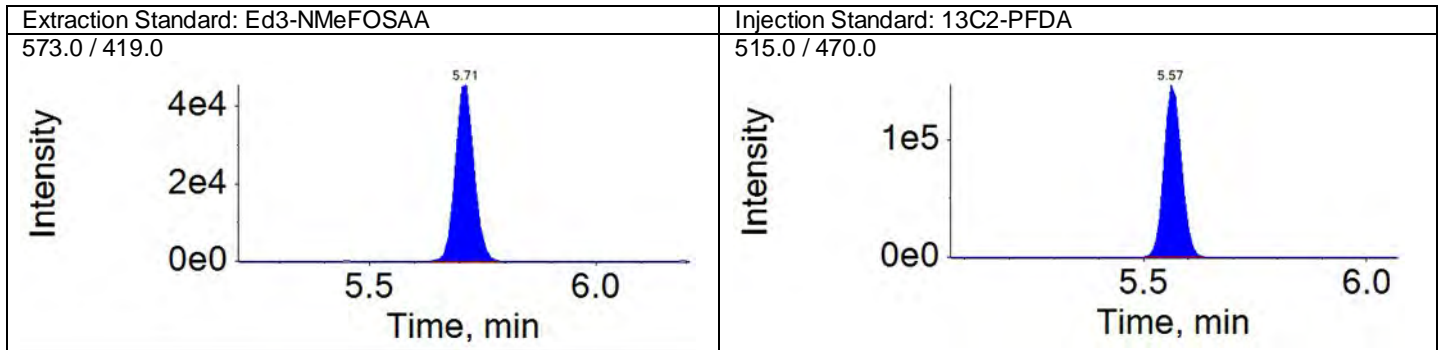
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QMethod Name: 18AUG20QM

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Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

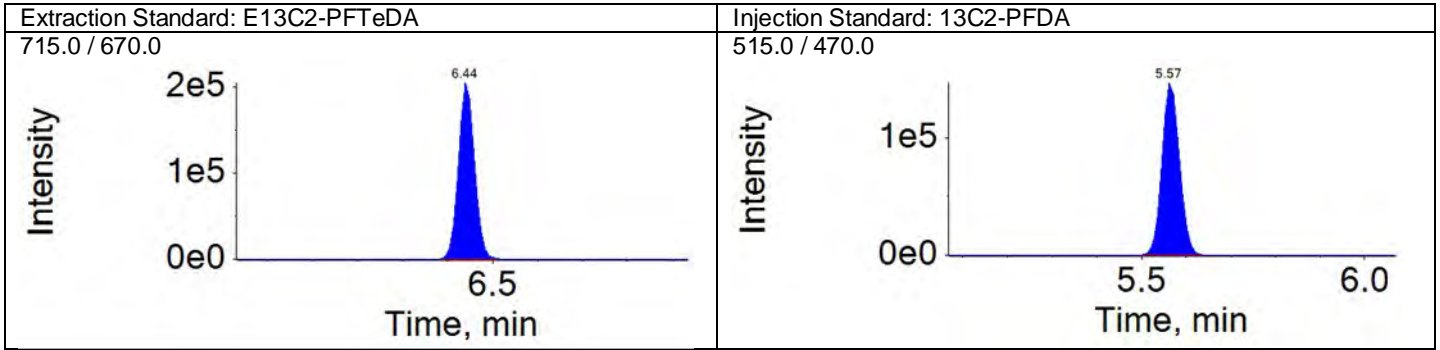
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

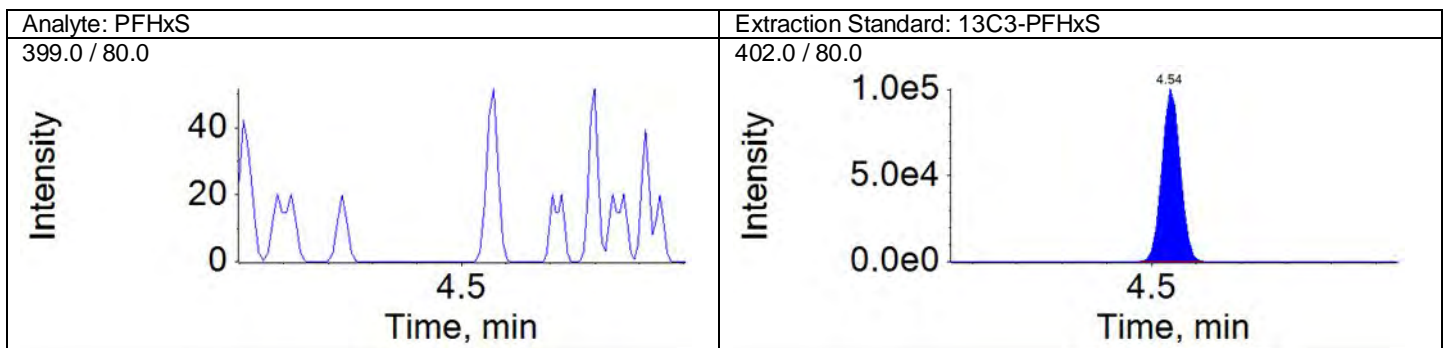
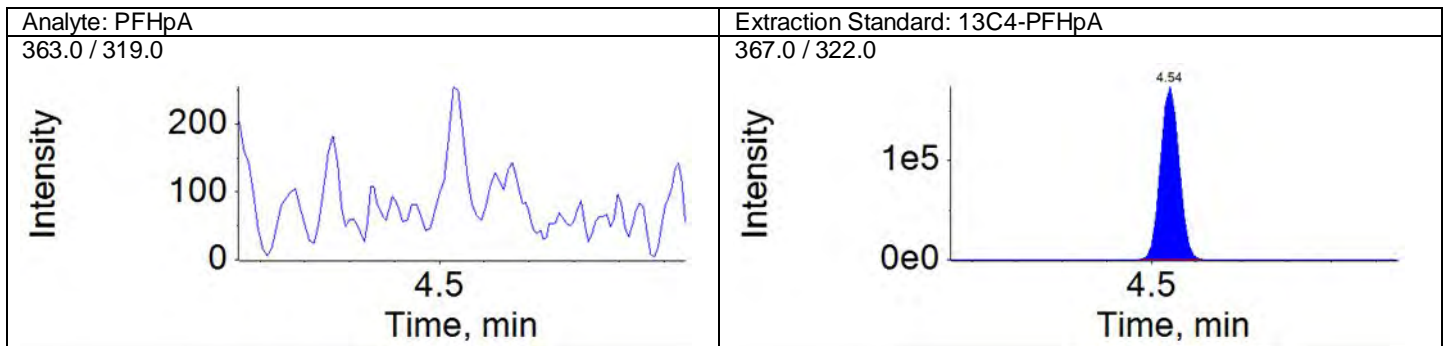
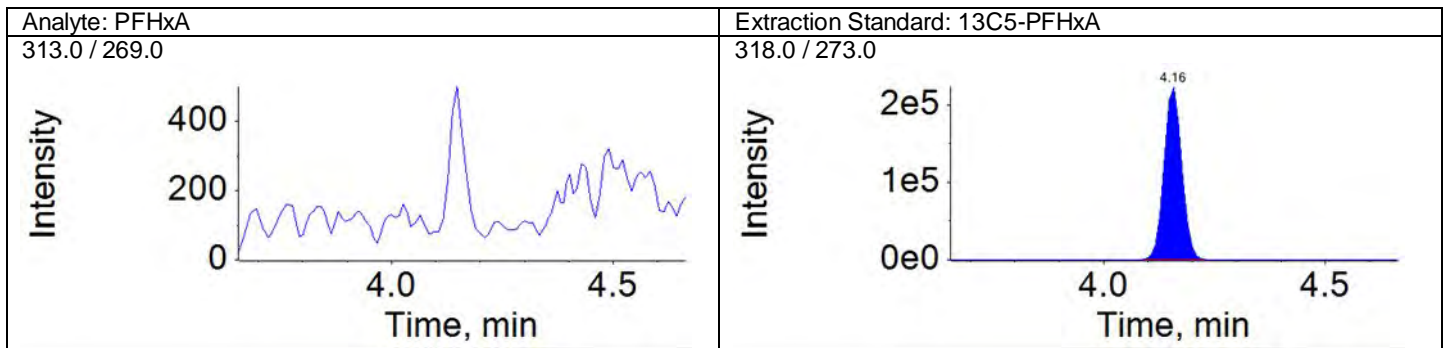
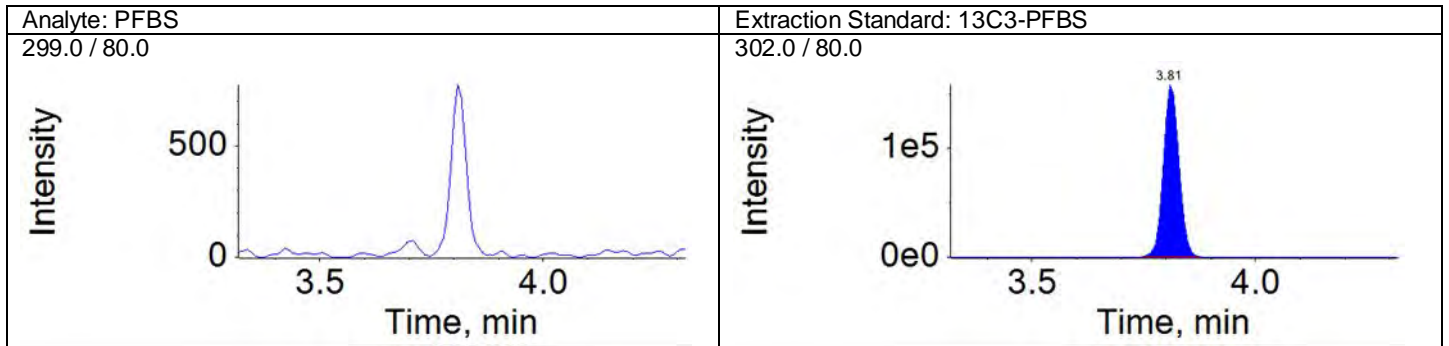
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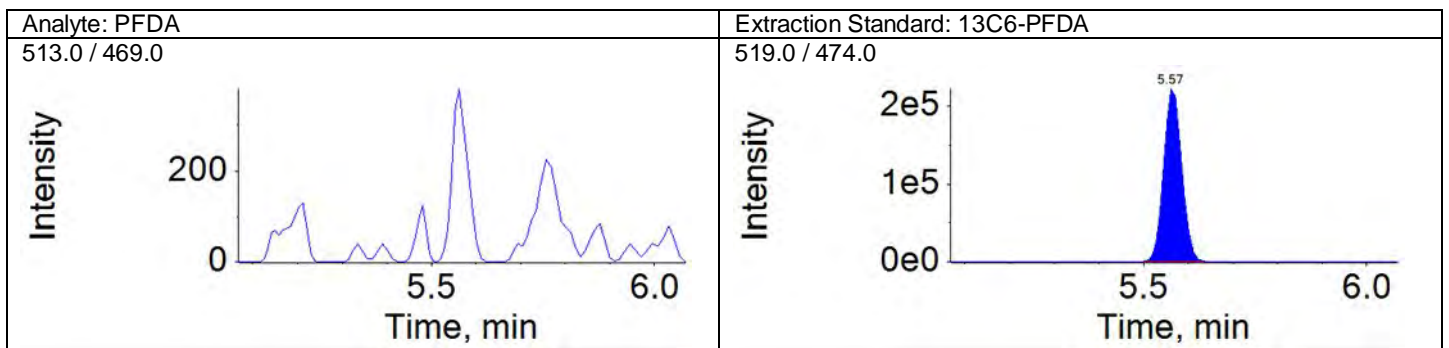
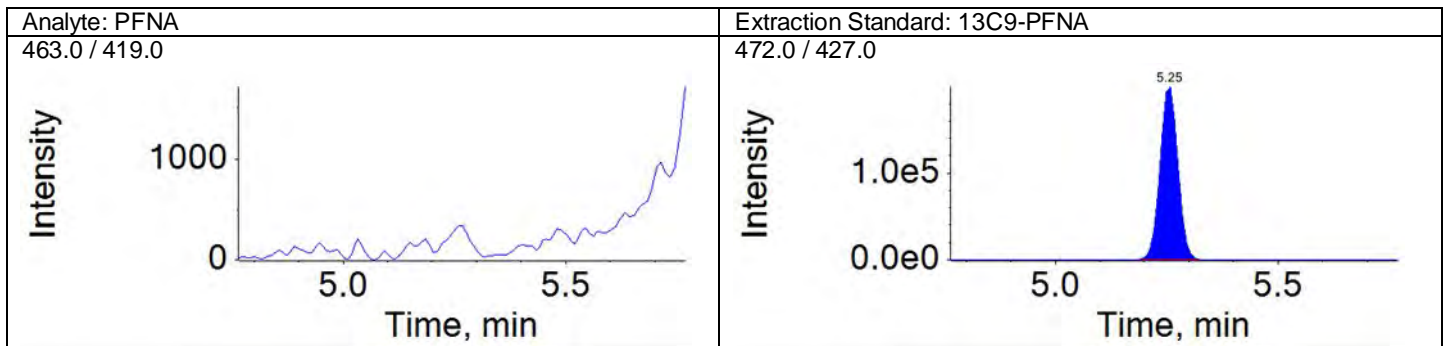
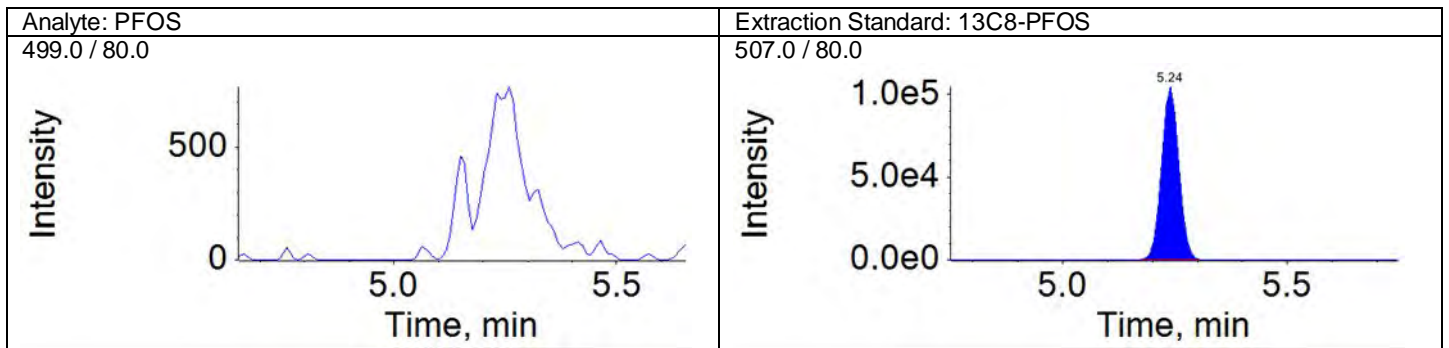
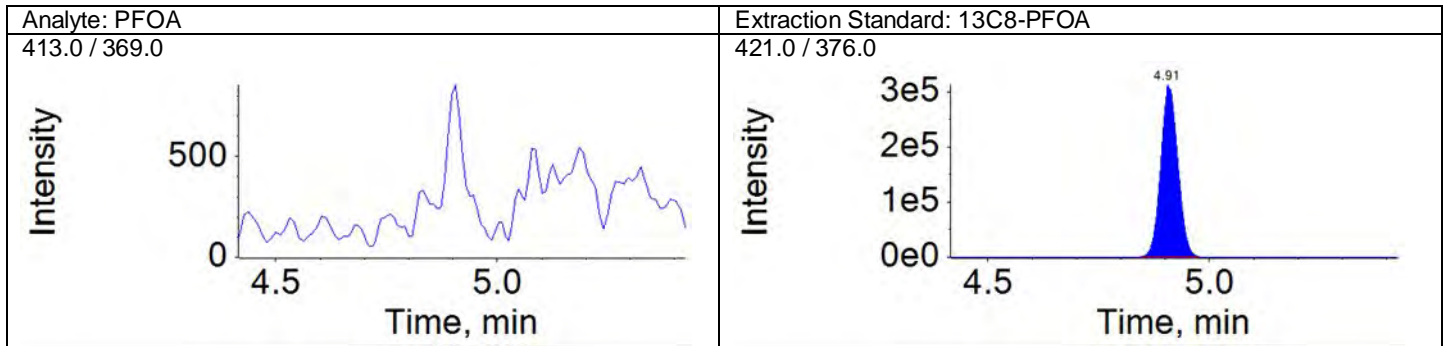
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QMethod Name: 18AUG20QM

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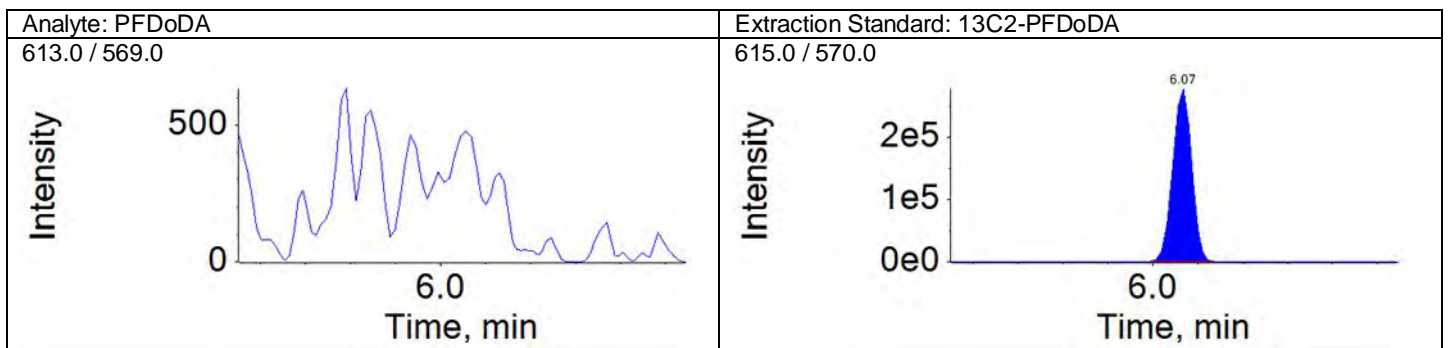
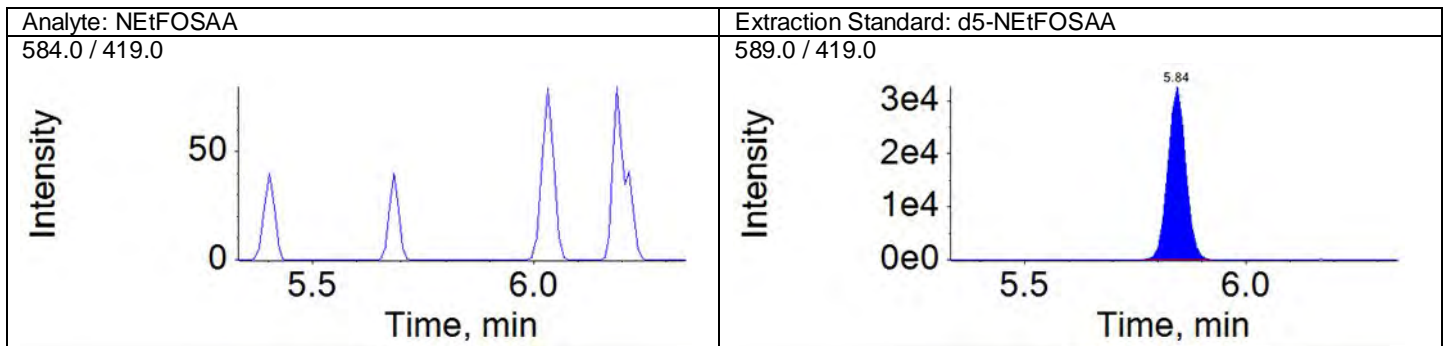
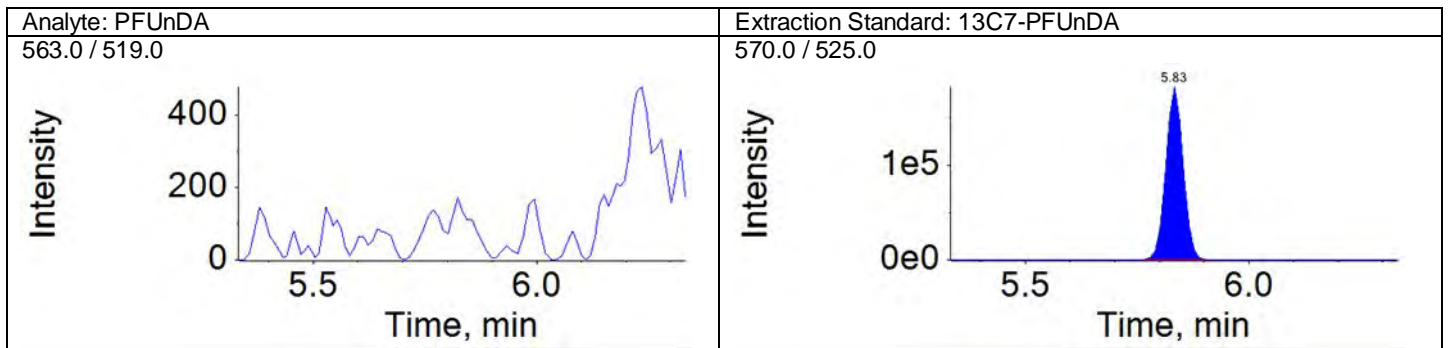
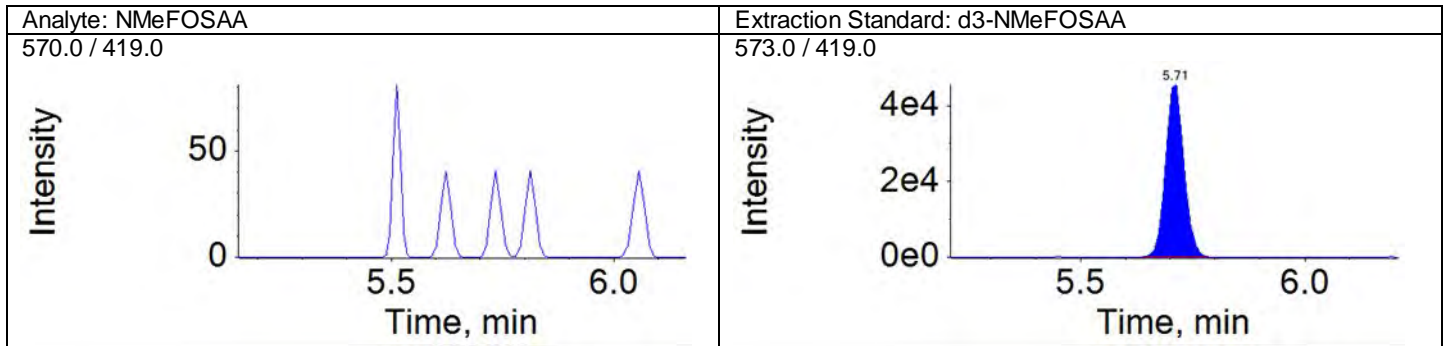
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Result Table: 18343003 12/13/2018 5:21:28 PM  
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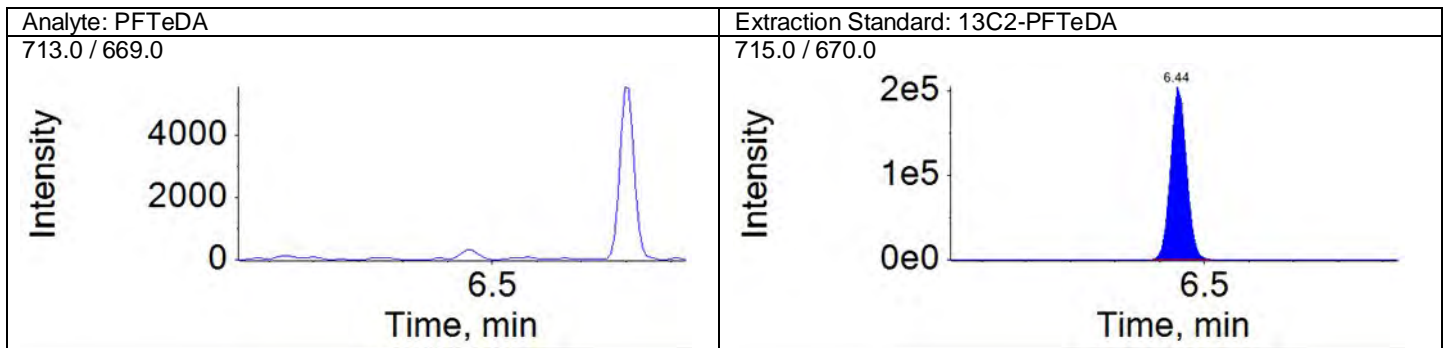
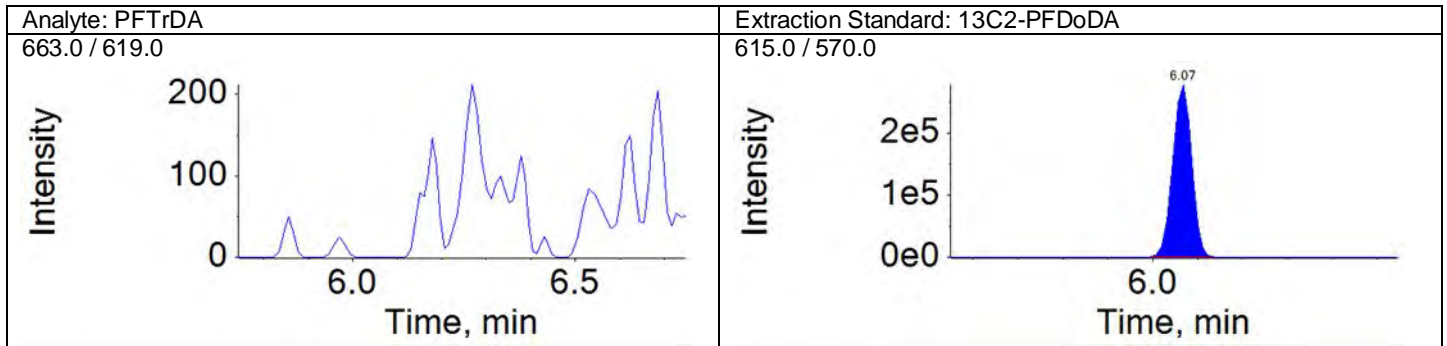
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
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Ion Ratio Report

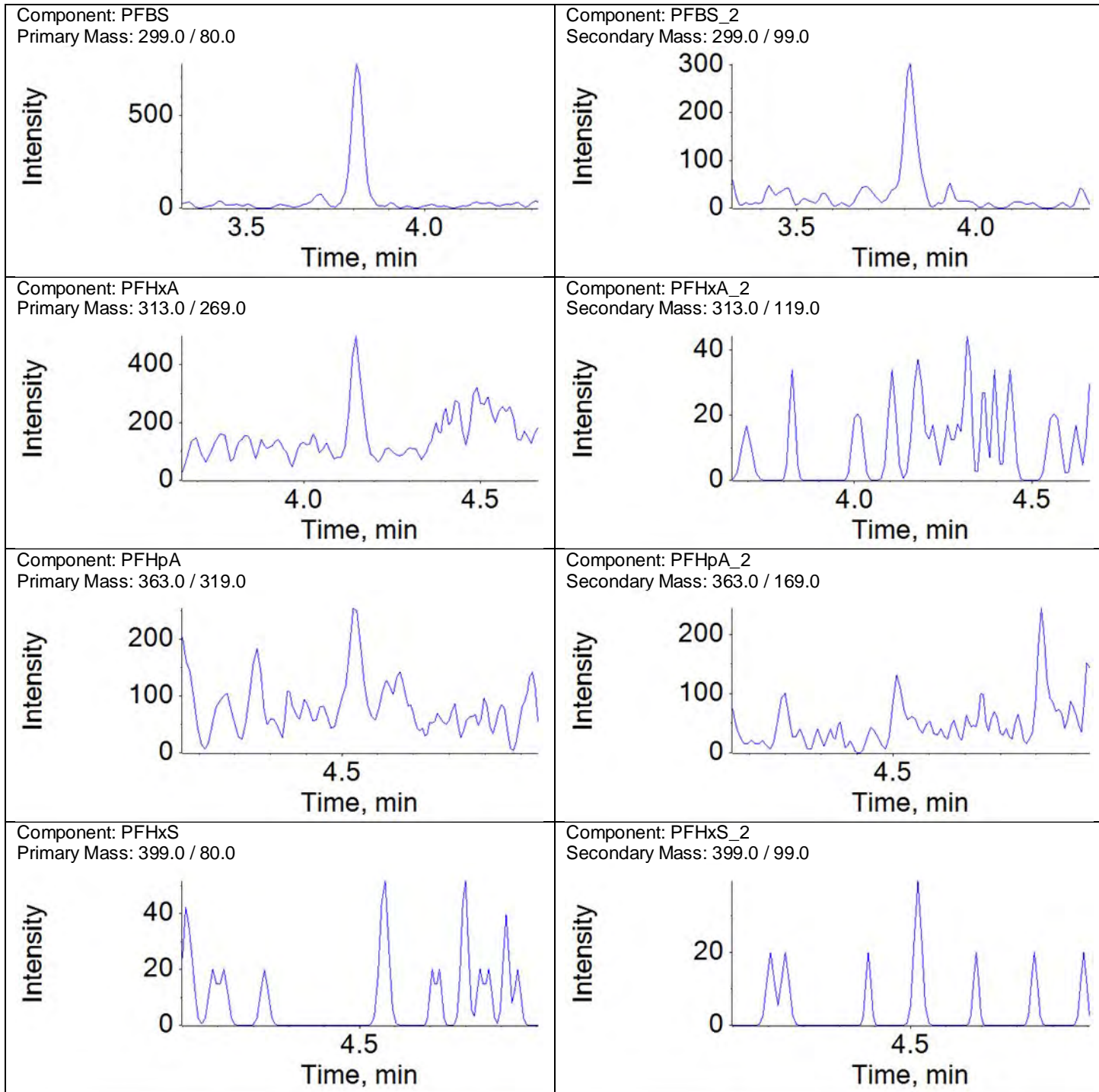
Sample Name: 9927679

Instrument Name: LM27631

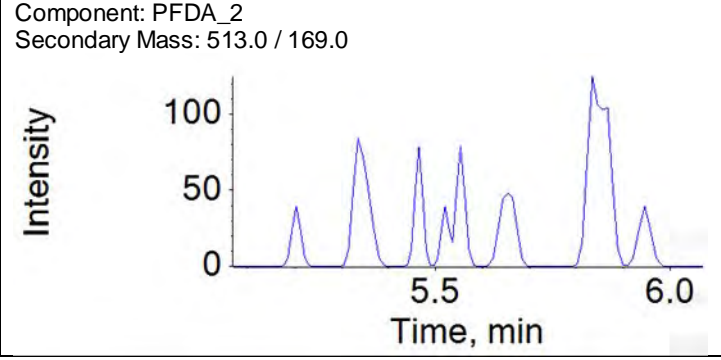
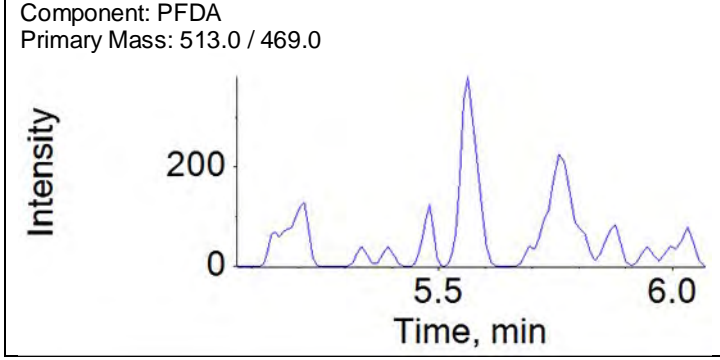
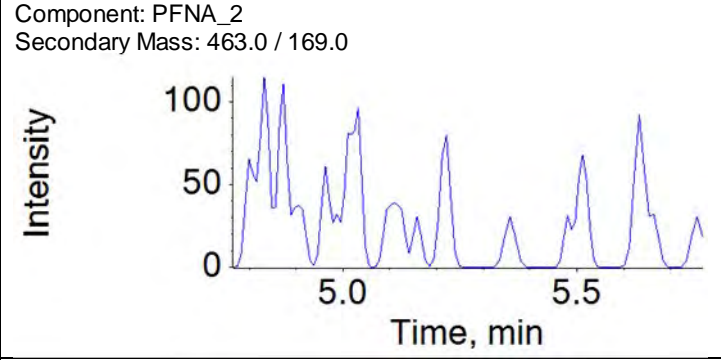
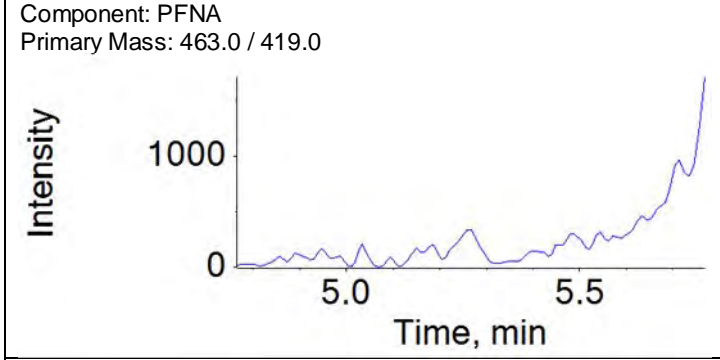
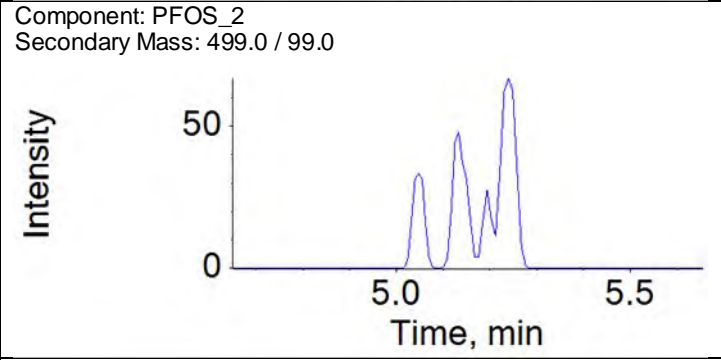
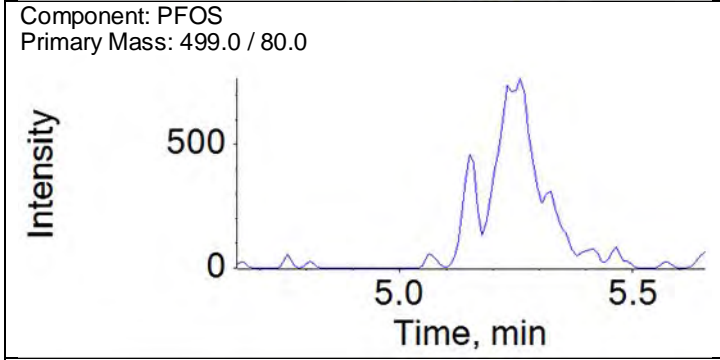
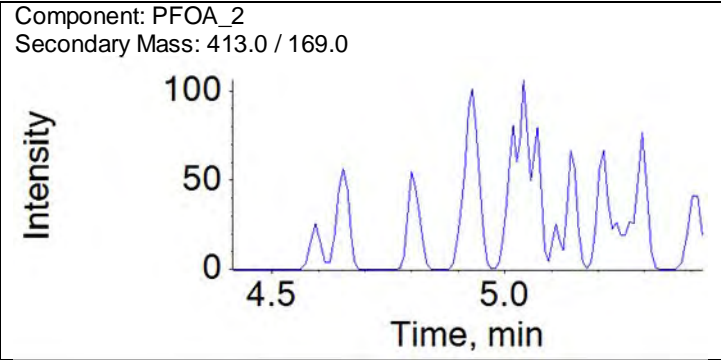
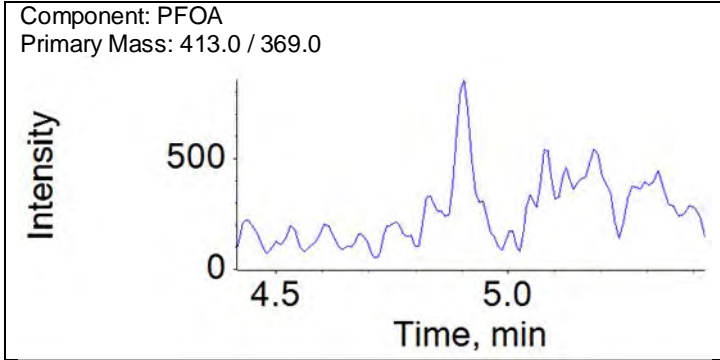
File Name: 18DEC11D-14.wiff

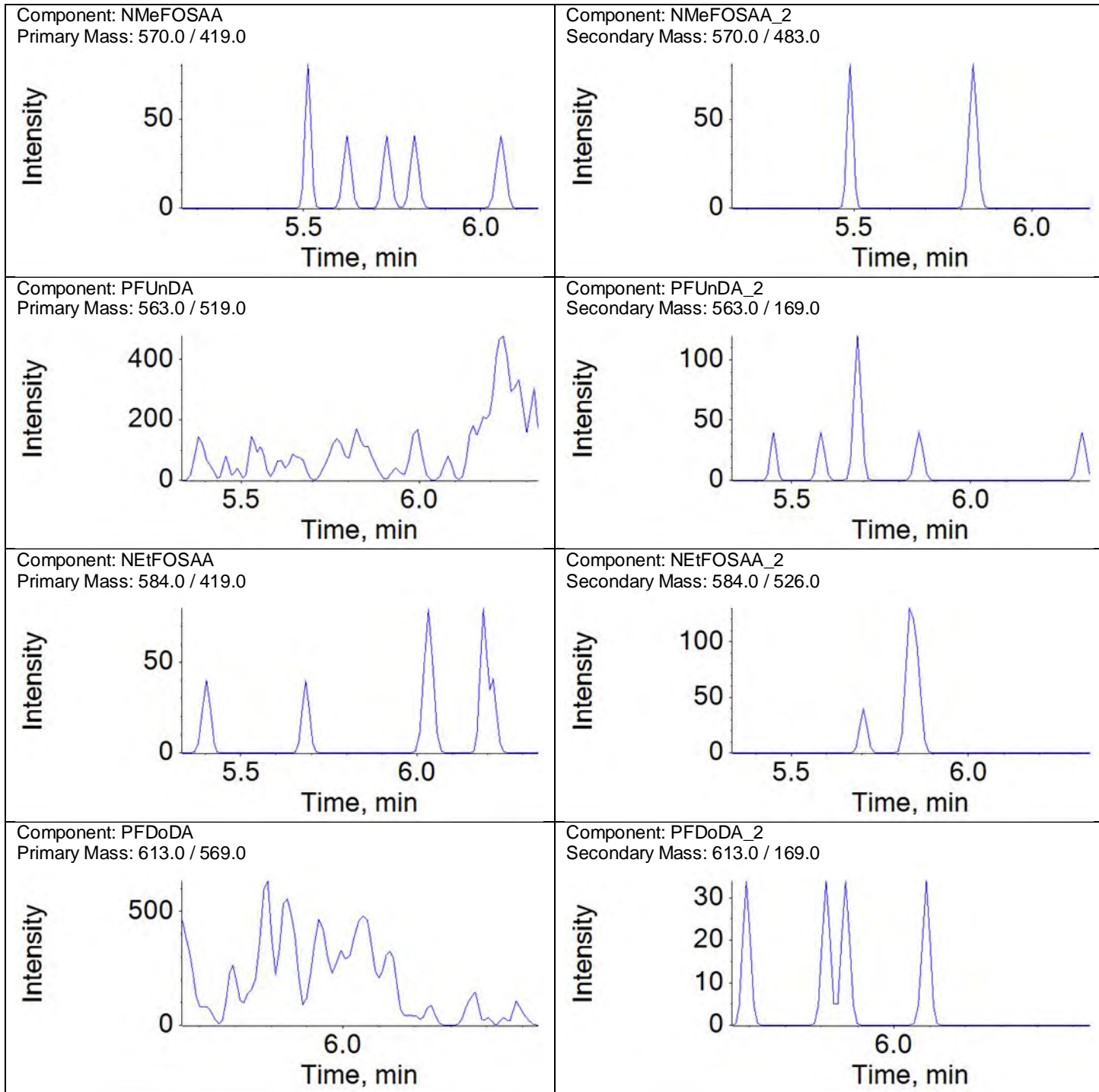
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	N/A	N/A			
PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDoDA	N/A	N/A	N/A	A	N/A	N/A			
PFDoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTTrDA	N/A	N/A	N/A	A	N/A	N/A			
PFTTrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTeDA	N/A	N/A	N/A	A	N/A	N/A			
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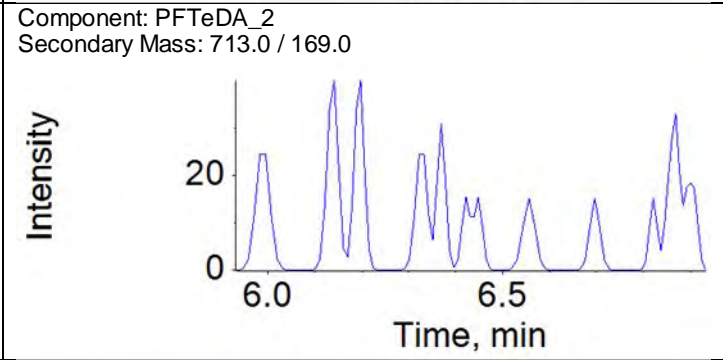
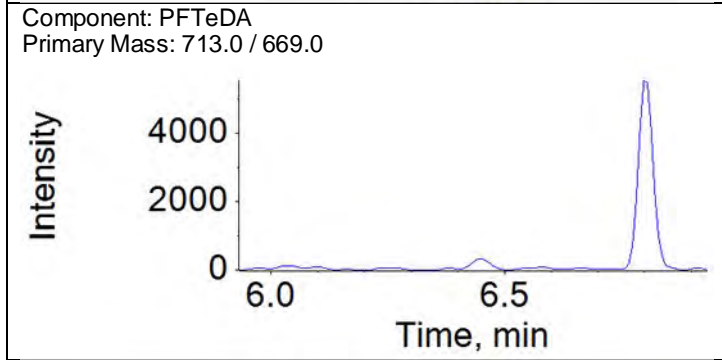
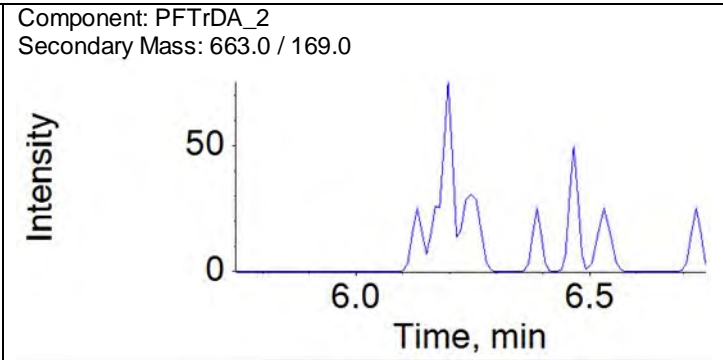
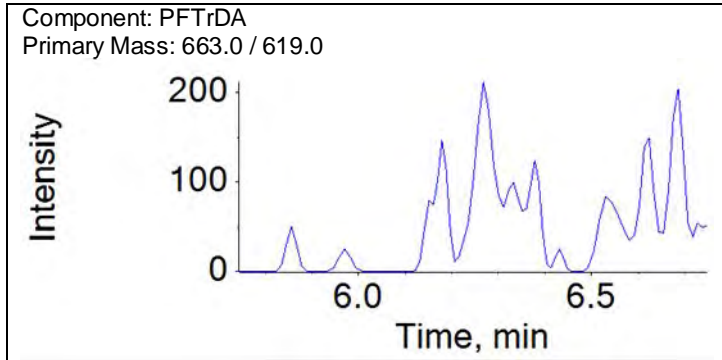












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	9927680	Data File:	18DEC11D-15.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003 OU1-44-2-W-02 Grab Water	Acquis Date:	2018-12-11T07:05:34
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	34	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.28085	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	942680.4	953492.0	-1	50	
13C2-PFOA	5.0	526228.8	500971.3	5	50	
13C4-PFOS	4.8	298545.7	310746.2	-4	50	
13C2-PFDA	5.0	396050.6	419040.9	-5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C3-PFBS	380865.6	13C3-PFBA	942680.4	0.404	16.557	12.194	74	50-150	
E13C5-PFHxA	640906.4	13C2-PFOA	526228.8	1.218	17.803	14.560	82	50-150	
E13C3-PFHxS	311782.3	13C2-PFOA	526228.8	0.592	16.842	13.531	80	50-150	
E13C4-PFHpA	504102.8	13C2-PFOA	526228.8	0.958	17.803	14.501	81	50-150	
E13C8-PFOA	843336.5	13C2-PFOA	526228.8	1.603	17.803	16.130	91	50-150	
E13C8-PFOS	282499.2	13C4-PFOS	298545.7	0.946	17.020	15.120	89	50-150	
E13C9-PFNA	547397.4	13C4-PFOS	298545.7	1.834	17.803	18.448	104	50-150	
E13C6-PFDA	629133.4	13C2-PFDA	396050.6	1.589	17.803	14.989	84	50-150	
Ed3-NMeFOSAA	123595.6	13C2-PFDA	396050.6	0.312	17.803	19.691	111	50-150	
E13C7-PFUnDA	387883.8	13C2-PFDA	396050.6	0.979	17.803	17.106	96	50-150	
Ed5-NEtFOSAA	74653.7	13C2-PFDA	396050.6	0.188	17.803	14.816	83	50-150	
E13C2-PFDoDA	706426.0	13C2-PFDA	396050.6	1.784	17.803	13.328	75	50-150	
E13C2-PFTeDA	421207.2	13C2-PFDA	396050.6	1.064	17.803	11.239	63	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

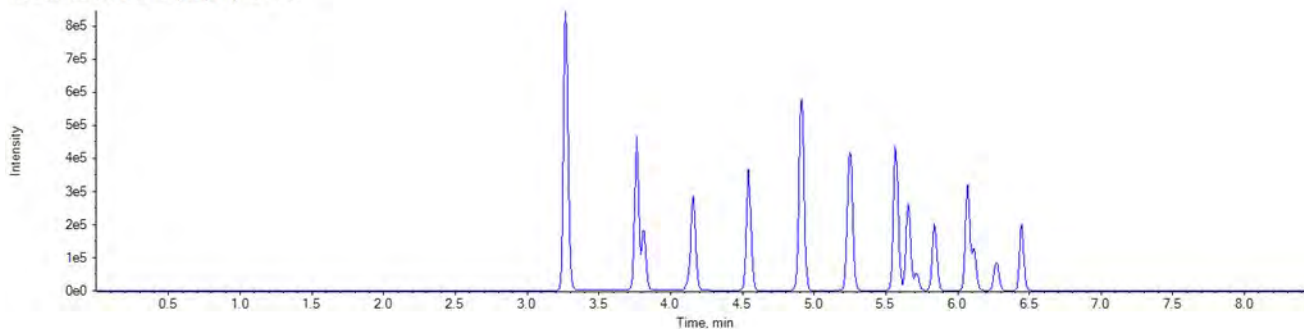
Sample Name: 9927680 Instrument Name: LM27631 File Name: 18DEC11D-15.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.28085	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.81	380865.6	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	640906.4	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.54	504102.8	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	311782.3	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	843336.5	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	282499.2	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	547397.4	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	629133.4	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	123595.6	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.84	387883.8	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.85	74653.7	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.07	706426.0	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	421207.2	N/A	

**Total Ion Chromatogram**

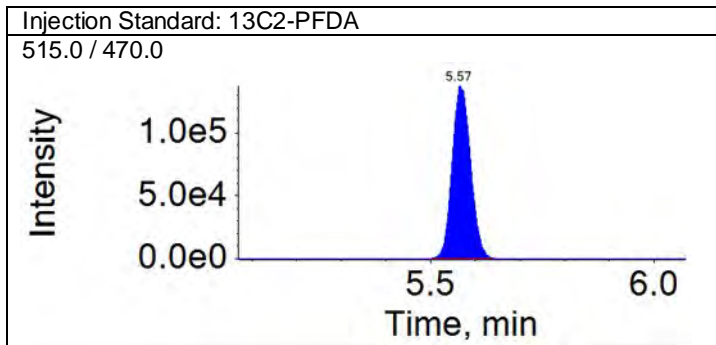
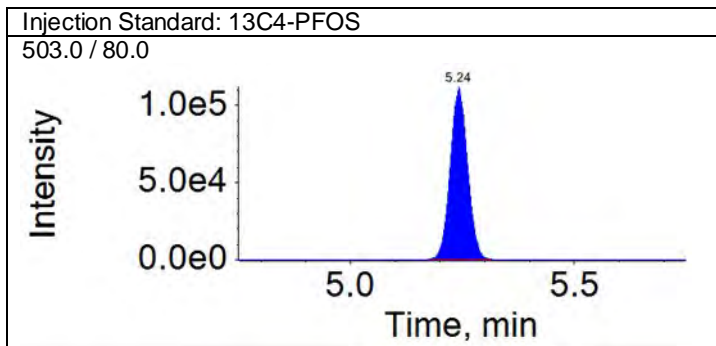
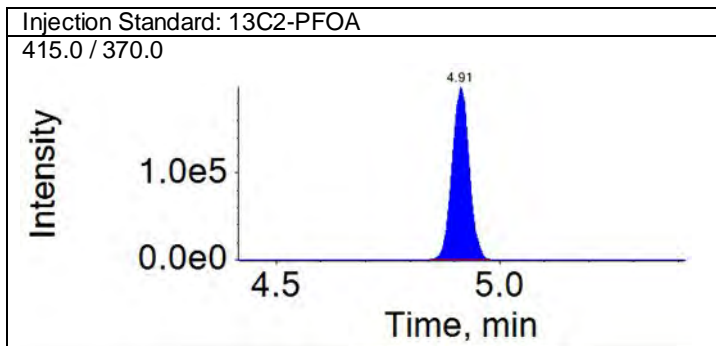
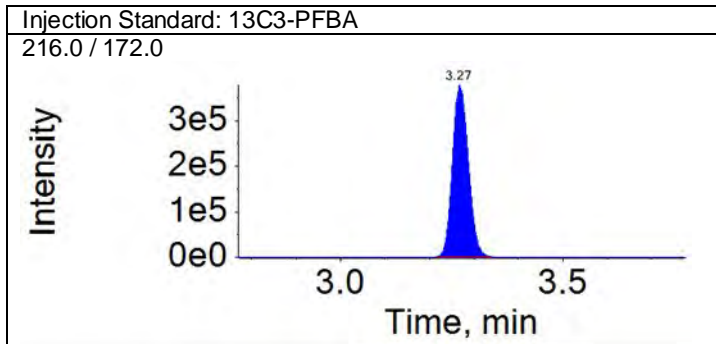
TIC from 18DEC11D-15.wiff (sample 1) - 9927680





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

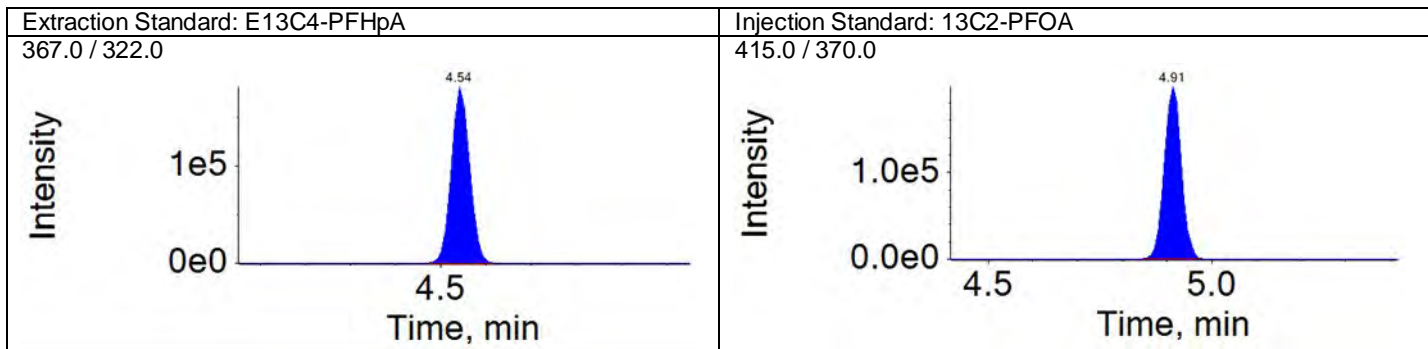
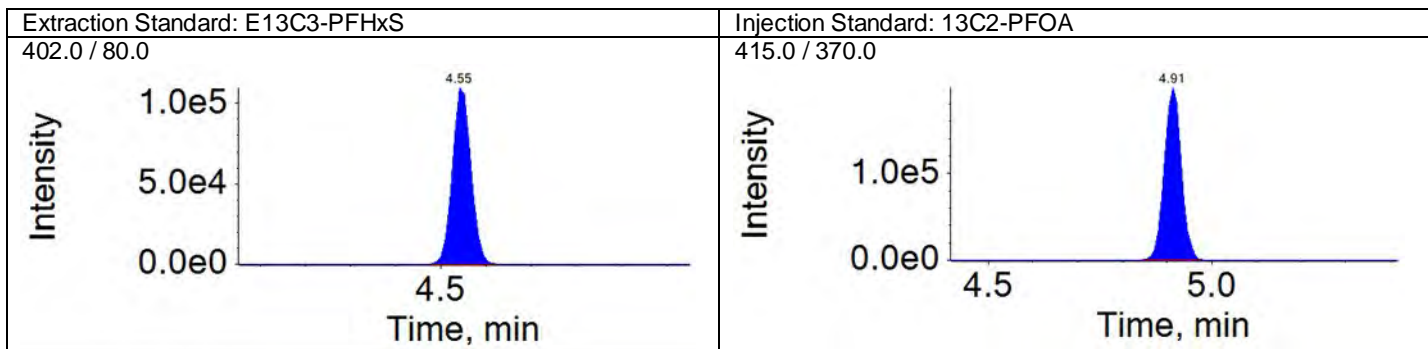
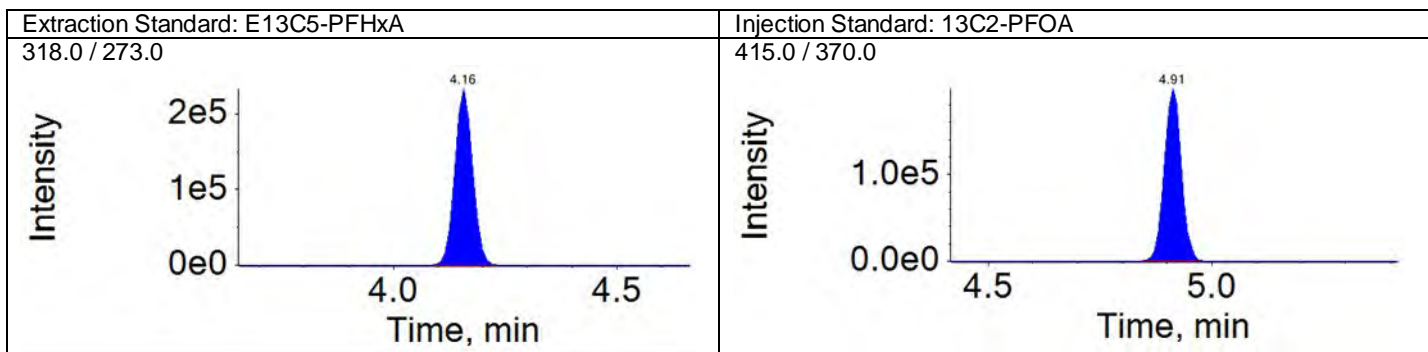
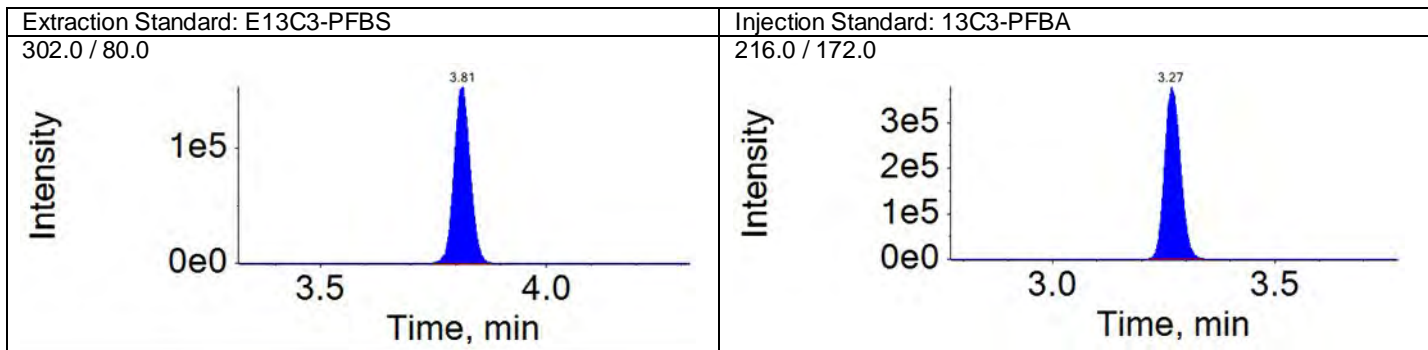
Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam





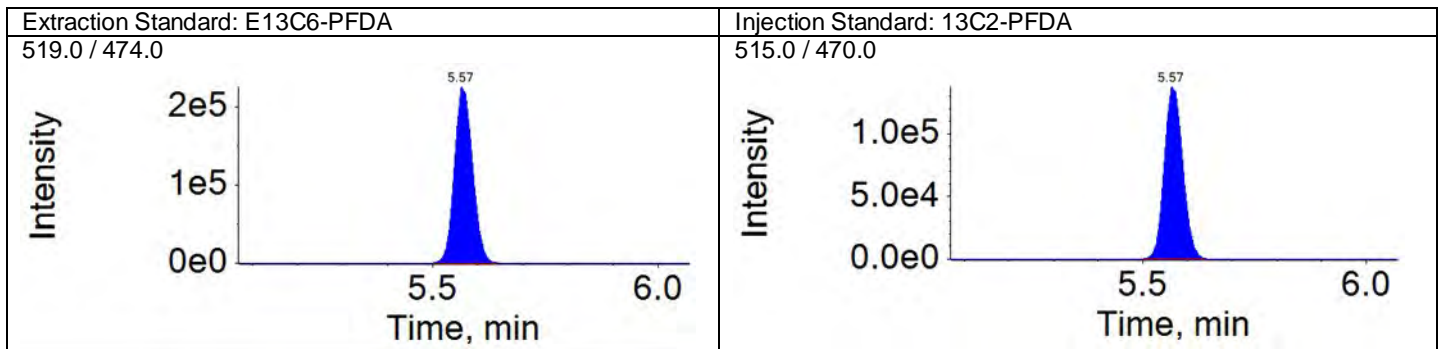
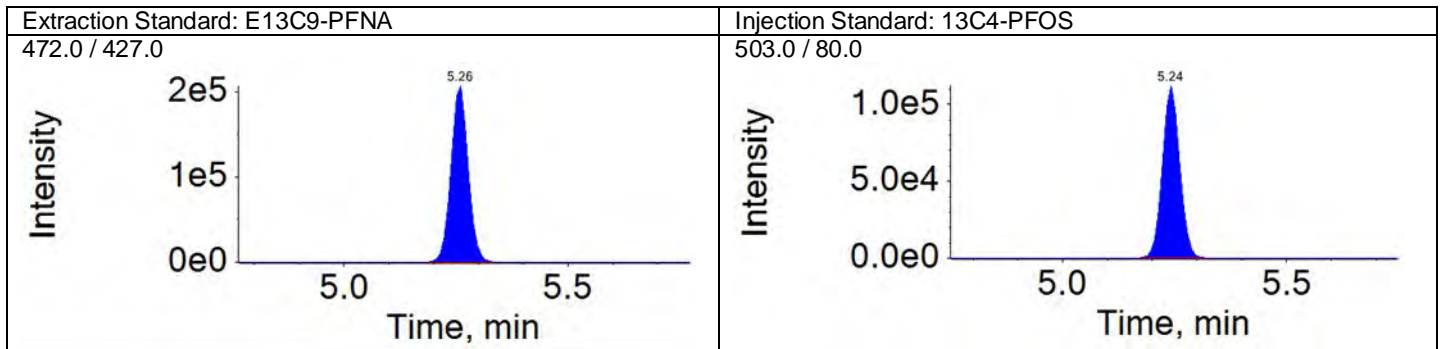
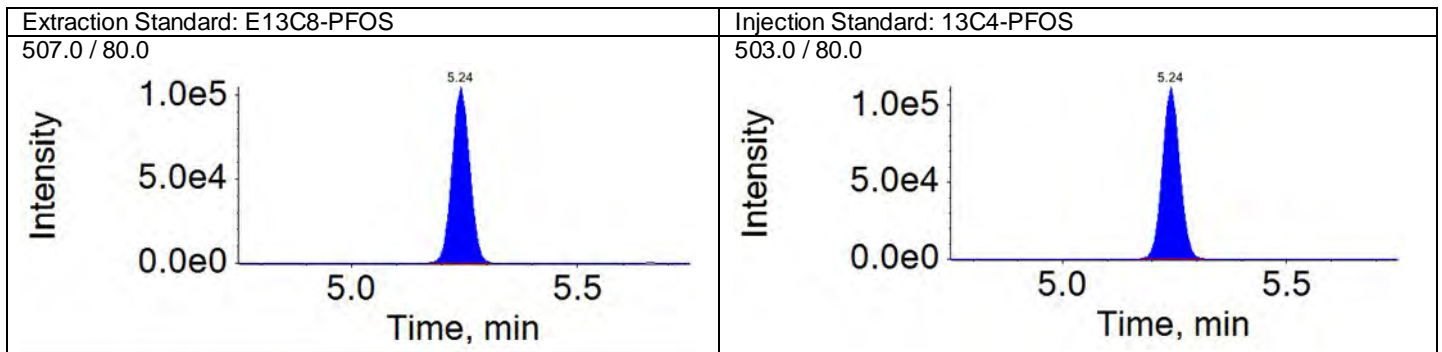
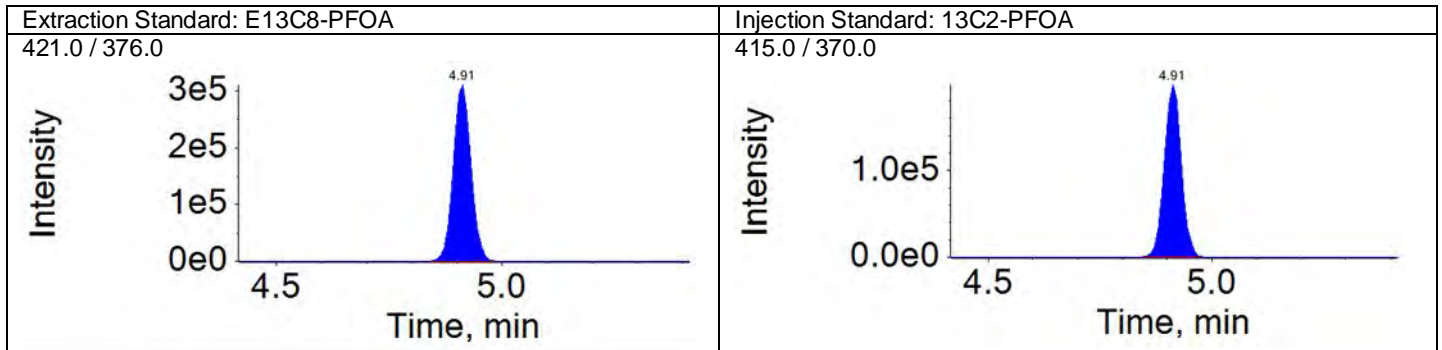
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



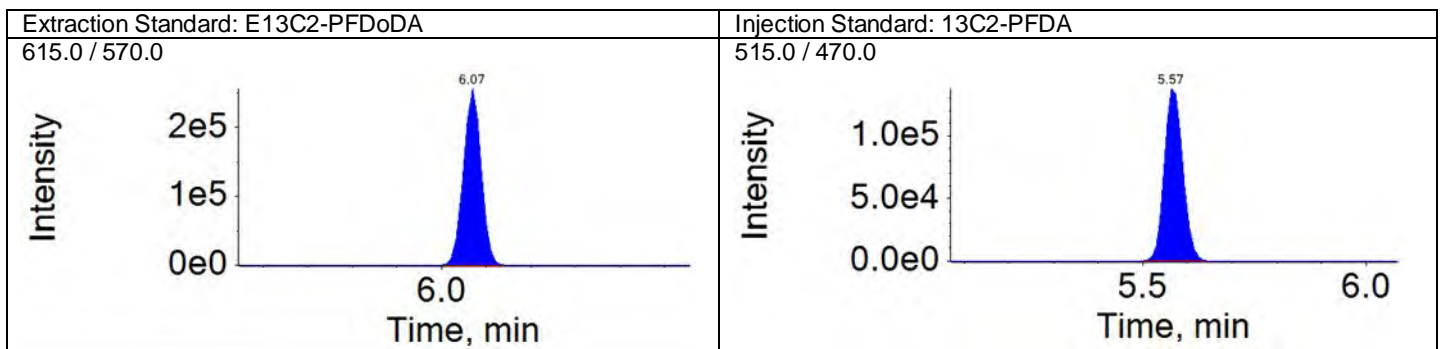
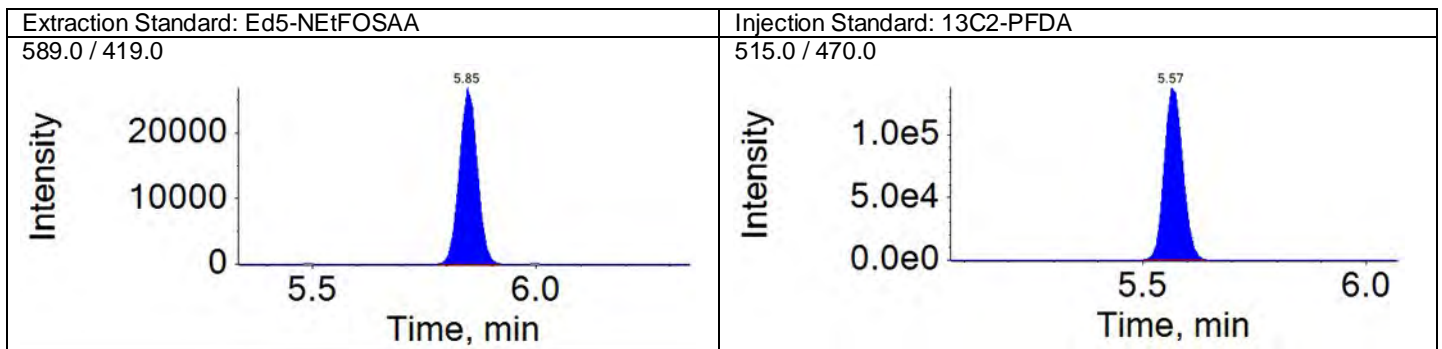
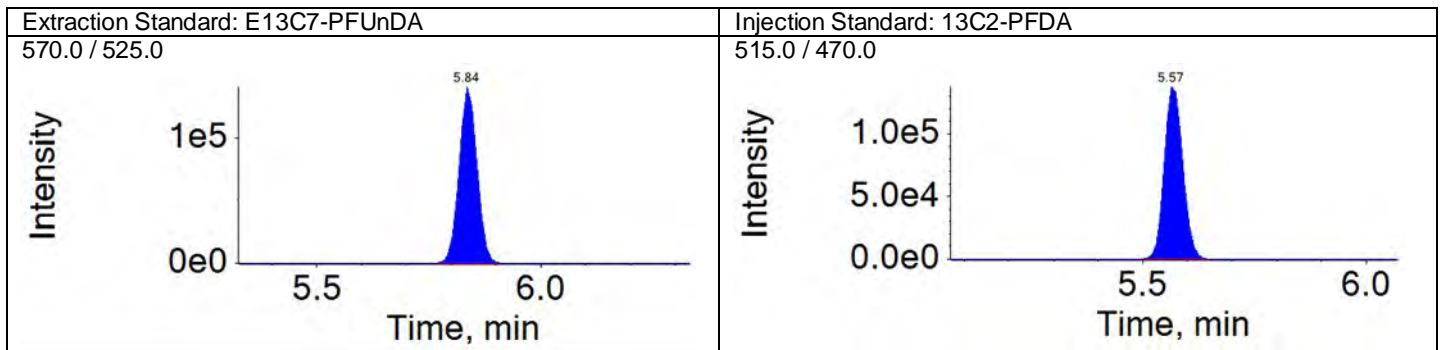
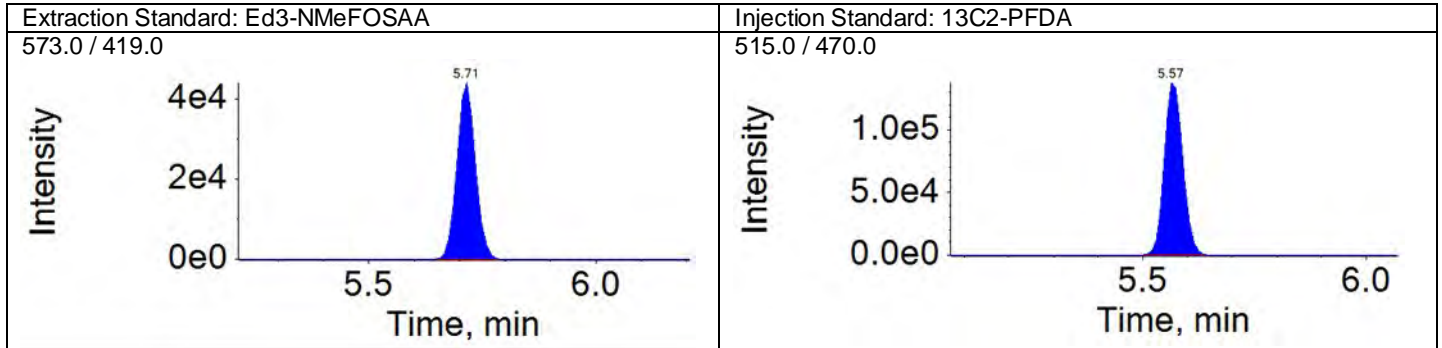
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Acquisition Method: 18AUG13\_3uL.dam



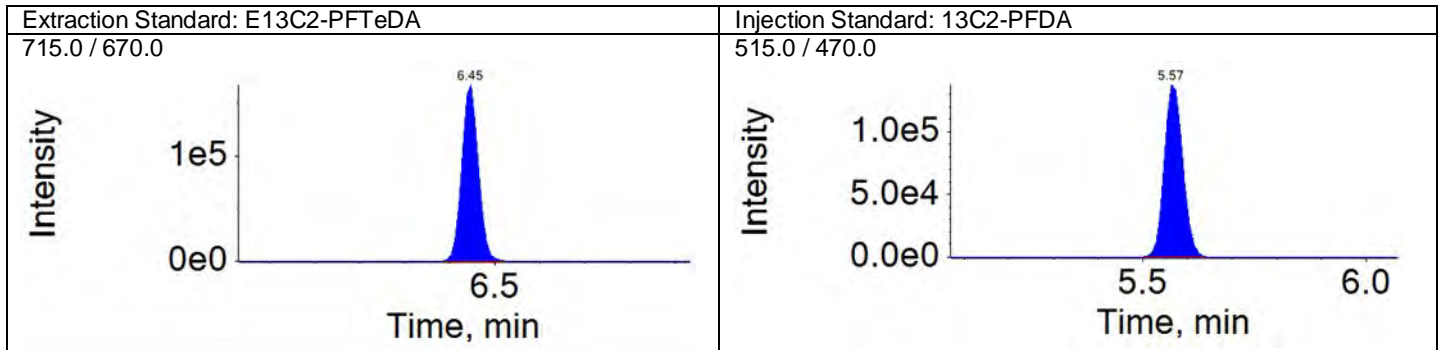
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Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



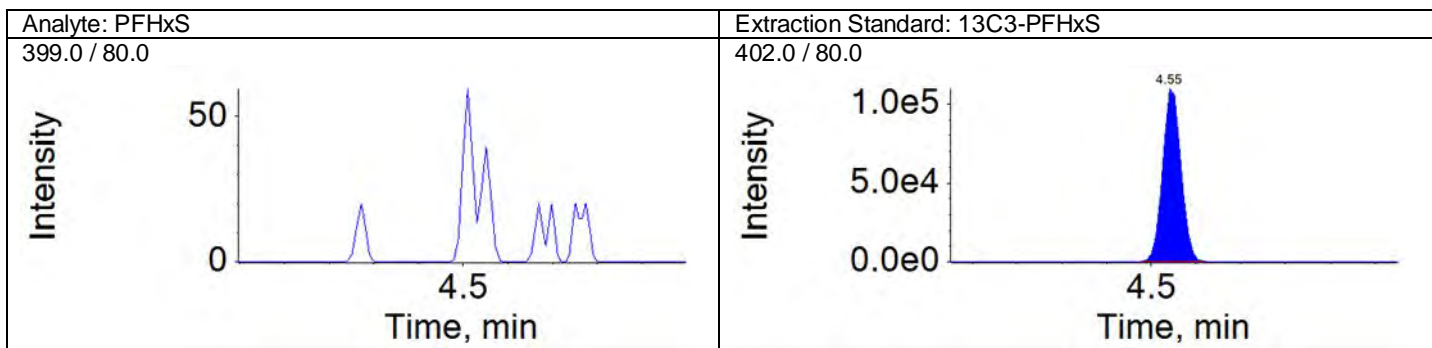
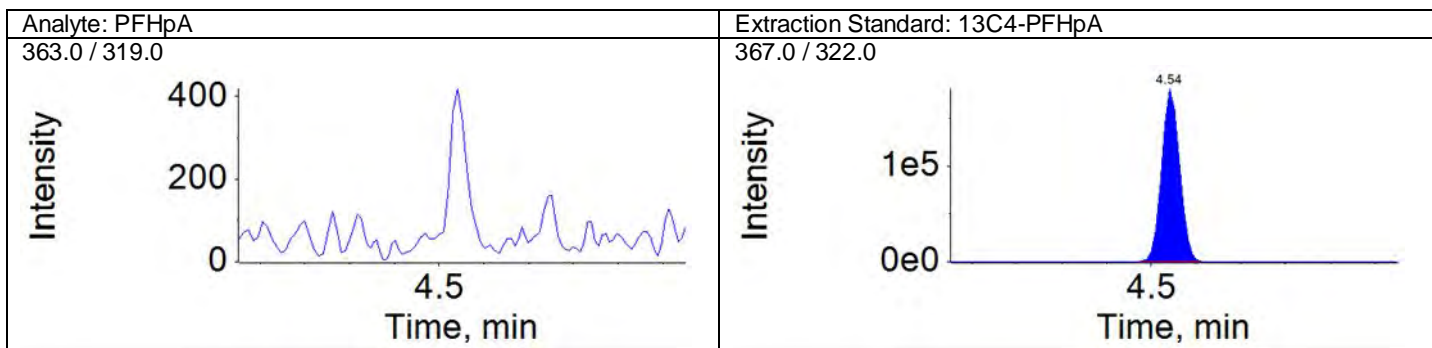
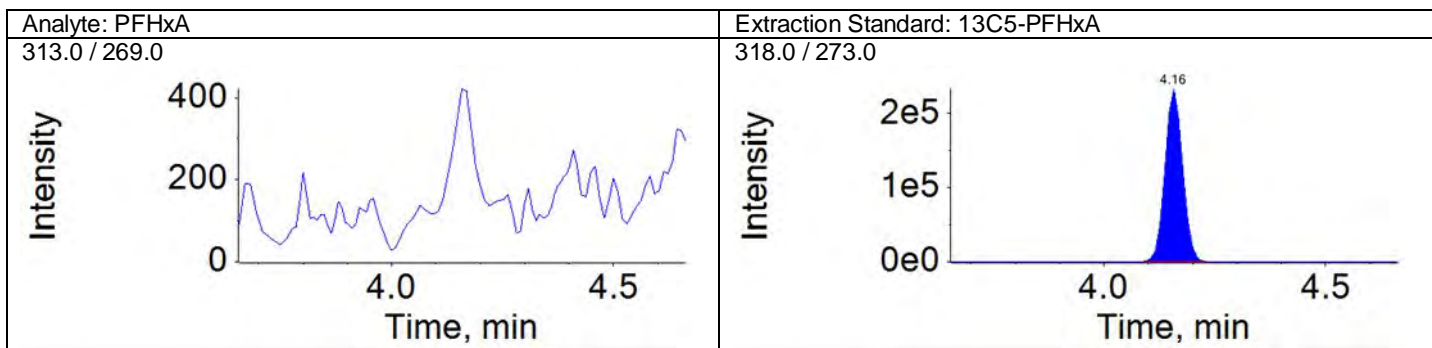
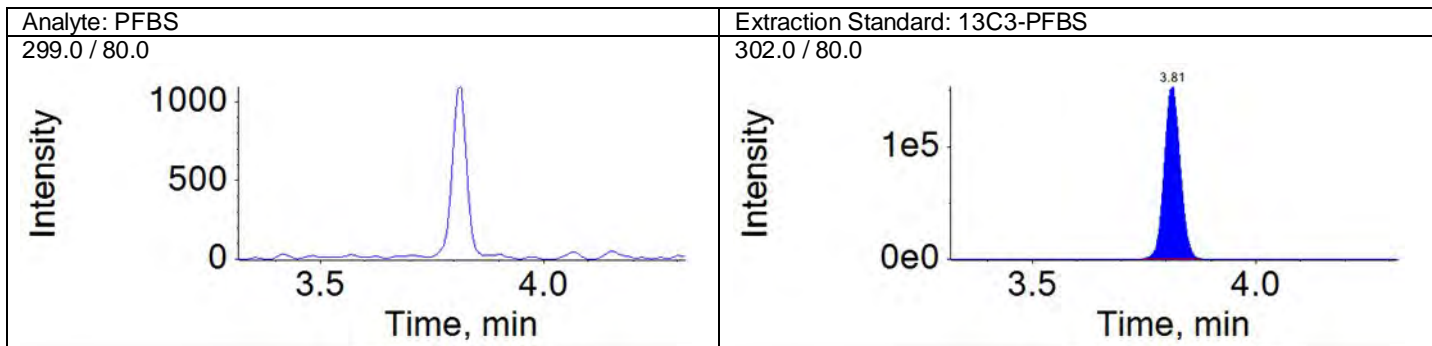
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

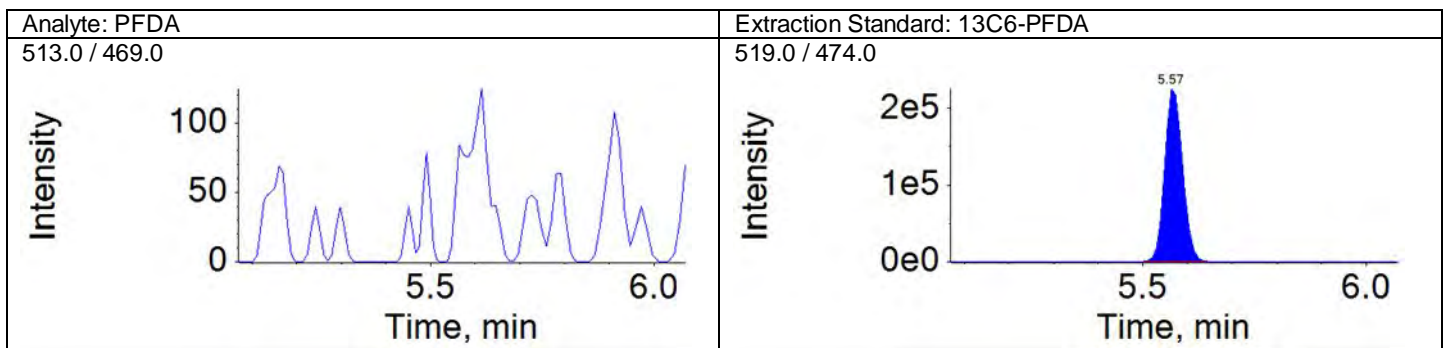
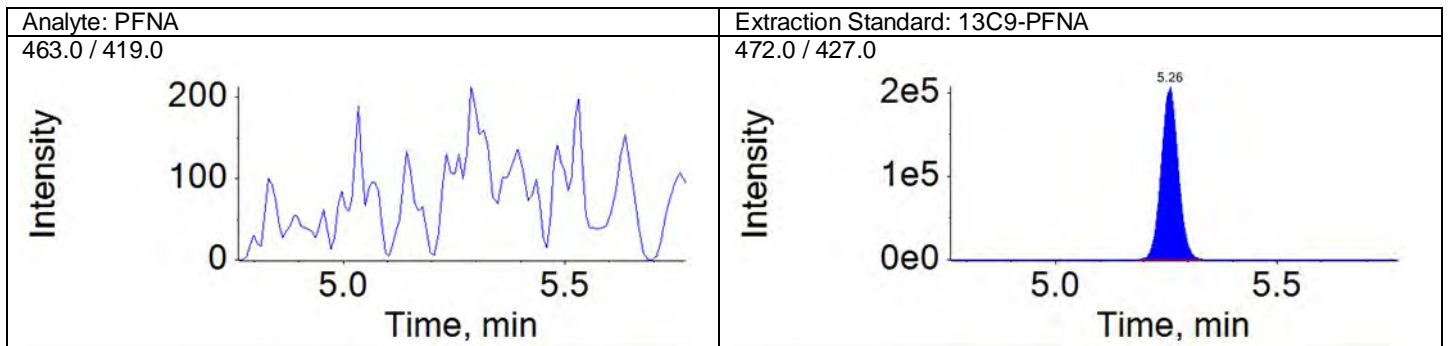
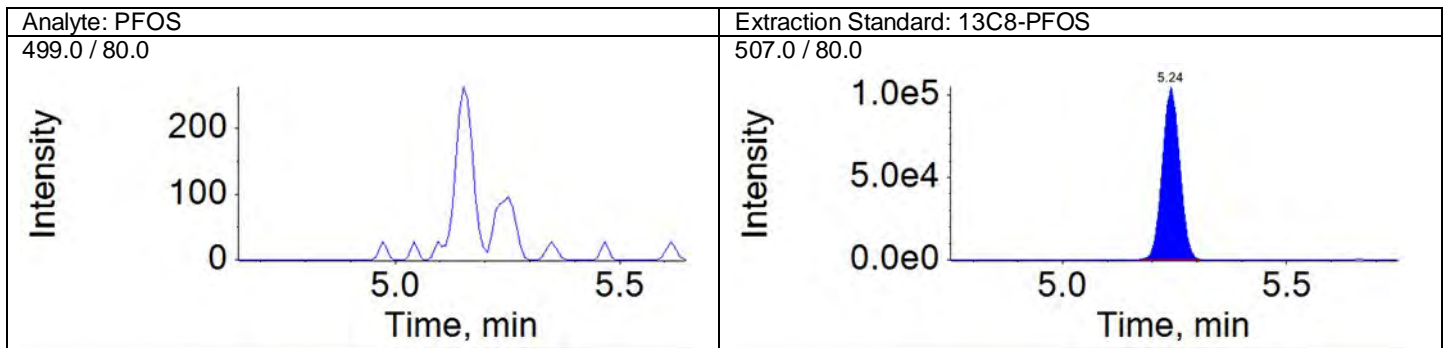
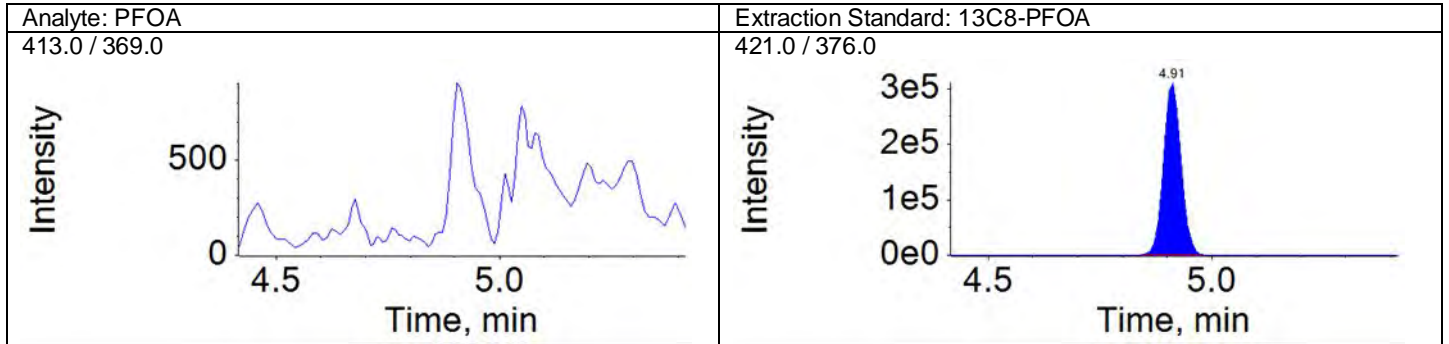
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

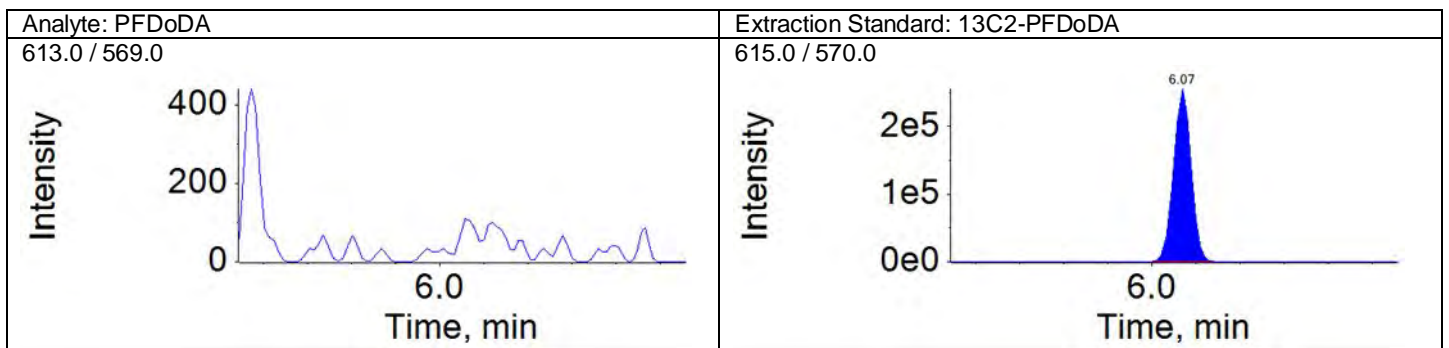
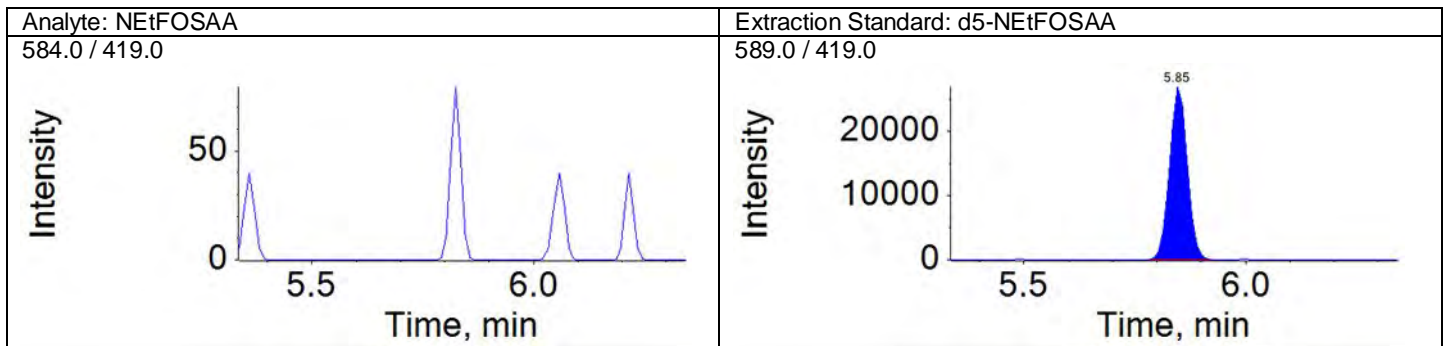
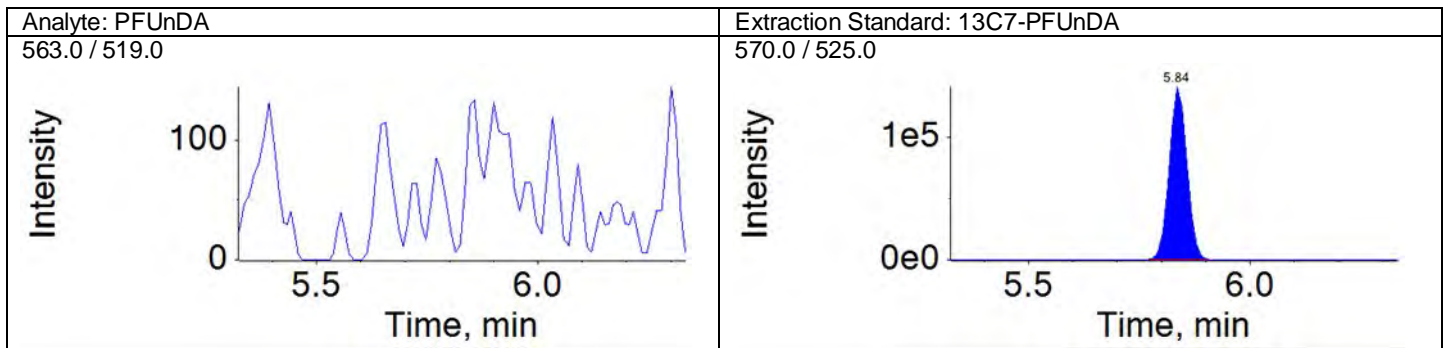
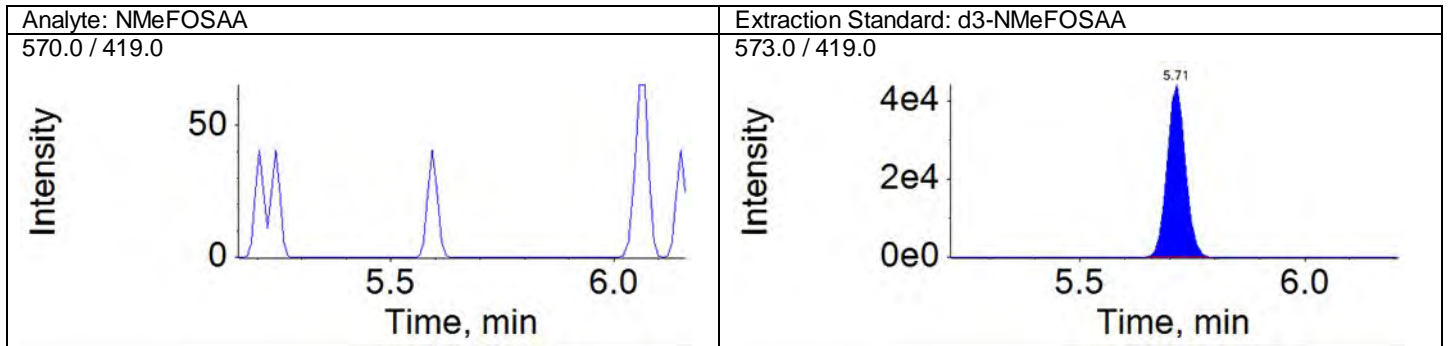
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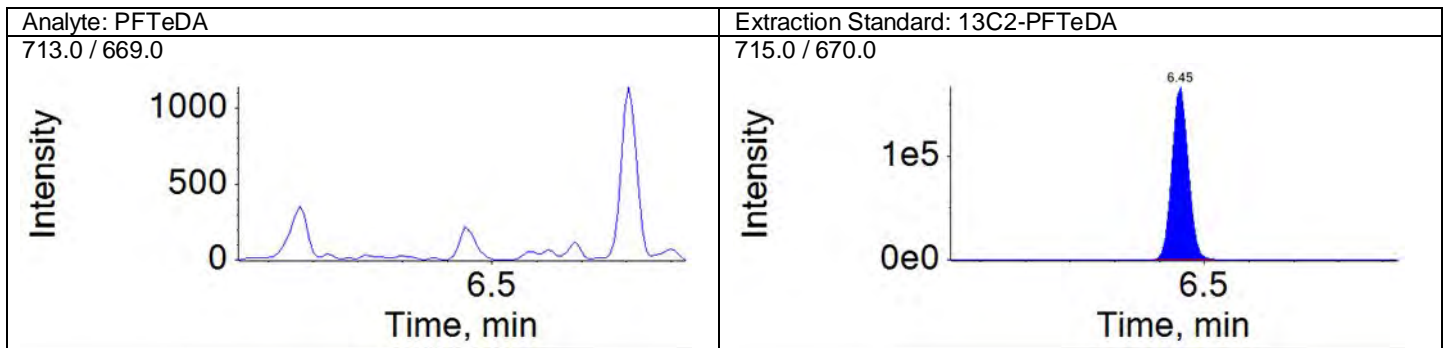
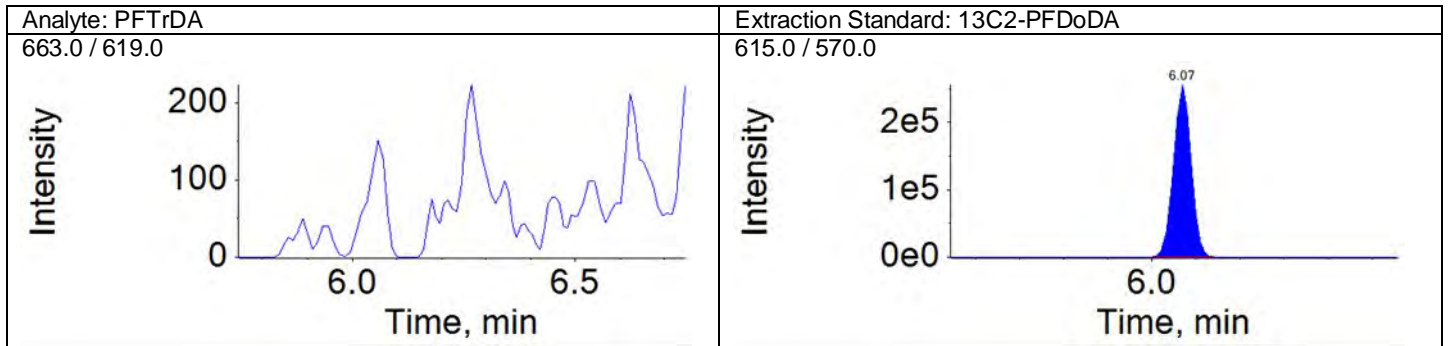
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



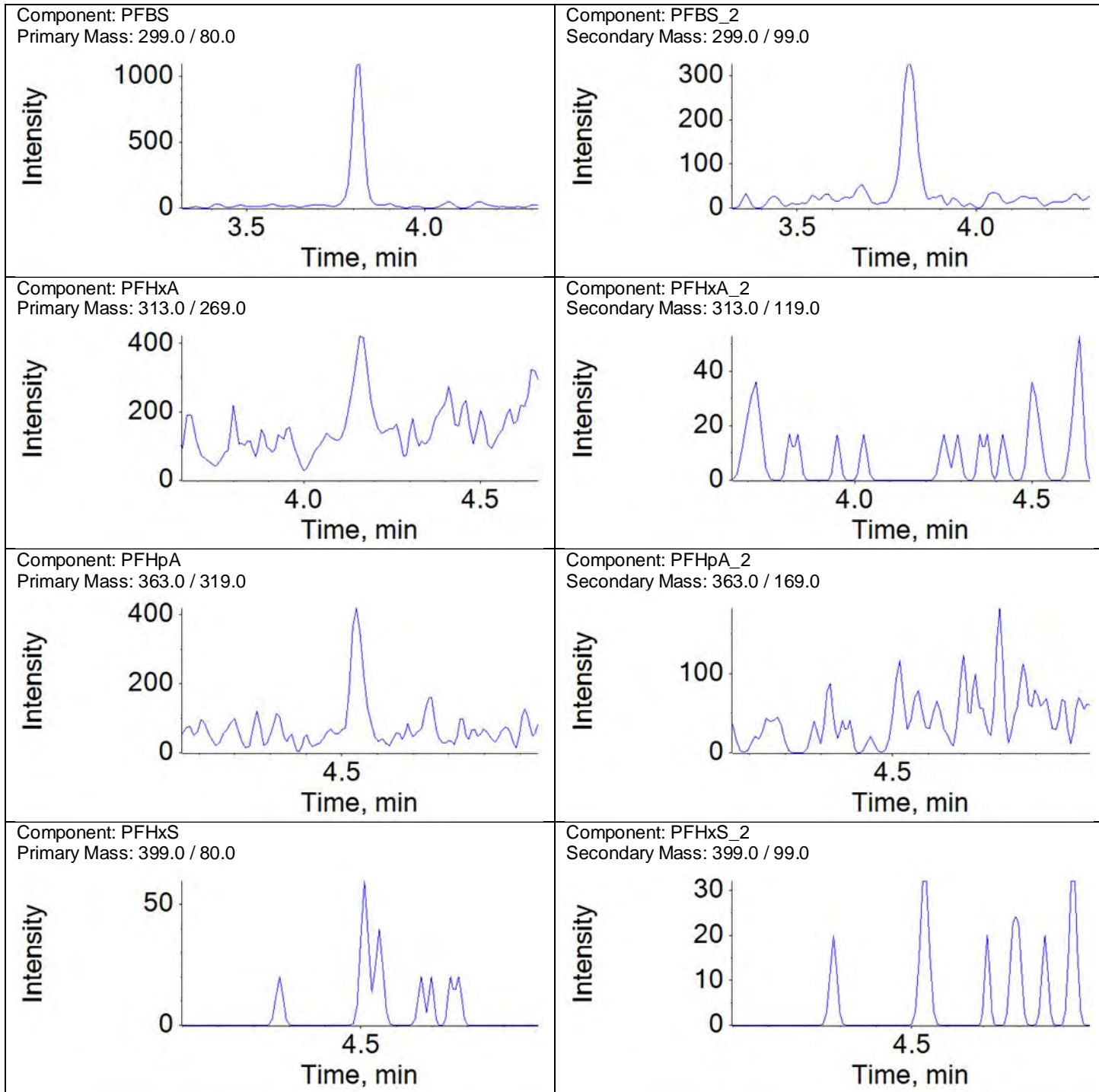
Ion Ratio Report

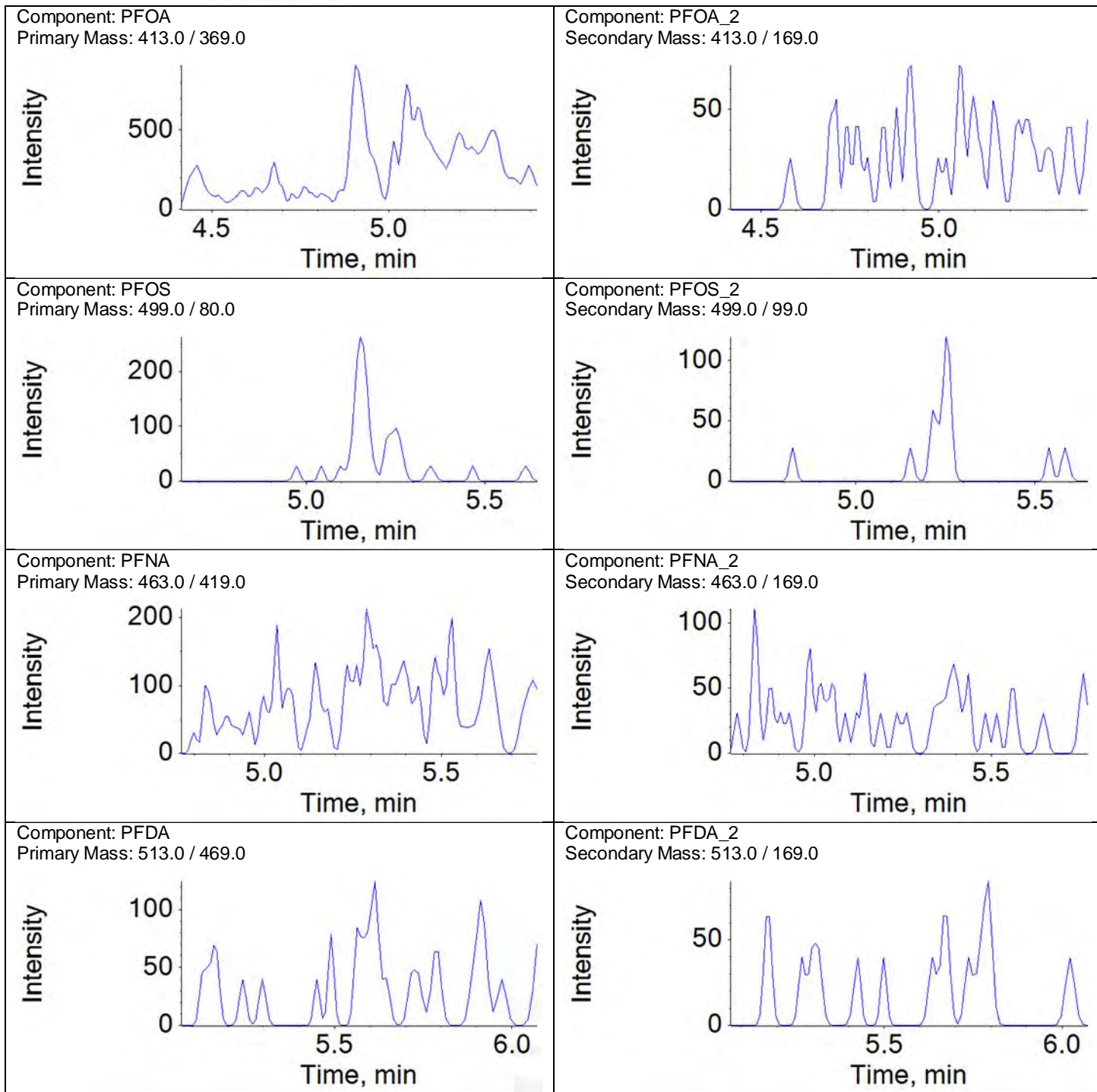
Sample Name: 9927680

Instrument Name: LM27631

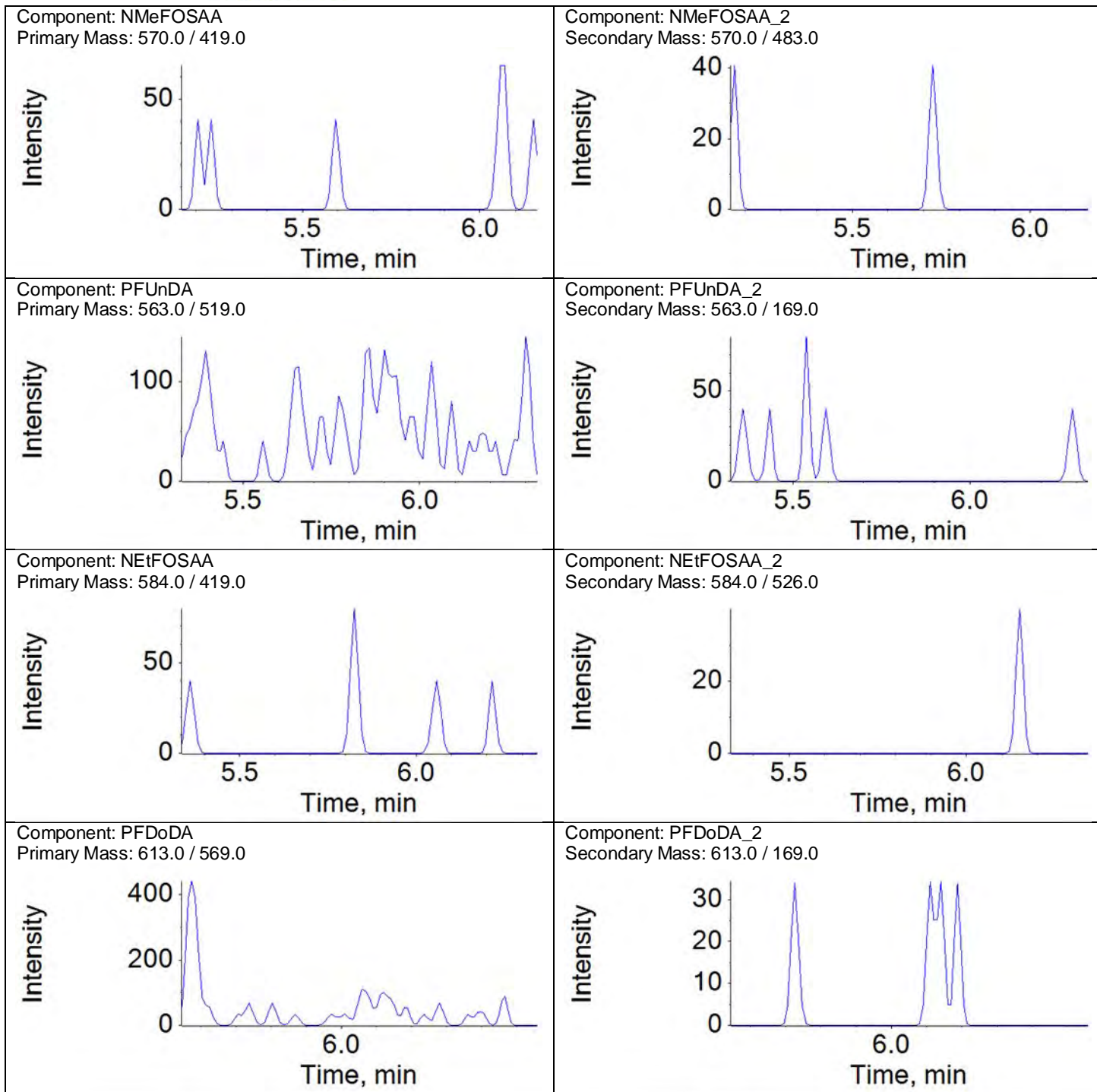
File Name: 18DEC11D-15.wiff

Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	N/A	N/A			
PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDoDA	N/A	N/A	N/A	A	N/A	N/A			
PFDoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTTrDA	N/A	N/A	N/A	A	N/A	N/A			
PFTTrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTeDA	N/A	N/A	N/A	A	N/A	N/A			
PFTeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	

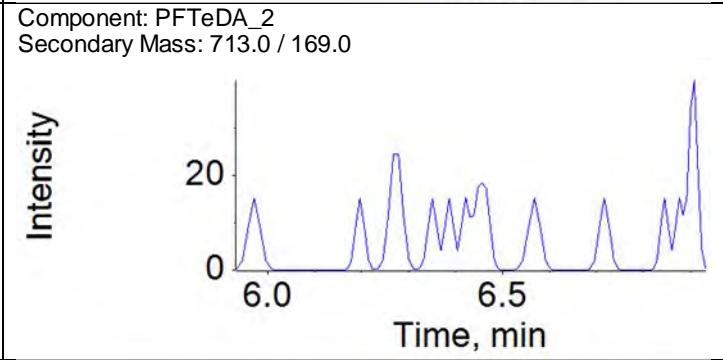
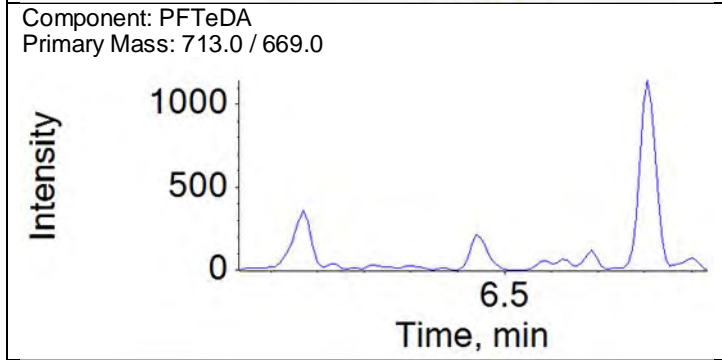
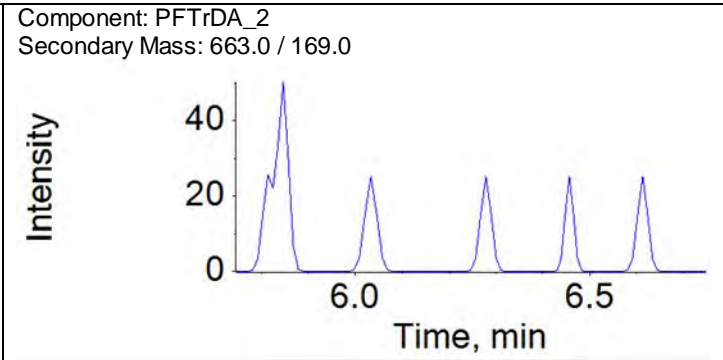
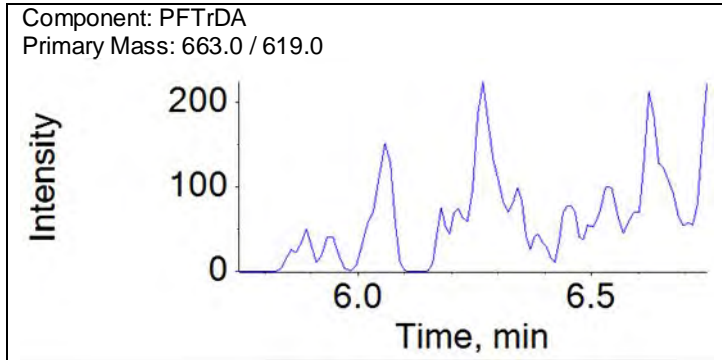












**Standards Data**

**PFAS by LC/MS/MS**

Instrument Name: LM27631

Data File Name	Sample ID	Batch No	Analysis Date/Time
18DEC06DCAL-24.wiff	MDL	N/A	12/6/2018 11:28:31 PM
18DEC06DCAL-25.wiff	CAL1	N/A	12/6/2018 11:37:31 PM
18DEC06DCAL-26.wiff	CAL2	N/A	12/6/2018 11:46:31 PM
18DEC06DCAL-27.wiff	CAL3	N/A	12/6/2018 11:55:31 PM
18DEC06DCAL-28.wiff	CAL4	N/A	12/7/2018 12:04:31 AM
18DEC06DCAL-29.wiff	CAL5	N/A	12/7/2018 12:13:31 AM
18DEC06DCAL-30.wiff	CAL6	N/A	12/7/2018 12:22:31 AM
18DEC06DCAL-31.wiff	CAL7	N/A	12/7/2018 12:31:34 AM
18DEC06DCAL-32.wiff	Instrument Blank	N/A	12/7/2018 12:40:37 AM
18DEC06DCAL-33.wiff	ICV	N/A	12/7/2018 12:49:37 AM
18DEC06DCAL-34.wiff	L+B CAL3	N/A	12/7/2018 12:58:37 AM
18DEC06DCAL-35.wiff	CCV1_CAL3	N/A	12/7/2018 1:07:40 AM
18DEC11D-01.wiff	CCV1_ISC_CAL2	N/A	12/11/2018 4:59:04 AM
18DEC11D-02.wiff	Instrument Blank	N/A	12/11/2018 5:08:07 AM
18DEC11D-03.wiff	BLK343003	18343003	12/11/2018 5:17:10 AM
18DEC11D-04.wiff	LCS343003	18343003	12/11/2018 5:26:13 AM
18DEC11D-05.wiff	LCSDA	18343003	12/11/2018 5:35:13 AM
18DEC11D-06.wiff	9927672	18343003	12/11/2018 5:44:13 AM
18DEC11D-07.wiff	9927673	18343003	12/11/2018 5:53:16 AM
18DEC11D-08.wiff	9927674	18343003	12/11/2018 6:02:19 AM
18DEC11D-09.wiff	9927675	18343003	12/11/2018 6:11:22 AM
18DEC11D-10.wiff	9927676	18343003	12/11/2018 6:20:25 AM
18DEC11D-11.wiff	9927677	18343003	12/11/2018 6:29:28 AM
18DEC11D-12.wiff	9927678	18343003	12/11/2018 6:38:28 AM
18DEC11D-13.wiff	CCV2_CAL3	N/A	12/11/2018 6:47:28 AM
18DEC11D-14.wiff	9927679	18343003	12/11/2018 6:56:31 AM
18DEC11D-15.wiff	9927680	18343003	12/11/2018 7:05:34 AM
18DEC11D-16.wiff	solvent	N/A	12/11/2018 7:14:37 AM
18DEC11D-17.wiff	BLK344004	18344004	12/11/2018 7:23:40 AM
18DEC11D-18.wiff	LCS344004	18344004	12/11/2018 7:32:43 AM
18DEC11D-19.wiff	9922703	18344004	12/11/2018 7:41:43 AM
18DEC11D-20.wiff	9922704	18344004	12/11/2018 7:50:43 AM
18DEC11D-21.wiff	9922705	18344004	12/11/2018 7:59:43 AM
18DEC11D-22.wiff	9922706	18344004	12/11/2018 8:08:46 AM
18DEC11D-23.wiff	9922707	18344004	12/11/2018 8:17:46 AM
18DEC11D-24.wiff	9922708	18344004	12/11/2018 8:26:49 AM
18DEC11D-25.wiff	CCV3_CAL4	N/A	12/11/2018 8:35:53 AM
18DEC11D-26.wiff	9922709	18344004	12/11/2018 8:44:53 AM
18DEC11D-27.wiff	9922710	18344004	12/11/2018 8:53:55 AM
18DEC11D-28.wiff	9922712	18344004	12/11/2018 9:02:58 AM
18DEC11D-29.wiff	9922714BKG	18344004	12/11/2018 9:12:01 AM
18DEC11D-30.wiff	9922717	18344004	12/11/2018 9:21:04 AM
18DEC11D-31.wiff	9922718	18344004	12/11/2018 9:30:07 AM
18DEC11D-32.wiff	9922719	18344004	12/11/2018 9:39:10 AM
18DEC11D-33.wiff	9922720	18344004	12/11/2018 9:48:10 AM
18DEC11D-34.wiff	9922721	18344004	12/11/2018 9:57:11 AM
18DEC11D-35.wiff	9922722	18344004	12/11/2018 10:06:10 AM
18DEC11D-36.wiff	CCV4_ISC_CAL2	N/A	12/11/2018 10:15:11 AM
18DEC11D-37.wiff	9922723	18344004	12/11/2018 10:24:14 AM
18DEC11D-38.wiff	9922724	18344004	12/11/2018 10:33:14 AM
18DEC11D-39.wiff	9922715MS	18344004	12/11/2018 10:42:14 AM
18DEC11D-40.wiff	9922716MSD	18344004	12/11/2018 10:51:14 AM
18DEC11D-41.wiff	solvent	N/A	12/11/2018 11:00:13 AM
18DEC11D-42.wiff	BLK338005	18338005	12/11/2018 11:09:14 AM
18DEC11D-43.wiff	LCS338005	18338005	12/11/2018 11:18:13 AM
18DEC11D-44.wiff	9920182BKG	18338005	12/11/2018 11:27:14 AM
18DEC11D-45.wiff	9920185	18338005	12/11/2018 11:36:13 AM

Instrument Name: LM27631

18DEC11D-46.wiff	9920186	18338005	12/11/2018 11:45:14 AM
18DEC11D-47.wiff	9920187	18338005	12/11/2018 11:54:14 AM
18DEC11D-48.wiff	CCV5_CAL3	N/A	12/11/2018 12:03:17 PM
18DEC11D-49.wiff	9920188	18338005	12/11/2018 12:12:20 PM
18DEC11D-50.wiff	9920183MS	18338005	12/11/2018 12:21:23 PM
18DEC11D-51.wiff	9920184MSD	18338005	12/11/2018 12:30:26 PM
18DEC11D-52.wiff	solvent	N/A	12/11/2018 12:39:29 PM
18DEC11D-53.wiff	BLK339012	18339012	12/11/2018 12:48:32 PM
18DEC11D-54.wiff	LCS339012	18339012	12/11/2018 12:57:32 PM
18DEC11D-55.wiff	9920198BKG	18339012	12/11/2018 1:06:32 PM
18DEC11D-56.wiff	9920201	18339012	12/11/2018 1:15:35 PM
18DEC11D-57.wiff	9920202	18339012	12/11/2018 1:24:38 PM
18DEC11D-58.wiff	9920203	18339012	12/11/2018 1:33:41 PM
18DEC11D-59.wiff	9922700	18339012	12/11/2018 1:42:44 PM
18DEC11D-60.wiff	CCV6_CAL4	N/A	12/11/2018 1:51:47 PM
18DEC11D-61.wiff	9922701	18339012	12/11/2018 2:00:50 PM
18DEC11D-62.wiff	9922702	18339012	12/11/2018 2:09:53 PM
18DEC11D-63.wiff	9920199MS	18339012	12/11/2018 2:18:56 PM
18DEC11D-64.wiff	9920200MSD	18339012	12/11/2018 2:27:56 PM
18DEC11D-65.wiff	LCS340014	18340014	12/11/2018 2:36:59 PM
18DEC11D-66.wiff	CCV7_ISC_CAL2	N/A	12/11/2018 2:46:02 PM
18DEC11D-67.wiff	solvent	N/A	12/11/2018 2:55:05 PM
18DEC11D-68.wiff	BLK344020	18344020	12/11/2018 3:04:08 PM
18DEC11D-69.wiff	LCS344020	18344020	12/11/2018 3:13:11 PM
18DEC11D-70.wiff	9920476	18344020	12/11/2018 3:22:14 PM
18DEC11D-71.wiff	9922711	18344020	12/11/2018 3:31:17 PM
18DEC11D-72.wiff	9930102	18344020	12/11/2018 3:40:20 PM
18DEC11D-73.wiff	9930103	18344020	12/11/2018 3:49:23 PM
18DEC11D-74.wiff	9930104	18344020	12/11/2018 3:58:23 PM
18DEC11D-75.wiff	9930105	18344020	12/11/2018 4:07:23 PM
18DEC11D-76.wiff	9930106	18344020	12/11/2018 4:16:23 PM
18DEC11D-77.wiff	9930107	18344020	12/11/2018 4:25:26 PM
18DEC11D-78.wiff	CCV8_CAL3	N/A	12/11/2018 4:34:29 PM
18DEC11D-79.wiff	9931255	18344020	12/11/2018 4:43:32 PM
18DEC11D-80.wiff	9931952BKG	18344020	12/11/2018 4:52:35 PM
18DEC11D-81.wiff	9931953MS	18344020	12/11/2018 5:01:38 PM
18DEC11D-82.wiff	9931954MSD	18344020	12/11/2018 5:10:38 PM
18DEC11D-83.wiff	9931955	18344020	12/11/2018 5:19:41 PM
18DEC11D-84.wiff	solvent	N/A	12/11/2018 5:28:44 PM
18DEC11D-85.wiff	LCS339002	18339002	12/11/2018 5:37:47 PM
18DEC11D-86.wiff	9920648	18339002	12/11/2018 5:46:50 PM
18DEC11D-87.wiff	9920654DL	18339002	12/11/2018 5:55:53 PM
18DEC11D-88.wiff	CCV9_CAL4	N/A	12/11/2018 6:04:56 PM

20 mM Ammonium Acetate in H2O: 782412061833A  
20 mM Ammonium Acetate in 0.5% H2O\Methanol: 782412061833B

Instrument Name: LM27631

Data File Name	Sample ID	Batch No	Analysis Date/Time
18DEC18DCAL-67.wiff	MDL	N/A	12/18/2018 11:25:52 PM
18DEC18DCAL-68.wiff	CAL1	N/A	12/18/2018 11:34:56 PM
18DEC18DCAL-69.wiff	CAL2	N/A	12/18/2018 11:43:56 PM
18DEC18DCAL-70.wiff	CAL3	N/A	12/18/2018 11:52:56 PM
18DEC18DCAL-71.wiff	CAL4	N/A	12/19/2018 12:01:56 AM
18DEC18DCAL-72.wiff	CAL5	N/A	12/19/2018 12:10:55 AM
18DEC18DCAL-73.wiff	CAL6	N/A	12/19/2018 12:19:55 AM
18DEC18DCAL-74.wiff	CAL7	N/A	12/19/2018 12:28:56 AM
18DEC18DCAL-75.wiff	Instrument Blank	N/A	12/19/2018 12:37:59 AM
18DEC18DCAL-76.wiff	ICV	N/A	12/19/2018 12:46:59 AM
18DEC18DCAL-77.wiff	L+B CAL3	N/A	12/19/2018 12:56:02 AM
18DEC18DCAL-78.wiff	CCV1_CAL3	N/A	12/19/2018 1:05:05 AM
18DEC19D-01.wiff	solvent	N/A	12/19/2018 10:07:50 AM
18DEC19D-02.wiff	solvent	N/A	12/19/2018 10:16:53 AM
18DEC19D-03.wiff	solvent	N/A	12/19/2018 10:25:53 AM
18DEC19D-04.wiff	solvent	N/A	12/19/2018 10:34:56 AM
18DEC19D-05.wiff	CCV1_ISC_CAL2	N/A	12/19/2018 10:43:56 AM
18DEC19D-06.wiff	Instrument blank	N/A	12/19/2018 10:52:56 AM
18DEC19D-07.wiff	BLK348011	18348011	12/19/2018 11:01:59 AM
18DEC19D-08.wiff	LCS348011	18348011	12/19/2018 11:10:59 AM
18DEC19D-09.wiff	LCSDA	18348011	12/19/2018 11:19:59 AM
18DEC19D-10.wiff	9934708	18348011	12/19/2018 11:28:59 AM
18DEC19D-11.wiff	9934709	18348011	12/19/2018 11:37:59 AM
18DEC19D-12.wiff	9934710	18348011	12/19/2018 11:47:02 AM
18DEC19D-13.wiff	9934711	18348011	12/19/2018 11:56:02 AM
18DEC19D-14.wiff	9934712	18348011	12/19/2018 12:05:02 PM
18DEC19D-15.wiff	9934714	18348011	12/19/2018 12:14:05 PM
18DEC19D-16.wiff	9934715	18348011	12/19/2018 12:23:05 PM
18DEC19D-17.wiff	CCV2_CAL3	N/A	12/19/2018 12:32:05 PM
18DEC19D-18.wiff	9934716	18348011	12/19/2018 12:41:05 PM
18DEC19D-19.wiff	9934717	18348011	12/19/2018 12:50:05 PM
18DEC19D-20.wiff	9927494RE	18348002	12/19/2018 12:59:05 PM
18DEC19D-21.wiff	9927496RE	18346012	12/19/2018 1:08:05 PM
18DEC19D-22.wiff	solvent	N/A	12/19/2018 1:17:08 PM
18DEC19D-23.wiff	BLK348012	18348012	12/19/2018 1:26:08 PM
18DEC19D-24.wiff	LCS348012	18348012	12/19/2018 1:35:08 PM
18DEC19D-25.wiff	LCSDA	18348012	12/19/2018 1:44:11 PM
18DEC19D-26.wiff	9927672	18348012	12/19/2018 1:53:11 PM
18DEC19D-27.wiff	9934777	18348012	12/19/2018 2:02:11 PM
18DEC19D-28.wiff	9934778	18348012	12/19/2018 2:11:11 PM
18DEC19D-29.wiff	CCV3_CAL4	N/A	12/19/2018 2:20:11 PM
18DEC19D-30.wiff	9934779	18348012	12/19/2018 2:29:11 PM
18DEC19D-31.wiff	9934780	18348012	12/19/2018 2:38:11 PM
18DEC19D-32.wiff	9934781	18348012	12/19/2018 2:47:14 PM
18DEC19D-33.wiff	9934782	18348012	12/19/2018 2:56:18 PM
18DEC19D-34.wiff	9934783	18348012	12/19/2018 3:05:17 PM
18DEC19D-35.wiff	9934784	18348012	12/19/2018 3:14:20 PM
18DEC19D-36.wiff	9934785	18348012	12/19/2018 3:23:20 PM
18DEC19D-37.wiff	9934786	18348012	12/19/2018 3:32:20 PM
18DEC19D-38.wiff	9934787	18348012	12/19/2018 3:41:20 PM
18DEC19D-39.wiff	9934788	18348012	12/19/2018 3:50:20 PM
18DEC19D-40.wiff	CCV4_ISC_CAL2	N/A	12/19/2018 3:59:21 PM
18DEC19D-41.wiff	BLK352017	18352017	12/19/2018 4:08:21 PM
18DEC19D-42.wiff	LCS352017	18352017	12/19/2018 4:17:20 PM
18DEC19D-43.wiff	9927473	18352017	12/19/2018 4:26:23 PM
18DEC19D-44.wiff	9941499	18352017	12/19/2018 4:35:26 PM
18DEC19D-45.wiff	9941500	18352017	12/19/2018 4:44:26 PM

Instrument Name: LM27631

18DEC19D-46.wiff	9941501	18352017	12/19/2018 4:53:26 PM
18DEC19D-47.wiff	9941502	18352017	12/19/2018 5:02:26 PM
18DEC19D-48.wiff	9941509BKG	18352017	12/19/2018 5:11:26 PM
18DEC19D-49.wiff	9941512	18352017	12/19/2018 5:20:26 PM
18DEC19D-50.wiff	9941513	18352017	12/19/2018 5:29:26 PM
18DEC19D-51.wiff	CCV5_CAL3	N/A	12/19/2018 5:38:26 PM
18DEC19D-52.wiff	9941516	18352017	12/19/2018 5:47:29 PM
18DEC19D-53.wiff	9941517	18352017	12/19/2018 5:56:29 PM
18DEC19D-54.wiff	9941518	18352017	12/19/2018 6:05:32 PM
18DEC19D-55.wiff	9941519	18352017	12/19/2018 6:14:35 PM
18DEC19D-56.wiff	9941520	18352017	12/19/2018 6:23:39 PM
18DEC19D-57.wiff	9941510MS	18352017	12/19/2018 6:32:38 PM
18DEC19D-58.wiff	9941511MSD	18352017	12/19/2018 6:41:42 PM
18DEC19D-59.wiff	CCV6_CAL4	N/A	12/19/2018 6:50:45 PM
18DEC19D-60.wiff	BLK352006	18352006	12/19/2018 6:59:45 PM
18DEC19D-61.wiff	LCS352006	18352006	12/19/2018 7:08:45 PM
18DEC19D-62.wiff	9939796	18352006	12/19/2018 7:17:45 PM
18DEC19D-63.wiff	9939797	18352006	12/19/2018 7:26:45 PM
18DEC19D-64.wiff	9939798BKG	18352006	12/19/2018 7:35:45 PM
18DEC19D-65.wiff	9939799MS	18352006	12/19/2018 7:44:45 PM
18DEC19D-66.wiff	9939800MSD	18352006	12/19/2018 7:53:45 PM
18DEC19D-67.wiff	CCV7_ISC_CAL2	N/A	12/19/2018 8:02:45 PM
18DEC19D-68.wiff	BLK352007	18352007	12/19/2018 8:11:48 PM
18DEC19D-69.wiff	LCS352007	18352007	12/19/2018 8:20:48 PM
18DEC19D-70.wiff	9939803	18352007	12/19/2018 8:29:48 PM
18DEC19D-71.wiff	9939804BKG	18352007	12/19/2018 8:38:48 PM
18DEC19D-72.wiff	9939807	18352007	12/19/2018 8:47:48 PM
18DEC19D-73.wiff	9939808	18352007	12/19/2018 8:56:51 PM
18DEC19D-74.wiff	9939809	18352007	12/19/2018 9:05:54 PM
18DEC19D-75.wiff	9939810	18352007	12/19/2018 9:14:57 PM
18DEC19D-76.wiff	9939811	18352007	12/19/2018 9:24:00 PM
18DEC19D-77.wiff	9939812	18352007	12/19/2018 9:33:00 PM
18DEC19D-78.wiff	CCV8_CAL3	N/A	12/19/2018 9:42:00 PM
18DEC19D-79.wiff	9939805MS	18352007	12/19/2018 9:51:00 PM
18DEC19D-80.wiff	9939806MSD	18352007	12/19/2018 10:00:03 PM
18DEC19D-81.wiff	solvent	N/A	12/19/2018 10:09:03 PM
18DEC19D-82.wiff	BLK352019	18352019	12/19/2018 10:18:03 PM
18DEC19D-83.wiff	LCS352019	18352019	12/19/2018 10:27:03 PM
18DEC19D-84.wiff	9941672BKG	18352019	12/19/2018 10:36:03 PM
18DEC19D-85.wiff	9941679	18352019	12/19/2018 10:45:06 PM
18DEC19D-86.wiff	9941680	18352019	12/19/2018 10:54:06 PM
18DEC19D-87.wiff	9941673MS	18352019	12/19/2018 11:03:09 PM
18DEC19D-88.wiff	9941674MSD	18352019	12/19/2018 11:12:09 PM
18DEC19D-89.wiff	CCV9_CAL4	N/A	12/19/2018 11:21:12 PM
18DEC19D-90.wiff	solvent	N/A	12/19/2018 11:30:12 PM

20mM Ammonium Acetate in H2O: 782412211833A  
20mM Ammonium Acetate in 0.5% H2O\Methanol: 782412211833B



**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

Sample File Name	Acquisition Date	Sample ID	Sample Name
18DEC06DCAL-25.wiff	12/6/2018 11:37:31 PM	CALBRN11833C	CAL1
18DEC06DCAL-26.wiff	12/6/2018 11:46:31 PM	CALBRN21833C	CAL2
18DEC06DCAL-27.wiff	12/6/2018 11:55:31 PM	CALBRN31833B	CAL3
18DEC06DCAL-28.wiff	12/7/2018 12:04:31 AM	CALBRN41833B	CAL4
18DEC06DCAL-29.wiff	12/7/2018 12:13:31 AM	CALBRN51833B	CAL5
18DEC06DCAL-30.wiff	12/7/2018 12:22:31 AM	CALBRN61833B	CAL6
18DEC06DCAL-31.wiff	12/7/2018 12:31:34 AM	CALBRN71833B	CAL7

**CAL3 Injection Standard Areas**

Sample Name	Injection Std Name	Injection Std Area
CAL3	13C3-PFBA	825688.9
CAL3	13C2-PFOA	449802.8
CAL3	13C4-PFOS	276858.3
CAL3	13C2-PFDA	315428.3

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**Response Factor Table**

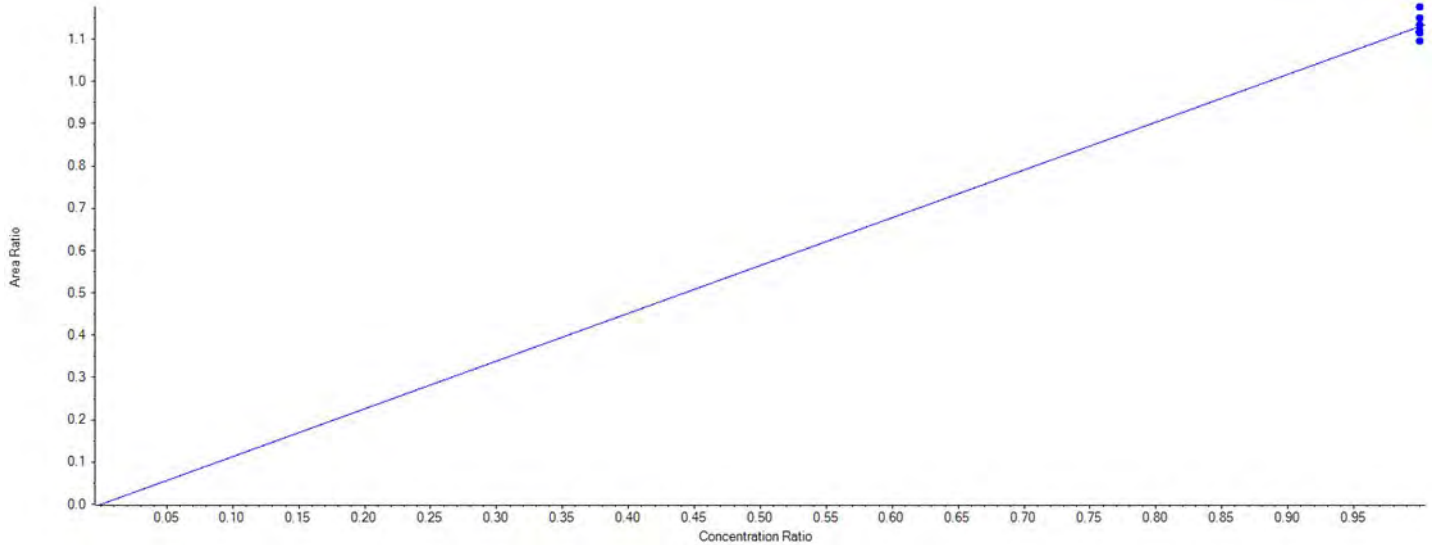
Analyte Name	CAL 1	CAL 2	CAL 3	CAL 4	CAL 5	CAL 6	CAL 7	%RSD	Limit	OOS	r <sup>2</sup>	OOS
PFBA	1.098	0.864	1.025	0.908	0.935	0.889	N/A	9	20		0.999	
PFPeA	1.142	0.890	1.054	0.950	0.988	0.931	N/A	8	20		0.999	
PFBS	1.074	0.869	1.046	0.934	0.986	0.937	0.928	7	20		0.999	
4:2-FTS	1.810	1.498	2.080	1.740	1.906	1.666	N/A	10	20		0.995	
PFHxA	1.413	1.196	1.354	1.279	1.191	1.099	N/A	8	20		0.997	
PFPeS	0.557	0.443	0.517	0.455	0.491	0.476	0.462	8	20		0.999	
PFHpA	1.855	1.543	1.663	1.546	1.489	N/A	N/A	8	20		0.999	
PFHxS	0.972	0.820	1.018	0.981	0.941	0.975	1.024	7	20		0.999	
6:2-FTS	1.956	2.095	2.080	1.928	1.944	1.889	N/A	4	20		1.000	
PFHpS	0.839	0.839	0.949	0.920	0.853	0.834	0.871	5	20		0.999	
PFOA	1.084	0.875	1.037	0.964	0.996	0.947	0.876	7	20		0.997	
PFOS	1.189	1.039	1.184	1.078	1.076	1.152	1.174	5	20		0.999	
PFNA	1.483	1.175	1.504	1.389	1.393	1.333	N/A	8	20		0.999	
PFNS	0.761	0.593	0.831	0.757	0.755	0.760	0.730	9	20		0.999	
PFDA	1.055	0.842	1.011	0.932	0.983	0.894	0.860	8	20		0.998	
8:2-FTS	2.370	2.067	2.235	2.167	2.377	2.151	N/A	5	20		0.998	
PFOSA	0.984	0.811	1.075	0.978	1.010	1.007	0.931	8	20		0.998	
NMeFOSAA	0.778	0.759	0.847	0.823	0.821	0.733	0.747	5	20		0.998	
PFDS	0.585	0.491	0.650	0.603	0.568	0.604	0.588	8	20		0.999	
PFUnDA	1.980	1.615	1.842	1.678	1.682	1.601	1.631	8	20		1.000	
NEtFOSAA	1.266	0.831	1.102	1.000	0.967	0.993	N/A	13	20		0.999	
PFDODA	1.236	0.818	1.031	0.967	0.992	0.927	N/A	13	20		0.999	
10:2-FTS	1.450	1.610	1.956	1.824	2.334	1.839	1.685	14	20		0.988	
NMePFOSAE	1.322	1.090	1.326	1.209	1.332	1.181	1.091	8	20		0.995	
NMePFOSA	1.080	0.882	1.056	0.997	1.008	0.948	1.007	6	20		0.999	
PFDoS	0.325	0.274	0.330	0.305	0.308	0.315	0.314	5	20		1.000	
NEtPFOSAE	1.601	1.613	1.743	1.593	1.605	1.468	1.468	6	20		0.999	
NEtPFOSA	0.937	1.097	1.218	1.016	1.129	1.054	1.022	8	20		0.999	
PFTrDA	0.811	0.731	0.894	0.836	0.810	0.728	N/A	7	20		0.996	
PFTeDA	0.998	0.862	1.003	0.910	0.896	0.855	N/A	6	20		0.999	
PFHxDA	0.509	0.379	0.466	0.390	0.411	0.397	0.397	11	20		1.000	
PFODA	0.338	0.285	0.327	0.293	0.313	0.309	0.314	5	20		1.000	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

E13C4-PFBA

$y = 1.12976 x$  (std. dev. = 0.02669) (weighting: None)



Extraction Standard Calibration Verification

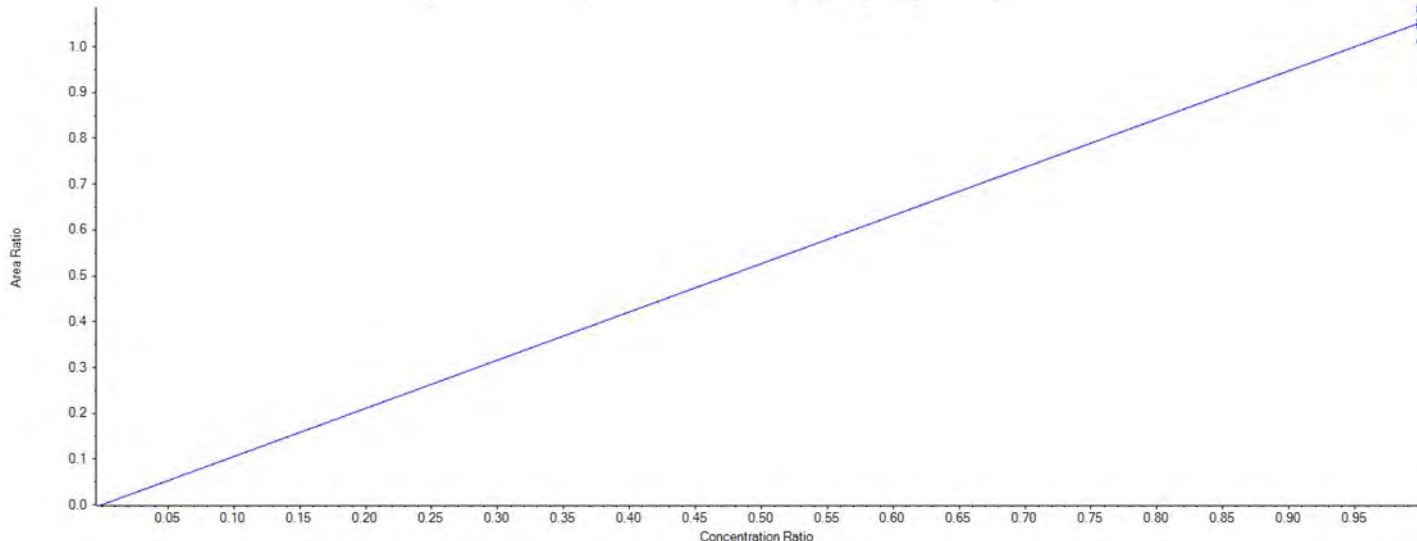
Sample Name	E13C4-PFBA Area	13C3-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	898694.92	804002.52	True	5.00	1.118	3.28	1.000	5.000	4.947	-1	30	
CAL2	956879.62	813532.84	True	5.00	1.176	3.27	1.000	5.000	5.206	4	30	
CAL3	936631.96	825688.88	True	5.00	1.134	3.27	1.000	5.000	5.020	0	30	
CAL4	937321.23	856263.90	True	5.00	1.095	3.27	1.000	5.000	4.845	-3	30	
CAL5	852222.77	764407.02	True	5.00	1.115	3.27	1.000	5.000	4.934	-1	30	
CAL6	779560.55	677845.97	True	5.00	1.150	3.27	1.000	5.000	5.090	2	30	
CAL7	674364.92	601926.90	True	5.00	1.120	3.27	1.000	5.000	4.958	-1	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C5-PFPeA**

$y = 1.05278 x$  (std. dev. = 0.02487) (weighting: None)



**Extraction Standard Calibration Verification**

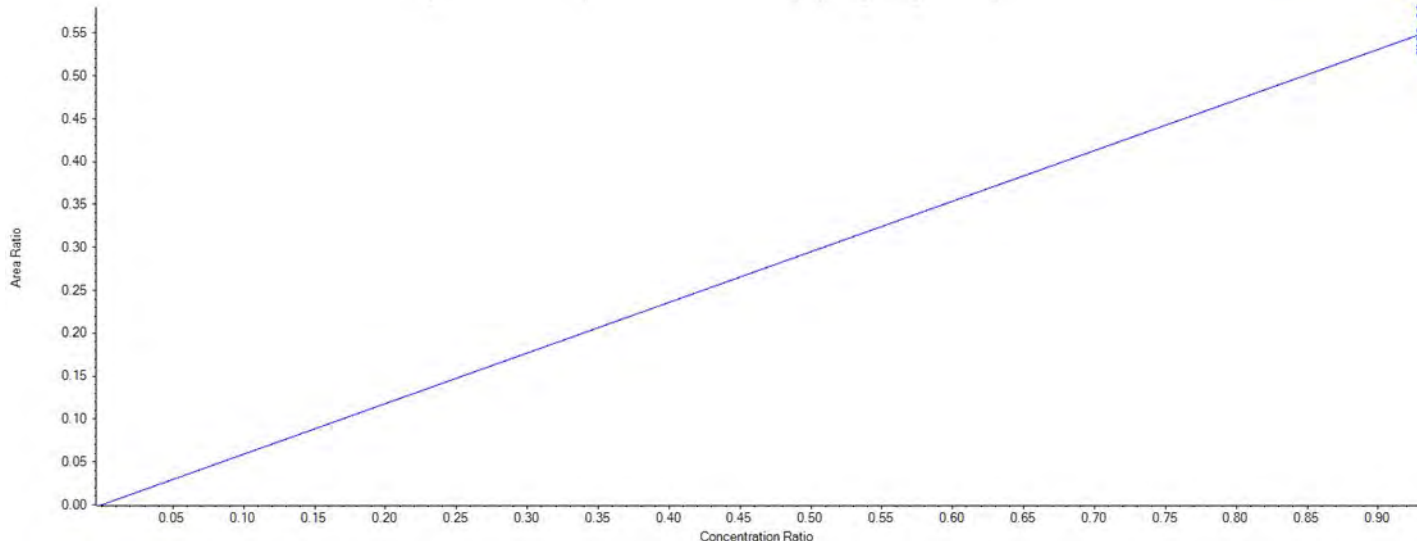
Sample Name	E13C5-PFPeA Area	13C3-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	841151.01	804002.52	True	5.00	1.046	3.77	1.150	5.000	4.969	-1	30	
CAL2	852542.70	813532.84	True	5.00	1.048	3.77	1.150	5.000	4.977	0	30	
CAL3	860904.33	825688.88	True	5.00	1.043	3.77	1.150	5.000	4.952	-1	30	
CAL4	865794.49	856263.90	True	5.00	1.011	3.77	1.150	5.000	4.802	-4	30	
CAL5	807458.25	764407.02	True	5.00	1.056	3.77	1.150	5.000	5.017	0	30	
CAL6	735887.05	677845.97	True	5.00	1.086	3.77	1.150	5.000	5.156	3	30	
CAL7	649808.28	601926.90	True	5.00	1.080	3.77	1.150	5.000	5.127	3	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

E13C3-PFBS

$y = 0.58987 x$  (std. dev. = 0.02171) (weighting: None)



Extraction Standard Calibration Verification

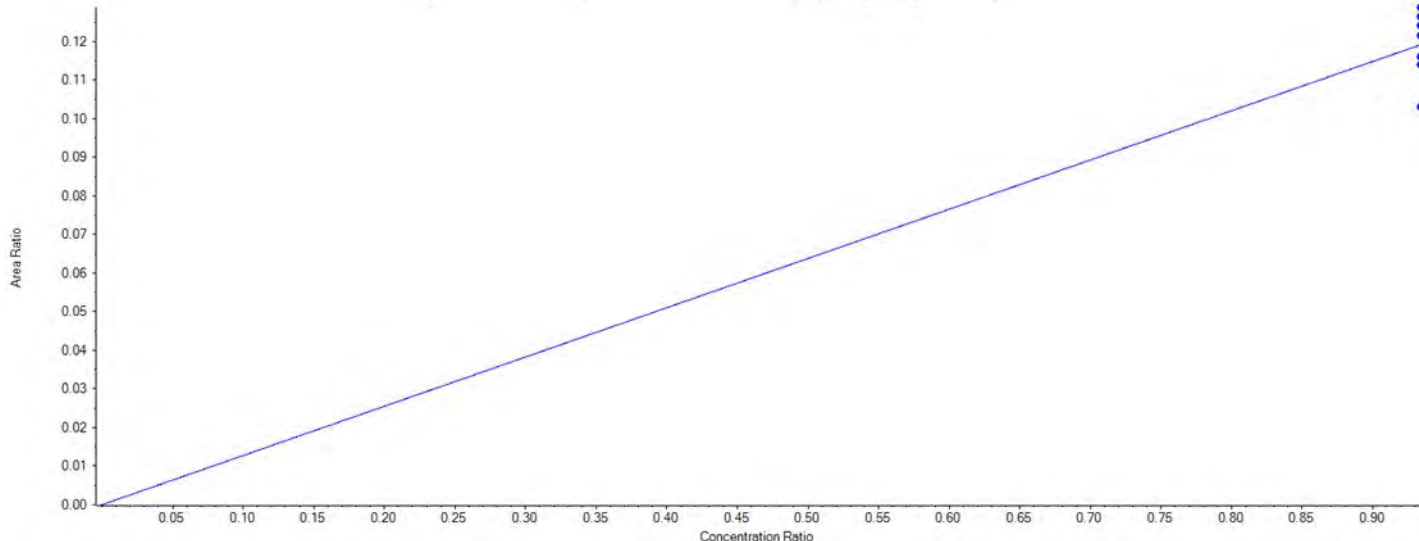
Sample Name	E13C3-PFBS Area	13C3-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	426818.09	804002.52	True	5.00	0.531	3.82	1.170	4.650	4.500	-3	30	
CAL2	449605.58	813532.84	True	5.00	0.553	3.82	1.170	4.650	4.685	1	30	
CAL3	442018.22	825688.88	True	5.00	0.535	3.82	1.170	4.650	4.538	-2	30	
CAL4	451275.83	856263.90	True	5.00	0.527	3.82	1.170	4.650	4.467	-4	30	
CAL5	415721.12	764407.02	True	5.00	0.544	3.82	1.170	4.650	4.610	-1	30	
CAL6	392877.27	677845.97	True	5.00	0.580	3.82	1.170	4.650	4.913	6	30	
CAL7	343547.87	601926.90	True	5.00	0.571	3.82	1.170	4.650	4.838	4	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

E13C2-4:2-FTS

$y = 0.12760 x$  (std. dev. = 0.00951) (weighting: None)



Extraction Standard Calibration Verification

Sample Name	E13C2-4:2-FTS Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	53888.76	433955.28	True	5.00	0.124	4.14	0.840	4.670	4.866	4	30	
CAL2	54114.25	427587.52	True	5.00	0.127	4.13	0.840	4.670	4.959	6	30	
CAL3	46397.66	449802.77	True	5.00	0.103	4.14	0.840	4.670	4.042	-13	30	
CAL4	53204.09	467059.35	True	5.00	0.114	4.13	0.840	4.670	4.464	-4	30	
CAL5	49011.43	422543.93	True	5.00	0.116	4.13	0.840	4.670	4.545	-3	30	
CAL6	49555.02	407328.46	True	5.00	0.122	4.13	0.840	4.670	4.767	2	30	
CAL7	49950.52	387778.11	True	5.00	0.129	4.13	0.840	4.670	5.047	8	30	

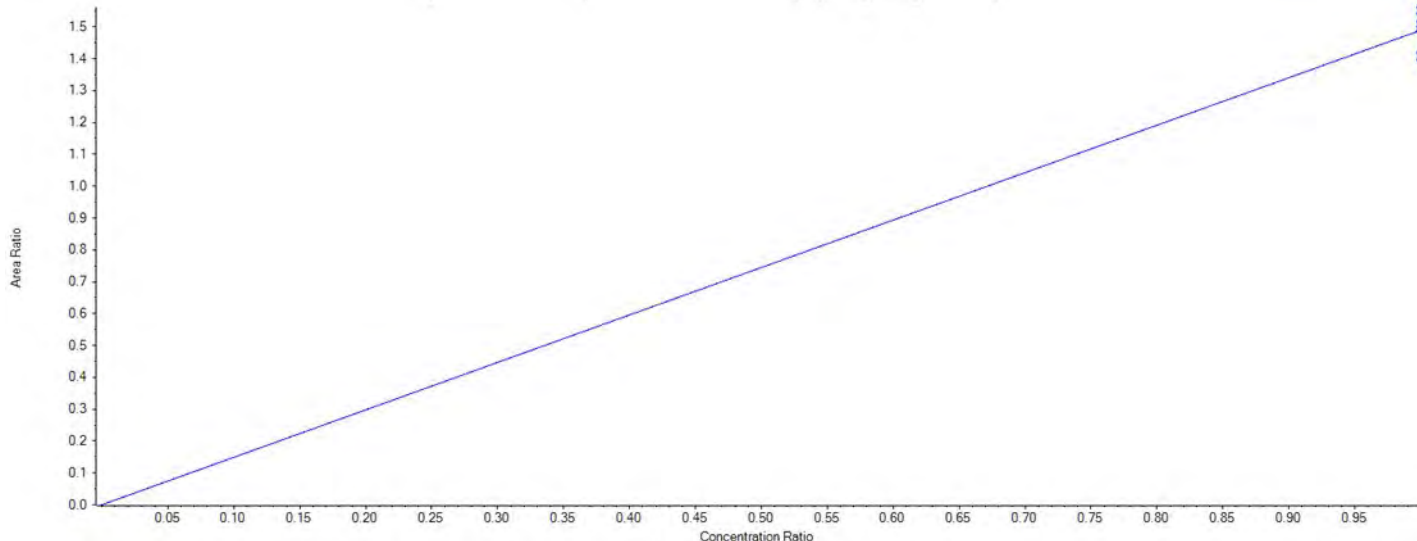


**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C5-PFHxA**

$y = 1.48923 x$  (std. dev. = 0.06056) (weighting: None)



**Extraction Standard Calibration Verification**

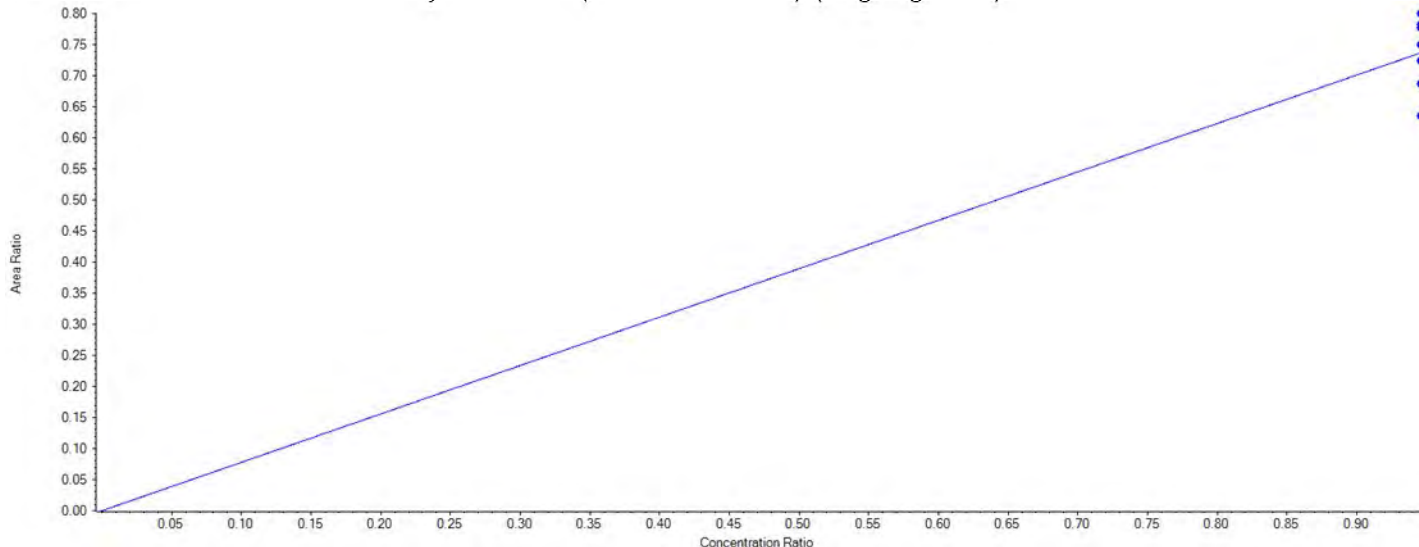
Sample Name	E13C5-PFHxA Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	658089.96	433955.28	True	5.00	1.516	4.17	0.850	5.000	5.092	2	30	
CAL2	667261.24	427587.52	True	5.00	1.561	4.16	0.850	5.000	5.239	5	30	
CAL3	675673.64	449802.77	True	5.00	1.502	4.17	0.850	5.000	5.043	1	30	
CAL4	653028.28	467059.35	True	5.00	1.398	4.17	0.850	5.000	4.694	-6	30	
CAL5	650822.82	422543.93	True	5.00	1.540	4.17	0.850	5.000	5.171	3	30	
CAL6	606649.18	407328.46	True	5.00	1.489	4.16	0.850	5.000	5.000	0	30	
CAL7	549743.17	387778.11	True	5.00	1.418	4.16	0.850	5.000	4.760	-5	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

E13C3-PFHxS

$y = 0.77953 x$  (std. dev. = 0.06251) (weighting: None)



Extraction Standard Calibration Verification

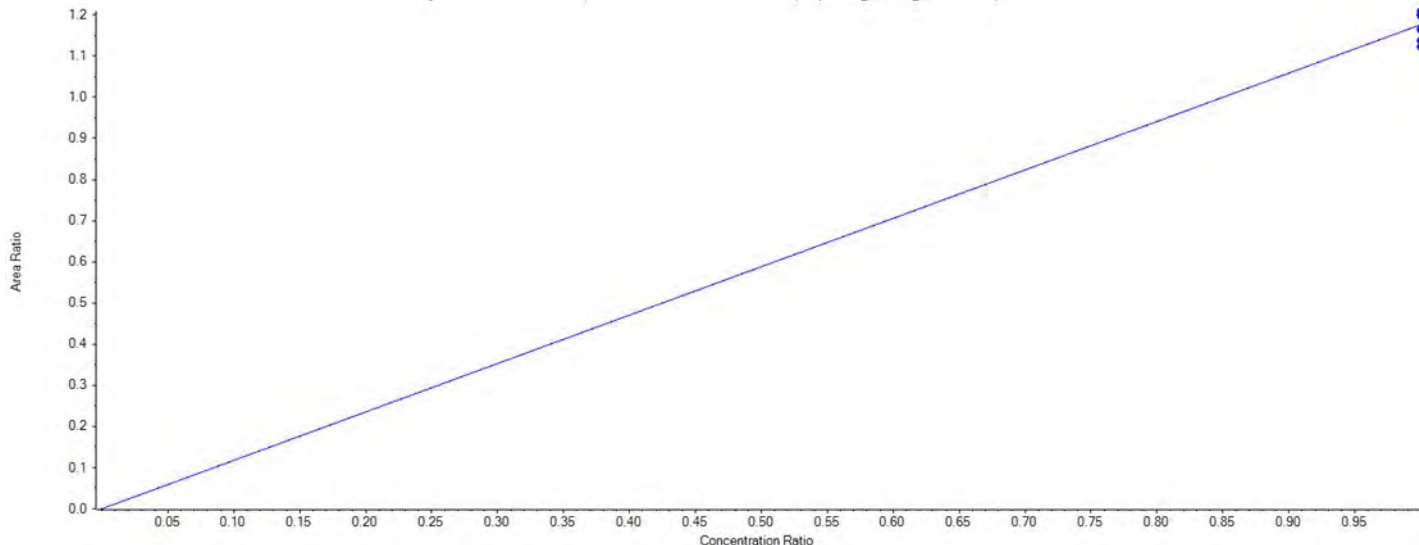
Sample Name	E13C3-PFHxS Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	339911.13	433955.28	True	5.00	0.783	4.56	0.930	4.730	5.024	6	30	
CAL2	342350.12	427587.52	True	5.00	0.801	4.55	0.930	4.730	5.135	9	30	
CAL3	337878.72	449802.77	True	5.00	0.751	4.56	0.930	4.730	4.818	2	30	
CAL4	321174.93	467059.35	True	5.00	0.688	4.56	0.930	4.730	4.411	-7	30	
CAL5	328924.25	422543.93	True	5.00	0.778	4.56	0.930	4.730	4.993	6	30	
CAL6	295455.62	407328.46	True	5.00	0.725	4.56	0.930	4.730	4.652	-2	30	
CAL7	246441.16	387778.11	True	5.00	0.636	4.55	0.920	4.730	4.076	-14	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C4-PFHpA**

$y = 1.17612 x$  (std. dev. = 0.03458) (weighting: None)



**Extraction Standard Calibration Verification**

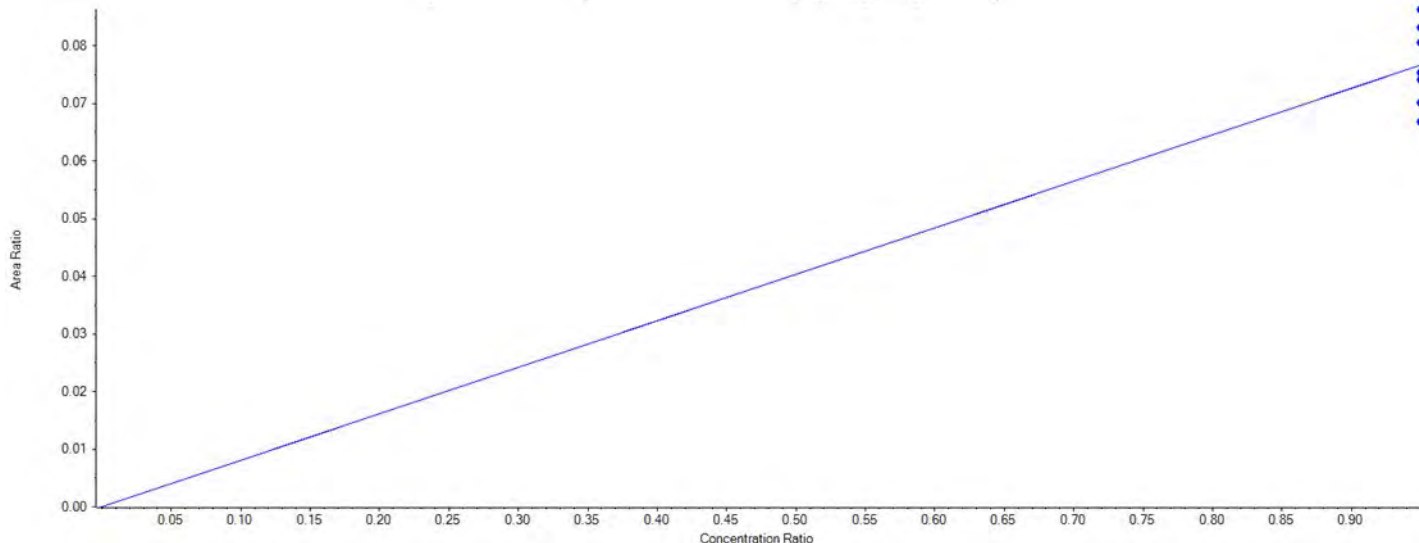
Sample Name	E13C4-PFHpA Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	505550.33	433955.28	True	5.00	1.165	4.56	0.920	5.000	4.953	-1	30	
CAL2	513029.29	427587.52	True	5.00	1.200	4.55	0.920	5.000	5.101	2	30	
CAL3	543346.60	449802.77	True	5.00	1.208	4.56	0.930	5.000	5.135	3	30	
CAL4	530667.18	467059.35	True	5.00	1.136	4.55	0.920	5.000	4.830	-3	30	
CAL5	506360.31	422543.93	True	5.00	1.198	4.56	0.920	5.000	5.095	2	30	
CAL6	489476.90	407328.46	True	5.00	1.202	4.55	0.920	5.000	5.109	2	30	
CAL7	435799.63	387778.11	True	5.00	1.124	4.55	0.920	5.000	4.778	-4	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C2-6:2-FTS**

$y = 0.08071 x$  (std. dev. = 0.00740) (weighting: None)



**Extraction Standard Calibration Verification**

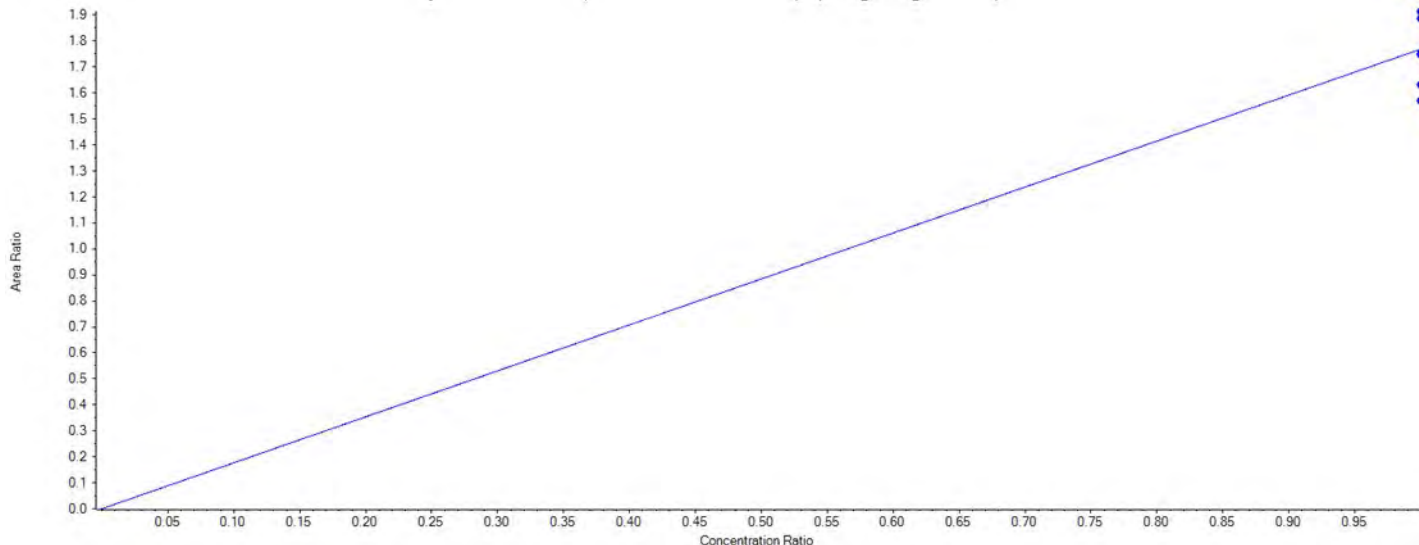
Sample Name	E13C2-6:2-FTS Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	37457.50	433955.28	True	5.00	0.086	4.92	1.000	4.750	5.347	13	30	
CAL2	35543.06	427587.52	True	5.00	0.083	4.91	1.000	4.750	5.150	8	30	
CAL3	36276.48	449802.77	True	5.00	0.081	4.91	1.000	4.750	4.996	5	30	
CAL4	35211.09	467059.35	True	5.00	0.075	4.91	1.000	4.750	4.670	-2	30	
CAL5	31346.83	422543.93	True	5.00	0.074	4.91	1.000	4.750	4.596	-3	30	
CAL6	27234.78	407328.46	True	5.00	0.067	4.91	1.000	4.750	4.142	-13	30	
CAL7	27219.54	387778.11	True	5.00	0.070	4.91	1.000	4.750	4.349	-8	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C8-PFOA**

$y = 1.76883 x$  (std. dev. = 0.13398) (weighting: None)



**Extraction Standard Calibration Verification**

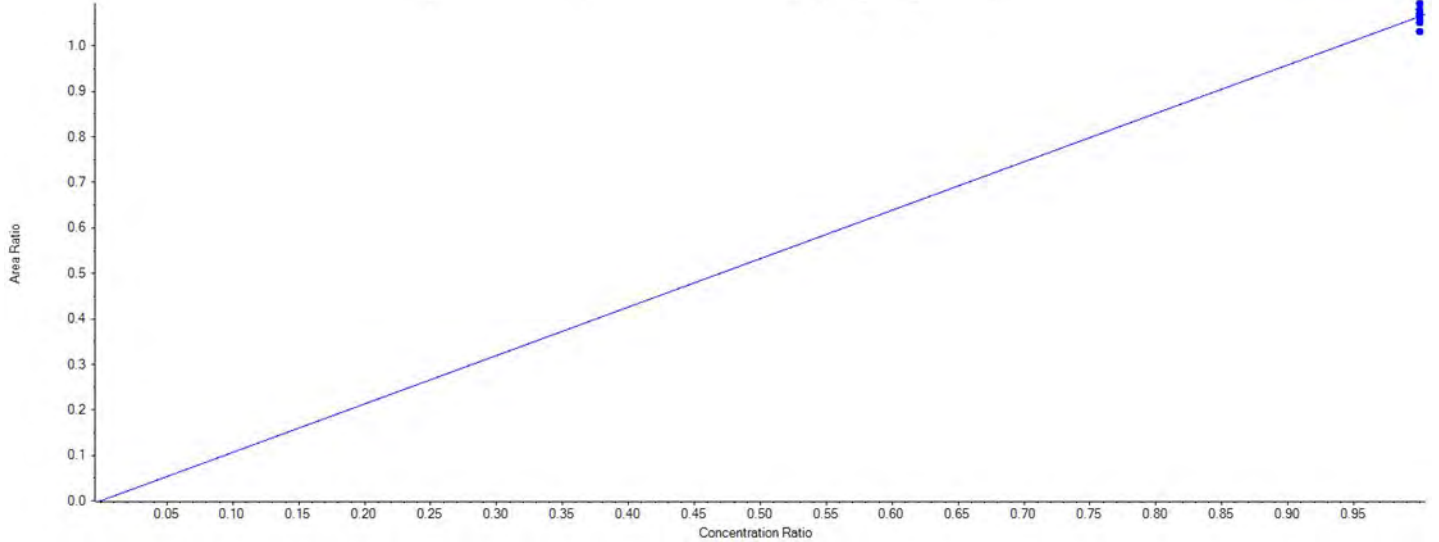
Sample Name	E13C8-PFOA Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	818121.26	433955.28	True	5.00	1.885	4.93	1.000	5.000	5.329	7	30	
CAL2	818119.44	427587.52	True	5.00	1.913	4.92	1.000	5.000	5.408	8	30	
CAL3	847979.16	449802.77	True	5.00	1.885	4.92	1.000	5.000	5.329	7	30	
CAL4	816400.08	467059.35	True	5.00	1.748	4.92	1.000	5.000	4.941	-1	30	
CAL5	739531.43	422543.93	True	5.00	1.750	4.93	1.000	5.000	4.947	-1	30	
CAL6	664219.19	407328.46	True	5.00	1.631	4.92	1.000	5.000	4.609	-8	30	
CAL7	608500.38	387778.11	True	5.00	1.569	4.92	1.000	5.000	4.436	-11	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

E13C8-PFOS

$y = 1.06511 x$  (std. dev. = 0.02011) (weighting: None)



Extraction Standard Calibration Verification

Sample Name	E13C8-PFOS Area	13C4-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	296771.13	274852.70	True	4.78	1.080	5.26	1.000	4.780	4.846	1	30	
CAL2	308155.48	287749.94	True	4.78	1.071	5.25	1.000	4.780	4.806	1	30	
CAL3	294019.28	276858.25	True	4.78	1.062	5.26	1.000	4.780	4.766	0	30	
CAL4	299310.50	284903.08	True	4.78	1.051	5.25	1.000	4.780	4.715	-1	30	
CAL5	286479.93	261977.37	True	4.78	1.094	5.26	1.000	4.780	4.908	3	30	
CAL6	255714.77	247949.79	True	4.78	1.031	5.25	1.000	4.780	4.628	-3	30	
CAL7	231168.31	216503.60	True	4.78	1.068	5.25	1.000	4.780	4.792	0	30	

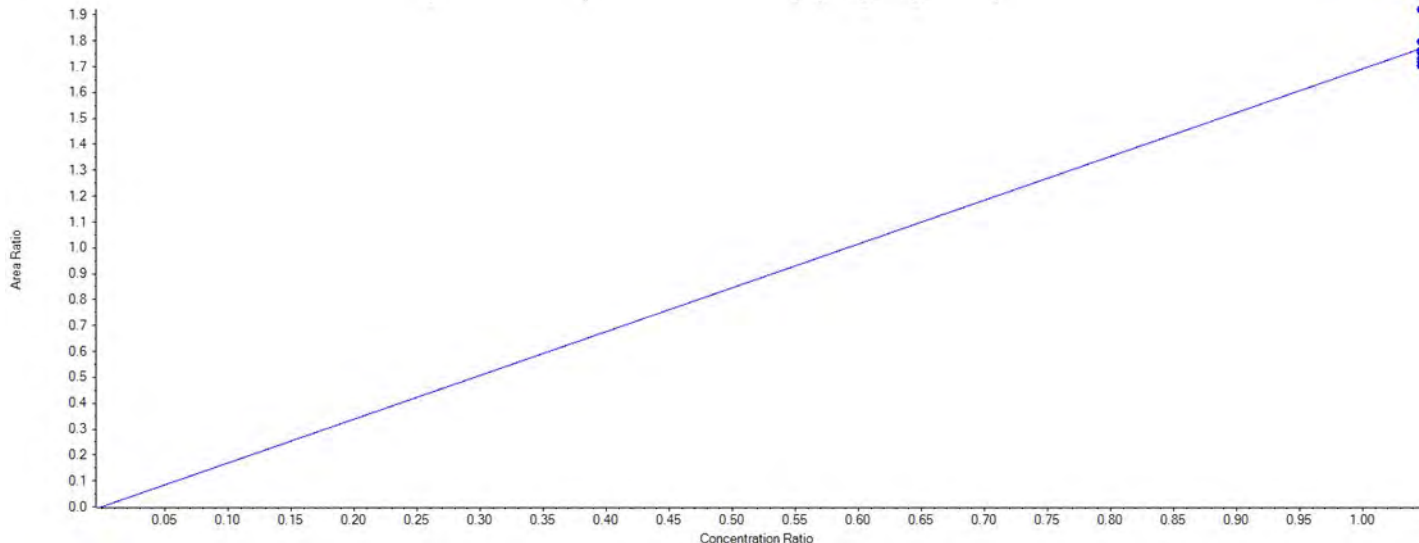


DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

E13C9-PFNA

$y = 1.69155 x$  (std. dev. = 0.07028) (weighting: None)



Extraction Standard Calibration Verification

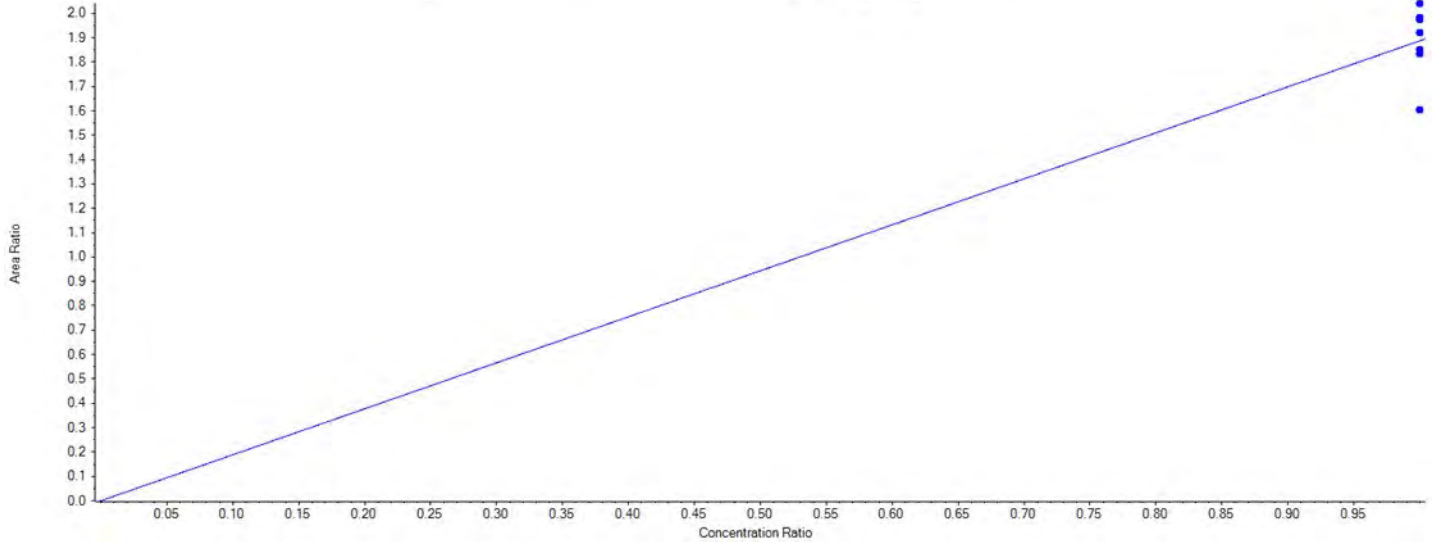
Sample Name	E13C9-PFNA Area	13C4-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	472343.16	274852.70	True	4.78	1.719	5.27	1.000	5.000	4.856	-3	30	
CAL2	489864.82	287749.94	True	4.78	1.702	5.27	1.000	5.000	4.811	-4	30	
CAL3	487999.89	276858.25	True	4.78	1.763	5.27	1.000	5.000	4.981	0	30	
CAL4	492781.53	284903.08	True	4.78	1.730	5.27	1.000	5.000	4.888	-2	30	
CAL5	459963.38	261977.37	True	4.78	1.756	5.27	1.000	5.000	4.961	-1	30	
CAL6	445443.05	247949.79	True	4.78	1.797	5.27	1.000	5.000	5.077	2	30	
CAL7	415771.23	216503.60	True	4.78	1.920	5.27	1.000	5.000	5.427	9	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C6-PFDA**

$y = 1.88679 x$  (std. dev. = 0.14388) (weighting: None)



**Extraction Standard Calibration Verification**

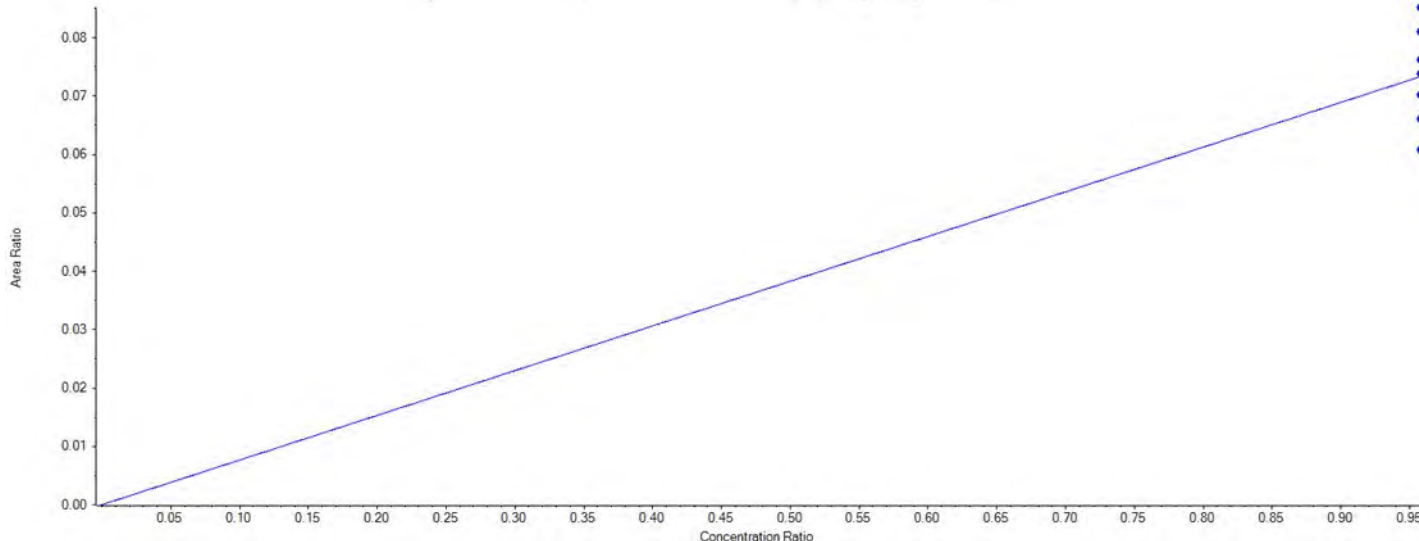
Sample Name	E13C6-PFDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	610780.80	330011.01	True	5.00	1.851	5.58	1.000	5.000	4.905	-2	30	
CAL2	620021.26	303983.96	True	5.00	2.040	5.58	1.000	5.000	5.405	8	30	
CAL3	622094.83	315428.26	True	5.00	1.972	5.58	1.000	5.000	5.226	5	30	
CAL4	611644.12	381032.92	True	5.00	1.605	5.58	1.000	5.000	4.254	-15	30	
CAL5	550668.27	286525.96	True	5.00	1.922	5.58	1.000	5.000	5.093	2	30	
CAL6	541153.24	272997.03	True	5.00	1.982	5.58	1.000	5.000	5.253	5	30	
CAL7	491017.31	267511.10	True	5.00	1.836	5.58	1.000	5.000	4.864	-3	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

E13C2-8:2-FTS

$y = 0.07659 x$  (std. dev. = 0.00876) (weighting: None)



Extraction Standard Calibration Verification

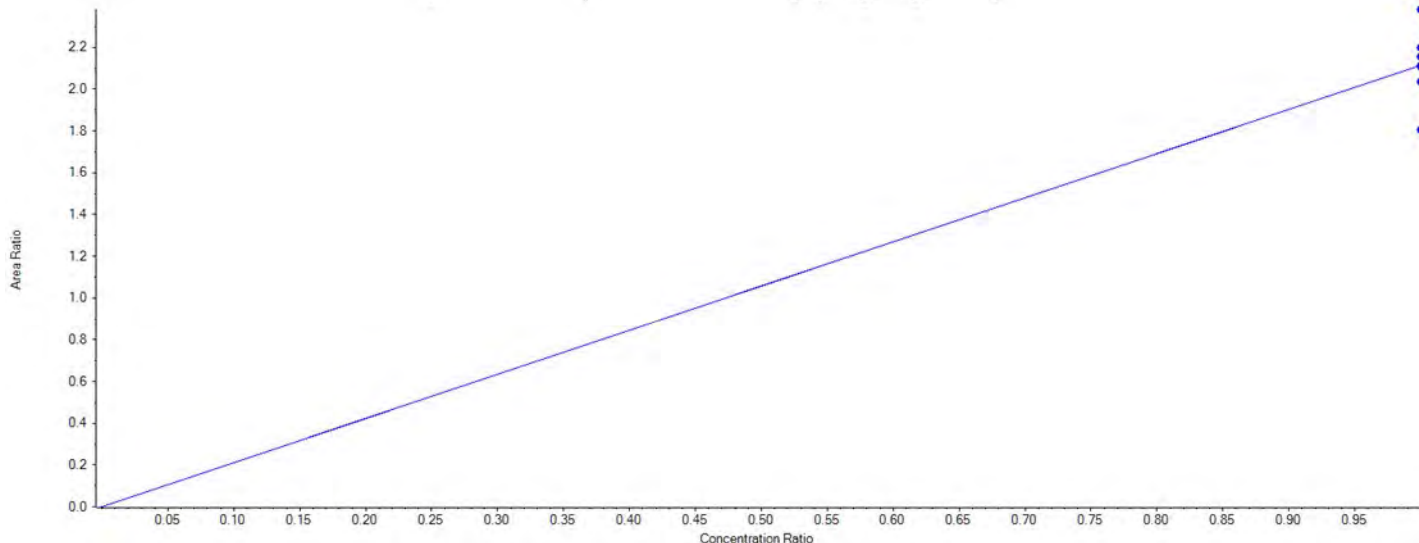
Sample Name	E13C2-8:2-FTS Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	23191.69	330011.01	True	5.00	0.070	5.59	1.000	4.790	4.588	-4	30	
CAL2	25892.25	303983.96	True	5.00	0.085	5.58	1.000	4.790	5.561	16	30	
CAL3	25542.30	315428.26	True	5.00	0.081	5.59	1.000	4.790	5.287	10	30	
CAL4	23195.67	381032.92	True	5.00	0.061	5.58	1.000	4.790	3.974	-17	30	
CAL5	18960.22	286525.96	True	5.00	0.066	5.58	1.000	4.790	4.320	-10	30	
CAL6	20179.01	272997.03	True	5.00	0.074	5.58	1.000	4.790	4.826	1	30	
CAL7	20381.41	267511.10	True	5.00	0.076	5.58	1.000	4.790	4.974	4	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C8-PFOSA**

$y = 2.11408 x$  (std. dev. = 0.17387) (weighting: None)



**Extraction Standard Calibration Verification**

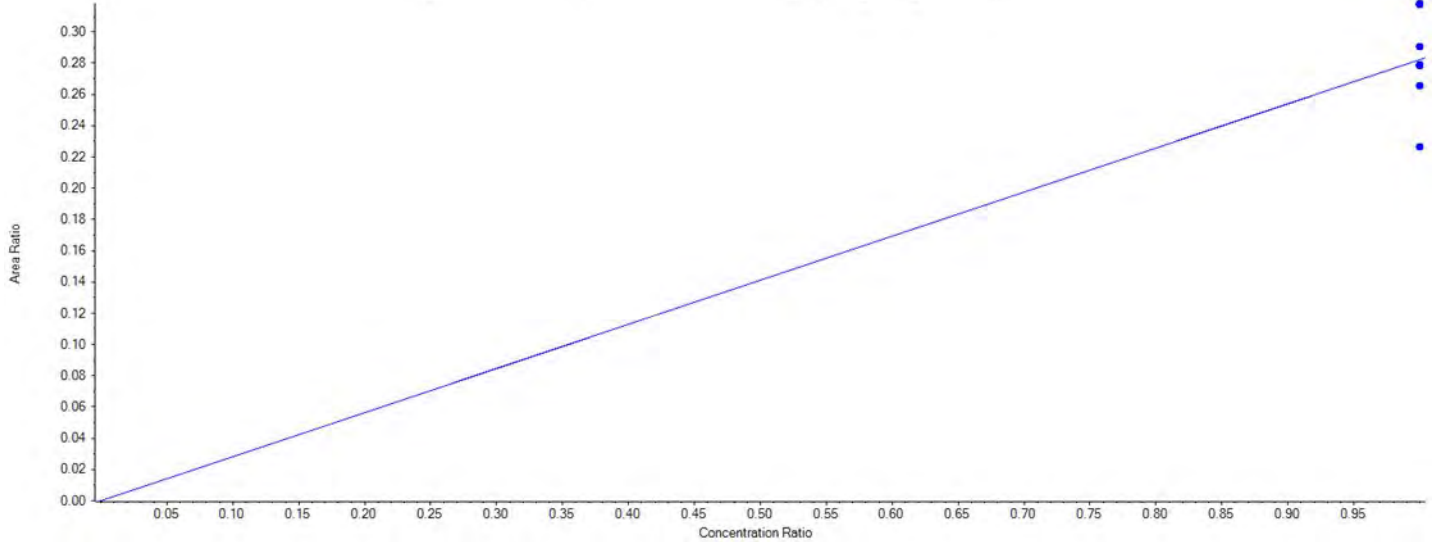
Sample Name	E13C8-PFOSA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	695258.63	330011.01	True	5.00	2.107	5.67	1.010	5.000	4.983	0	30	
CAL2	723822.87	303983.96	True	5.00	2.381	5.66	1.020	5.000	5.632	13	30	
CAL3	693861.54	315428.26	True	5.00	2.200	5.66	1.010	5.000	5.203	4	30	
CAL4	688204.51	381032.92	True	5.00	1.806	5.66	1.020	5.000	4.272	-15	30	
CAL5	617622.80	286525.96	True	5.00	2.156	5.67	1.020	5.000	5.098	2	30	
CAL6	576971.52	272997.03	True	5.00	2.113	5.66	1.010	5.000	4.999	0	30	
CAL7	544579.33	267511.10	True	5.00	2.036	5.66	1.010	5.000	4.815	-4	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**Ed3-NMeFOSAA**

$y = 0.28214 x$  (std. dev. = 0.03172) (weighting: None)



**Extraction Standard Calibration Verification**

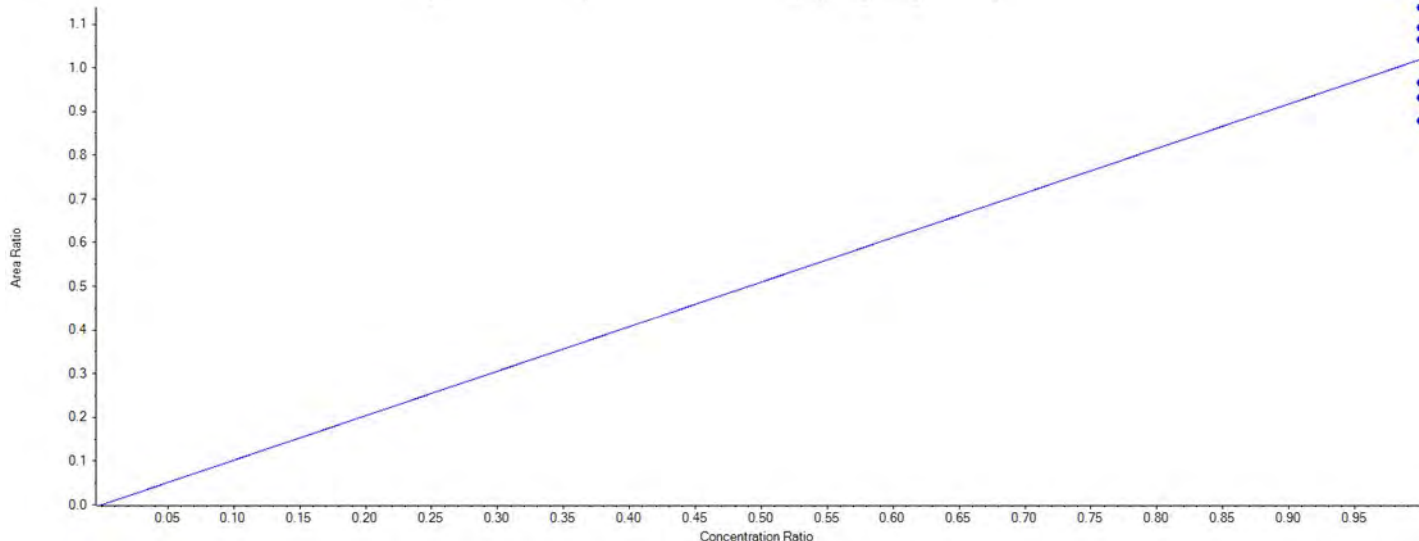
Sample Name	Ed3-NMeFOSAA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	91943.99	330011.01	True	5.00	0.279	5.73	1.030	5.000	4.937	-1	30	
CAL2	84870.09	303983.96	True	5.00	0.279	5.72	1.030	5.000	4.948	-1	30	
CAL3	83733.38	315428.26	True	5.00	0.265	5.73	1.030	5.000	4.704	-6	30	
CAL4	86138.32	381032.92	True	5.00	0.226	5.72	1.030	5.000	4.006	-20	30	
CAL5	83194.53	286525.96	True	5.00	0.290	5.72	1.030	5.000	5.146	3	30	
CAL6	86838.40	272997.03	True	5.00	0.318	5.72	1.030	5.000	5.637	13	30	
CAL7	84863.12	267511.10	True	5.00	0.317	5.72	1.030	5.000	5.622	12	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**E13C7-PFUnDA**

$y = 1.01928 x$  (std. dev. = 0.09441) (weighting: None)



**Extraction Standard Calibration Verification**

Sample Name	E13C7-PFUnDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	318852.78	330011.01	True	5.00	0.966	5.85	1.050	5.000	4.740	-5	30	
CAL2	345908.67	303983.96	True	5.00	1.138	5.84	1.050	5.000	5.582	12	30	
CAL3	335572.48	315428.26	True	5.00	1.064	5.85	1.050	5.000	5.219	4	30	
CAL4	335166.97	381032.92	True	5.00	0.880	5.85	1.050	5.000	4.315	-14	30	
CAL5	305265.77	286525.96	True	5.00	1.065	5.85	1.050	5.000	5.226	5	30	
CAL6	297859.04	272997.03	True	5.00	1.091	5.85	1.050	5.000	5.352	7	30	
CAL7	249018.66	267511.10	True	5.00	0.931	5.84	1.050	5.000	4.566	-9	30	

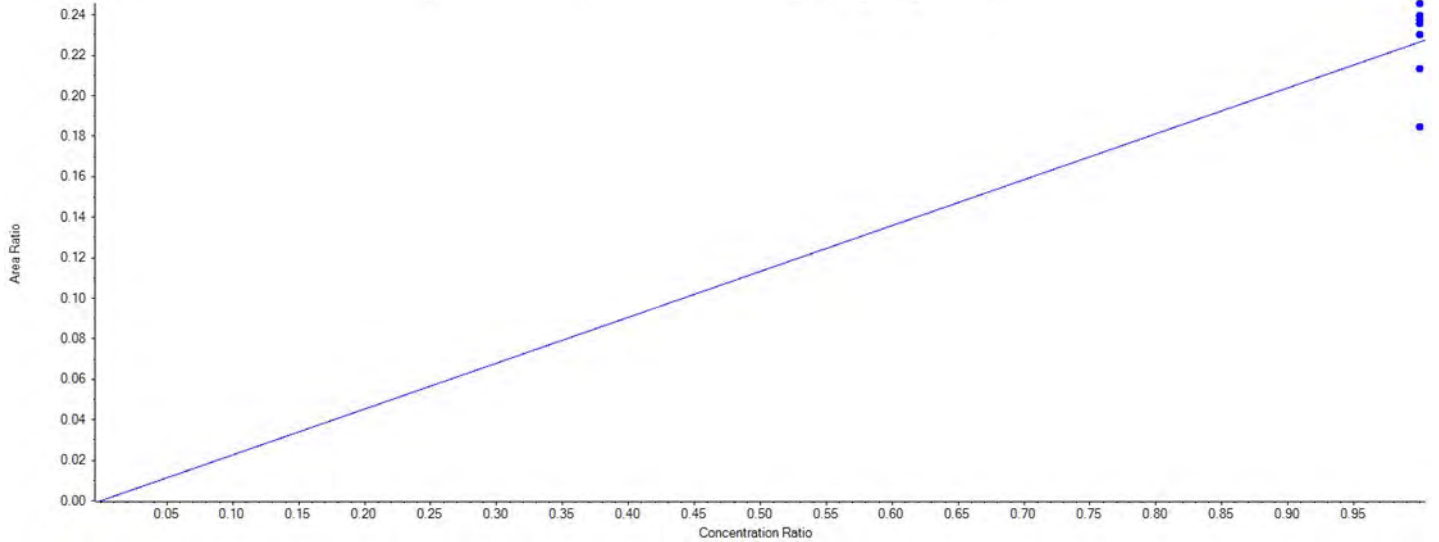


**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**Ed5-NEtFOSAA**

$y = 0.22650 x$  (std. dev. = 0.02112) (weighting: None)



**Extraction Standard Calibration Verification**

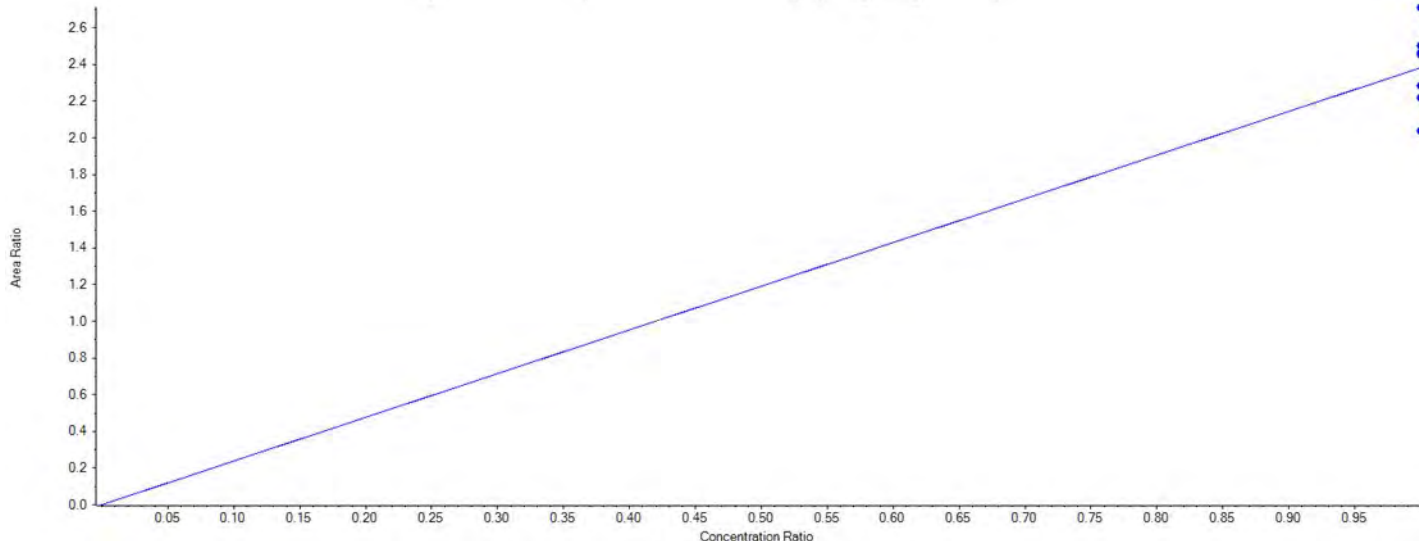
Sample Name	Ed5-NEtFOSAA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	70354.75	330011.01	True	5.00	0.213	5.86	1.050	5.000	4.706	-6	30	
CAL2	74625.88	303983.96	True	5.00	0.245	5.86	1.050	5.000	5.419	8	30	
CAL3	72524.36	315428.26	True	5.00	0.230	5.86	1.050	5.000	5.076	2	30	
CAL4	70313.98	381032.92	True	5.00	0.185	5.86	1.050	5.000	4.074	-19	30	
CAL5	67520.89	286525.96	True	5.00	0.236	5.86	1.050	5.000	5.202	4	30	
CAL6	64805.85	272997.03	True	5.00	0.237	5.86	1.050	5.000	5.240	5	30	
CAL7	64018.92	267511.10	True	5.00	0.239	5.85	1.050	5.000	5.283	6	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

E13C2-PFDoDA

$y = 2.38264 x$  (std. dev. = 0.21888) (weighting: None)



Extraction Standard Calibration Verification

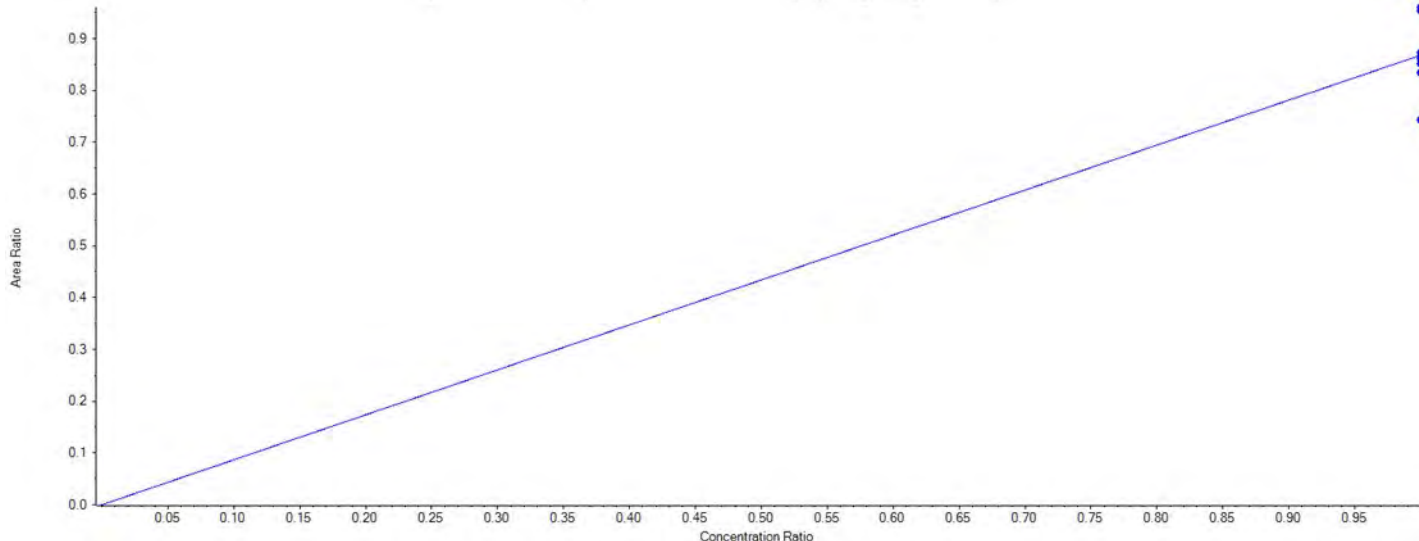
Sample Name	E13C2-PFDoDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	754066.10	330011.01	True	5.00	2.285	6.08	1.090	5.000	4.795	-4	30	
CAL2	823944.34	303983.96	True	5.00	2.710	6.08	1.090	5.000	5.688	14	30	
CAL3	789543.71	315428.26	True	5.00	2.503	6.08	1.090	5.000	5.253	5	30	
CAL4	777497.15	381032.92	True	5.00	2.040	6.08	1.090	5.000	4.282	-14	30	
CAL5	706411.13	286525.96	True	5.00	2.465	6.08	1.090	5.000	5.174	3	30	
CAL6	670197.85	272997.03	True	5.00	2.455	6.07	1.090	5.000	5.152	3	30	
CAL7	593609.87	267511.10	True	5.00	2.219	6.07	1.090	5.000	4.657	-7	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**Ed7-NMePFOSAE**

$y = 0.86797 x$  (std. dev. = 0.07432) (weighting: None)



**Extraction Standard Calibration Verification**

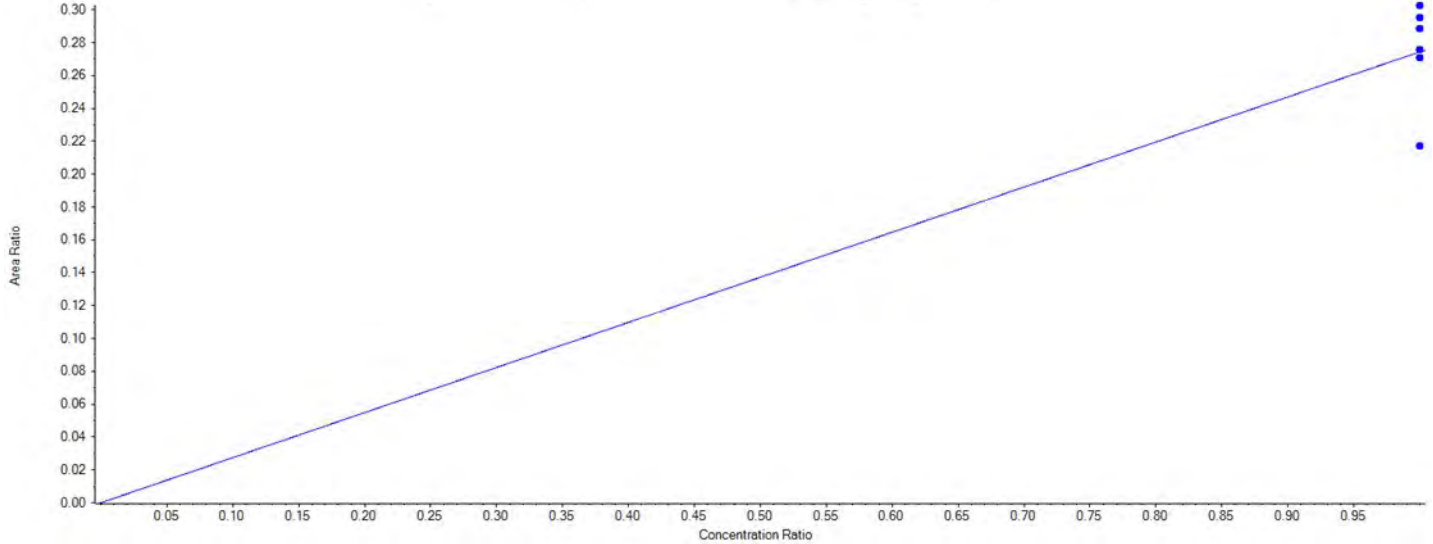
Sample Name	Ed7-NMePFOSA E Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	275061.76	330011.01	True	5.00	0.833	6.12	1.100	5.000	4.801	-4	30	
CAL2	265104.11	303983.96	True	5.00	0.872	6.11	1.100	5.000	5.024	0	30	
CAL3	271371.96	315428.26	True	5.00	0.860	6.12	1.100	5.000	4.956	-1	30	
CAL4	283055.24	381032.92	True	5.00	0.743	6.12	1.100	5.000	4.279	-14	30	
CAL5	244218.51	286525.96	True	5.00	0.852	6.12	1.100	5.000	4.910	-2	30	
CAL6	260658.19	272997.03	True	5.00	0.955	6.11	1.100	5.000	5.500	10	30	
CAL7	256769.15	267511.10	True	5.00	0.960	6.11	1.100	5.000	5.529	11	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**Ed3-NMePFOSA**

$y = 0.27441 x$  (std. dev. = 0.02799) (weighting: None)



**Extraction Standard Calibration Verification**

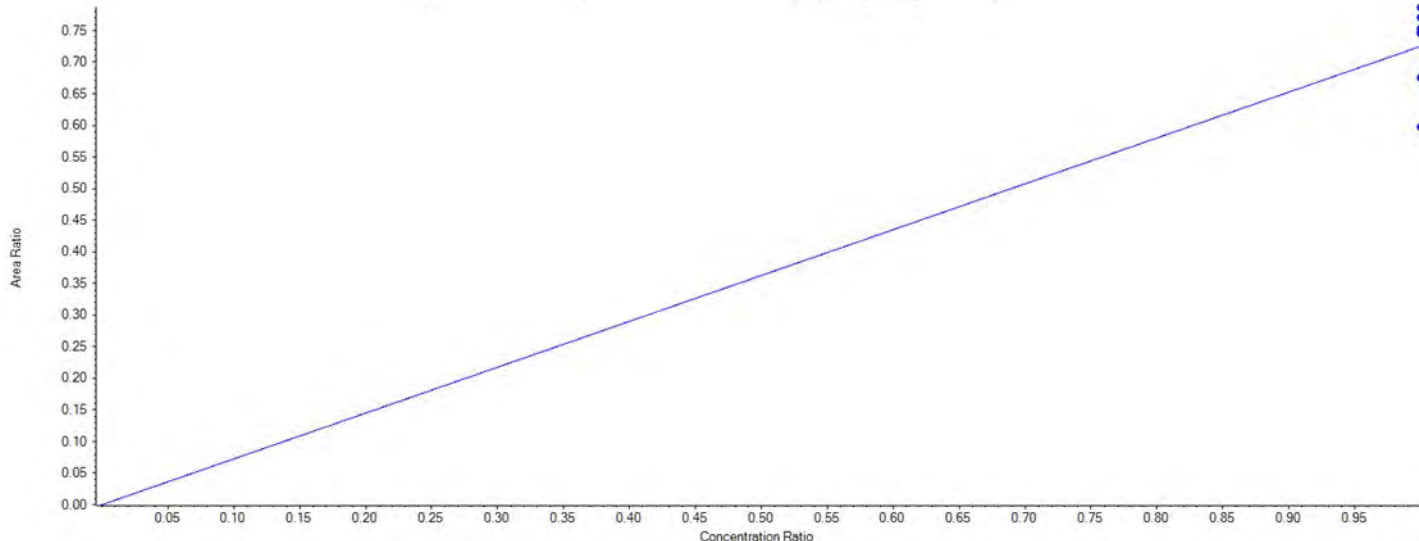
Sample Name	Ed3-NMePFOSA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	89306.24	330011.01	True	5.00	0.271	6.13	1.100	5.000	4.931	-1	30	
CAL2	87716.56	303983.96	True	5.00	0.289	6.13	1.100	5.000	5.258	5	30	
CAL3	85427.70	315428.26	True	5.00	0.271	6.13	1.100	5.000	4.935	-1	30	
CAL4	82821.34	381032.92	True	5.00	0.217	6.13	1.100	5.000	3.960	-21	30	
CAL5	84514.87	286525.96	True	5.00	0.295	6.13	1.100	5.000	5.374	7	30	
CAL6	82601.00	272997.03	True	5.00	0.303	6.13	1.100	5.000	5.513	10	30	
CAL7	73831.64	267511.10	True	5.00	0.276	6.12	1.100	5.000	5.029	1	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**Ed9-NEtPFOSAE**

$y = 0.72508 x$  (std. dev. = 0.06602) (weighting: None)



**Extraction Standard Calibration Verification**

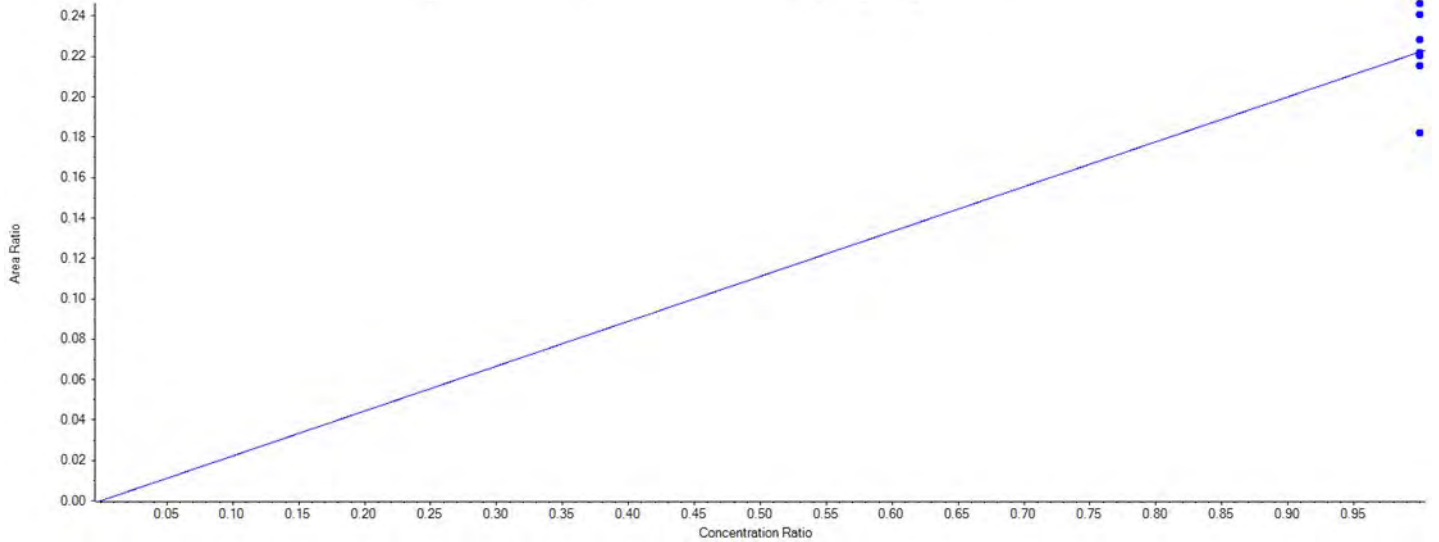
Sample Name	Ed9-NEtPFOSAE Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	222789.54	330011.01	True	5.00	0.675	6.27	1.120	5.000	4.655	-7	30	
CAL2	234011.31	303983.96	True	5.00	0.770	6.27	1.120	5.000	5.308	6	30	
CAL3	235845.39	315428.26	True	5.00	0.748	6.27	1.120	5.000	5.156	3	30	
CAL4	227812.80	381032.92	True	5.00	0.598	6.27	1.120	5.000	4.123	-18	30	
CAL5	215846.99	286525.96	True	5.00	0.753	6.27	1.120	5.000	5.195	4	30	
CAL6	214650.52	272997.03	True	5.00	0.786	6.27	1.120	5.000	5.422	8	30	
CAL7	199424.66	267511.10	True	5.00	0.745	6.27	1.120	5.000	5.141	3	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

Ed5-NEtPFOSA

$y = 0.22218 x$  (std. dev. = 0.02077) (weighting: None)



Extraction Standard Calibration Verification

Sample Name	Ed5-NEtPFOSA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	71072.66	330011.01	True	5.00	0.215	6.29	1.130	5.000	4.847	-3	30	
CAL2	66979.27	303983.96	True	5.00	0.220	6.28	1.130	5.000	4.959	-1	30	
CAL3	70028.97	315428.26	True	5.00	0.222	6.29	1.130	5.000	4.996	0	30	
CAL4	69489.36	381032.92	True	5.00	0.182	6.29	1.130	5.000	4.104	-18	30	
CAL5	65432.89	286525.96	True	5.00	0.228	6.29	1.130	5.000	5.139	3	30	
CAL6	65686.64	272997.03	True	5.00	0.241	6.28	1.130	5.000	5.415	8	30	
CAL7	65852.47	267511.10	True	5.00	0.246	6.28	1.130	5.000	5.540	11	30	

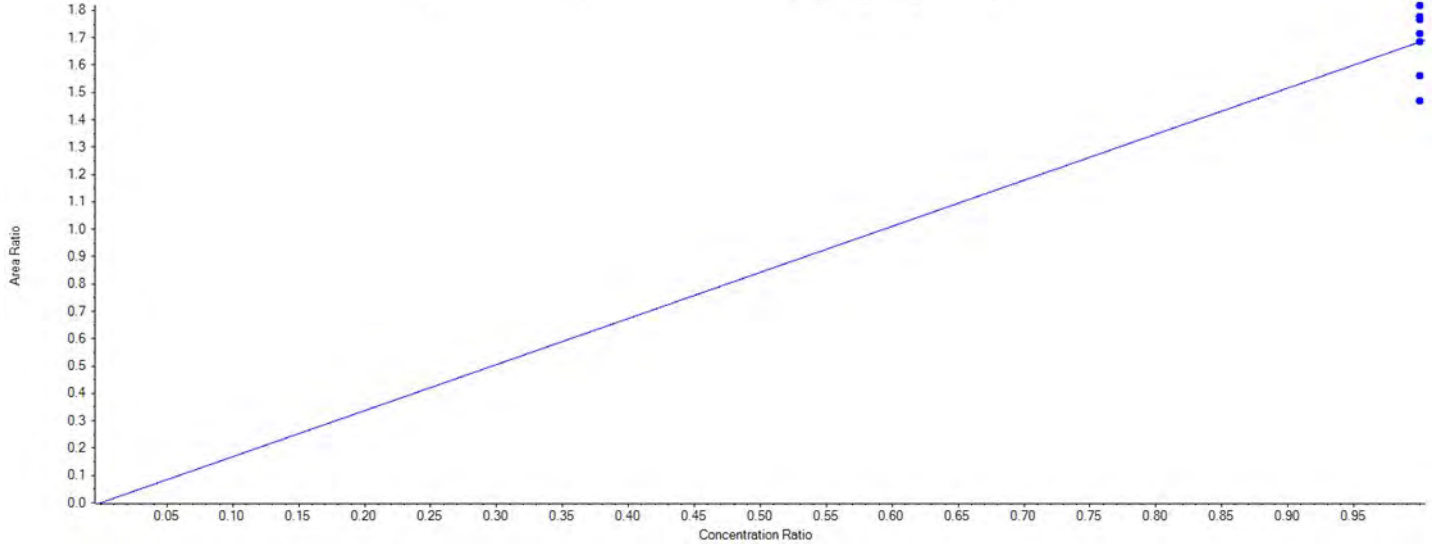


DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

E13C2-PFTeDA

$y = 1.68461 x$  (std. dev. = 0.12668) (weighting: None)



Extraction Standard Calibration Verification

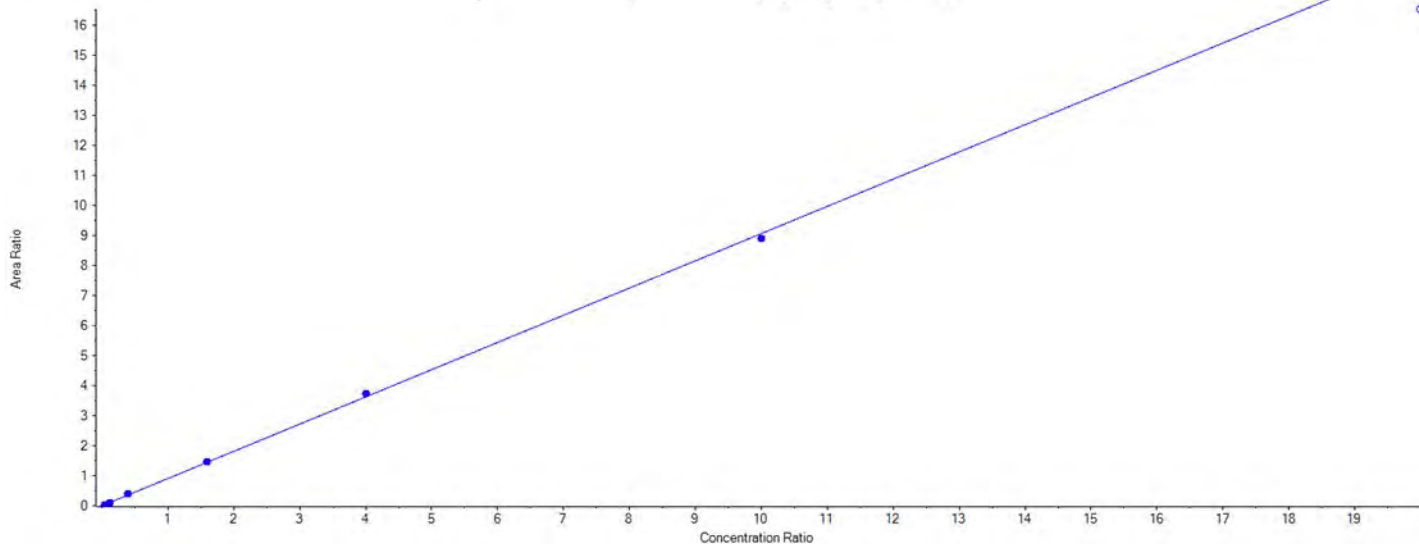
Sample Name	E13C2-PFTeDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	515073.56	330011.01	True	5.00	1.561	6.46	1.160	5.000	4.632	-7	30	
CAL2	540663.86	303983.96	True	5.00	1.779	6.45	1.160	5.000	5.279	6	30	
CAL3	540932.65	315428.26	True	5.00	1.715	6.45	1.160	5.000	5.090	2	30	
CAL4	559294.73	381032.92	True	5.00	1.468	6.45	1.160	5.000	4.357	-13	30	
CAL5	520852.39	286525.96	True	5.00	1.818	6.45	1.160	5.000	5.395	8	30	
CAL6	481845.90	272997.03	True	5.00	1.765	6.45	1.160	5.000	5.239	5	30	
CAL7	451368.75	267511.10	True	5.00	1.687	6.45	1.160	5.000	5.008	0	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

PFBA

$y = 0.90625 x$  (r = 0.99955) (weighting: 1 / x)



Component Calibration Verification

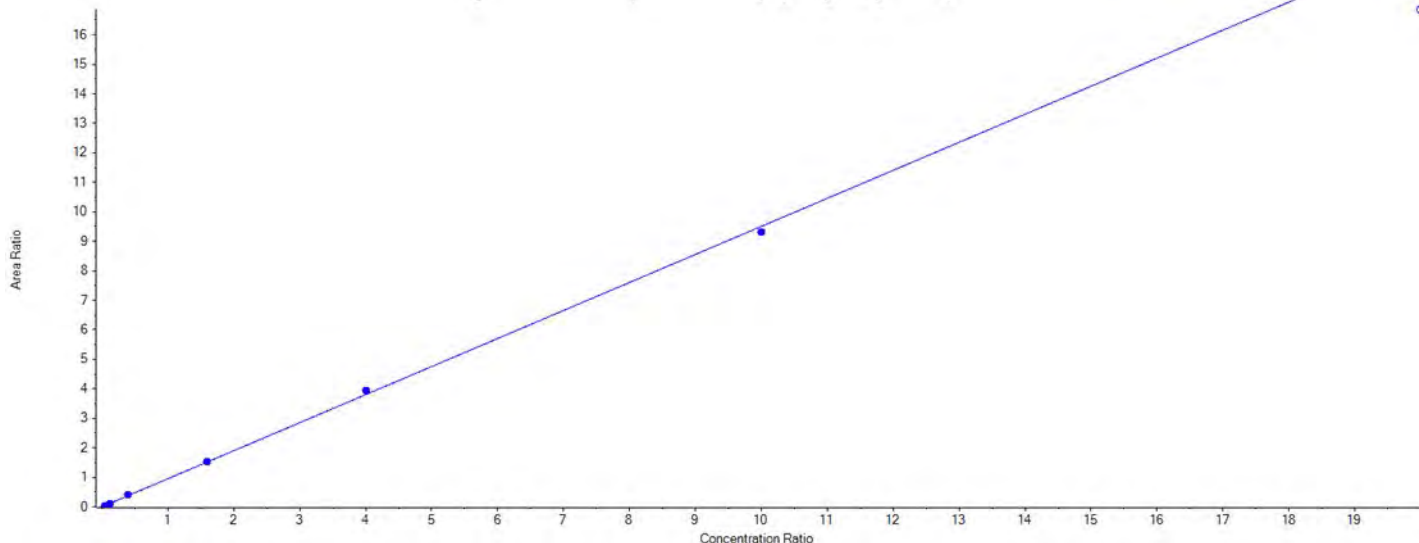
Sample Name	PFBA Area	S/N	13C4-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	39459.31	249.5	898694.92	True	5.00	0.044	3.27	1.000	0.200	0.242	21	30	
CAL2	99228.63	402.0	956879.62	True	5.00	0.104	3.27	1.000	0.600	0.572	-5	30	
CAL3	383859.64	701.3	936631.96	True	5.00	0.410	3.27	1.000	2.000	2.261	13	30	
CAL4	1362372.60	1390.9	937321.23	True	5.00	1.453	3.27	1.000	8.000	8.019	0	30	
CAL5	3186861.83	2118.1	852222.77	True	5.00	3.739	3.27	1.000	20.000	20.632	3	30	
CAL6	6933920.33	3235.9	779560.55	True	5.00	8.895	3.27	1.000	50.000	49.074	-2	30	
CAL7	11149178.56	3063.3	674364.92	False	5.00	16.533	3.27	1.000	100.000	91.216	-9	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFPeA

$y = 0.95046 x$  (r = 0.99950) (weighting: 1 / x)



Component Calibration Verification

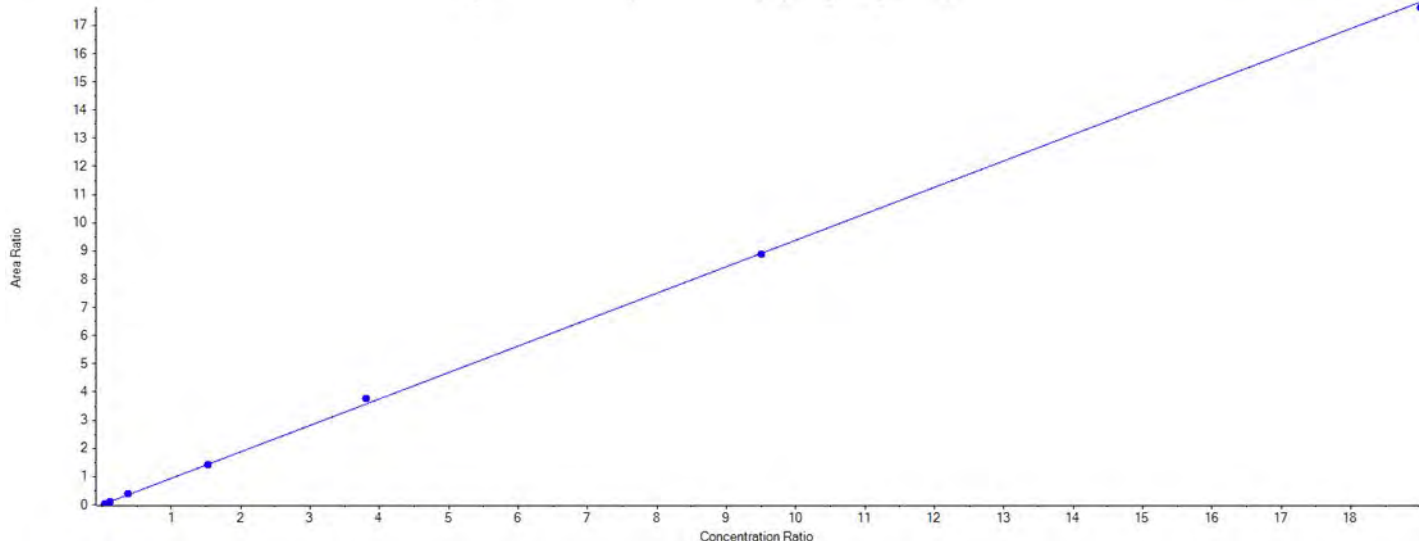
Sample Name	PFPeA Area	S/N	13C5-PFPeA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	38422.35	113.4	841151.01	True	5.00	0.046	3.78	1.000	0.200	0.240	20	30	
CAL2	91072.26	133.2	852542.70	True	5.00	0.107	3.77	1.000	0.600	0.562	-6	30	
CAL3	363071.54	265.2	860904.33	True	5.00	0.422	3.77	1.000	2.000	2.219	11	30	
CAL4	1316238.40	503.8	865794.49	True	5.00	1.520	3.77	1.000	8.000	7.998	0	30	
CAL5	3191751.14	819.2	807458.25	True	5.00	3.953	3.77	1.000	20.000	20.794	4	30	
CAL6	6852617.33	1075.4	735887.05	True	5.00	9.312	3.77	1.000	50.000	48.987	-2	30	
CAL7	10952335.05	1287.5	649808.28	False	5.00	16.855	3.77	1.000	100.000	88.666	-11	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFBS

$y = 0.93813 x$  (r = 0.99973) (weighting: 1 / x)



Component Calibration Verification

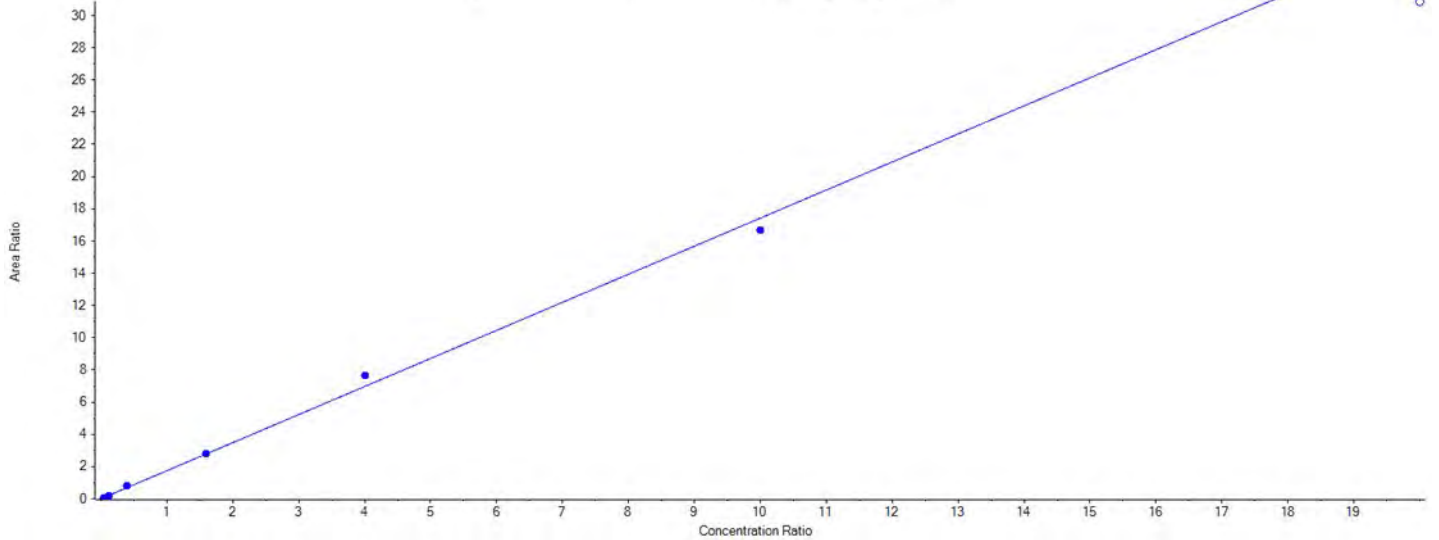
Sample Name	PFBS Area	S/N	13C3-PFBS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	17447.72	656.7	426818.09	True	4.65	0.041	3.82	1.000	0.177	0.203	14	30	
CAL2	44603.18	981.7	449605.58	True	4.65	0.099	3.82	1.000	0.531	0.492	-7	30	
CAL3	175965.98	1993.3	442018.22	True	4.65	0.398	3.82	1.000	1.770	1.973	11	30	
CAL4	641650.74	3293.4	451275.83	True	4.65	1.422	3.82	1.000	7.080	7.048	0	30	
CAL5	1560425.11	3850.1	415721.12	True	4.65	3.754	3.82	1.000	17.700	18.605	5	30	
CAL6	3497911.96	3368.2	392877.27	True	4.65	8.903	3.82	1.000	44.200	44.131	0	30	
CAL7	6058196.36	3513.6	343547.87	True	4.65	17.634	3.82	1.000	88.400	87.407	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

4:2-FTS

$y = 1.74232 x$  (r = 0.99765) (weighting: 1 / x)



Component Calibration Verification

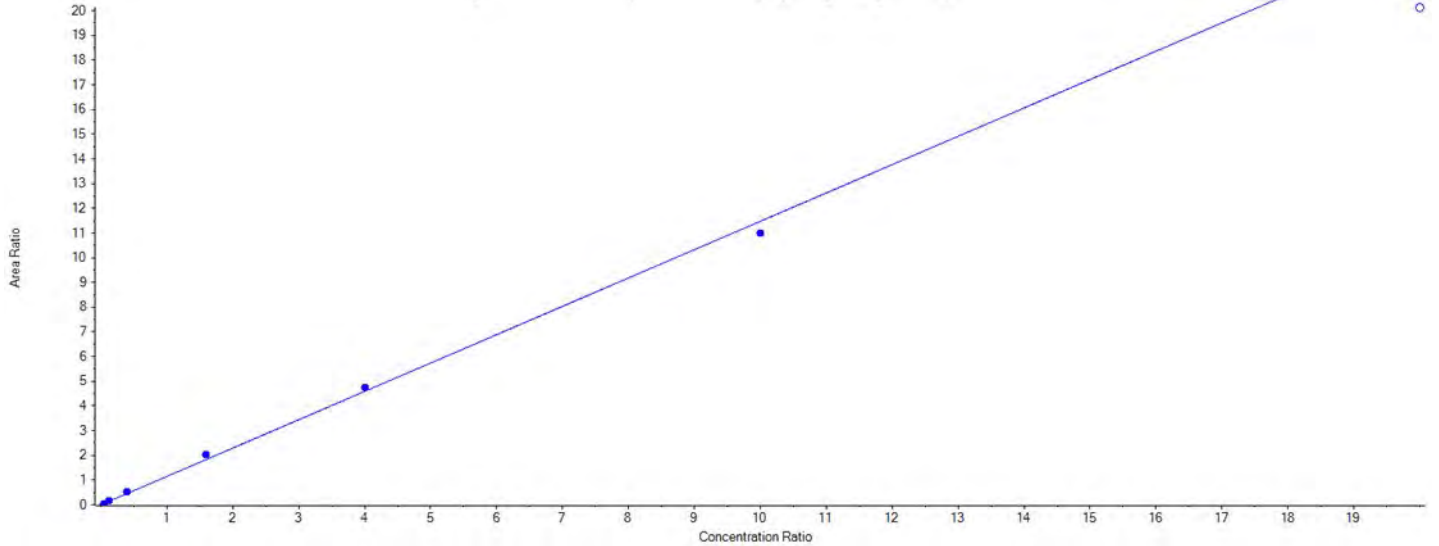
Sample Name	4:2-FTS Area	S/N	13C2-4:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	3906.59	478.9	53888.76	True	4.67	0.072	4.14	1.000	0.187	0.194	4	30	
CAL2	9721.43	618.9	54114.25	True	4.67	0.180	4.13	1.000	0.560	0.482	-14	30	
CAL3	38643.69	896.7	46397.66	True	4.67	0.833	4.14	1.000	1.870	2.232	19	30	
CAL4	148072.82	1873.1	53204.09	True	4.67	2.783	4.13	1.000	7.470	7.460	0	30	
CAL5	374067.13	2126.5	49011.43	True	4.67	7.632	4.13	1.000	18.700	20.457	9	30	
CAL6	825733.73	3123.2	49555.02	True	4.67	16.663	4.13	1.000	46.700	44.662	-4	30	
CAL7	1541772.12	4328.6	49950.52	False	4.67	30.866	4.13	1.000	93.400	82.731	-11	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFHxA

$y = 1.14745 x$  (r = 0.99831) (weighting: 1 / x)



Component Calibration Verification

Sample Name	PFHxA Area	S/N	13C5-PFHxA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	37193.37	297.4	658089.96	True	5.00	0.057	4.17	1.000	0.200	0.246	23	30	
CAL2	95772.84	420.4	667261.24	True	5.00	0.144	4.16	1.000	0.600	0.625	4	30	
CAL3	365926.61	822.6	675673.64	True	5.00	0.542	4.17	1.000	2.000	2.360	18	30	
CAL4	1336811.10	1330.8	653028.28	True	5.00	2.047	4.17	1.000	8.000	8.920	12	30	
CAL5	3100313.22	2036.9	650822.82	True	5.00	4.764	4.17	1.000	20.000	20.758	4	30	
CAL6	6667267.35	2311.5	606649.18	True	5.00	10.990	4.16	1.000	50.000	47.890	-4	30	
CAL7	11064156.53	2847.3	549743.17	False	5.00	20.126	4.16	1.000	100.000	87.699	-12	30	

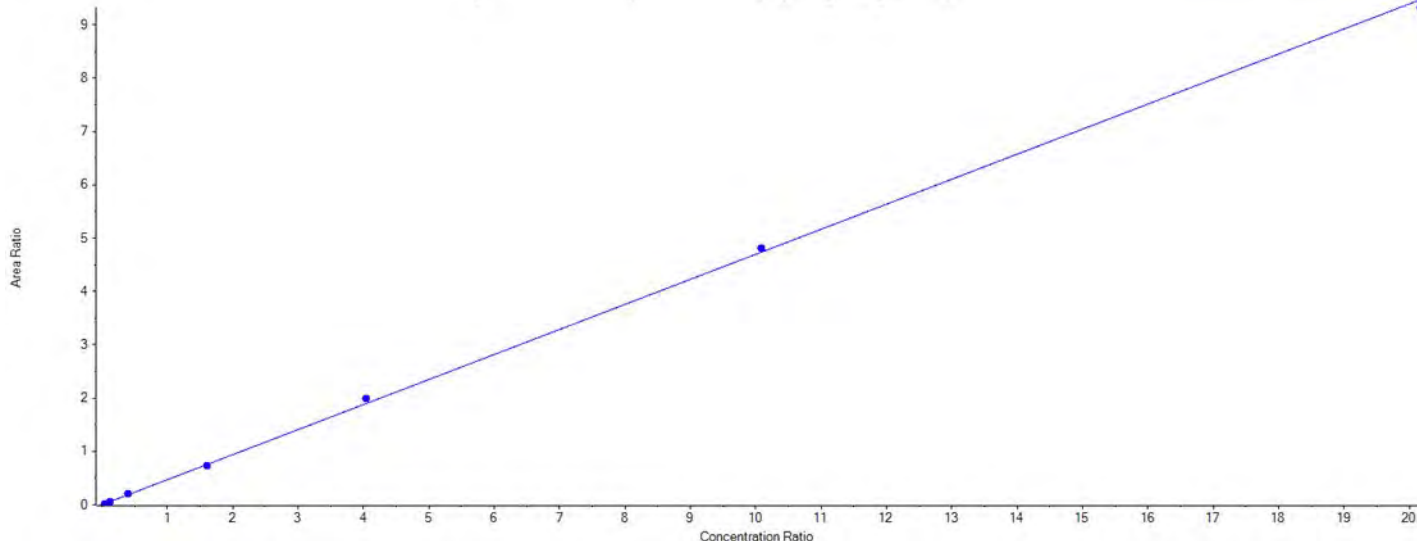


**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**PFPeS**

$y = 0.46960 x$  ( $r = 0.99969$ ) (weighting:  $1 / x$ )



**Component Calibration Verification**

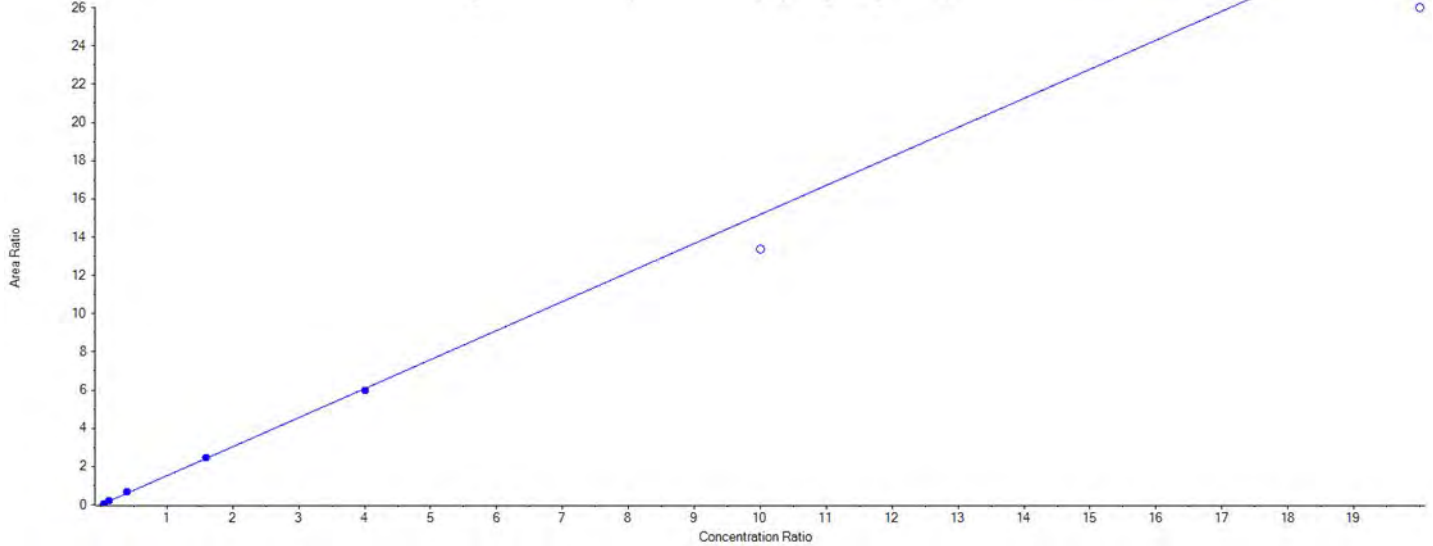
Sample Name	PFPeS Area	S/N	<sup>13</sup> C3-PFBS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	9605.71	550.8	426818.09	True	4.65	0.023	4.19	1.100	0.188	0.223	19	30	
CAL2	24089.05	647.1	449605.58	True	4.65	0.054	4.18	1.100	0.563	0.531	-6	30	
CAL3	92327.74	1911.4	442018.22	True	4.65	0.209	4.19	1.100	1.880	2.068	10	30	
CAL4	330977.55	1972.0	451275.83	True	4.65	0.733	4.19	1.100	7.500	7.262	-3	30	
CAL5	825391.64	3406.1	415721.12	True	4.65	1.985	4.19	1.100	18.800	19.660	5	30	
CAL6	1887536.71	3273.3	392877.27	True	4.65	4.804	4.19	1.100	46.900	47.573	1	30	
CAL7	3202799.19	3006.3	343547.87	True	4.65	9.323	4.18	1.100	93.800	92.314	-2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFHpA

$y = 1.51859 x$  (r = 0.99961) (weighting: 1 / x)



Component Calibration Verification

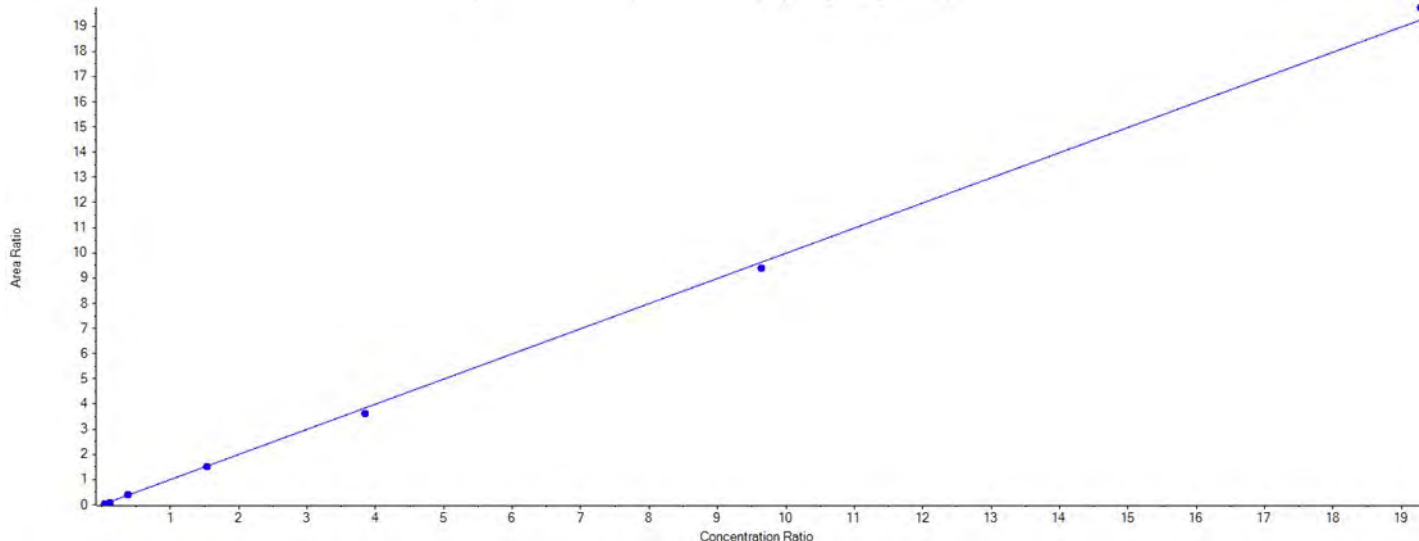
Sample Name	PFHpA Area	S/N	<sup>13</sup> C4-PFHpA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	37520.09	366.2	505550.33	True	5.00	0.074	4.56	1.000	0.200	0.244	22	30	
CAL2	95001.99	663.3	513029.29	True	5.00	0.185	4.55	1.000	0.600	0.610	2	30	
CAL3	361419.75	1165.6	543346.60	True	5.00	0.665	4.56	1.000	2.000	2.190	10	30	
CAL4	1312251.02	2071.3	530667.18	True	5.00	2.473	4.55	1.000	8.000	8.142	2	30	
CAL5	3016454.01	2849.9	506360.31	True	5.00	5.957	4.56	1.000	20.000	19.614	-2	30	
CAL6	6544306.50	3175.1	489476.90	False	5.00	13.370	4.55	1.000	50.000	44.021	-12	30	
CAL7	11333940.43	3930.2	435799.63	False	5.00	26.007	4.55	1.000	100.000	85.629	-14	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFHxS

$y = 0.99830 x$  ( $r = 0.99951$ ) (weighting:  $1 / x$ )



Component Calibration Verification

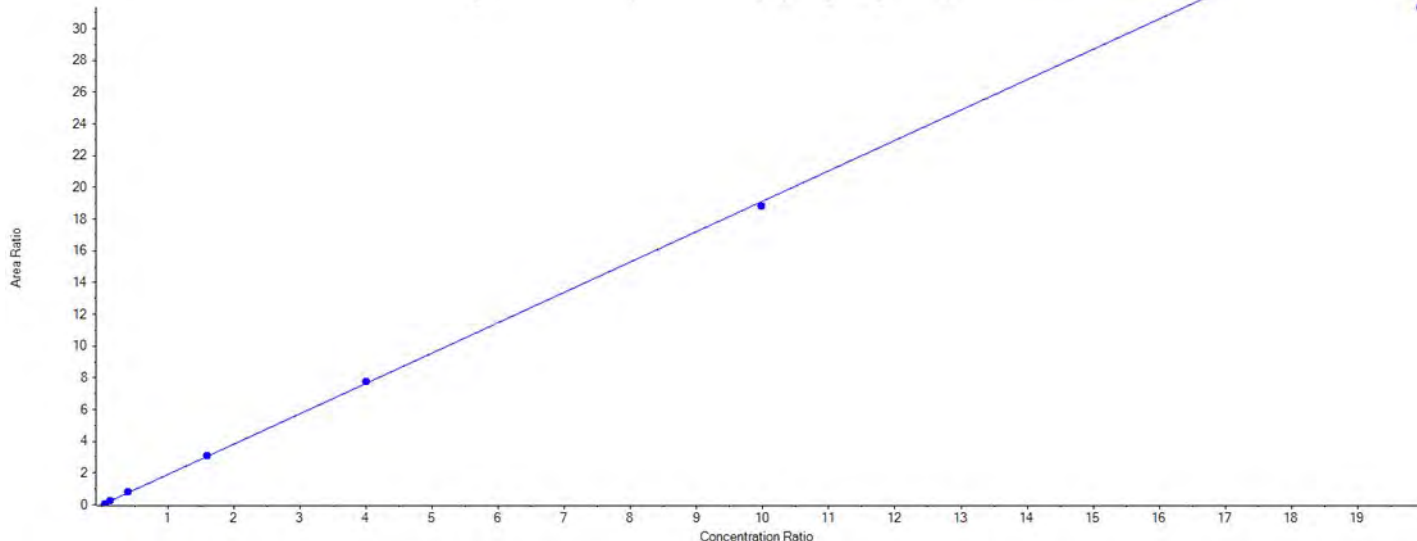
Sample Name	PFHxS Area	S/N	<sup>13</sup> C3-PFHxS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	12711.08	786.3	339911.13	True	4.73	0.037	4.56	1.000	0.182	0.177	-3	30	
CAL2	32481.65	789.7	342350.12	True	4.73	0.095	4.55	1.000	0.547	0.450	-18	30	
CAL3	132327.20	30638.2	337878.72	True	4.73	0.392	4.56	1.000	1.820	1.856	2	30	
CAL4	486027.42	2643.0	321174.93	True	4.73	1.513	4.56	1.000	7.300	7.170	-2	30	
CAL5	1191013.53	2408.4	328924.25	True	4.73	3.621	4.56	1.000	18.200	17.156	-6	30	
CAL6	2776076.01	1955.8	295455.62	True	4.73	9.396	4.56	1.000	45.600	44.518	-2	30	
CAL7	4864366.46	1787.5	246441.16	True	4.73	19.738	4.55	1.000	91.200	93.522	3	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**6:2-FTS**

$y = 1.91294 x$  ( $r = 0.99982$ ) (weighting:  $1 / x$ )



**Component Calibration Verification**

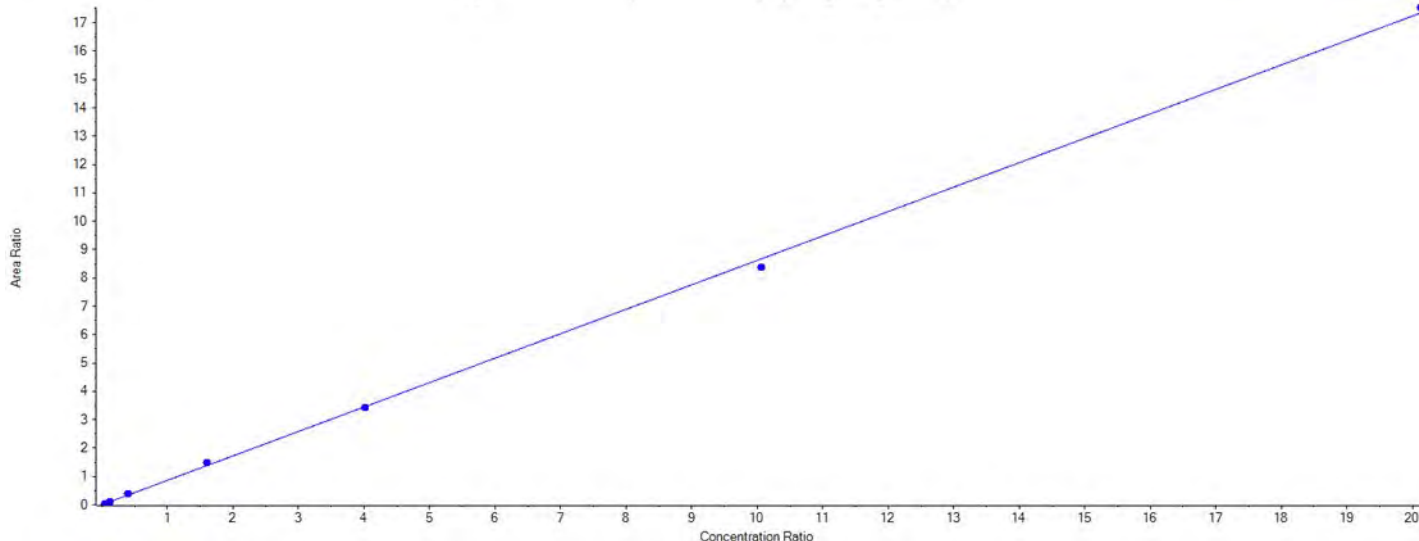
Sample Name	6:2-FTS Area	S/N	13C2-6:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	2930.50	264.2	37457.50	True	4.75	0.078	4.92	1.000	0.190	0.194	2	30	
CAL2	8921.66	860.8	35543.06	True	4.75	0.251	4.91	1.000	0.569	0.623	10	30	
CAL3	30175.96	805.9	36276.48	True	4.75	0.832	4.91	1.000	1.900	2.066	9	30	
CAL4	108350.61	1447.6	35211.09	True	4.75	3.077	4.91	1.000	7.580	7.641	1	30	
CAL5	243777.52	2364.2	31346.83	True	4.75	7.777	4.91	1.000	19.000	19.310	2	30	
CAL6	513358.22	2477.6	27234.78	True	4.75	18.849	4.91	1.000	47.400	46.805	-1	30	
CAL7	852701.24	2275.0	27219.54	False	4.75	31.327	4.91	1.000	94.800	77.787	-18	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**PFHpS**

$y = 0.86166 x$  (r = 0.99964) (weighting: 1 / x)



**Component Calibration Verification**

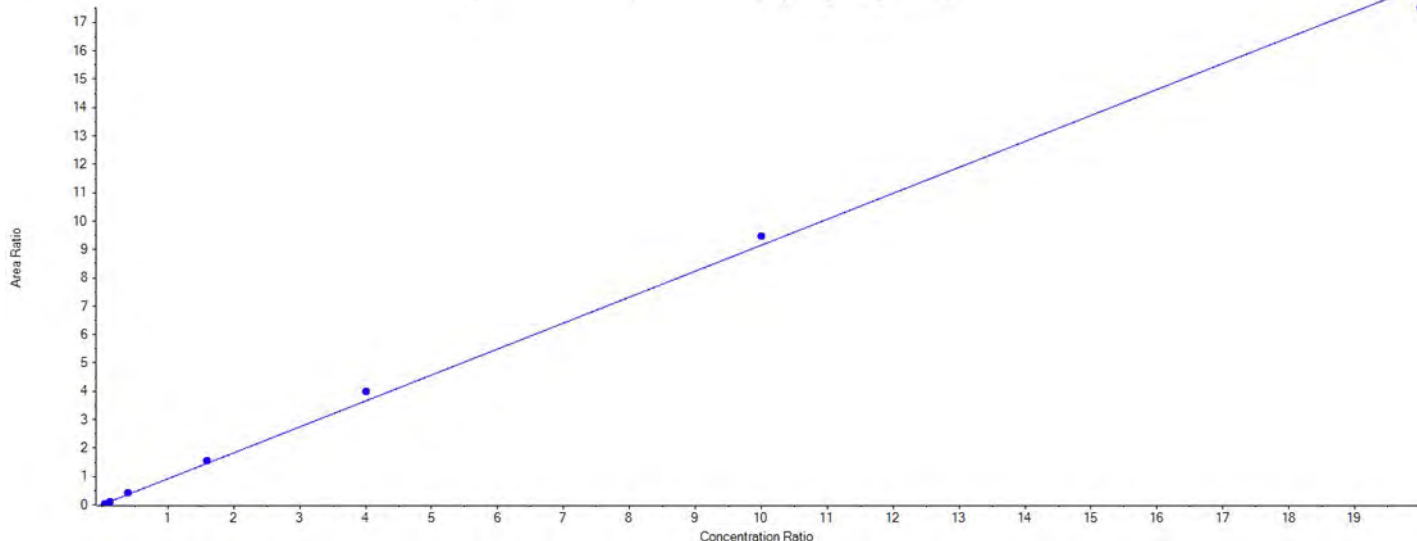
Sample Name	PFHpS Area	S/N	13C3-PFHxS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	11460.50	17591.2	339911.13	True	4.73	0.034	4.92	1.080	0.190	0.185	-3	30	
CAL2	34669.19	1722.1	342350.12	True	4.73	0.101	4.91	1.080	0.571	0.556	-3	30	
CAL3	128849.80	1783.1	337878.72	True	4.73	0.381	4.92	1.080	1.900	2.093	10	30	
CAL4	475629.59	3164.1	321174.93	True	4.73	1.481	4.92	1.080	7.610	8.129	7	30	
CAL5	1127510.75	2888.5	328924.25	True	4.73	3.428	4.92	1.080	19.000	18.817	-1	30	
CAL6	2478350.56	2992.3	295455.62	True	4.73	8.388	4.91	1.080	47.600	46.046	-3	30	
CAL7	4320784.79	2653.7	246441.16	True	4.73	17.533	4.91	1.080	95.200	96.244	1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFOA

$y = 0.91492 x$  (r = 0.99874) (weighting: 1 / x)



Component Calibration Verification

Sample Name	PFOA Area	S/N	13C8-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	35481.90	195.0	818121.26	True	5.00	0.043	4.93	1.000	0.200	0.237	19	30	
CAL2	85869.84	319.6	818119.44	True	5.00	0.105	4.92	1.000	0.600	0.574	-4	30	
CAL3	351794.98	658.1	847979.16	True	5.00	0.415	4.92	1.000	2.000	2.267	13	30	
CAL4	1259378.83	1308.2	816400.08	True	5.00	1.543	4.92	1.000	8.000	8.430	5	30	
CAL5	2945282.04	1984.3	739531.43	True	5.00	3.983	4.93	1.000	20.000	21.765	9	30	
CAL6	6289920.12	2608.9	664219.19	True	5.00	9.470	4.92	1.000	50.000	51.751	4	30	
CAL7	10664235.85	2366.7	608500.38	True	5.00	17.525	4.92	1.000	100.000	95.776	-4	30	

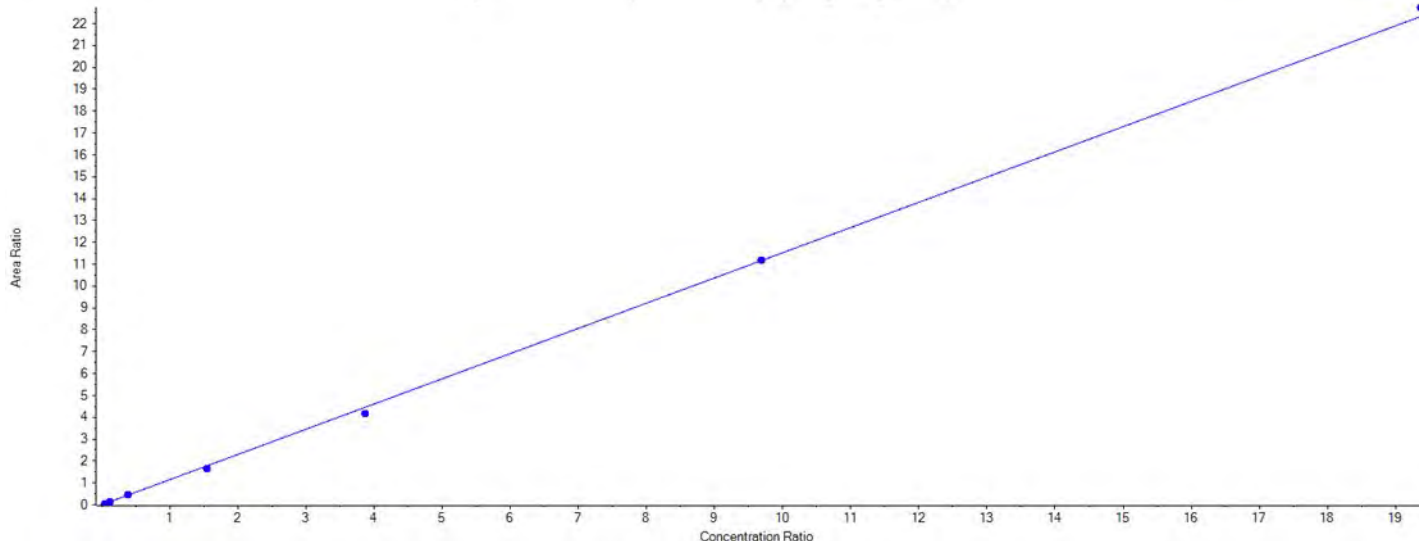


DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

PFOS

$y = 1.15243 x$  (r = 0.99955) (weighting: 1 / x)



Component Calibration Verification

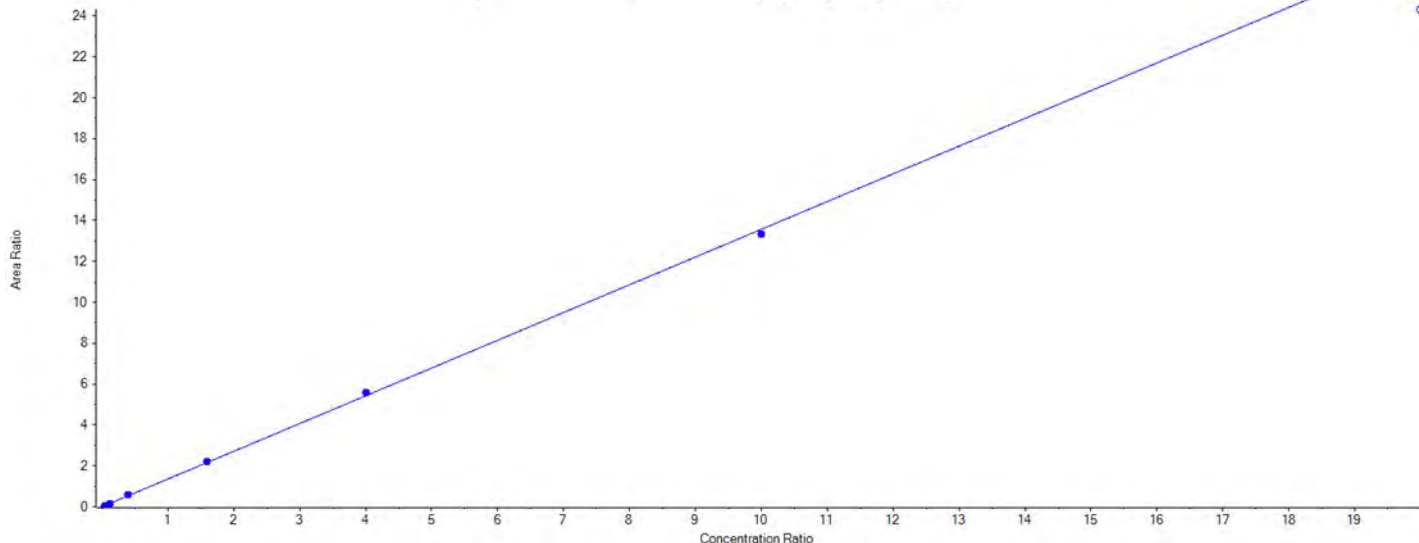
Sample Name	PFOS Area	S/N	<sup>13</sup> C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	13660.39	451.8	296771.13	True	4.78	0.046	5.26	1.000	0.185	0.191	3	30	
CAL2	37181.07	1135.7	308155.48	True	4.78	0.121	5.25	1.000	0.555	0.500	-10	30	
CAL3	134760.97	738.7	294019.28	True	4.78	0.458	5.25	1.000	1.850	1.901	3	30	
CAL4	499514.66	1257.0	299310.50	True	4.78	1.669	5.25	1.000	7.400	6.922	-6	30	
CAL5	1193441.80	1540.1	286479.93	True	4.78	4.166	5.26	1.000	18.500	17.279	-7	30	
CAL6	2854538.75	1101.5	255714.77	True	4.78	11.163	5.25	1.000	46.300	46.302	0	30	
CAL7	5255335.21	1157.9	231168.31	True	4.78	22.734	5.25	1.000	92.600	94.295	2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFNA

$y = 1.35673 x$  (r = 0.99955) (weighting: 1 / x)



Component Calibration Verification

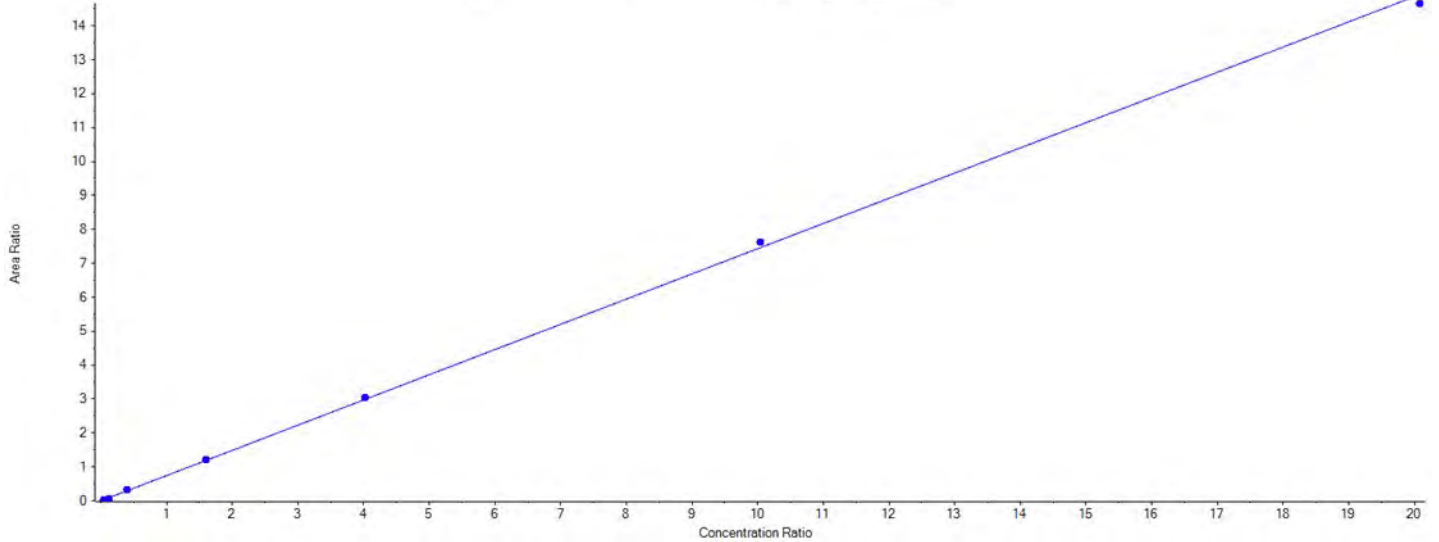
Sample Name	PFNA Area	S/N	13C9-PFNA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	28020.98	258.4	472343.16	True	5.00	0.059	5.27	1.000	0.200	0.219	9	30	
CAL2	69083.38	575.7	489864.82	True	5.00	0.141	5.27	1.000	0.600	0.520	-13	30	
CAL3	293549.54	1224.2	487999.89	True	5.00	0.602	5.27	1.000	2.000	2.217	11	30	
CAL4	1095142.56	1851.2	492781.53	True	5.00	2.222	5.27	1.000	8.000	8.190	2	30	
CAL5	2562019.26	3199.1	459963.38	True	5.00	5.570	5.27	1.000	20.000	20.527	3	30	
CAL6	5937971.99	3496.6	445443.05	True	5.00	13.330	5.27	1.000	50.000	49.127	-2	30	
CAL7	10109257.93	3549.3	415771.23	False	5.00	24.314	5.27	1.000	100.000	89.607	-10	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFNS

$y = 0.74285 x (r = 0.99966) (weighting: 1 / x)$



Component Calibration Verification

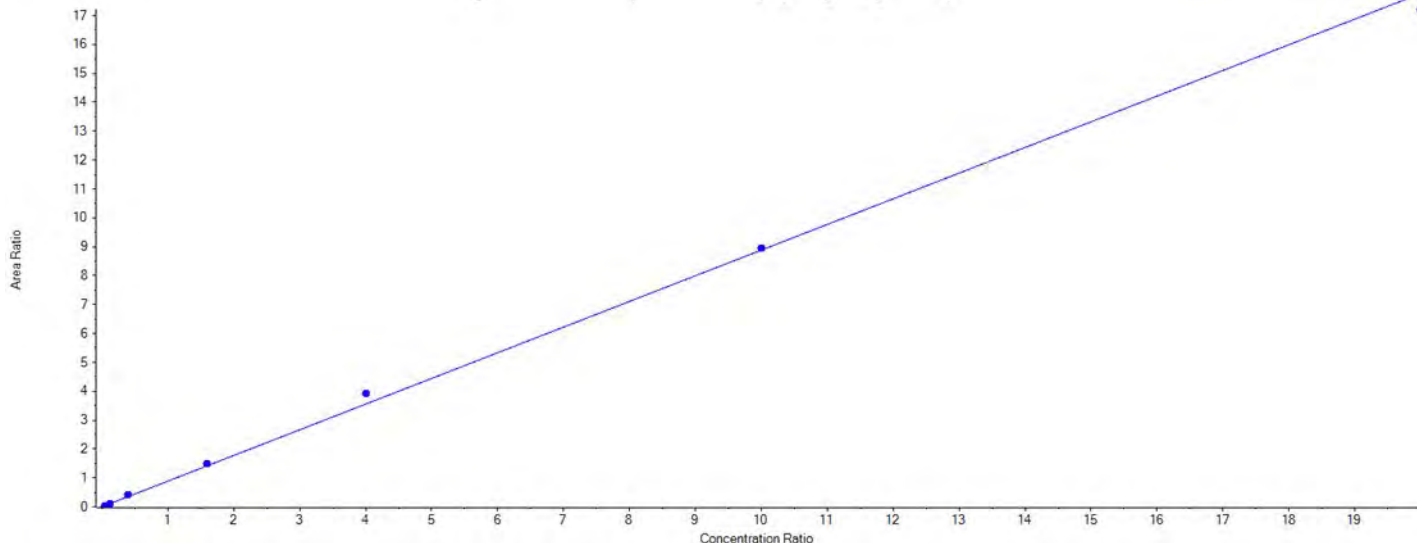
Sample Name	PFNS Area	S/N	13C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	9066.40	109136.7	296771.13	True	4.78	0.031	5.56	1.060	0.192	0.197	2	30	
CAL2	22032.83	19202.1	308155.48	True	4.78	0.071	5.55	1.060	0.576	0.460	-20	30	
CAL3	98097.94	32132.9	294019.28	True	4.78	0.334	5.56	1.060	1.920	2.147	12	30	
CAL4	364043.01	9726.8	299310.50	True	4.78	1.216	5.56	1.060	7.680	7.826	2	30	
CAL5	868436.21	1522.6	286479.93	True	4.78	3.031	5.56	1.060	19.200	19.506	2	30	
CAL6	1952695.25	2379.9	255714.77	True	4.78	7.636	5.56	1.060	48.000	49.137	2	30	
CAL7	3387582.43	2929.1	231168.31	True	4.78	14.654	5.55	1.060	96.000	94.295	-2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

PFDA

$y = 0.88831 x$  (r = 0.99893) (weighting: 1 / x)



Component Calibration Verification

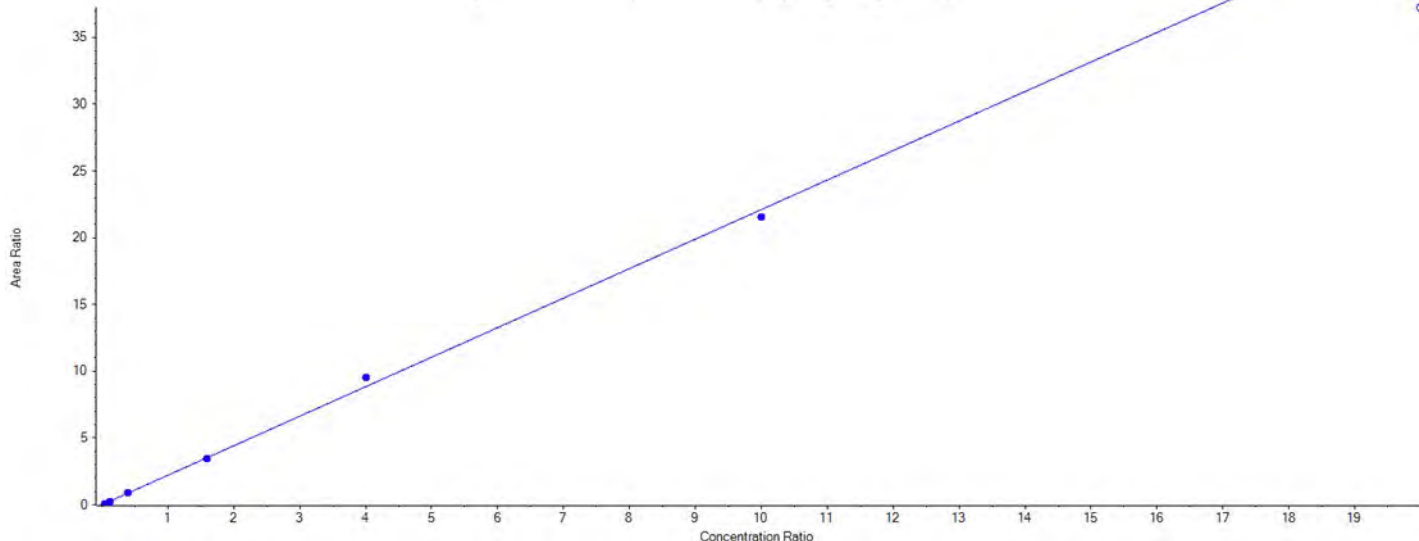
Sample Name	PFDA Area	S/N	<sup>13</sup> C6-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	25786.15	166.4	610780.80	True	5.00	0.042	5.58	1.000	0.200	0.238	19	30	
CAL2	62650.38	298.0	620021.26	True	5.00	0.101	5.58	1.000	0.600	0.569	-5	30	
CAL3	251623.61	652.9	622094.83	True	5.00	0.404	5.58	1.000	2.000	2.277	14	30	
CAL4	911932.08	1327.7	611644.12	True	5.00	1.491	5.58	1.000	8.000	8.392	5	30	
CAL5	2165925.64	1806.8	550668.27	True	5.00	3.933	5.58	1.000	20.000	22.139	11	30	
CAL6	4838370.82	1898.2	541153.24	True	5.00	8.941	5.58	1.000	50.000	50.325	1	30	
CAL7	8449610.52	2128.5	491017.31	True	5.00	17.208	5.58	1.000	100.000	96.860	-3	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

8:2-FTS

$y = 2.21069 x (r = 0.99897) \text{ (weighting: } 1 / x \text{)}$



Component Calibration Verification

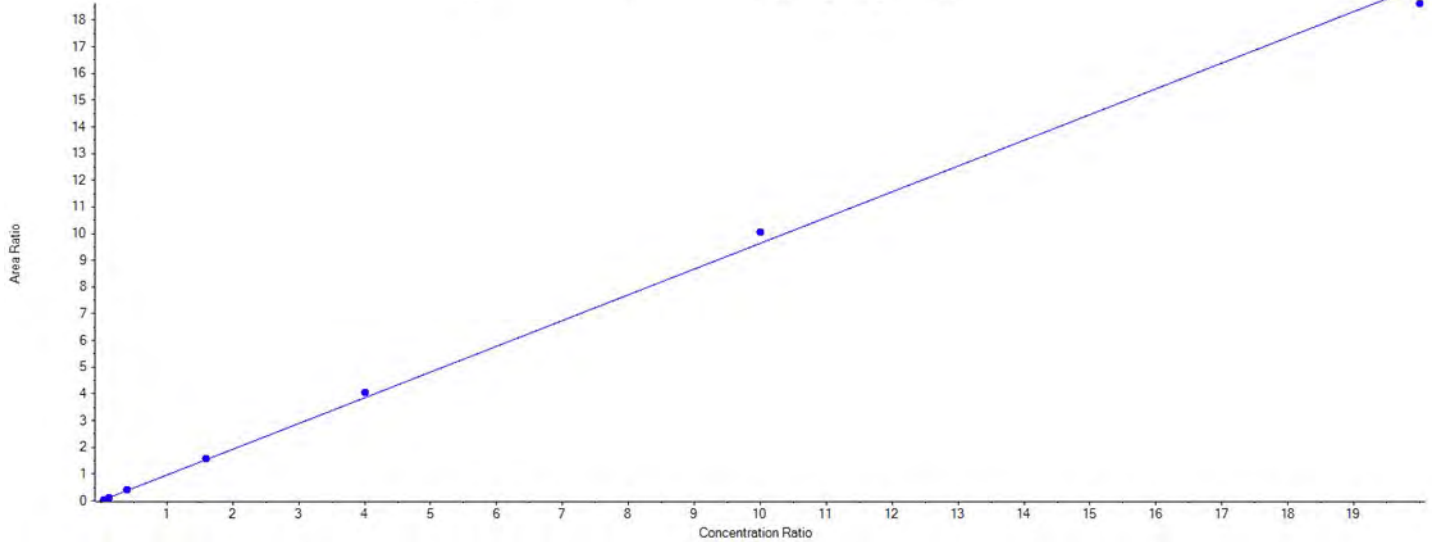
Sample Name	8:2-FTS Area	S/N	13C2-8:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	2203.18	58.0	23191.69	True	4.79	0.095	5.59	1.000	0.192	0.206	7	30	
CAL2	6424.49	130.3	25892.25	True	4.79	0.248	5.58	1.000	0.575	0.538	-7	30	
CAL3	22886.21	465.5	25542.30	True	4.79	0.896	5.59	1.000	1.920	1.941	1	30	
CAL4	80381.54	706.8	23195.67	True	4.79	3.465	5.58	1.000	7.660	7.509	-2	30	
CAL5	180667.13	1004.3	18960.22	True	4.79	9.529	5.58	1.000	19.200	20.646	8	30	
CAL6	434056.07	2021.2	20179.01	True	4.79	21.510	5.58	1.000	47.900	46.607	-3	30	
CAL7	758920.24	2278.1	20381.41	False	4.79	37.236	5.58	1.000	95.800	80.681	-16	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFOSA

$y = 0.96378 x$  (r = 0.99912) (weighting: 1 / x)



Component Calibration Verification

Sample Name	PFOSA Area	S/N	13C8-PFOSA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	27373.90	557.6	695258.63	True	5.00	0.039	5.67	1.000	0.200	0.204	2	30	
CAL2	70441.25	540.5	723822.87	True	5.00	0.097	5.66	1.000	0.600	0.505	-16	30	
CAL3	298383.71	1487.7	693861.54	True	5.00	0.430	5.66	1.000	2.000	2.231	12	30	
CAL4	1076362.63	2201.0	688204.51	True	5.00	1.564	5.66	1.000	8.000	8.114	1	30	
CAL5	2495160.43	2222.1	617622.80	True	5.00	4.040	5.66	1.000	20.000	20.959	5	30	
CAL6	5808768.48	2082.9	576971.52	True	5.00	10.068	5.66	1.000	50.000	52.230	4	30	
CAL7	10135588.91	2046.9	544579.33	True	5.00	18.612	5.66	1.000	100.000	96.557	-3	30	

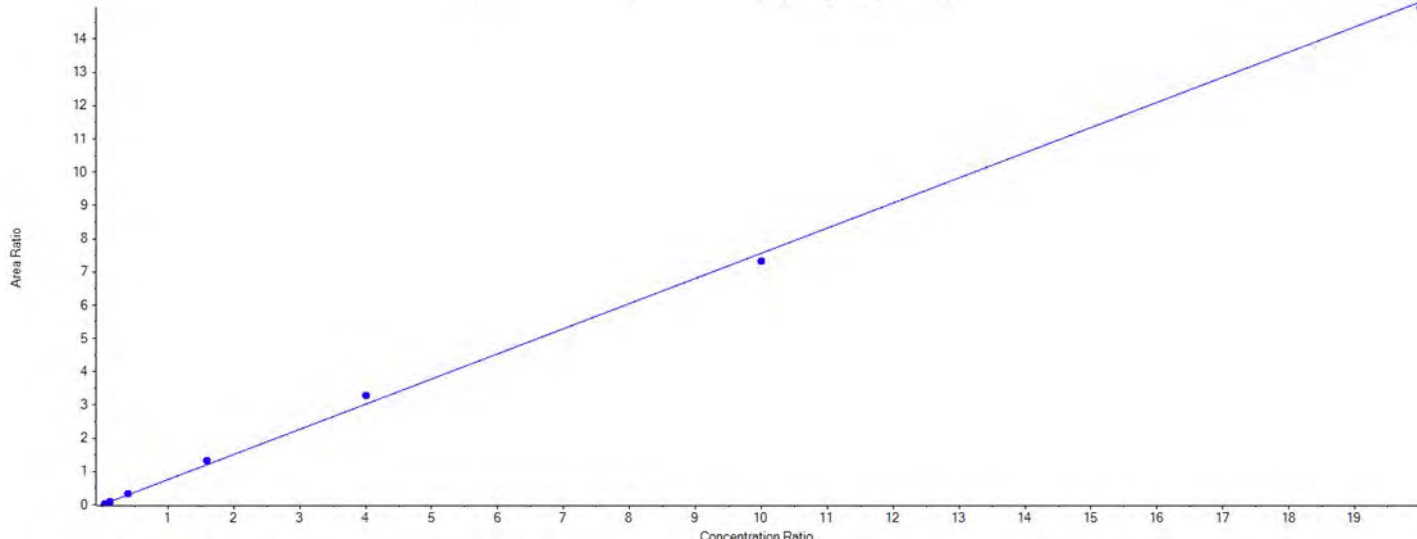


DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

NMeFOSAA

$y = 0.75593 x$  (r = 0.99917) (weighting: 1 / x)



Component Calibration Verification

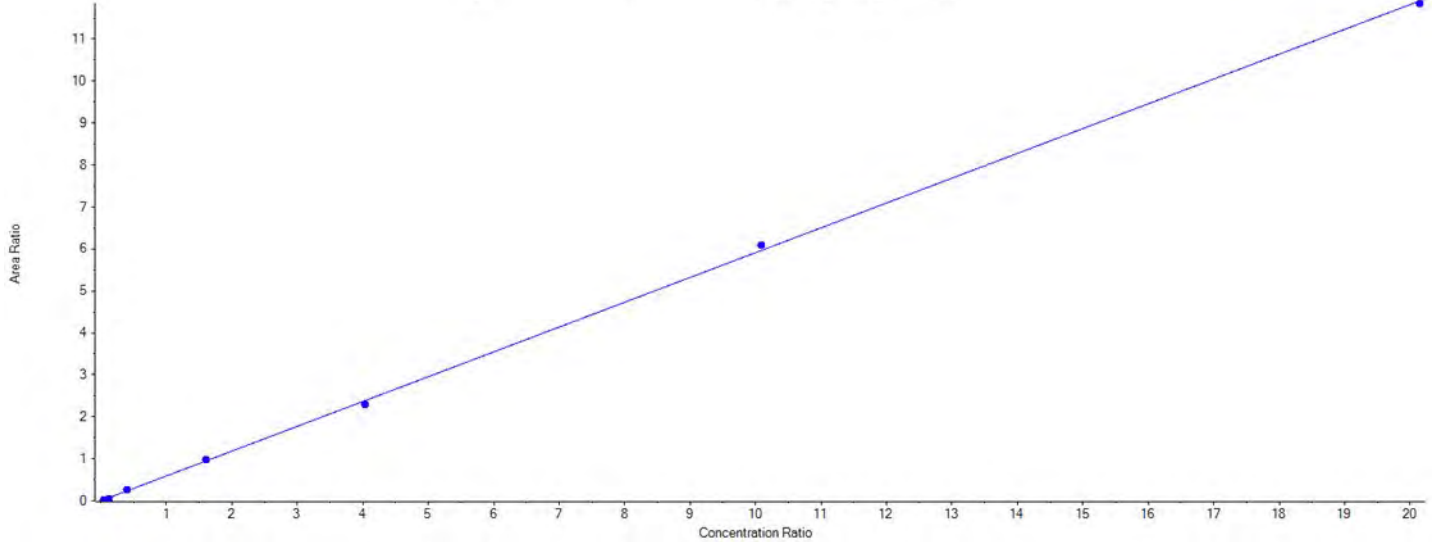
Sample Name	NMeFOSAA Area	S/N	d3-NMeFOSAA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	2862.99	329.5	91943.99	True	5.00	0.031	5.74	1.000	0.200	0.206	3	30	
CAL2	7727.87	170.3	84870.09	True	5.00	0.091	5.72	1.000	0.600	0.602	0	30	
CAL3	28372.58	314.2	83733.38	True	5.00	0.339	5.73	1.000	2.000	2.241	12	30	
CAL4	113391.52	784.4	86138.32	True	5.00	1.316	5.73	1.000	8.000	8.707	9	30	
CAL5	273175.18	1090.1	83194.53	True	5.00	3.284	5.73	1.000	20.000	21.719	9	30	
CAL6	636332.60	1008.2	86838.40	True	5.00	7.328	5.72	1.000	50.000	48.469	-3	30	
CAL7	1268339.66	1234.6	84863.12	True	5.00	14.946	5.72	1.000	100.000	98.856	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFDS

$y = 0.59118 x$  (r = 0.99972) (weighting: 1 / x)



Component Calibration Verification

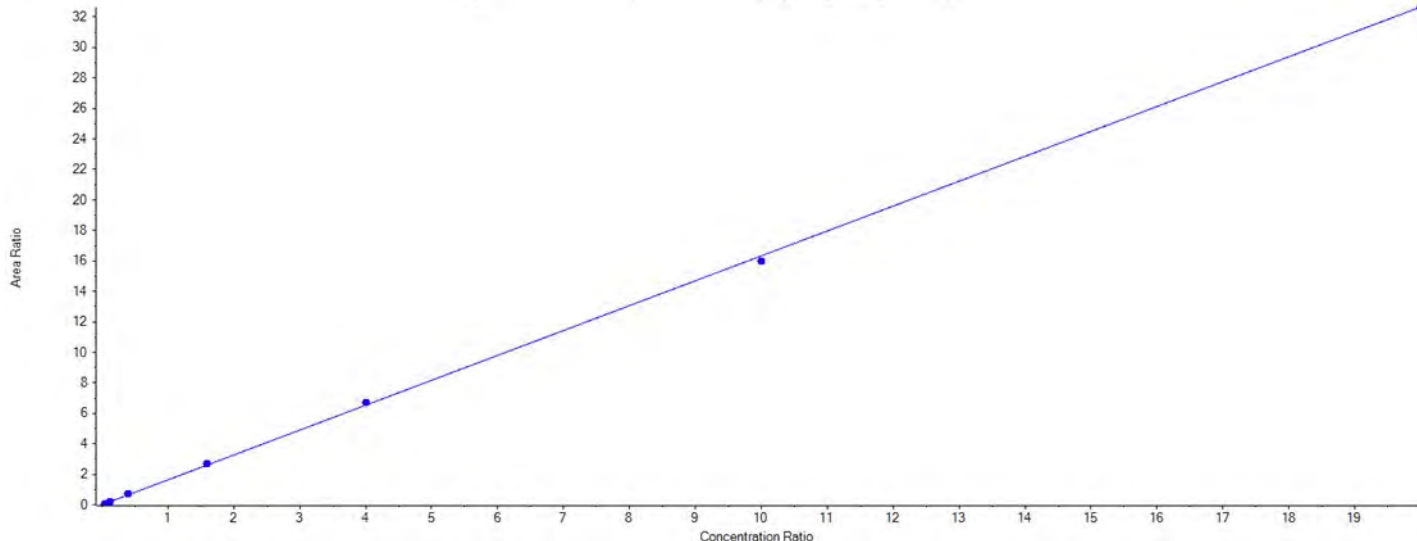
Sample Name	PFDS Area	S/N	13C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	7005.61	40832.3	296771.13	True	4.78	0.024	5.82	1.110	0.193	0.191	-1	30	
CAL2	18312.86	1550842.3	308155.48	True	4.78	0.059	5.82	1.110	0.578	0.481	-17	30	
CAL3	77164.09	705.6	294019.28	True	4.78	0.262	5.82	1.110	1.930	2.122	10	30	
CAL4	290693.23	74178.4	299310.50	True	4.78	0.971	5.82	1.110	7.700	7.853	2	30	
CAL5	656687.67	14915.4	286479.93	True	4.78	2.292	5.82	1.110	19.300	18.534	-4	30	
CAL6	1557080.12	2480.6	255714.77	True	4.78	6.089	5.82	1.110	48.200	49.234	2	30	
CAL7	2738544.97	4085.7	231168.31	True	4.78	11.847	5.82	1.110	96.300	95.786	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFUnDA

$y = 1.63299 x$  ( $r = 0.99981$ ) (weighting:  $1 / x$ )



Component Calibration Verification

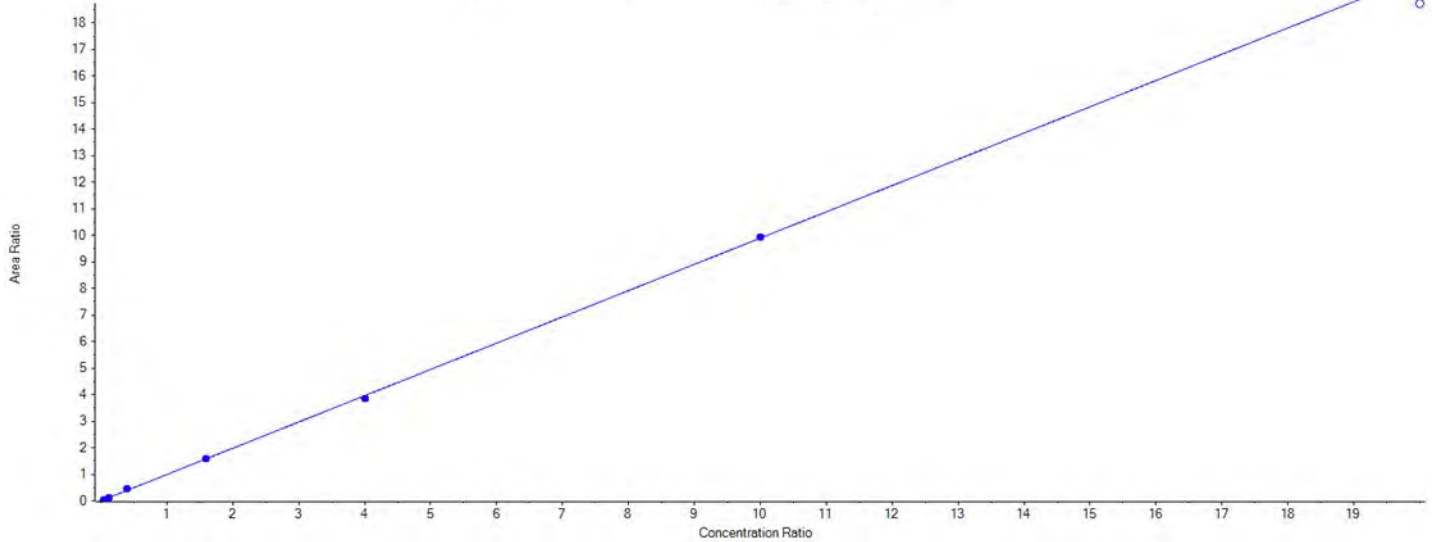
Sample Name	PFUnDA Area	S/N	<sup>13</sup> C7-PFUnDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	25249.68	177.7	318852.78	True	5.00	0.079	5.85	1.000	0.200	0.242	21	30	
CAL2	67047.18	399.0	345908.67	True	5.00	0.194	5.84	1.000	0.600	0.593	-1	30	
CAL3	247240.79	825.6	335572.48	True	5.00	0.737	5.85	1.000	2.000	2.256	13	30	
CAL4	899827.44	1309.1	335166.97	True	5.00	2.685	5.85	1.000	8.000	8.220	3	30	
CAL5	2053634.11	2370.2	305265.77	True	5.00	6.727	5.85	1.000	20.000	20.598	3	30	
CAL6	4768074.33	2464.2	297859.04	True	5.00	16.008	5.84	1.000	50.000	49.014	-2	30	
CAL7	8122821.30	3096.0	249018.66	True	5.00	32.619	5.84	1.000	100.000	99.876	0	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

NEtFOSAA

$y = 0.98933 x$  (r = 0.99959) (weighting: 1 / x)



Component Calibration Verification

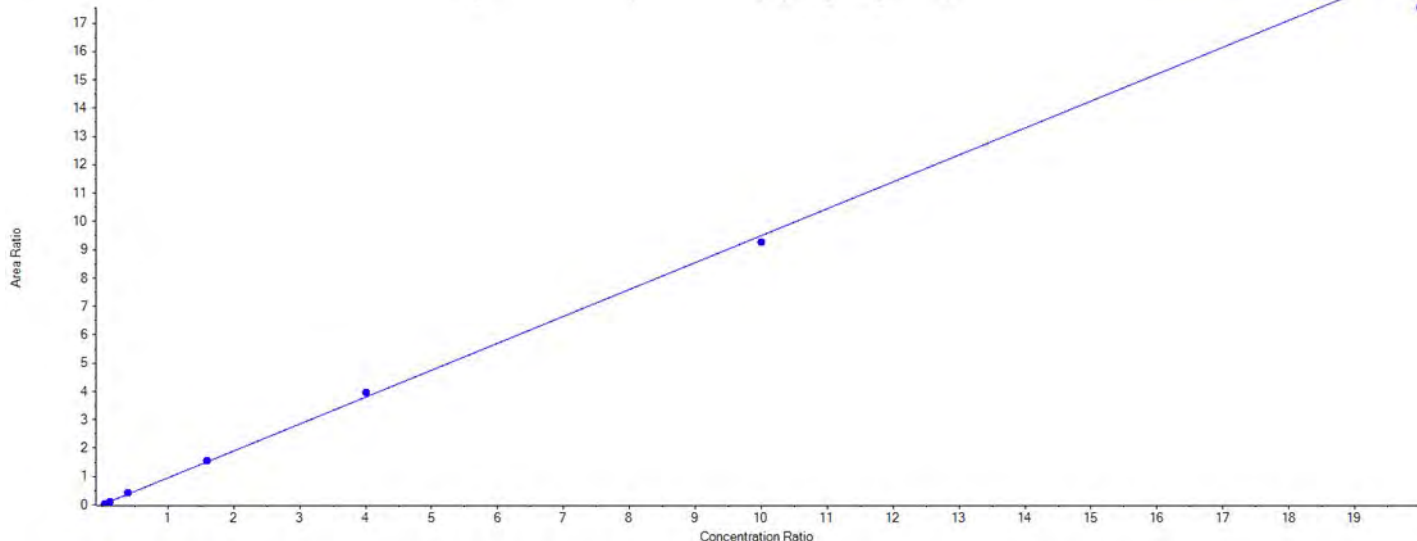
Sample Name	NEtFOSAA Area	S/N	d5-NEtFOSAA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	3561.72	160.5	70354.75	True	5.00	0.051	5.87	1.000	0.200	0.256	28	30	
CAL2	7437.87	232.6	74625.88	True	5.00	0.100	5.86	1.000	0.600	0.504	-16	30	
CAL3	31960.94	12521.6	72524.36	True	5.00	0.441	5.87	1.000	2.000	2.227	11	30	
CAL4	112530.30	852.2	70313.98	True	5.00	1.600	5.86	1.000	8.000	8.088	1	30	
CAL5	261138.15	1113.7	67520.89	True	5.00	3.868	5.86	1.000	20.000	19.546	-2	30	
CAL6	643440.74	1557.0	64805.85	True	5.00	9.929	5.86	1.000	50.000	50.179	0	30	
CAL7	1198896.19	1364.6	64018.92	False	5.00	18.727	5.86	1.000	100.000	94.646	-5	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFD<sub>o</sub>DA

$y = 0.94986 x$  (r = 0.99931) (weighting: 1 / x)



Component Calibration Verification

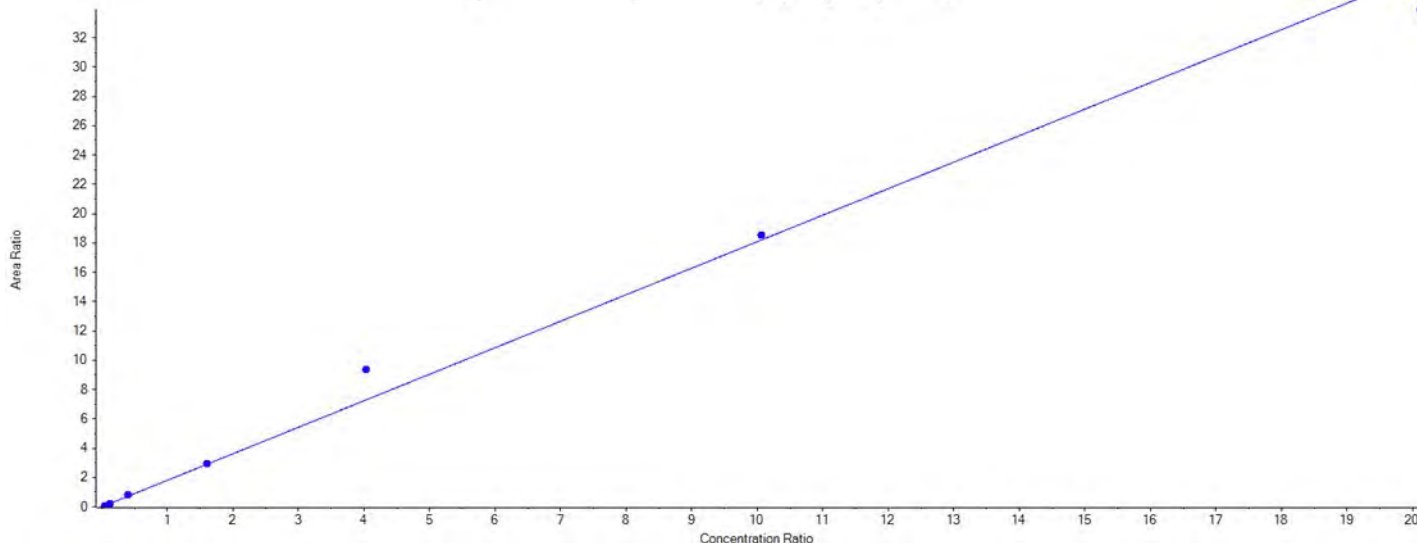
Sample Name	PFD <sub>o</sub> DA Area	S/N	<sup>13</sup> C <sub>2</sub> -PFD <sub>o</sub> DA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	37270.51	412.0	754066.10	True	5.00	0.049	6.08	1.000	0.200	0.260	30	30	
CAL2	80887.26	620.8	823944.34	True	5.00	0.098	6.07	1.000	0.600	0.517	-14	30	
CAL3	325640.83	1278.7	789543.71	True	5.00	0.412	6.08	1.000	2.000	2.171	9	30	
CAL4	1203364.64	2004.1	777497.15	True	5.00	1.548	6.08	1.000	8.000	8.147	2	30	
CAL5	2804098.45	2754.1	706411.13	True	5.00	3.969	6.08	1.000	20.000	20.895	4	30	
CAL6	6214332.27	2901.1	670197.85	True	5.00	9.272	6.07	1.000	50.000	48.809	-2	30	
CAL7	10417166.00	2398.9	593609.87	False	5.00	17.549	6.07	1.000	100.000	92.376	-8	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

10:2-FTS

$y = 1.80830 x$  ( $r = 0.99376$ ) (weighting:  $1 / x$ )



Component Calibration Verification

Sample Name	10:2-FTS Area	S/N	13C2-8:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	1354.81	399.2	23191.69	True	4.79	0.058	6.09	1.090	0.193	0.155	-20	30	
CAL2	5031.45	1102.9	25892.25	True	4.79	0.194	6.09	1.090	0.578	0.515	-11	30	
CAL3	20128.37	12142.5	25542.30	True	4.79	0.788	6.10	1.090	1.930	2.087	8	30	
CAL4	68099.46	2363.8	23195.67	True	4.79	2.936	6.09	1.090	7.710	7.777	1	30	
CAL5	178277.68	1526.2	18960.22	True	4.79	9.403	6.09	1.090	19.300	24.907	29	30	
CAL6	373461.12	1810.4	20179.01	True	4.79	18.507	6.09	1.090	48.200	49.024	2	30	
CAL7	691304.98	2564.5	20381.41	True	4.79	33.918	6.09	1.090	96.400	89.846	-7	30	

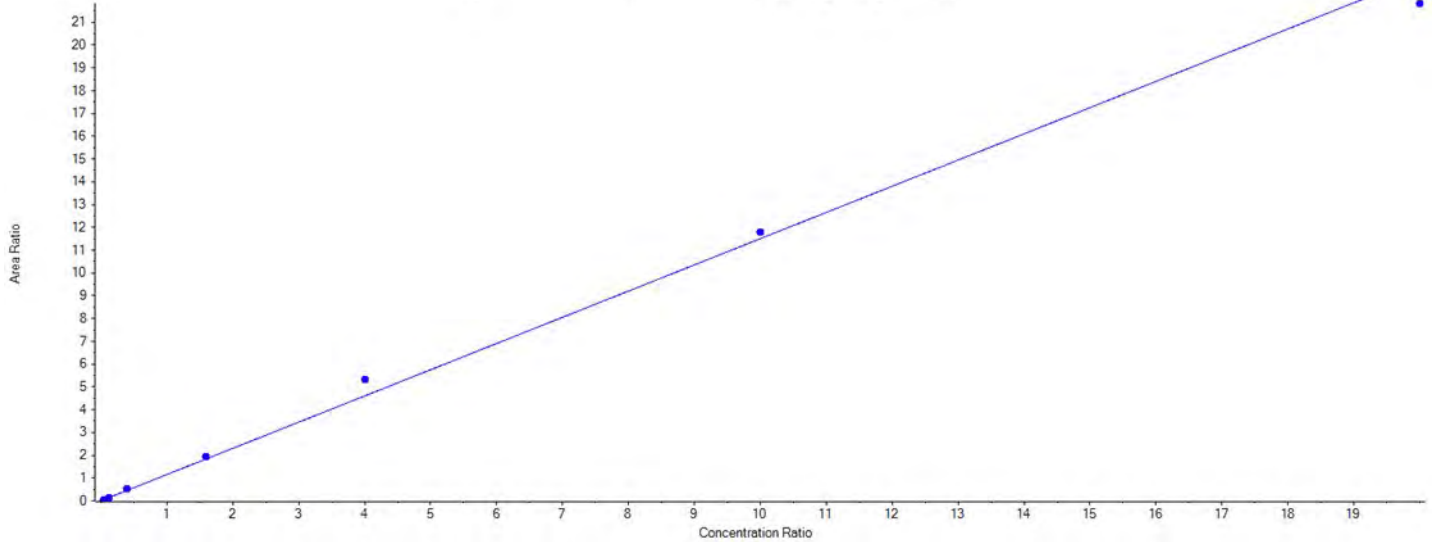


DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

NMePFOSAE

$y = 1.15061 x$  (r = 0.99758) (weighting: 1 / x)



Component Calibration Verification

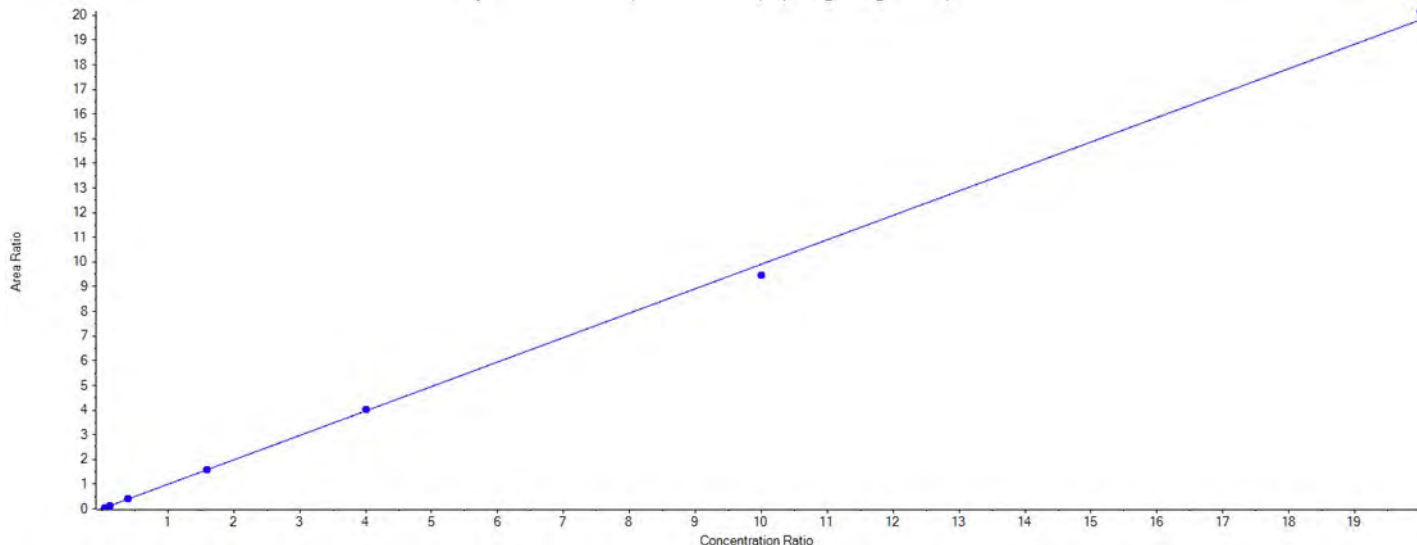
Sample Name	NMePFOSAE Area	S/N	d7-NMePFOSAE Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	14542.72	115.4	275061.76	True	5.00	0.053	6.13	1.000	0.200	0.230	15	30	
CAL2	34660.64	260.9	265104.11	True	5.00	0.131	6.12	1.000	0.600	0.568	-5	30	
CAL3	143928.06	490.0	271371.96	True	5.00	0.530	6.13	1.000	2.000	2.305	15	30	
CAL4	547399.01	855.7	283055.24	True	5.00	1.934	6.13	1.000	8.000	8.404	5	30	
CAL5	1300871.75	997.5	244218.51	True	5.00	5.327	6.13	1.000	20.000	23.147	16	30	
CAL6	3077102.19	1464.8	260658.19	True	5.00	11.805	6.12	1.000	50.000	51.300	3	30	
CAL7	5604299.93	1313.3	256769.15	True	5.00	21.826	6.12	1.000	100.000	94.847	-5	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

NMePFOSA

$y = 0.99096 x$  (r = 0.99959) (weighting: 1 / x)



Component Calibration Verification

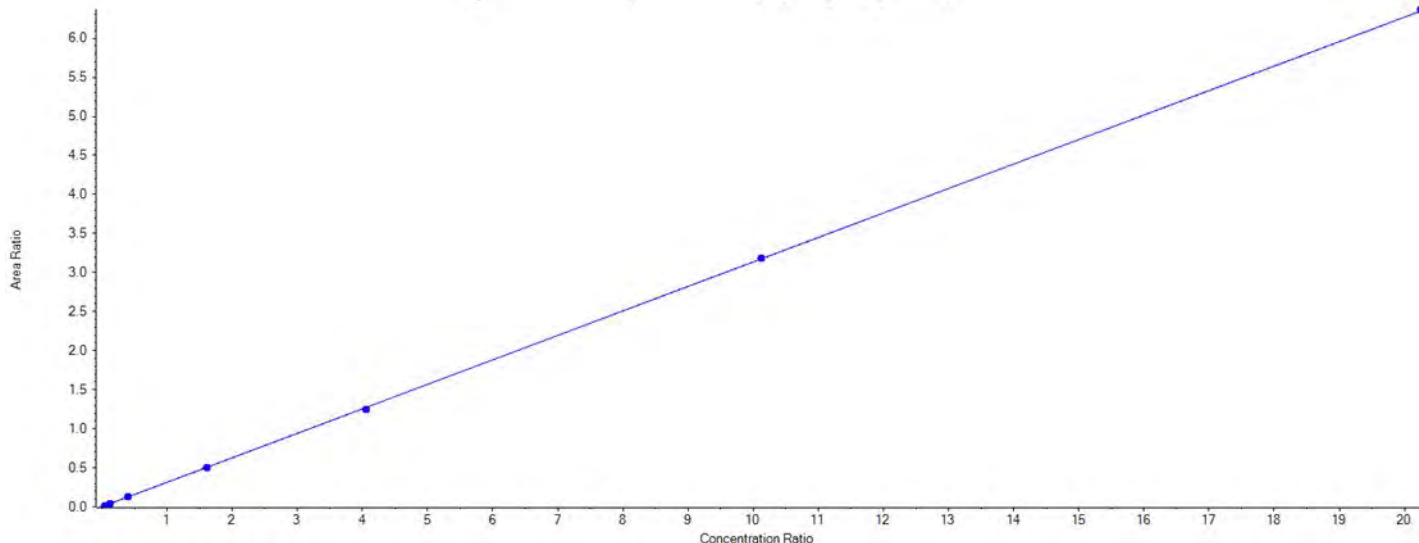
Sample Name	NMePFOSA Area	S/N	d3-NMePFOSA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	3858.71	312.2	89306.24	True	5.00	0.043	6.14	1.000	0.200	0.218	9	30	
CAL2	9287.70	211.0	87716.56	True	5.00	0.106	6.13	1.000	0.600	0.534	-11	30	
CAL3	36080.19	652.6	85427.70	True	5.00	0.422	6.13	1.000	2.000	2.131	7	30	
CAL4	132178.28	1048.0	82821.34	True	5.00	1.596	6.13	1.000	8.000	8.052	1	30	
CAL5	340769.02	1312.1	84514.87	True	5.00	4.032	6.13	1.000	20.000	20.344	2	30	
CAL6	783375.42	1153.6	82601.00	True	5.00	9.484	6.13	1.000	50.000	47.852	-4	30	
CAL7	1487707.20	1331.1	73831.64	True	5.00	20.150	6.13	1.000	100.000	101.669	2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

PFDoS

$y = 0.31354 x$  (r = 0.99992) (weighting: 1 / x)



Component Calibration Verification

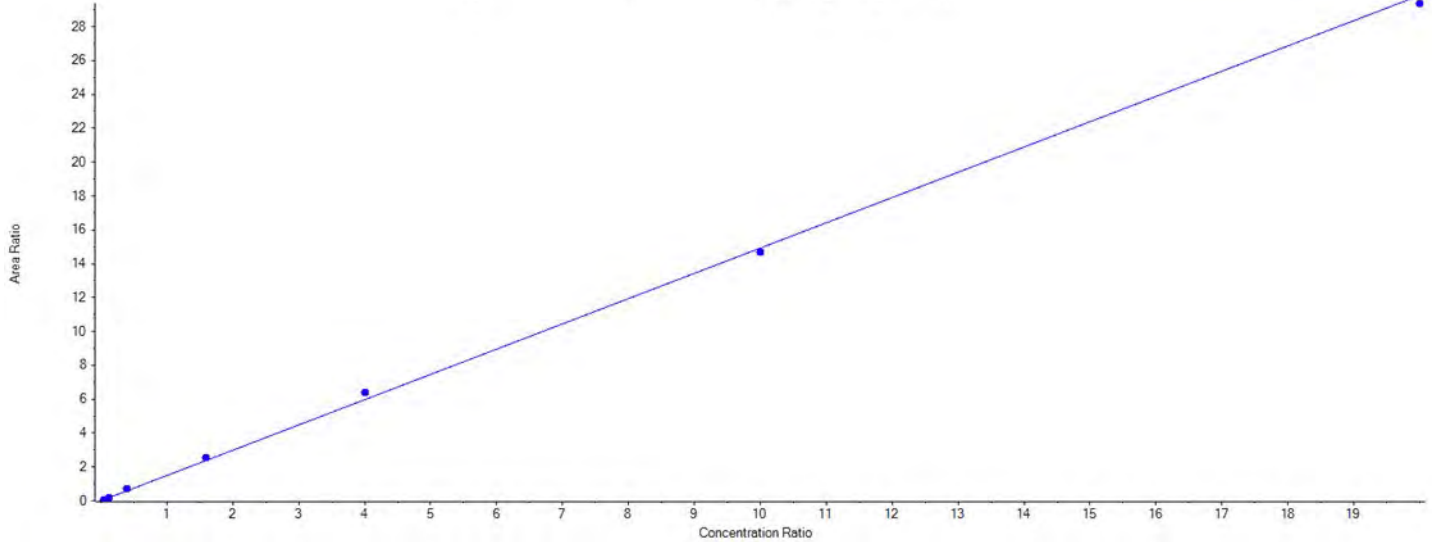
Sample Name	PFDoS Area	S/N	<sup>13</sup> C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	3916.45	1274.7	296771.13	True	4.78	0.013	6.25	1.190	0.194	0.201	4	30	
CAL2	10261.97	350.6	308155.48	True	4.78	0.033	6.24	1.190	0.581	0.508	-13	30	
CAL3	39376.37	1317.9	294019.28	True	4.78	0.134	6.25	1.190	1.940	2.042	5	30	
CAL4	148019.20	3384.5	299310.50	True	4.78	0.495	6.25	1.190	7.740	7.539	-3	30	
CAL5	357990.58	1979.8	286479.93	True	4.78	1.250	6.25	1.190	19.400	19.051	-2	30	
CAL6	815763.72	1854.4	255714.77	True	4.78	3.190	6.24	1.190	48.400	48.634	0	30	
CAL7	1472050.71	2021.5	231168.31	True	4.78	6.368	6.24	1.190	96.800	97.080	0	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

NEtPFOSAE

$y = 1.49234 x$  (r = 0.99935) (weighting: 1 / x)



Component Calibration Verification

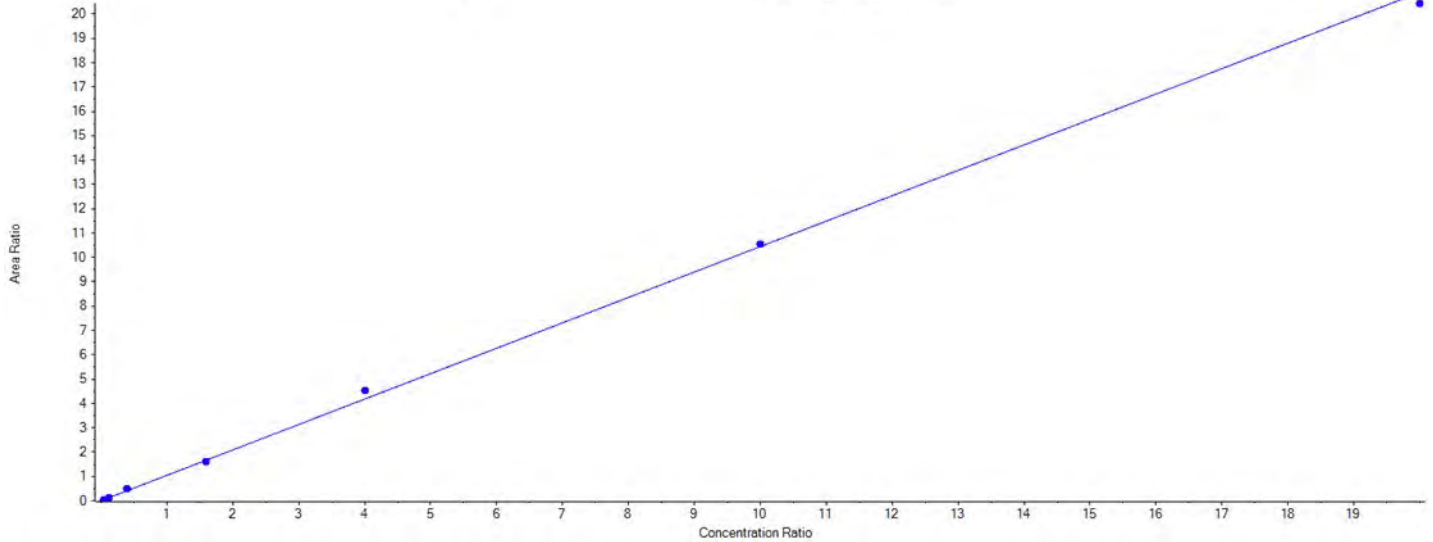
Sample Name	NEtPFOSAE Area	S/N	d9-NEtPFOSAE Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	14267.84	119.0	222789.54	True	5.00	0.064	6.28	1.000	0.200	0.215	7	30	
CAL2	45303.75	325.5	234011.31	True	5.00	0.194	6.28	1.000	0.600	0.649	8	30	
CAL3	164401.86	464.6	235845.39	True	5.00	0.697	6.28	1.000	2.000	2.336	17	30	
CAL4	580672.37	823.7	227812.80	True	5.00	2.549	6.28	1.000	8.000	8.540	7	30	
CAL5	1386117.66	1034.1	215846.99	True	5.00	6.422	6.28	1.000	20.000	21.516	8	30	
CAL6	3150023.96	1284.6	214650.52	True	5.00	14.675	6.28	1.000	50.000	49.168	-2	30	
CAL7	5855586.84	1418.6	199424.66	True	5.00	29.362	6.28	1.000	100.000	98.377	-2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

NEtPFOSA

$y = 1.04447 x (r = 0.99930)$  (weighting: 1 / x)



Component Calibration Verification

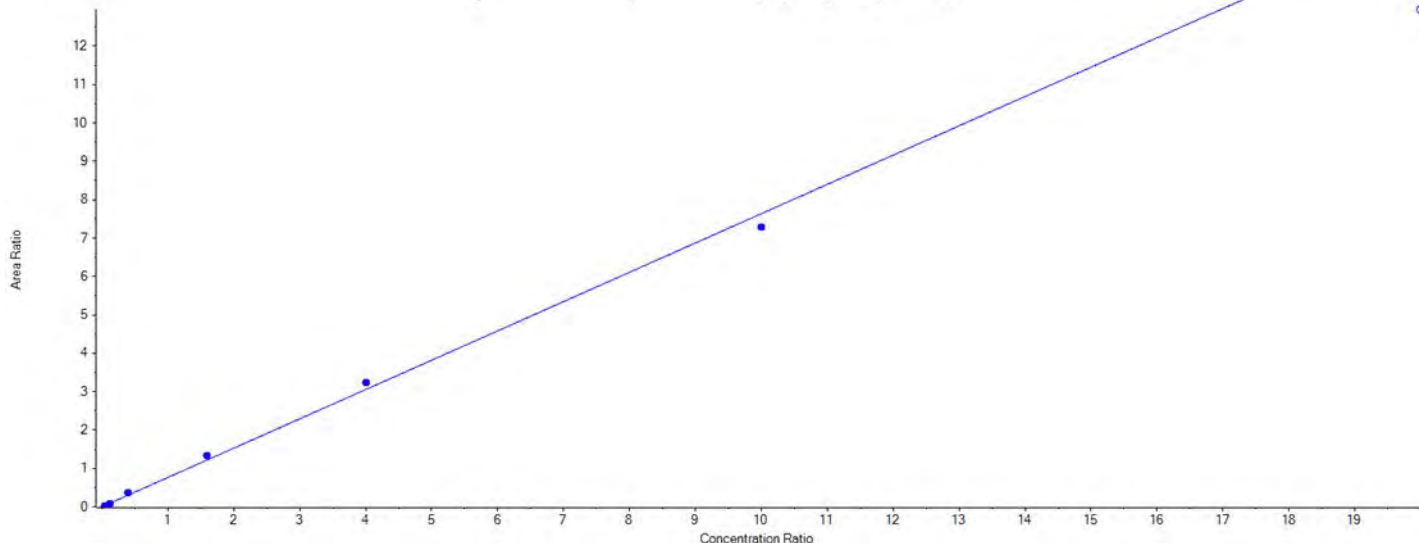
Sample Name	NEtPFOSA Area	S/N	d5-NEtPFOSA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	2663.21	74.4	71072.66	True	5.00	0.037	6.30	1.000	0.200	0.179	-10	30	
CAL2	8819.41	201.3	66979.27	True	5.00	0.132	6.29	1.000	0.600	0.630	5	30	
CAL3	34117.11	493.5	70028.97	True	5.00	0.487	6.29	1.000	2.000	2.332	17	30	
CAL4	112922.94	859.2	69489.36	True	5.00	1.625	6.29	1.000	8.000	7.779	-3	30	
CAL5	295448.63	1329.2	65432.89	True	5.00	4.515	6.29	1.000	20.000	21.615	8	30	
CAL6	692421.71	1122.4	65686.64	True	5.00	10.541	6.29	1.000	50.000	50.462	1	30	
CAL7	1345368.37	1255.4	65852.47	True	5.00	20.430	6.29	1.000	100.000	97.801	-2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC06DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM Acquisition Method: 18AUG13\_3uL.dam

PFTrDA

$y = 0.76341 x$  (r = 0.99801) (weighting: 1 / x)



Component Calibration Verification

Sample Name	PFTrDA Area	S/N	<sup>13</sup> C2-PFDoDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	24471.60	143.9	754066.10	True	5.00	0.032	6.28	1.030	0.200	0.213	6	30	
CAL2	72303.60	213.3	823944.34	True	5.00	0.088	6.27	1.030	0.600	0.575	-4	30	
CAL3	282288.53	519.7	789543.71	True	5.00	0.358	6.28	1.030	2.000	2.342	17	30	
CAL4	1039364.46	741.4	777497.15	True	5.00	1.337	6.28	1.030	8.000	8.755	9	30	
CAL5	2289995.99	1052.8	706411.13	True	5.00	3.242	6.28	1.030	20.000	21.232	6	30	
CAL6	4879343.81	1480.3	670197.85	True	5.00	7.280	6.27	1.030	50.000	47.684	-5	30	
CAL7	7688079.44	1694.8	593609.87	False	5.00	12.951	6.27	1.030	100.000	84.826	-15	30	

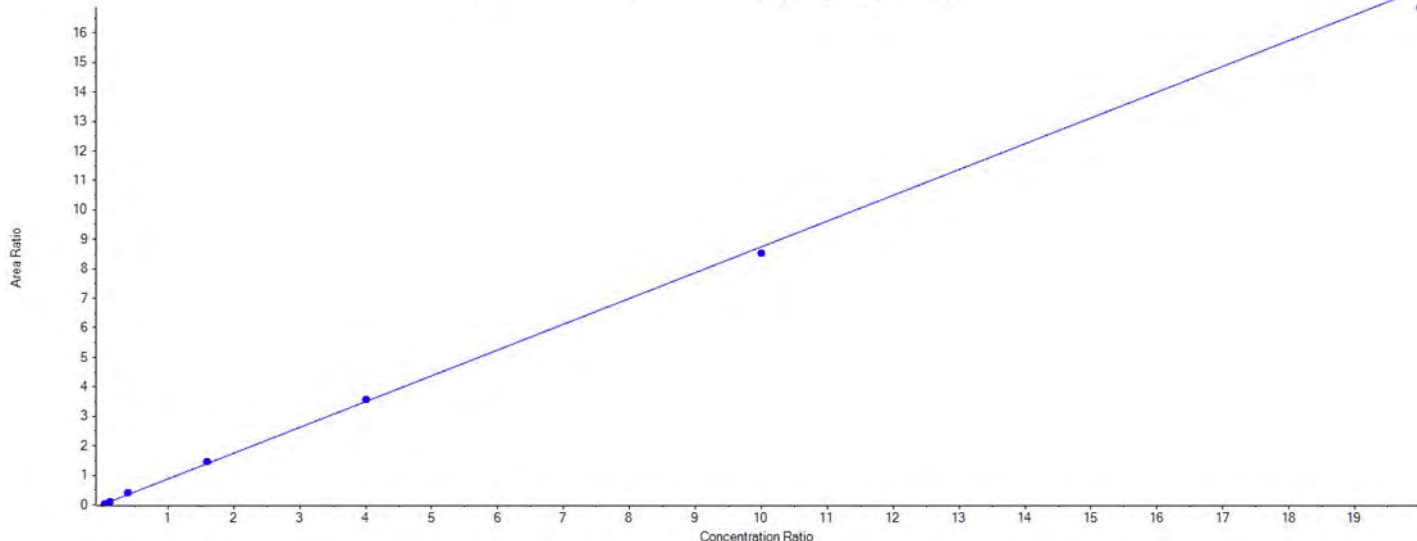


**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

**PFTeDA**

$y = 0.87435 x$  (r = 0.99944) (weighting: 1 / x)



**Component Calibration Verification**

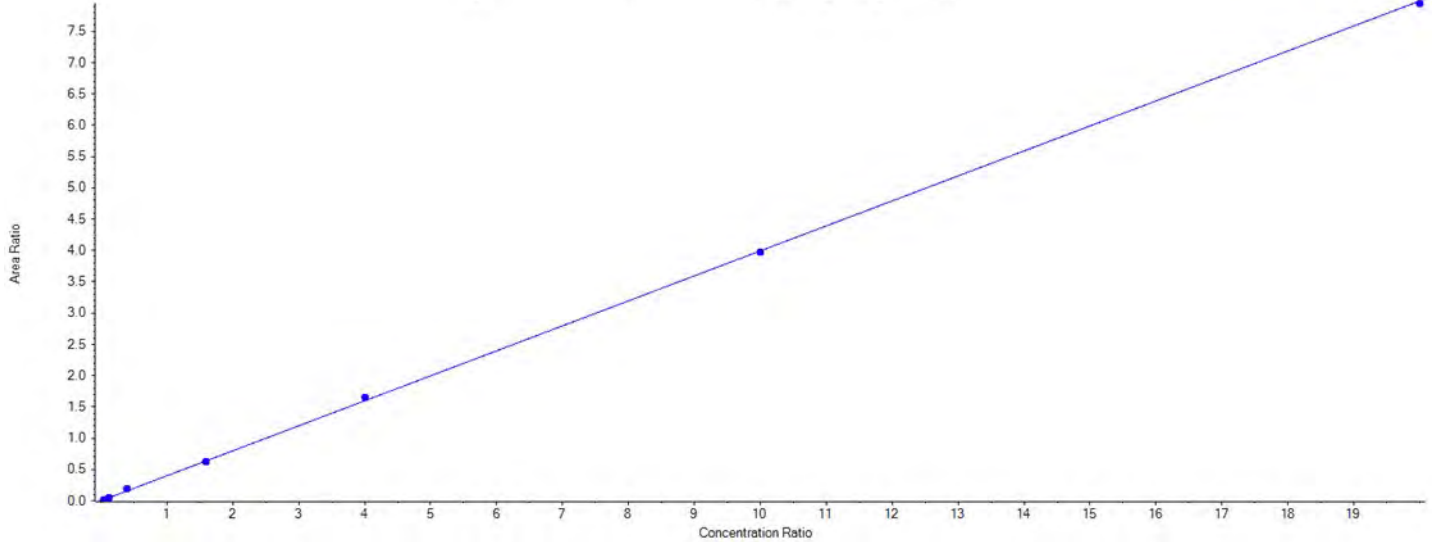
Sample Name	PFTeDA Area	S/N	13C2-PFTeDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	20571.65	155.1	515073.56	True	5.00	0.040	6.45	1.000	0.200	0.228	14	30	
CAL2	55946.77	270.4	540663.86	True	5.00	0.103	6.45	1.000	0.600	0.592	-1	30	
CAL3	217102.02	792.1	540932.65	True	5.00	0.401	6.45	1.000	2.000	2.295	15	30	
CAL4	814575.84	1339.9	559294.73	True	5.00	1.456	6.45	1.000	8.000	8.329	4	30	
CAL5	1865922.85	1575.4	520852.39	True	5.00	3.582	6.45	1.000	20.000	20.486	2	30	
CAL6	4117781.14	1789.0	481845.90	True	5.00	8.546	6.45	1.000	50.000	48.870	-2	30	
CAL7	7609017.15	1938.6	451368.75	False	5.00	16.858	6.45	1.000	100.000	96.401	-4	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

PFHxDA

$y = 0.39925 x$  (r = 0.99978) (weighting: 1 / x)



Component Calibration Verification

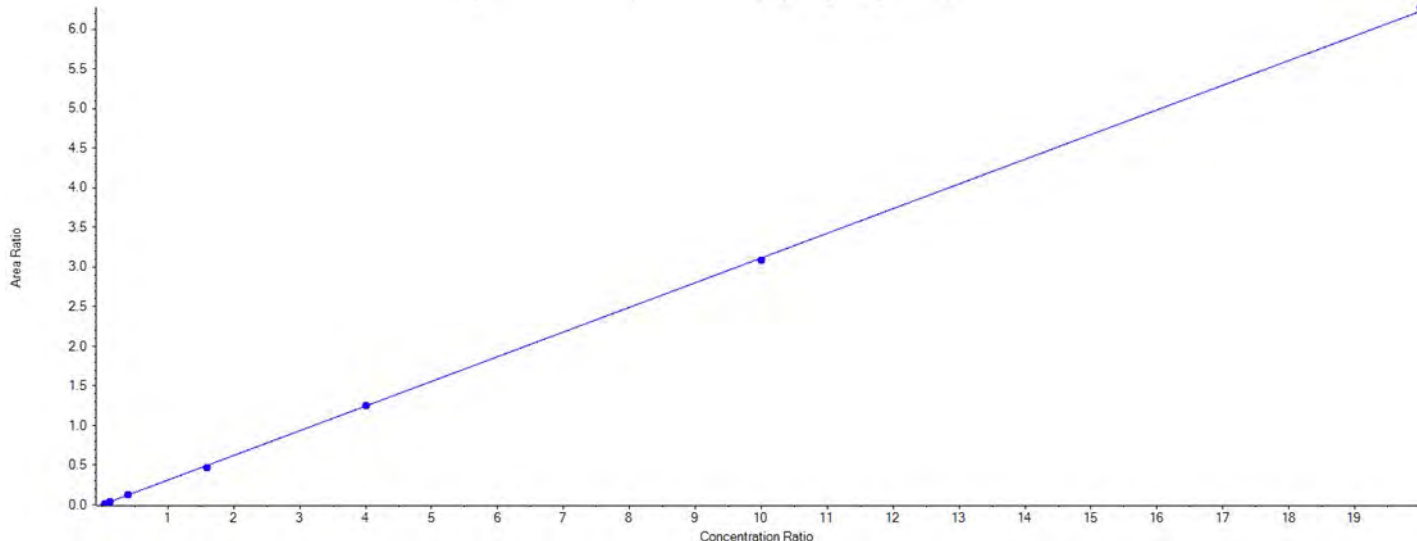
Sample Name	PFHxDA Area	S/N	<sup>13</sup> C <sub>2</sub> -PFTeDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	10493.78	347.8	515073.56	True	5.00	0.020	6.74	1.040	0.200	0.255	28	30	
CAL2	24602.52	783.7	540663.86	True	5.00	0.046	6.74	1.040	0.600	0.570	-5	30	
CAL3	100823.70	1310.5	540932.65	True	5.00	0.186	6.74	1.040	2.000	2.334	17	30	
CAL4	349067.59	1866.3	559294.73	True	5.00	0.624	6.74	1.040	8.000	7.816	-2	30	
CAL5	856971.96	2417.8	520852.39	True	5.00	1.645	6.74	1.040	20.000	20.605	3	30	
CAL6	1913602.75	4651.9	481845.90	True	5.00	3.971	6.74	1.040	50.000	49.736	-1	30	
CAL7	3585505.03	3079.9	451368.75	True	5.00	7.944	6.73	1.040	100.000	99.483	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

PFODA

$y = 0.31148 x$  (r = 0.99986) (weighting: 1 / x)



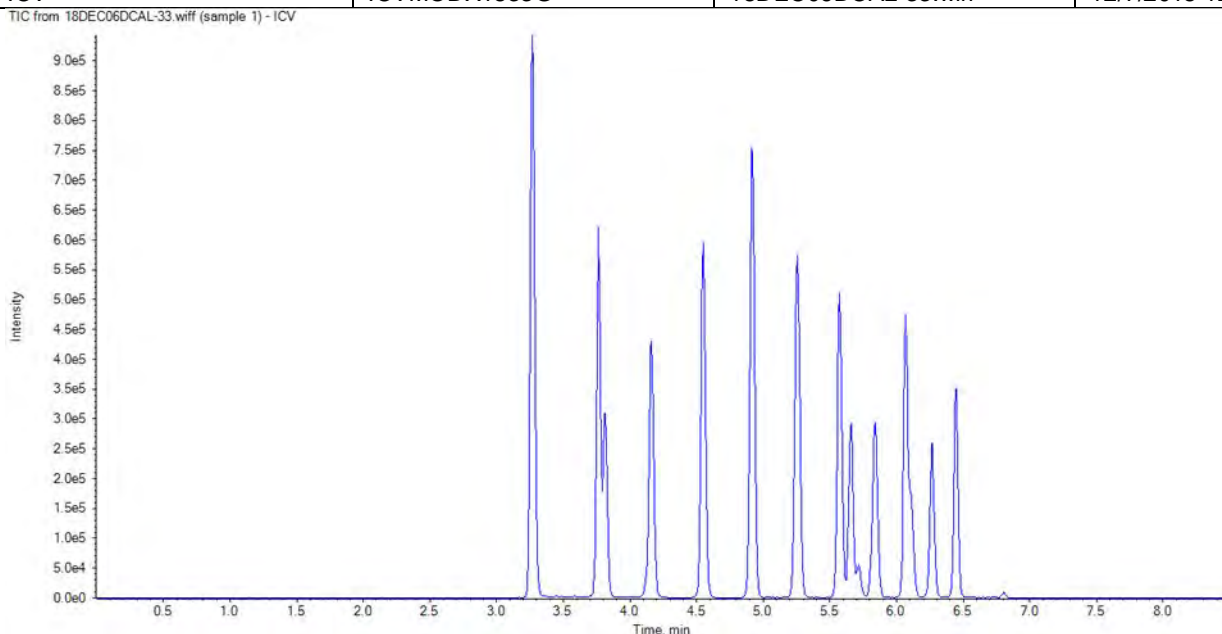
Component Calibration Verification

Sample Name	PFODA Area	S/N	13C2-PFTeDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	6969.17	553.6	515073.56	True	5.00	0.014	6.99	1.080	0.200	0.217	9	30	
CAL2	18468.51	1036.0	540663.86	True	5.00	0.034	6.98	1.080	0.600	0.548	-9	30	
CAL3	70714.00	1712.2	540932.65	True	5.00	0.131	6.99	1.080	2.000	2.098	5	30	
CAL4	262292.75	2891.5	559294.73	True	5.00	0.469	6.98	1.080	8.000	7.528	-6	30	
CAL5	651552.95	3073.4	520852.39	True	5.00	1.251	6.99	1.080	20.000	20.081	0	30	
CAL6	1488718.76	3739.3	481845.90	True	5.00	3.090	6.98	1.080	50.000	49.596	-1	30	
CAL7	2832373.93	3634.0	451368.75	True	5.00	6.275	6.98	1.080	100.000	100.731	1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

Sample Name	Sample ID:	Sample File:	Acquisition Date:
ICV	ICVMODX1833G	18DEC06DCAL-33.wiff	12/7/2018 12:49:37 AM



Injection Standard Name	Inj Std Conc	Injection Std Peak Area	CAL3 Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.000	862809.82	825688.9	4.5	50	
13C2-PFOA	5.000	440385.38	449802.8	-2.1	50	
13C4-PFOS	4.780	289133.30	276858.3	4.4	50	
13C2-PFDA	5.000	325898.29	315428.3	3.3	50	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC06DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC06DCAL12/7/2018 12:45:29 PM      Acquisition Method: 18AUG13\_3uL.dam

Sample Name	Sample ID:	Sample File:	Acquisition Date:
ICV	ICVMODX1833G	18DEC06DCAL-33.wiff	12/7/2018 12:49:37 AM

Analyte Name	Analyte Area	Ext Std Name	Ext Std Area	Ext Std Con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	365740.64	13C4-PFBA	949191.04	5.00	0.385	3.27	1.00	2.000	2.126	6	30	
PFPeA	343574.54	13C5-PFPeA	881736.08	5.00	0.390	3.77	1.00	2.000	2.050	2	30	
PFBS	162265.95	13C3-PFBS	445541.67	4.65	0.364	3.81	1.00	1.769	1.805	2	30	
4:2-FTS	N/A	13C2-4:2-FTS	56764.65	4.67	N/A	N/A	N/A	0.000	N/A		30	
PFHxA	339202.11	13C5-PFHxA	656636.38	5.00	0.517	4.16	1.00	2.000	2.251	13	30	
PFPeS	N/A	13C3-PFBS	445541.67	4.65	N/A	N/A	N/A	0.000	N/A		30	
PFHpA	342255.00	13C4-PFHpA	518050.90	5.00	0.661	4.55	1.00	2.000	2.175	9	30	
PFHxS	125645.75	13C3-PFHxS	350861.28	4.73	0.358	4.55	1.00	1.890	1.697	-10	30	
6:2-FTS	N/A	13C2-6:2-FTS	35235.42	4.75	N/A	N/A	N/A	0.000	N/A		30	
PFHpS	124002.40	13C3-PFHxS	350861.28	4.73	0.353	4.91	1.08	1.900	1.940	2	30	
PFOA	320848.38	13C8-PFOA	819462.10	5.00	0.392	4.92	1.00	2.000	2.140	7	30	
PFOS	119330.15	13C8-PFOS	301700.51	4.78	0.396	5.25	1.00	1.910	1.641	-14	30	
PFNA	281622.36	13C9-PFNA	506111.66	5.00	0.556	5.26	1.00	2.000	2.051	3	30	
PFNS	N/A	13C8-PFOS	301700.51	4.78	N/A	N/A	N/A	0.000	N/A		30	
PFDA	241839.27	13C6-PFDA	616493.85	5.00	0.392	5.57	1.00	2.000	2.208	10	30	
8:2-FTS	N/A	13C2-8:2-FTS	24385.97	4.79	N/A	N/A	N/A	0.000	N/A		30	
PFOSA	N/A	13C8-PFOSA	701268.41	5.00	N/A	N/A	N/A	0.000	N/A		30	
NMeFOSAA	33150.53	d3-NMeFOSAA	87605.07	5.00	0.378	5.72	1.00	2.000	2.503	25	30	
PFDS	72651.57	13C8-PFOS	301700.51	4.78	0.241	5.81	1.11	1.930	1.947	1	30	
PFUnDA	236810.29	13C7-PFUnDA	336300.95	5.00	0.704	5.84	1.00	2.000	2.156	8	30	
NEtFOSAA	28610.36	d5-NEtFOSAA	71167.55	5.00	0.402	5.86	1.00	2.000	2.032	2	30	
PFDoDA	282836.29	13C2-PFDoDA	765392.66	5.00	0.370	6.07	1.00	2.000	1.945	-3	30	
10:2-FTS	N/A	13C2-8:2-FTS	24385.97	4.79	N/A	N/A	N/A	0.000	N/A		30	
NMePFOSAE	N/A	d7-NMePFOSAE	282158.78	5.00	N/A	N/A	N/A	0.000	N/A		30	
NMePFOSA	N/A	d3-NMePFOSA	89779.37	5.00	N/A	N/A	N/A	0.000	N/A		30	
PFDoS	N/A	13C8-PFOS	301700.51	4.78	N/A	N/A	N/A	0.000	N/A		30	
NEtPFOSAE	N/A	d9-NEtPFOSAE	228783.41	5.00	N/A	N/A	N/A	0.000	N/A		30	
NEtPFOSA	N/A	d5-NEtPFOSA	72087.81	5.00	N/A	N/A	N/A	0.000	N/A		30	
PFTrDA	269624.15	13C2-PFDoDA	765392.66	5.00	0.352	6.27	1.03	2.000	2.307	15	30	
PFTeDA	203997.28	13C2-PFTeDA	545334.36	5.00	0.374	6.44	1.00	2.000	2.139	7	30	
PFHxDA	N/A	13C2-PFTeDA	545334.36	5.00	N/A	N/A	N/A	0.000	N/A		30	
PFODA	N/A	13C2-PFTeDA	545334.36	5.00	N/A	N/A	N/A	0.000	N/A		30	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL1	Data File:	18DEC06DCAL-25.wiff
Sample ID:	CALBRN11833C	Acquis Date:	2018-12-06T23:37:31
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	3	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	804002.5	825688.9	-3	50	
13C2-PFOA	5.0	433955.3	449802.8	-4	50	
13C4-PFOS	4.8	274852.7	276858.3	-1	50	
13C2-PFDA	5.0	330011.0	315428.3	5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	898694.9	13C3-PFBA	804002.5	1.118	5.000	4.947	99	70-130	
E13C5-PFPeA	841151.0	13C3-PFBA	804002.5	1.046	5.000	4.969	99	70-130	
E13C3-PFBS	426818.1	13C3-PFBA	804002.5	0.531	4.650	4.500	97	70-130	
E13C2-4:2-FTS	53888.8	13C2-PFOA	433955.3	0.124	4.670	4.866	104	70-130	
E13C5-PFHxA	658090.0	13C2-PFOA	433955.3	1.516	5.000	5.092	102	70-130	
E13C3-PFHxS	339911.1	13C2-PFOA	433955.3	0.783	4.730	5.024	106	70-130	
E13C4-PFHpA	505550.3	13C2-PFOA	433955.3	1.165	5.000	4.953	99	70-130	
E13C2-6:2-FTS	37457.5	13C2-PFOA	433955.3	0.086	4.750	5.347	113	70-130	
E13C8-PFOA	818121.3	13C2-PFOA	433955.3	1.885	5.000	5.329	107	70-130	
E13C8-PFOS	296771.1	13C4-PFOS	274852.7	1.080	4.780	4.846	101	70-130	
E13C9-PFNA	472343.2	13C4-PFOS	274852.7	1.719	5.000	4.856	97	70-130	
E13C6-PFDA	610780.8	13C2-PFDA	330011.0	1.851	5.000	4.905	98	70-130	
E13C2-8:2-FTS	23191.7	13C2-PFDA	330011.0	0.070	4.790	4.588	96	70-130	
E13C8-PFOA	695258.6	13C2-PFDA	330011.0	2.107	5.000	4.983	100	70-130	
Ed3-NMeFOSAA	91944.0	13C2-PFDA	330011.0	0.279	5.000	4.937	99	70-130	
E13C7-PFUnDA	318852.8	13C2-PFDA	330011.0	0.966	5.000	4.740	95	70-130	
Ed5-NEtFOSAA	70354.8	13C2-PFDA	330011.0	0.213	5.000	4.706	94	70-130	
E13C2-PFDoDA	754066.1	13C2-PFDA	330011.0	2.285	5.000	4.795	96	70-130	
Ed7-NMePFOSAE	275061.8	13C2-PFDA	330011.0	0.833	5.000	4.801	96	70-130	
Ed3-NMePFOSA	89306.2	13C2-PFDA	330011.0	0.271	5.000	4.931	99	70-130	
Ed9-NEtPFOSAE	222789.5	13C2-PFDA	330011.0	0.675	5.000	4.655	93	70-130	
Ed5-NEtPFOSA	71072.7	13C2-PFDA	330011.0	0.215	5.000	4.847	97	70-130	
E13C2-PFTeDA	515073.6	13C2-PFDA	330011.0	1.561	5.000	4.632	93	70-130	



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

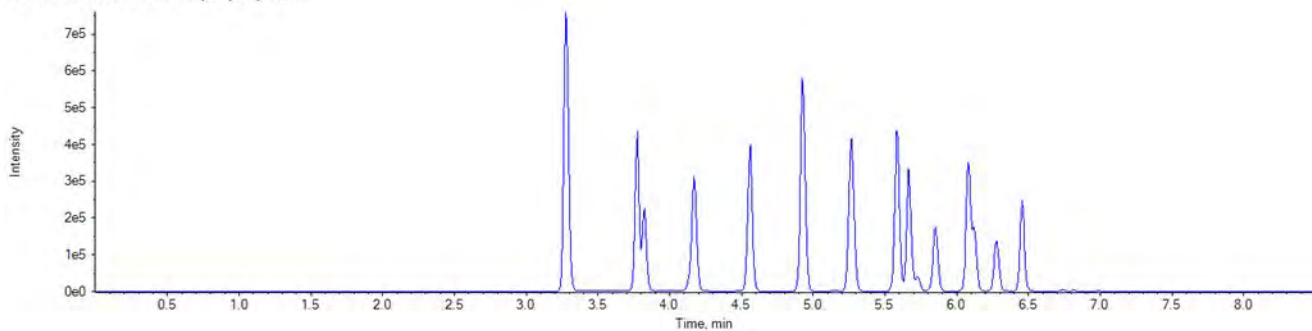
Sample Name: CAL1 Instrument Name: LM27631 File Name: 18DEC06DCAL-25.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	39459.3		A	13C4-PFBA	3.28	898694.9	0.044	0.242
PFPeA	3.78	1.000	38422.4		A	13C5-PFPeA	3.77	841151.0	0.046	0.240
PFBS	3.82	1.000	17447.7		A	13C3-PFBS	3.82	426818.1	0.041	0.203
4:2-FTS	4.14	1.000	3906.6		A	13C2-4:2-FTS	4.14	53888.8	0.072	0.194
PFHxA	4.17	1.000	37193.4		A	13C5-PFHxA	4.17	658090.0	0.057	0.246
PFPeS	4.19	1.100	9605.7		A	13C3-PFBS	3.82	426818.1	0.023	0.223
PFHpA	4.56	1.000	37520.1		A	13C4-PFHpA	4.56	505550.3	0.074	0.244
PFHxS	4.56	1.000	12711.1		M	13C3-PFHxS	4.56	339911.1	0.037	0.177
6:2-FTS	4.92	1.000	2930.5		A	13C2-6:2-FTS	4.92	37457.5	0.078	0.194
PFHpS	4.92	1.080	11460.5		A	13C3-PFHxS	4.56	339911.1	0.034	0.185
PFOA	4.93	1.000	35481.9		A	13C8-PFOA	4.93	818121.3	0.043	0.237
PFOS	5.26	1.000	13660.4		M	13C8-PFOS	5.26	296771.1	0.046	0.191
PFNA	5.27	1.000	28021.0		A	13C9-PFNA	5.27	472343.2	0.059	0.219
PFNS	5.56	1.060	9066.4		A	13C8-PFOS	5.26	296771.1	0.031	0.197
PFDA	5.58	1.000	25786.2		A	13C6-PFDA	5.58	610780.8	0.042	0.238
8:2-FTS	5.59	1.000	2203.2		A	13C2-8:2-FTS	5.59	23191.7	0.095	0.206
PFOSA	5.67	1.000	27373.9		A	13C8-PFOSA	5.67	695258.6	0.039	0.204
NMeFOSAA	5.74	1.000	2863.0		A	d3-NMeFOSAA	5.73	91944.0	0.031	0.206
PFDS	5.82	1.110	7005.6		A	13C8-PFOS	5.26	296771.1	0.024	0.191
PfUnDA	5.85	1.000	25249.7		A	13C7-PfUnDA	5.85	318852.8	0.079	0.242
NEtFOSAA	5.87	1.000	3561.7		M	d5-NEtFOSAA	5.86	70354.8	0.051	0.256
PFDaDA	6.08	1.000	37270.5		A	13C2-PFDaDA	6.08	754066.1	0.049	0.260
10:2-FTS	6.09	1.090	1354.8		A	13C2-8:2-FTS	5.59	23191.7	0.058	0.155
NMePFOSAE	6.13	1.000	14542.7		A	d7-NMePFOSAE	6.12	275061.8	0.053	0.230
NMePFOSA	6.14	1.000	3858.7		A	d3-NMePFOSA	6.13	89306.2	0.043	0.218
PFDoS	6.25	1.190	3916.5		A	13C8-PFOS	5.26	296771.1	0.013	0.201
NEtPFOSAE	6.28	1.000	14267.8		A	d9-NEtPFOSAE	6.27	222789.5	0.064	0.215
NEtPFOSA	6.30	1.000	2663.2		A	d5-NEtPFOSA	6.29	71072.7	0.037	0.179
PFTrDA	6.28	1.030	24471.6		A	13C2-PFDaDA	6.08	754066.1	0.032	0.213
PFTeDA	6.45	1.000	20571.7		A	13C2-PFTeDA	6.46	515073.6	0.040	0.228
PFHxDA	6.74	1.040	10493.8		A	13C2-PFTeDA	6.46	515073.6	0.020	0.255
PFODA	6.99	1.080	6969.2		A	13C2-PFTeDA	6.46	515073.6	0.014	0.217

**Total Ion Chromatogram**

TIC from 18DEC06DCAL-25.wiff (sample 1) - CAL1

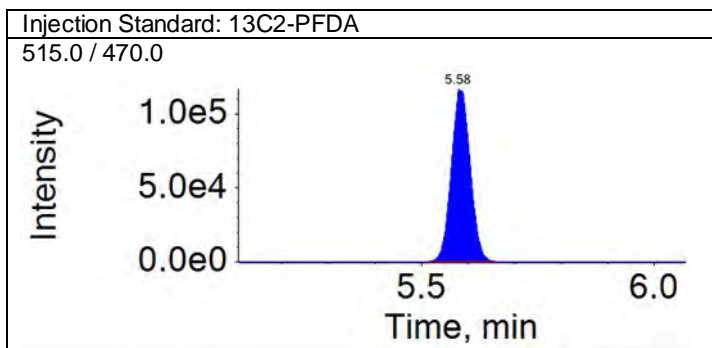
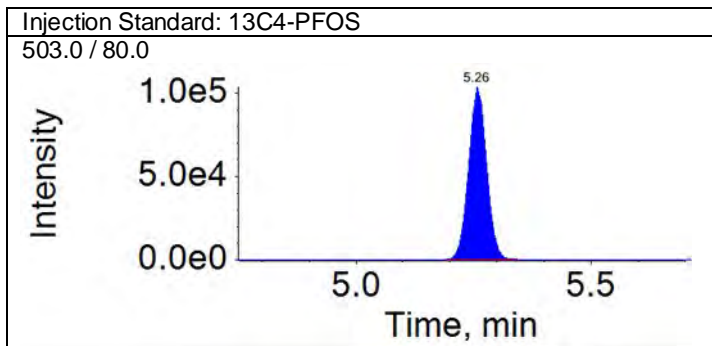
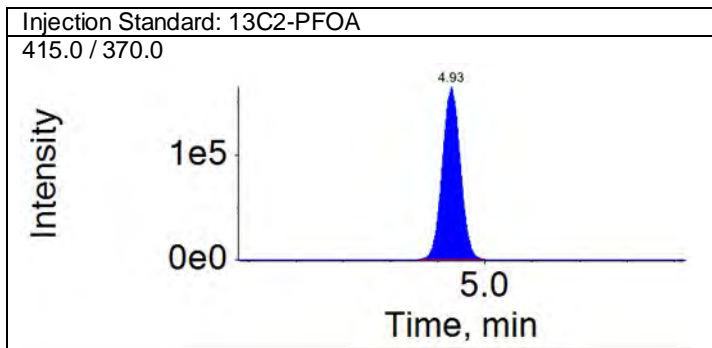
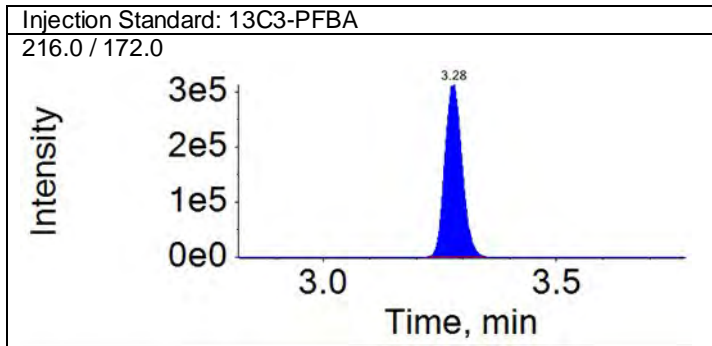


**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18

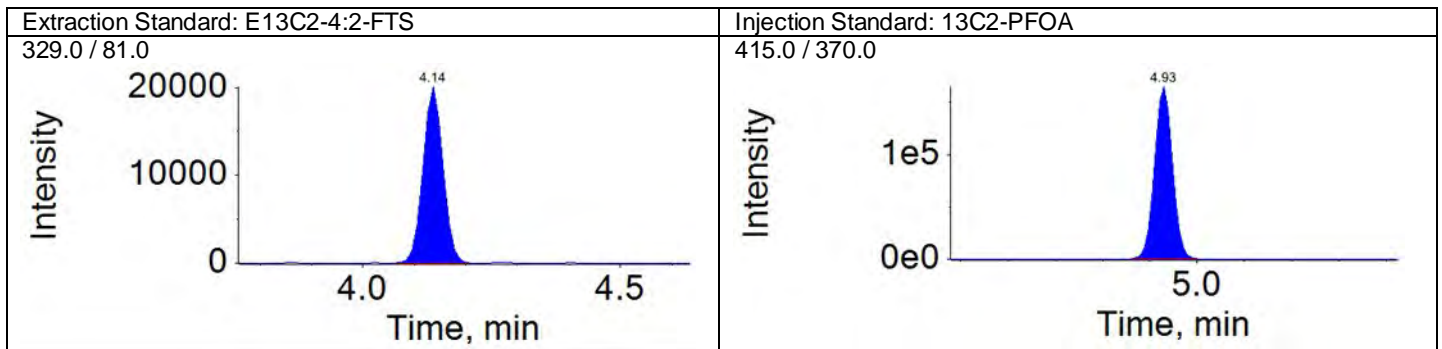
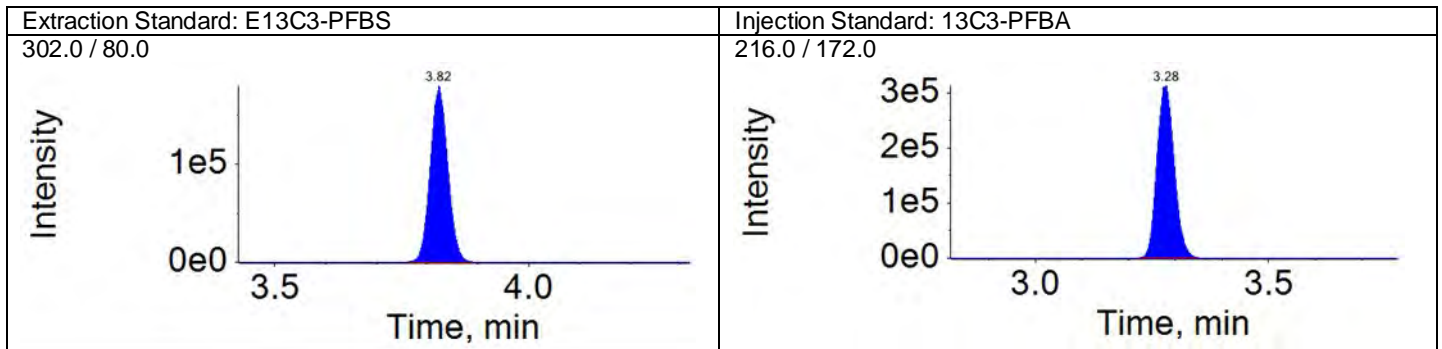
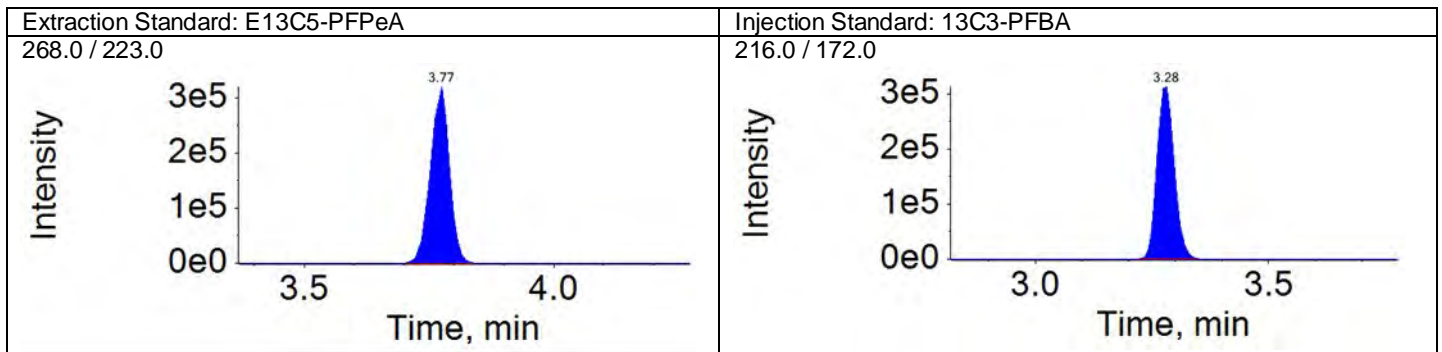
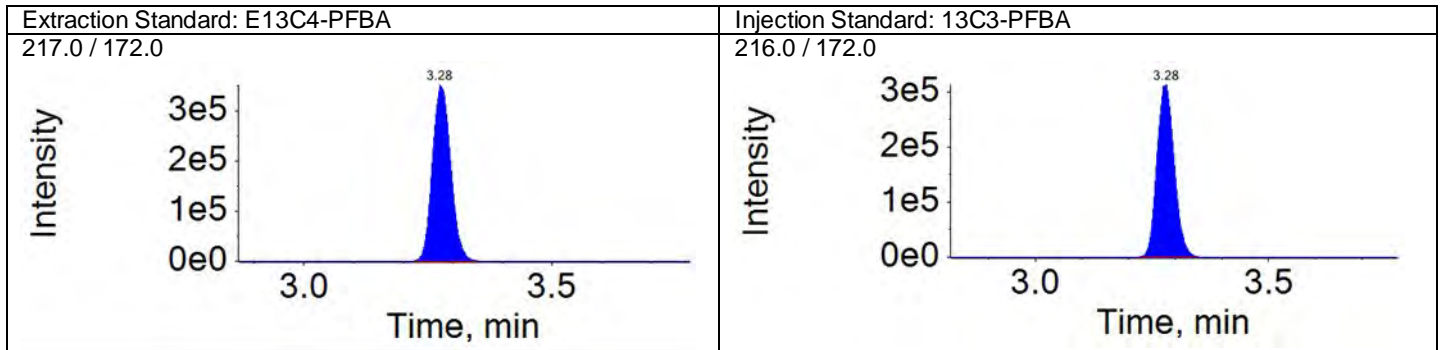
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



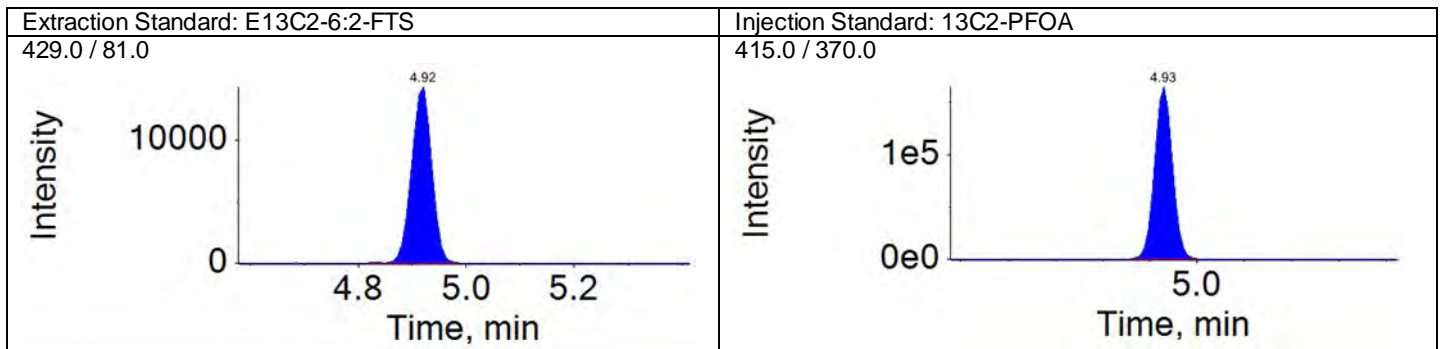
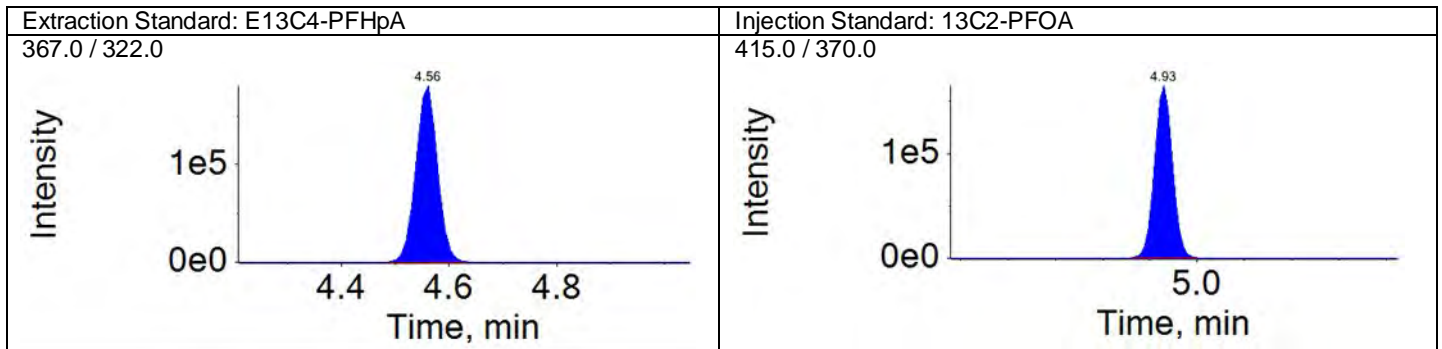
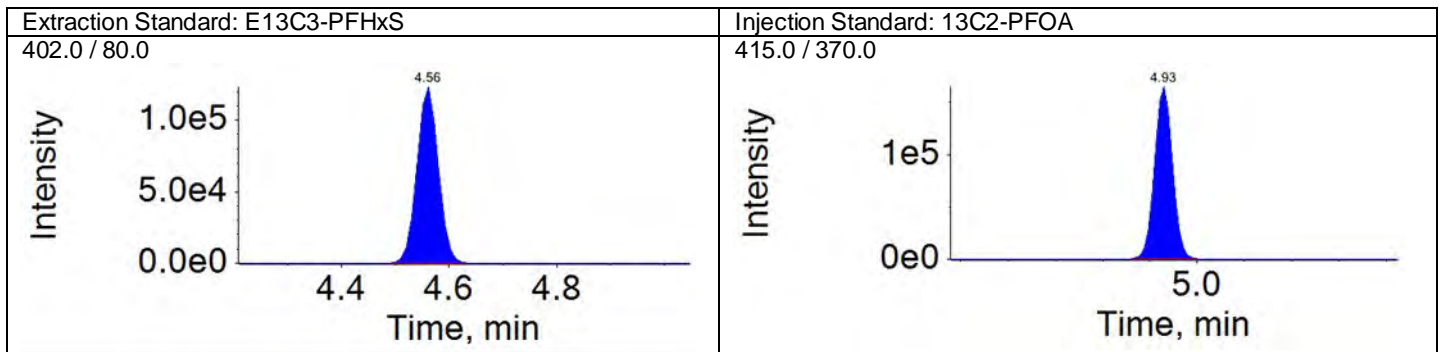
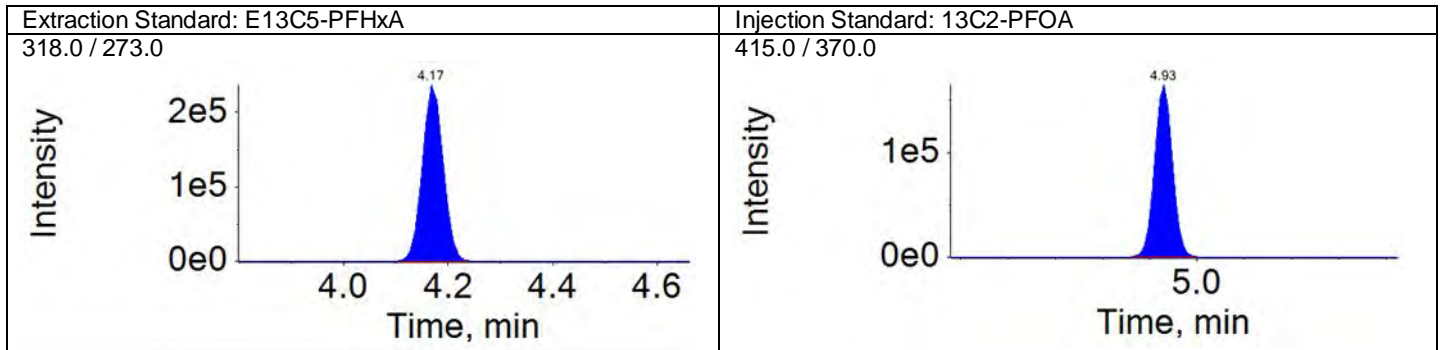
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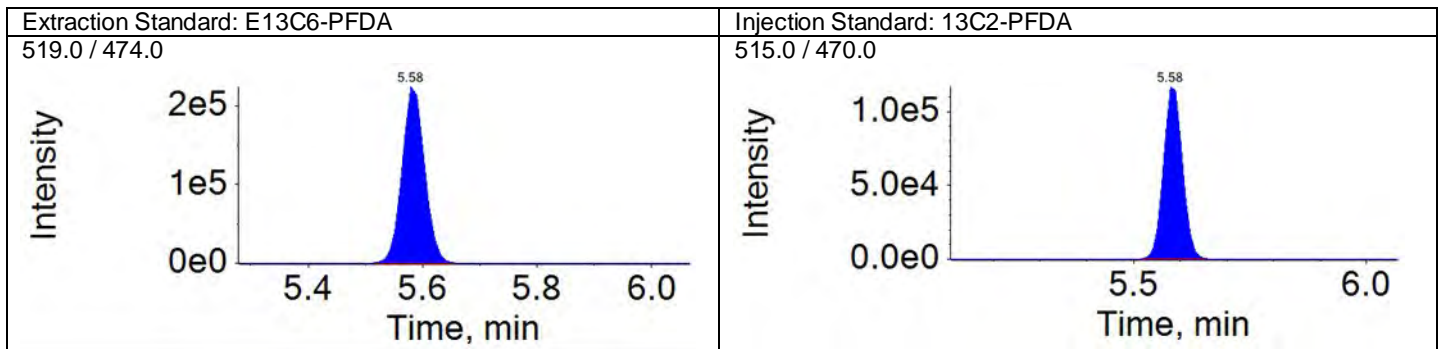
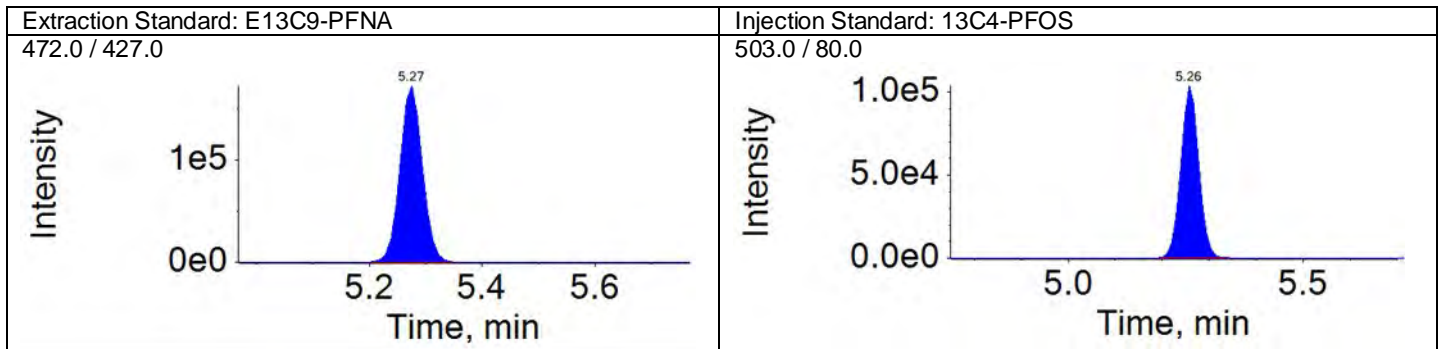
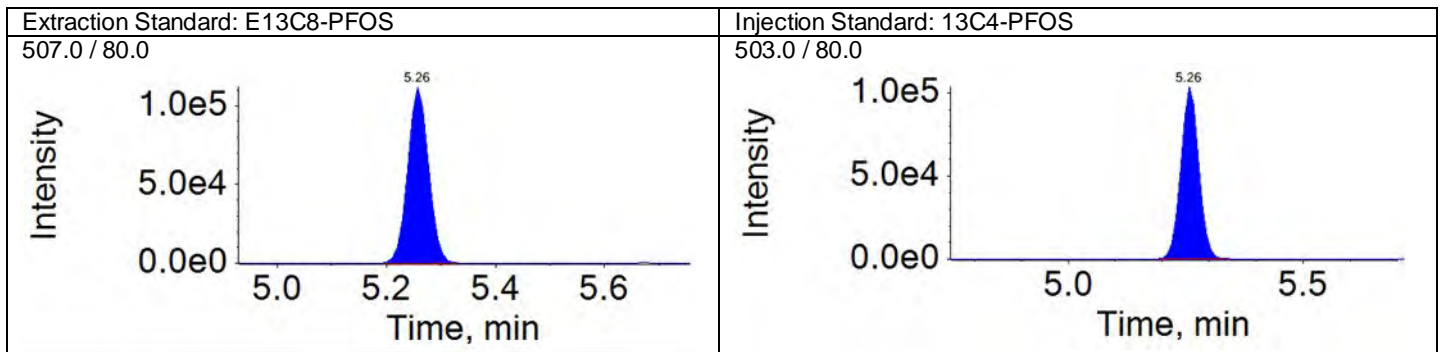
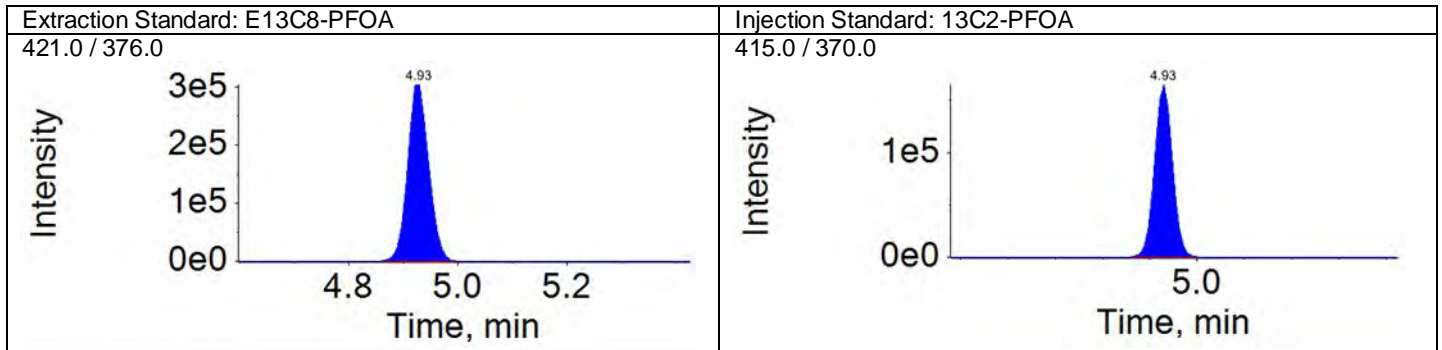
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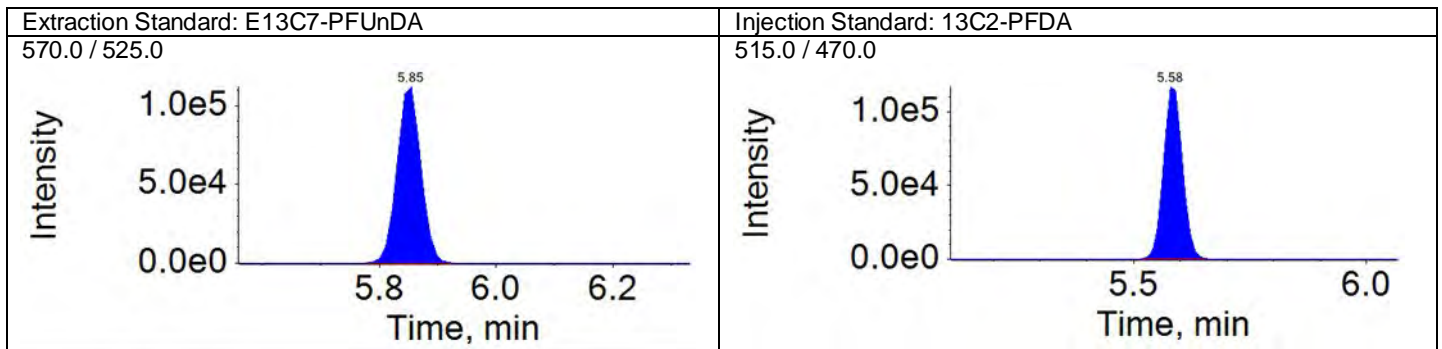
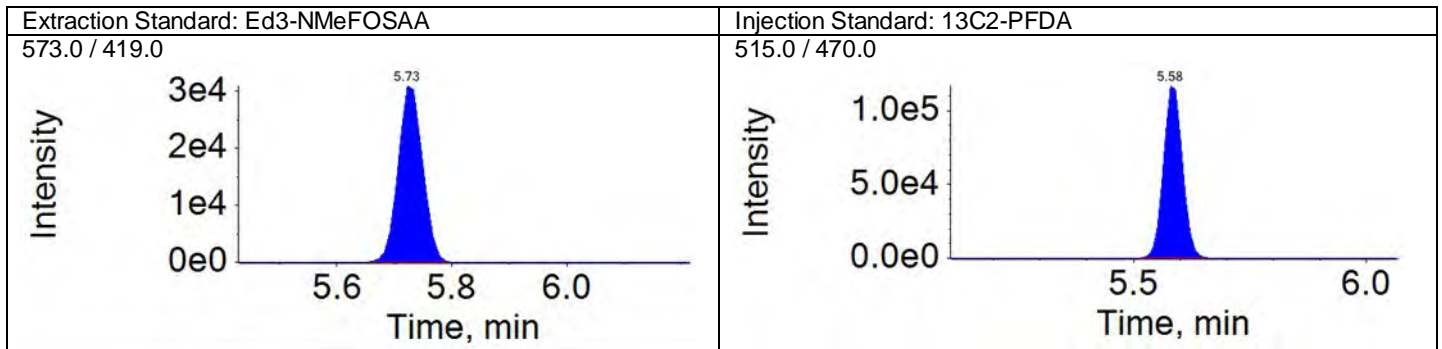
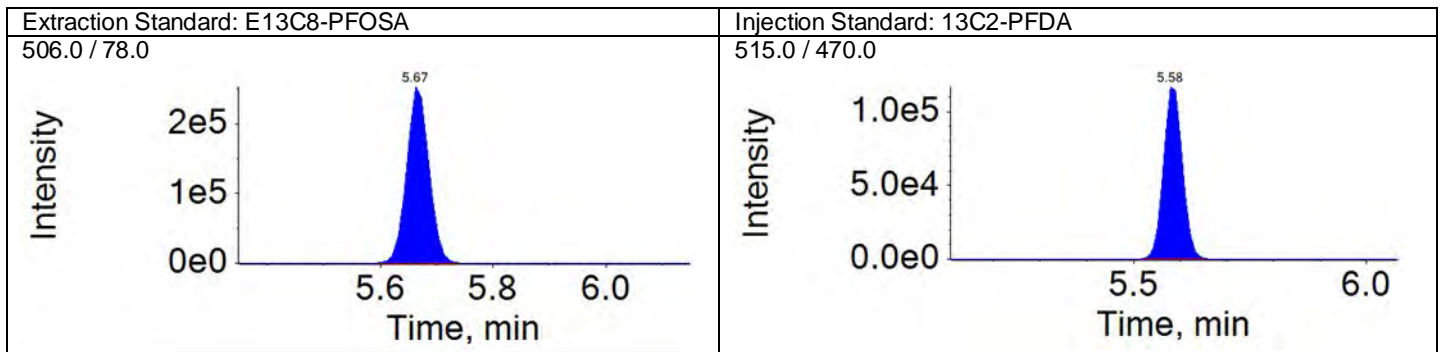
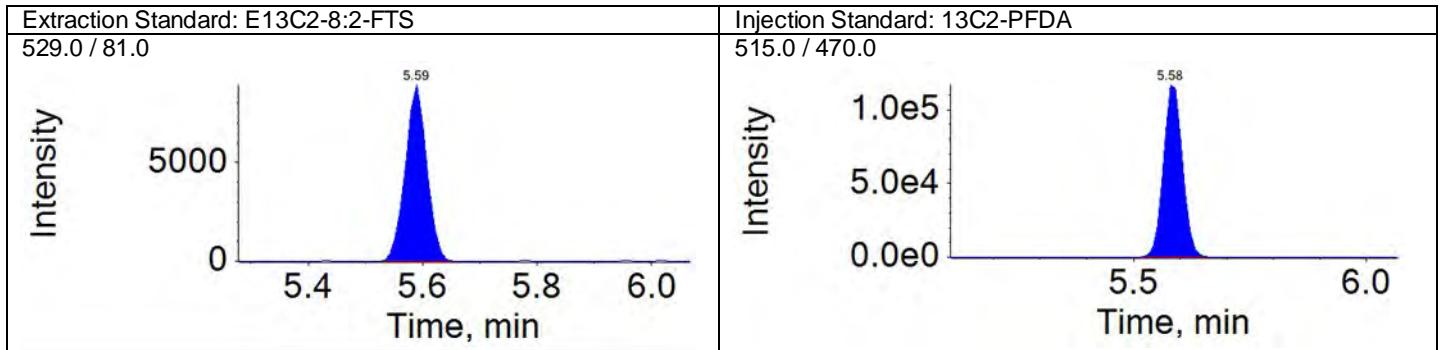
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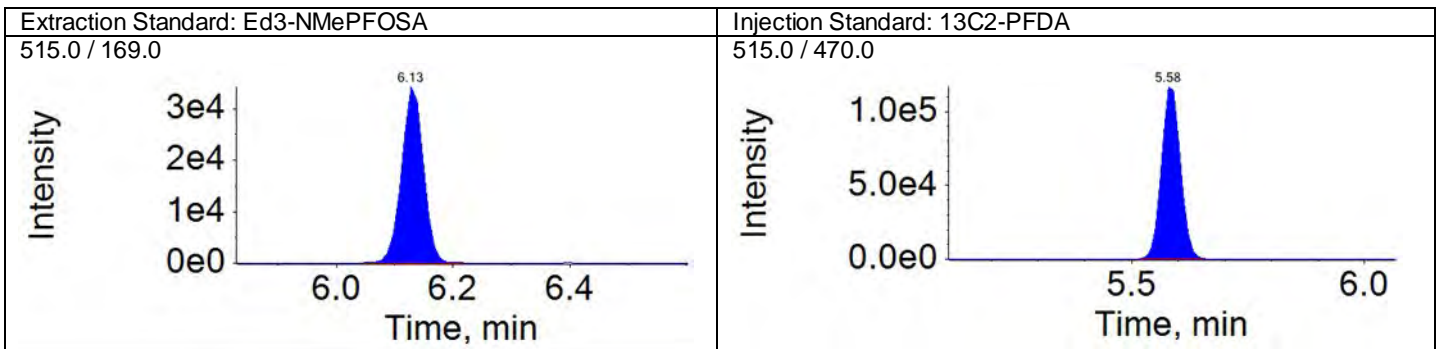
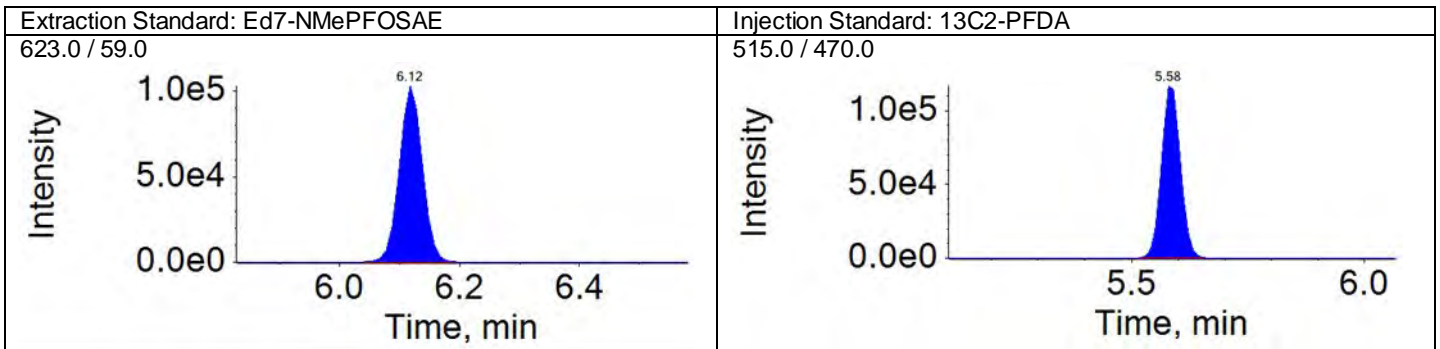
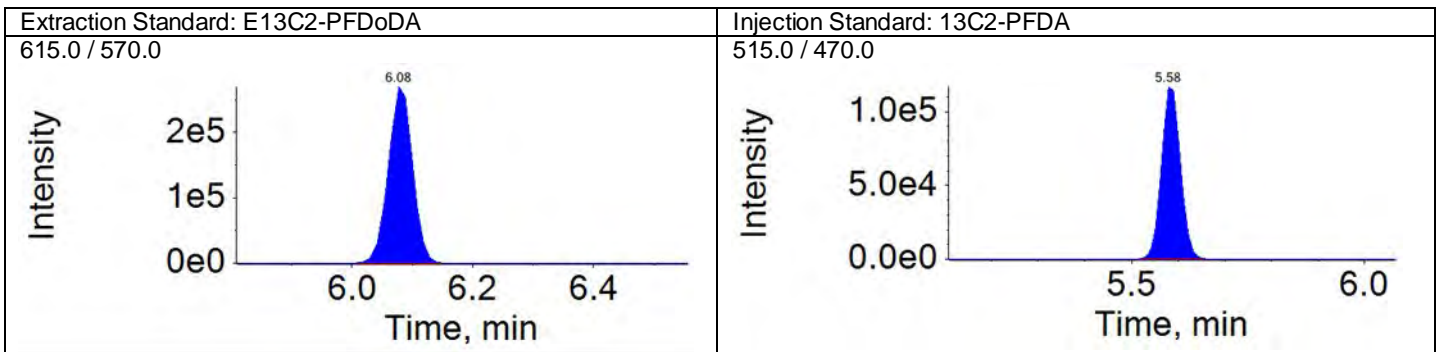
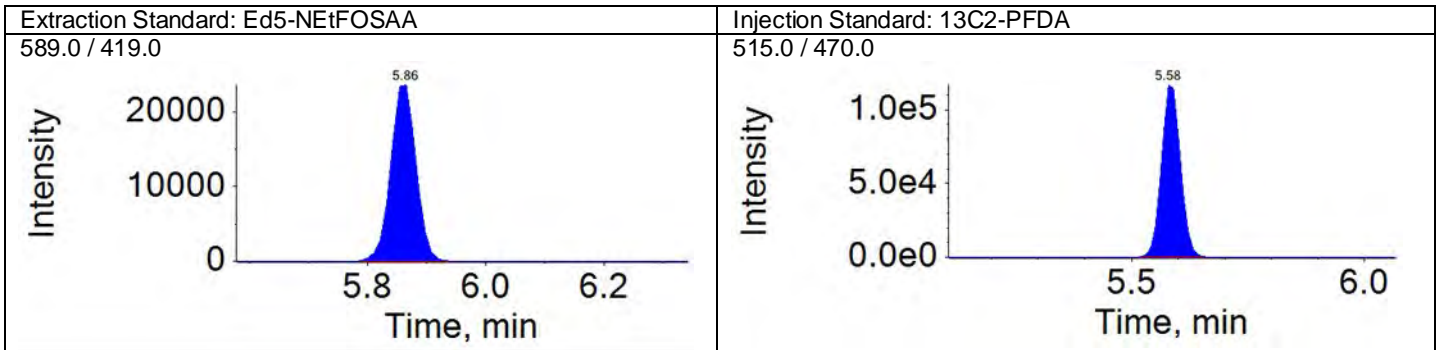
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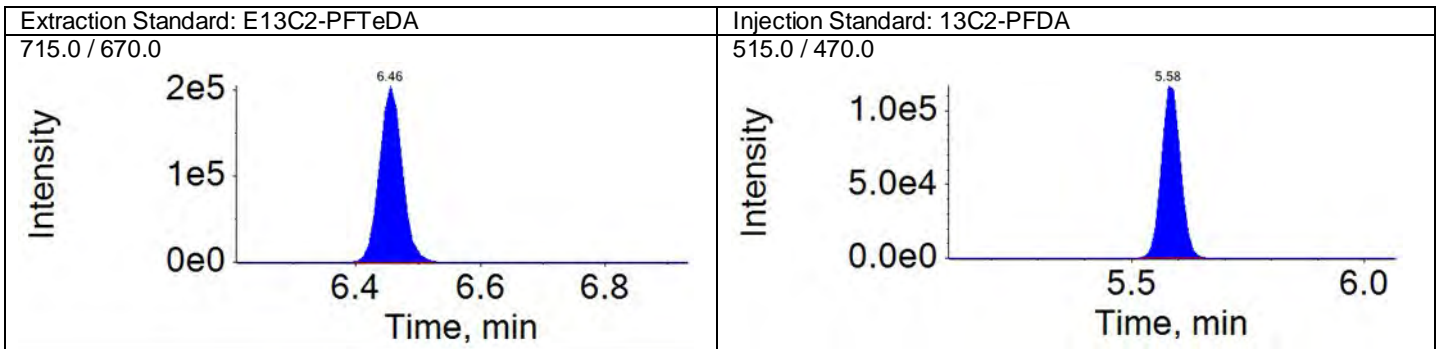
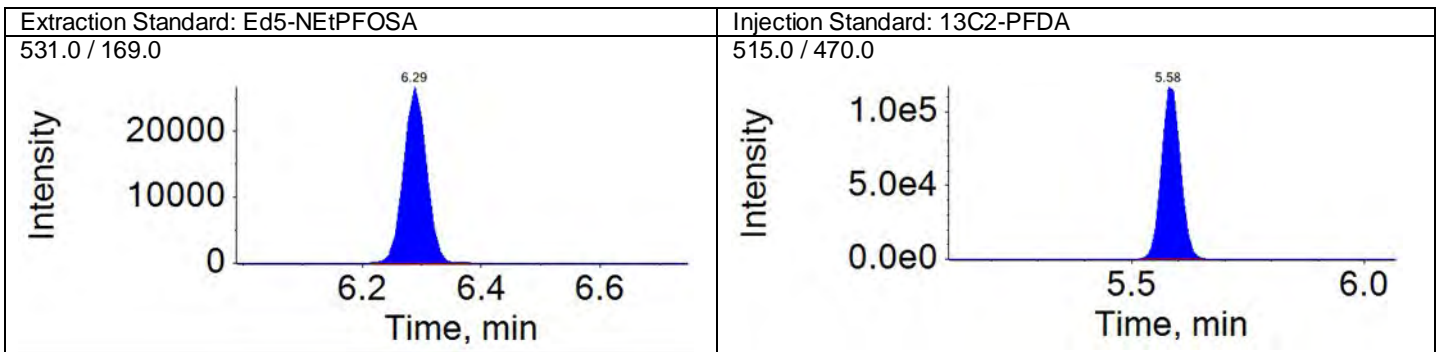
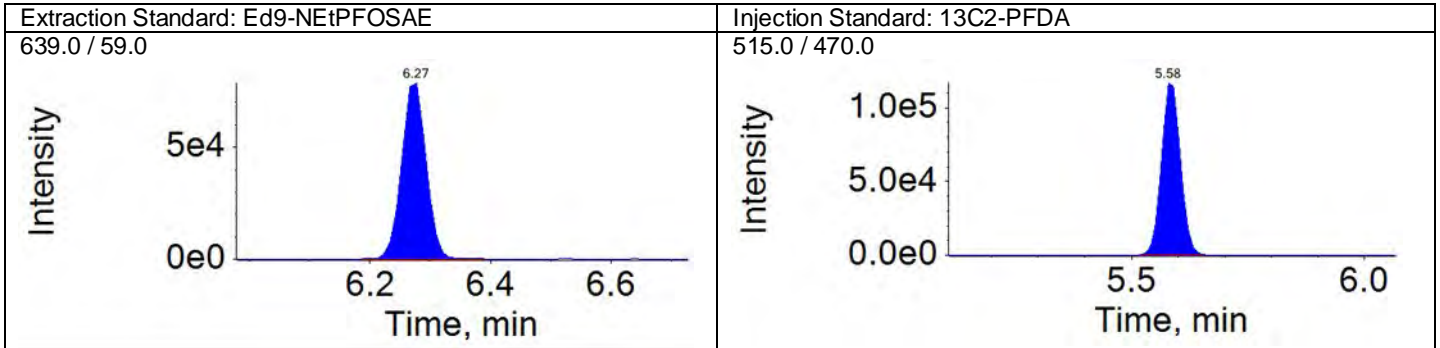
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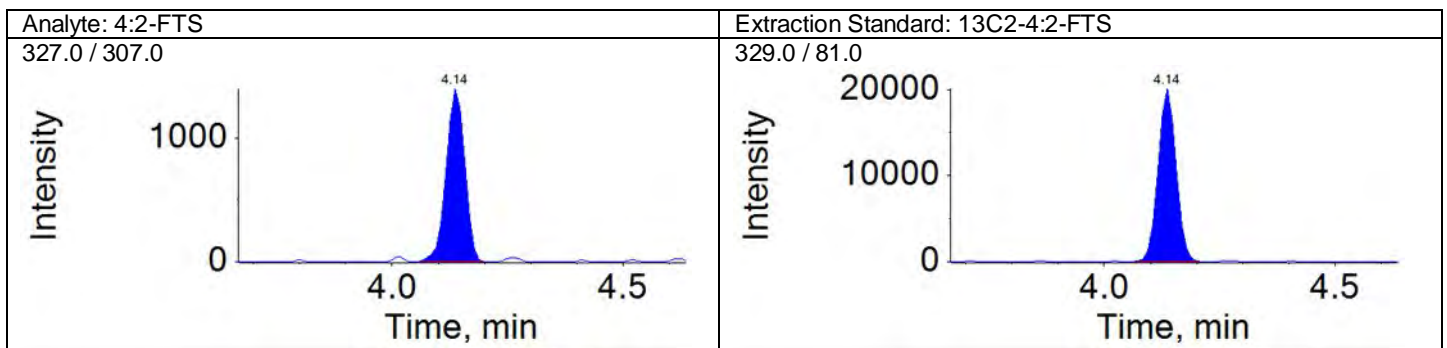
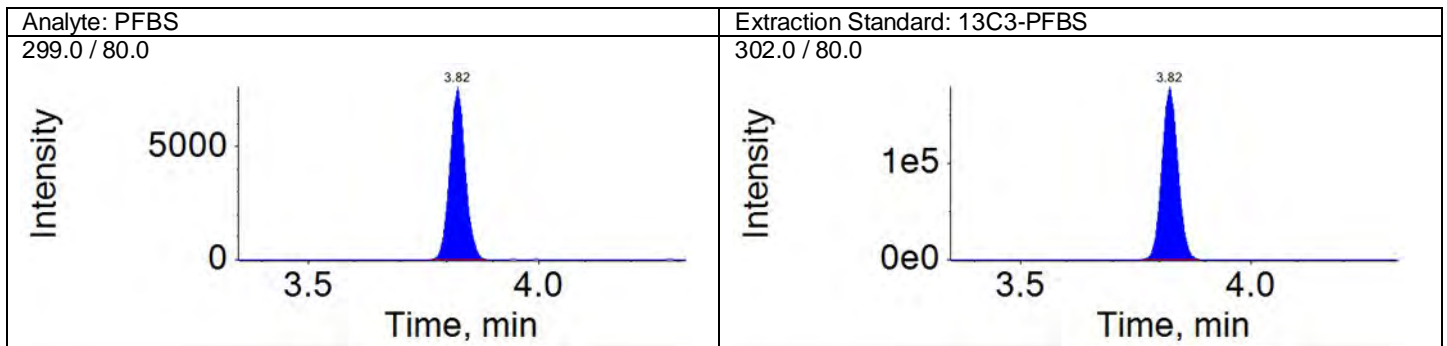
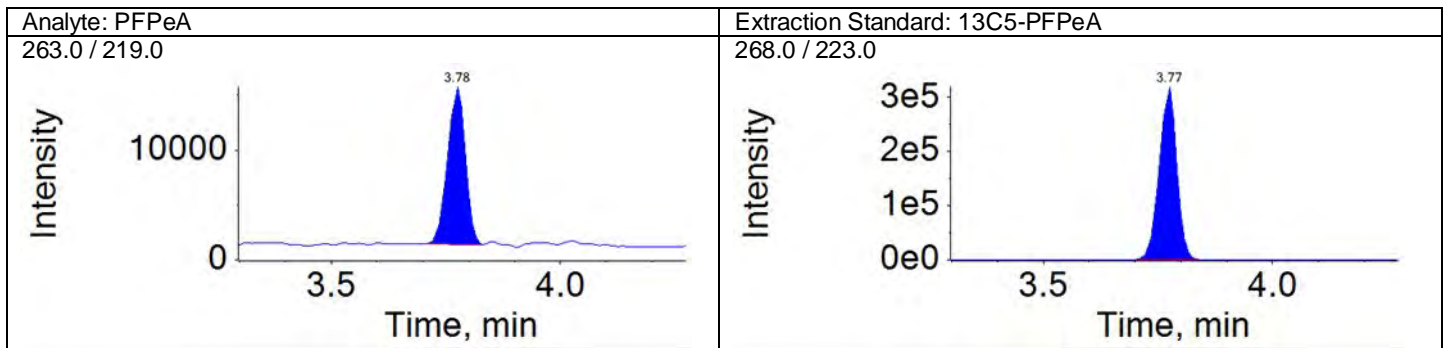
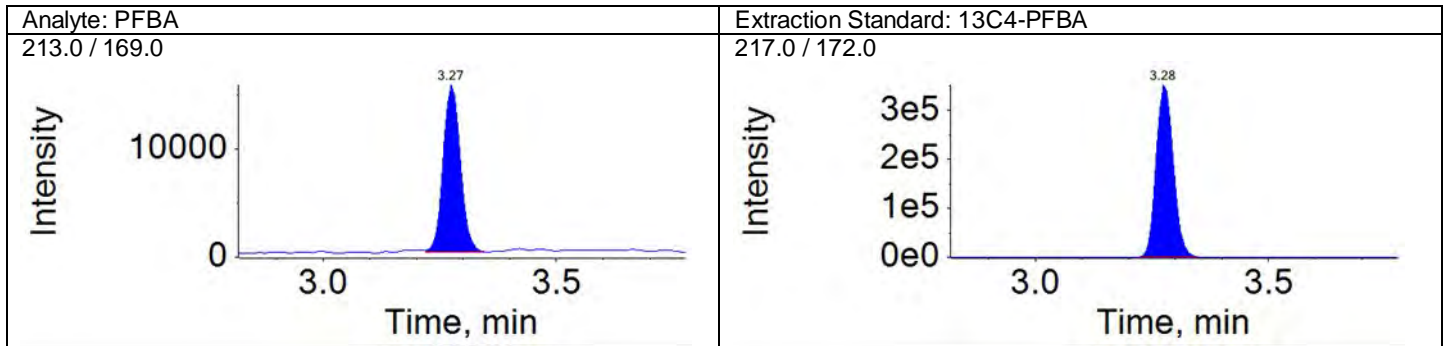
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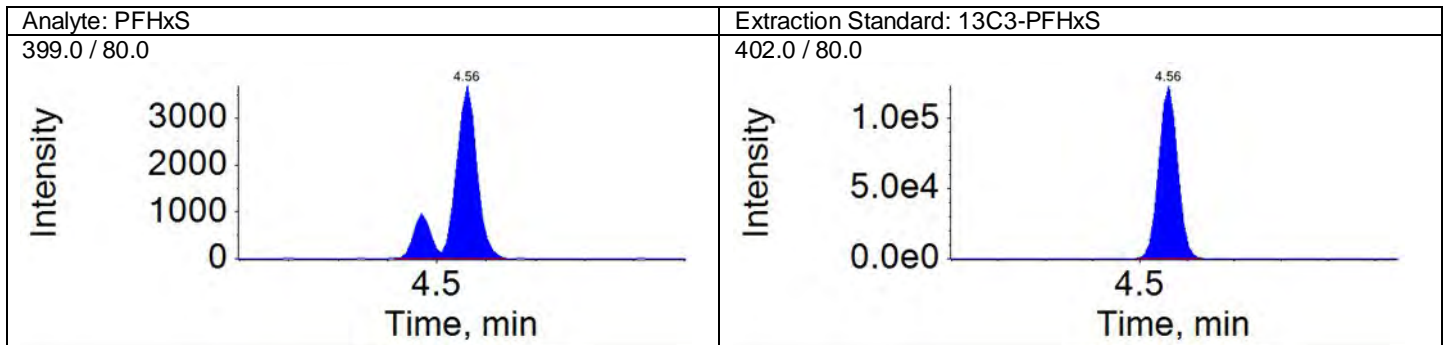
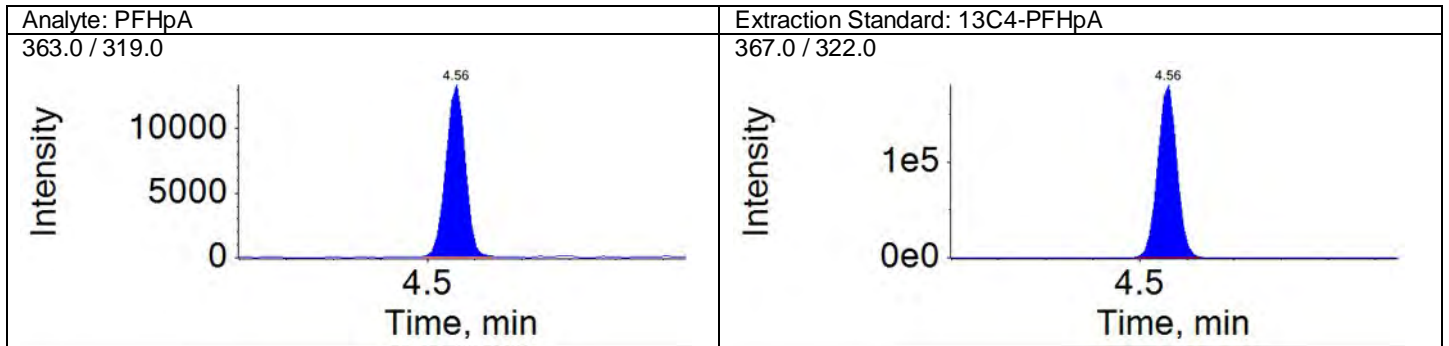
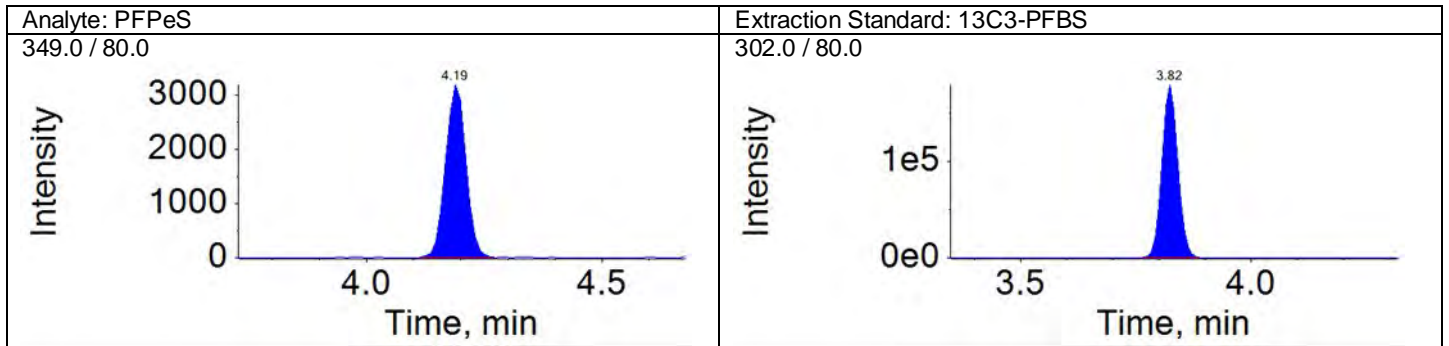
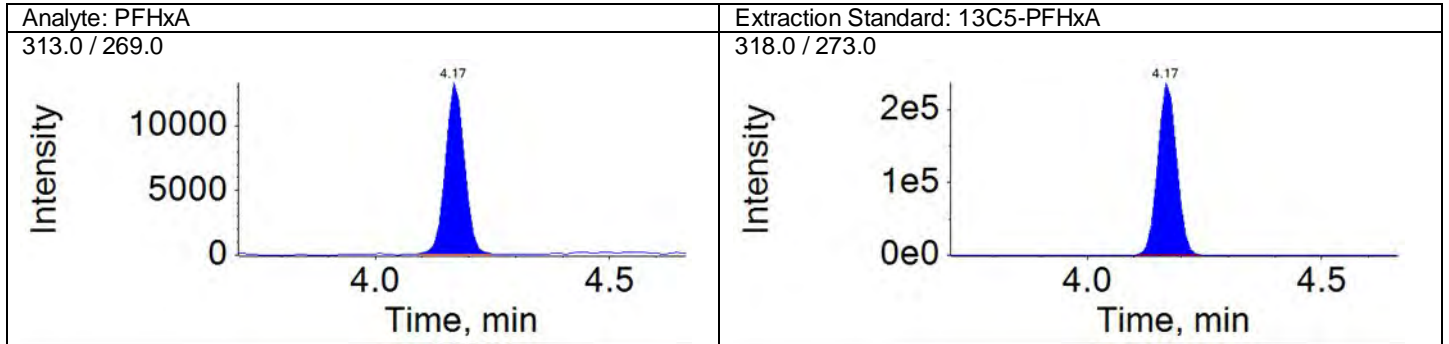
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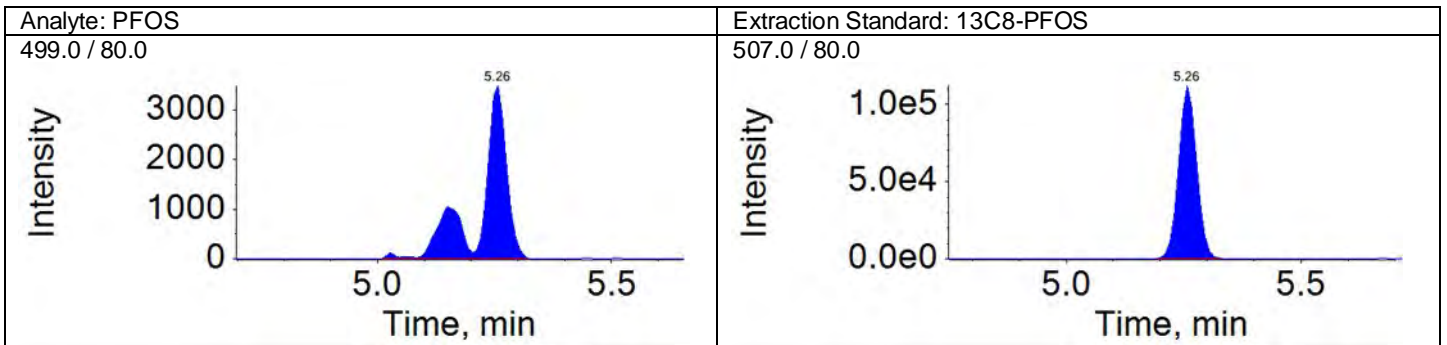
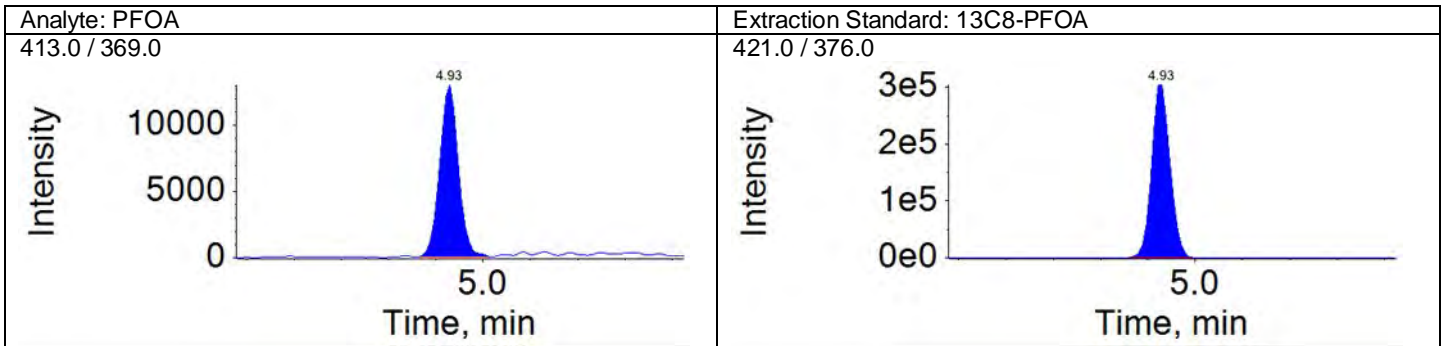
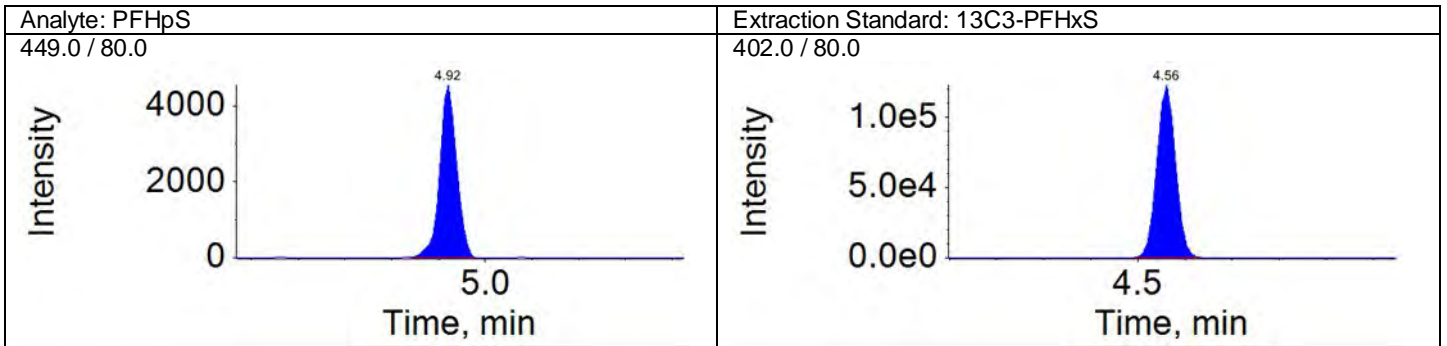
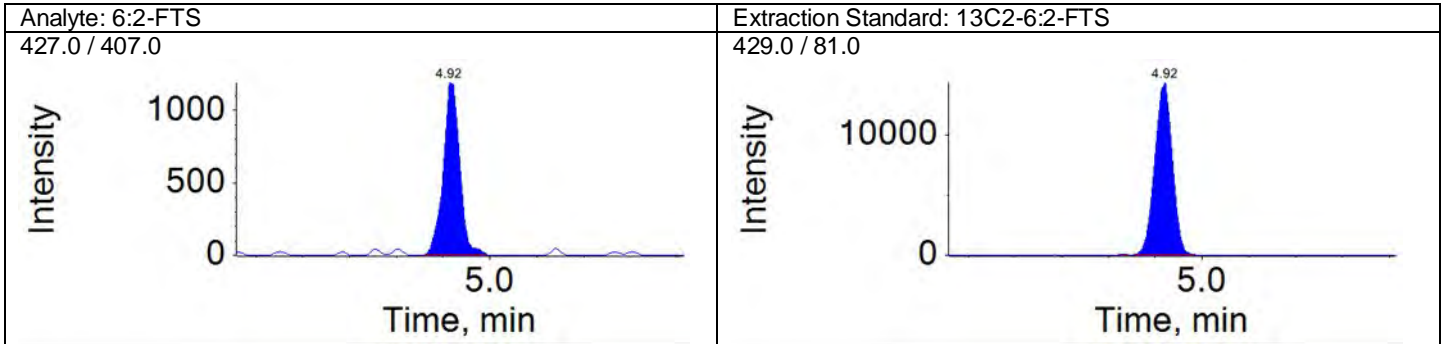
Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam





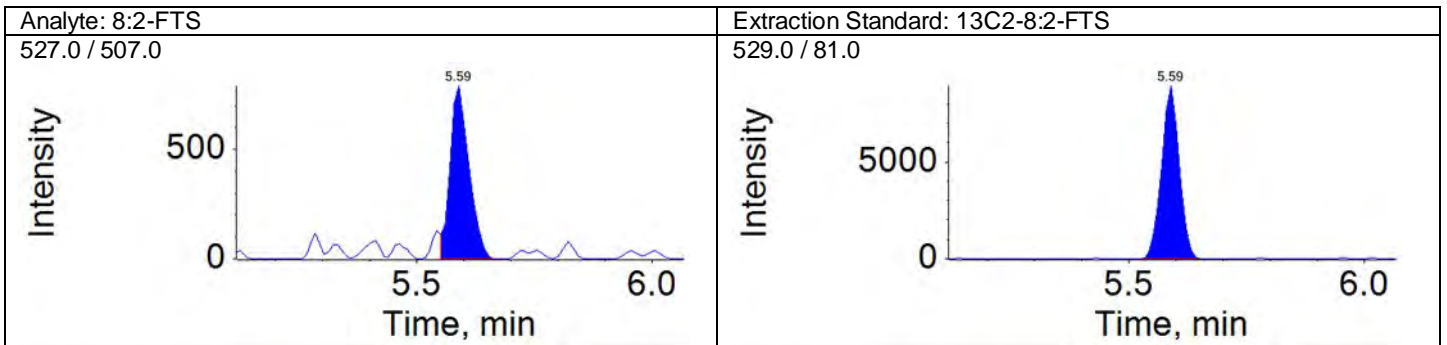
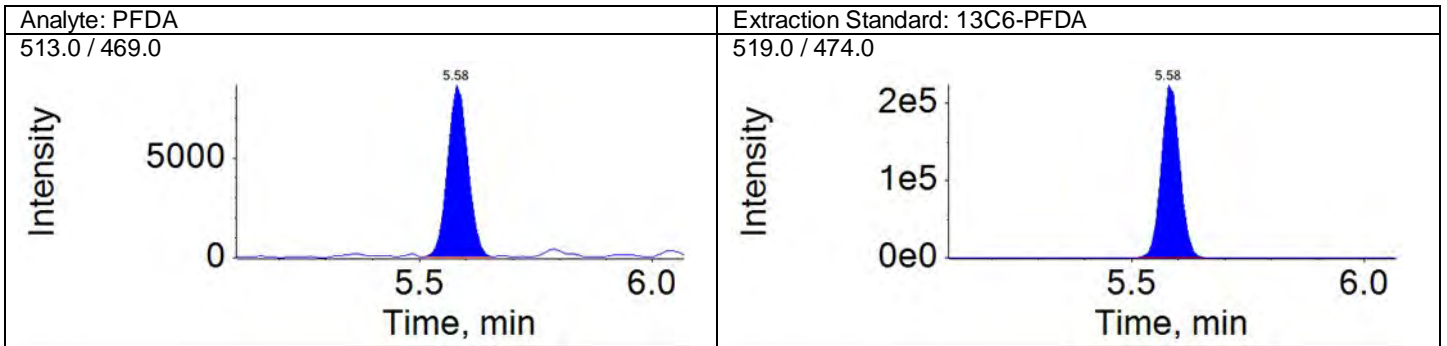
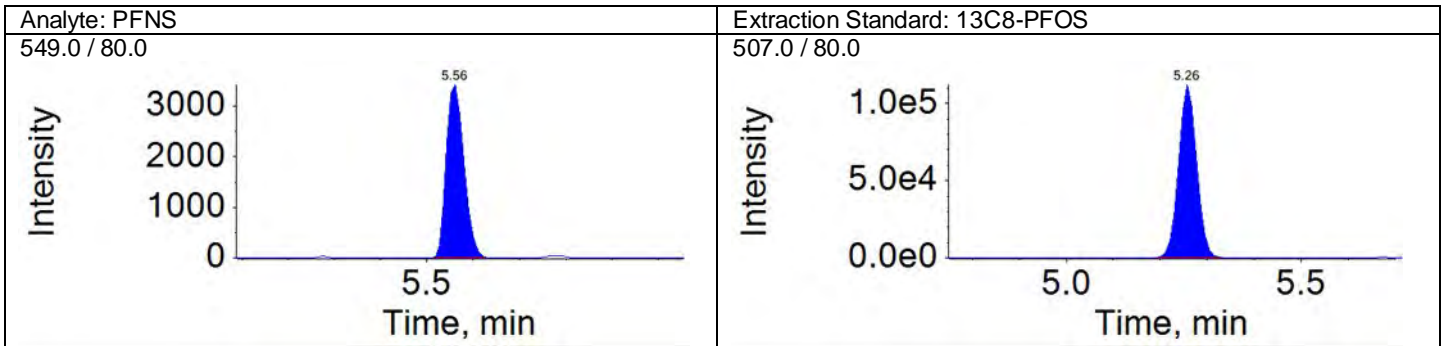
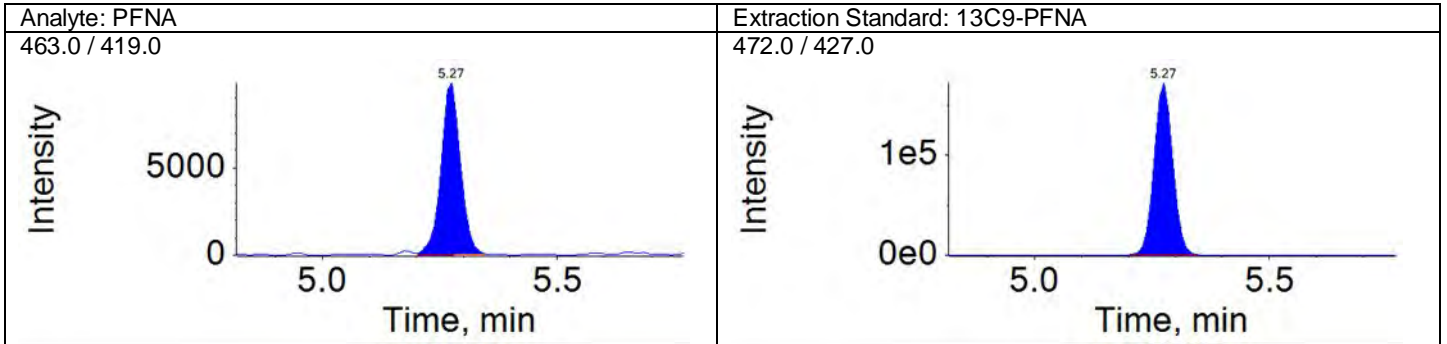
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

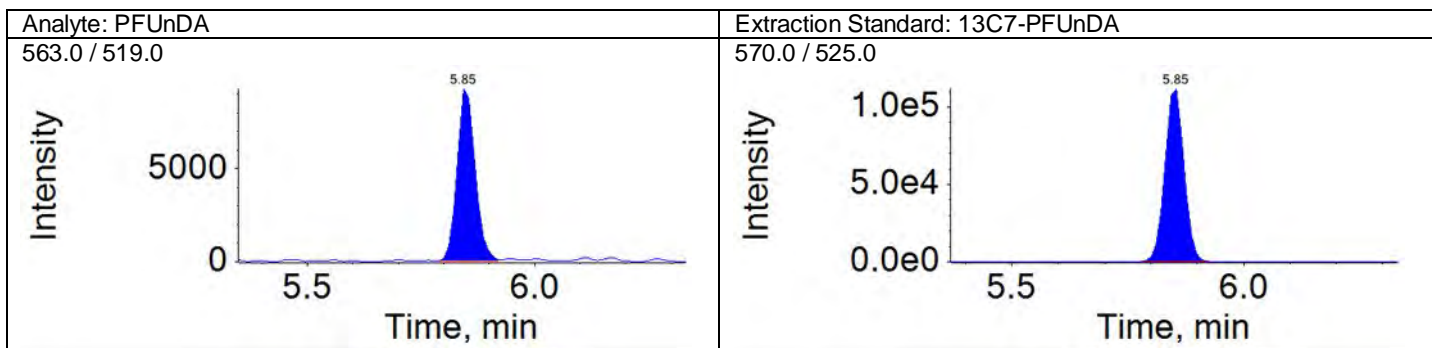
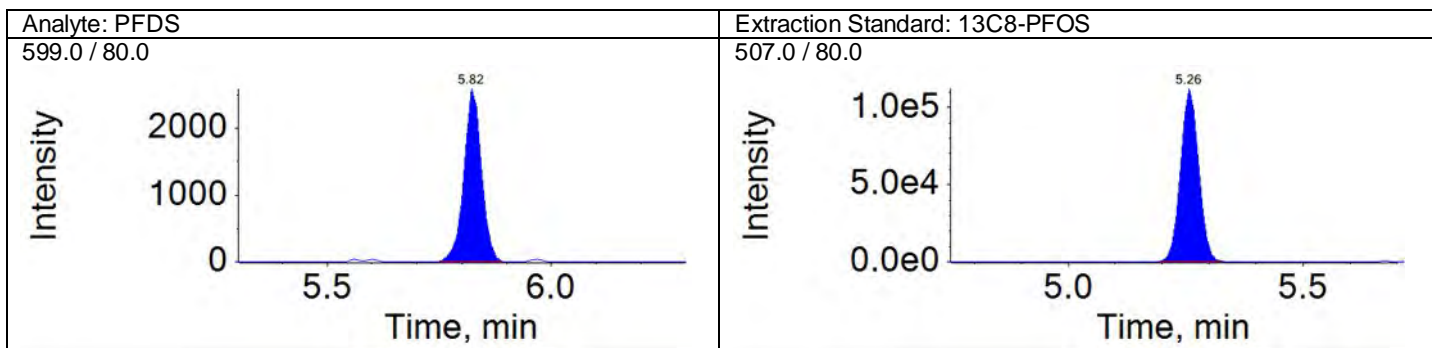
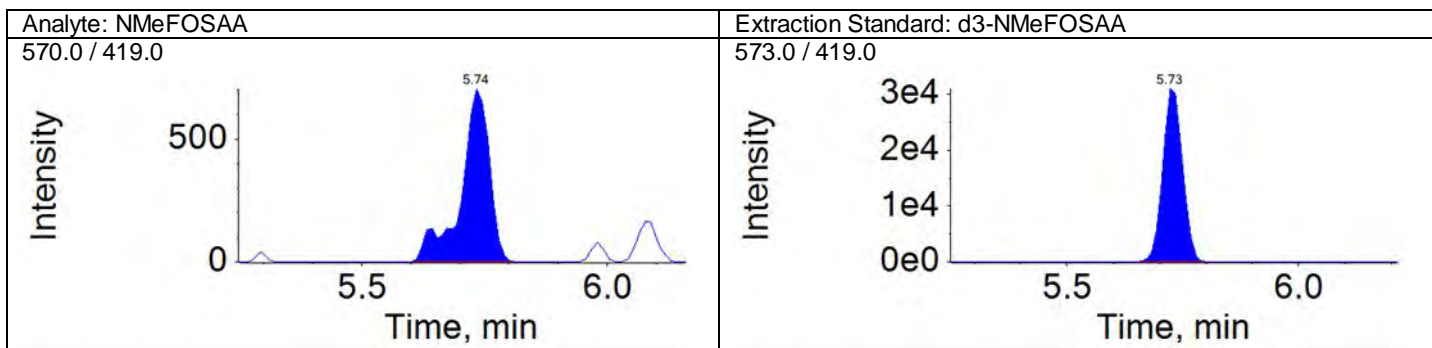
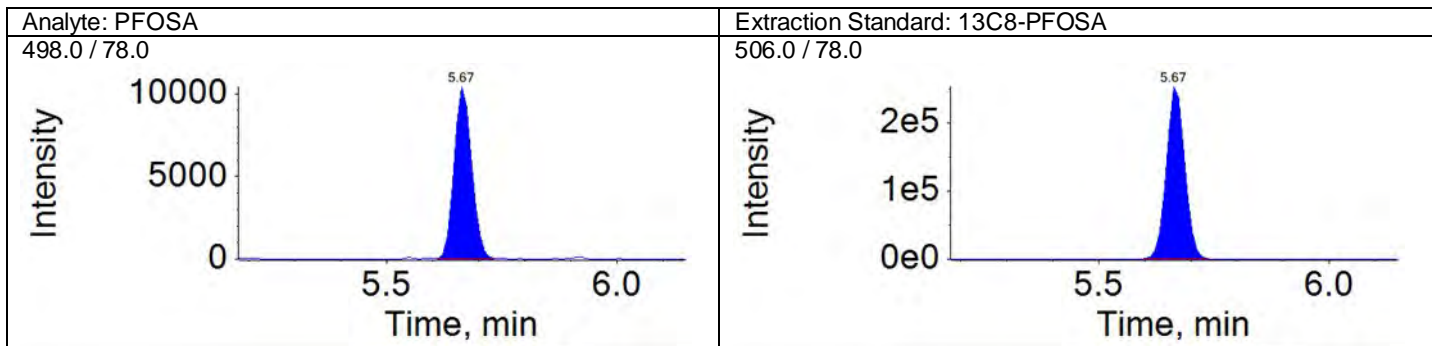
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Acquisition Method: 18AUG13\_3uL.dam





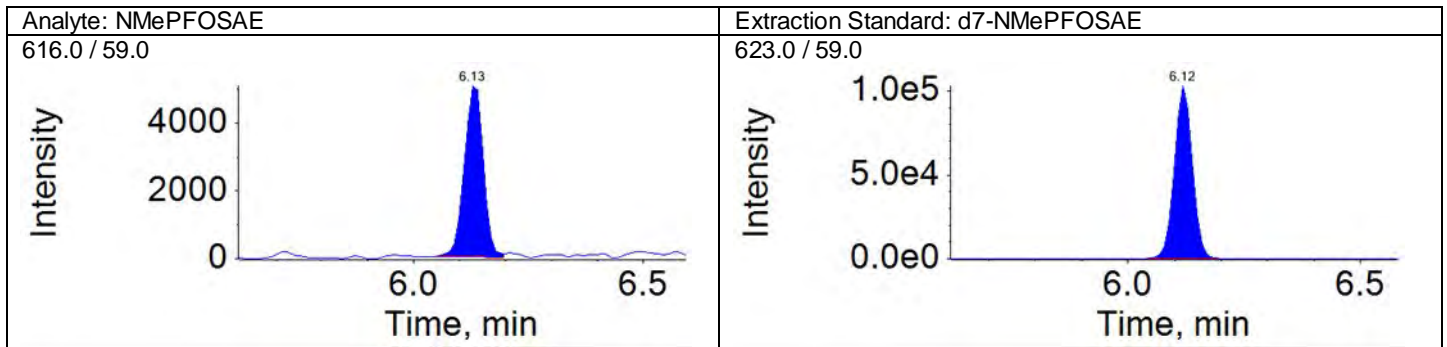
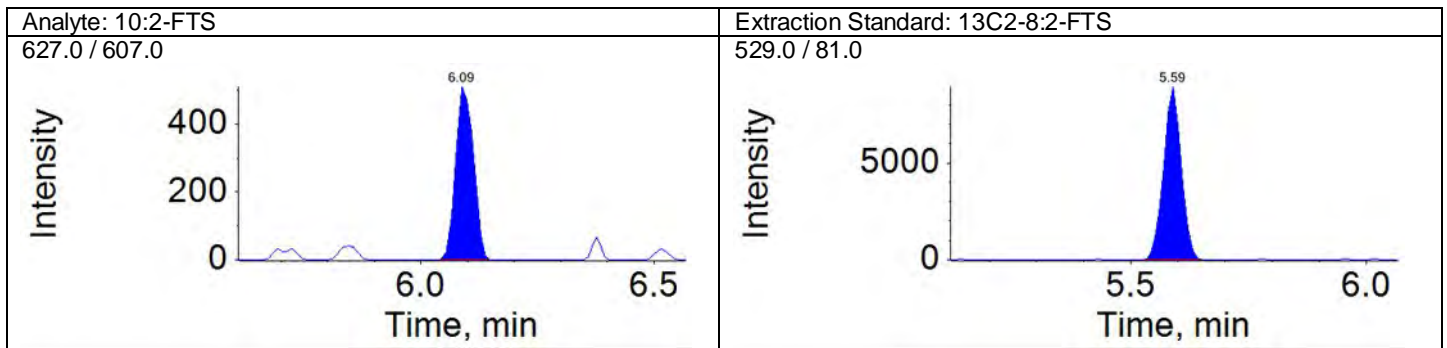
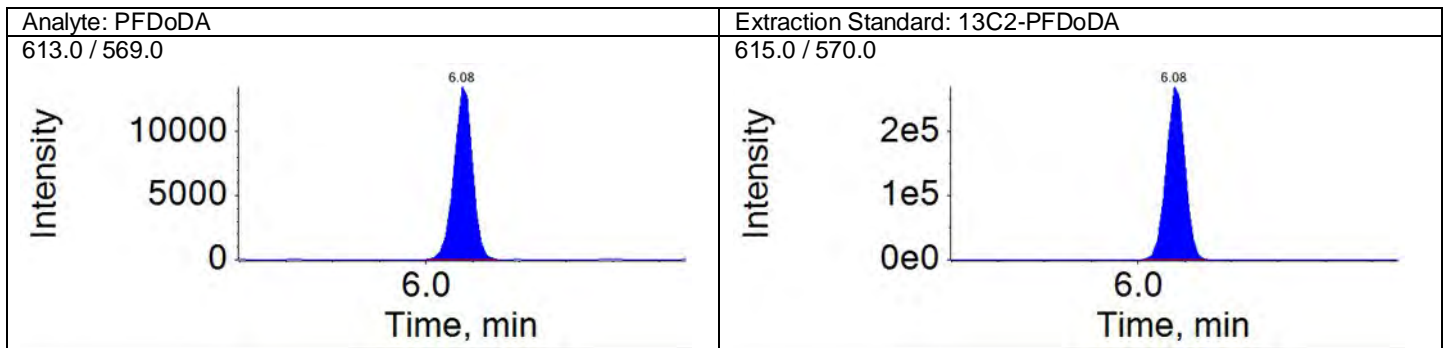
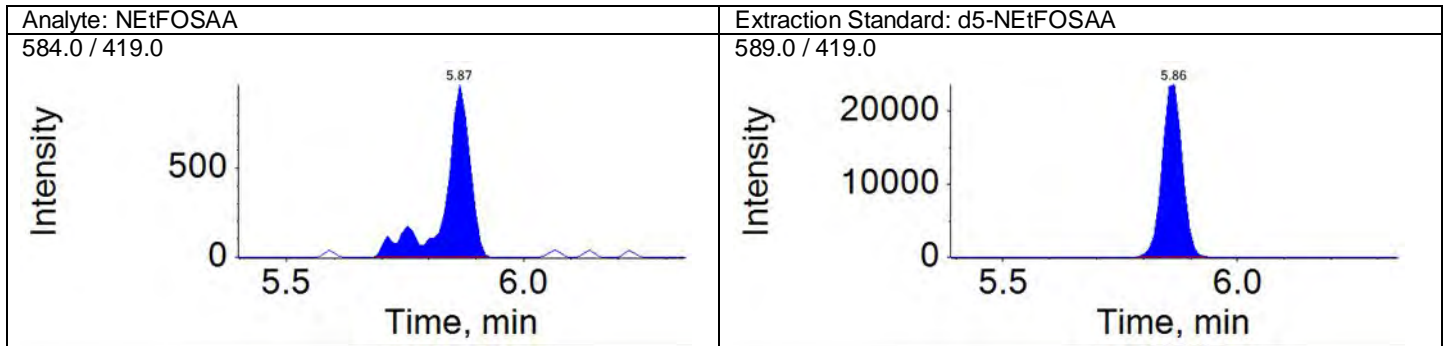
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



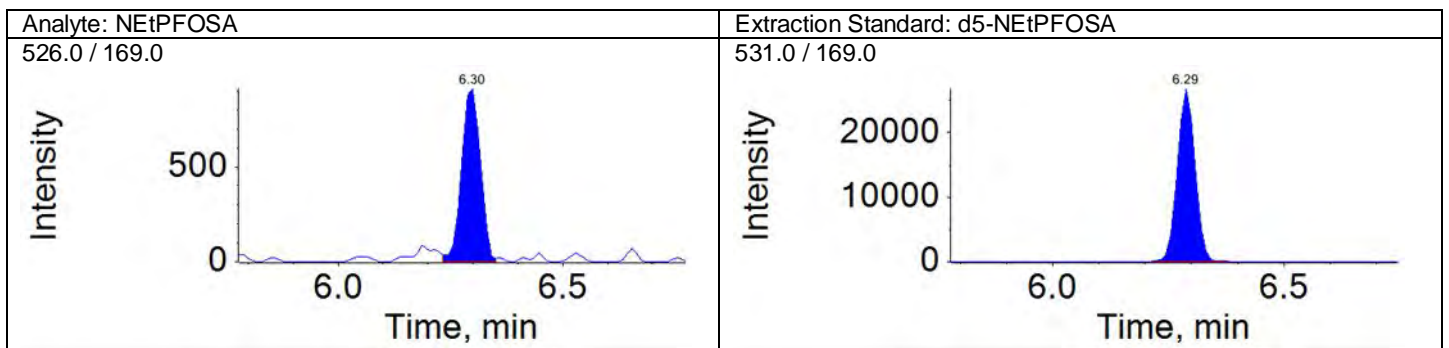
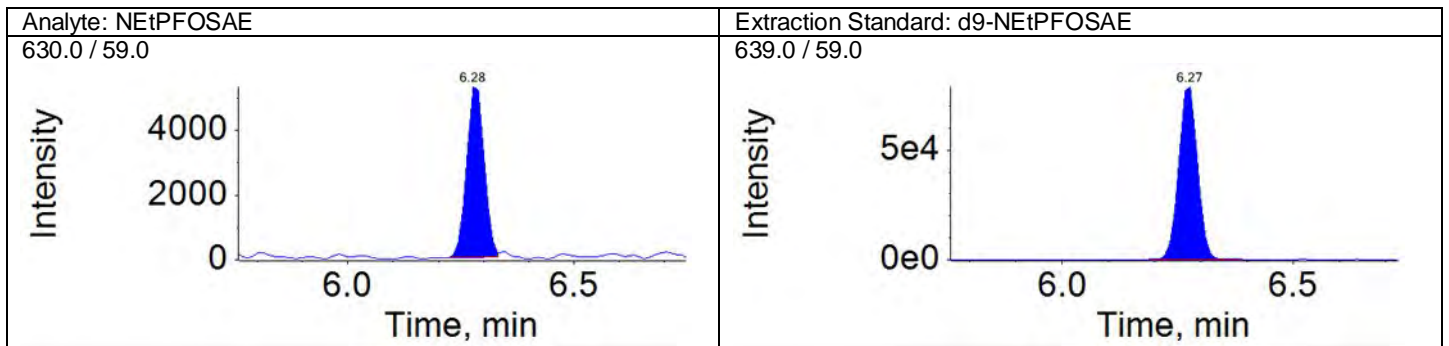
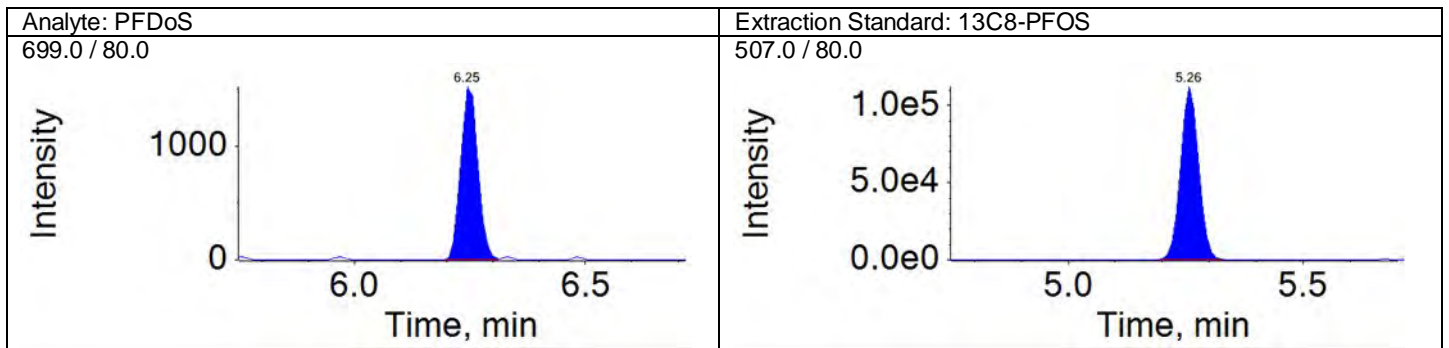
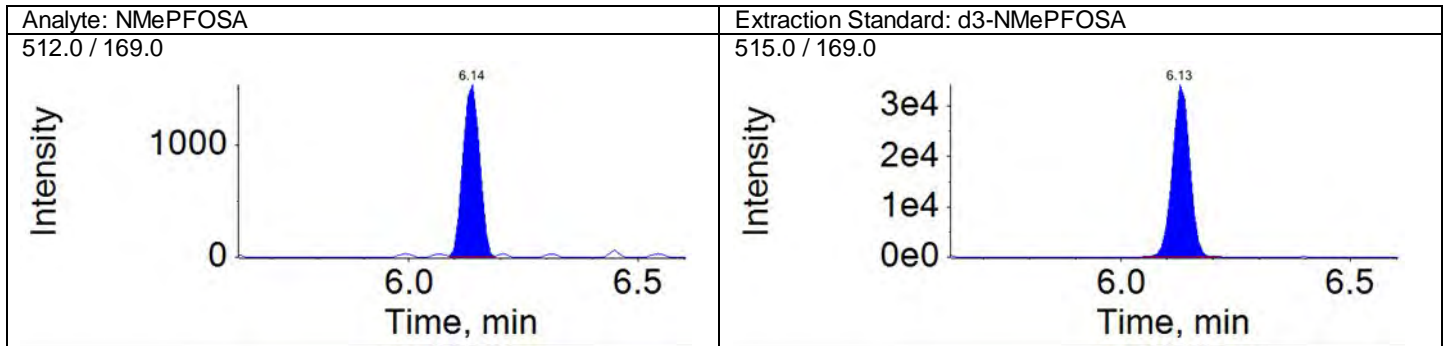
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



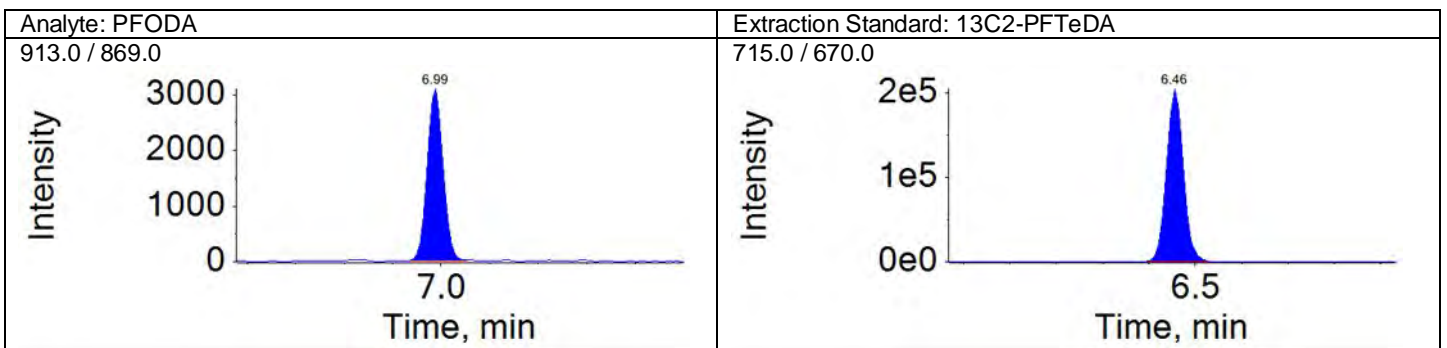
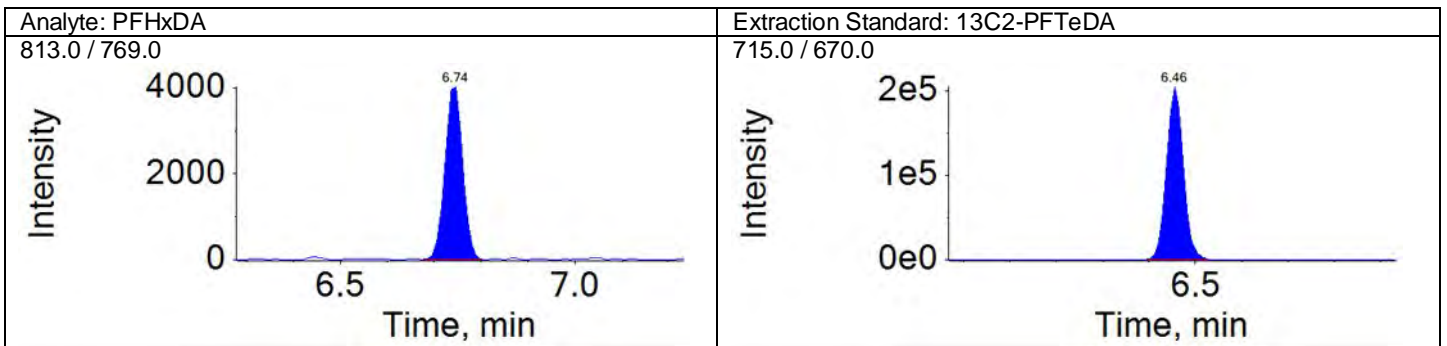
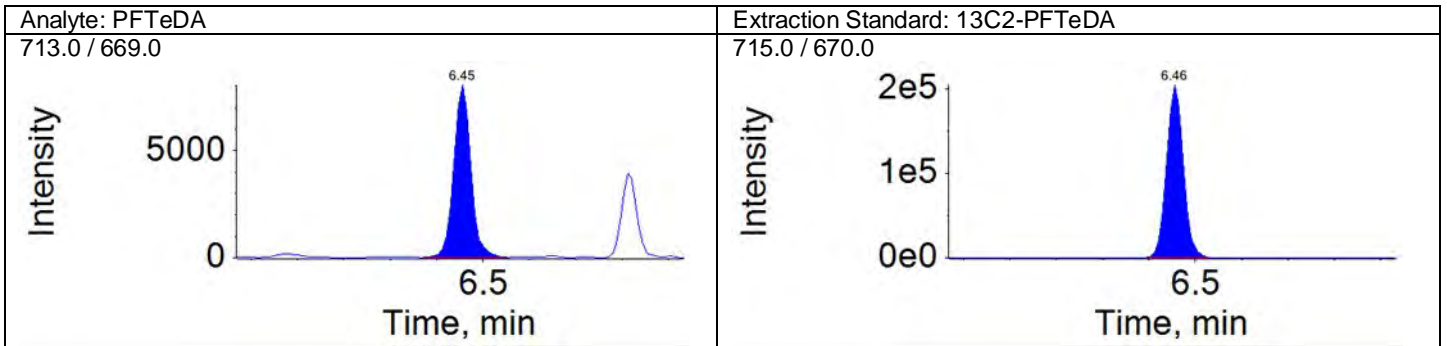
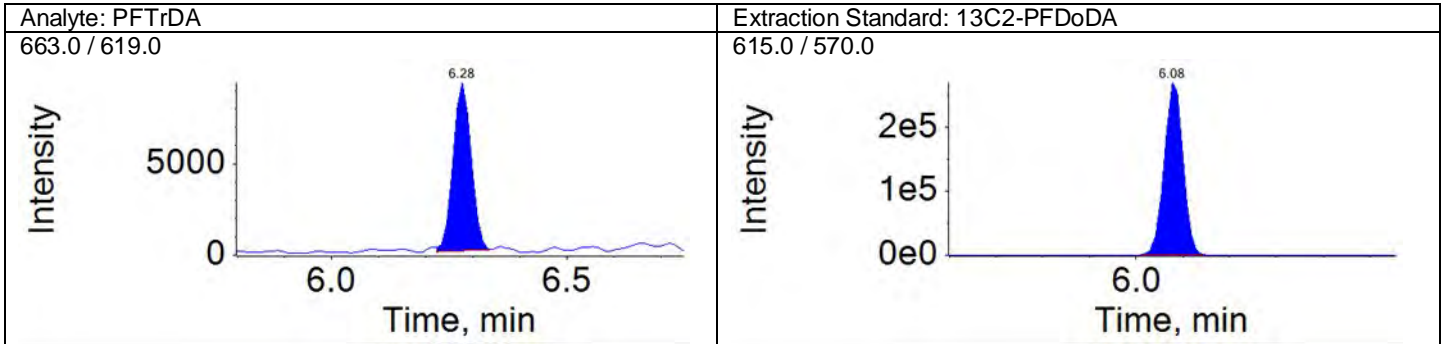
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Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

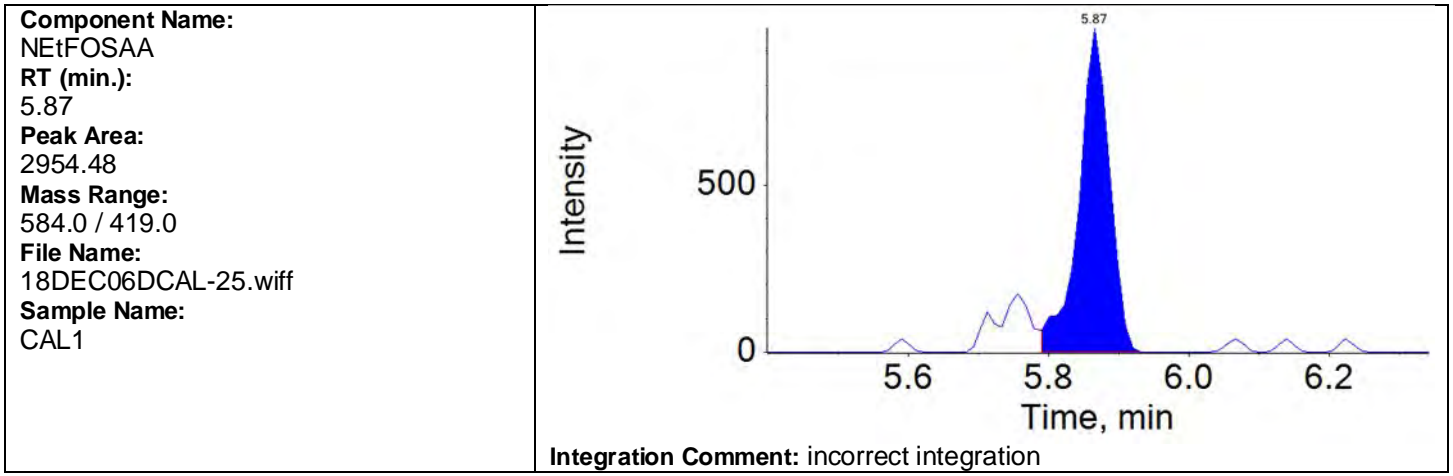
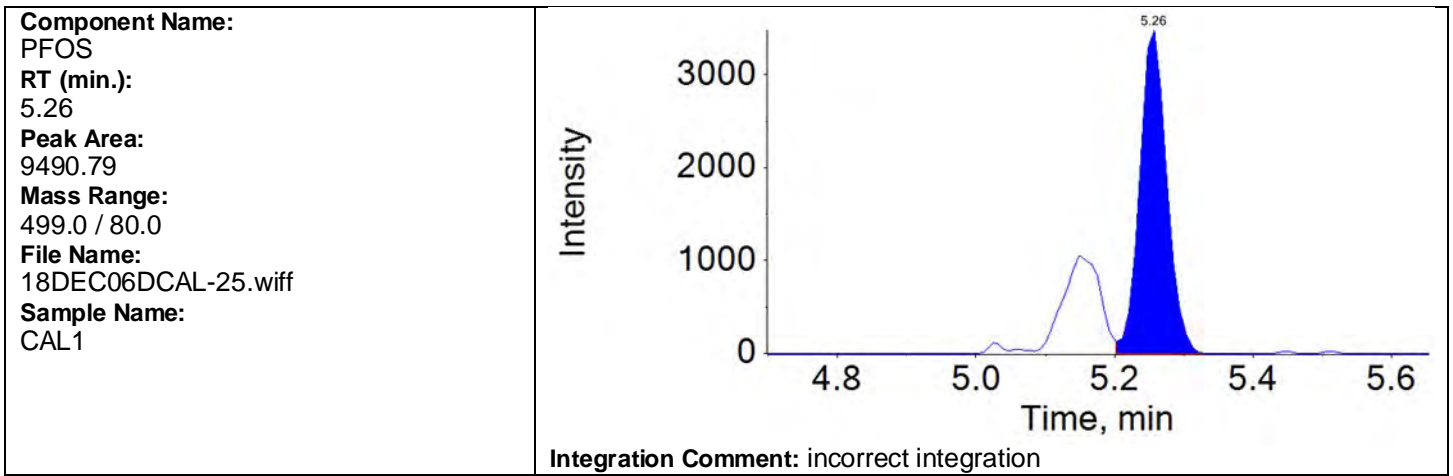
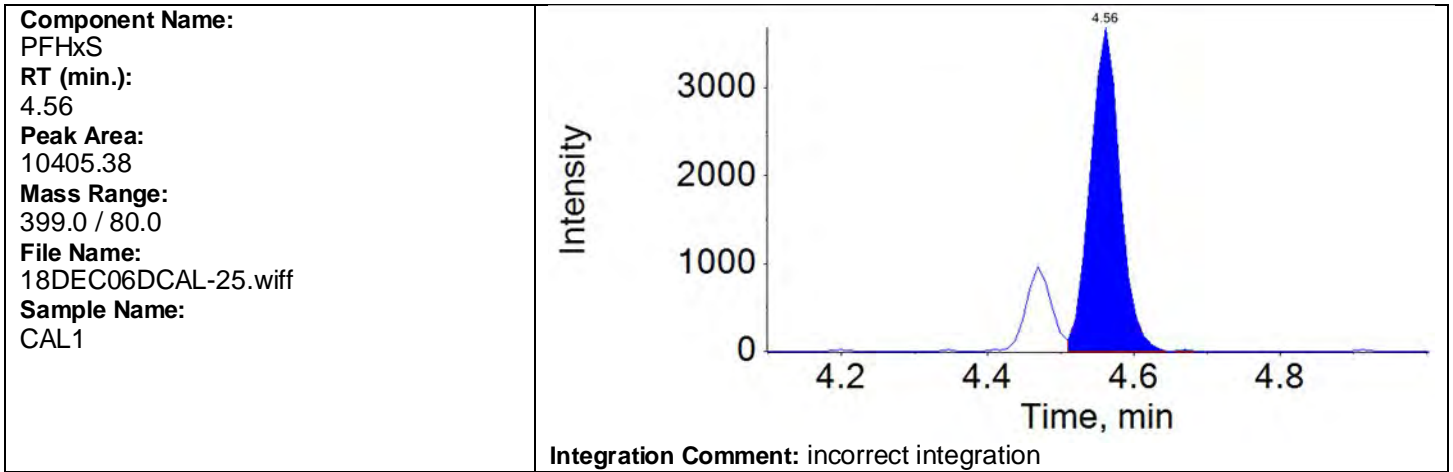
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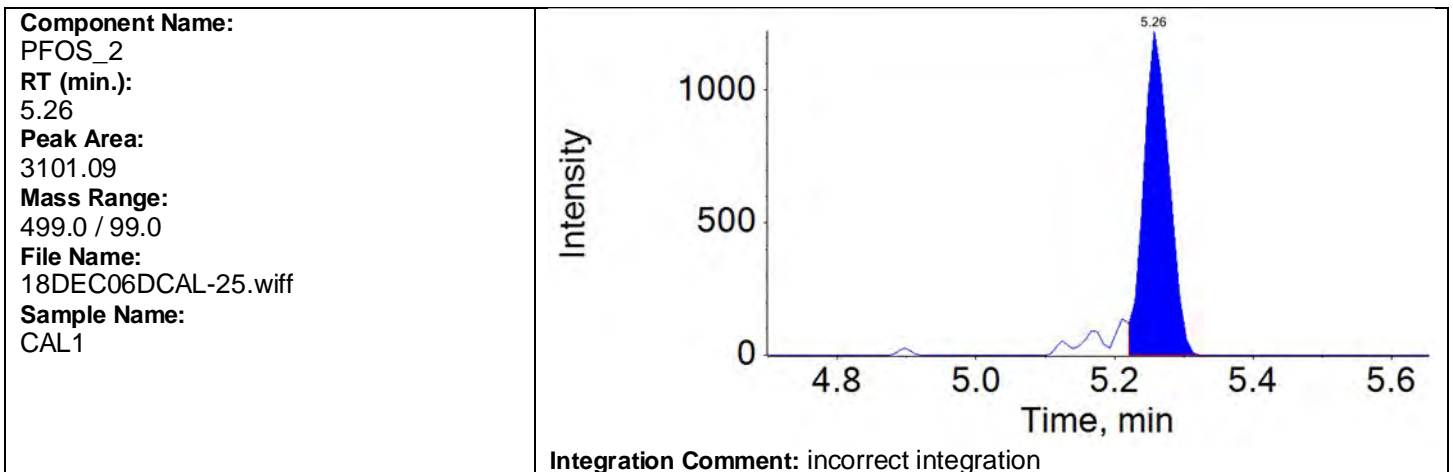
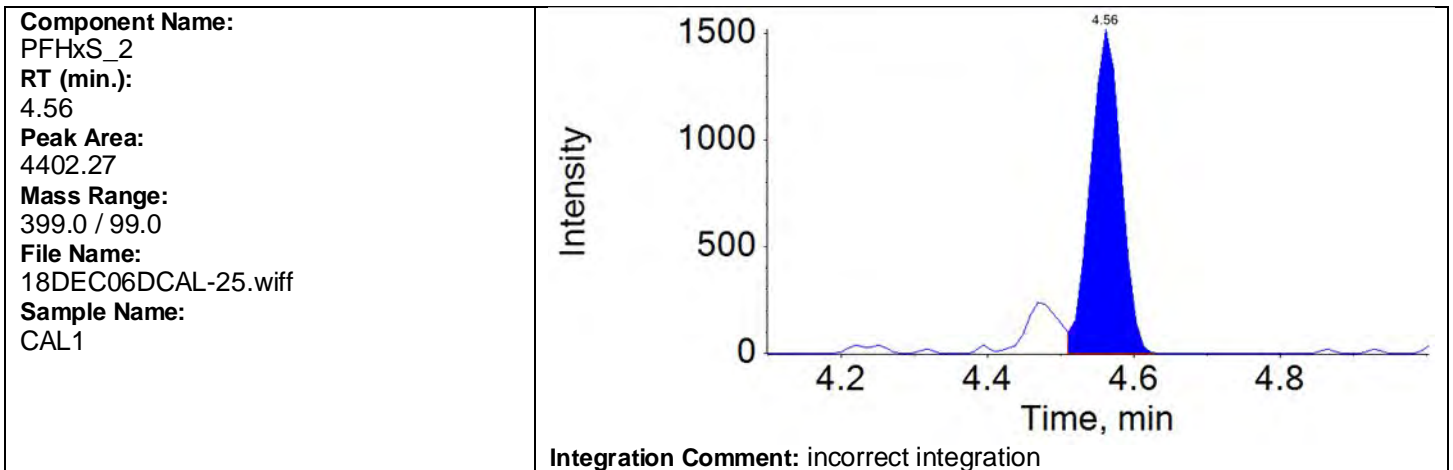
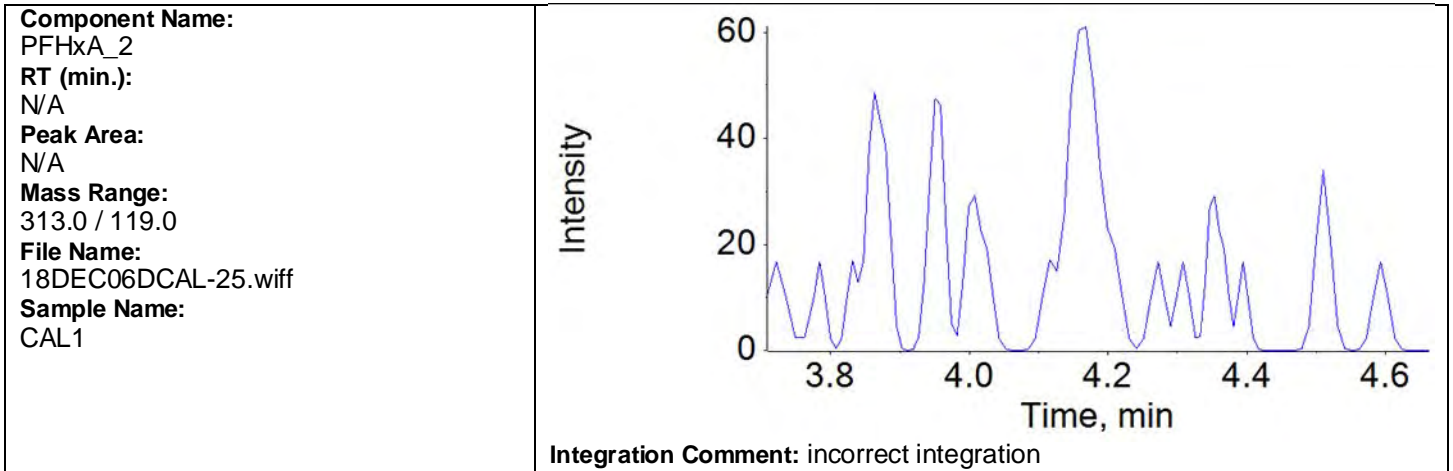
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Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

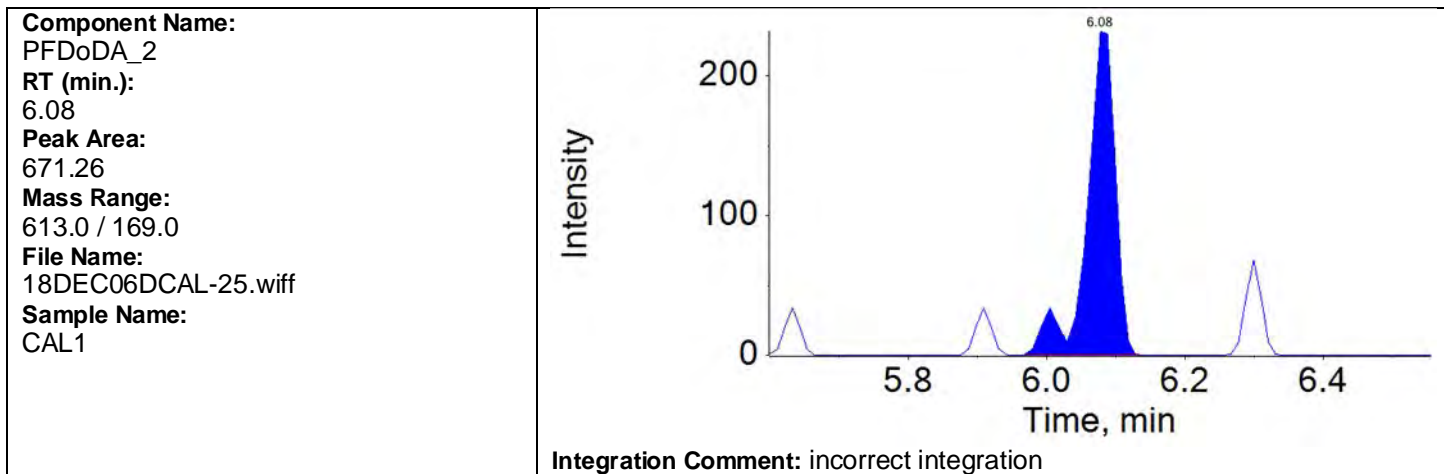
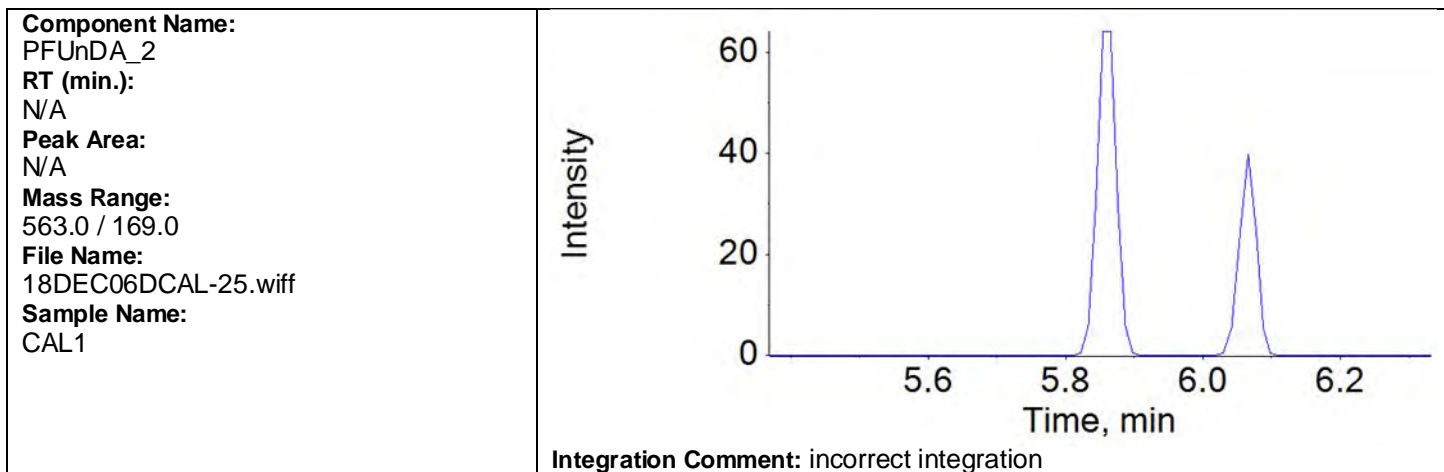
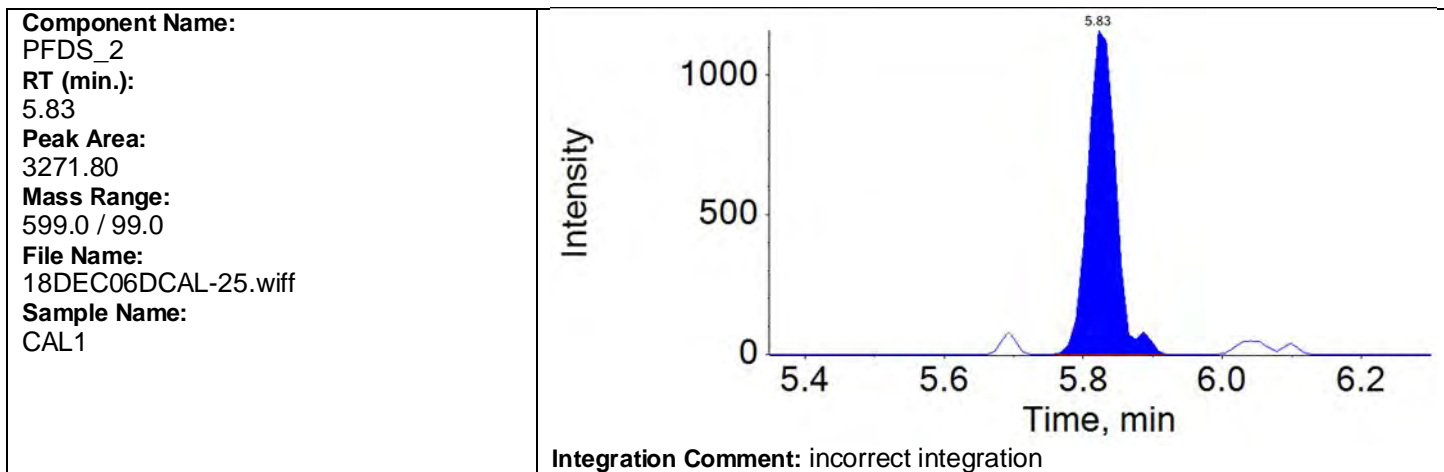
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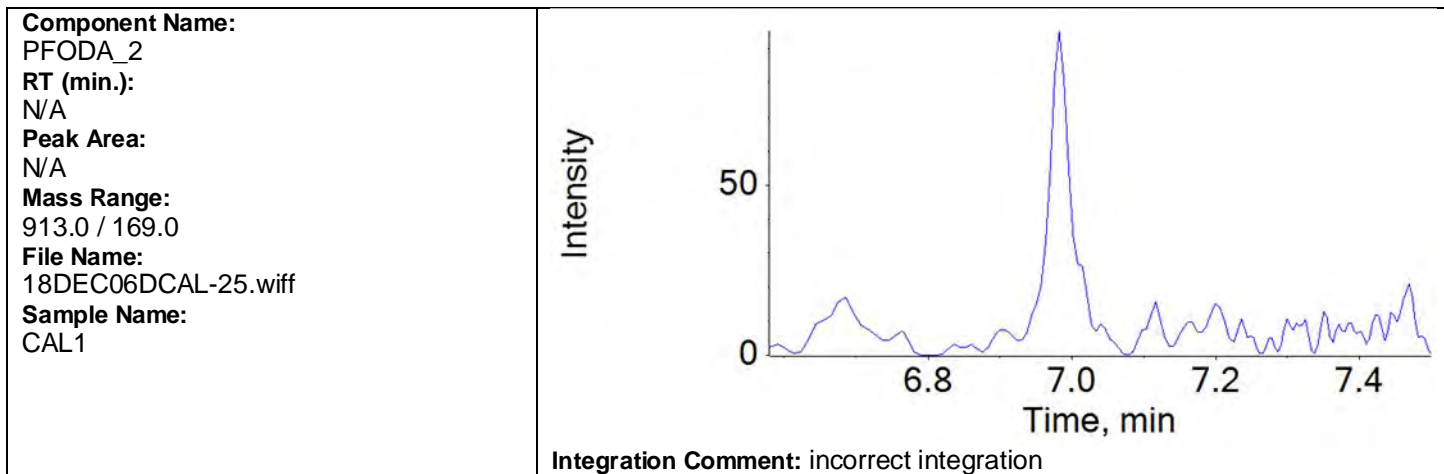
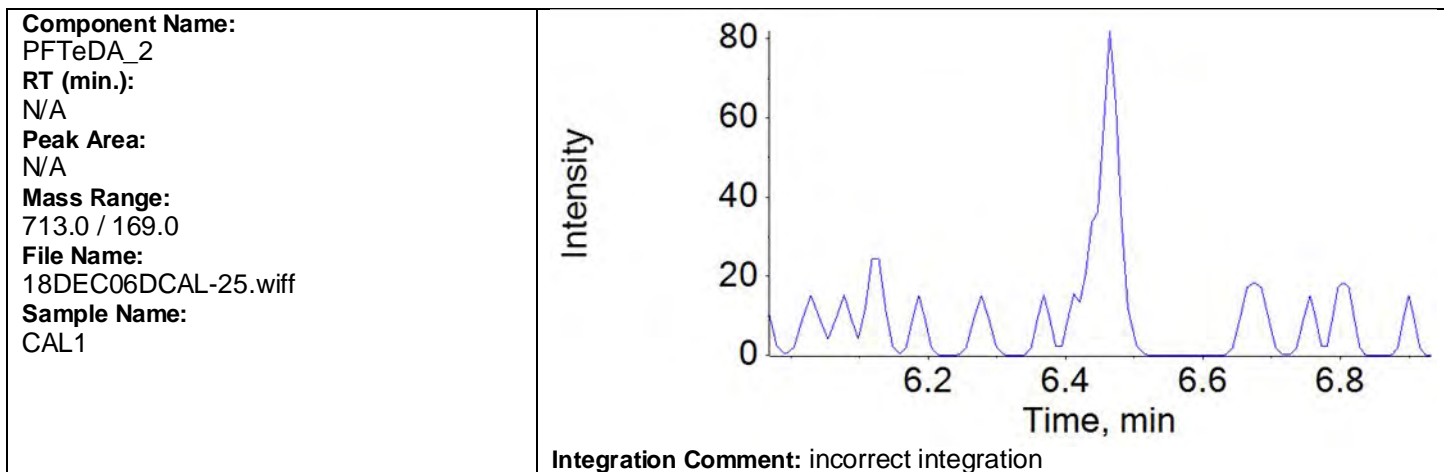
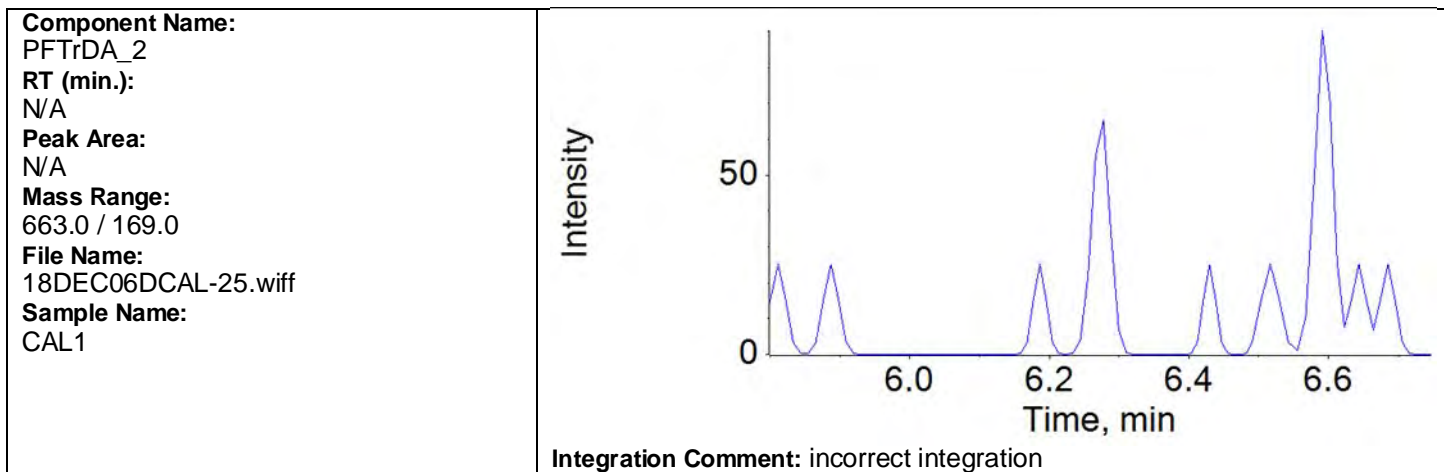
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QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
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Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18

Ion Ratio Report

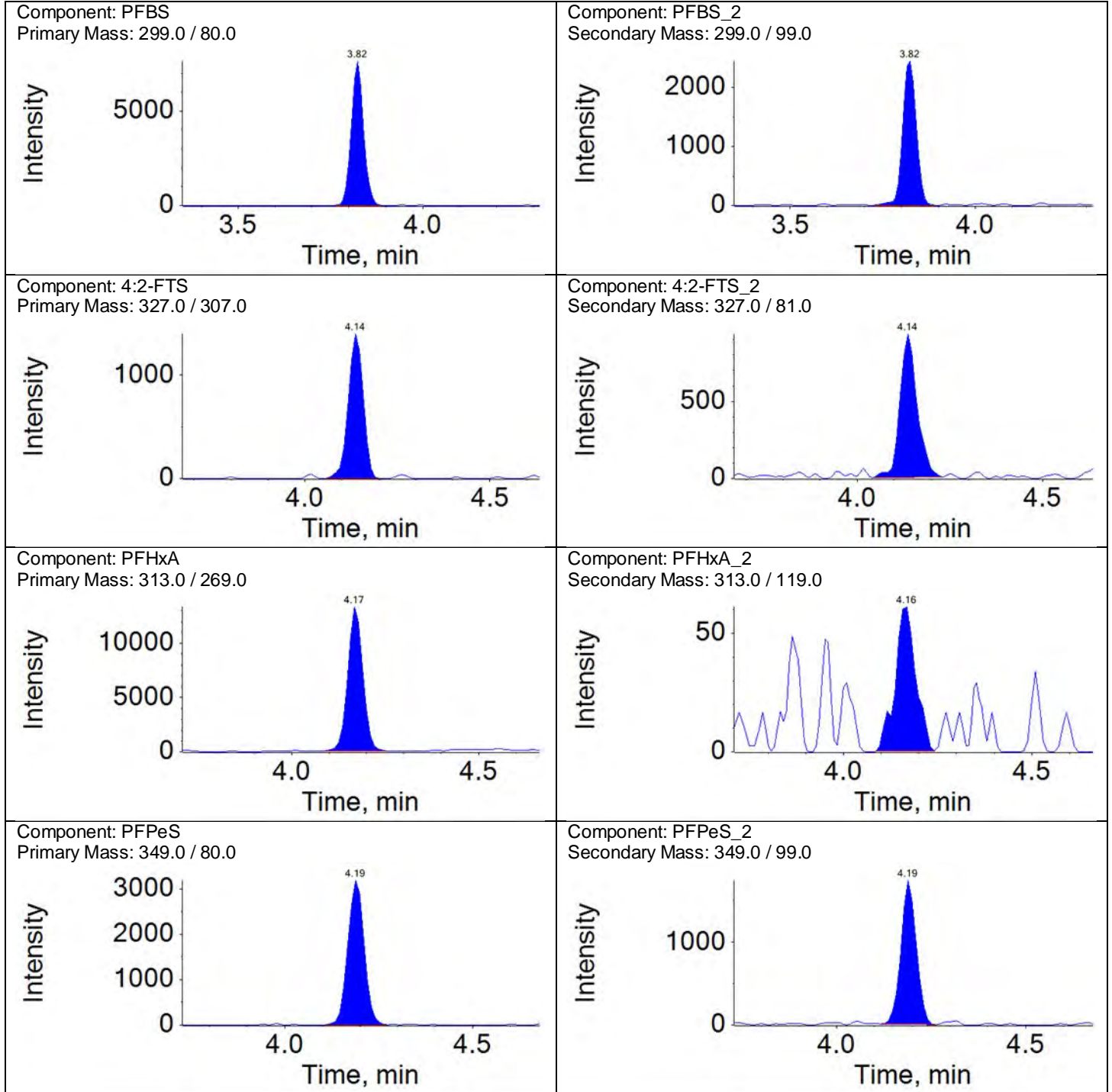
Sample Name: CAL1

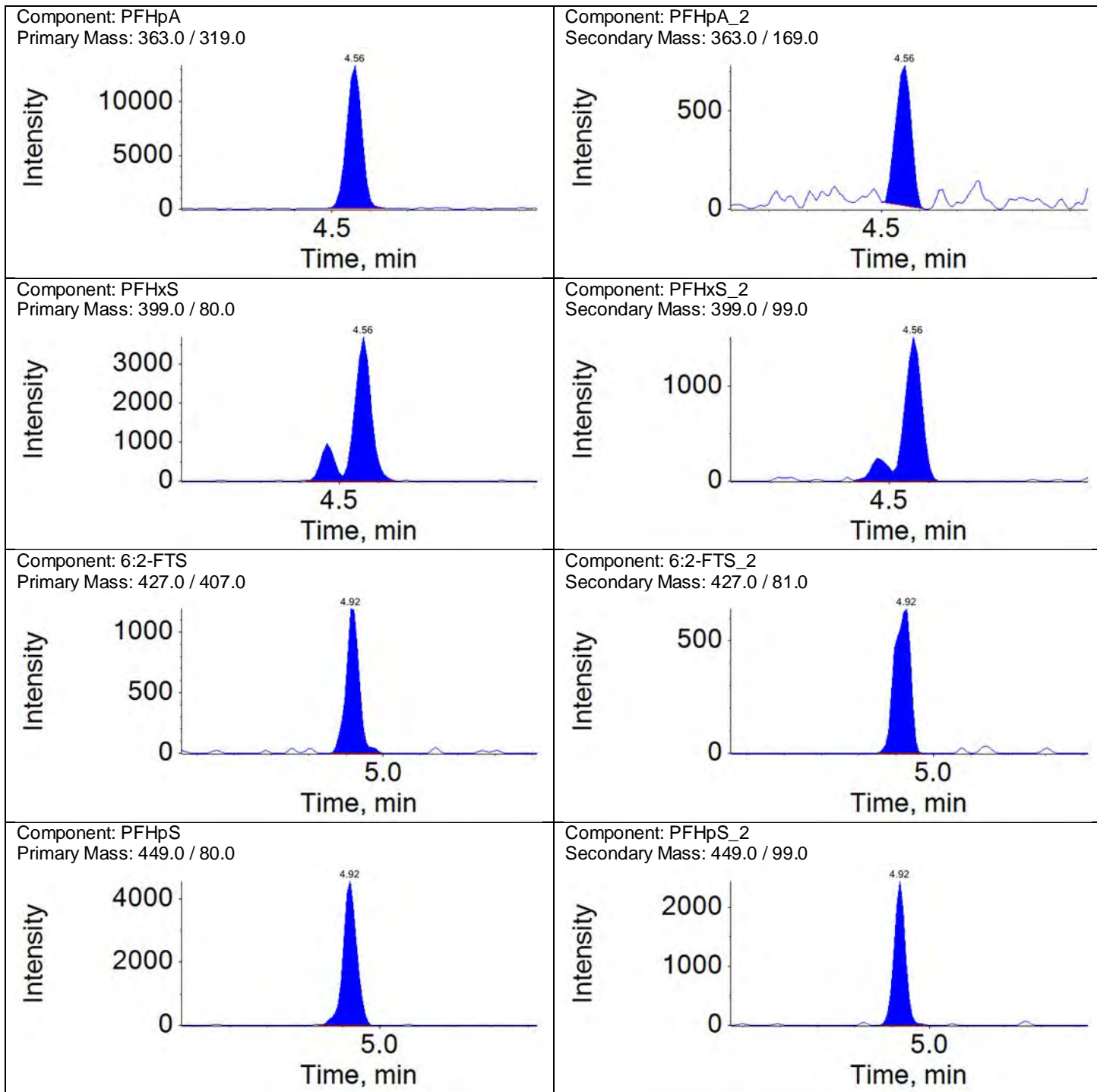
Instrument Name: LM27631

File Name: 18DEC06DCAL-25.wiff

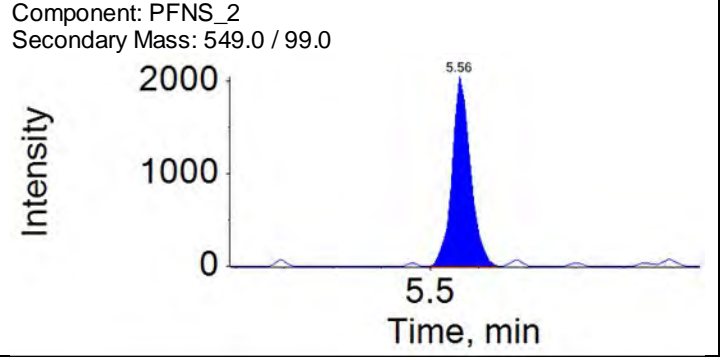
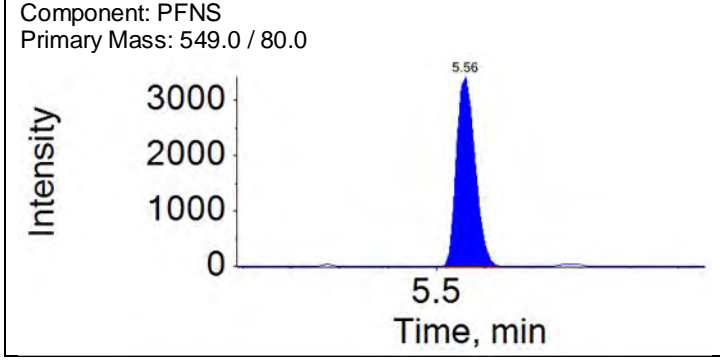
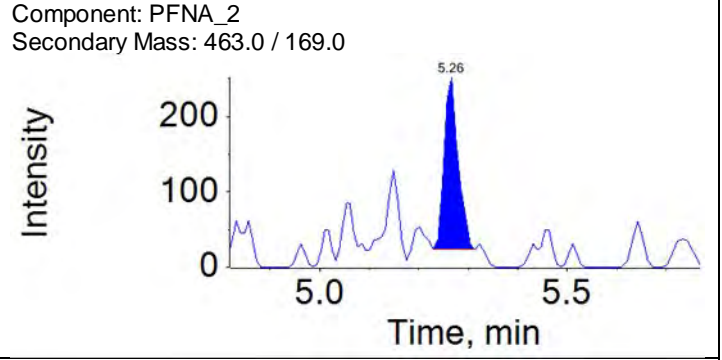
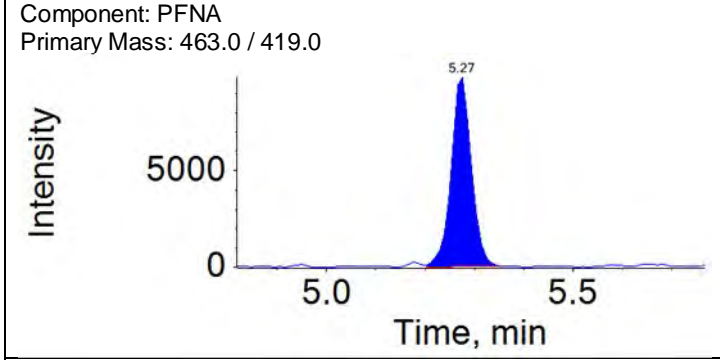
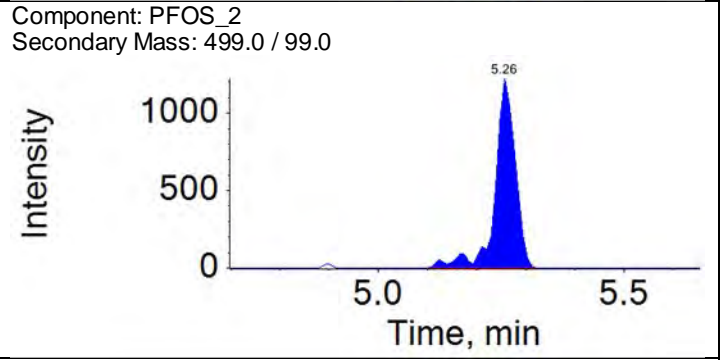
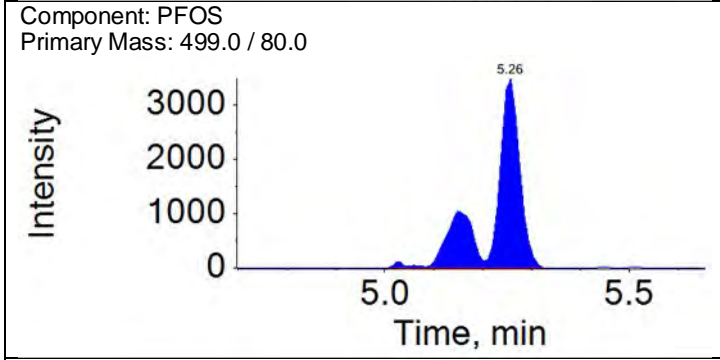
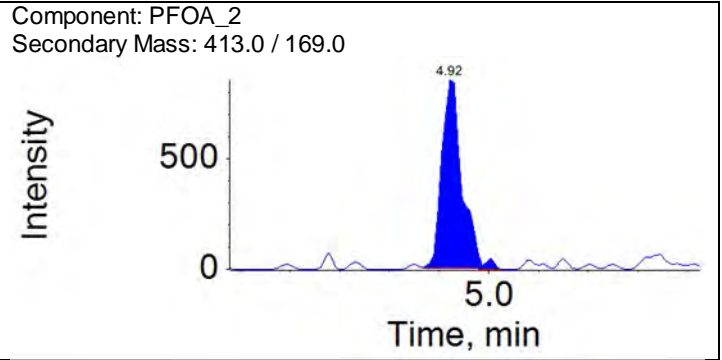
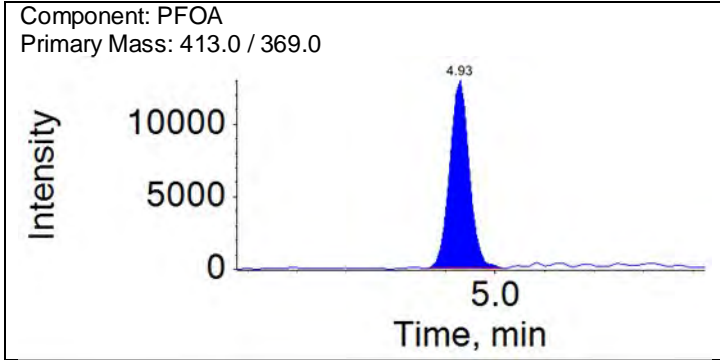
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	17447.72	A	1.0000	1.0000			
PFBS_2	3.82	1.00	6236.17	A	0.3627	0.3574	-1	50	
4:2-FTS	4.14	1.00	3906.59	A	1.0000	1.0000			
4:2-FTS_2	4.14	1.00	3004.38	A	0.6542	0.7691	18	50	
PFHxA	4.17	1.00	37193.37	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	234.07	M	0.0097	0.0063	-35	50	
PFPeS	4.19	1.10	9605.71	A	1.0000	1.0000			
PFPeS_2	4.19	1.10	4882.71	A	0.5262	0.5083	-3	50	
PFHpA	4.56	1.00	37520.09	A	1.0000	1.0000			
PFHpA_2	4.56	1.00	2056.69	A	0.0565	0.0548	-3	50	
PFHxS	4.56	1.00	12711.08	M	1.0000	1.0000			
PFHxS_2	4.56	1.00	5122.27	M	0.3645	0.4030	11	50	
6:2-FTS	4.92	1.00	2930.50	A	1.0000	1.0000			
6:2-FTS_2	4.92	1.00	1943.08	A	0.6273	0.6631	6	50	
PFHpS	4.92	1.08	11460.50	A	1.0000	1.0000			
PFHpS_2	4.92	1.08	5056.44	A	0.4162	0.4412	6	50	
PFOA	4.93	1.00	35481.90	A	1.0000	1.0000			
PFOA_2	4.92	1.00	2459.57	A	0.0616	0.0693	13	50	
PFOS	5.26	1.00	13660.39	M	1.0000	1.0000			
PFOS_2	5.26	1.00	3514.81	M	0.3021	0.2573	-15	50	
PFNA	5.27	1.00	28020.98	A	1.0000	1.0000			
PFNA_2	5.26	1.00	444.44	A	0.0192	0.0159	-17	50	
PFNS	5.56	1.06	9066.40	A	1.0000	1.0000			
PFNS_2	5.56	1.06	5325.86	A	0.4845	0.5874	21	50	
PFDA	5.58	1.00	25786.15	A	1.0000	1.0000			
PFDA_2	5.60	1.00	295.19	A	0.0096	0.0114	19	50	
8:2-FTS	5.59	1.00	2203.18	A	1.0000	1.0000			
8:2-FTS_2	5.58	1.00	1615.08	A	0.6117	0.7331	20	50	
NMeFOSAA	5.74	1.00	2862.99	A	1.0000	1.0000			
NMeFOSAA_2	5.73	1.00	769.19	A	0.2673	0.2687	1	50	
PFDS	5.82	1.11	7005.61	A	1.0000	1.0000			
PFDS_2	5.83	1.11	3163.16	M	0.4952	0.4515	-9	50	
PFOA_2	5.85	1.00	25249.68	A	1.0000	1.0000			
PFOA_2	5.86	1.00	129.73	M	0.0041	0.0051	25	50	
NEtFOSAA	5.87	1.00	3561.72	M	1.0000	1.0000			
NEtFOSAA_2	5.87	1.00	2532.36	A	0.6726	0.7110	6	50	
PFOA_2	6.08	1.00	37270.51	A	1.0000	1.0000			
PFOA_2	6.08	1.00	606.14	M	0.0133	0.0163	22	50	
10:2-FTS	6.09	1.09	1354.81	A	1.0000	1.0000			
10:2-FTS_2	6.10	1.09	1128.23	A	0.6969	0.8328	20	50	
PFOA_2	6.28	1.03	24471.60	A	1.0000	1.0000			
PFOA_2	6.27	1.03	123.92	M	0.0075	0.0051	-33	50	
PFOA_2	6.45	1.00	20571.65	A	1.0000	1.0000			
PFOA_2	6.46	1.00	200.37	M	0.0066	0.0097	47	50	
PFOA_2	6.74	1.04	10493.78	A	1.0000	1.0000			
PFOA_2	6.74	1.04	612.43	A	0.0616	0.0584	-5	50	
PFOA_2	6.99	1.08	6969.17	A	1.0000	1.0000			
PFOA_2	6.98	1.08	222.61	M	0.0272	0.0319	17	50	

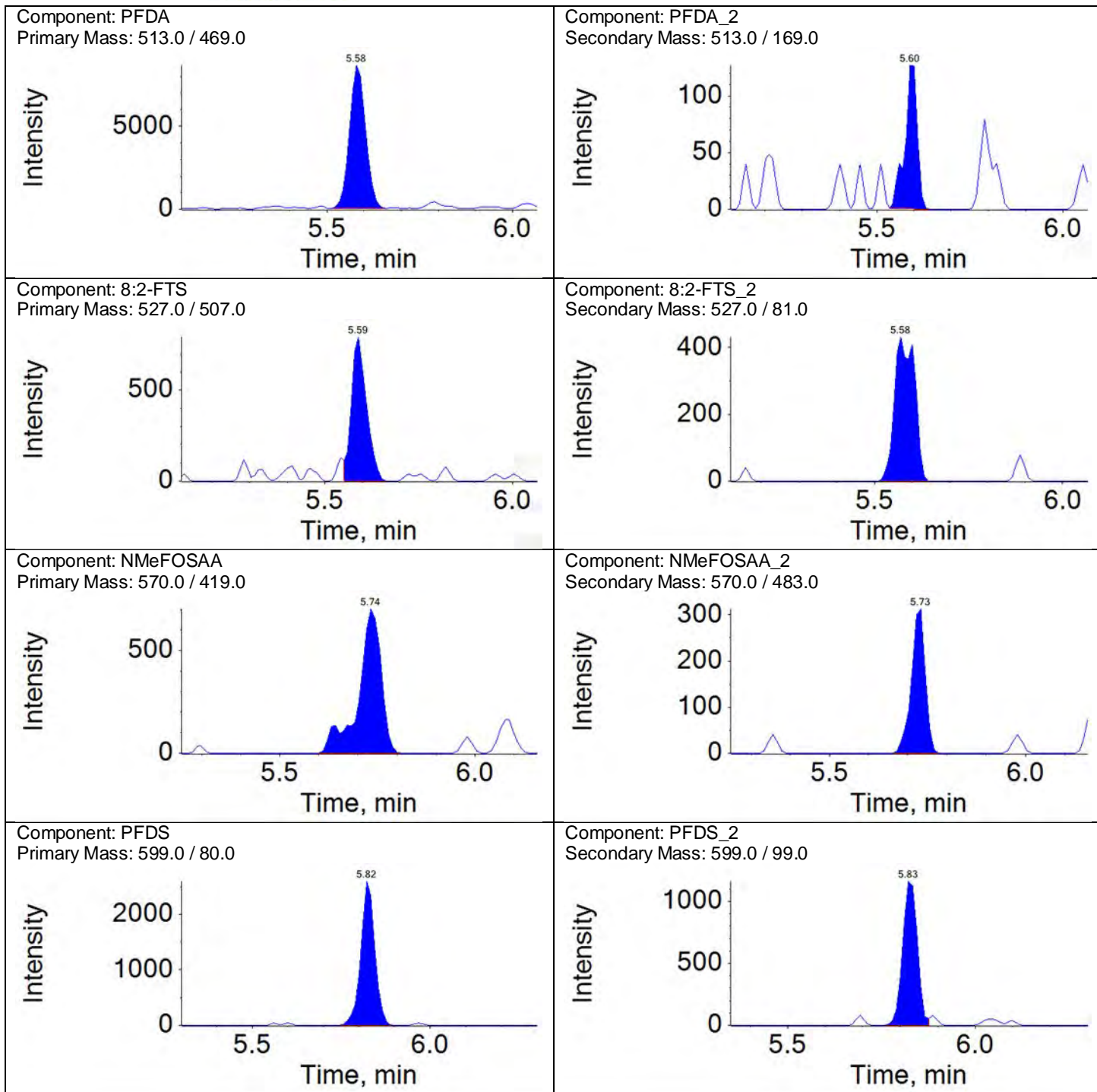


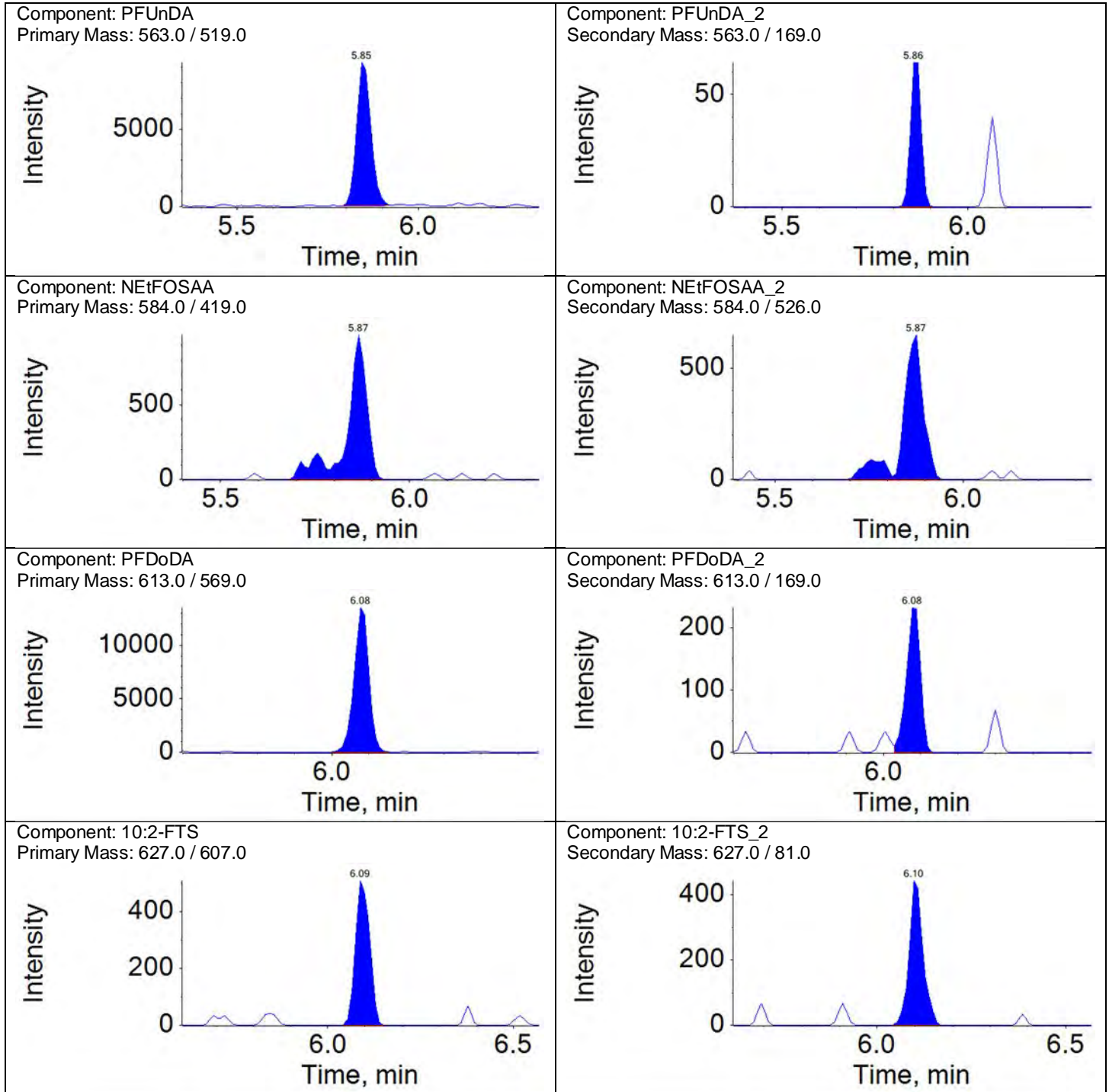


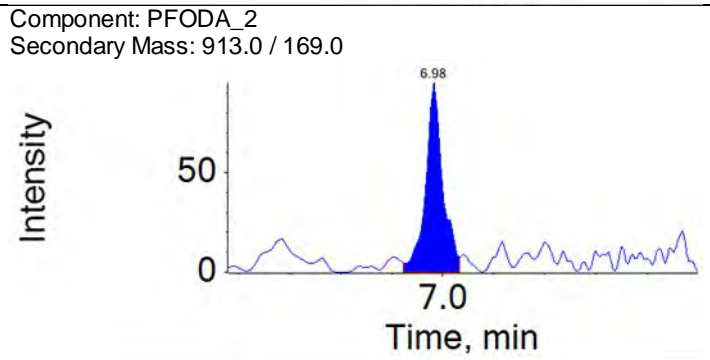
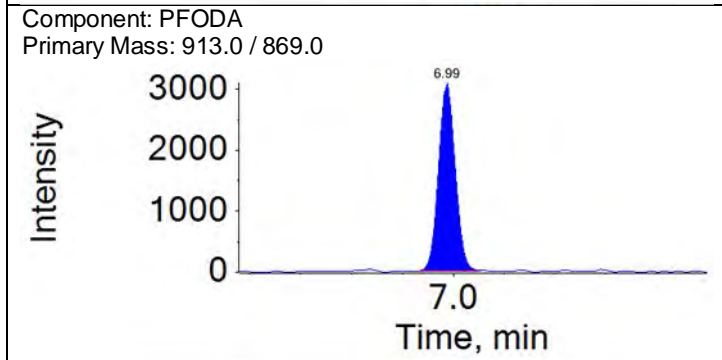
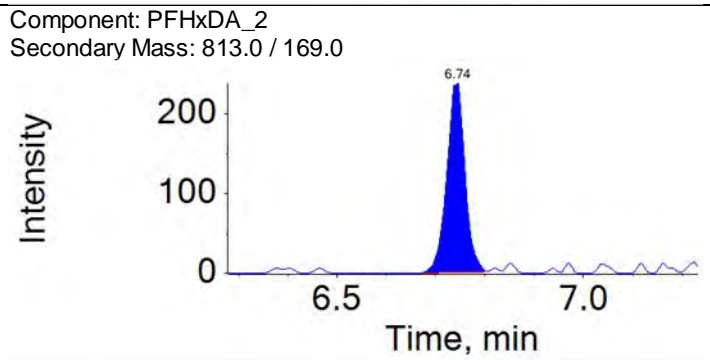
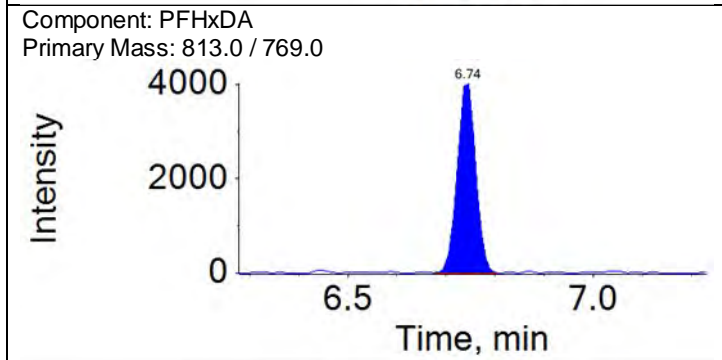
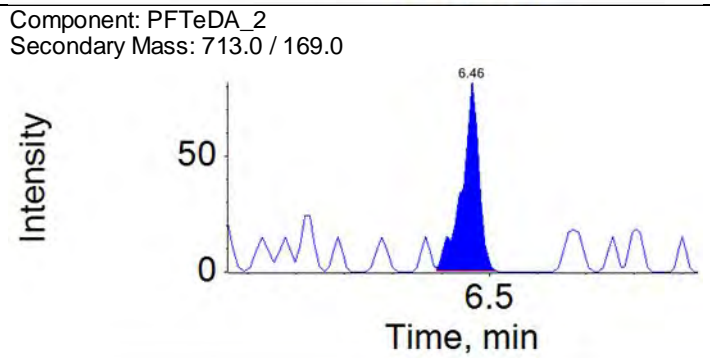
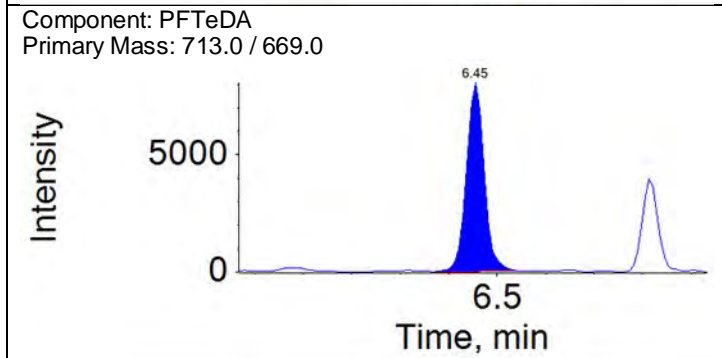
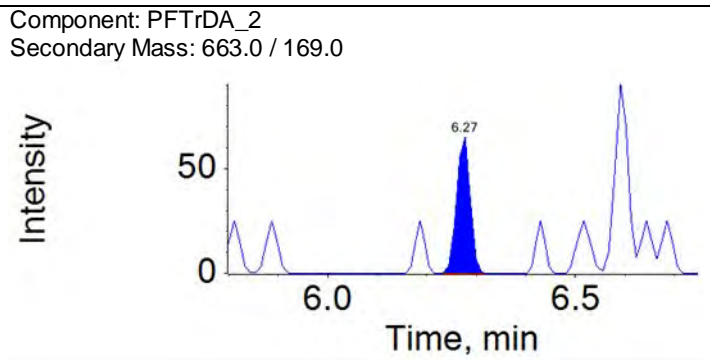
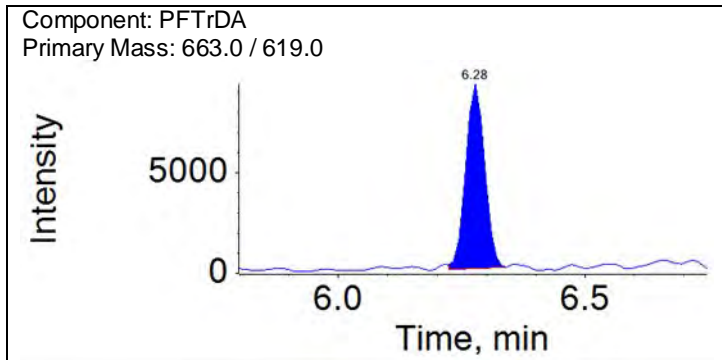














ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL2	Data File:	18DEC06DCAL-26.wiff
Sample ID:	CALBRN21833C	Acquis Date:	2018-12-06T23:46:31
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	4	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	813532.8	825688.9	-1	50	
13C2-PFOA	5.0	427587.5	449802.8	-5	50	
13C4-PFOS	4.8	287749.9	276858.3	4	50	
13C2-PFDA	5.0	303984.0	315428.3	-4	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	956879.6	13C3-PFBA	813532.8	1.176	5.000	5.206	104	70-130	
E13C5-PFPeA	852542.7	13C3-PFBA	813532.8	1.048	5.000	4.977	100	70-130	
E13C3-PFBS	449605.6	13C3-PFBA	813532.8	0.553	4.650	4.685	101	70-130	
E13C2-4:2-FTS	54114.3	13C2-PFOA	427587.5	0.127	4.670	4.959	106	70-130	
E13C5-PFHxA	667261.2	13C2-PFOA	427587.5	1.561	5.000	5.239	105	70-130	
E13C3-PFHxS	342350.1	13C2-PFOA	427587.5	0.801	4.730	5.135	109	70-130	
E13C4-PFHpA	513029.3	13C2-PFOA	427587.5	1.200	5.000	5.101	102	70-130	
E13C2-6:2-FTS	35543.1	13C2-PFOA	427587.5	0.083	4.750	5.150	108	70-130	
E13C8-PFOA	818119.4	13C2-PFOA	427587.5	1.913	5.000	5.408	108	70-130	
E13C8-PFOS	308155.5	13C4-PFOS	287749.9	1.071	4.780	4.806	101	70-130	
E13C9-PFNA	489864.8	13C4-PFOS	287749.9	1.702	5.000	4.811	96	70-130	
E13C6-PFDA	620021.3	13C2-PFDA	303984.0	2.040	5.000	5.405	108	70-130	
E13C2-8:2-FTS	25892.3	13C2-PFDA	303984.0	0.085	4.790	5.561	116	70-130	
E13C8-PFOA	723822.9	13C2-PFDA	303984.0	2.381	5.000	5.632	113	70-130	
Ed3-NMeFOSAA	84870.1	13C2-PFDA	303984.0	0.279	5.000	4.948	99	70-130	
E13C7-PFUnDA	345908.7	13C2-PFDA	303984.0	1.138	5.000	5.582	112	70-130	
Ed5-NEtFOSAA	74625.9	13C2-PFDA	303984.0	0.245	5.000	5.419	108	70-130	
E13C2-PFDoDA	823944.3	13C2-PFDA	303984.0	2.710	5.000	5.688	114	70-130	
Ed7-NMePFOSAE	265104.1	13C2-PFDA	303984.0	0.872	5.000	5.024	100	70-130	
Ed3-NMePFOSA	87716.6	13C2-PFDA	303984.0	0.289	5.000	5.258	105	70-130	
Ed9-NEtPFOSAE	234011.3	13C2-PFDA	303984.0	0.770	5.000	5.308	106	70-130	
Ed5-NEtPFOSA	66979.3	13C2-PFDA	303984.0	0.220	5.000	4.959	99	70-130	
E13C2-PFTeDA	540663.9	13C2-PFDA	303984.0	1.779	5.000	5.279	106	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

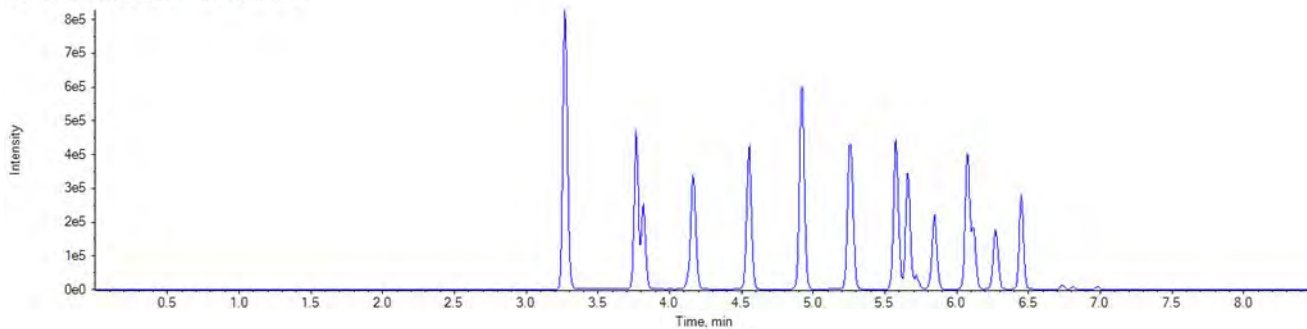
Sample Name: CAL2 Instrument Name: LM27631 File Name: 18DEC06DCAL-26.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	99228.6		A	13C4-PFBA	3.27	956879.6	0.104	0.572
PFPeA	3.77	1.000	91072.3		A	13C5-PFPeA	3.77	852542.7	0.107	0.562
PFBS	3.82	1.000	44603.2		A	13C3-PFBS	3.82	449605.6	0.099	0.492
4:2-FTS	4.13	1.000	9721.4		A	13C2-4:2-FTS	4.13	54114.3	0.180	0.482
PFHxA	4.16	1.000	95772.8		A	13C5-PFHxA	4.16	667261.2	0.144	0.625
PFPeS	4.18	1.100	24089.1		A	13C3-PFBS	3.82	449605.6	0.054	0.531
PFHpA	4.55	1.000	95002.0		A	13C4-PFHpA	4.55	513029.3	0.185	0.610
PFHxS	4.55	1.000	32481.7		M	13C3-PFHxS	4.55	342350.1	0.095	0.450
6:2-FTS	4.91	1.000	8921.7		A	13C2-6:2-FTS	4.91	35543.1	0.251	0.623
PFHpS	4.91	1.080	34669.2		A	13C3-PFHxS	4.55	342350.1	0.101	0.556
PFOA	4.92	1.000	85869.8		A	13C8-PFOA	4.92	818119.4	0.105	0.574
PFOS	5.25	1.000	37181.1		M	13C8-PFOS	5.25	308155.5	0.121	0.500
PFNA	5.27	1.000	69083.4		A	13C9-PFNA	5.27	489864.8	0.141	0.520
PFNS	5.55	1.060	22032.8		A	13C8-PFOS	5.25	308155.5	0.071	0.460
PFDA	5.58	1.000	62650.4		A	13C6-PFDA	5.58	620021.3	0.101	0.569
8:2-FTS	5.58	1.000	6424.5		A	13C2-8:2-FTS	5.58	25892.3	0.248	0.538
PFOSA	5.66	1.000	70441.3		A	13C8-PFOSA	5.66	723822.9	0.097	0.505
NMeFOSAA	5.72	1.000	7727.9		M	d3-NMeFOSAA	5.72	84870.1	0.091	0.602
PFDS	5.82	1.110	18312.9		A	13C8-PFOS	5.25	308155.5	0.059	0.481
PfUnDA	5.84	1.000	67047.2		A	13C7-PfUnDA	5.84	345908.7	0.194	0.593
NEtFOSAA	5.86	1.000	7437.9		A	d5-NEtFOSAA	5.86	74625.9	0.100	0.504
PFDaDA	6.07	1.000	80887.3		A	13C2-PFDaDA	6.08	823944.3	0.098	0.517
10:2-FTS	6.09	1.090	5031.5		A	13C2-8:2-FTS	5.58	25892.3	0.194	0.515
NMePFOSAE	6.12	1.000	34660.6		A	d7-NMePFOSAE	6.11	265104.1	0.131	0.568
NMePFOSA	6.13	1.000	9287.7		A	d3-NMePFOSA	6.13	87716.6	0.106	0.534
PFDoS	6.24	1.190	10262.0		A	13C8-PFOS	5.25	308155.5	0.033	0.508
NEtPFOSAE	6.28	1.000	45303.8		A	d9-NEtPFOSAE	6.27	234011.3	0.194	0.649
NEtPFOSA	6.29	1.000	8819.4		A	d5-NEtPFOSA	6.28	66979.3	0.132	0.630
PFTrDA	6.27	1.030	72303.6		A	13C2-PFDaDA	6.08	823944.3	0.088	0.575
PFTeDA	6.45	1.000	55946.8		A	13C2-PFTeDA	6.45	540663.9	0.103	0.592
PFHxDA	6.74	1.040	24602.5		A	13C2-PFTeDA	6.45	540663.9	0.046	0.570
PFOA	6.98	1.080	18468.5		A	13C2-PFTeDA	6.45	540663.9	0.034	0.548

**Total Ion Chromatogram**

TIC from 18DEC06DCAL-26.wiff (sample 1) - CAL2



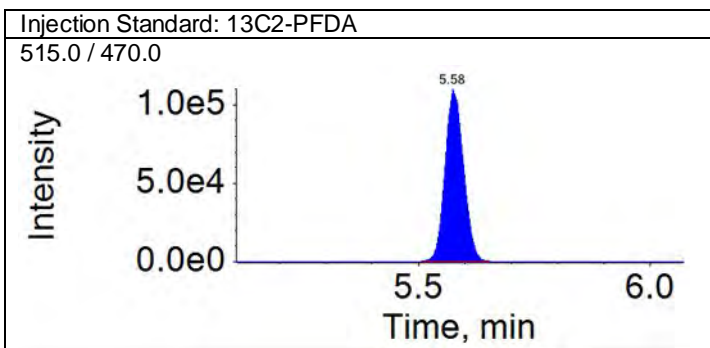
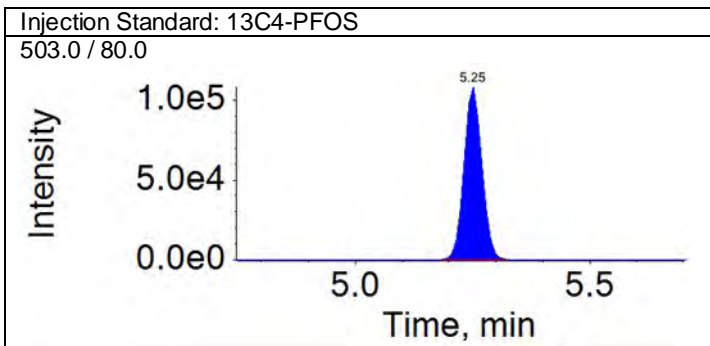
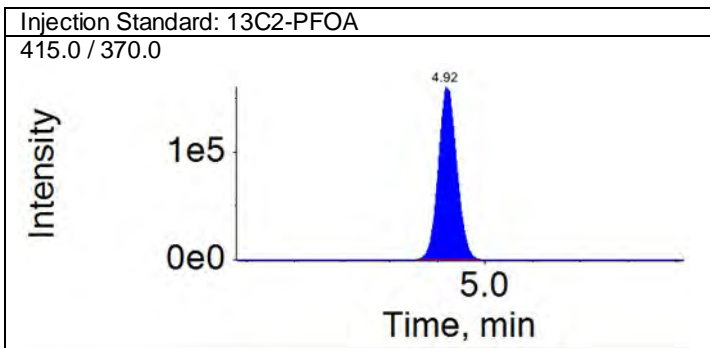
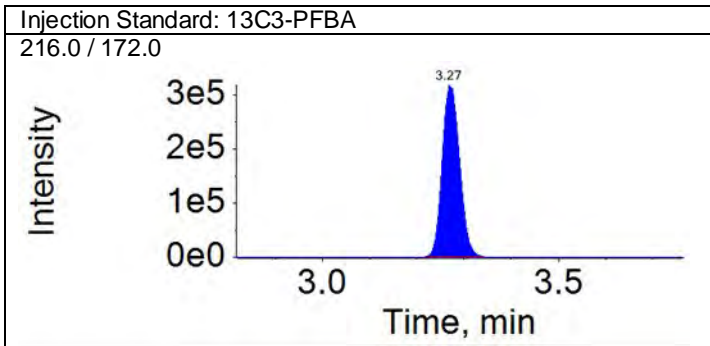
**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18



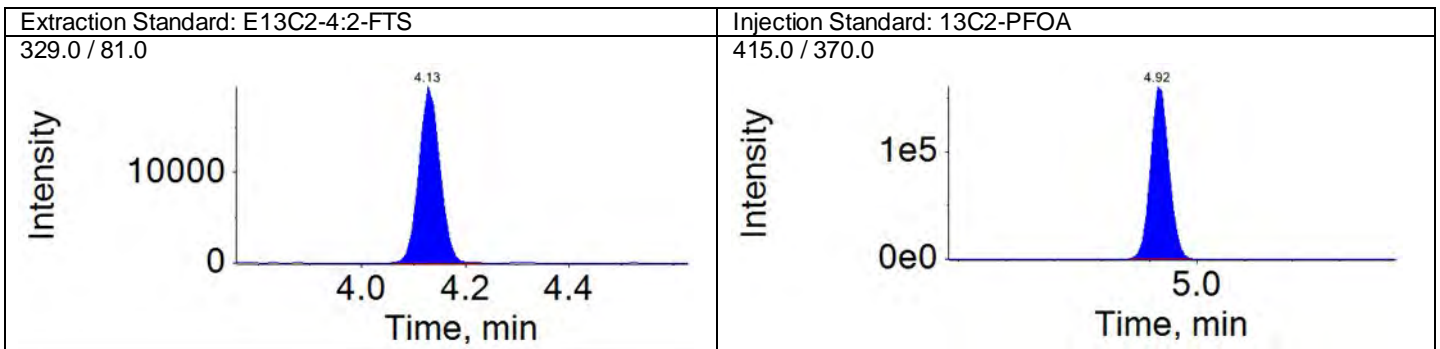
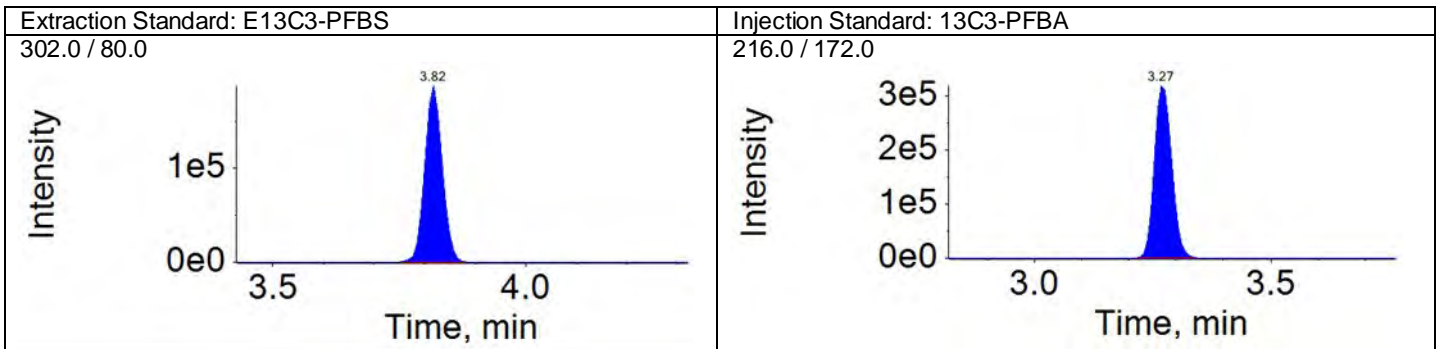
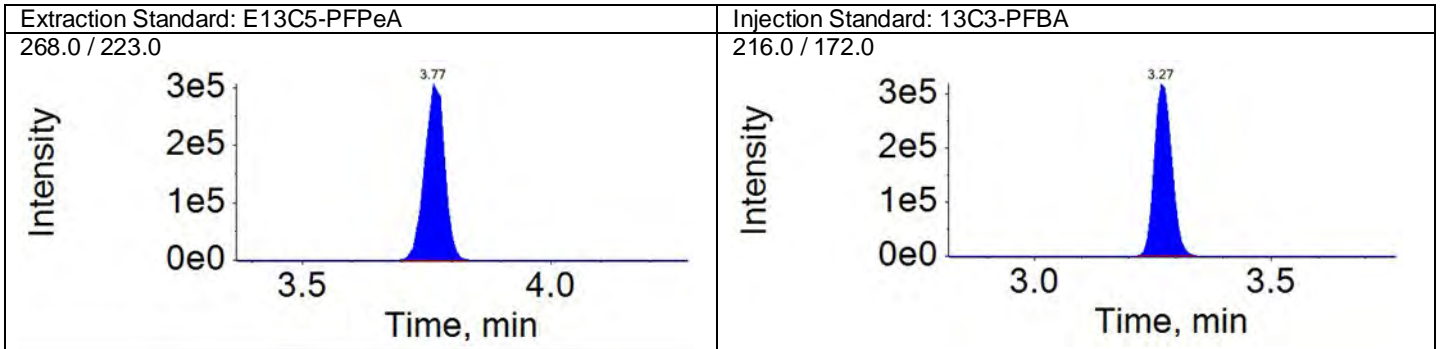
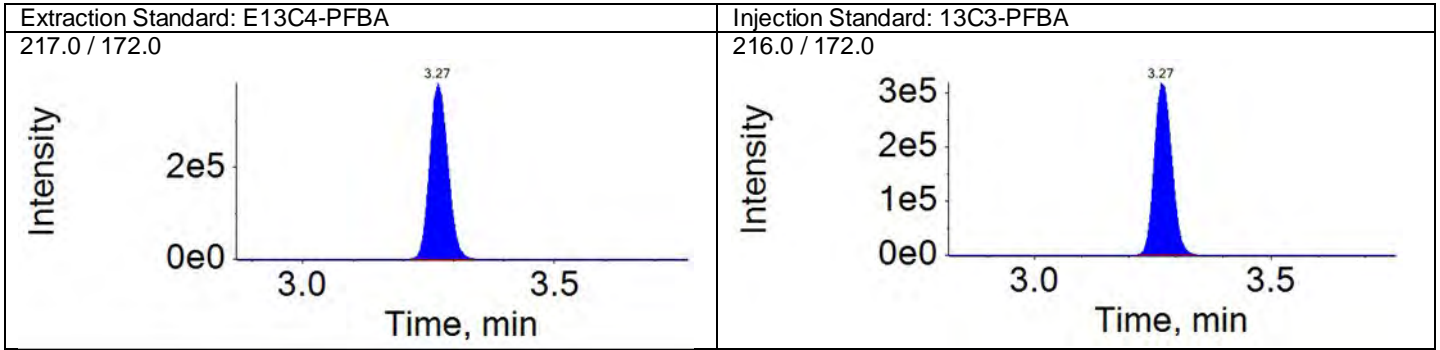
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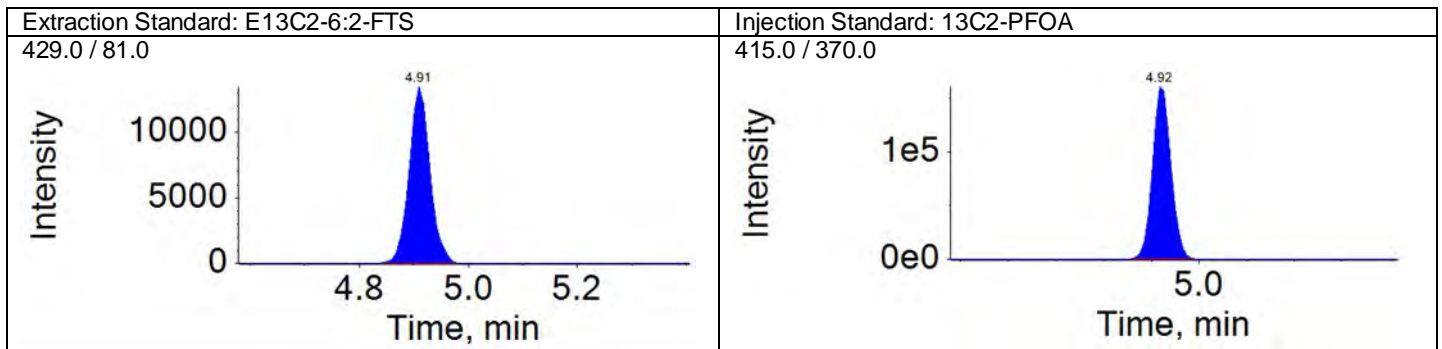
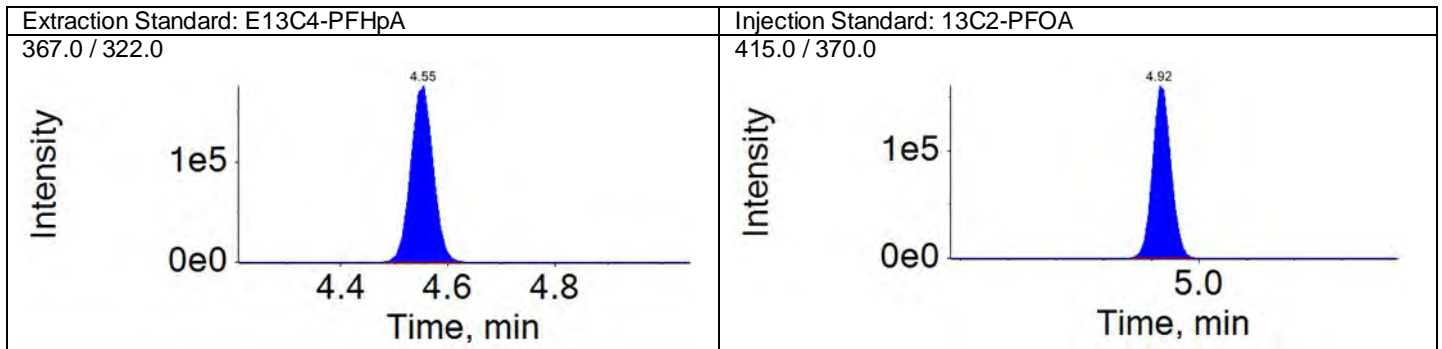
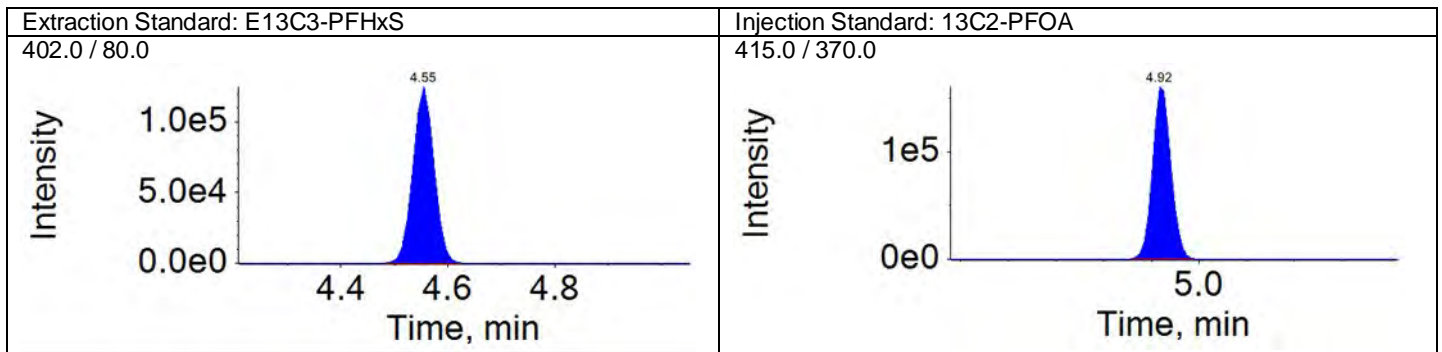
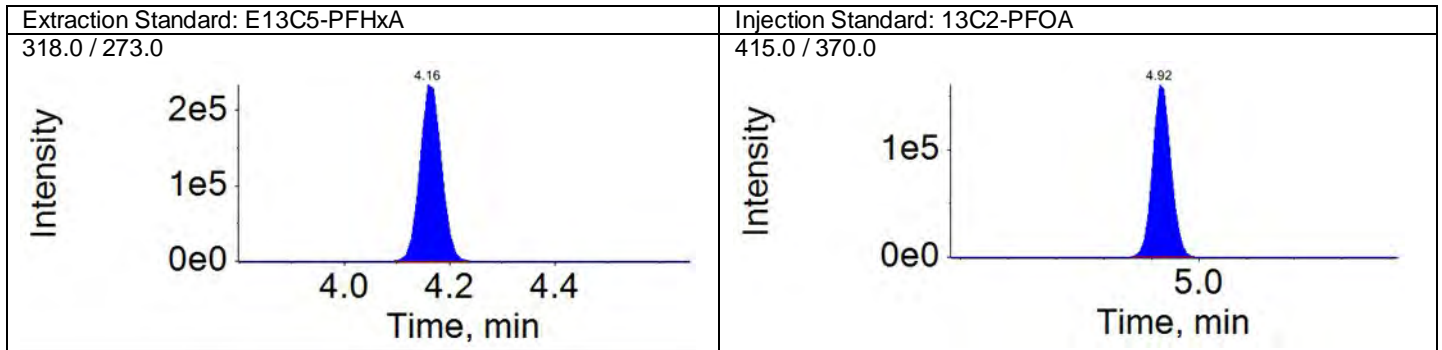
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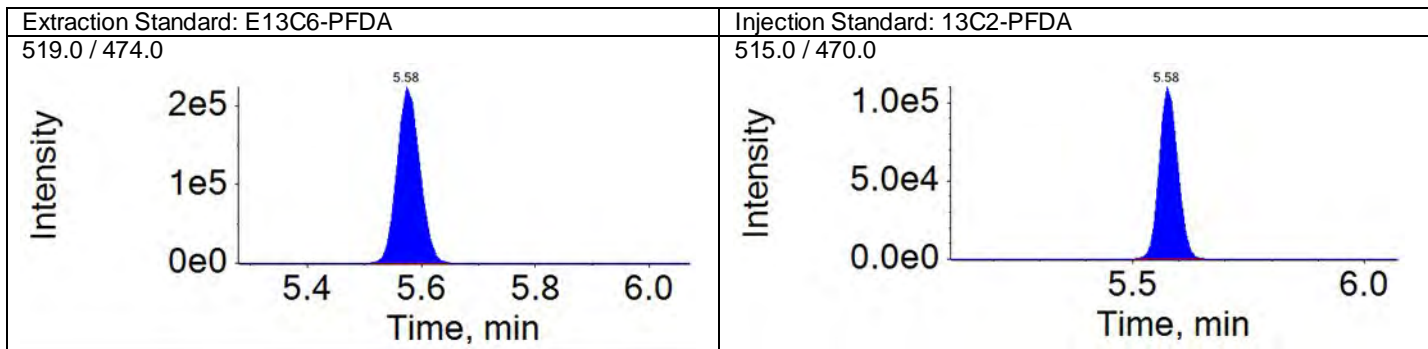
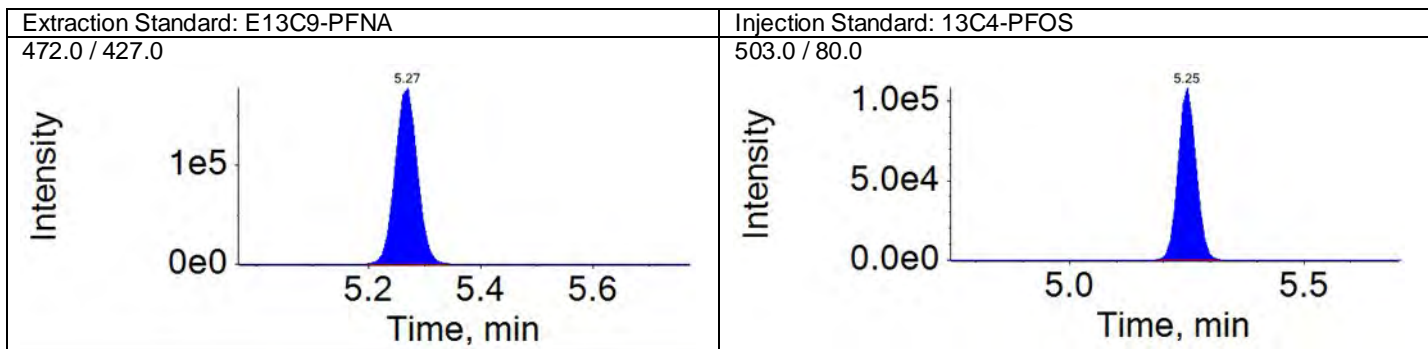
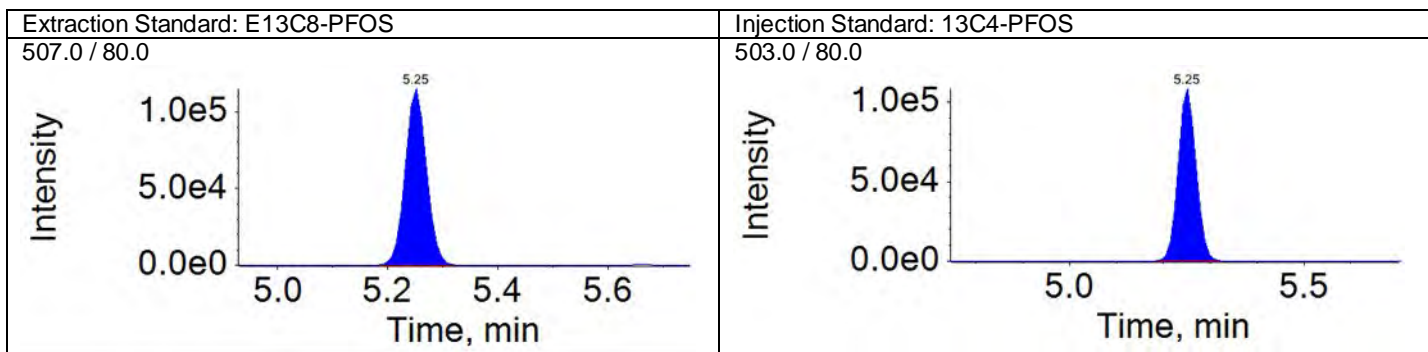
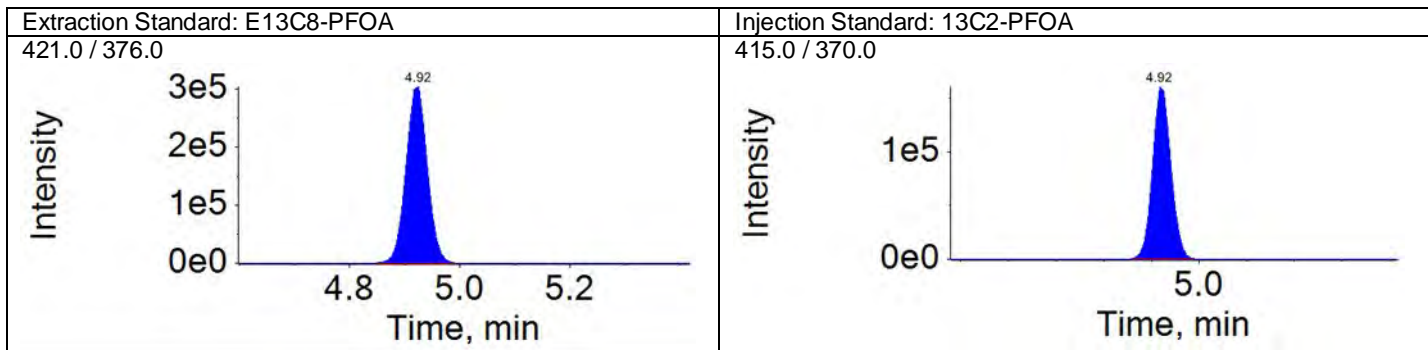
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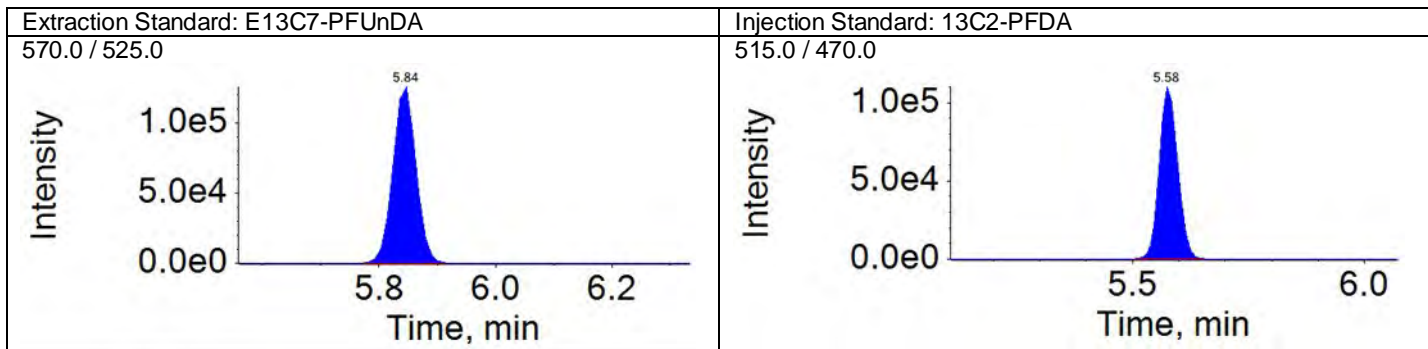
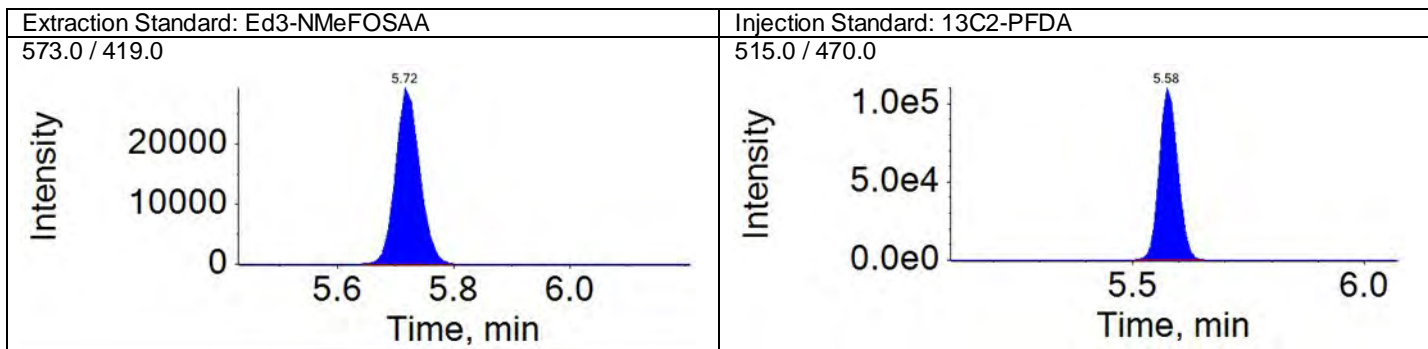
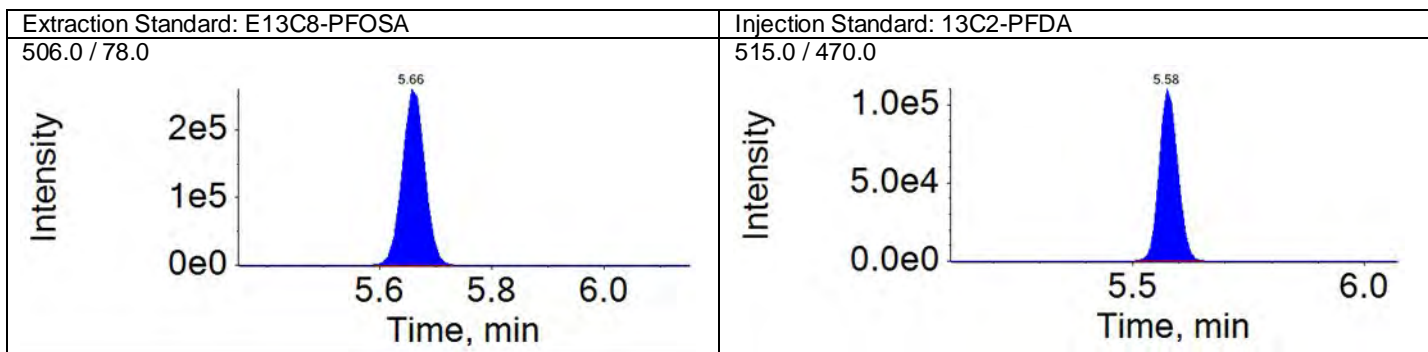
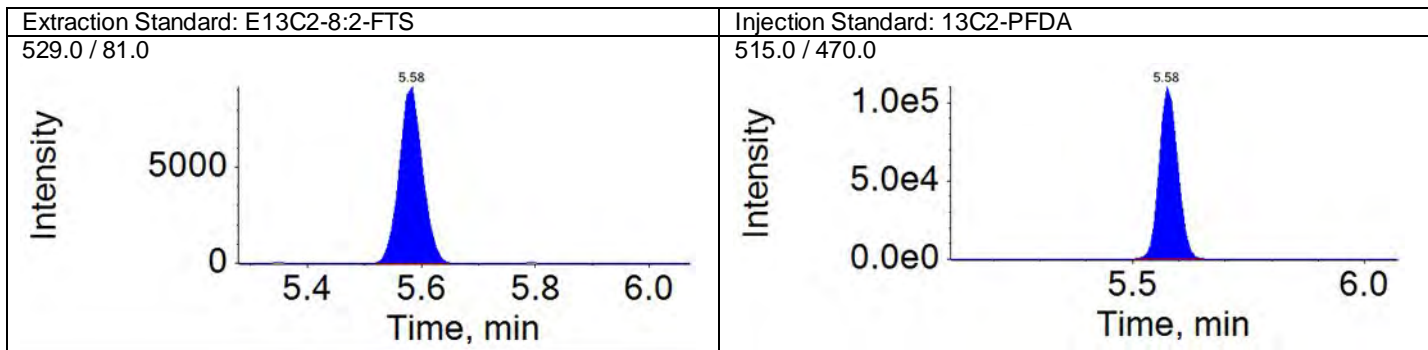
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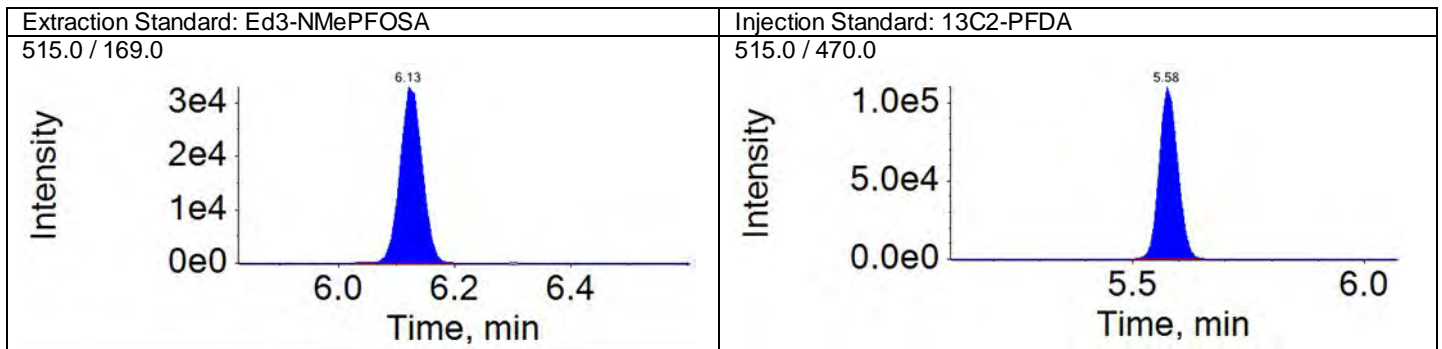
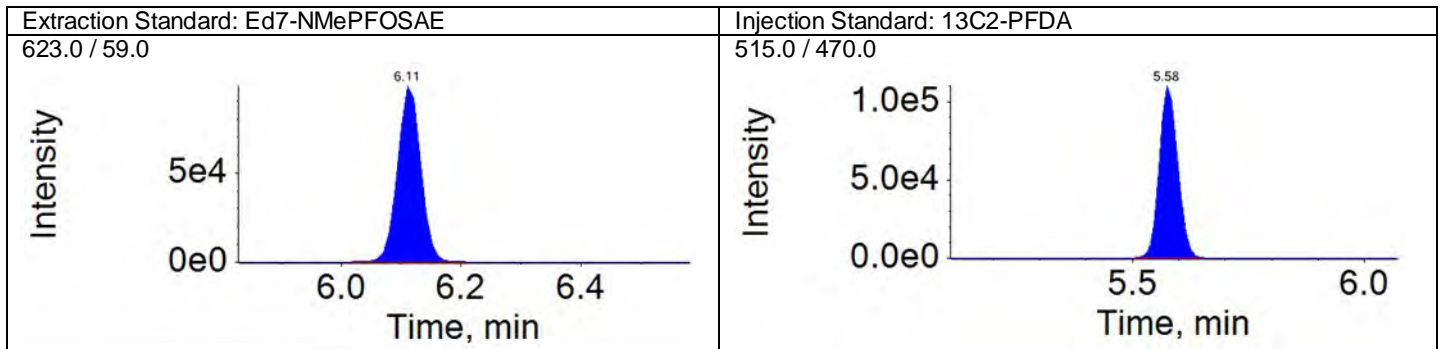
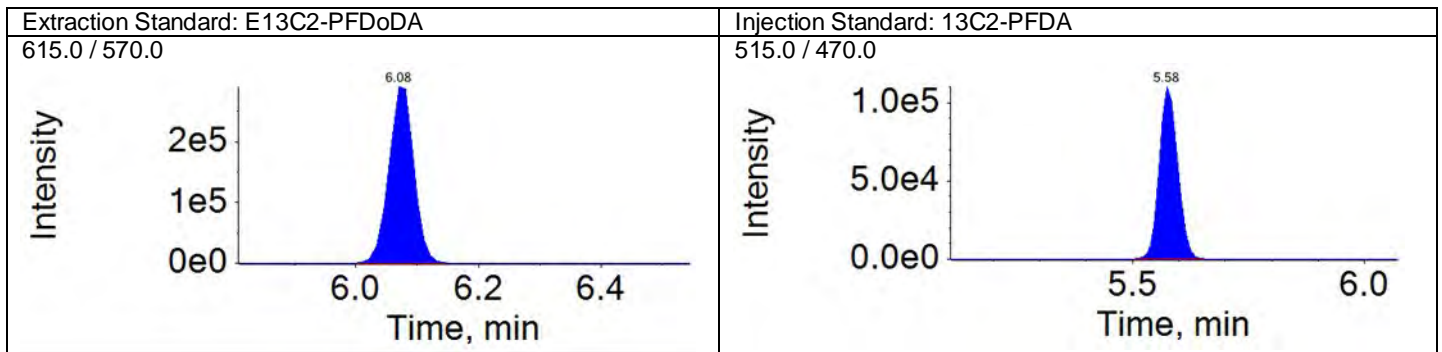
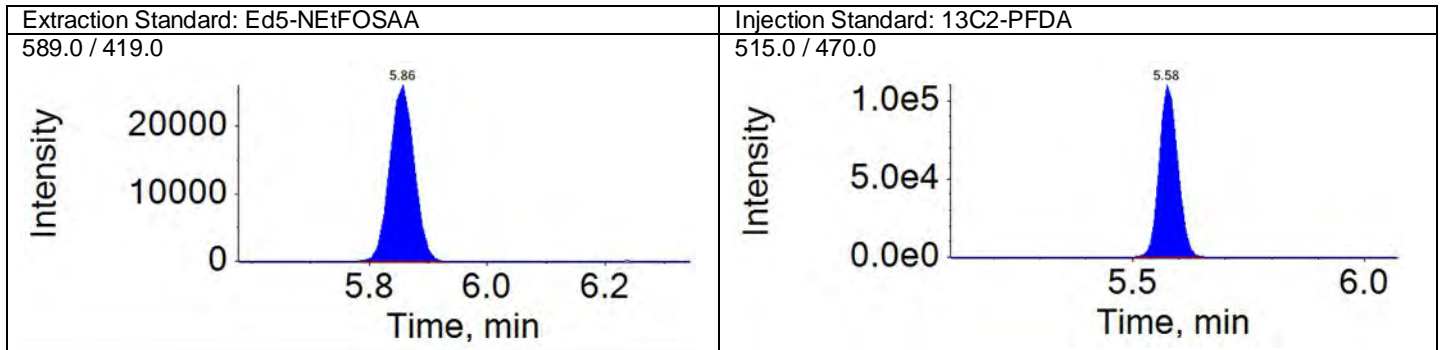
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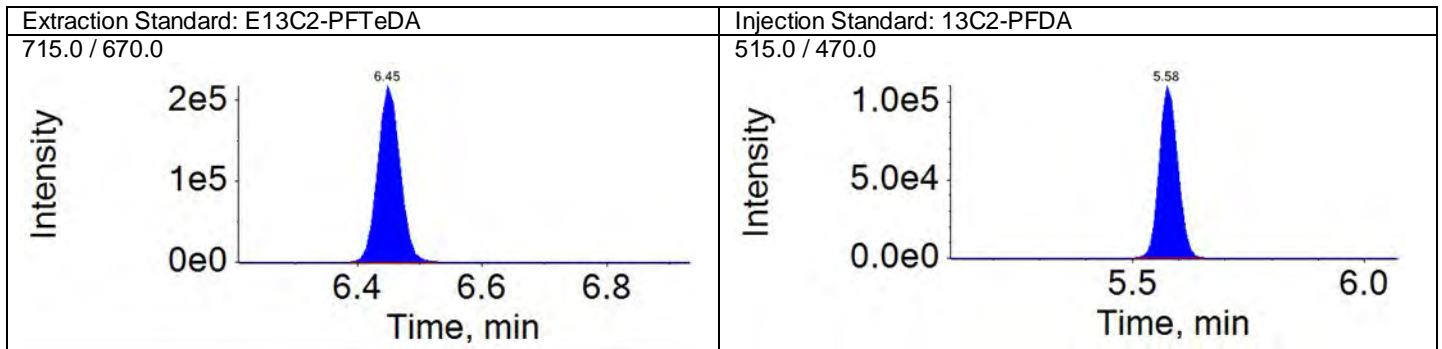
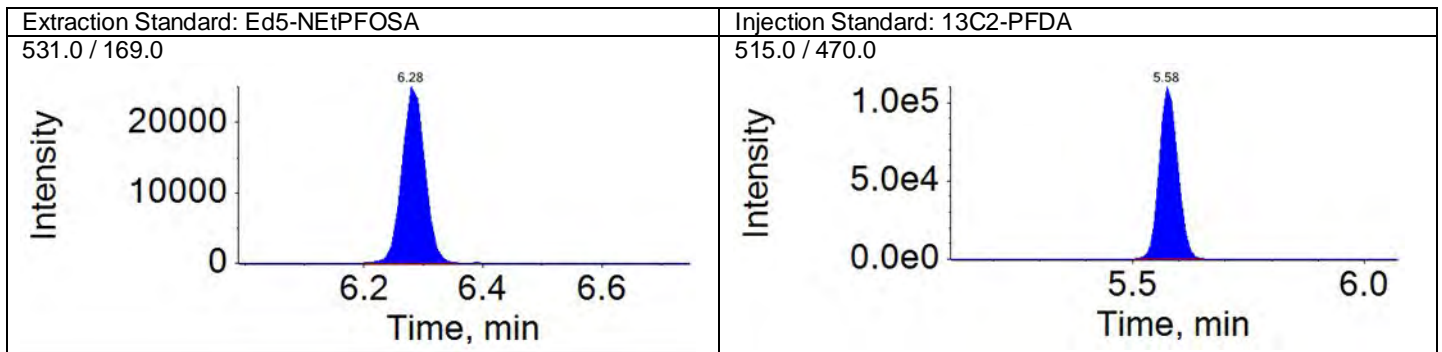
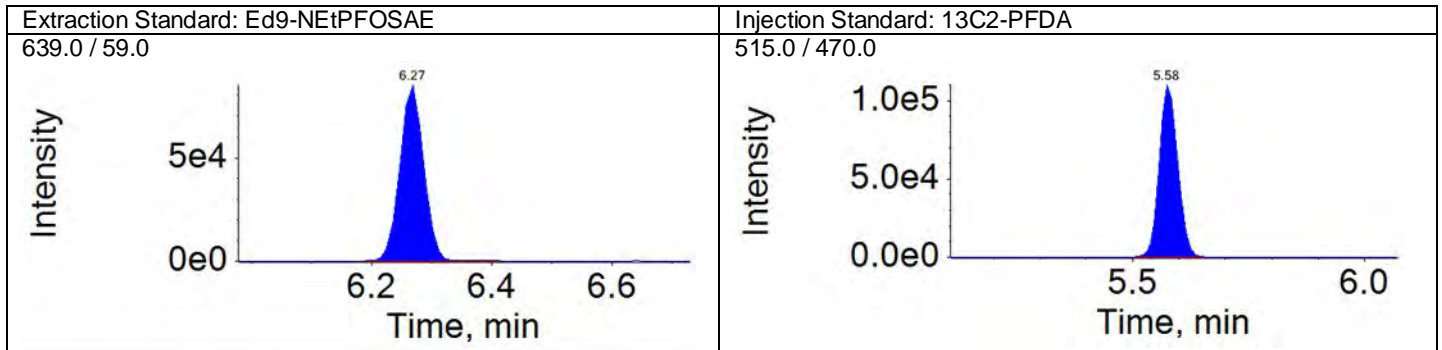
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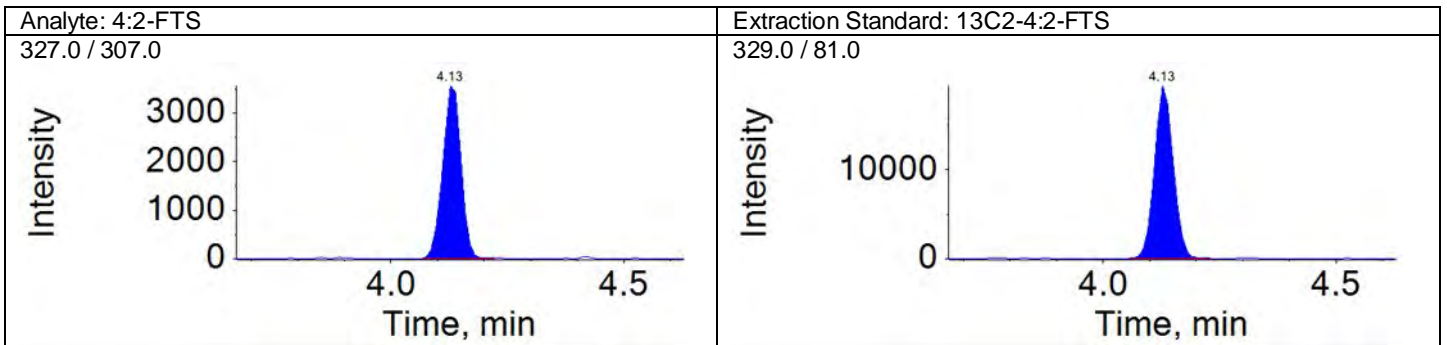
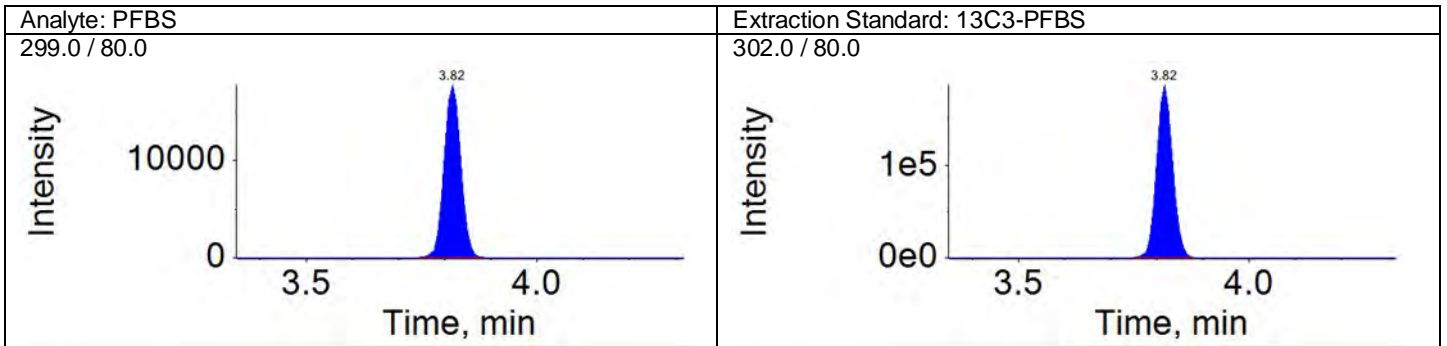
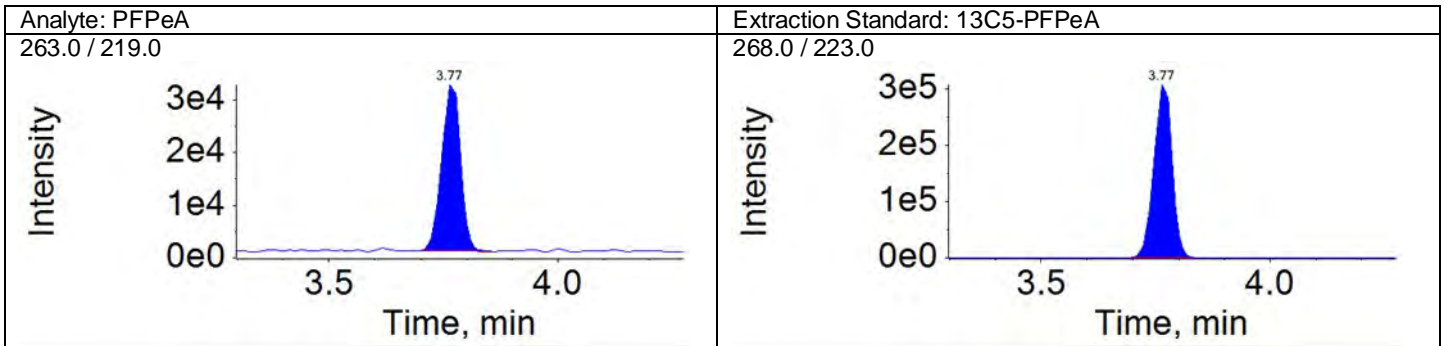
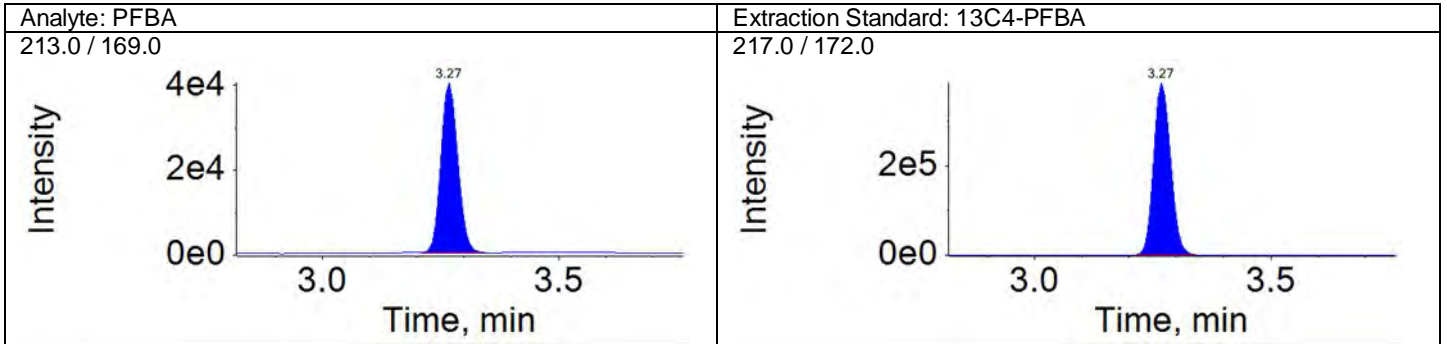
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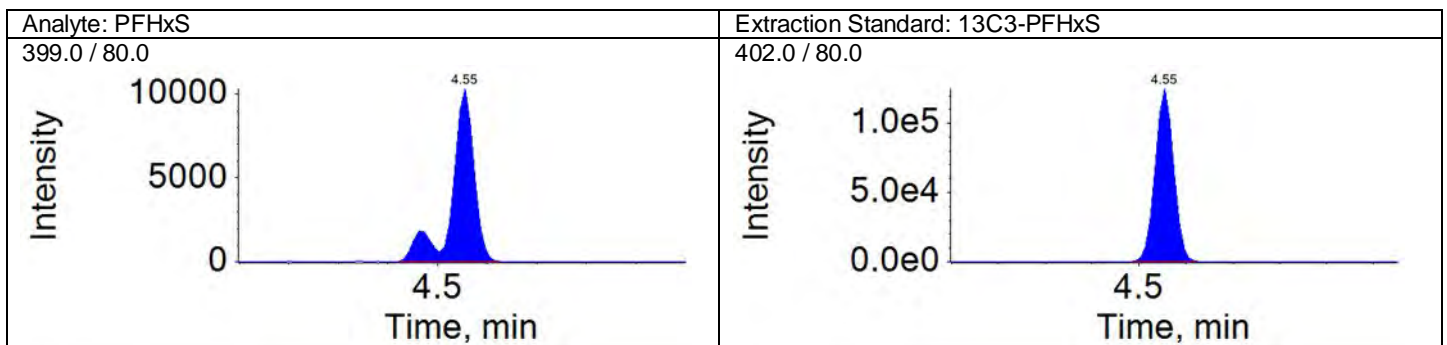
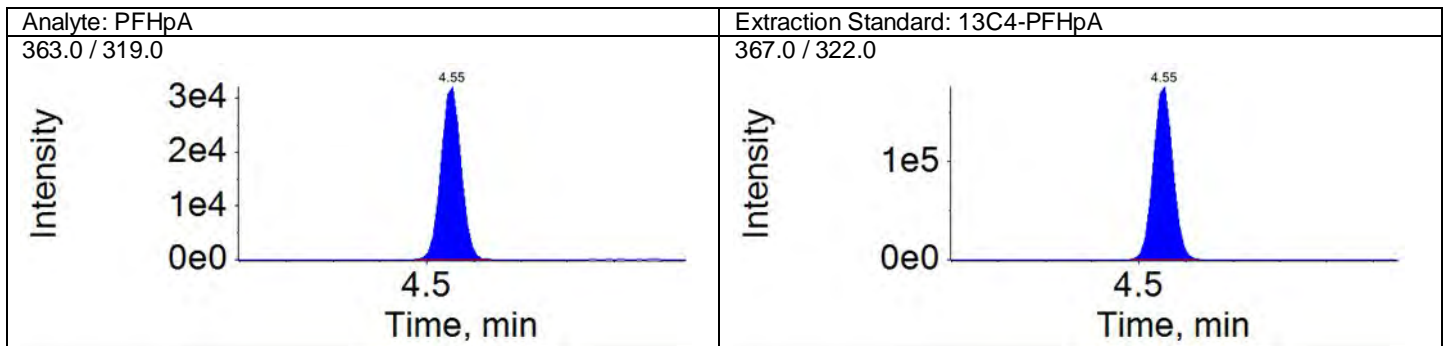
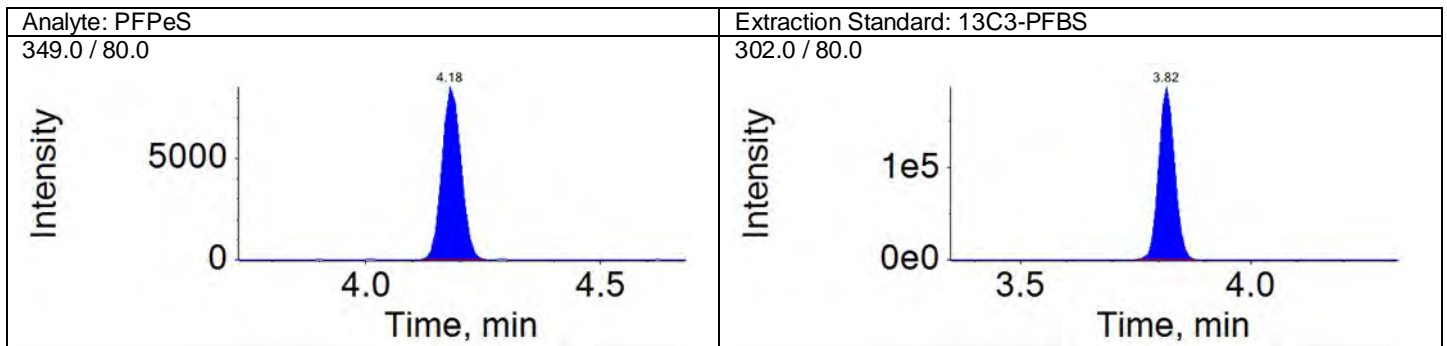
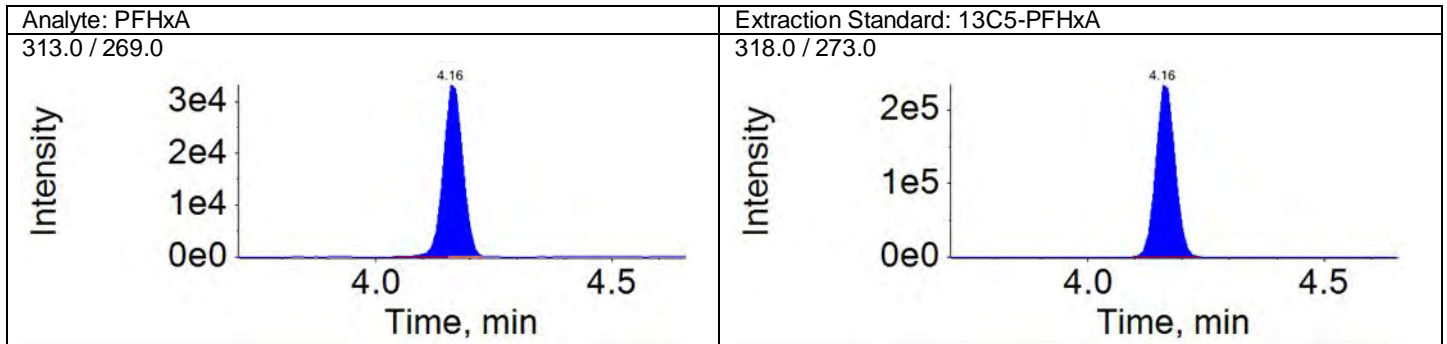
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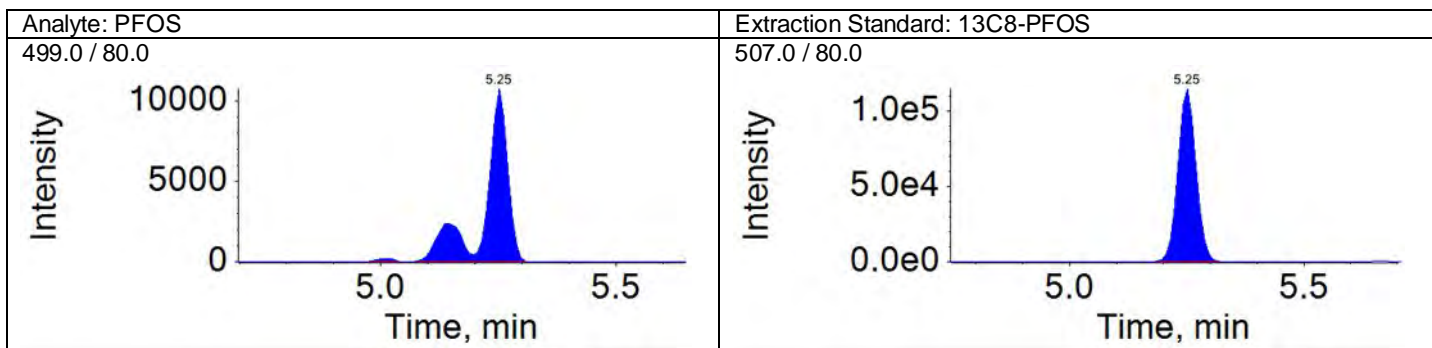
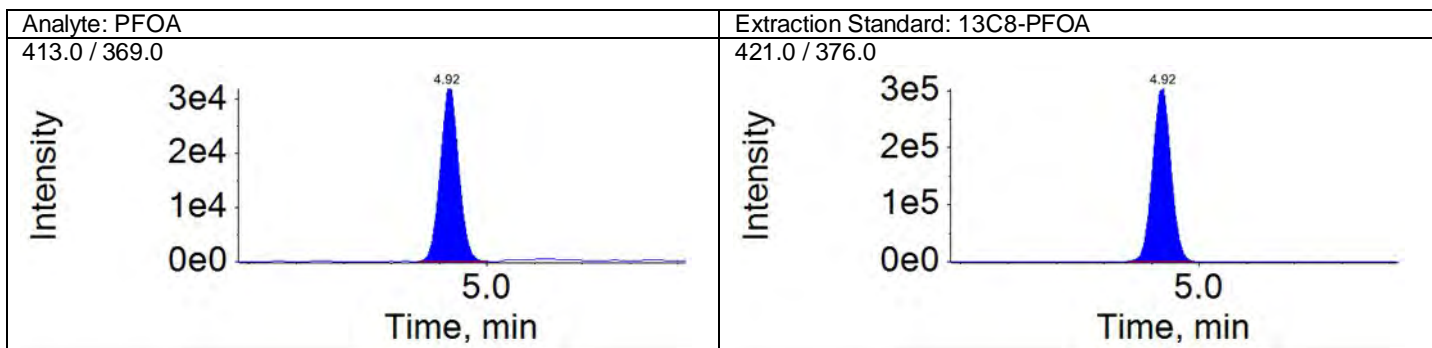
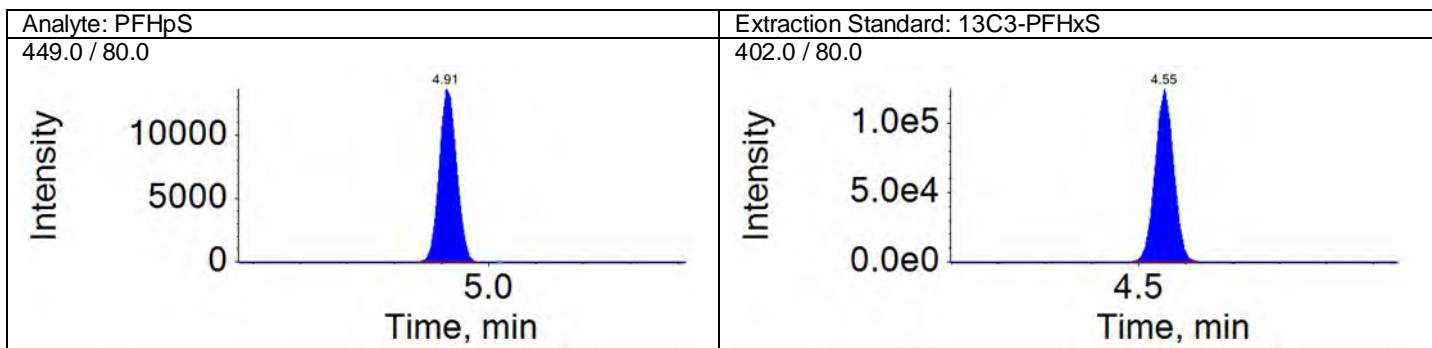
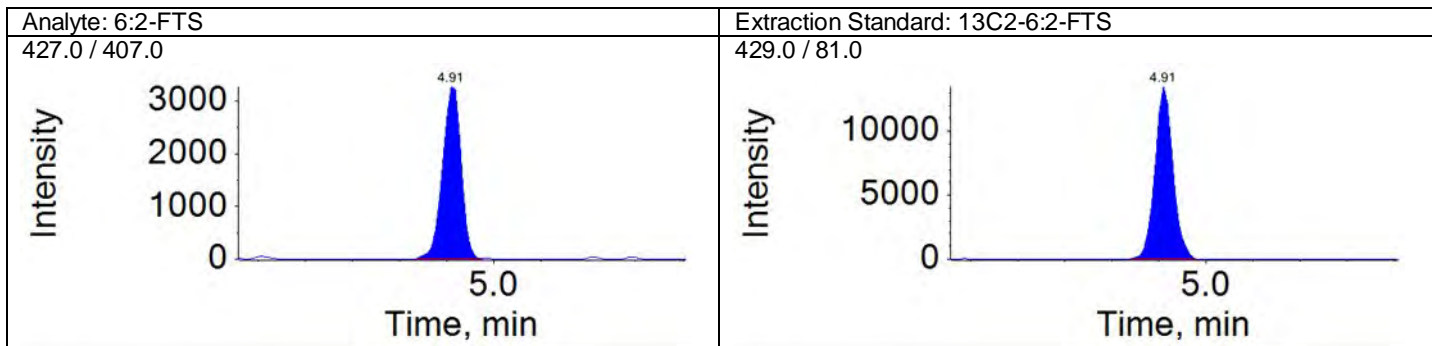
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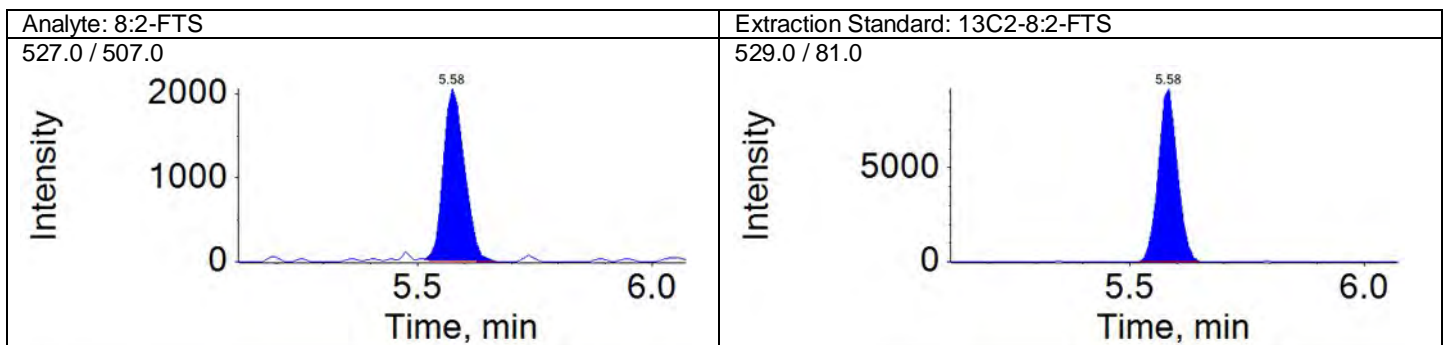
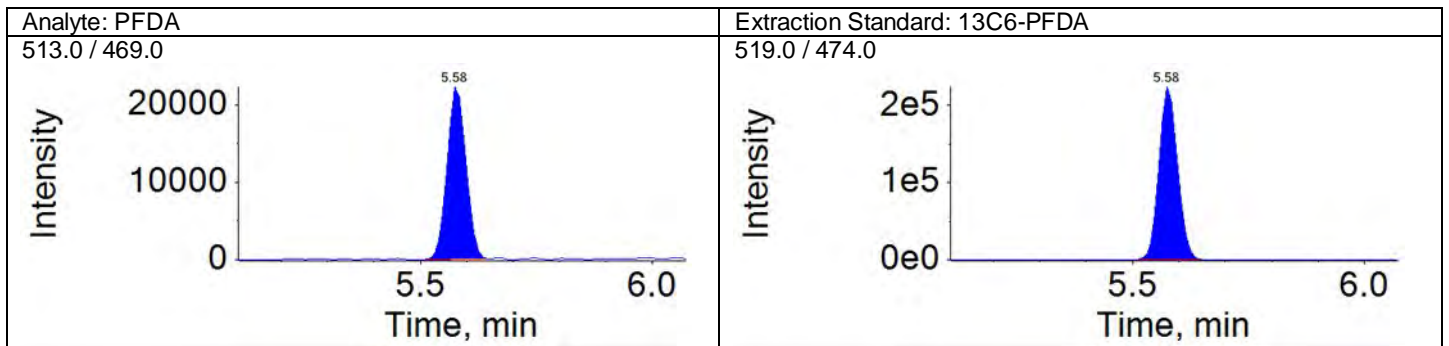
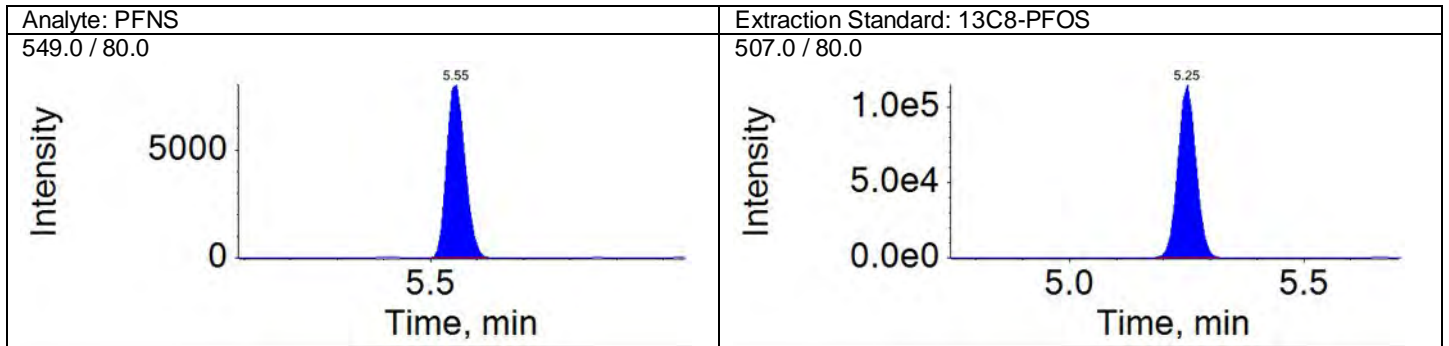
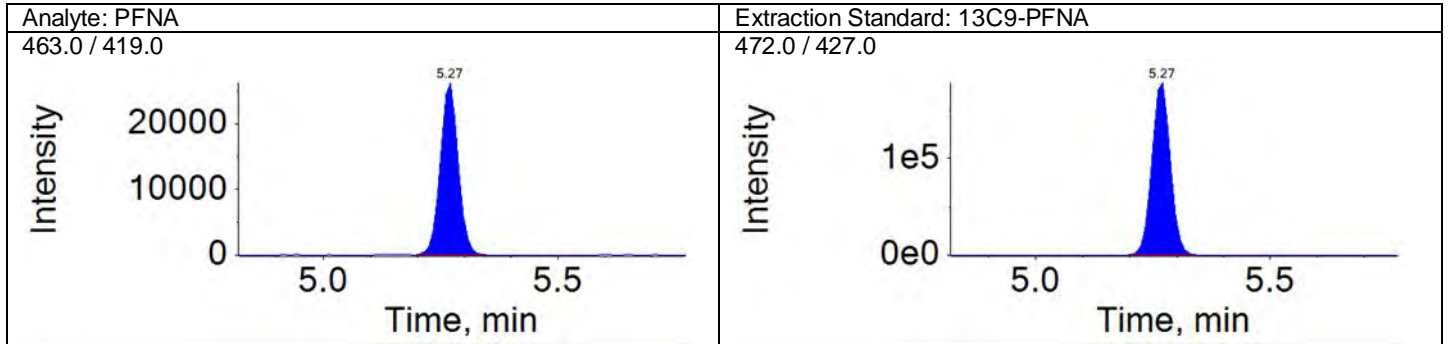
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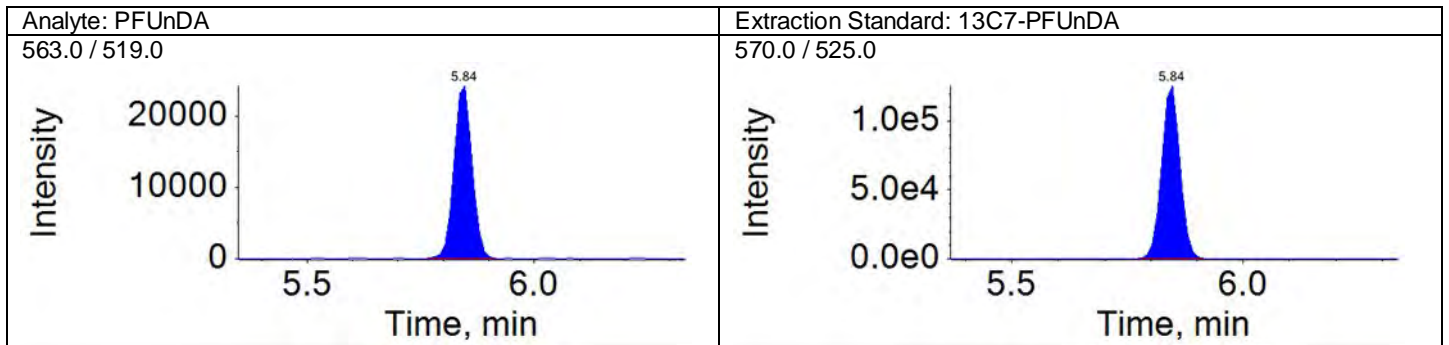
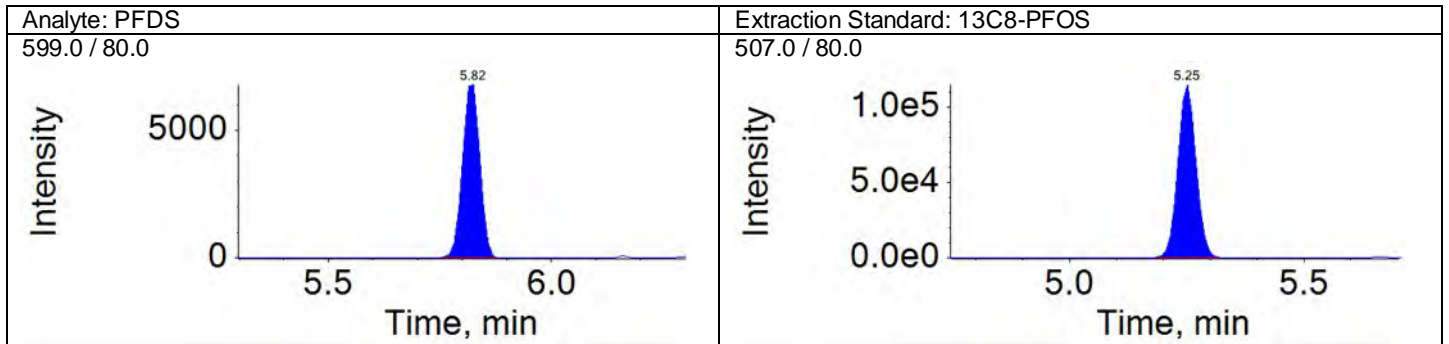
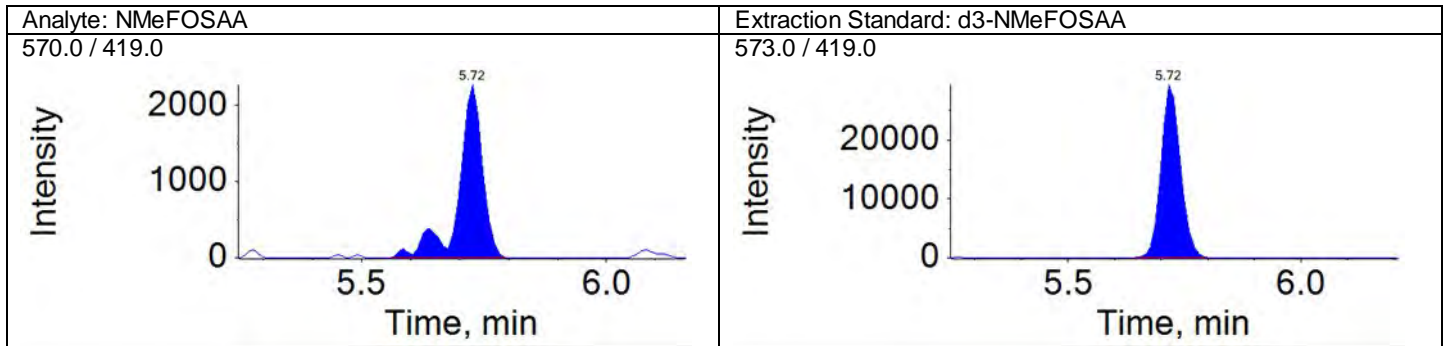
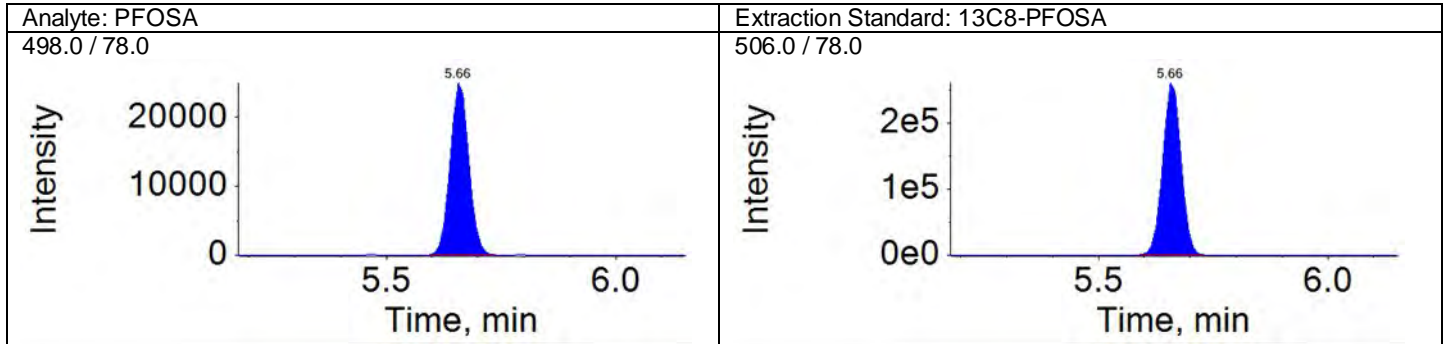
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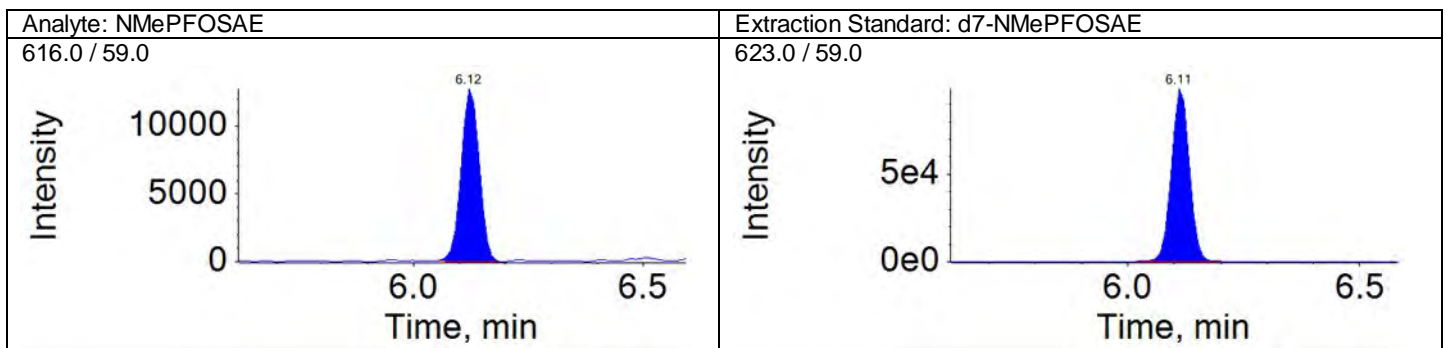
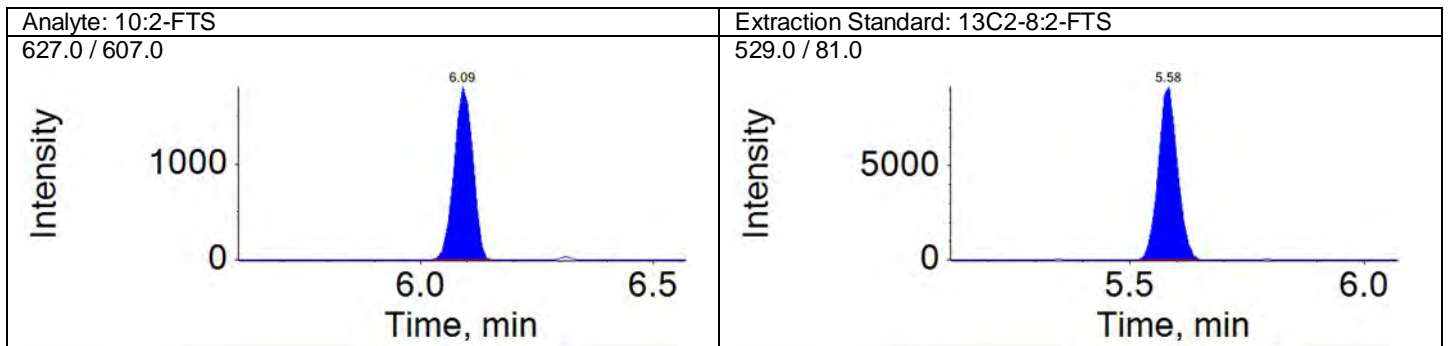
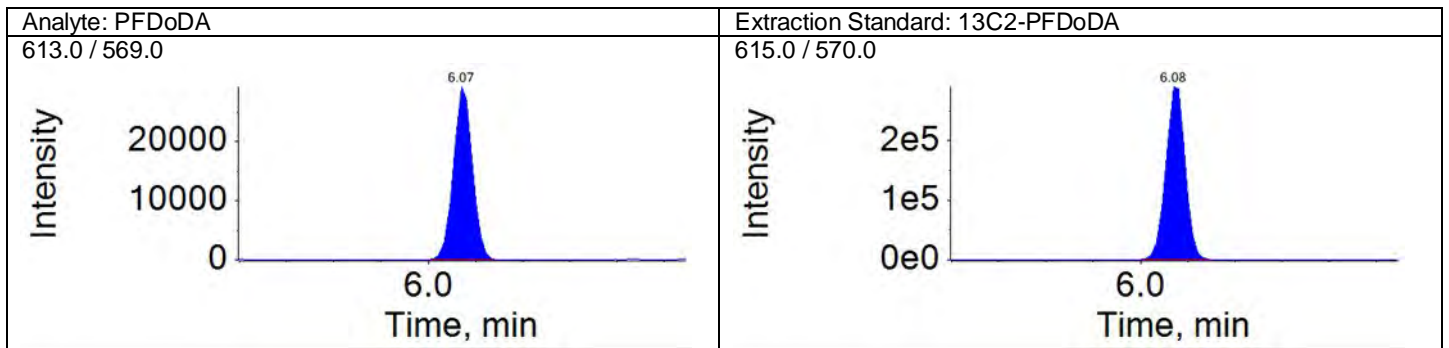
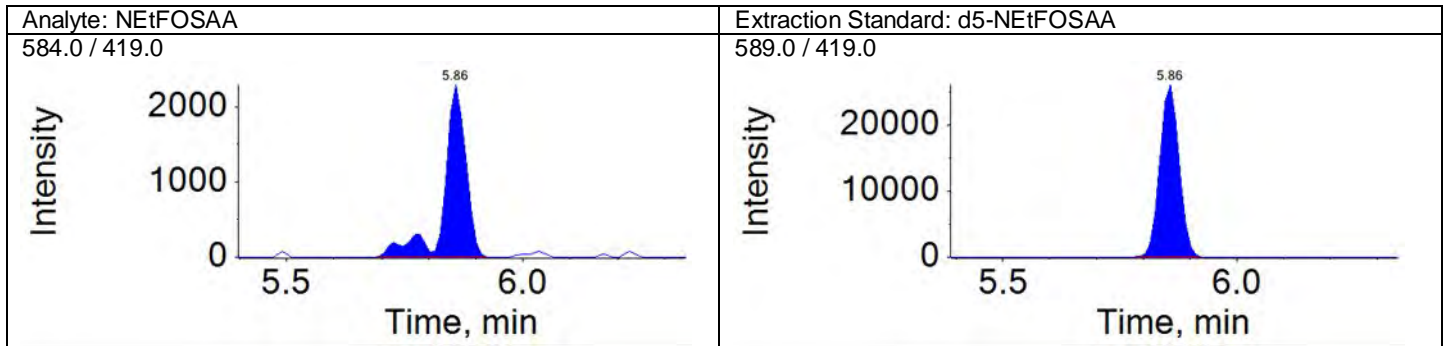
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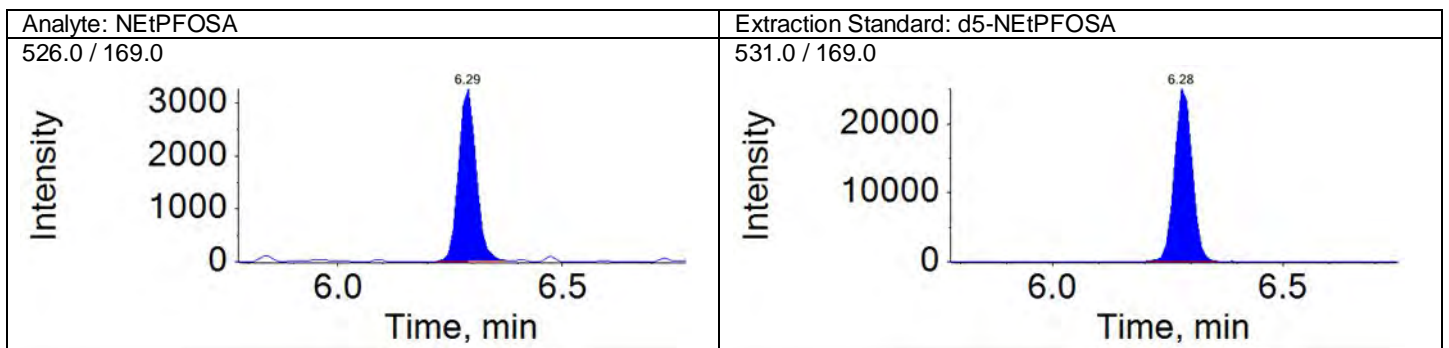
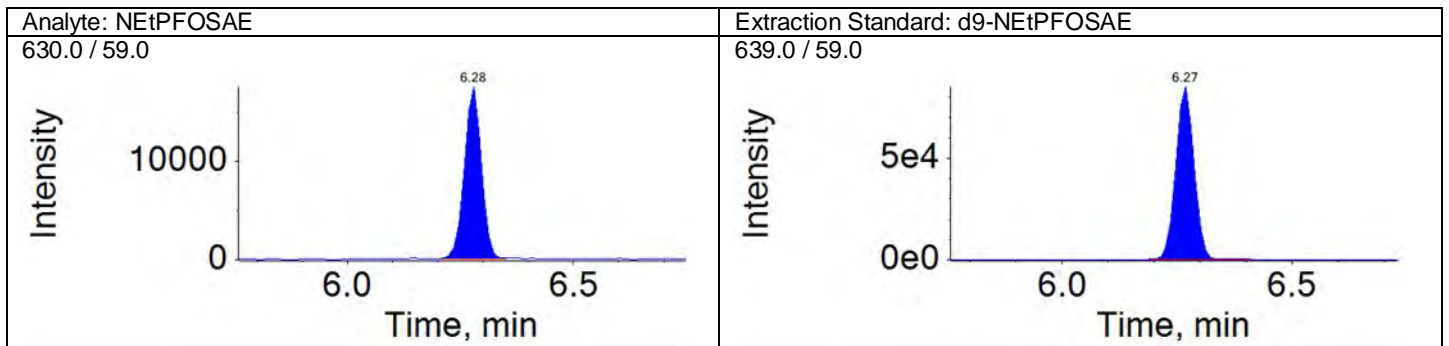
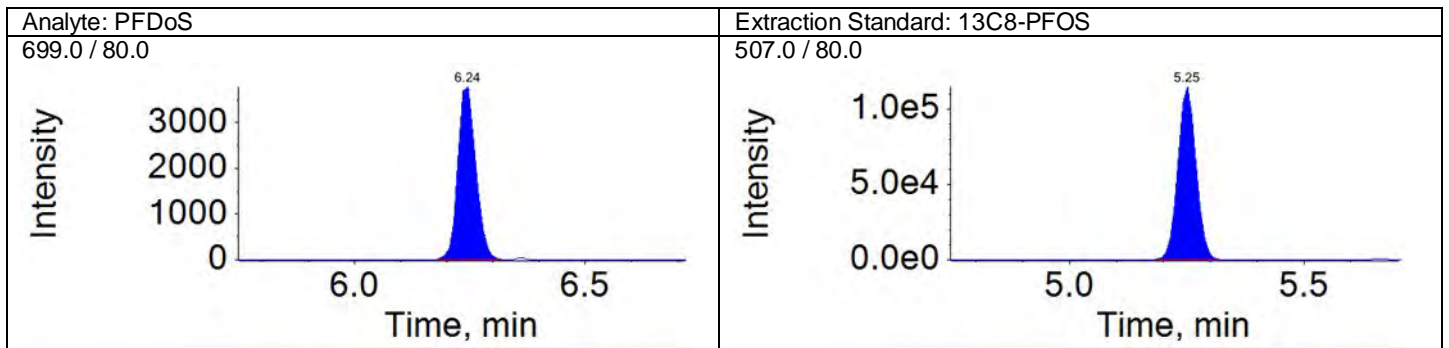
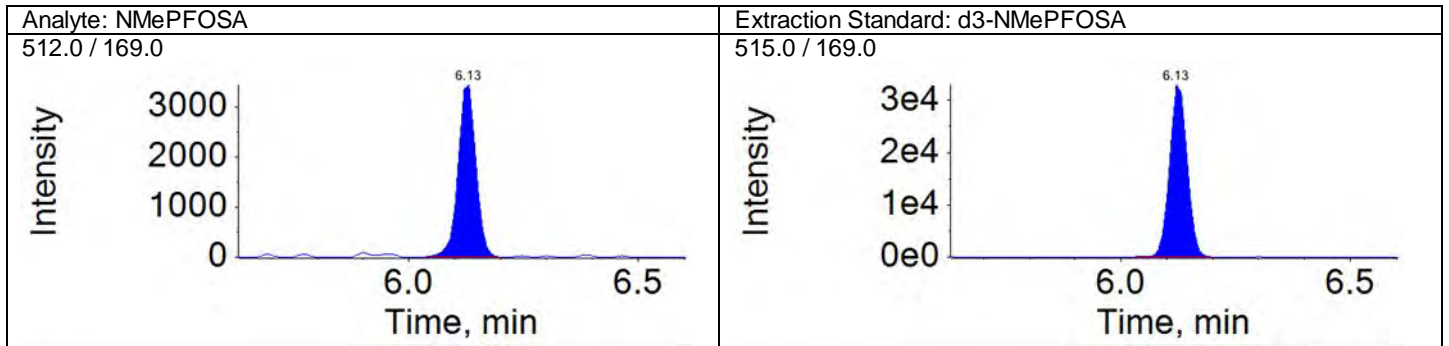
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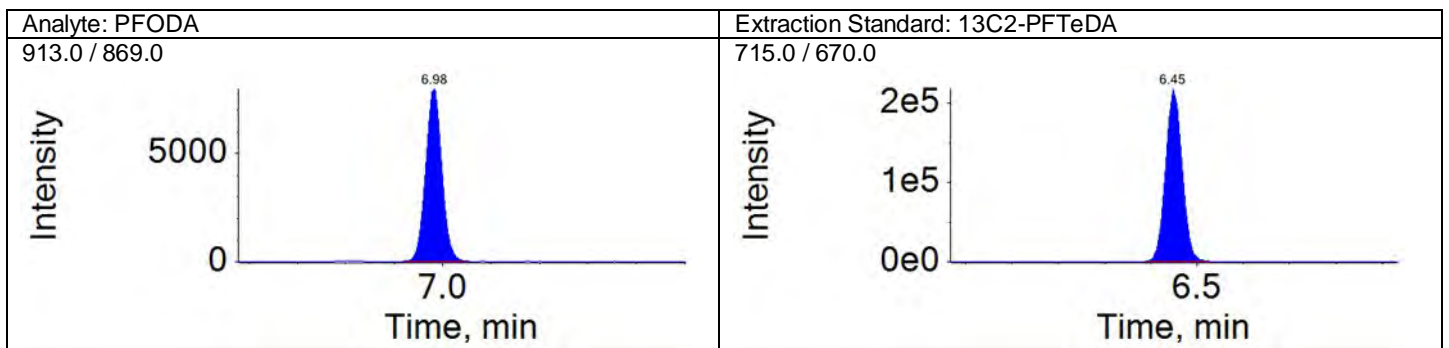
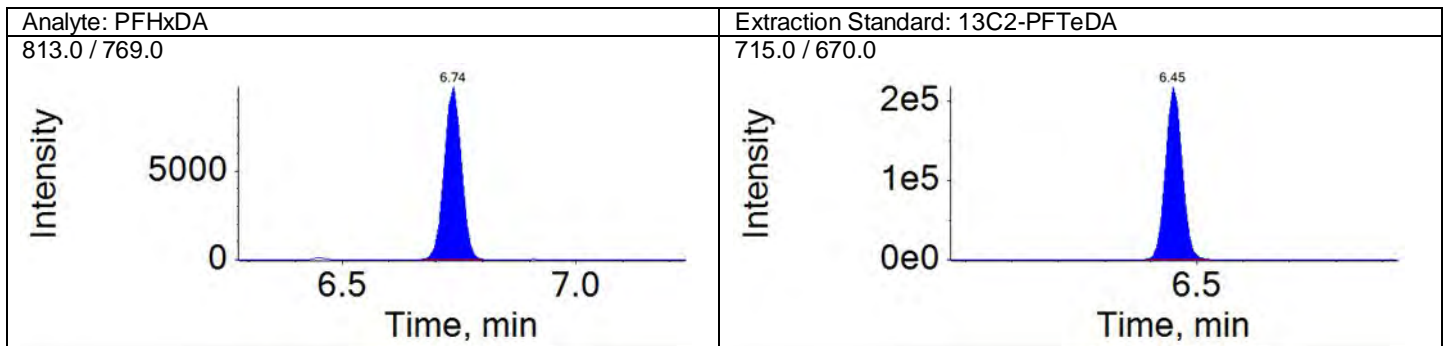
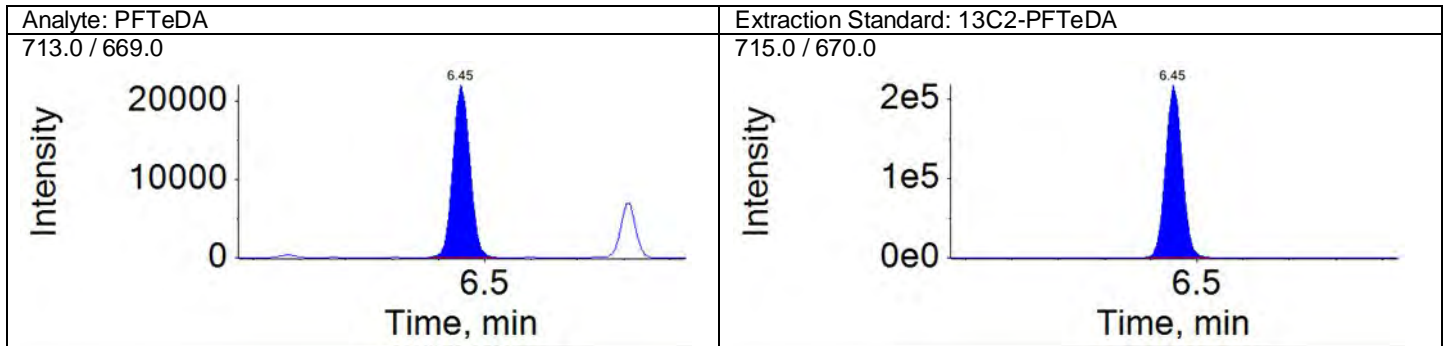
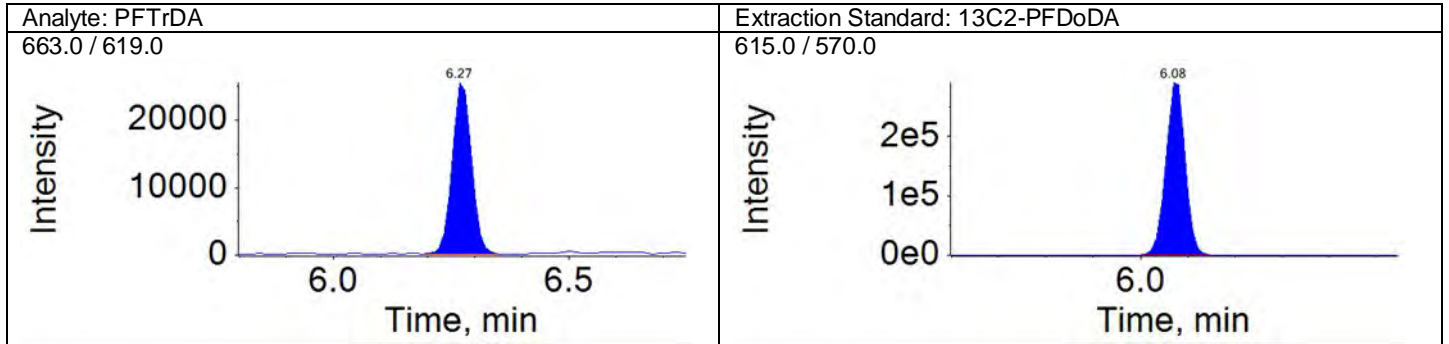
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



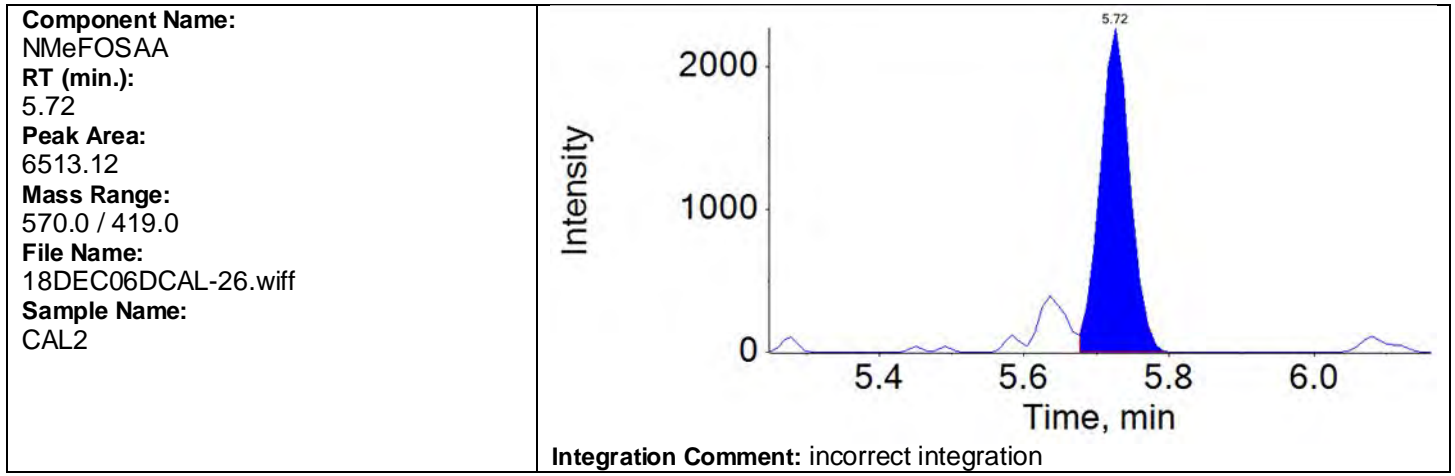
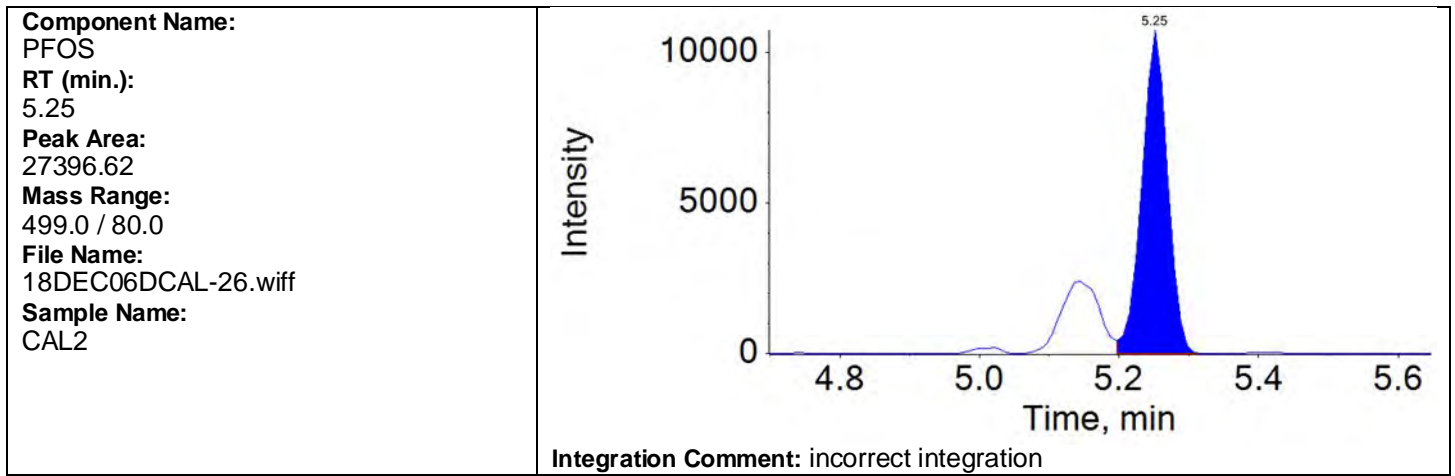
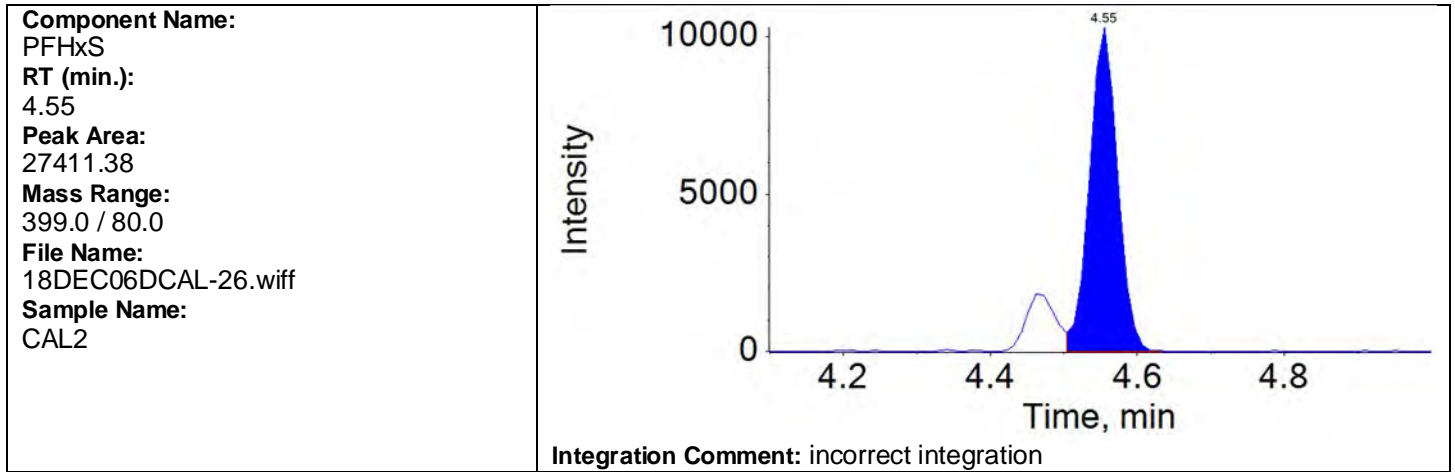
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
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Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

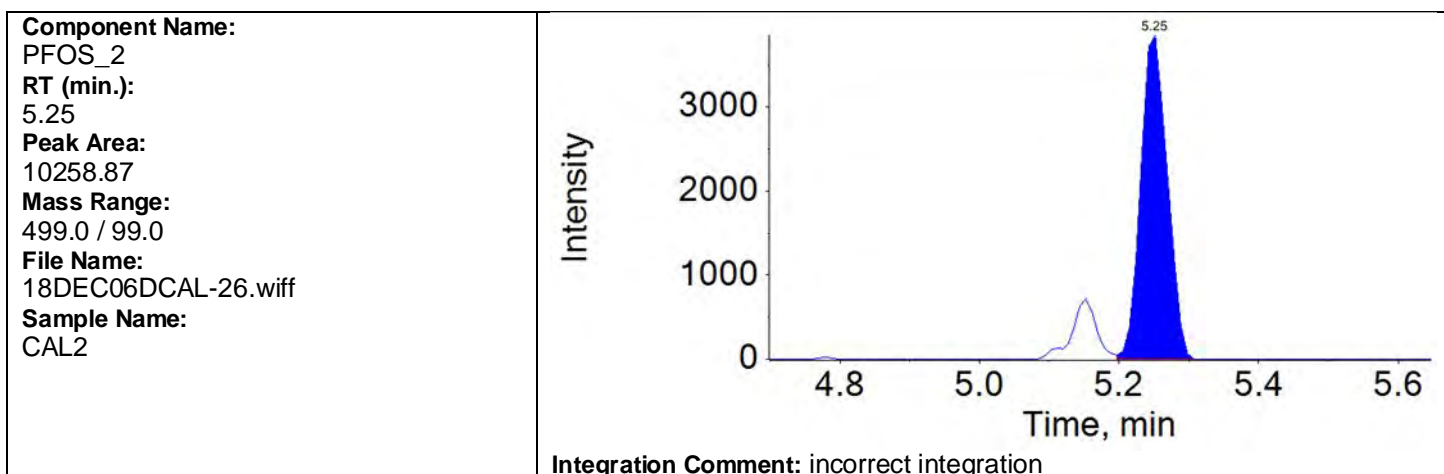
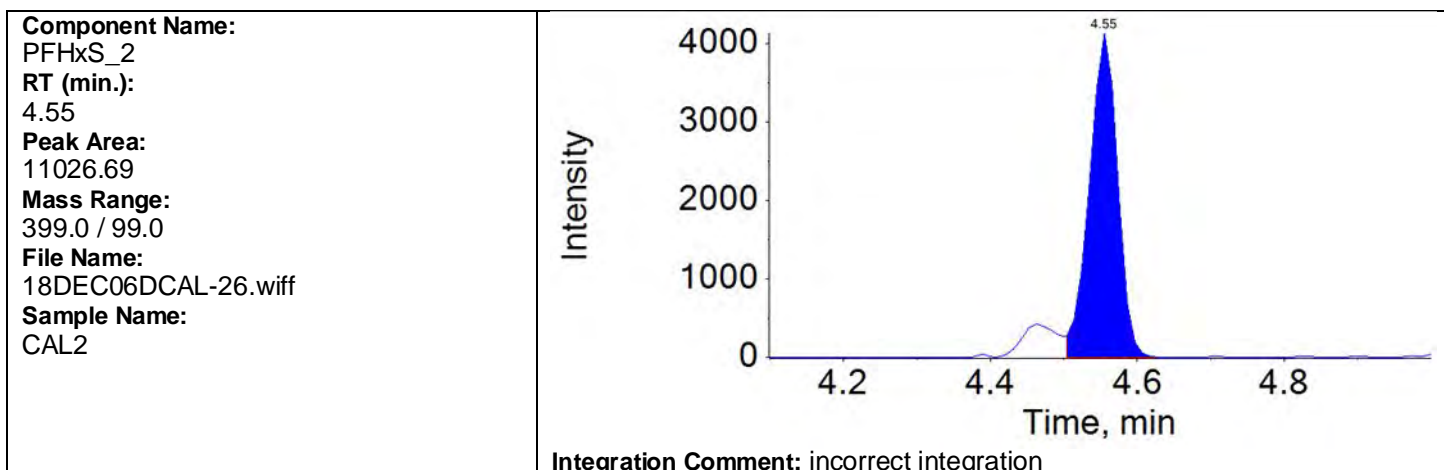
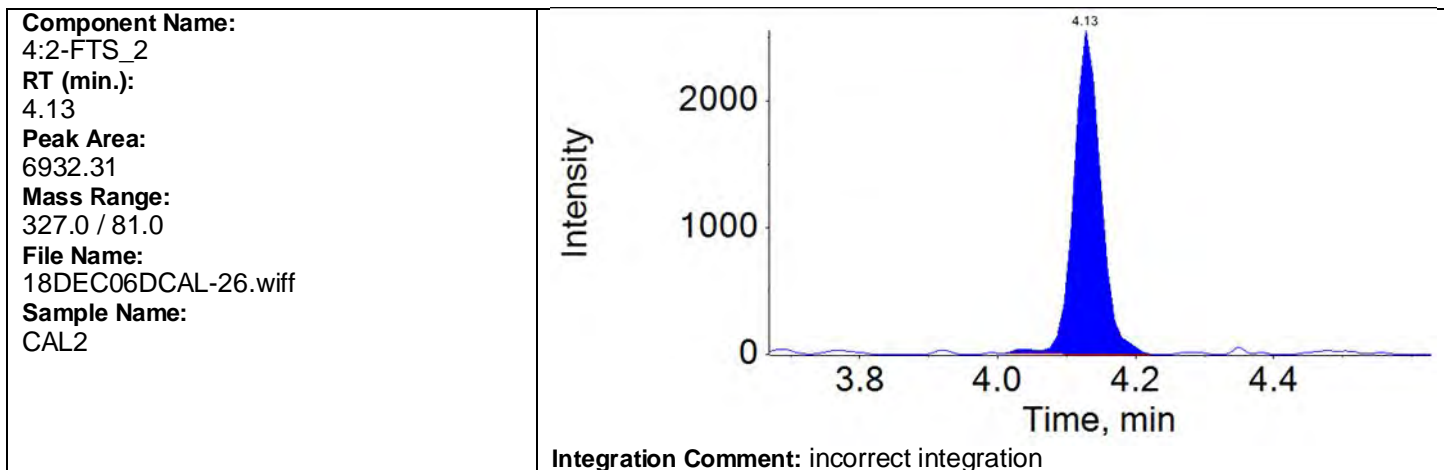
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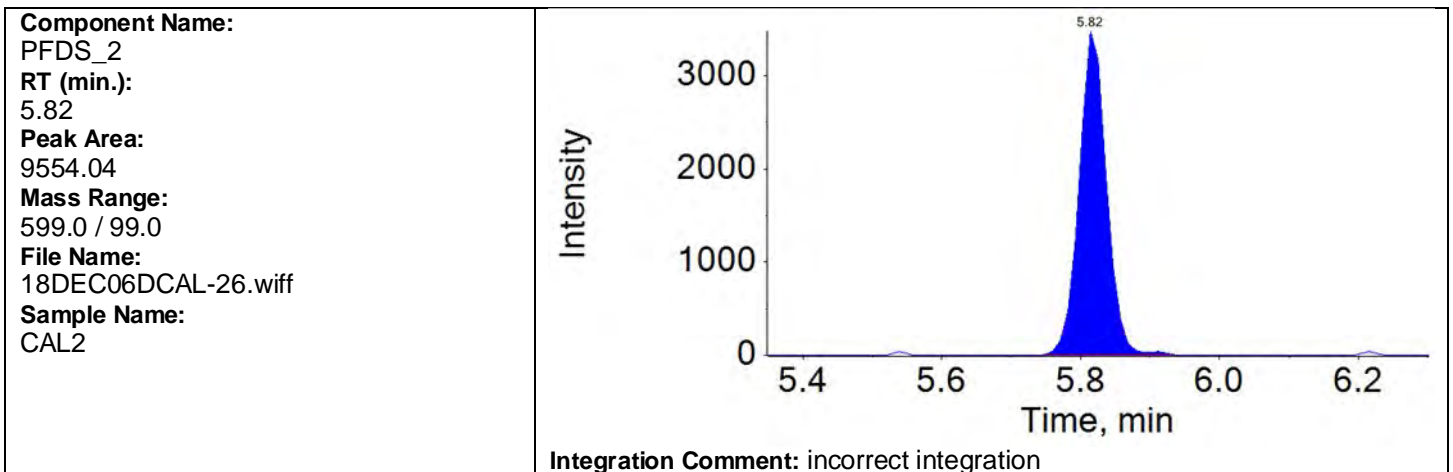
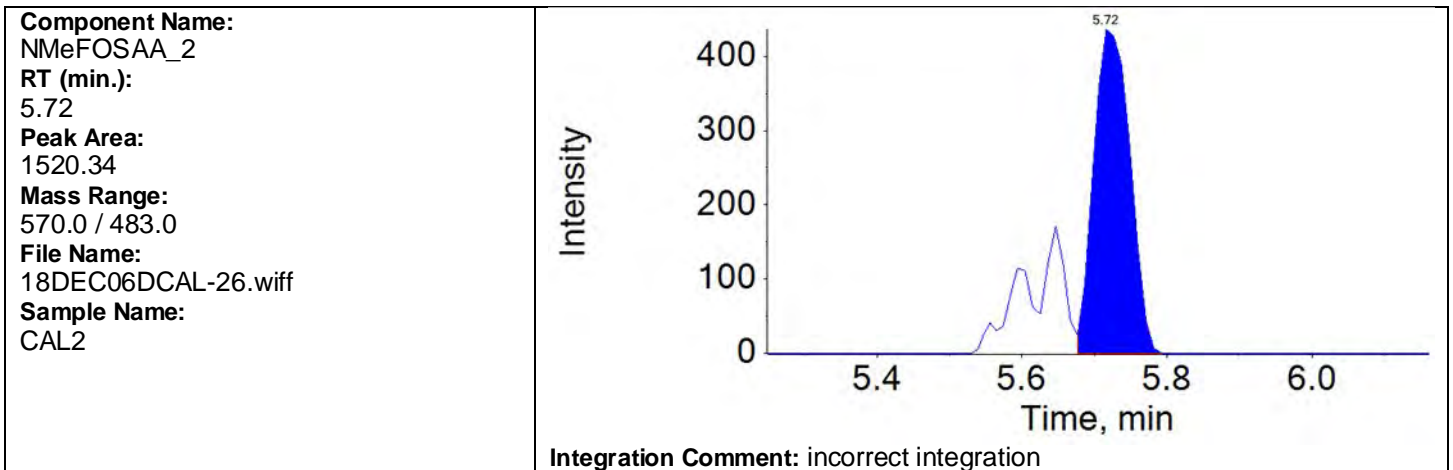
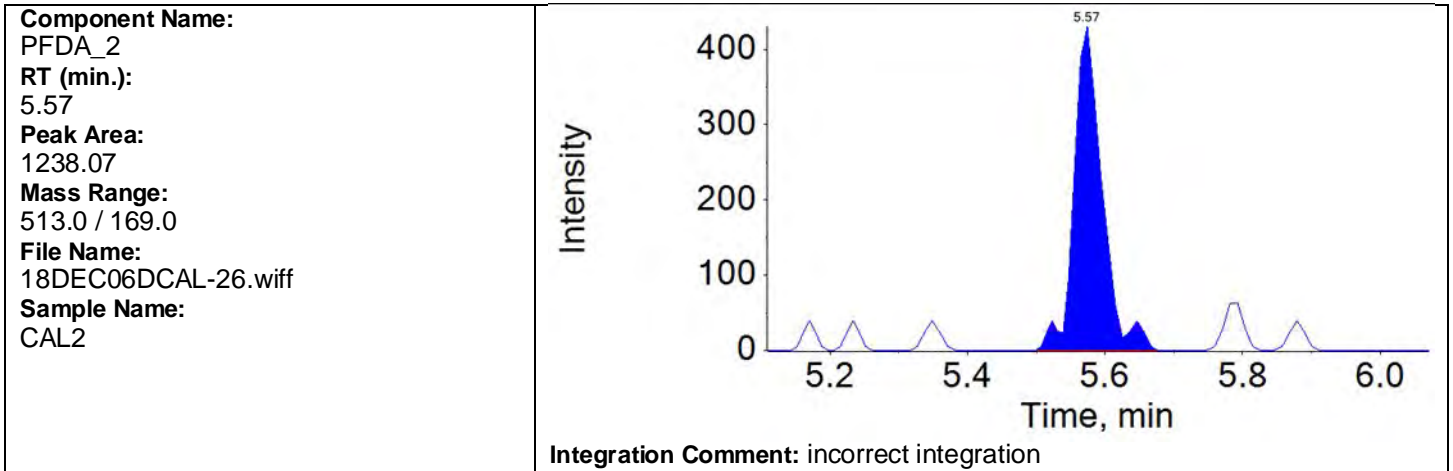
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Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
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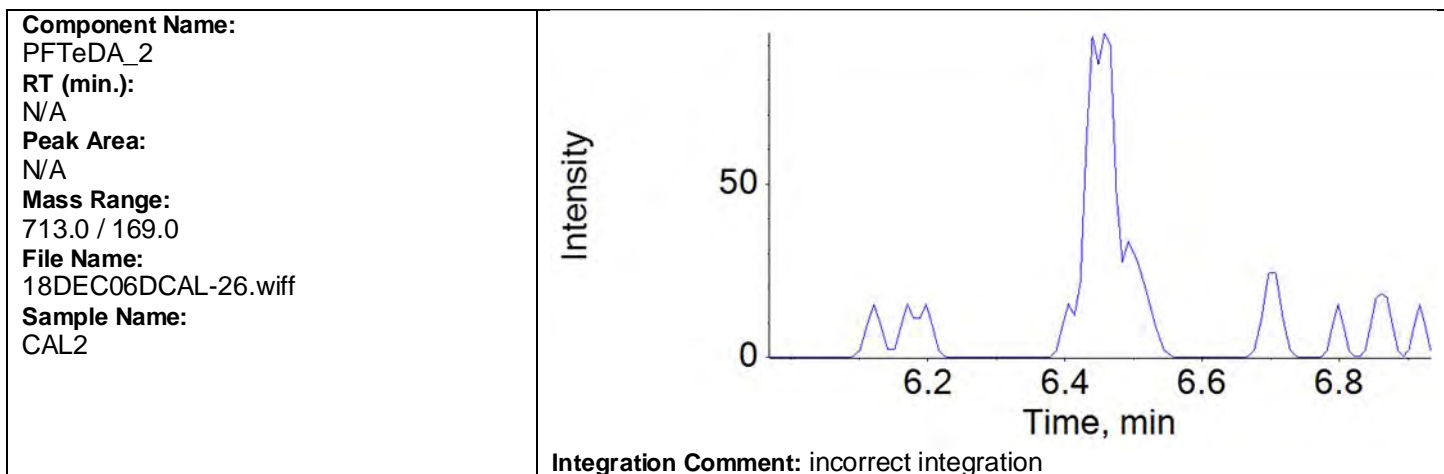
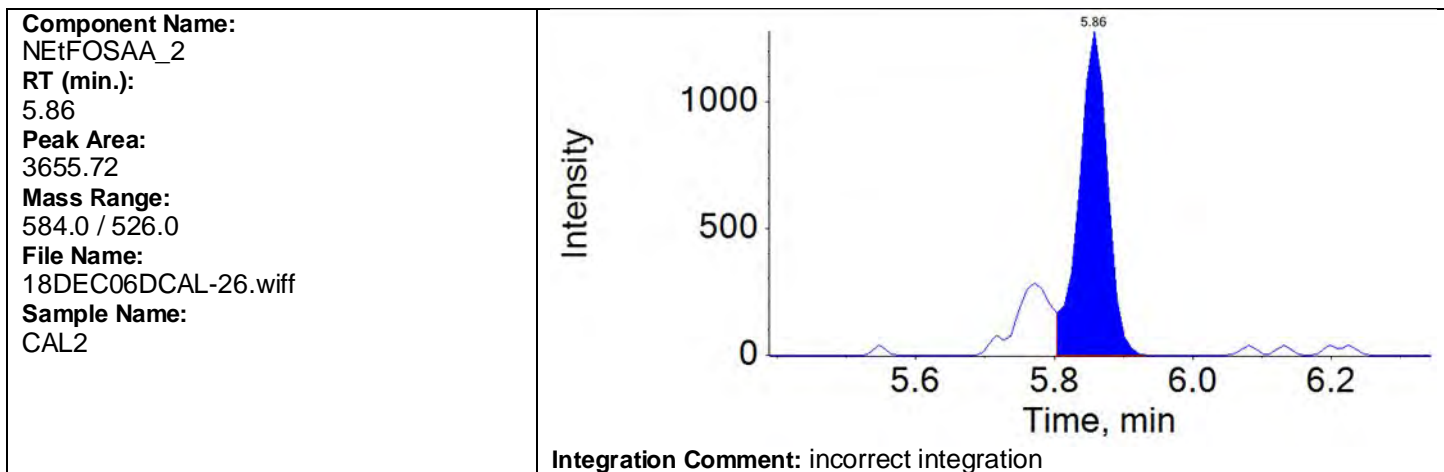
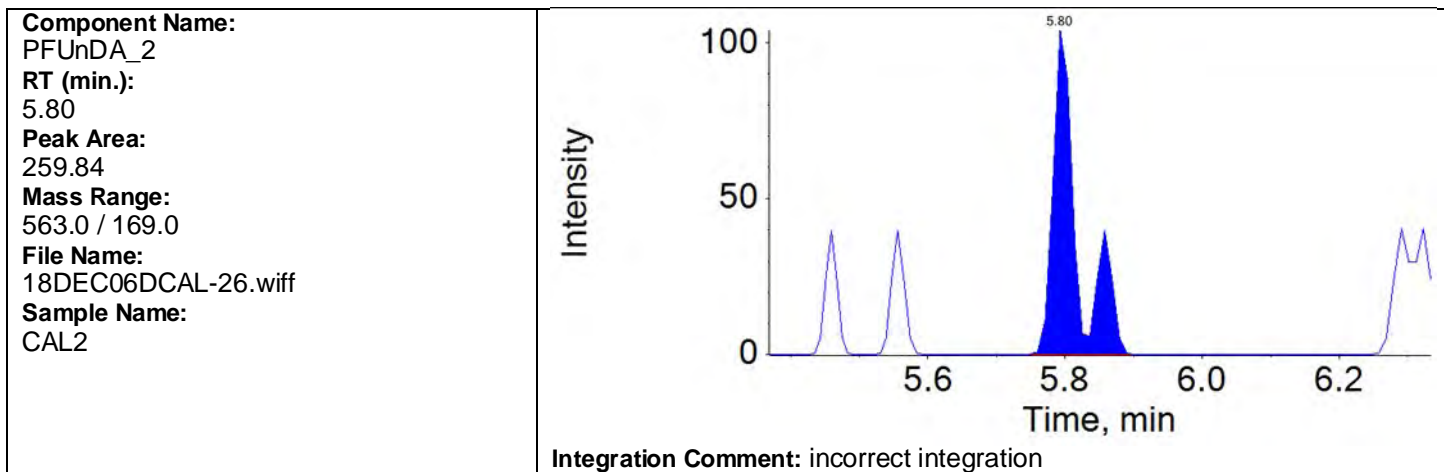
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QMethod File: 18AUG20QM





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

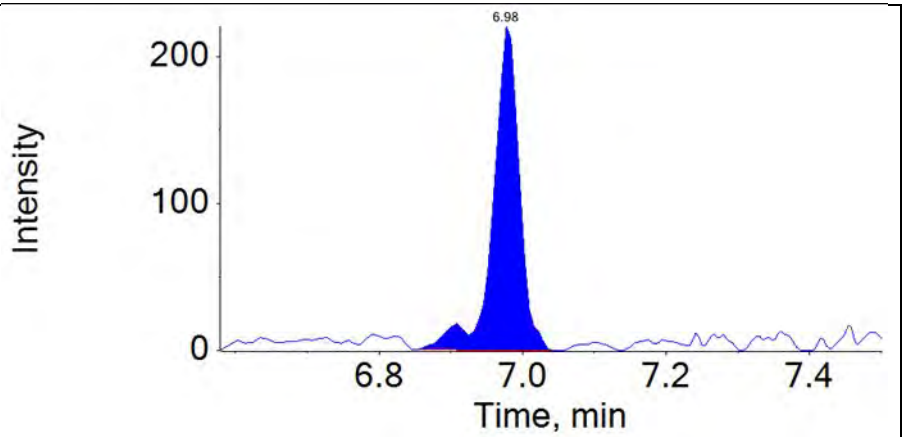
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QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
PFODA\_2  
RT (min.):  
6.98  
Peak Area:  
566.46  
Mass Range:  
913.0 / 169.0  
File Name:  
18DEC06DCAL-26.wiff  
Sample Name:  
CAL2



Integration Comment: incorrect integration

Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18

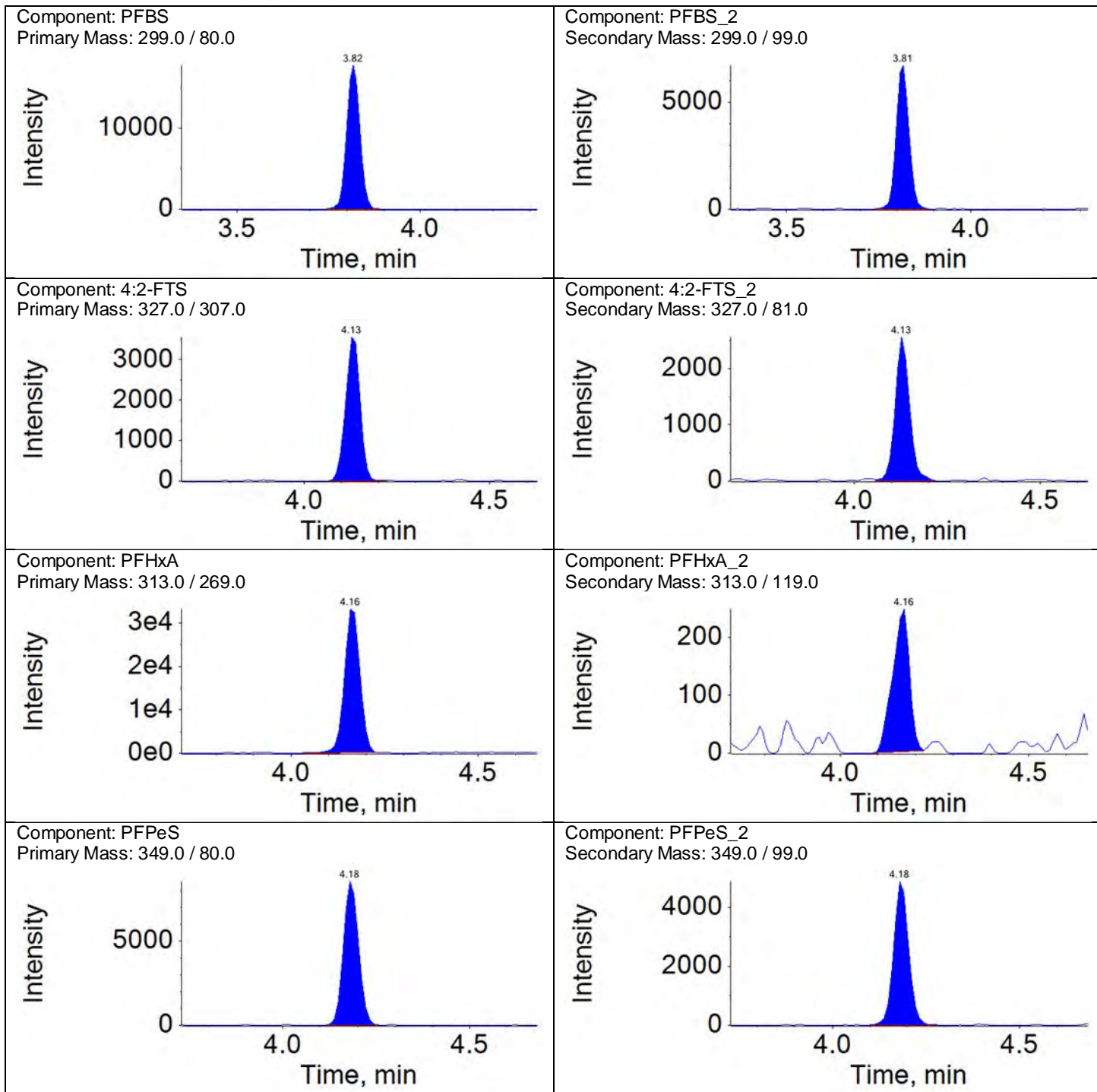
Ion Ratio Report

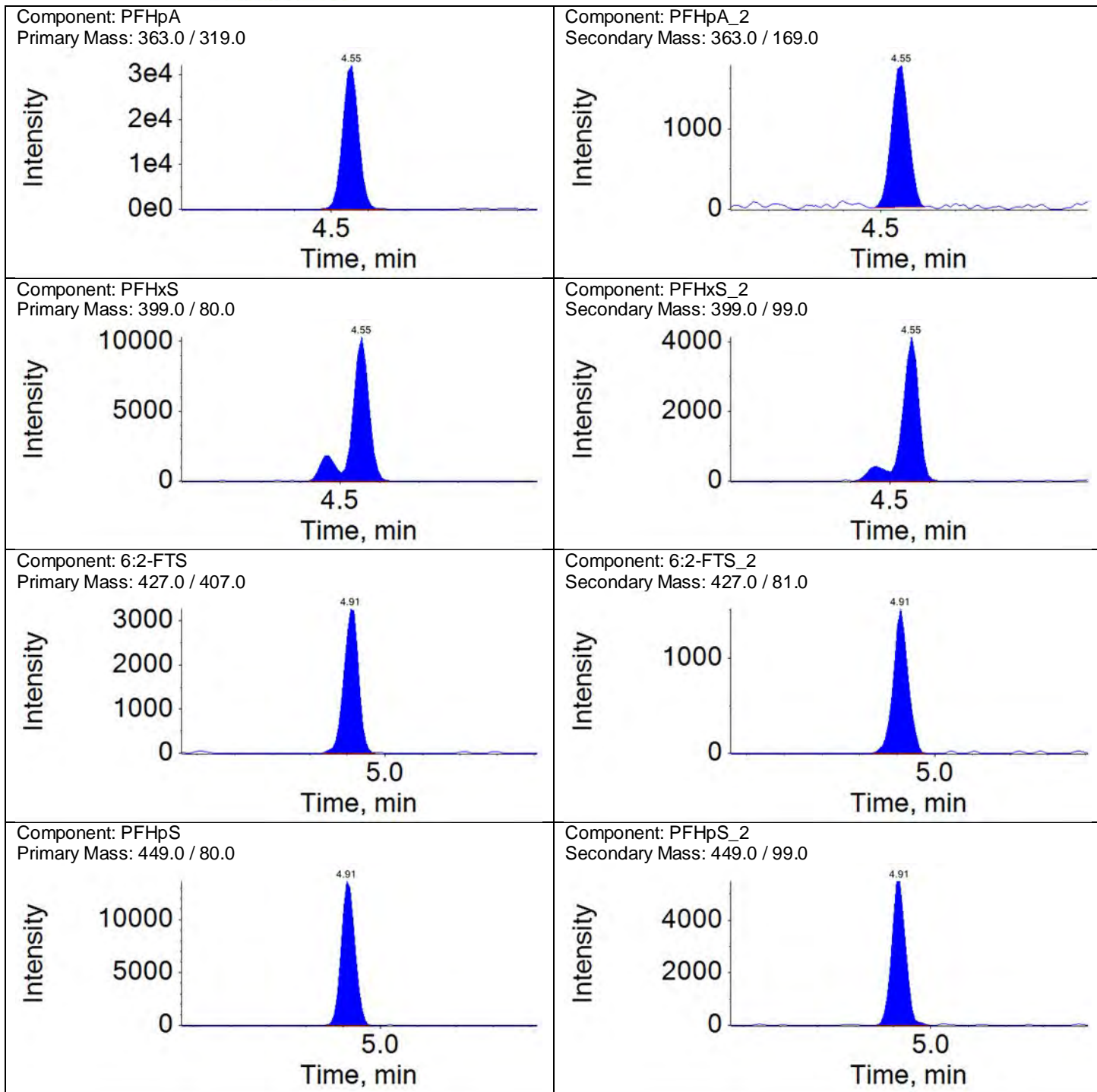
Sample Name: CAL2

Instrument Name: LM27631

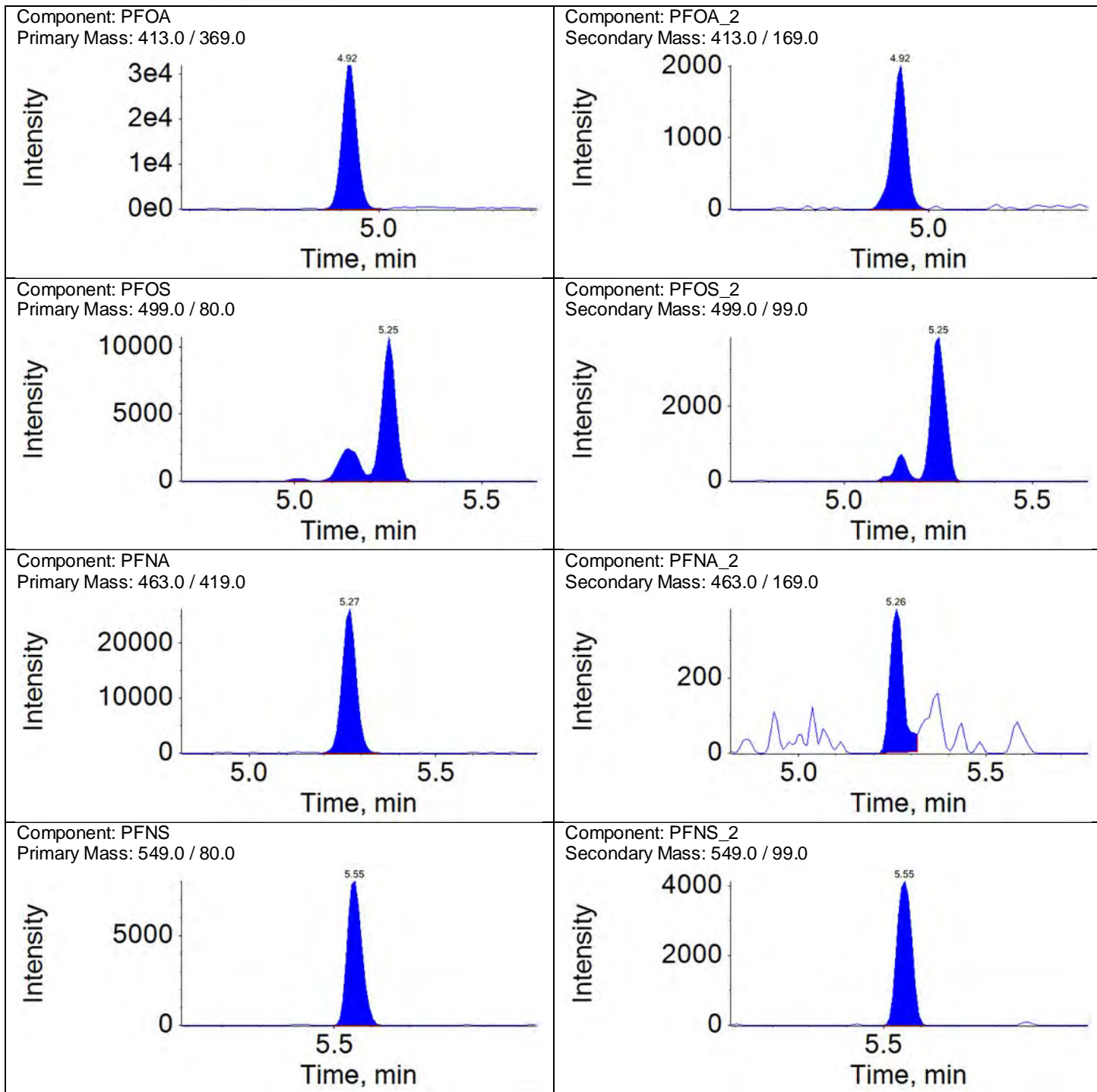
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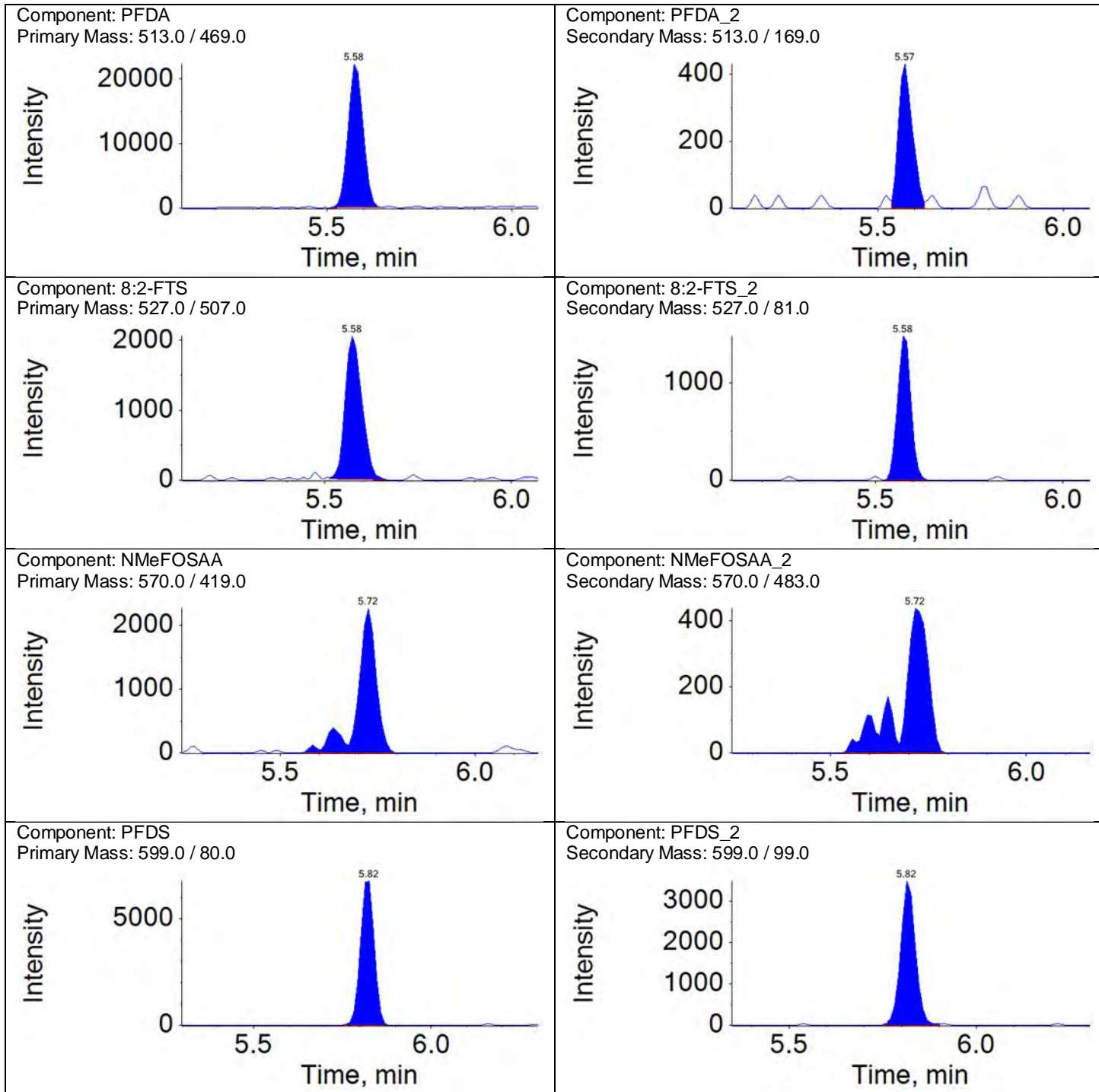
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	44603.18	A	1.0000	1.0000			
PFBS_2	3.81	1.00	16155.50	A	0.3627	0.3622	0	50	
4:2-FTS	4.13	1.00	9721.43	A	1.0000	1.0000			
4:2-FTS_2	4.13	1.00	6883.83	M	0.6542	0.7081	8	50	
PFHxA	4.16	1.00	95772.84	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	772.56	A	0.0097	0.0081	-17	50	
PFPeS	4.18	1.10	24089.05	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	13567.24	A	0.5262	0.5632	7	50	
PFHpA	4.55	1.00	95001.99	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	5611.64	A	0.0565	0.0591	5	50	
PFHxS	4.55	1.00	32481.65	M	1.0000	1.0000			
PFHxS_2	4.55	1.00	12460.11	M	0.3645	0.3836	5	50	
6:2-FTS	4.91	1.00	8921.66	A	1.0000	1.0000			
6:2-FTS_2	4.91	1.00	4103.08	A	0.6273	0.4599	-27	50	
PFHpS	4.91	1.08	34669.19	A	1.0000	1.0000			
PFHpS_2	4.91	1.08	14135.50	A	0.4162	0.4077	-2	50	
PFOA	4.92	1.00	85869.84	A	1.0000	1.0000			
PFOA_2	4.92	1.00	5256.38	A	0.0616	0.0612	-1	50	
PFOS	5.25	1.00	37181.07	M	1.0000	1.0000			
PFOS_2	5.25	1.00	12022.90	M	0.3021	0.3234	7	50	
PFNA	5.27	1.00	69083.38	A	1.0000	1.0000			
PFNA_2	5.26	1.00	965.06	A	0.0192	0.0140	-27	50	
PFNS	5.55	1.06	22032.83	A	1.0000	1.0000			
PFNS_2	5.55	1.06	11480.76	A	0.4845	0.5211	8	50	
PFDA	5.58	1.00	62650.38	A	1.0000	1.0000			
PFDA_2	5.57	1.00	1122.62	M	0.0096	0.0179	86	50	OOS
8:2-FTS	5.58	1.00	6424.49	A	1.0000	1.0000			
8:2-FTS_2	5.58	1.00	3674.88	A	0.6117	0.5720	-6	50	
NMeFOSAA	5.72	1.00	7727.87	M	1.0000	1.0000			
NMeFOSAA_2	5.72	1.00	2145.53	M	0.2673	0.2776	4	50	
PFDS	5.82	1.11	18312.86	A	1.0000	1.0000			
PFDS_2	5.82	1.11	9497.52	M	0.4952	0.5186	5	50	
PFOA	5.84	1.00	67047.18	A	1.0000	1.0000			
PFOA_2	5.80	0.99	196.17	M	0.0041	0.0029	-29	50	
NEtFOSAA	5.86	1.00	7437.87	A	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	4668.57	M	0.6726	0.6277	-7	50	
PFOA	6.07	1.00	80887.26	A	1.0000	1.0000			
PFOA_2	6.07	1.00	1137.76	A	0.0133	0.0141	6	50	
10:2-FTS	6.09	1.09	5031.45	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	2765.69	A	0.6969	0.5497	-21	50	
PFOA	6.27	1.03	72303.60	A	1.0000	1.0000			
PFOA_2	6.27	1.03	329.09	A	0.0075	0.0046	-40	50	
PFOA	6.45	1.00	55946.77	A	1.0000	1.0000			
PFOA_2	6.45	1.00	360.09	M	0.0066	0.0064	-3	50	
PFOA	6.74	1.04	24602.52	A	1.0000	1.0000			
PFOA_2	6.74	1.04	1563.80	A	0.0616	0.0636	3	50	
PFOA	6.98	1.08	18468.51	A	1.0000	1.0000			
PFOA_2	6.98	1.08	528.63	M	0.0272	0.0286	5	50	

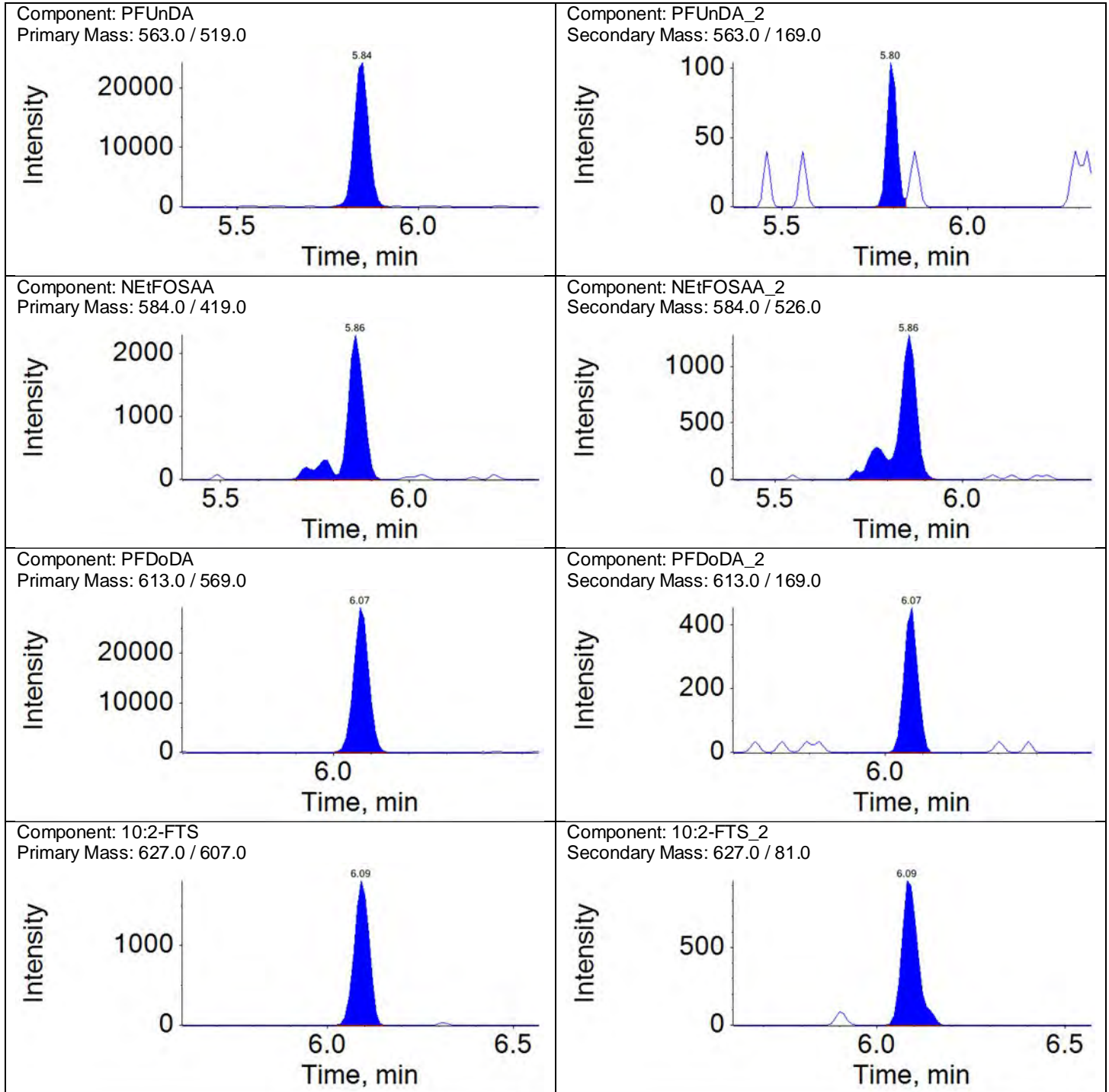


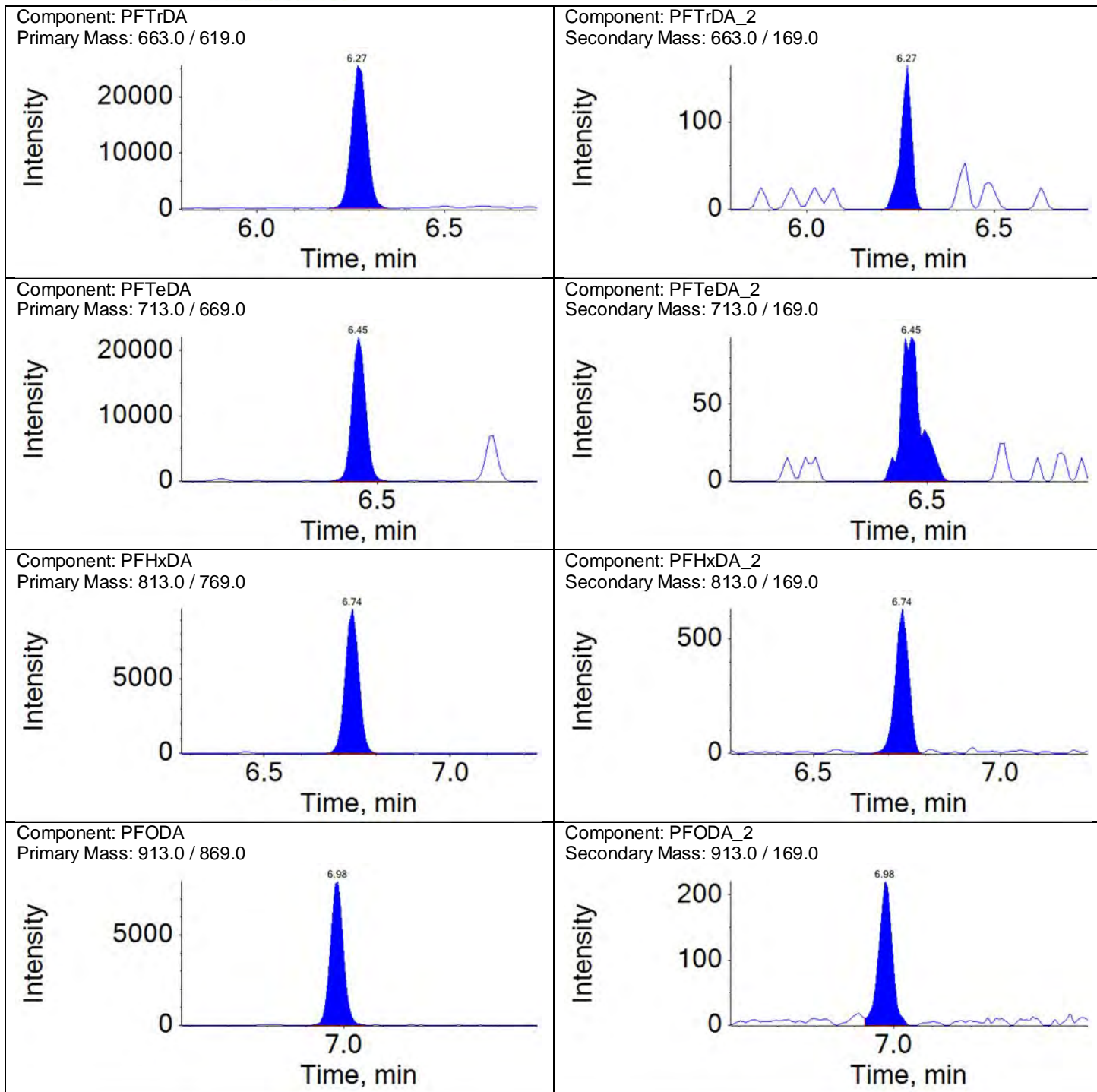














ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL3	Data File:	18DEC06DCAL-27.wiff
Sample ID:	CALBRN31833B	Acquis Date:	2018-12-06T23:55:31
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	5	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	825688.9	825688.9	0	50	
13C2-PFOA	5.0	449802.8	449802.8	0	50	
13C4-PFOS	4.8	276858.3	276858.3	0	50	
13C2-PFDA	5.0	315428.3	315428.3	0	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	936632.0	13C3-PFBA	825688.9	1.134	5.000	5.020	100	70-130	
E13C5-PFPeA	860904.3	13C3-PFBA	825688.9	1.043	5.000	4.952	99	70-130	
E13C3-PFBS	442018.2	13C3-PFBA	825688.9	0.535	4.650	4.538	98	70-130	
E13C2-4:2-FTS	46397.7	13C2-PFOA	449802.8	0.103	4.670	4.042	87	70-130	
E13C5-PFHxA	675673.6	13C2-PFOA	449802.8	1.502	5.000	5.043	101	70-130	
E13C3-PFHxS	337878.7	13C2-PFOA	449802.8	0.751	4.730	4.818	102	70-130	
E13C4-PFHpA	543346.6	13C2-PFOA	449802.8	1.208	5.000	5.135	103	70-130	
E13C2-6:2-FTS	36276.5	13C2-PFOA	449802.8	0.081	4.750	4.996	105	70-130	
E13C8-PFOA	847979.2	13C2-PFOA	449802.8	1.885	5.000	5.329	107	70-130	
E13C8-PFOS	294019.3	13C4-PFOS	276858.3	1.062	4.780	4.766	100	70-130	
E13C9-PFNA	487999.9	13C4-PFOS	276858.3	1.763	5.000	4.981	100	70-130	
E13C6-PFDA	622094.8	13C2-PFDA	315428.3	1.972	5.000	5.226	105	70-130	
E13C2-8:2-FTS	25542.3	13C2-PFDA	315428.3	0.081	4.790	5.287	110	70-130	
E13C8-PFOA	693861.5	13C2-PFDA	315428.3	2.200	5.000	5.203	104	70-130	
Ed3-NMeFOSAA	83733.4	13C2-PFDA	315428.3	0.265	5.000	4.704	94	70-130	
E13C7-PFUnDA	335572.5	13C2-PFDA	315428.3	1.064	5.000	5.219	104	70-130	
Ed5-NEtFOSAA	72524.4	13C2-PFDA	315428.3	0.230	5.000	5.076	102	70-130	
E13C2-PFDoDA	789543.7	13C2-PFDA	315428.3	2.503	5.000	5.253	105	70-130	
Ed7-NMePFOSAE	271372.0	13C2-PFDA	315428.3	0.860	5.000	4.956	99	70-130	
Ed3-NMePFOSA	85427.7	13C2-PFDA	315428.3	0.271	5.000	4.935	99	70-130	
Ed9-NEtPFOSAE	235845.4	13C2-PFDA	315428.3	0.748	5.000	5.156	103	70-130	
Ed5-NEtPFOSA	70029.0	13C2-PFDA	315428.3	0.222	5.000	4.996	100	70-130	
E13C2-PFTeDA	540932.7	13C2-PFDA	315428.3	1.715	5.000	5.090	102	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Analyte Quantitation Peak Table

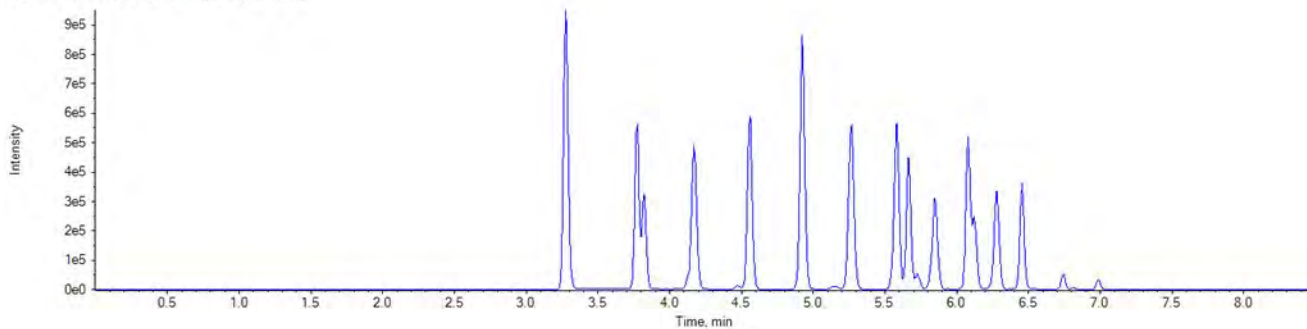
Sample Name: CAL3 Instrument Name: LM27631 File Name: 18DEC06DCAL-27.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	383859.6		A	13C4-PFBA	3.27	936632.0	0.410	2.261
PFPeA	3.77	1.000	363071.5		A	13C5-PFPeA	3.77	860904.3	0.422	2.219
PFBS	3.82	1.000	175966.0		A	13C3-PFBS	3.82	442018.2	0.398	1.973
4:2-FTS	4.14	1.000	38643.7		A	13C2-4:2-FTS	4.14	46397.7	0.833	2.232
PFHxA	4.17	1.000	365926.6		A	13C5-PFHxA	4.17	675673.6	0.542	2.360
PFPeS	4.19	1.100	92327.7		A	13C3-PFBS	3.82	442018.2	0.209	2.068
PFHpA	4.56	1.000	361419.8		A	13C4-PFHpA	4.56	543346.6	0.665	2.190
PFHxS	4.56	1.000	132327.2		M	13C3-PFHxS	4.56	337878.7	0.392	1.856
6:2-FTS	4.91	1.000	30176.0		A	13C2-6:2-FTS	4.91	36276.5	0.832	2.066
PFHpS	4.92	1.080	128849.8		A	13C3-PFHxS	4.56	337878.7	0.381	2.093
PFOA	4.92	1.000	351795.0		A	13C8-PFOA	4.92	847979.2	0.415	2.267
PFOS	5.25	1.000	134761.0		M	13C8-PFOS	5.26	294019.3	0.458	1.901
PFNA	5.27	1.000	293549.5		A	13C9-PFNA	5.27	487999.9	0.602	2.217
PFNS	5.56	1.060	98097.9		A	13C8-PFOS	5.26	294019.3	0.334	2.147
PFDA	5.58	1.000	251623.6		A	13C6-PFDA	5.58	622094.8	0.404	2.277
8:2-FTS	5.59	1.000	22886.2		A	13C2-8:2-FTS	5.59	25542.3	0.896	1.941
PFOSA	5.66	1.000	298383.7		A	13C8-PFOSA	5.66	693861.5	0.430	2.231
NMeFOSAA	5.73	1.000	28372.6		A	d3-NMeFOSAA	5.73	83733.4	0.339	2.241
PFDS	5.82	1.110	77164.1		A	13C8-PFOS	5.26	294019.3	0.262	2.122
PUnDA	5.85	1.000	247240.8		A	13C7-PUnDA	5.85	335572.5	0.737	2.256
NEtFOSAA	5.87	1.000	31960.9		A	d5-NEtFOSAA	5.86	72524.4	0.441	2.227
PFDoDA	6.08	1.000	325640.8		A	13C2-PFDoDA	6.08	789543.7	0.412	2.171
10:2-FTS	6.10	1.090	20128.4		A	13C2-8:2-FTS	5.59	25542.3	0.788	2.087
NMePFOSAE	6.13	1.000	143928.1		A	d7-NMePFOSAE	6.12	271372.0	0.530	2.305
NMePFOSA	6.13	1.000	36080.2		A	d3-NMePFOSA	6.13	85427.7	0.422	2.131
PFDoS	6.25	1.190	39376.4		A	13C8-PFOS	5.26	294019.3	0.134	2.042
NEtPFOSAE	6.28	1.000	164401.9		A	d9-NEtPFOSAE	6.27	235845.4	0.697	2.336
NEtPFOSA	6.29	1.000	34117.1		A	d5-NEtPFOSA	6.29	70029.0	0.487	2.332
PFTTrDA	6.28	1.030	282288.5		A	13C2-PFDoDA	6.08	789543.7	0.358	2.342
PFTeDA	6.45	1.000	217102.0		A	13C2-PFTeDA	6.45	540932.7	0.401	2.295
PFHxDA	6.74	1.040	100823.7		A	13C2-PFTeDA	6.45	540932.7	0.186	2.334
PFODA	6.99	1.080	70714.0		A	13C2-PFTeDA	6.45	540932.7	0.131	2.098

Total Ion Chromatogram

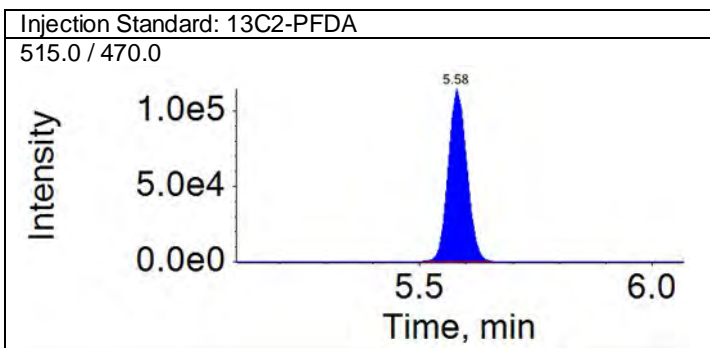
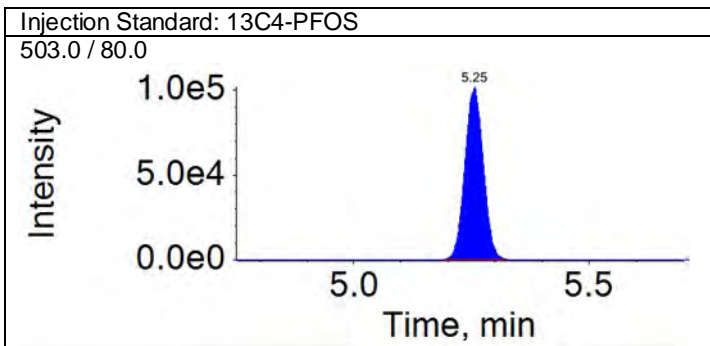
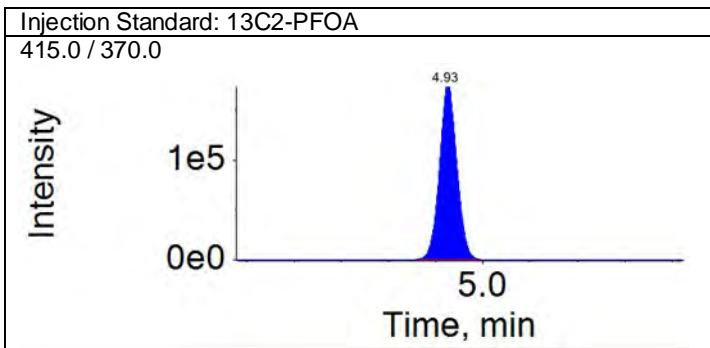
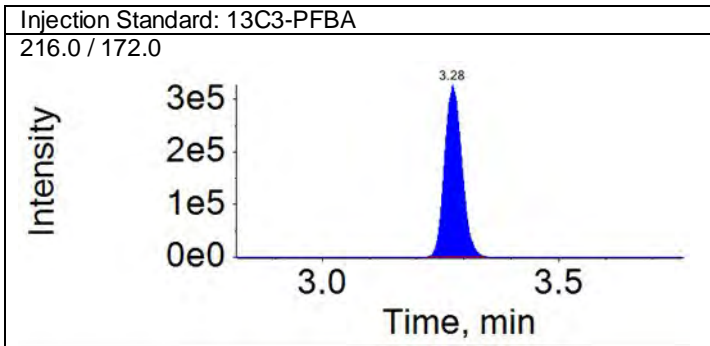
TIC from 18DEC06DCAL-27.wiff (sample 1) - CAL3





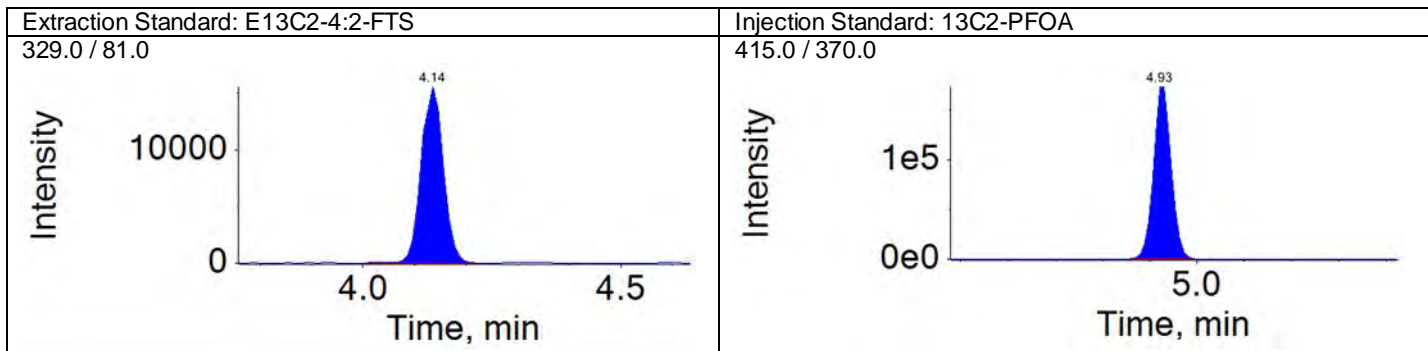
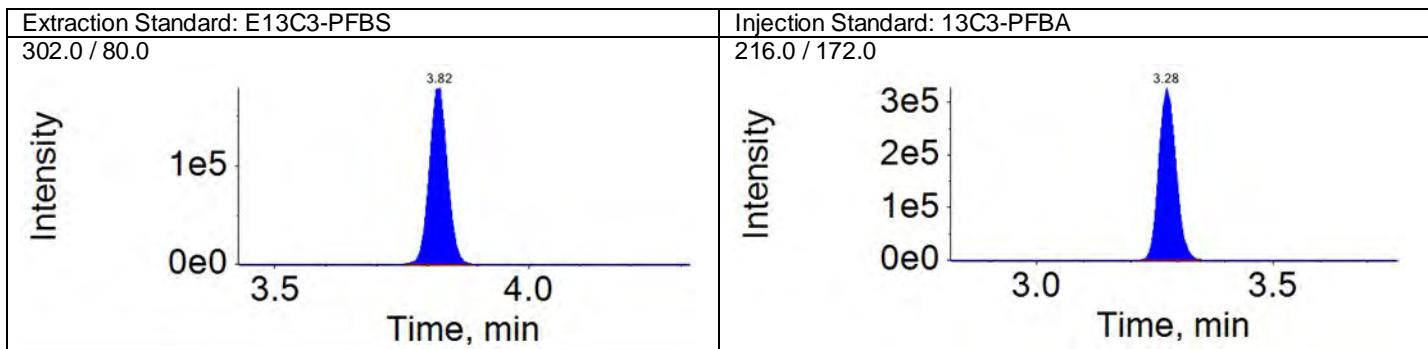
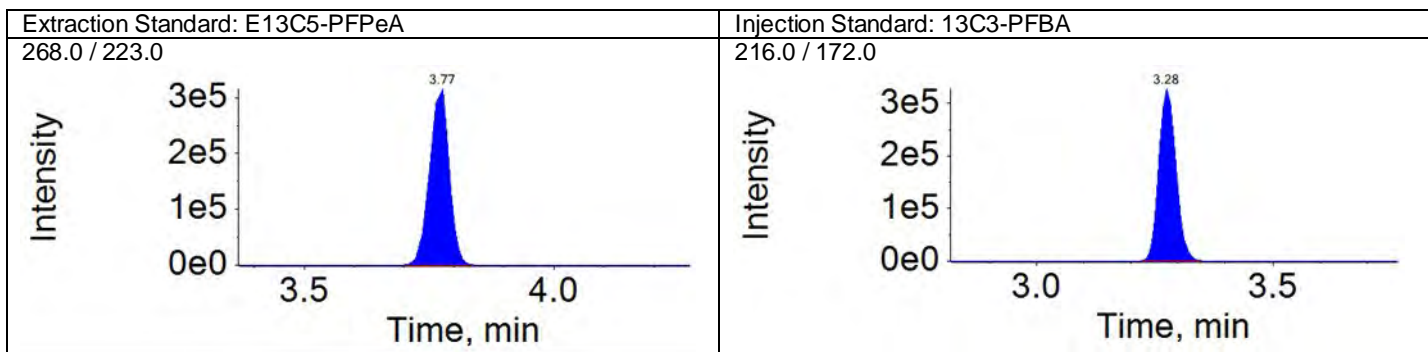
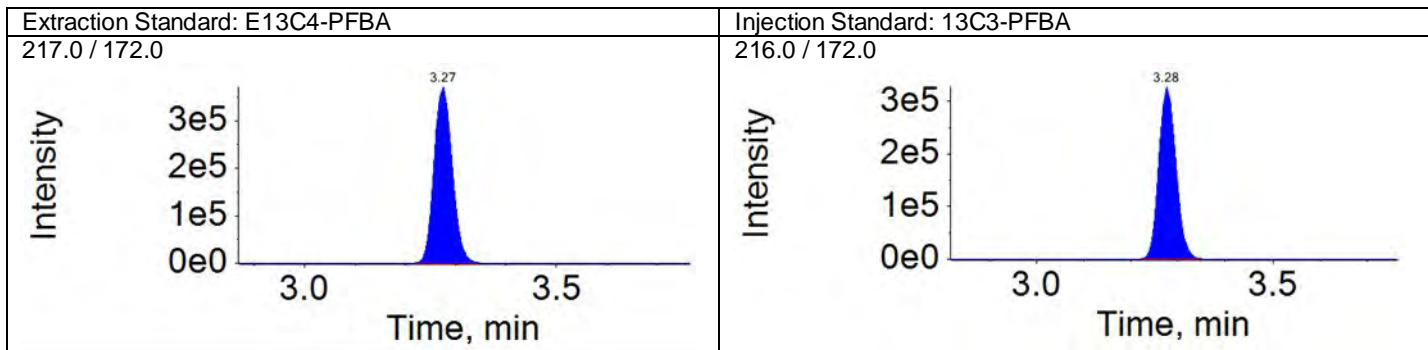
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



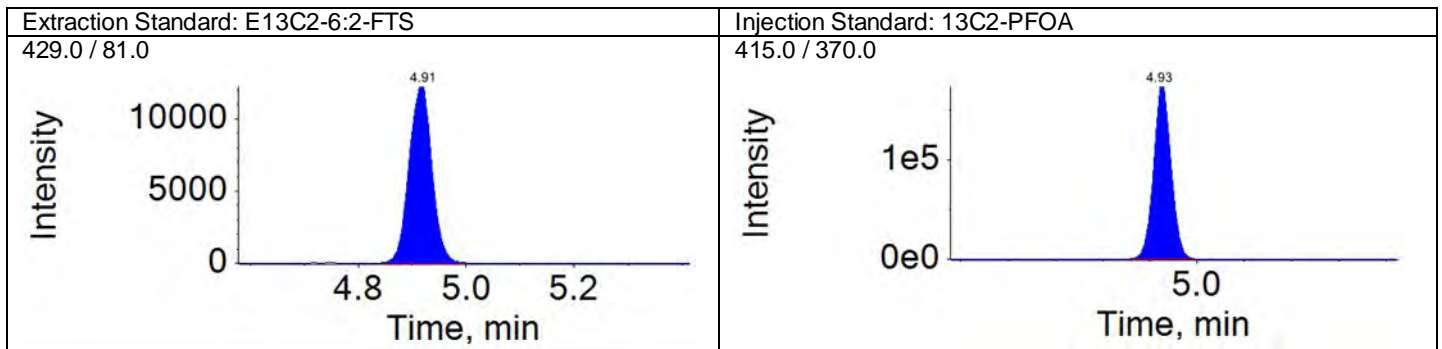
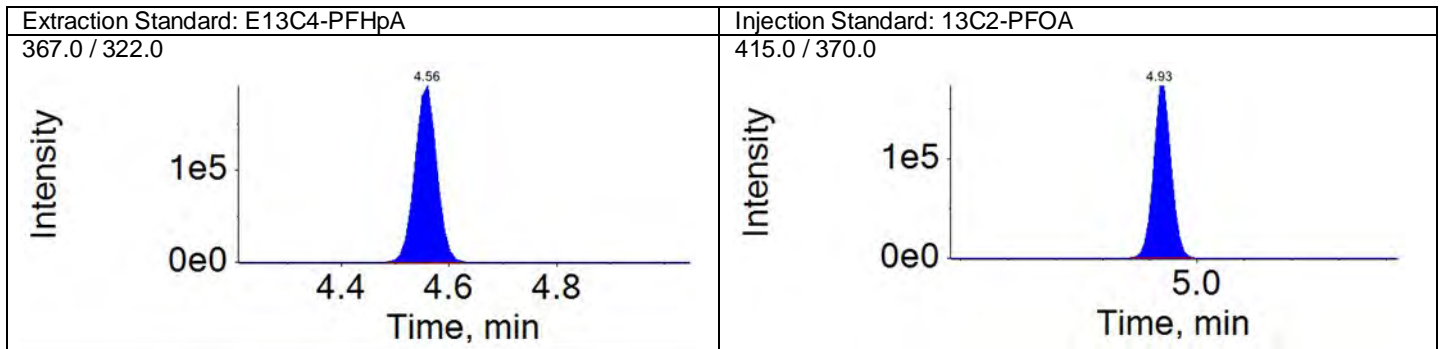
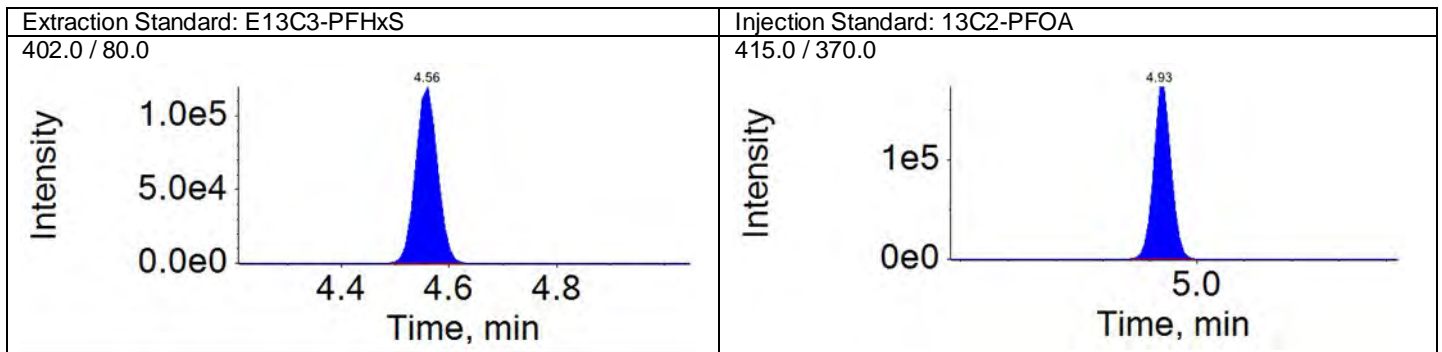
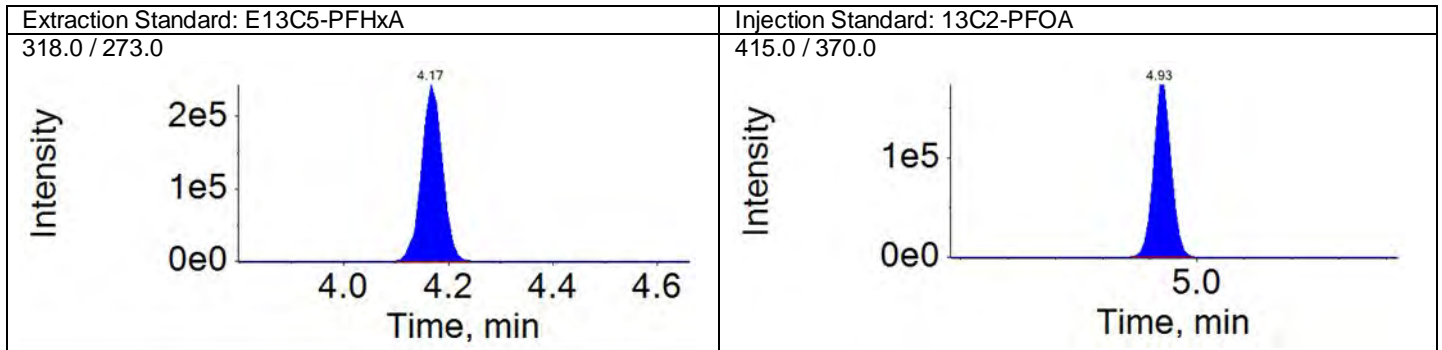
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Acquisition Method: 18AUG13\_3uL.dam



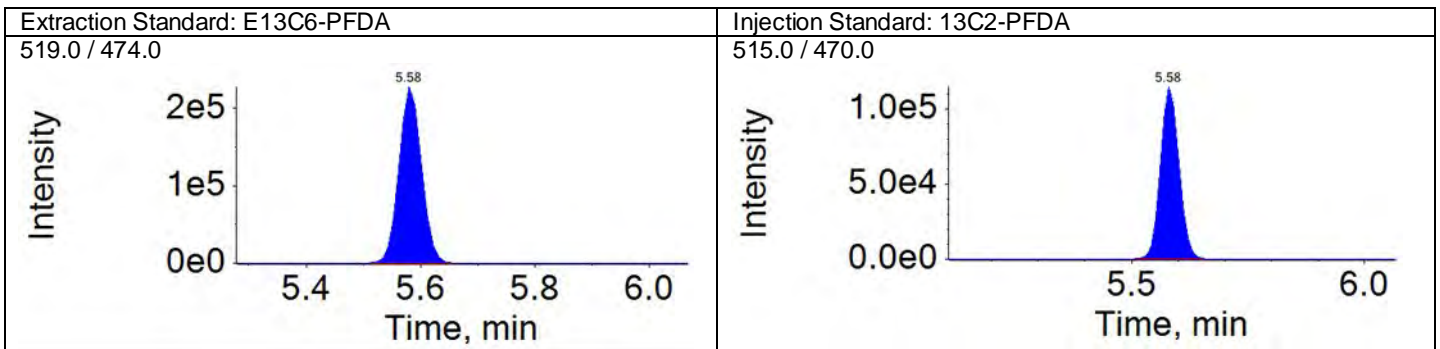
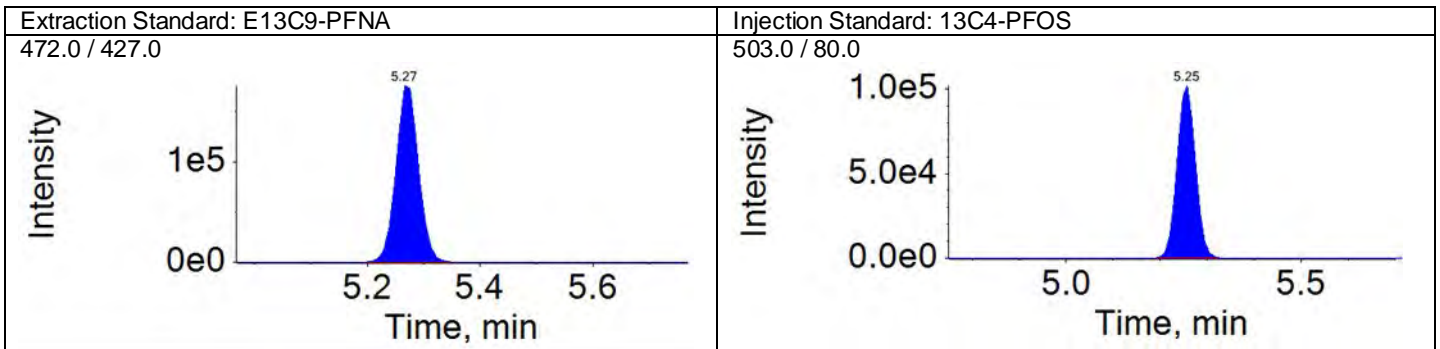
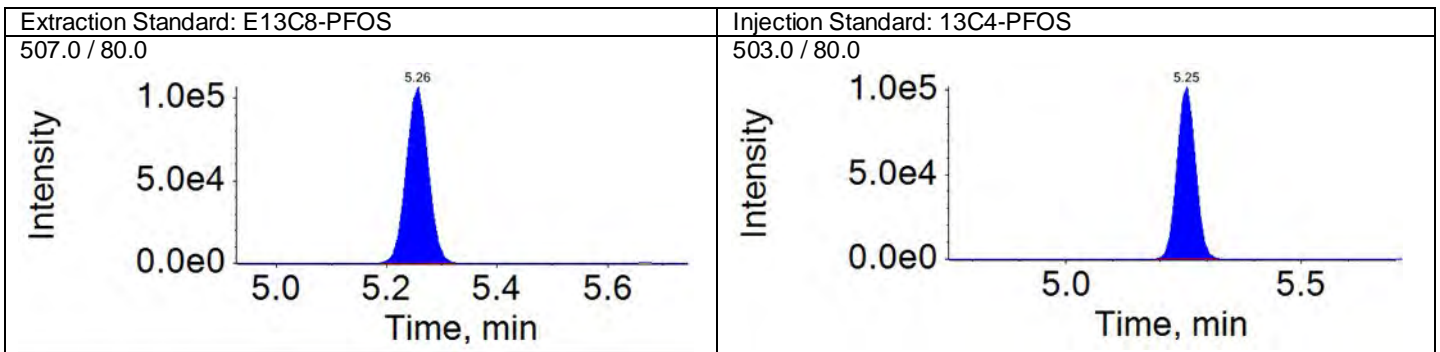
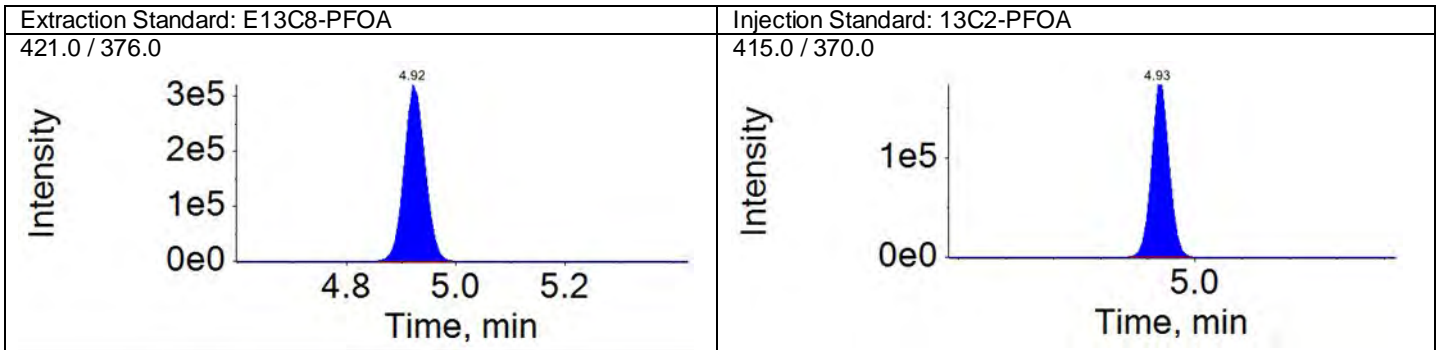
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

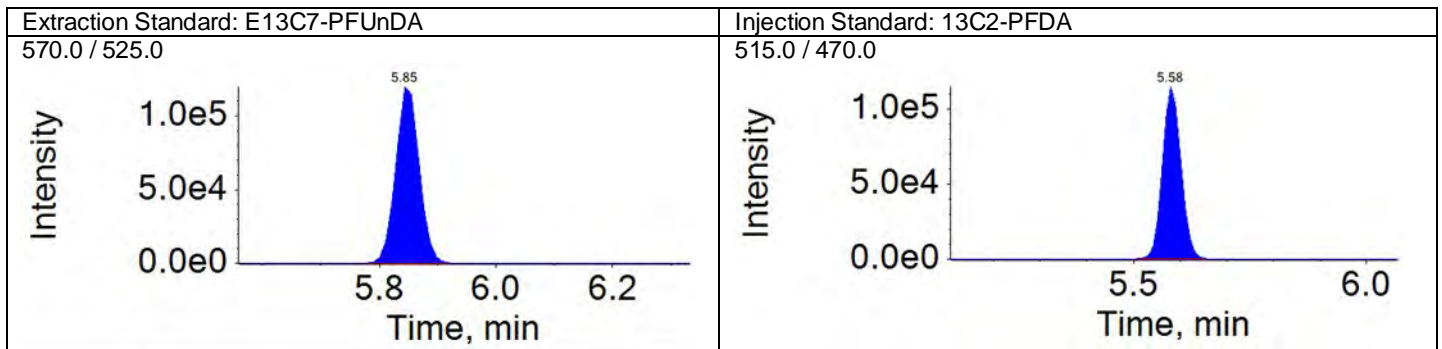
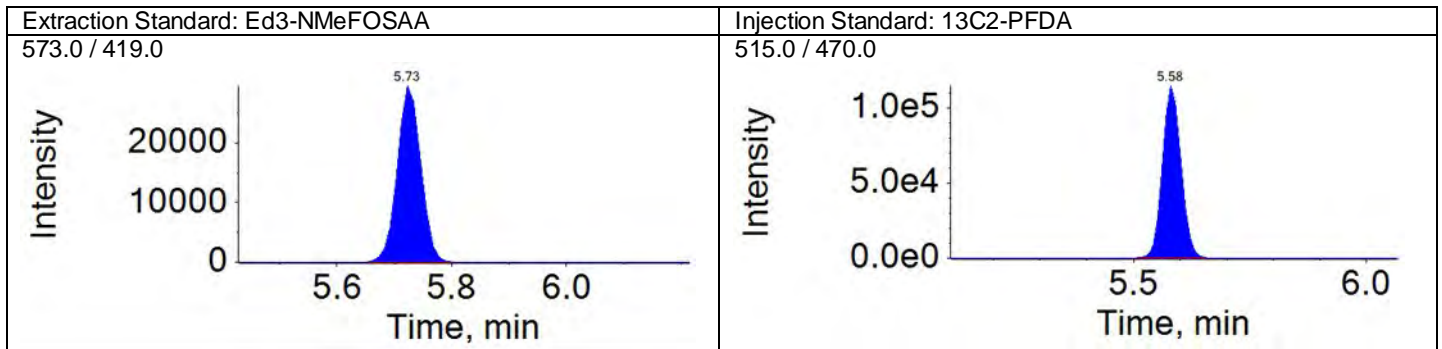
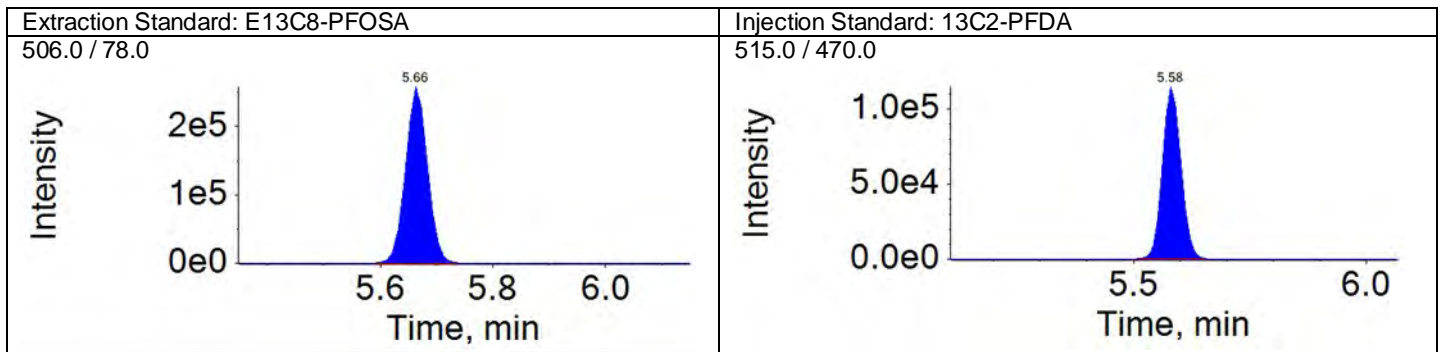
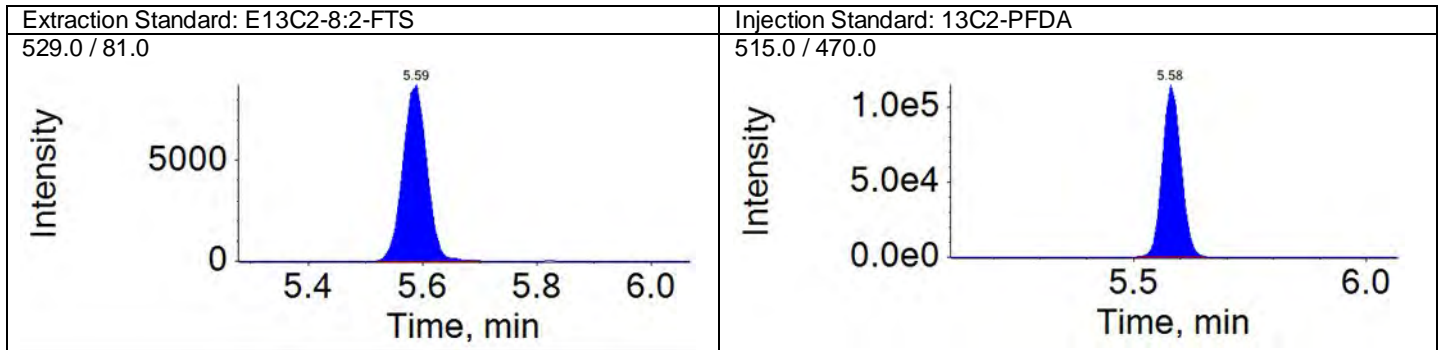
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Acquisition Method: 18AUG13\_3uL.dam





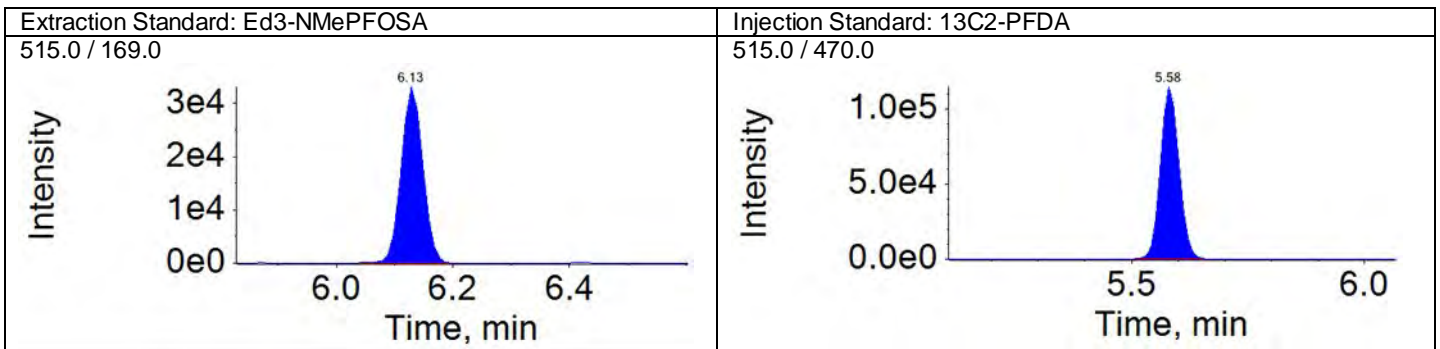
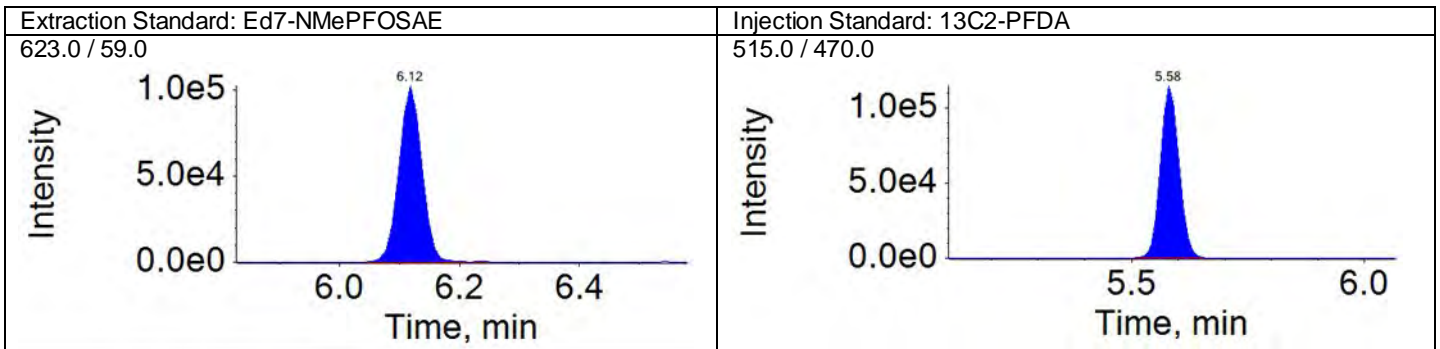
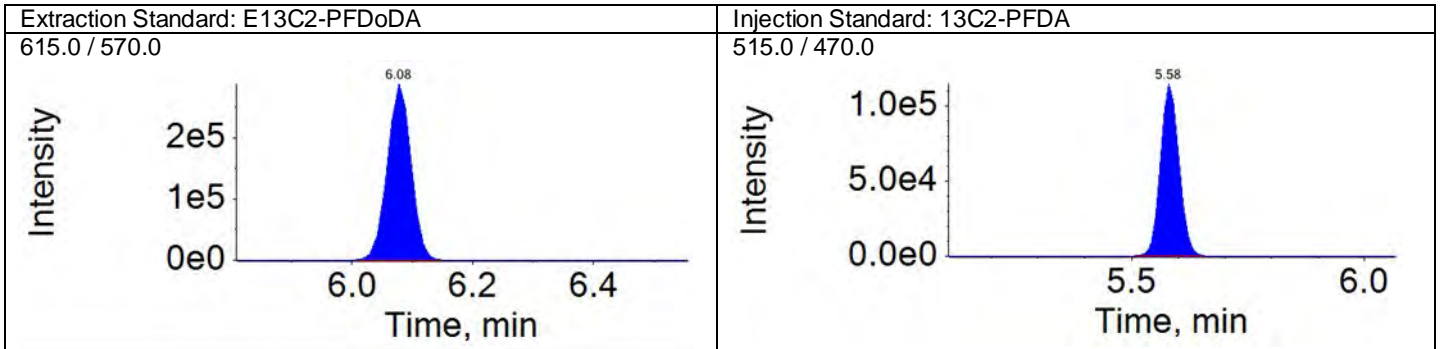
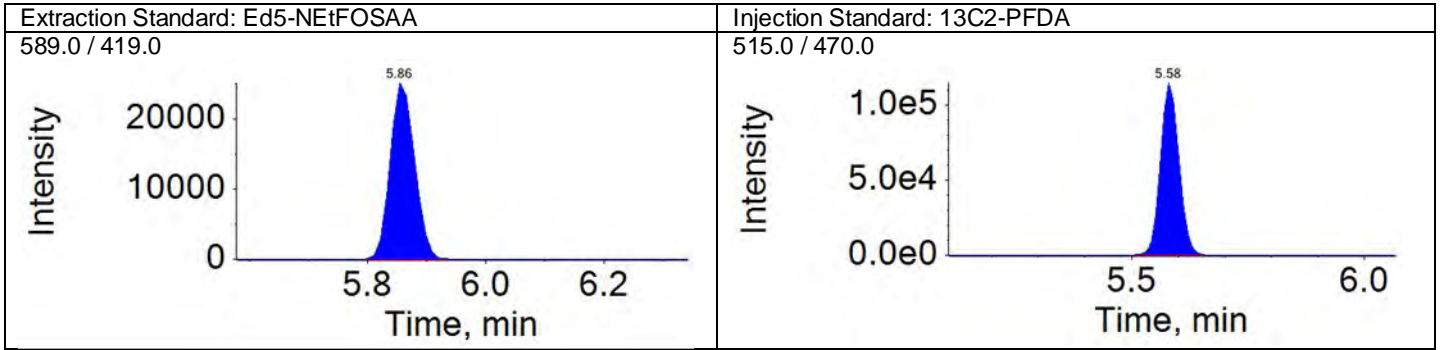
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

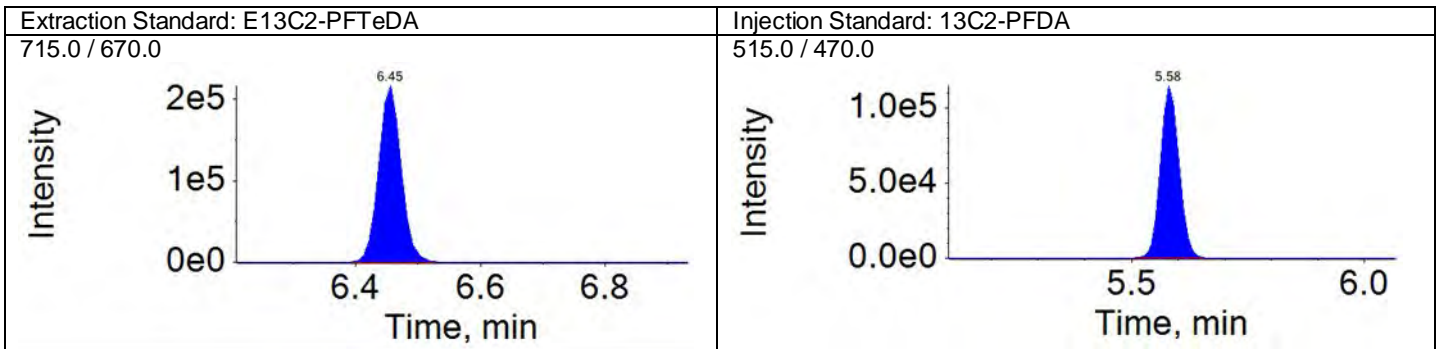
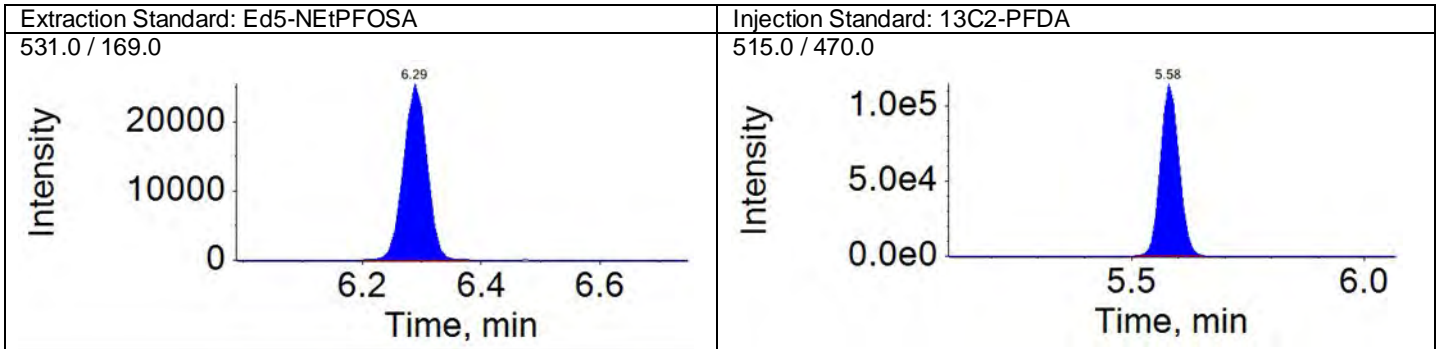
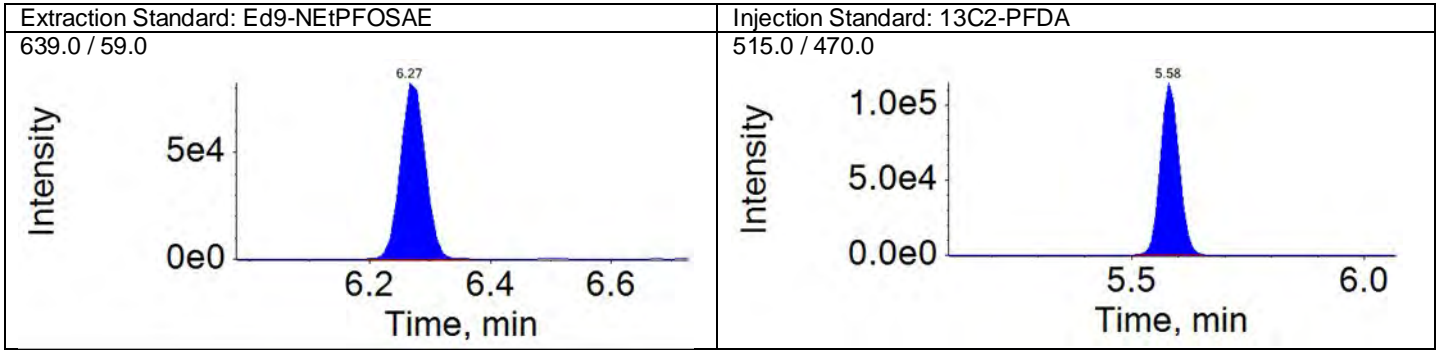
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Acquisition Method: 18AUG13\_3uL.dam





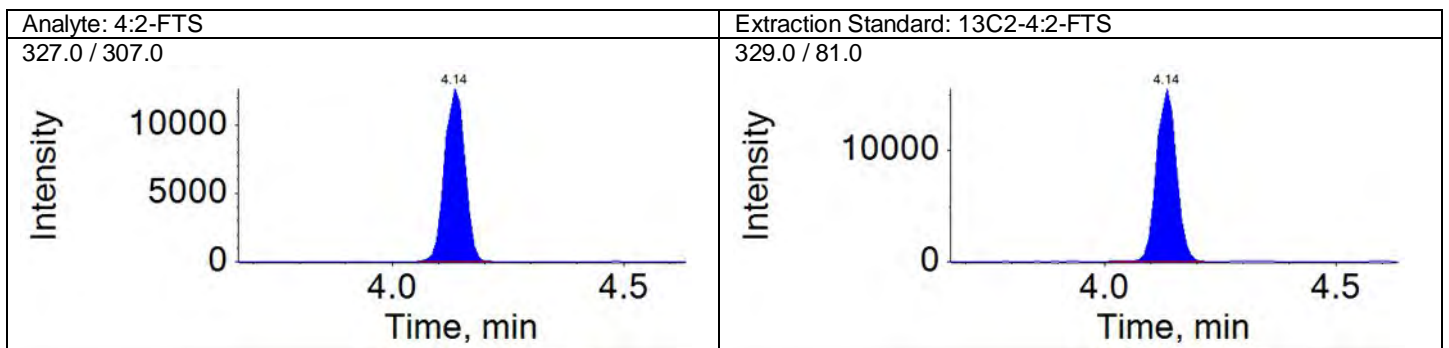
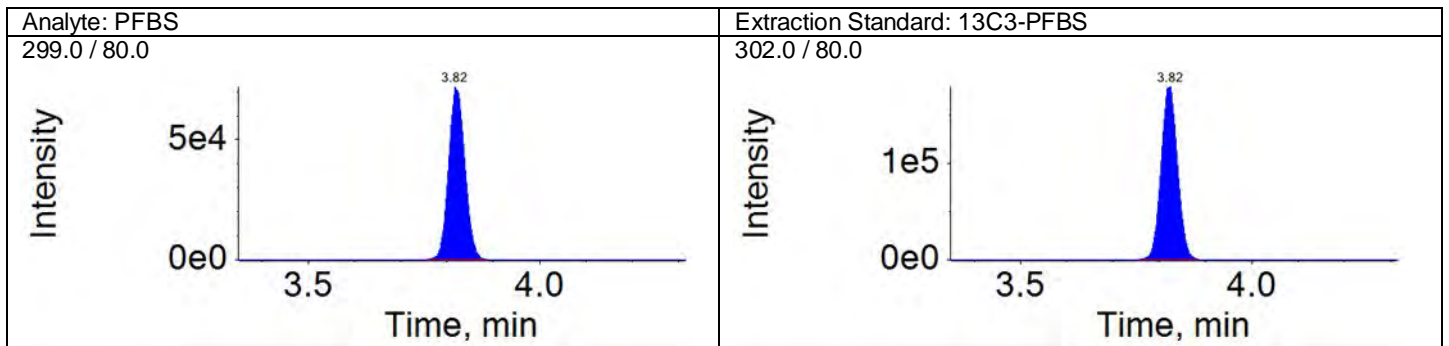
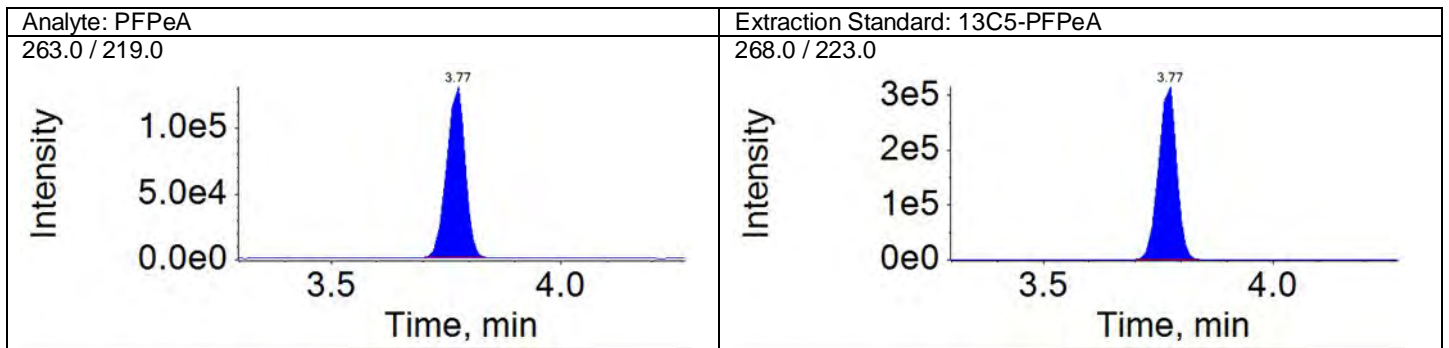
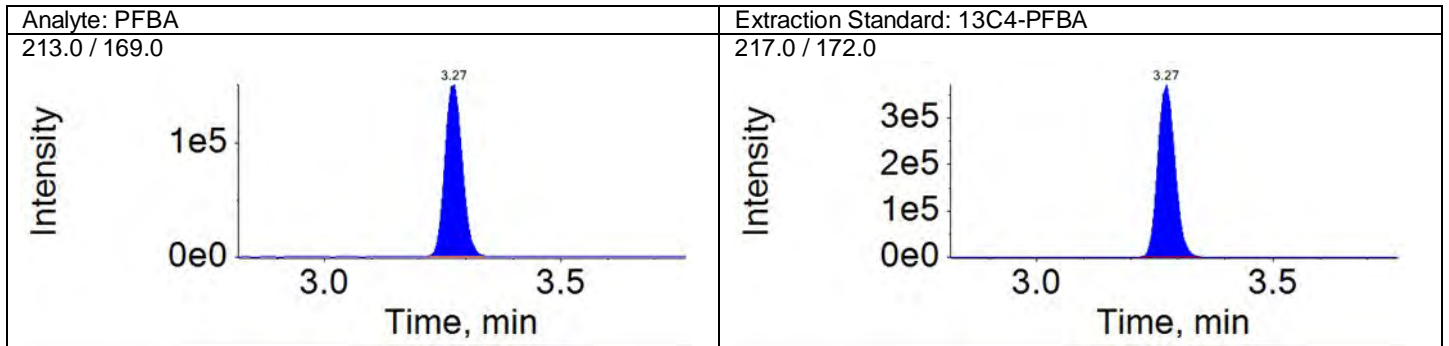
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



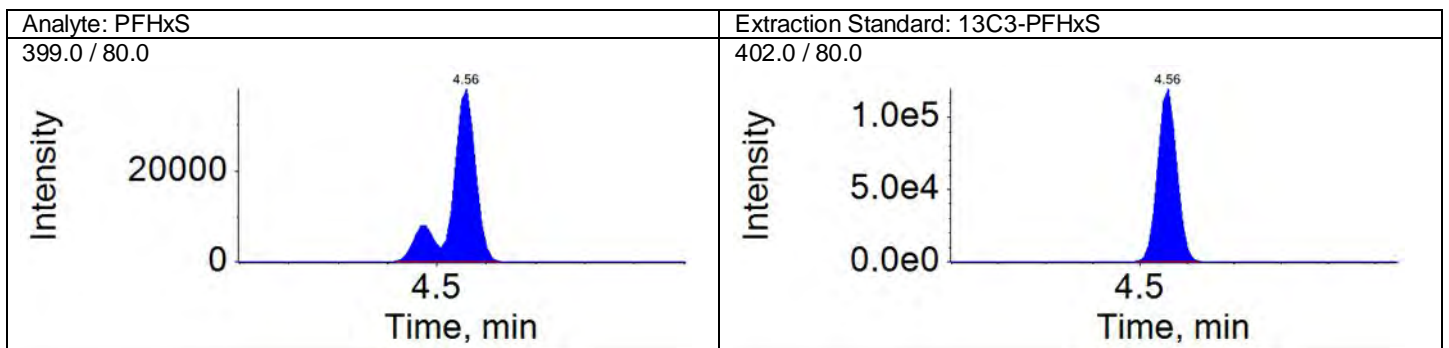
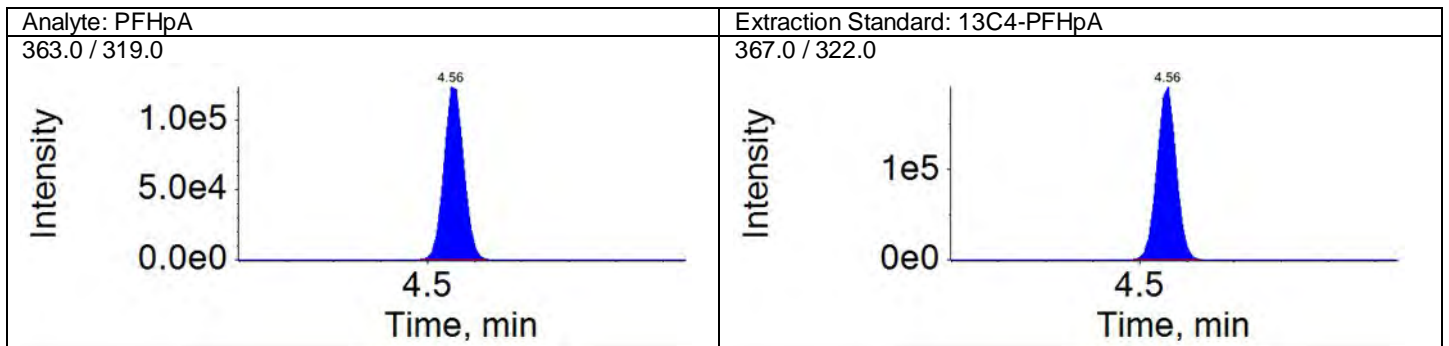
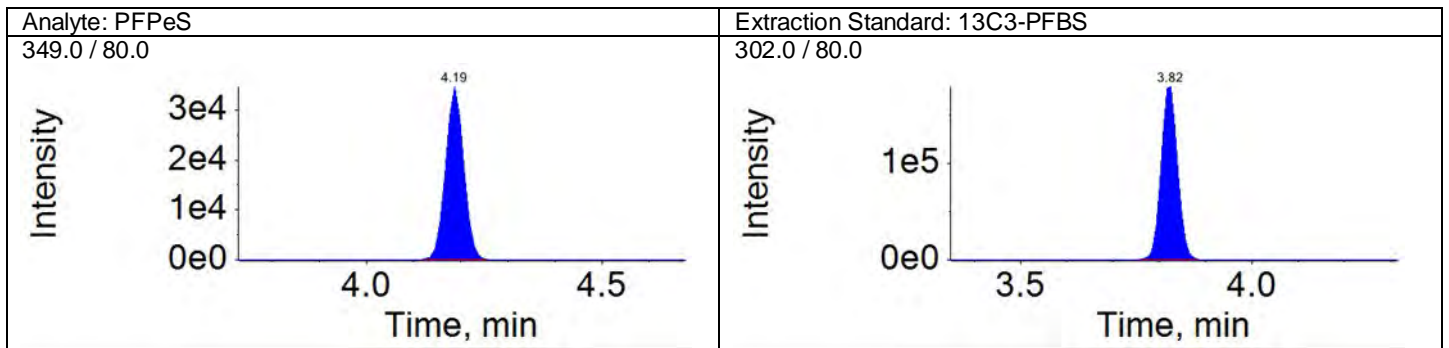
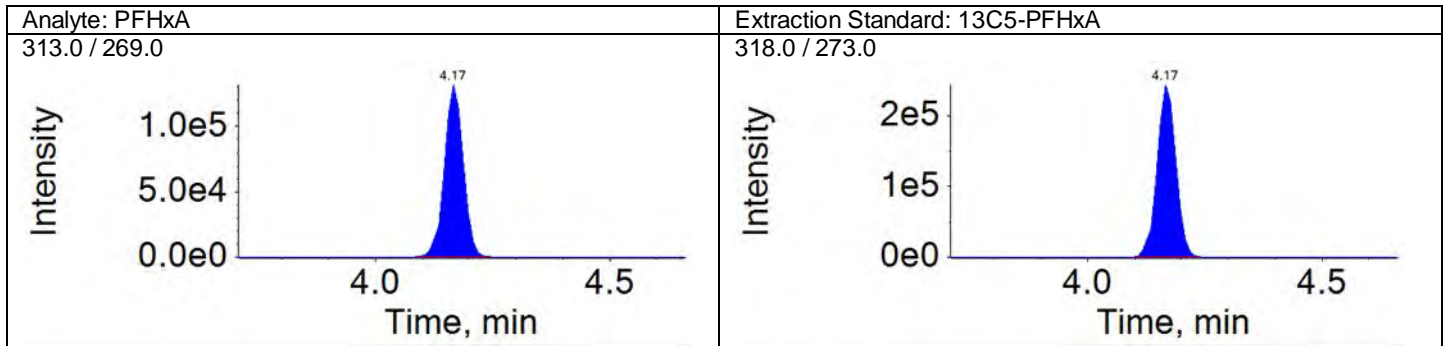
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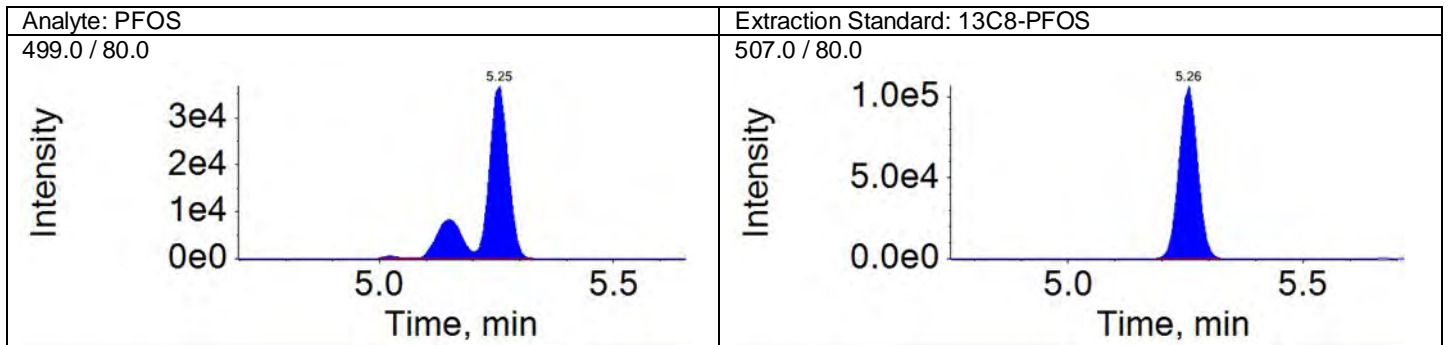
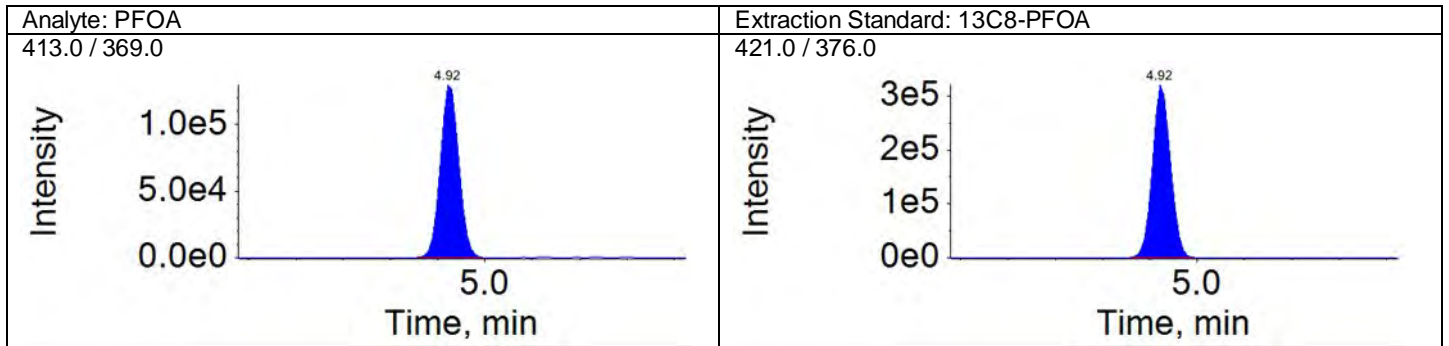
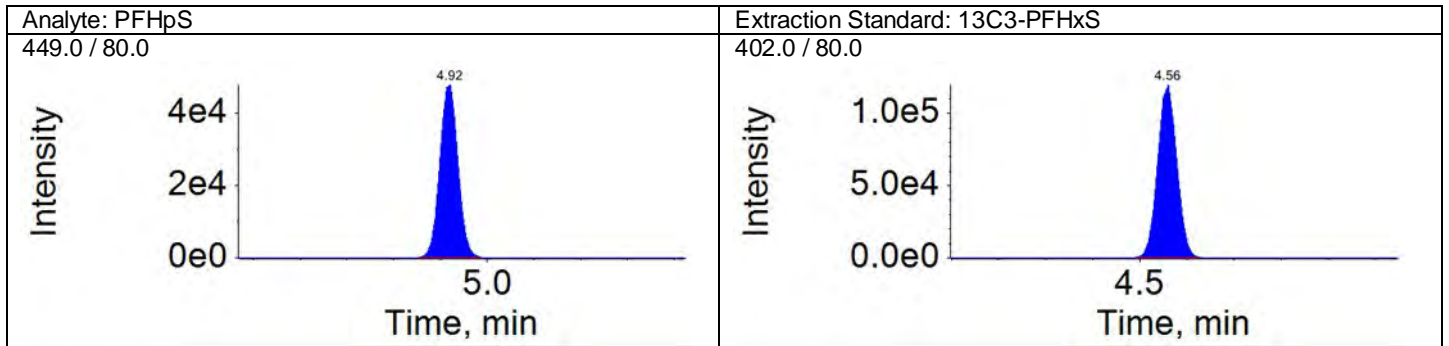
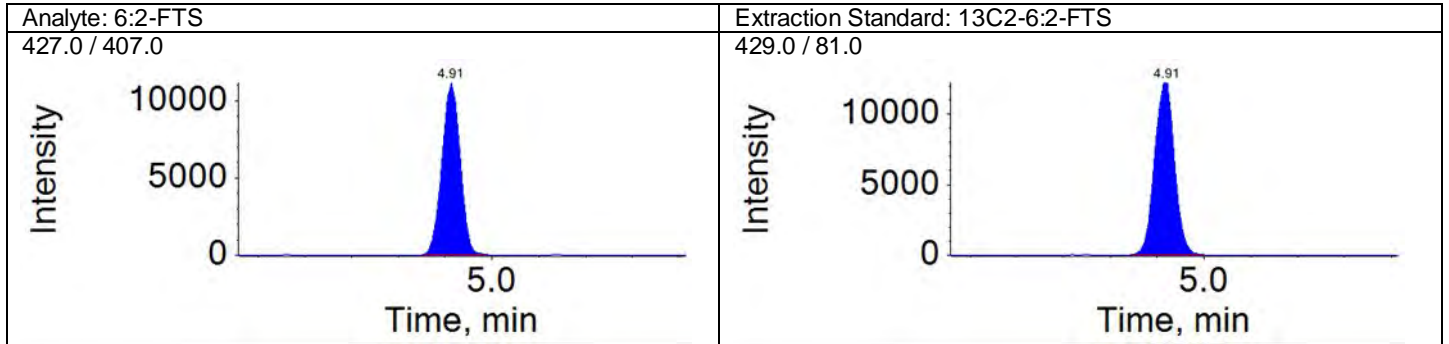
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

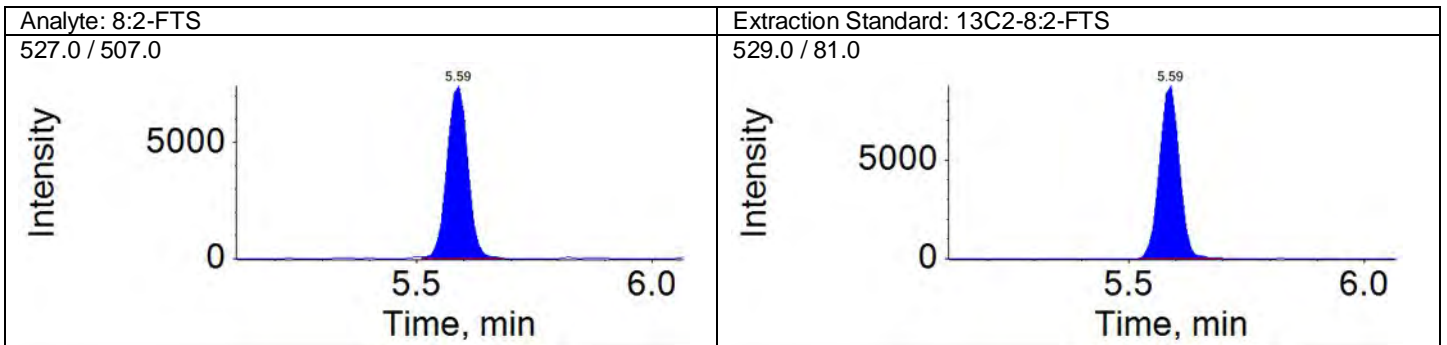
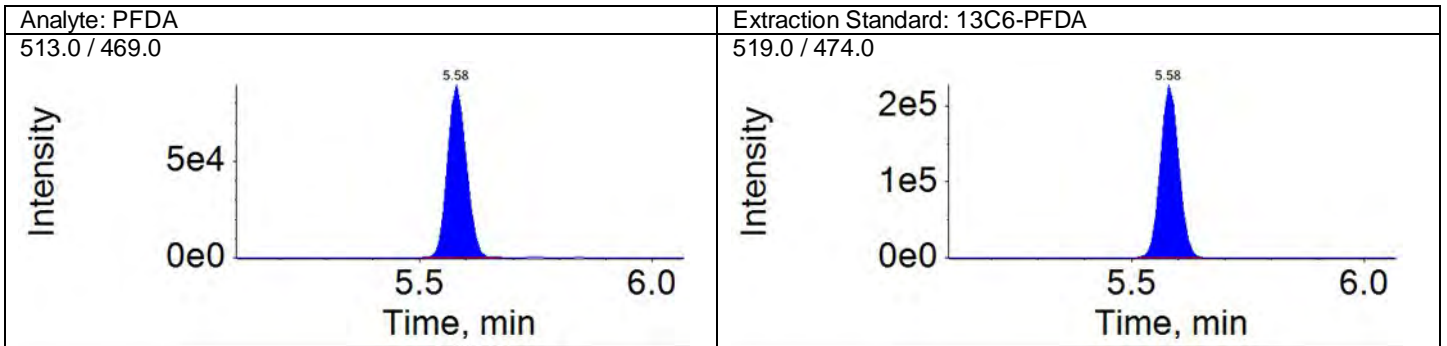
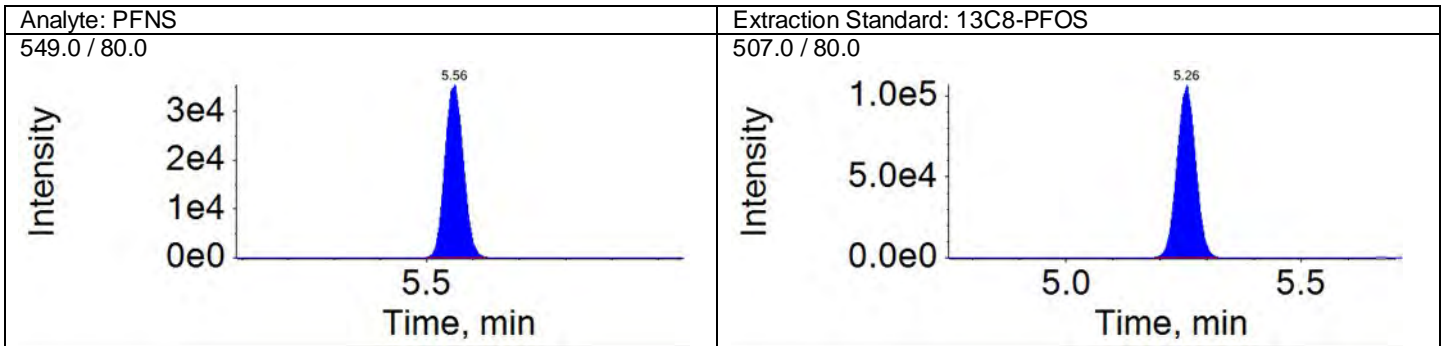
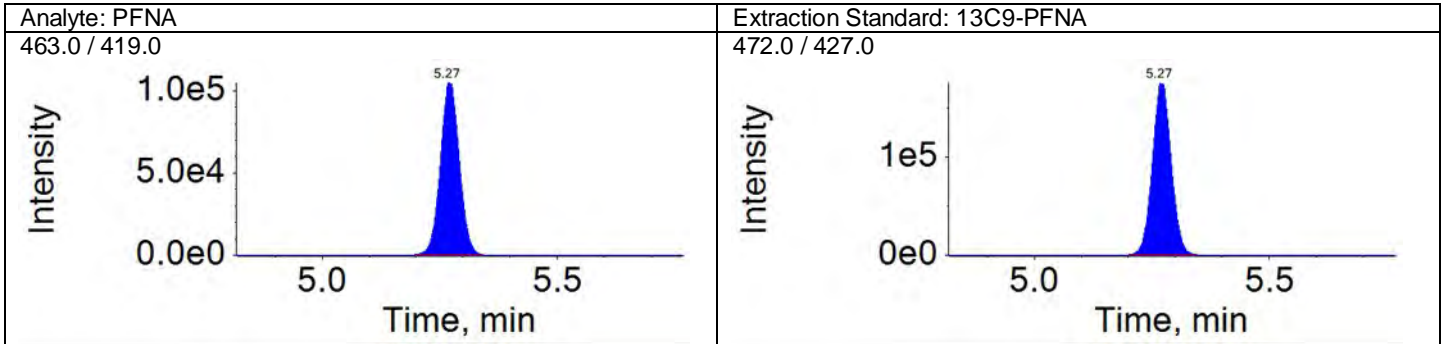
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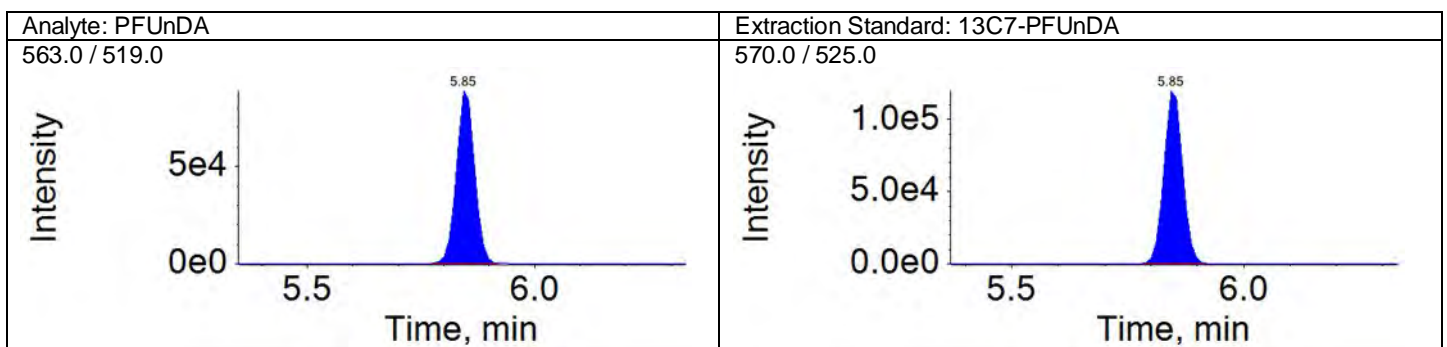
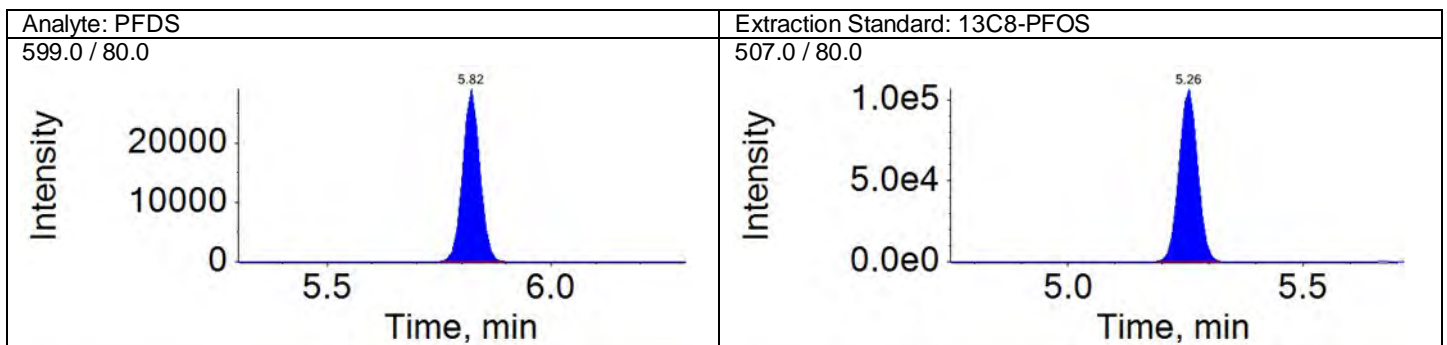
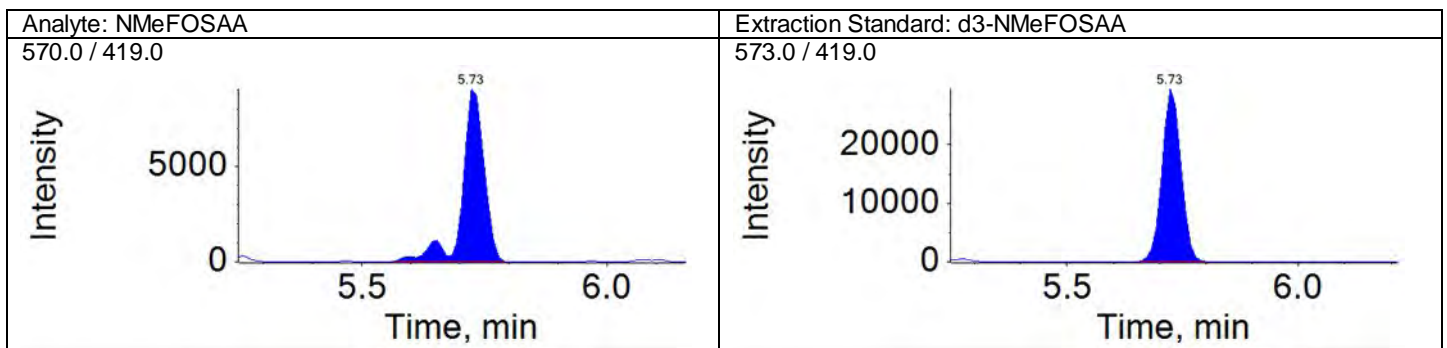
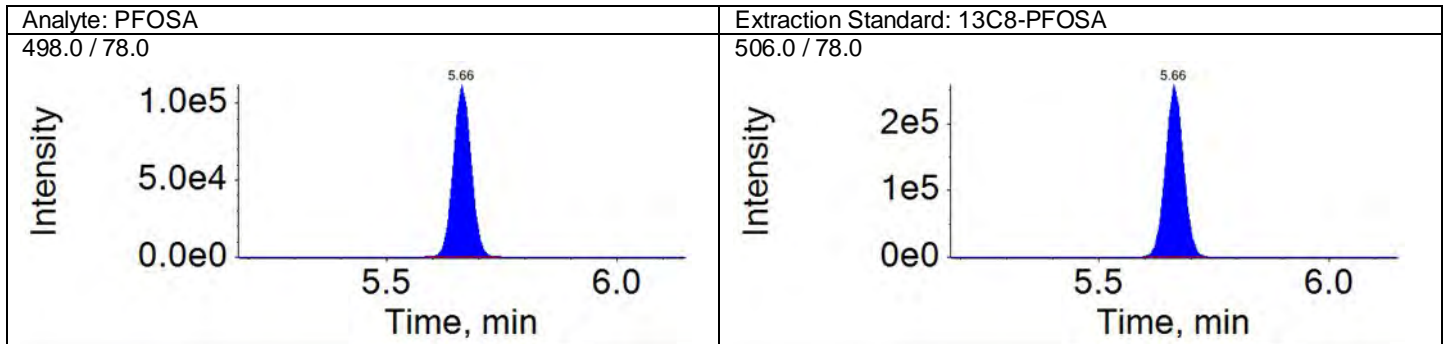
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
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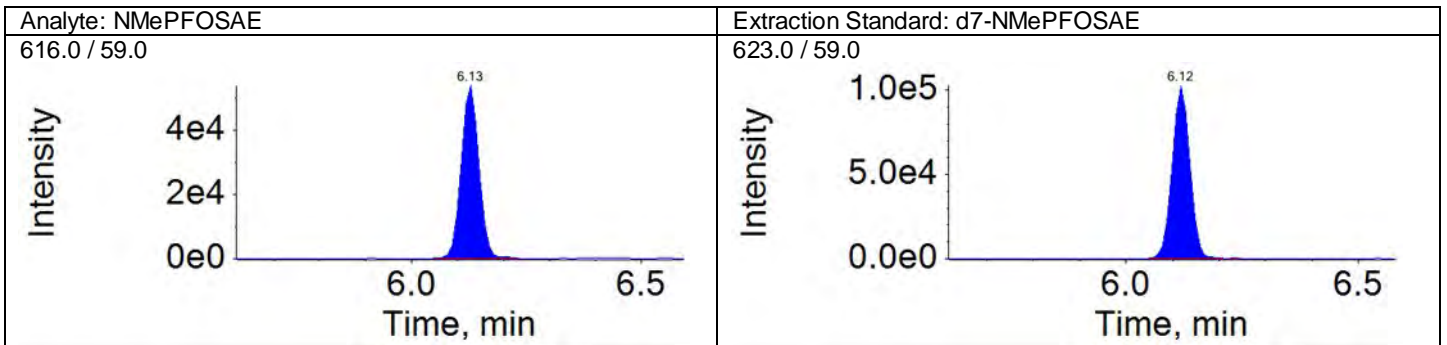
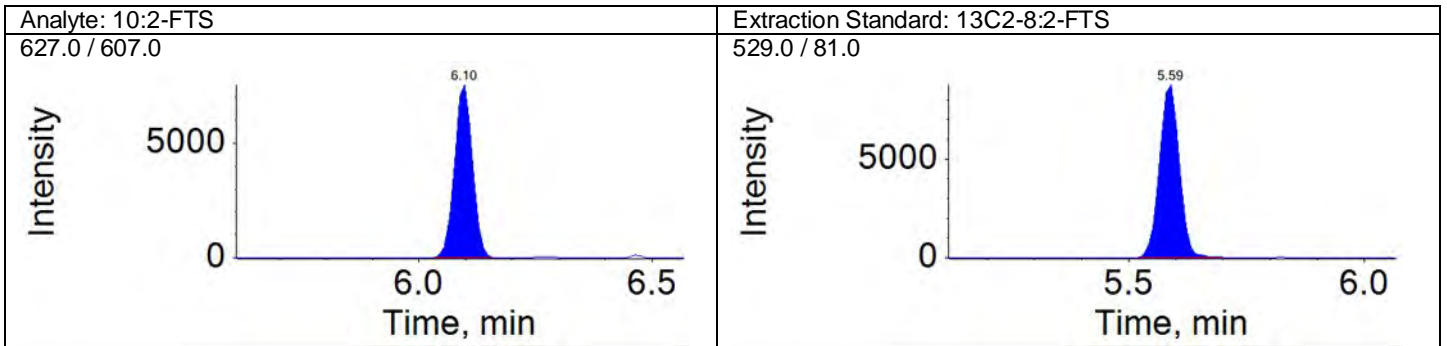
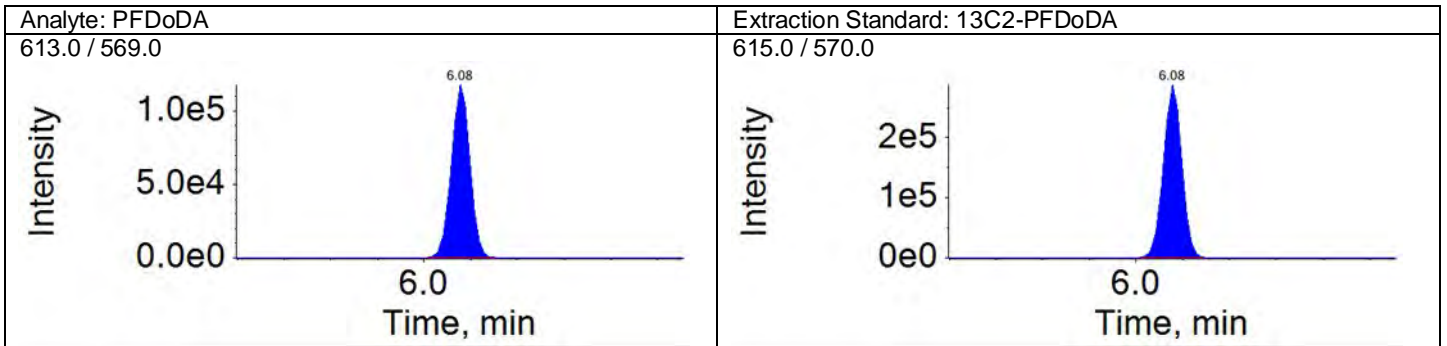
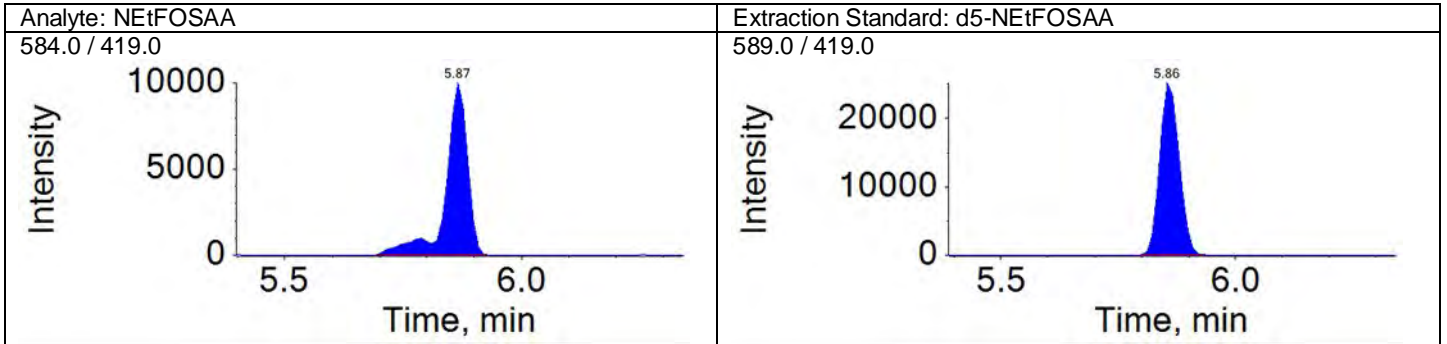
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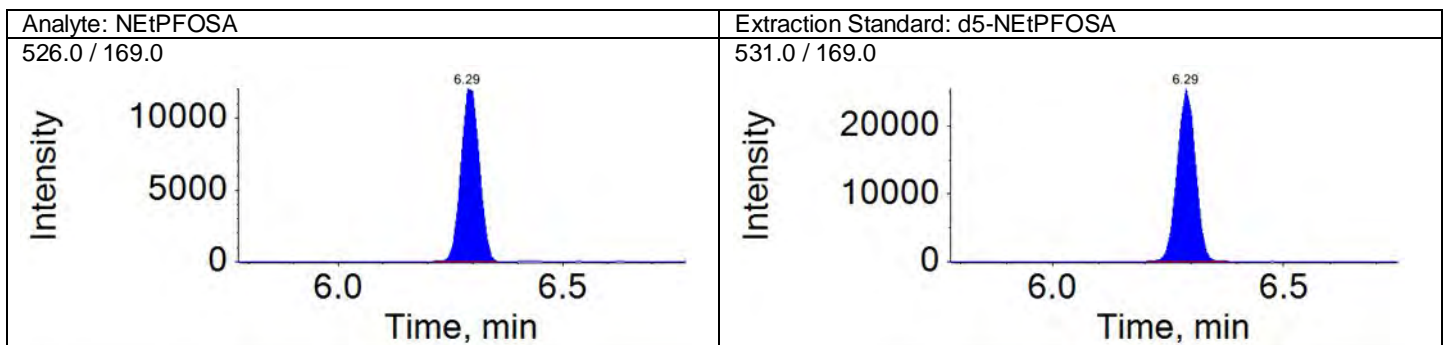
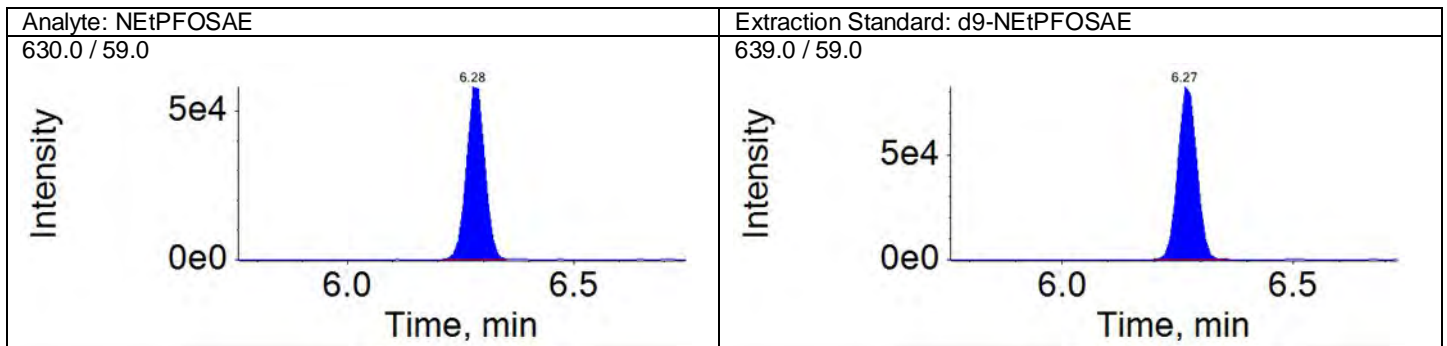
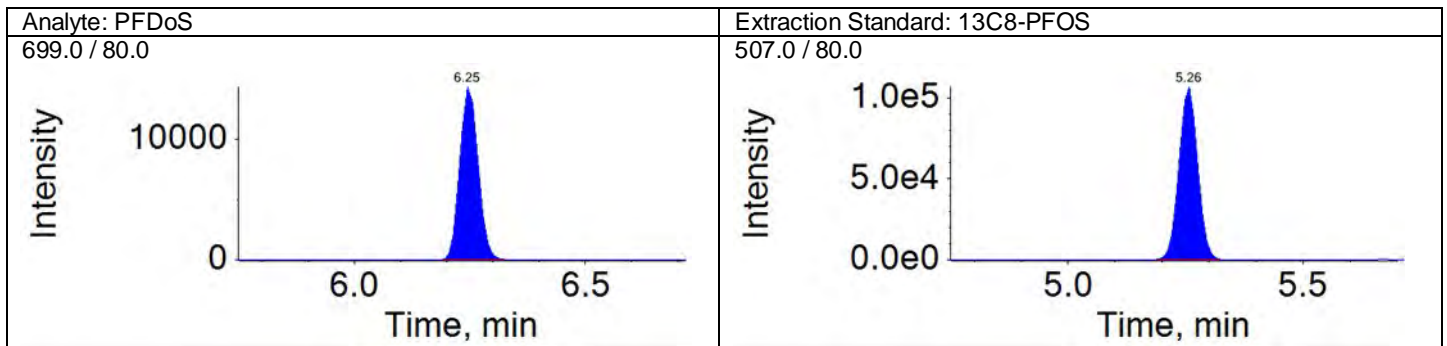
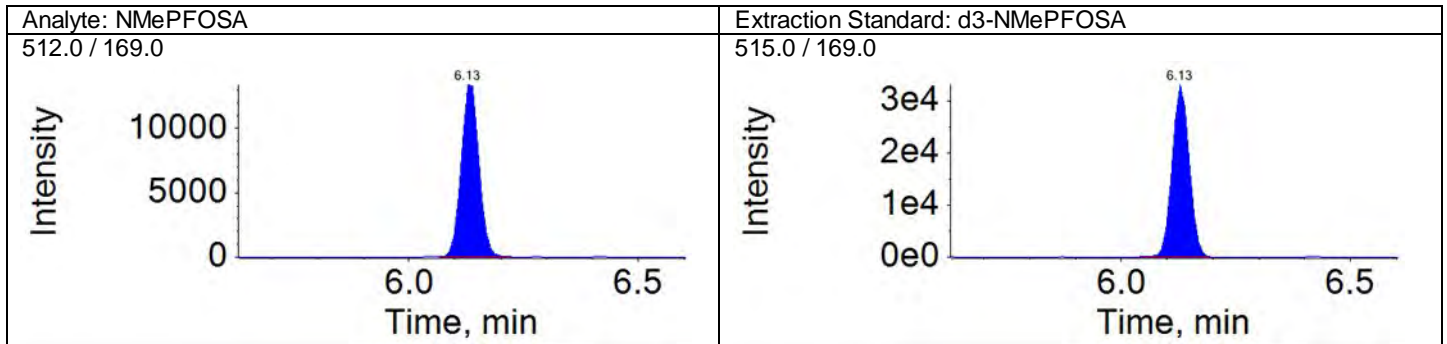
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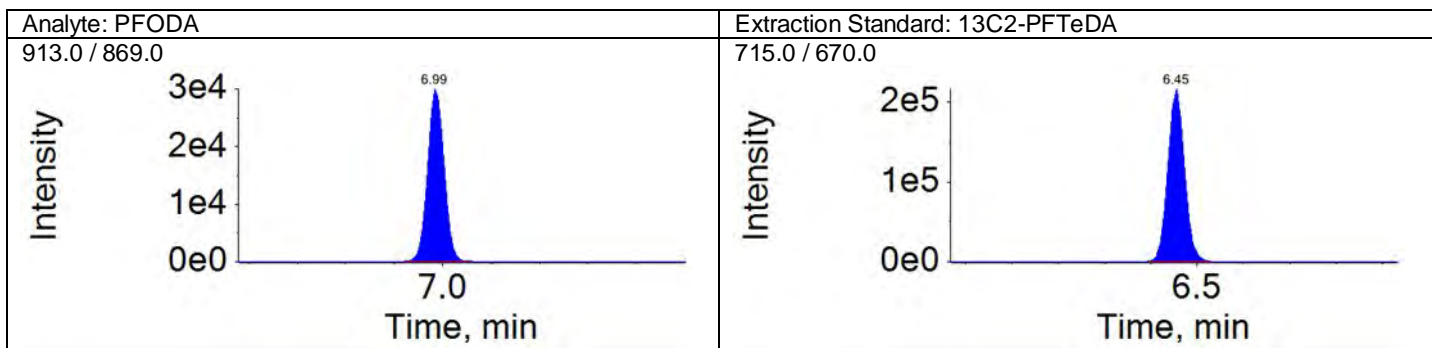
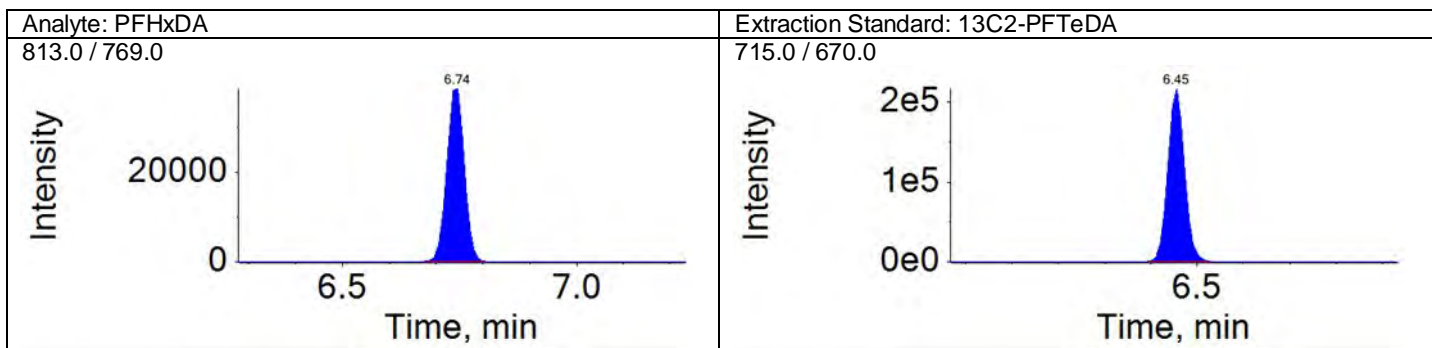
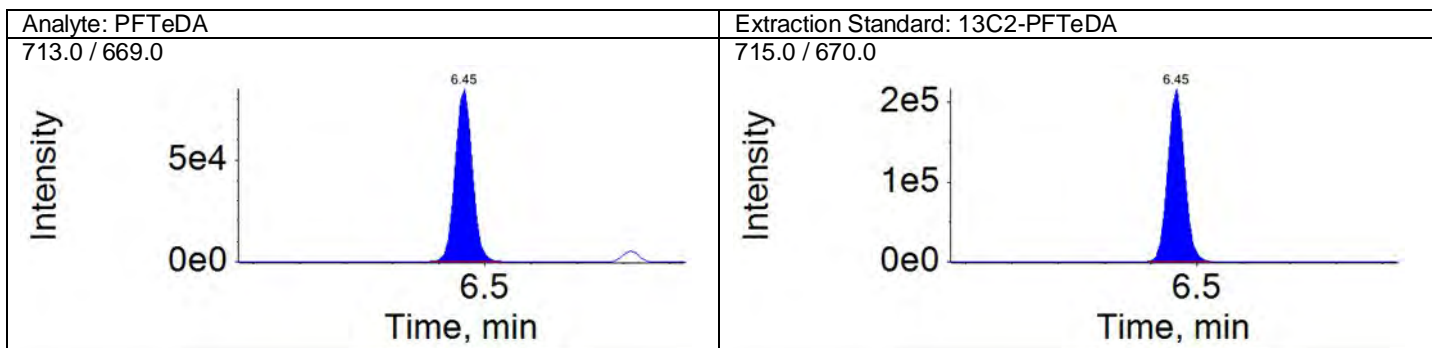
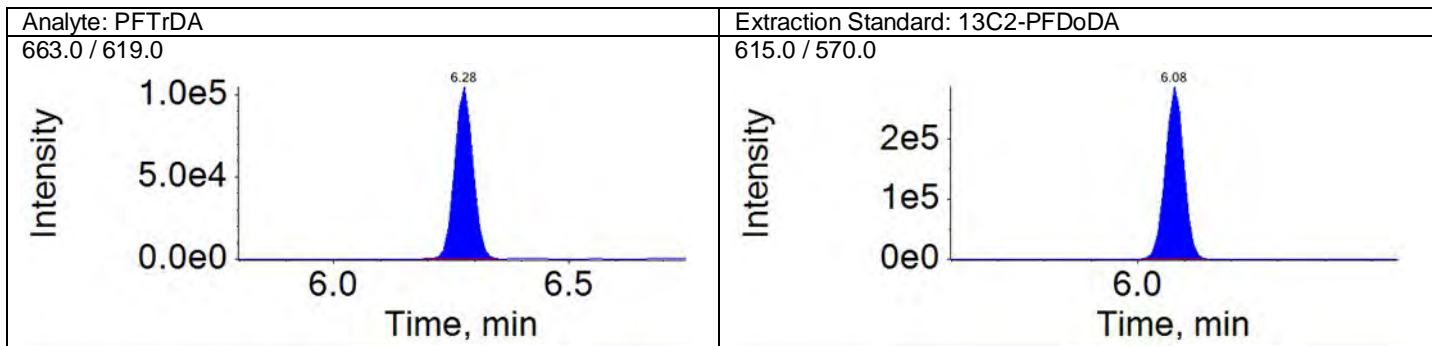
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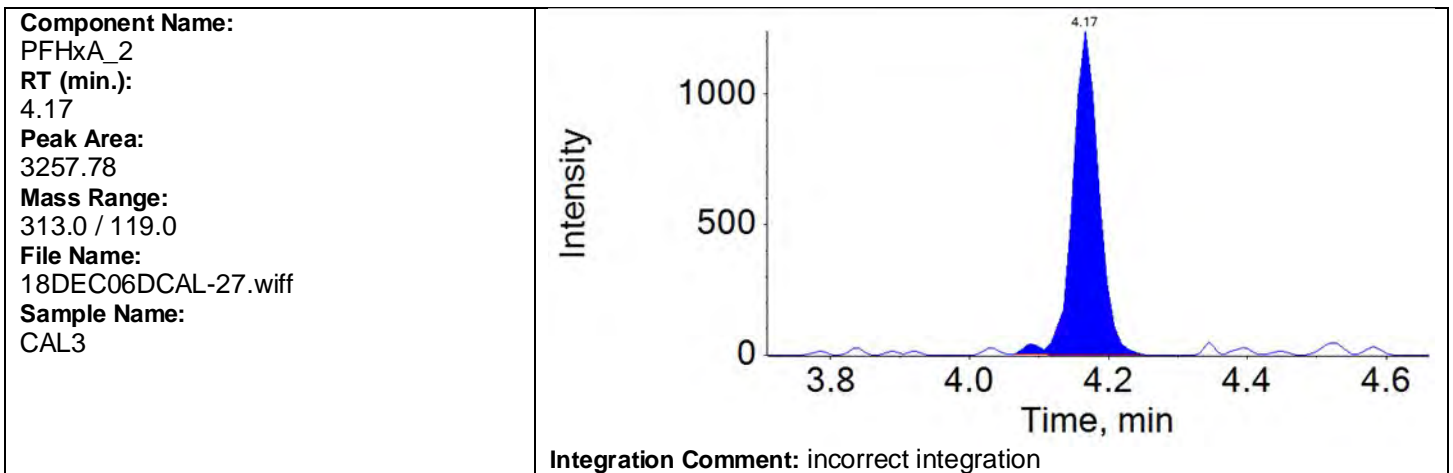
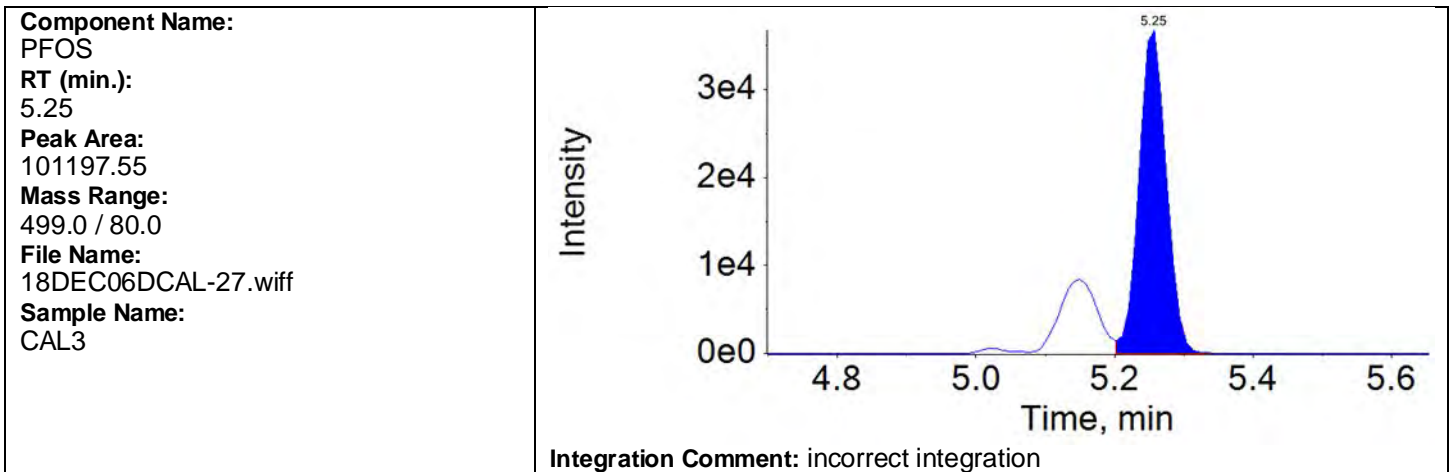
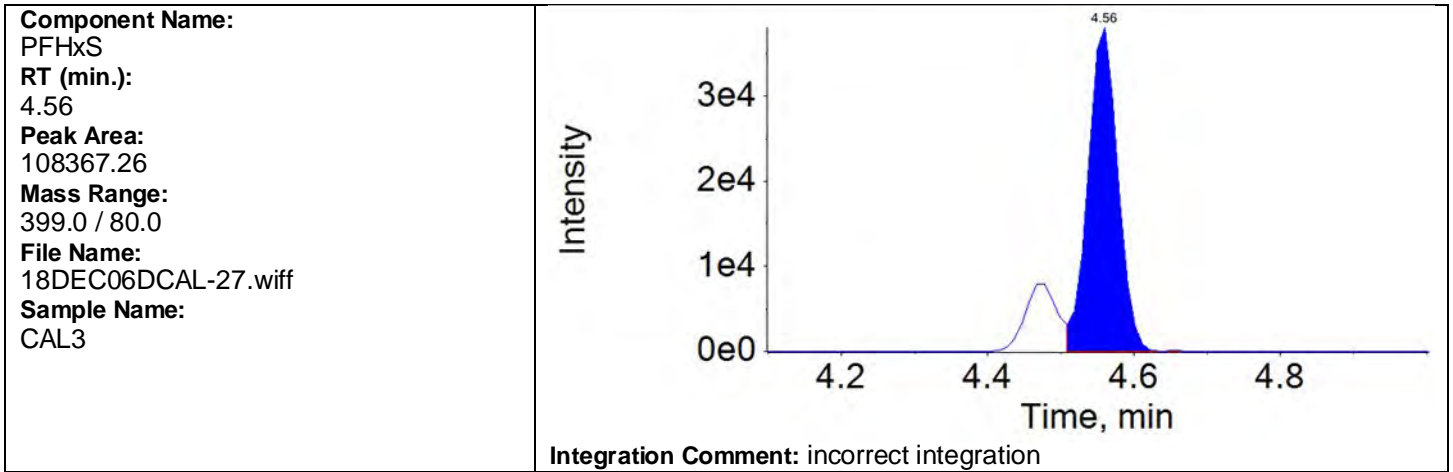
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Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

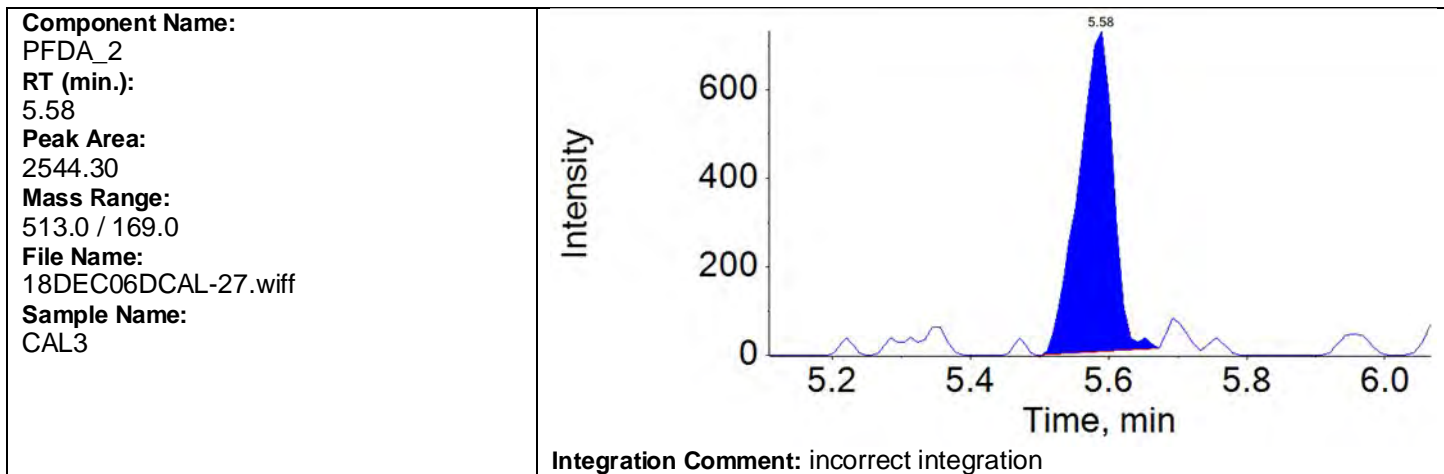
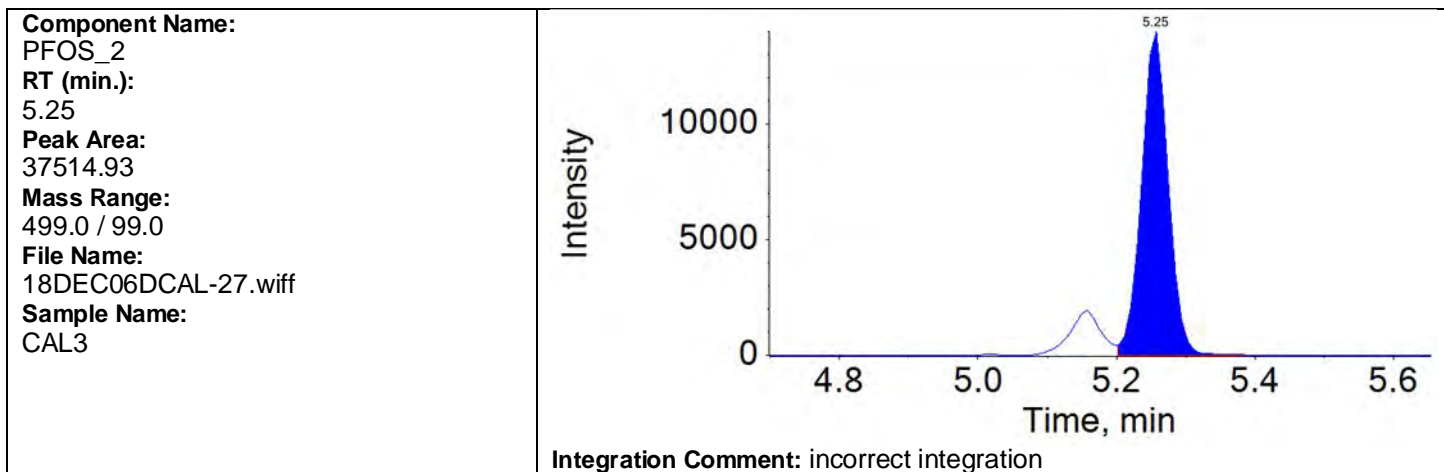
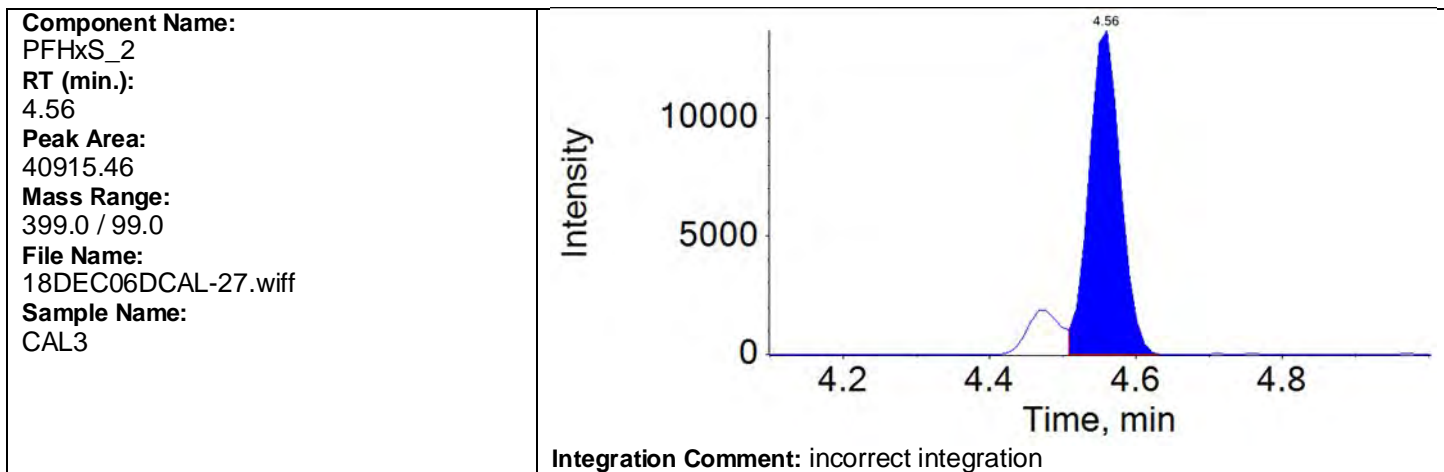
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Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

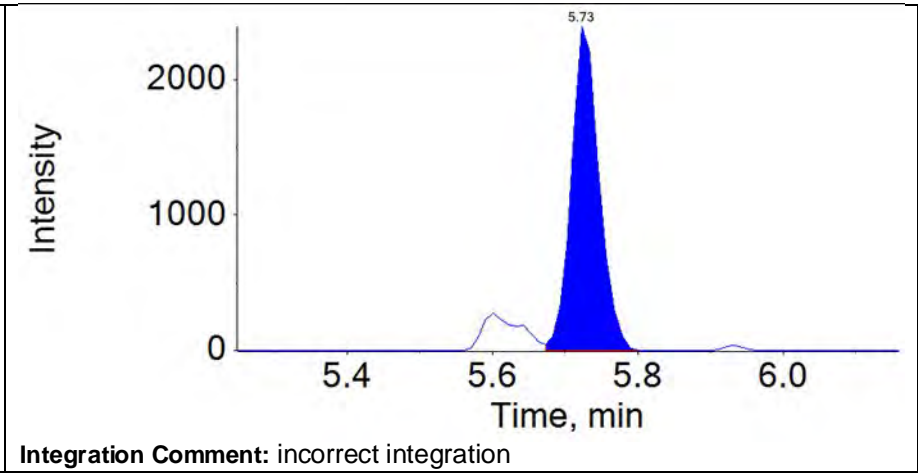
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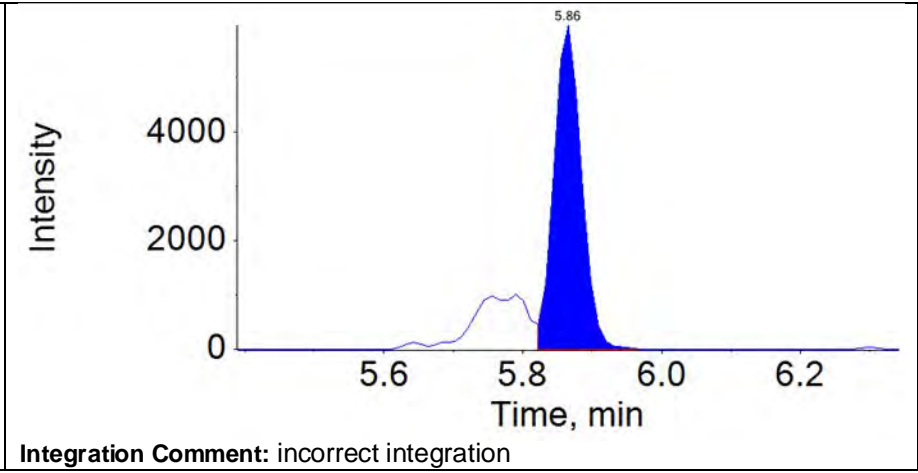
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Results Table Date: 12/7/2018 1:17:11 PM

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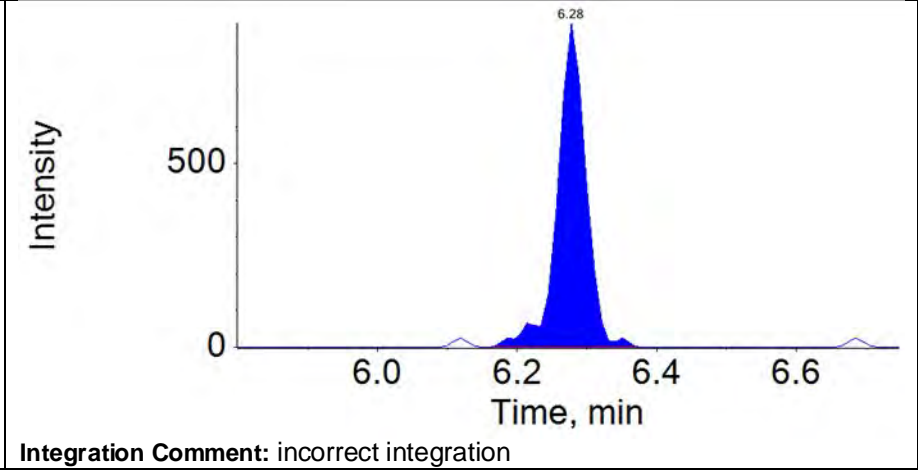
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**RT (min.):**  
5.73  
**Peak Area:**  
6388.95  
**Mass Range:**  
570.0 / 483.0  
**File Name:**  
18DEC06DCAL-27.wiff  
**Sample Name:**  
CAL3



**Component Name:**  
NEtFOSAA\_2  
**RT (min.):**  
5.86  
**Peak Area:**  
16528.92  
**Mass Range:**  
584.0 / 526.0  
**File Name:**  
18DEC06DCAL-27.wiff  
**Sample Name:**  
CAL3



**Component Name:**  
PFTrDA\_2  
**RT (min.):**  
6.28  
**Peak Area:**  
2522.53  
**Mass Range:**  
663.0 / 169.0  
**File Name:**  
18DEC06DCAL-27.wiff  
**Sample Name:**  
CAL3





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18

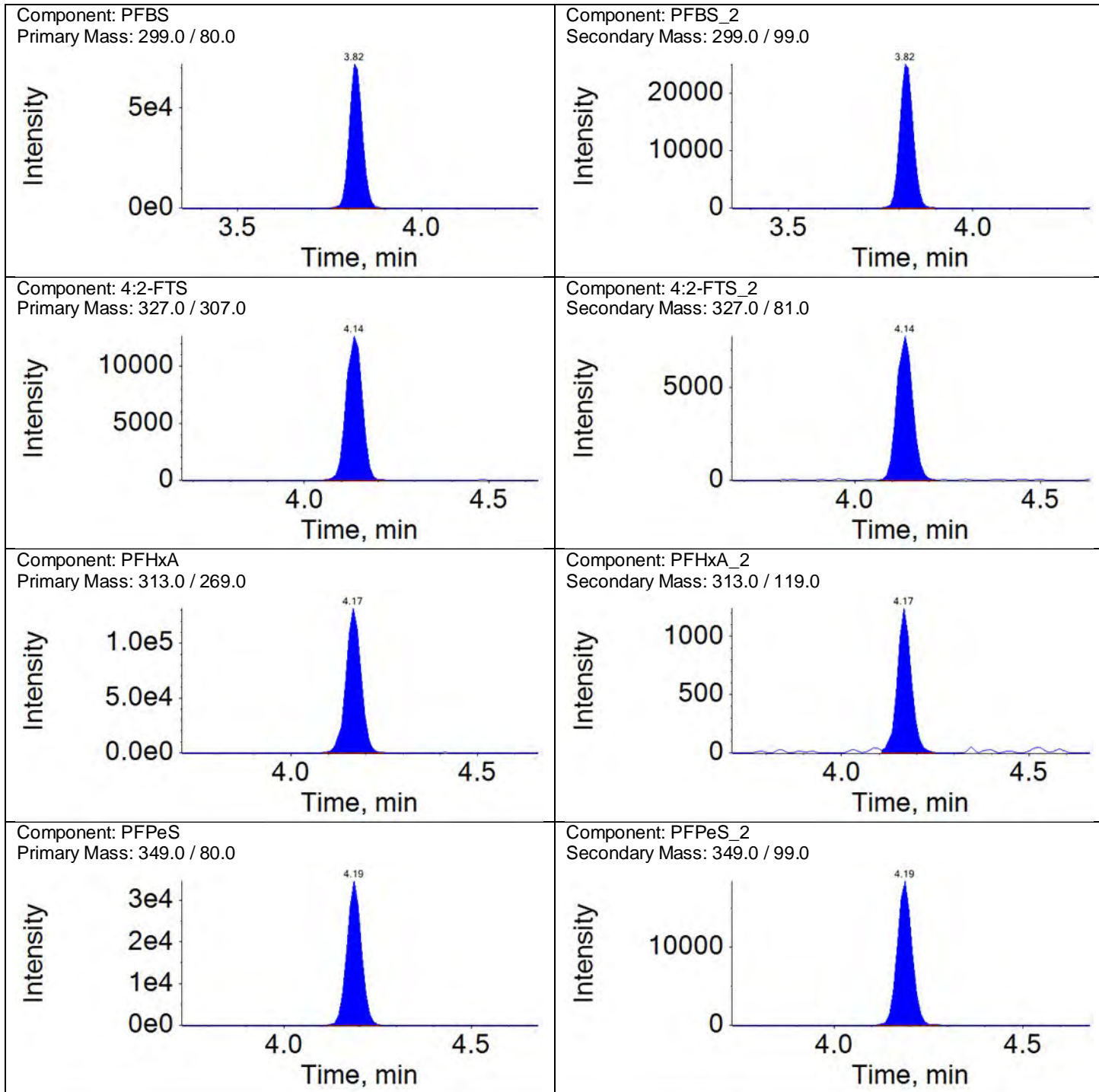
Ion Ratio Report

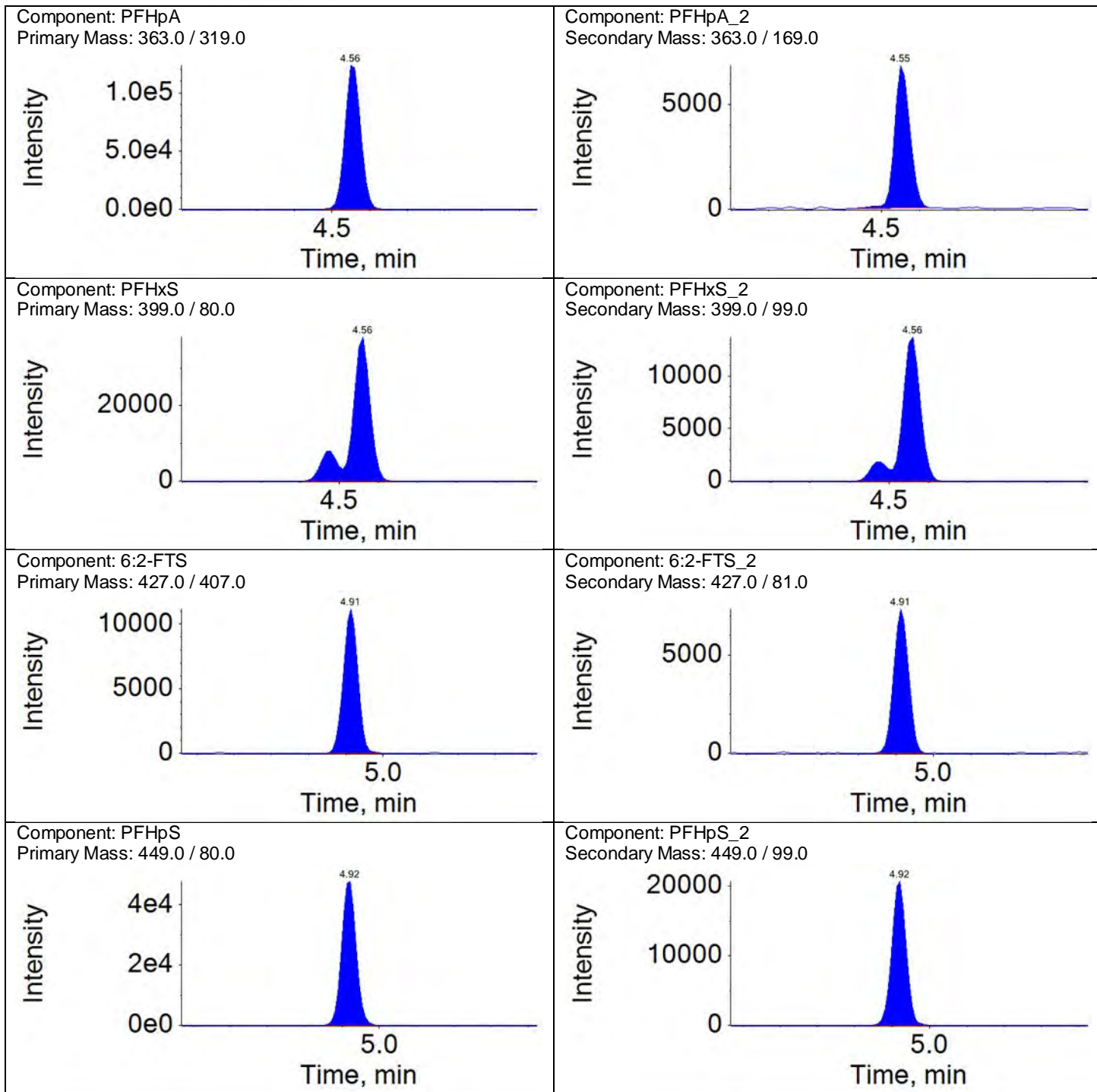
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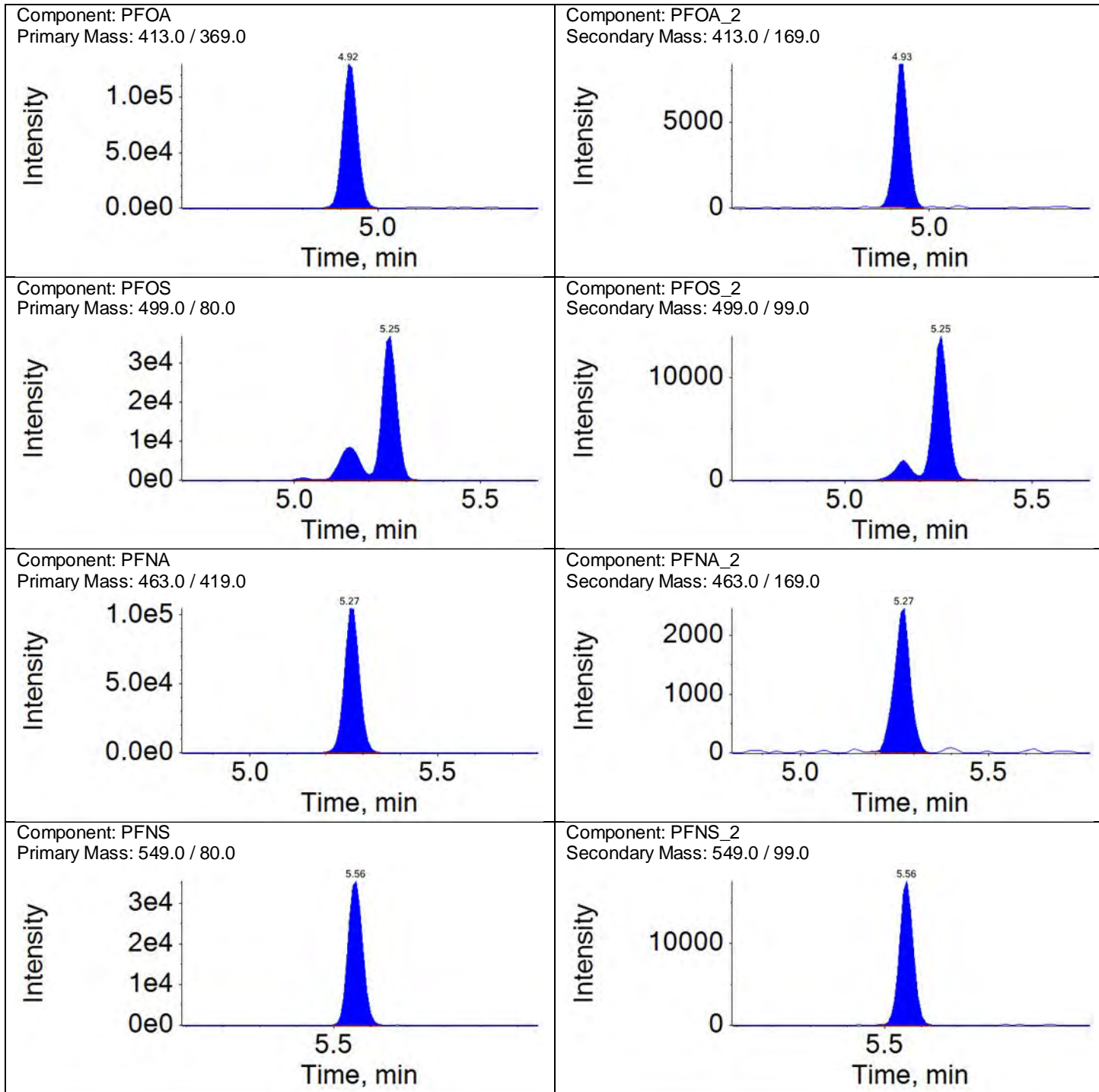
Instrument Name: LM27631

File Name: 18DEC06DCAL-27.wiff

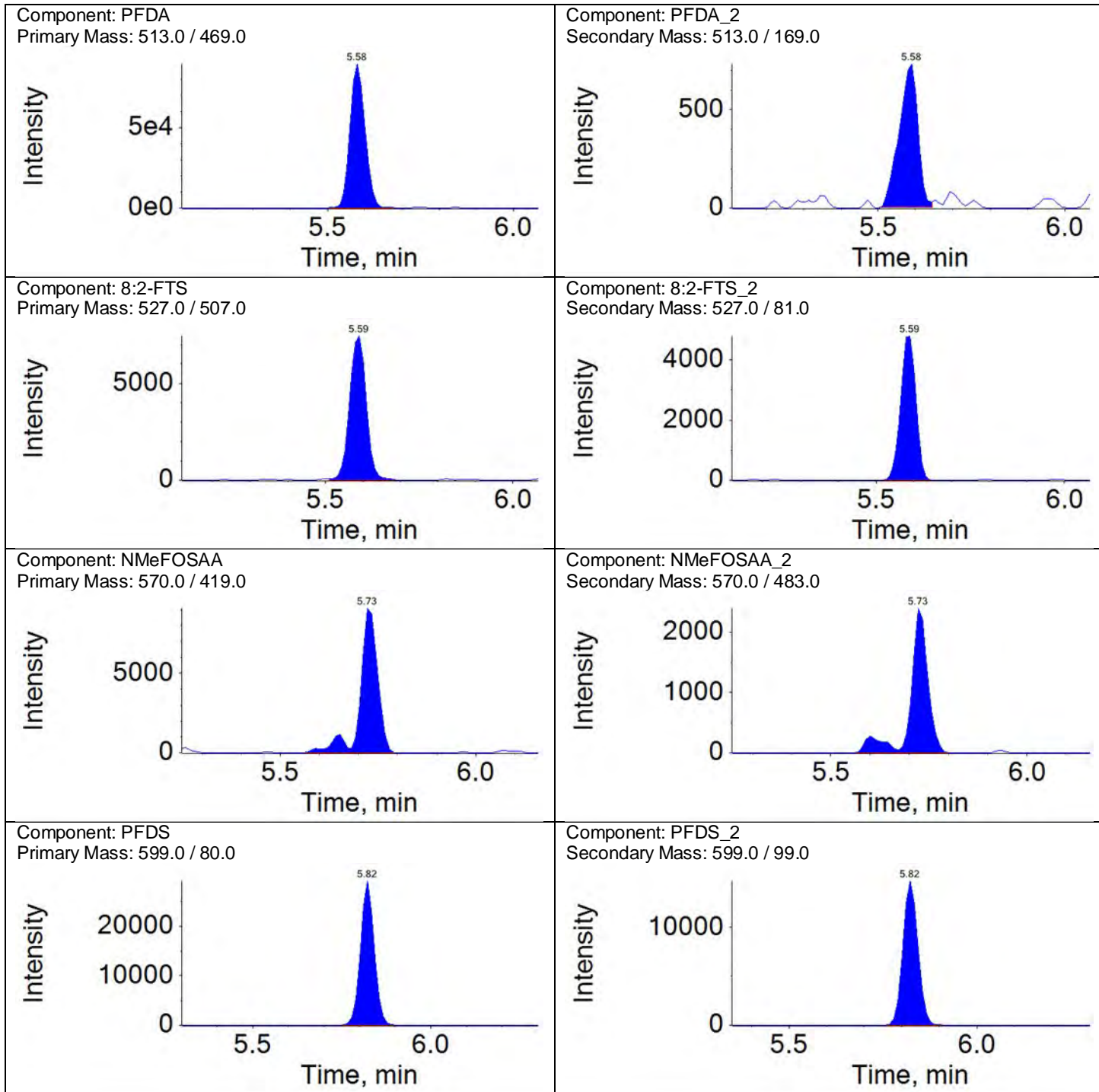
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PFBS_2	3.82	1.00	62986.43	A	0.3627	0.3579	-1	50	
4:2-FTS	4.14	1.00	38643.69	A	1.0000	1.0000			
4:2-FTS_2	4.14	1.00	23233.41	A	0.6542	0.6012	-8	50	
PFHxA	4.17	1.00	365926.61	A	1.0000	1.0000			
PFHxA_2	4.17	1.00	3186.66	M	0.0097	0.0087	-10	50	
PFPeS	4.19	1.10	92327.74	A	1.0000	1.0000			
PFPeS_2	4.19	1.10	49861.48	A	0.5262	0.5400	3	50	
PFHpA	4.56	1.00	361419.75	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	19446.73	A	0.0565	0.0538	-5	50	
PFHxS	4.56	1.00	132327.20	M	1.0000	1.0000			
PFHxS_2	4.56	1.00	46831.60	M	0.3645	0.3539	-3	50	
6:2-FTS	4.91	1.00	30175.96	A	1.0000	1.0000			
6:2-FTS_2	4.91	1.00	20371.72	A	0.6273	0.6751	8	50	
PFHpS	4.92	1.08	128849.80	A	1.0000	1.0000			
PFHpS_2	4.92	1.08	55393.12	A	0.4162	0.4299	3	50	
PFOA	4.92	1.00	351794.98	A	1.0000	1.0000			
PFOA_2	4.93	1.00	20987.94	A	0.0616	0.0597	-3	50	
PFOS	5.25	1.00	134760.97	M	1.0000	1.0000			
PFOS_2	5.25	1.00	43699.03	M	0.3021	0.3243	7	50	
PFNA	5.27	1.00	293549.54	A	1.0000	1.0000			
PFNA_2	5.27	1.00	7319.93	A	0.0192	0.0249	30	50	
PFNS	5.56	1.06	98097.94	A	1.0000	1.0000			
PFNS_2	5.56	1.06	45813.14	A	0.4845	0.4670	-4	50	
PFDA	5.58	1.00	251623.61	A	1.0000	1.0000			
PFDA_2	5.58	1.00	2553.39	M	0.0096	0.0101	5	50	
8:2-FTS	5.59	1.00	22886.21	A	1.0000	1.0000			
8:2-FTS_2	5.59	1.00	13505.17	A	0.6117	0.5901	-4	50	
NMeFOSAA	5.73	1.00	28372.58	A	1.0000	1.0000			
NMeFOSAA_2	5.73	1.00	7393.75	M	0.2673	0.2606	-3	50	
PFDS	5.82	1.11	77164.09	A	1.0000	1.0000			
PFDS_2	5.82	1.11	40764.59	A	0.4952	0.5283	7	50	
PUnDA	5.85	1.00	247240.79	A	1.0000	1.0000			
PUnDA_2	5.85	1.00	1300.67	A	0.0041	0.0053	28	50	
NEtFOSAA	5.87	1.00	31960.94	A	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	21849.64	M	0.6726	0.6836	2	50	
PFDODA	6.08	1.00	325640.83	A	1.0000	1.0000			
PFDODA_2	6.08	1.00	3552.58	A	0.0133	0.0109	-18	50	
10:2-FTS	6.10	1.09	20128.37	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	12894.29	A	0.6969	0.6406	-8	50	
PFTrDA	6.28	1.03	282288.53	A	1.0000	1.0000			
PFTrDA_2	6.28	1.03	2341.28	M	0.0075	0.0083	10	50	
PFTeDA	6.45	1.00	217102.02	A	1.0000	1.0000			
PFTeDA_2	6.45	1.00	1209.29	A	0.0066	0.0056	-16	50	
PFHxDA	6.74	1.04	100823.70	A	1.0000	1.0000			
PFHxDA_2	6.74	1.04	5841.33	A	0.0616	0.0579	-6	50	
PFOA	6.99	1.08	70714.00	A	1.0000	1.0000			
PFOA_2	6.98	1.08	1837.52	A	0.0272	0.0260	-5	50	



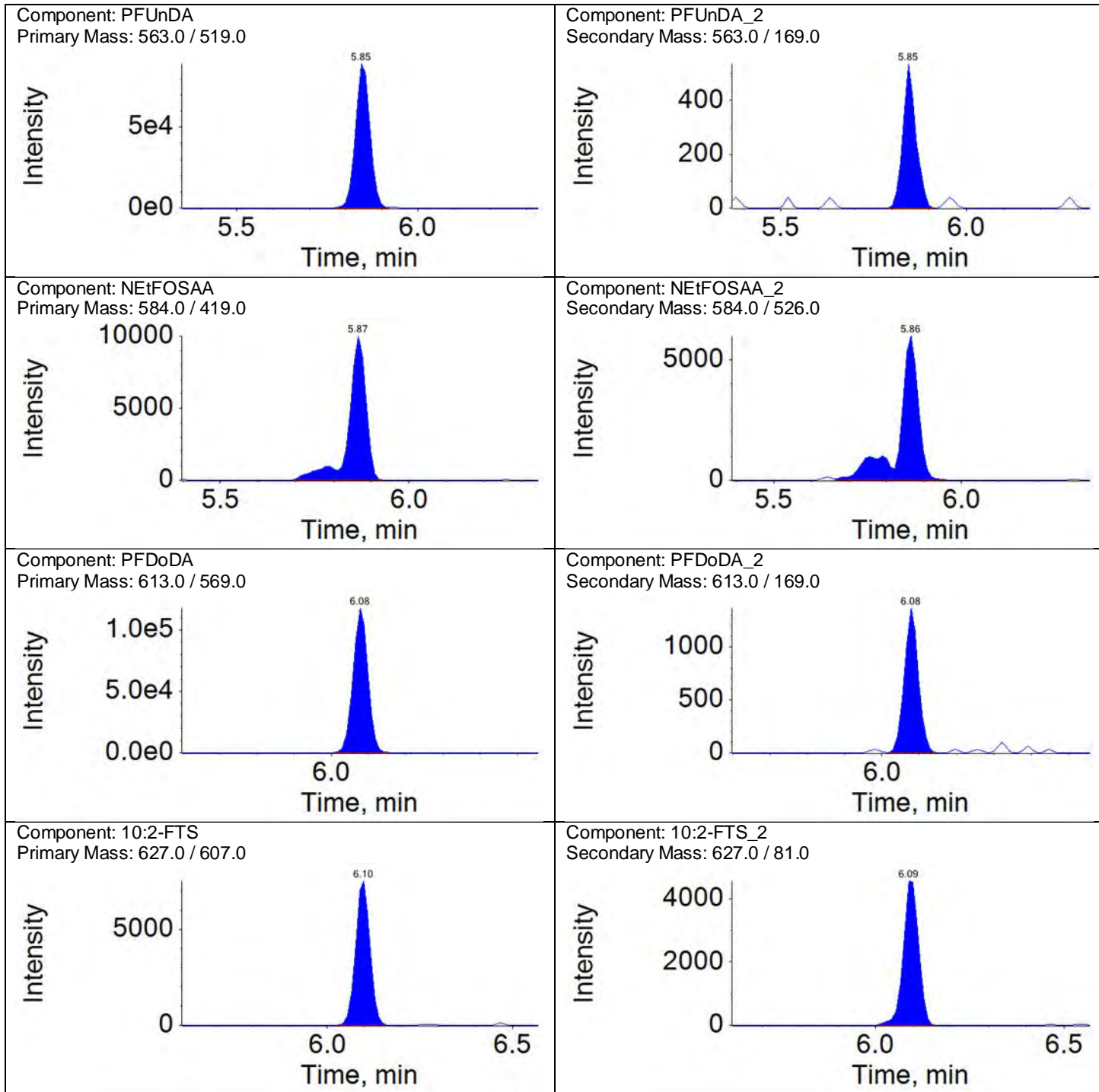


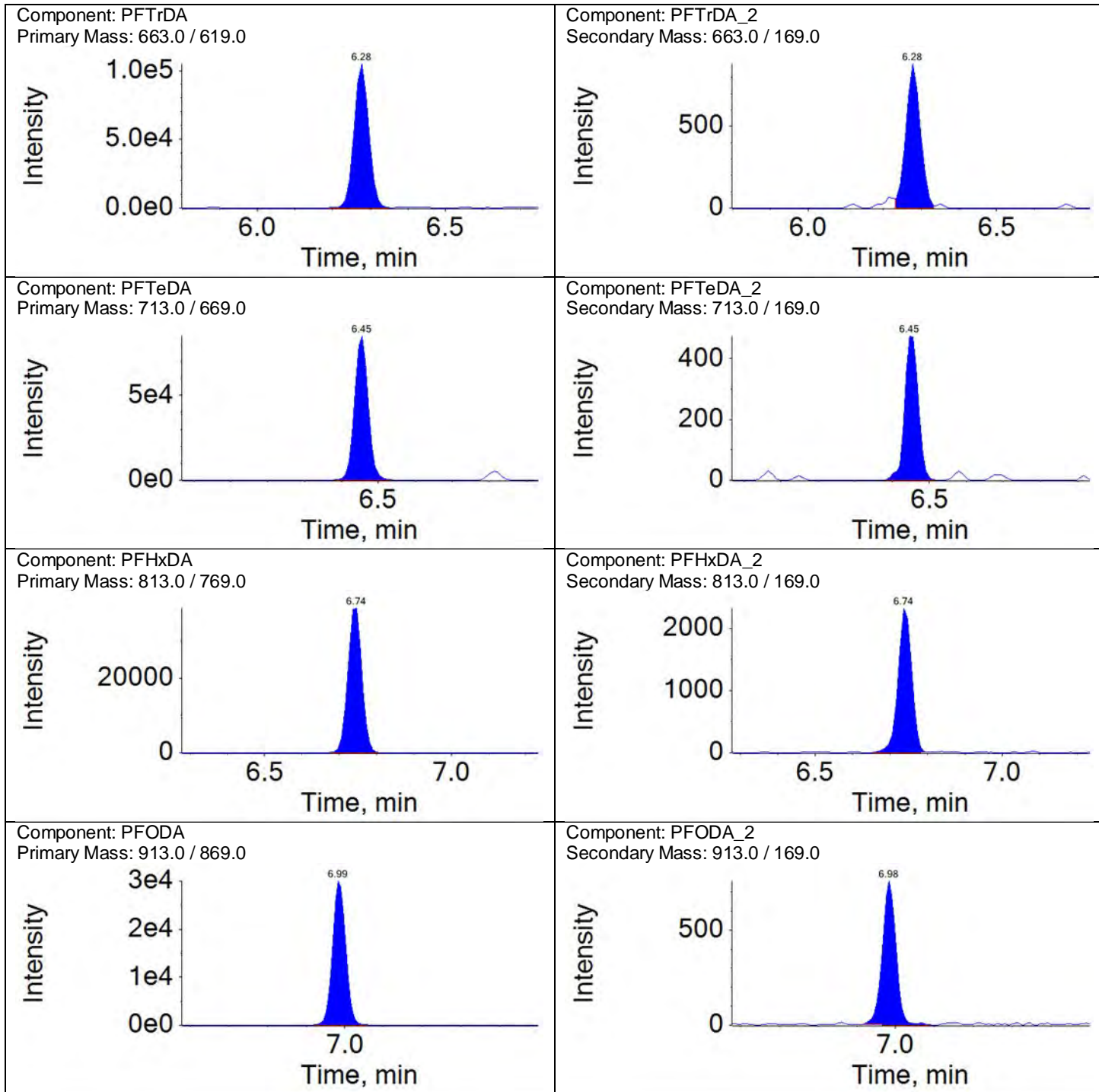












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL4	Data File:	18DEC06DCAL-28.wiff
Sample ID:	CALBRN41833B	Acquis Date:	2018-12-07T00:04:31
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	6	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	856263.9	825688.9	4	50	
13C2-PFOA	5.0	467059.4	449802.8	4	50	
13C4-PFOS	4.8	284903.1	276858.3	3	50	
13C2-PFDA	5.0	381032.9	315428.3	21	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	937321.2	13C3-PFBA	856263.9	1.095	5.000	4.845	97	70-130	
E13C5-PFPeA	865794.5	13C3-PFBA	856263.9	1.011	5.000	4.802	96	70-130	
E13C3-PFBFS	451275.8	13C3-PFBA	856263.9	0.527	4.650	4.467	96	70-130	
E13C2-4:2-FTS	53204.1	13C2-PFOA	467059.4	0.114	4.670	4.464	96	70-130	
E13C5-PFHxA	653028.3	13C2-PFOA	467059.4	1.398	5.000	4.694	94	70-130	
E13C3-PFHxS	321174.9	13C2-PFOA	467059.4	0.688	4.730	4.411	93	70-130	
E13C4-PFHpA	530667.2	13C2-PFOA	467059.4	1.136	5.000	4.830	97	70-130	
E13C2-6:2-FTS	35211.1	13C2-PFOA	467059.4	0.075	4.750	4.670	98	70-130	
E13C8-PFOA	816400.1	13C2-PFOA	467059.4	1.748	5.000	4.941	99	70-130	
E13C8-PFOS	299310.5	13C4-PFOS	284903.1	1.051	4.780	4.715	99	70-130	
E13C9-PFNA	492781.5	13C4-PFOS	284903.1	1.730	5.000	4.888	98	70-130	
E13C6-PFDA	611644.1	13C2-PFDA	381032.9	1.605	5.000	4.254	85	70-130	
E13C2-8:2-FTS	23195.7	13C2-PFDA	381032.9	0.061	4.790	3.974	83	70-130	
E13C8-PFOA	688204.5	13C2-PFDA	381032.9	1.806	5.000	4.272	85	70-130	
Ed3-NMeFOSAA	86138.3	13C2-PFDA	381032.9	0.226	5.000	4.006	80	70-130	
E13C7-PFUnDA	335167.0	13C2-PFDA	381032.9	0.880	5.000	4.315	86	70-130	
Ed5-NEtFOSAA	70314.0	13C2-PFDA	381032.9	0.185	5.000	4.074	81	70-130	
E13C2-PFDoDA	777497.2	13C2-PFDA	381032.9	2.040	5.000	4.282	86	70-130	
Ed7-NMePFOSAE	283055.2	13C2-PFDA	381032.9	0.743	5.000	4.279	86	70-130	
Ed3-NMePFOSA	82821.3	13C2-PFDA	381032.9	0.217	5.000	3.960	79	70-130	
Ed9-NEtPFOSAE	227812.8	13C2-PFDA	381032.9	0.598	5.000	4.123	82	70-130	
Ed5-NEtPFOSA	69489.4	13C2-PFDA	381032.9	0.182	5.000	4.104	82	70-130	
E13C2-PFTeDA	559294.7	13C2-PFDA	381032.9	1.468	5.000	4.357	87	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

### Analyte Quantitation Peak Table

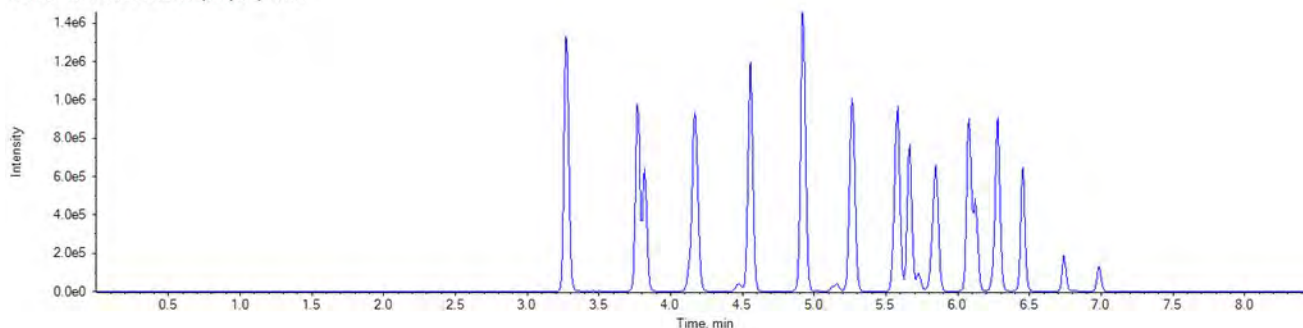
Sample Name: CAL4 Instrument Name: LM27631 File Name: 18DEC06DCAL-28.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.0000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	1362372.6		A	13C4-PFBA	3.27	937321.2	1.453	8.019
PFPeA	3.77	1.000	1316238.4		A	13C5-PFPeA	3.77	865794.5	1.520	7.998
PFBS	3.82	1.000	641650.7		A	13C3-PFBS	3.82	451275.8	1.422	7.048
4:2-FTS	4.13	1.000	148072.8		A	13C2-4:2-FTS	4.13	53204.1	2.783	7.460
PFHxA	4.17	1.000	1336811.1		A	13C5-PFHxA	4.17	653028.3	2.047	8.920
PFPeS	4.19	1.100	330977.6		A	13C3-PFBS	3.82	451275.8	0.733	7.262
PFHpA	4.55	1.000	1312251.0		A	13C4-PFHpA	4.55	530667.2	2.473	8.142
PFHxS	4.56	1.000	486027.4		M	13C3-PFHxS	4.56	321174.9	1.513	7.170
6:2-FTS	4.91	1.000	108350.6		A	13C2-6:2-FTS	4.91	35211.1	3.077	7.641
PFHpS	4.92	1.080	475629.6		A	13C3-PFHxS	4.56	321174.9	1.481	8.129
PFOA	4.92	1.000	1259378.8		A	13C8-PFOA	4.92	816400.1	1.543	8.430
PFOS	5.25	1.000	499514.7		M	13C8-PFOS	5.25	299310.5	1.669	6.922
PFNA	5.27	1.000	1095142.6		A	13C9-PFNA	5.27	492781.5	2.222	8.190
PFNS	5.56	1.060	364043.0		A	13C8-PFOS	5.25	299310.5	1.216	7.826
PFDA	5.58	1.000	911932.1		A	13C6-PFDA	5.58	611644.1	1.491	8.392
8:2-FTS	5.58	1.000	80381.5		A	13C2-8:2-FTS	5.58	23195.7	3.465	7.509
PFOSA	5.66	1.000	1076362.6		A	13C8-PFOSA	5.66	688204.5	1.564	8.114
NMeFOSAA	5.73	1.000	113391.5		M	d3-NMeFOSAA	5.72	86138.3	1.316	8.707
PFDS	5.82	1.110	290693.2		A	13C8-PFOS	5.25	299310.5	0.971	7.853
PfUnDA	5.85	1.000	899827.4		A	13C7-PfUnDA	5.85	335167.0	2.685	8.220
NEtFOSAA	5.86	1.000	112530.3		M	d5-NEtFOSAA	5.86	70314.0	1.600	8.088
PFDaDA	6.08	1.000	1203364.6		A	13C2-PFDaDA	6.08	777497.2	1.548	8.147
10:2-FTS	6.09	1.090	68099.5		A	13C2-8:2-FTS	5.58	23195.7	2.936	7.777
NMePFOSAE	6.13	1.000	547399.0		A	d7-NMePFOSAE	6.12	283055.2	1.934	8.404
NMePFOSA	6.13	1.000	132178.3		A	d3-NMePFOSA	6.13	82821.3	1.596	8.052
PFDoS	6.25	1.190	148019.2		A	13C8-PFOS	5.25	299310.5	0.495	7.539
NEtPFOSAE	6.28	1.000	580672.4		A	d9-NEtPFOSAE	6.27	227812.8	2.549	8.540
NEtPFOSA	6.29	1.000	112922.9		A	d5-NEtPFOSA	6.29	69489.4	1.625	7.779
PFTrDA	6.28	1.030	1039364.5		A	13C2-PFDaDA	6.08	777497.2	1.337	8.755
PFTeDA	6.45	1.000	814575.8		A	13C2-PFTeDA	6.45	559294.7	1.456	8.329
PFHxDA	6.74	1.040	349067.6		A	13C2-PFTeDA	6.45	559294.7	0.624	7.816
PFOA	6.98	1.080	262292.8		A	13C2-PFTeDA	6.45	559294.7	0.469	7.528

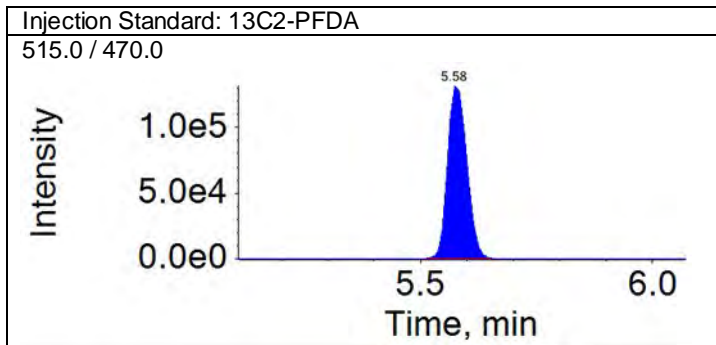
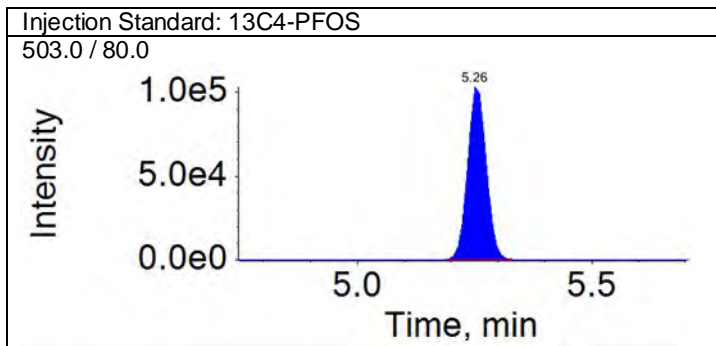
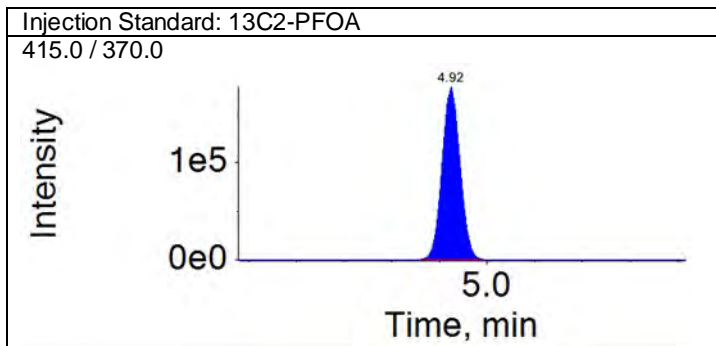
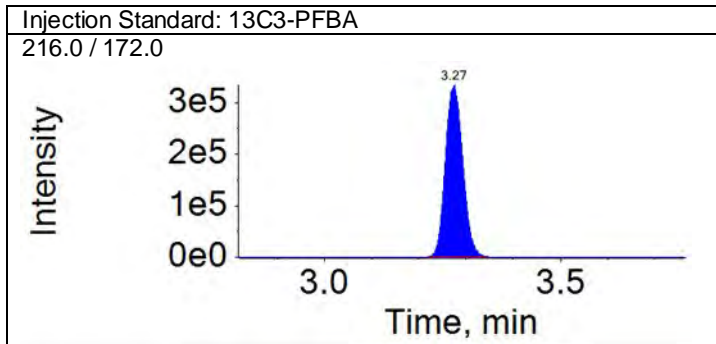
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TIC from 18DEC06DCAL-28.wiff (sample 1) - CAL4



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QMethod Name: 18AUG20QM

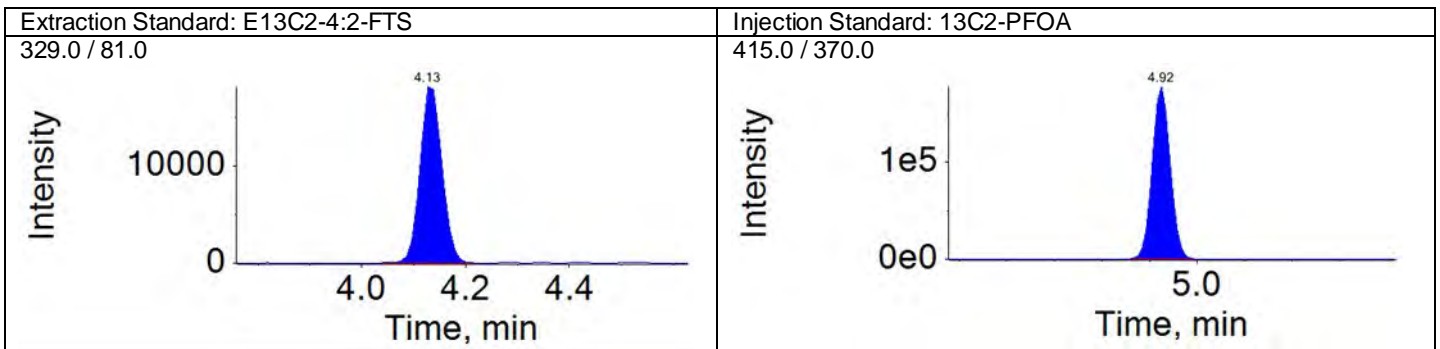
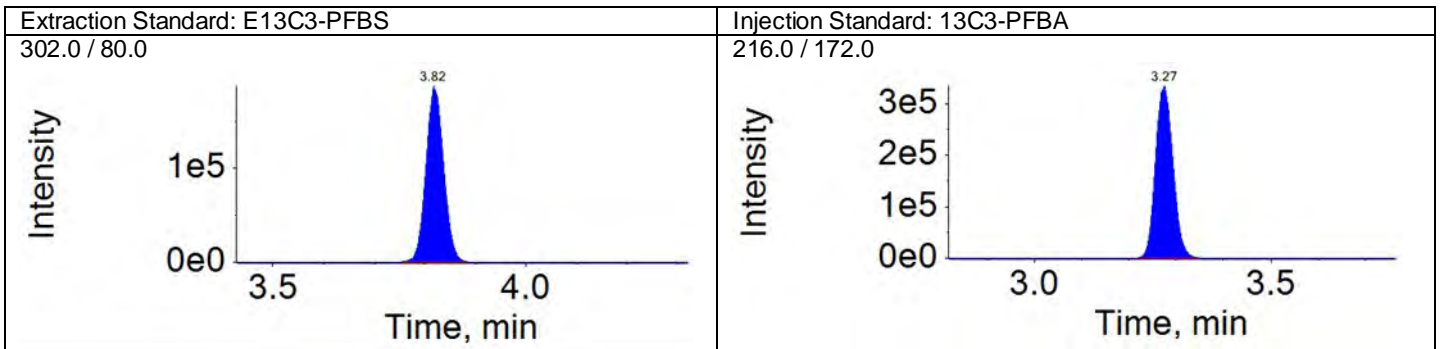
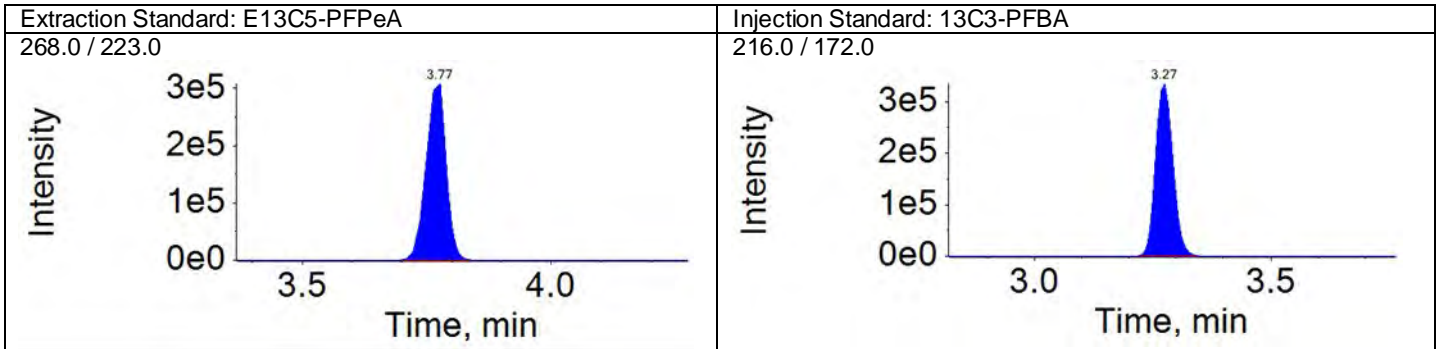
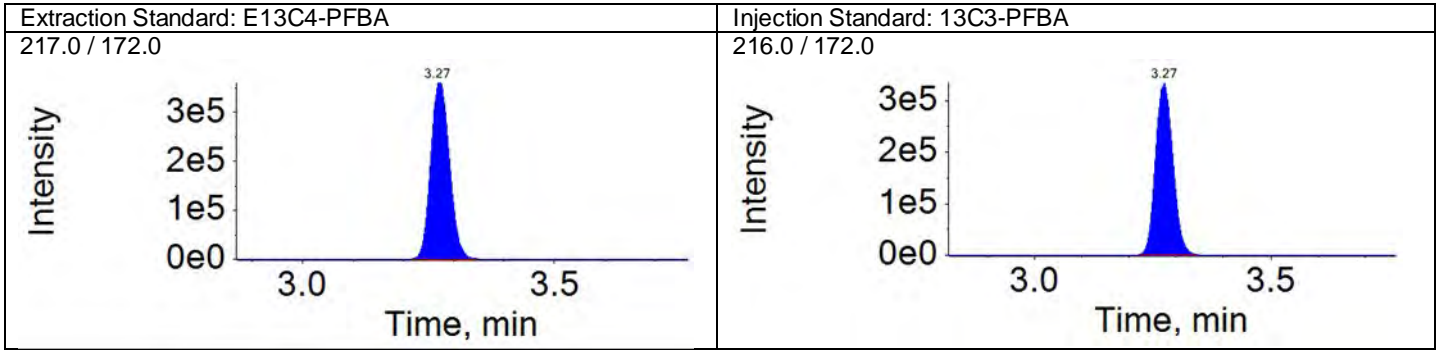
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

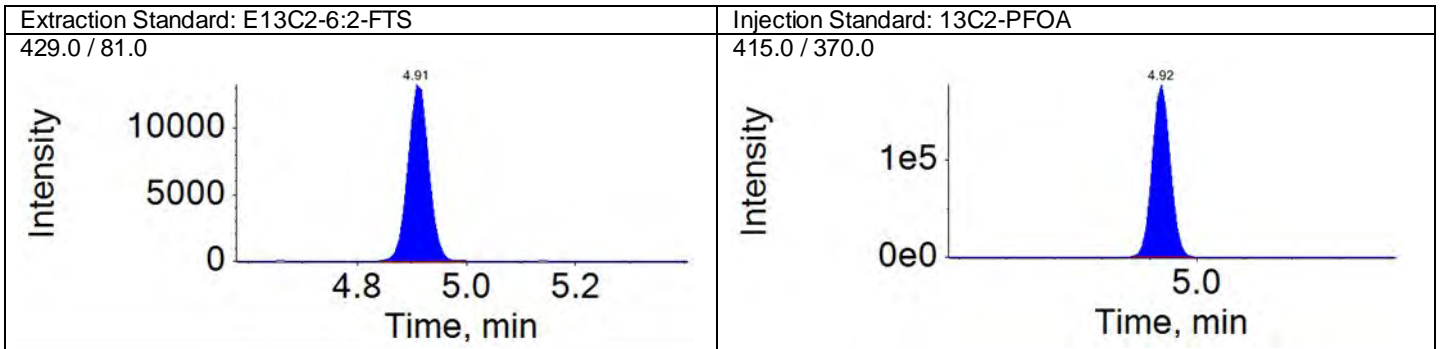
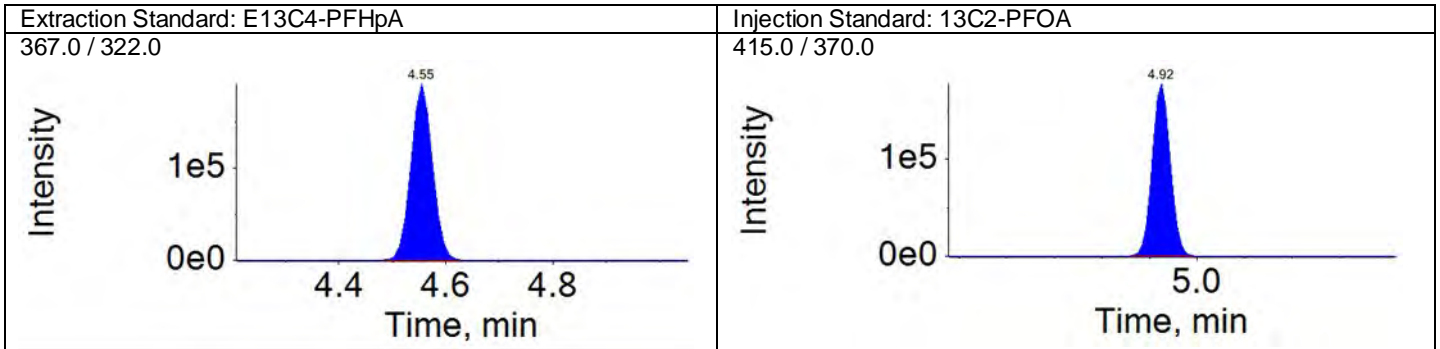
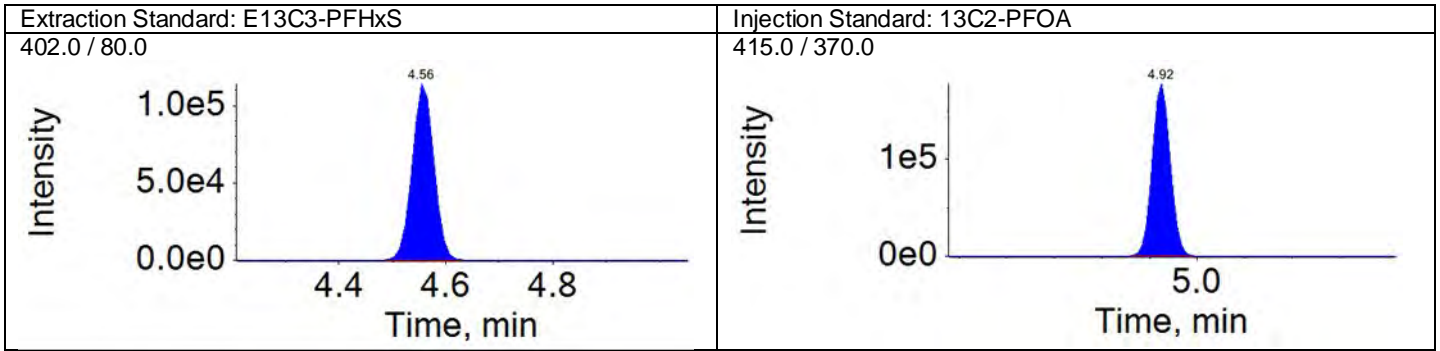
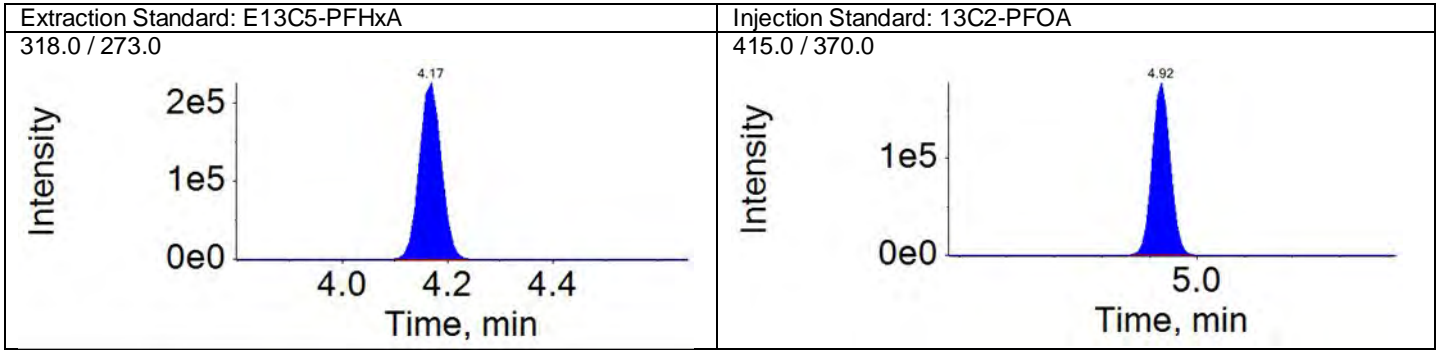
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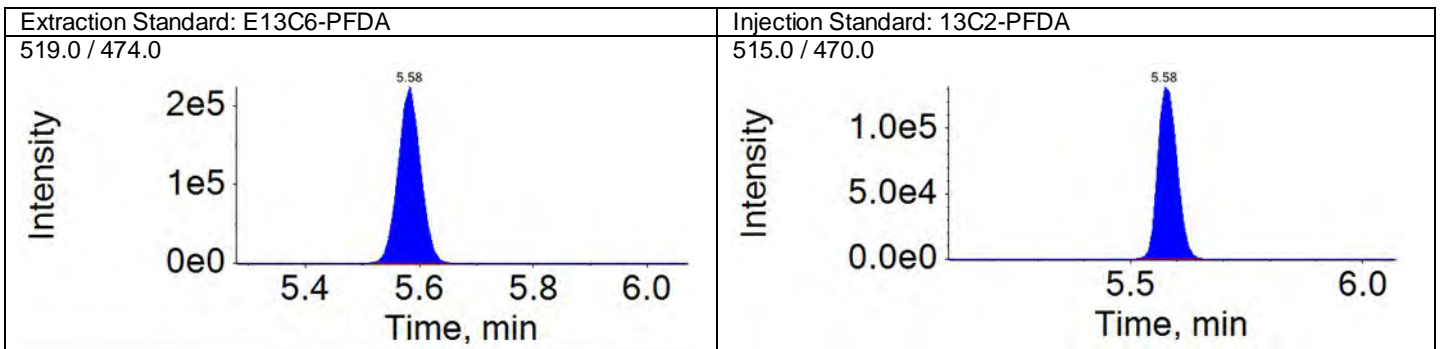
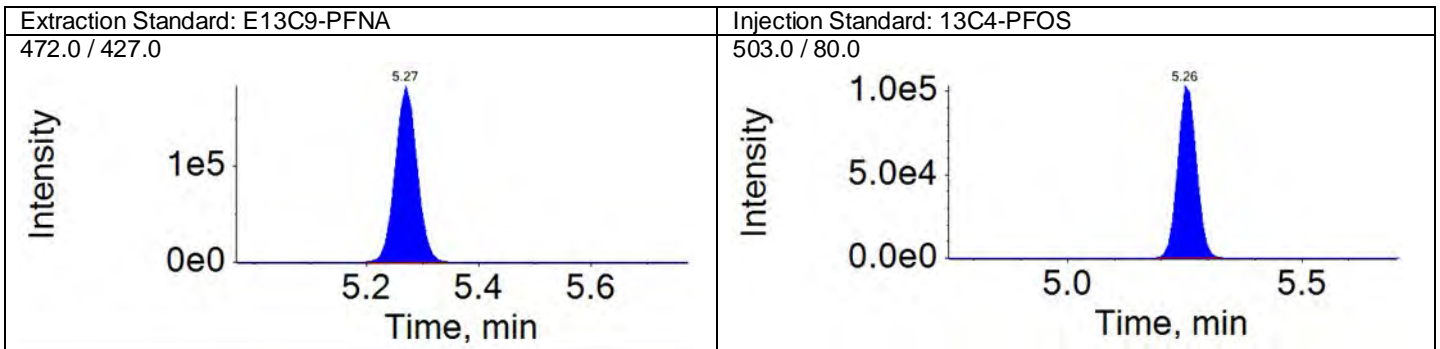
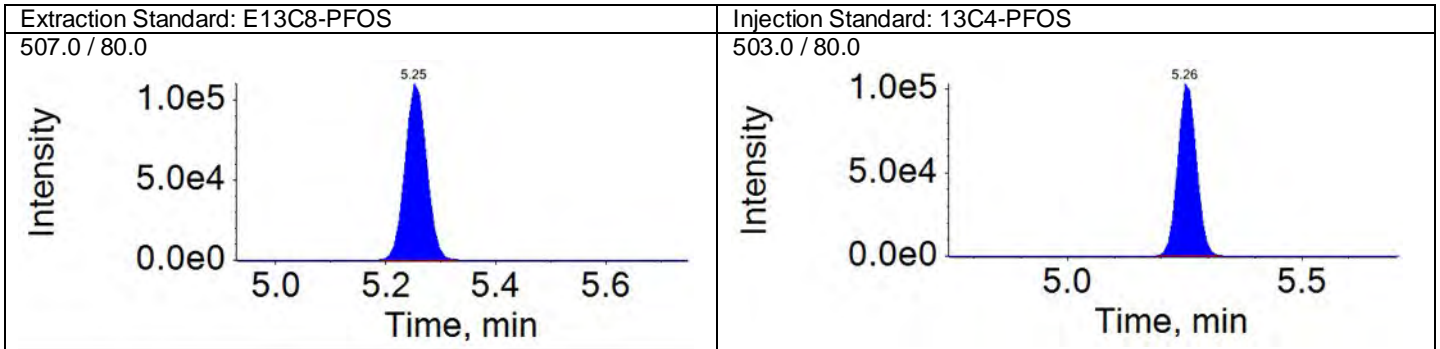
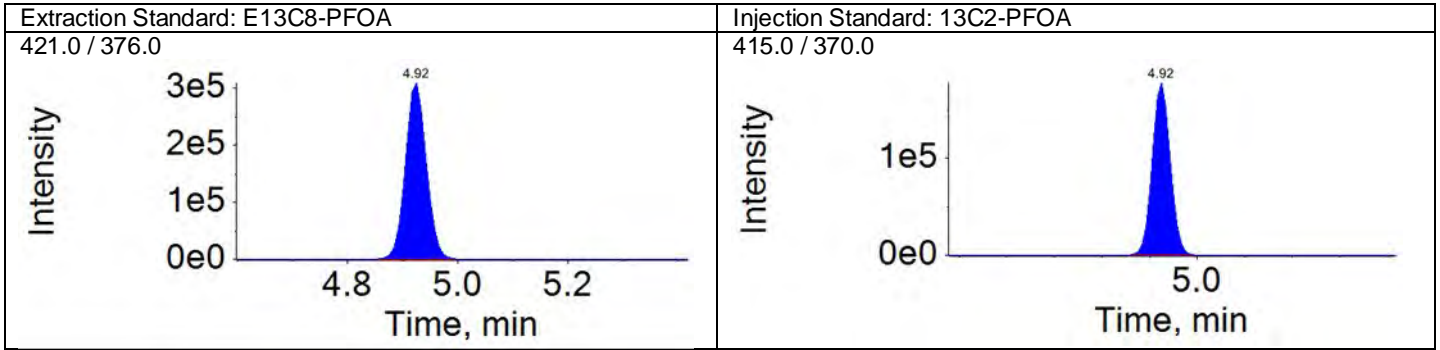
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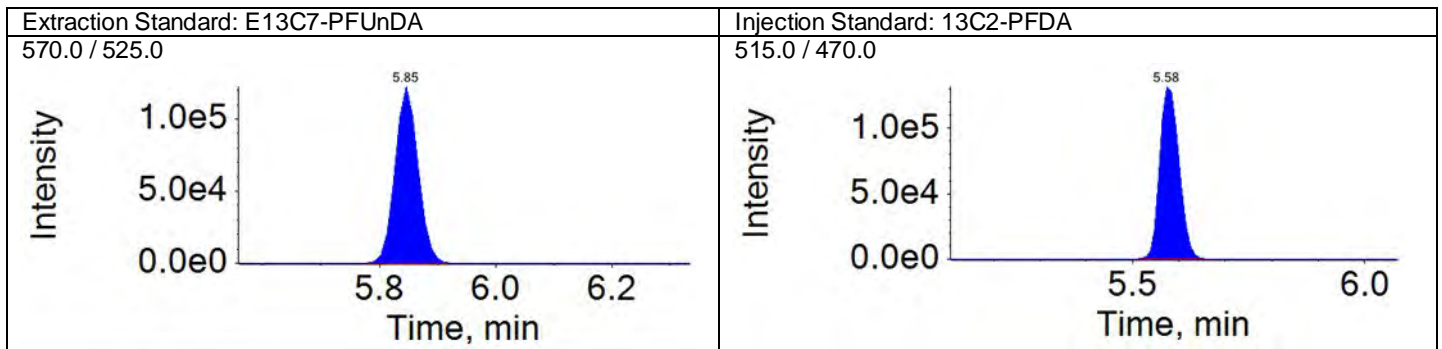
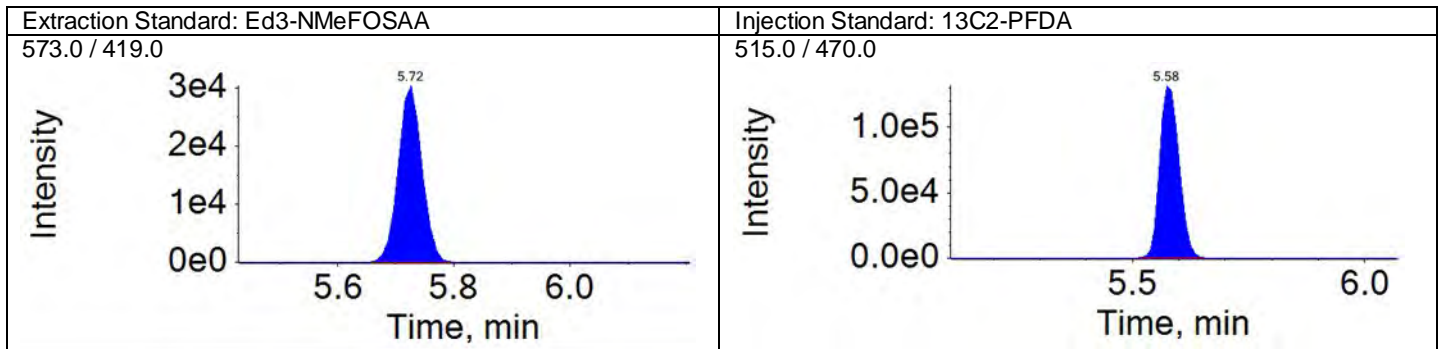
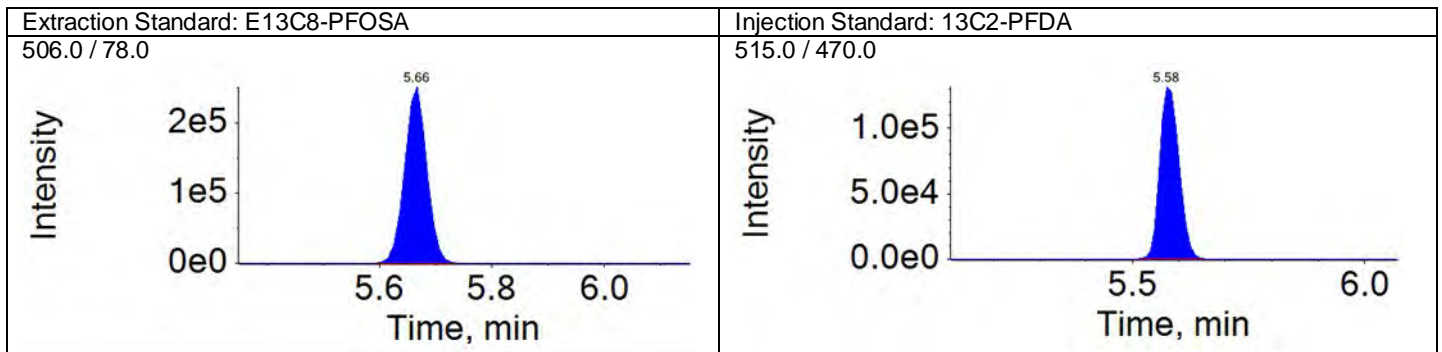
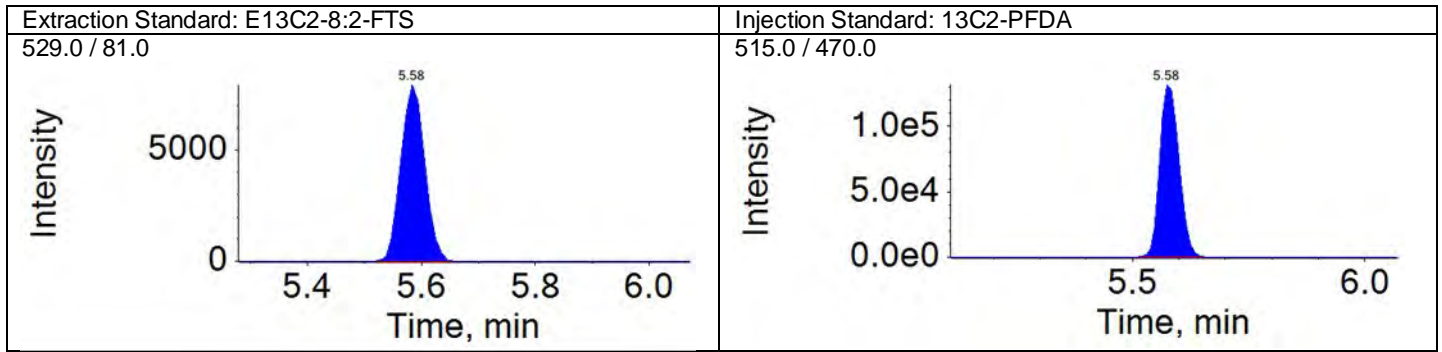
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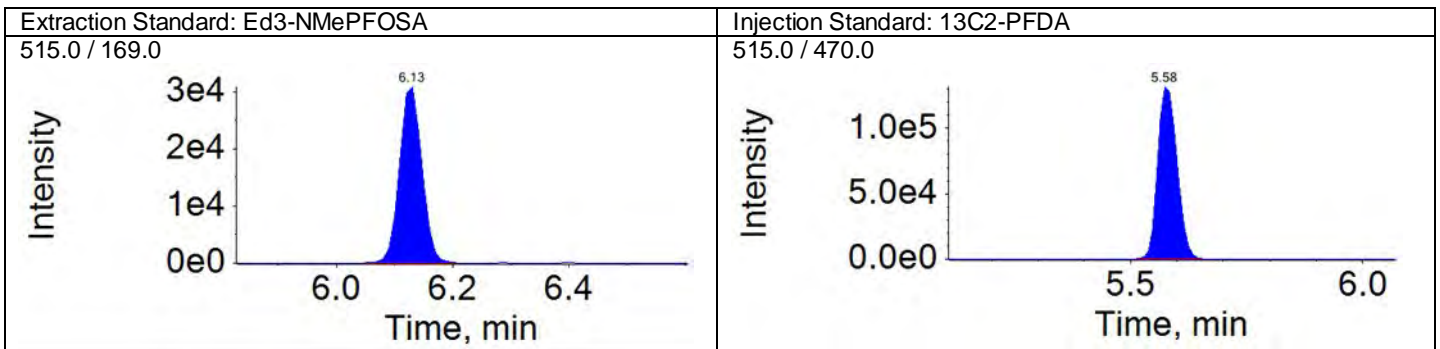
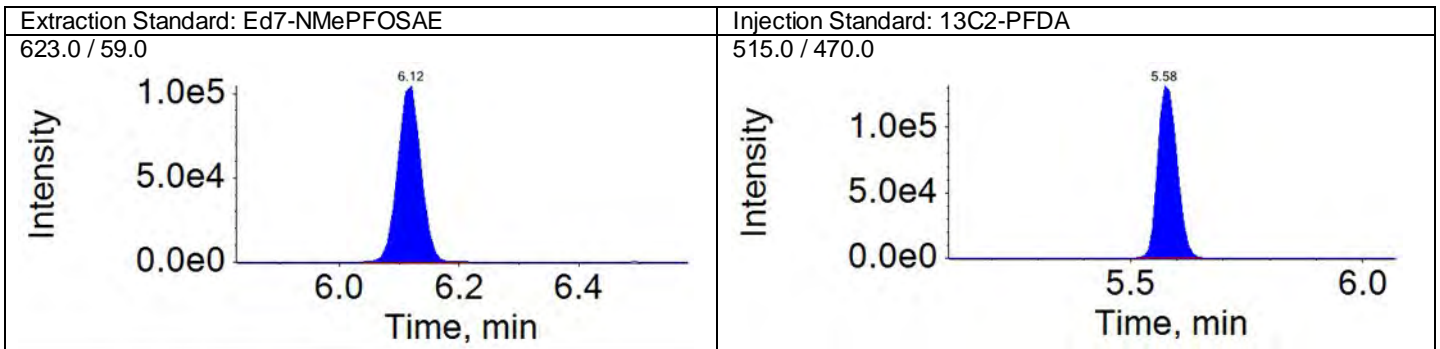
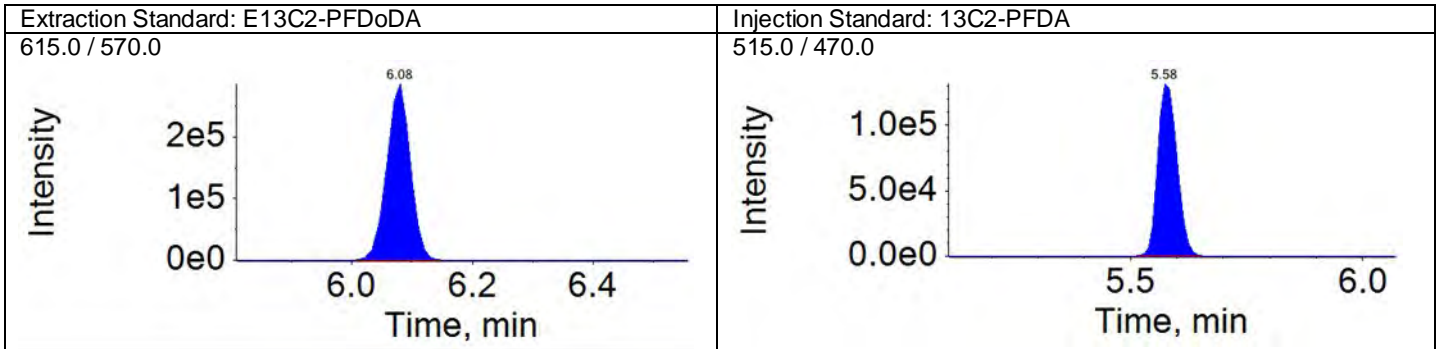
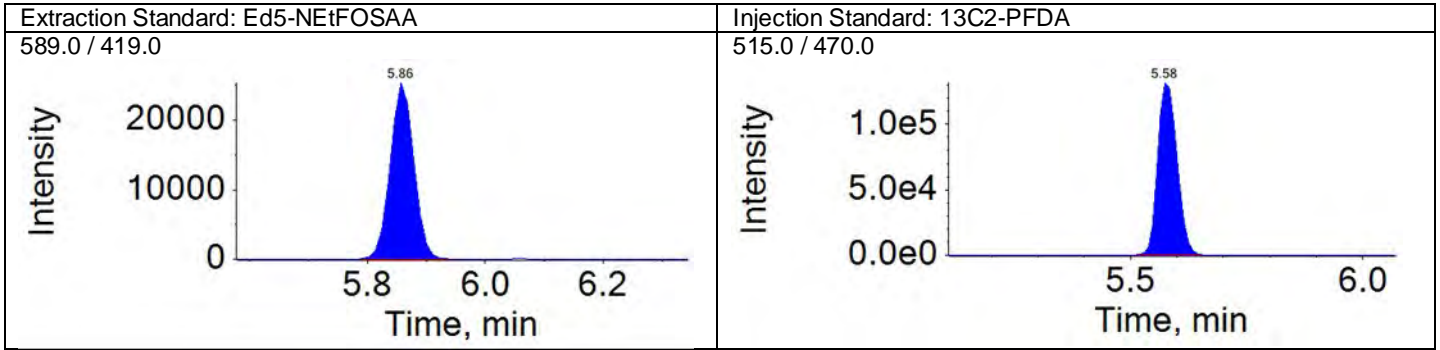
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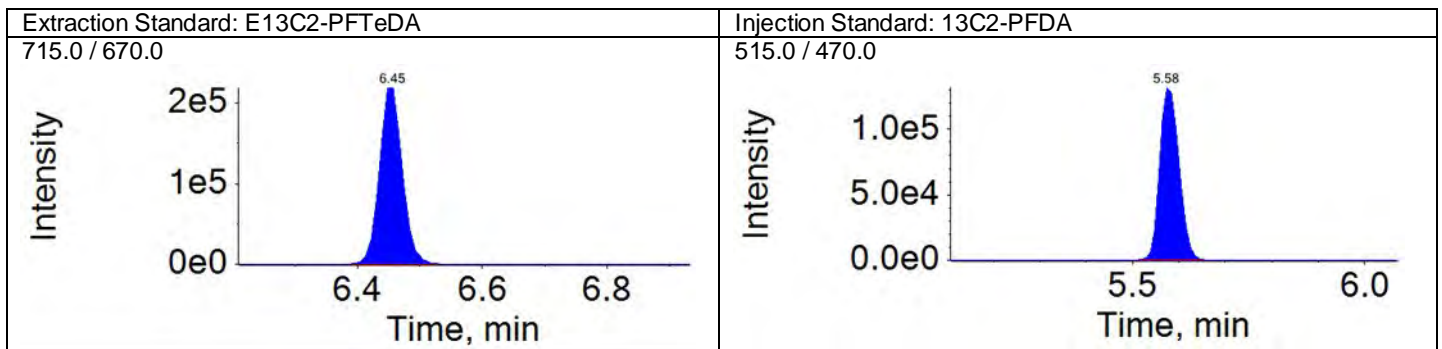
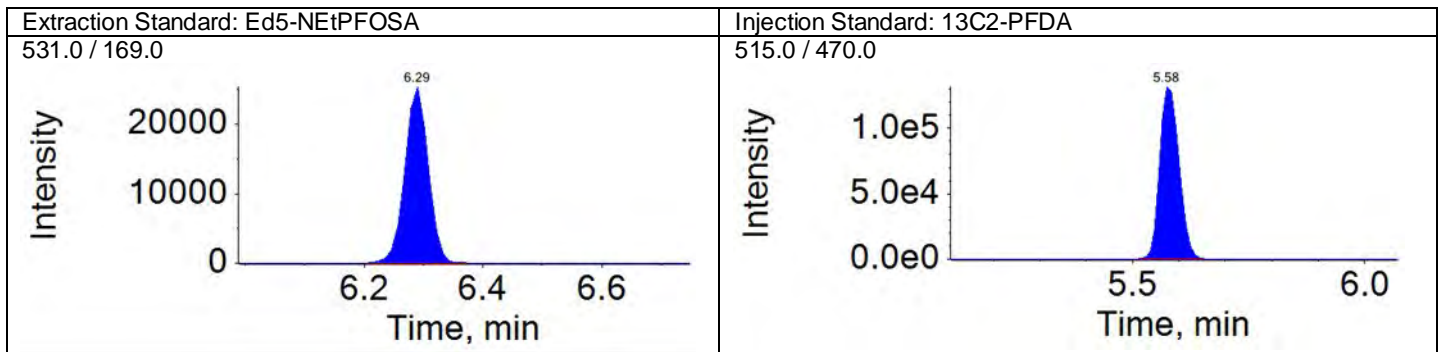
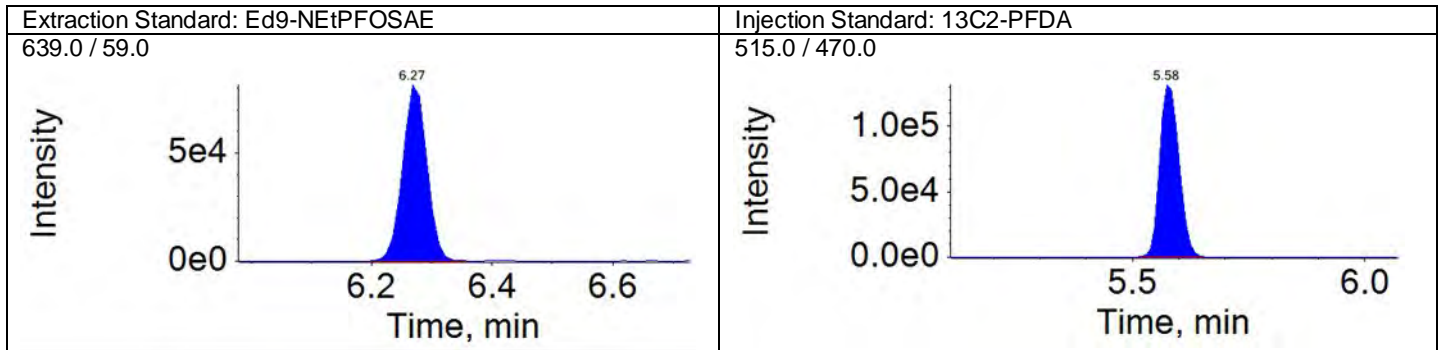
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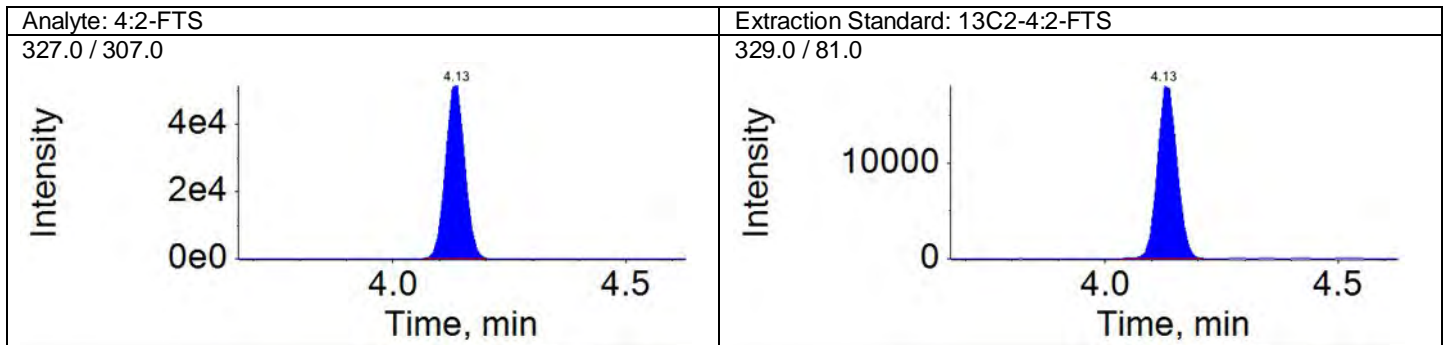
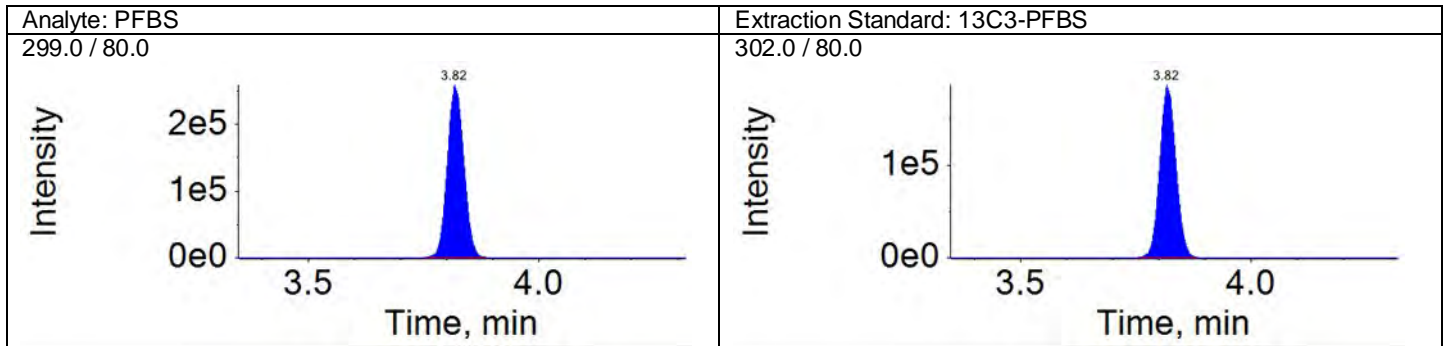
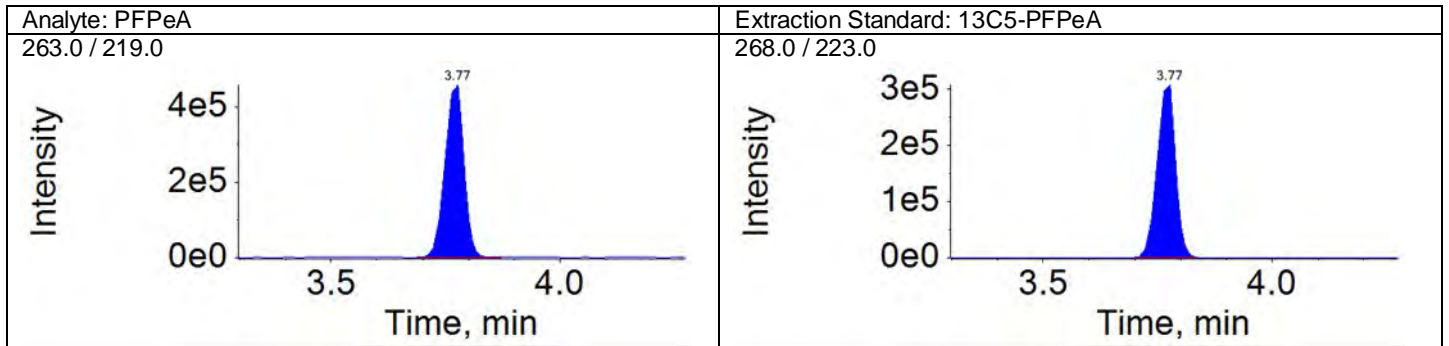
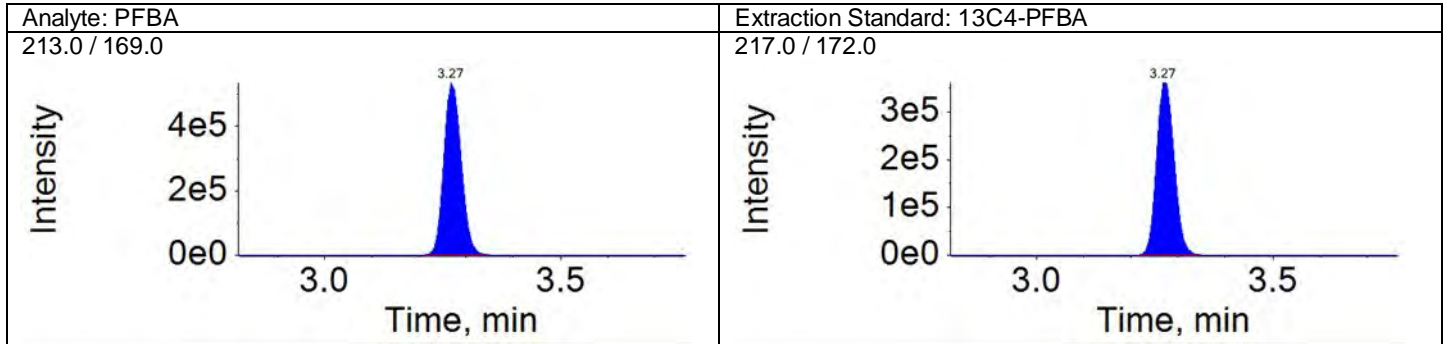
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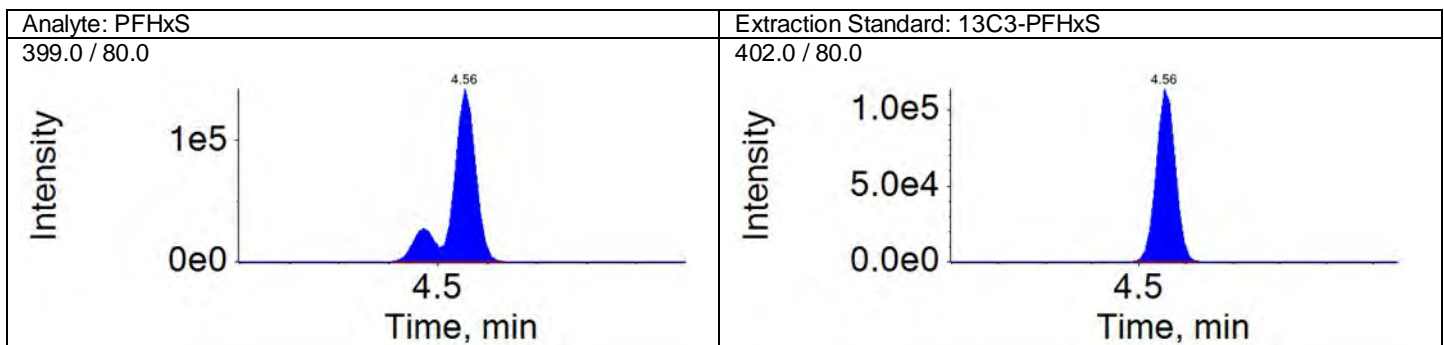
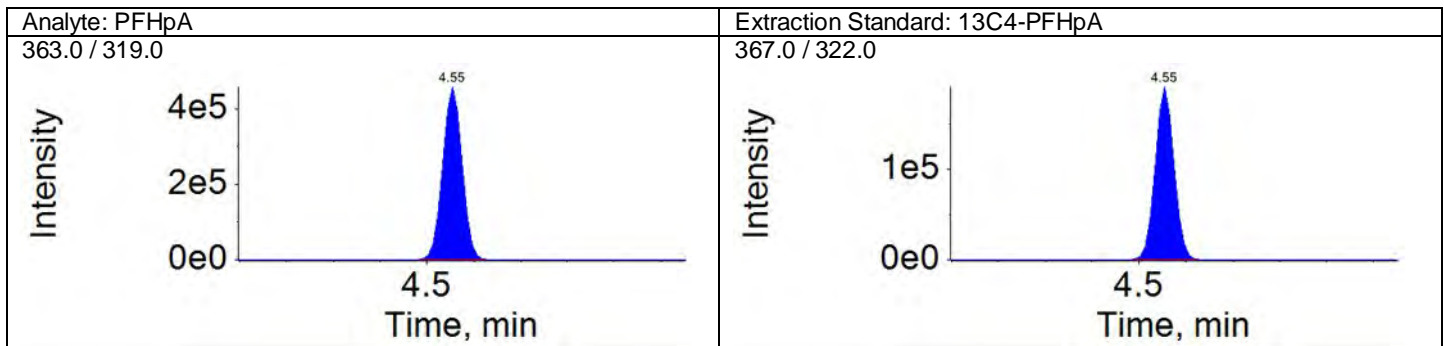
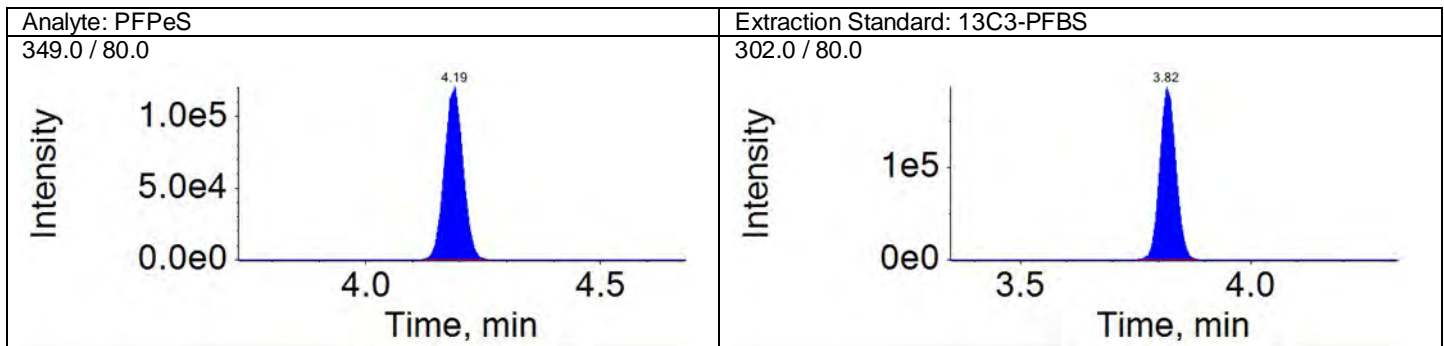
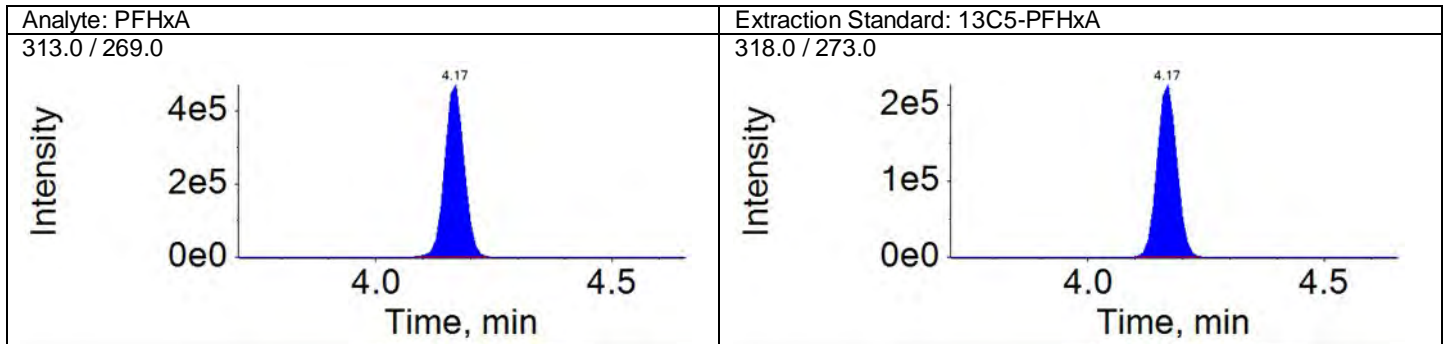
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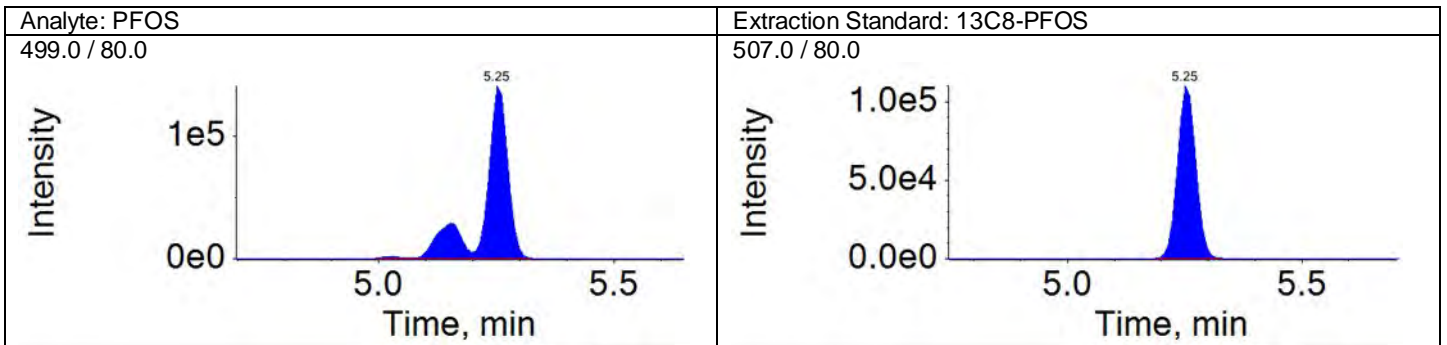
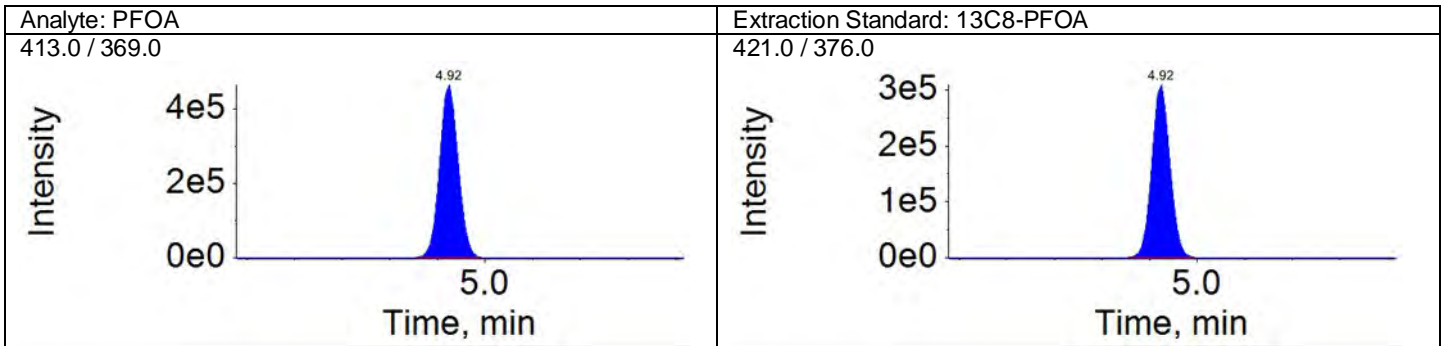
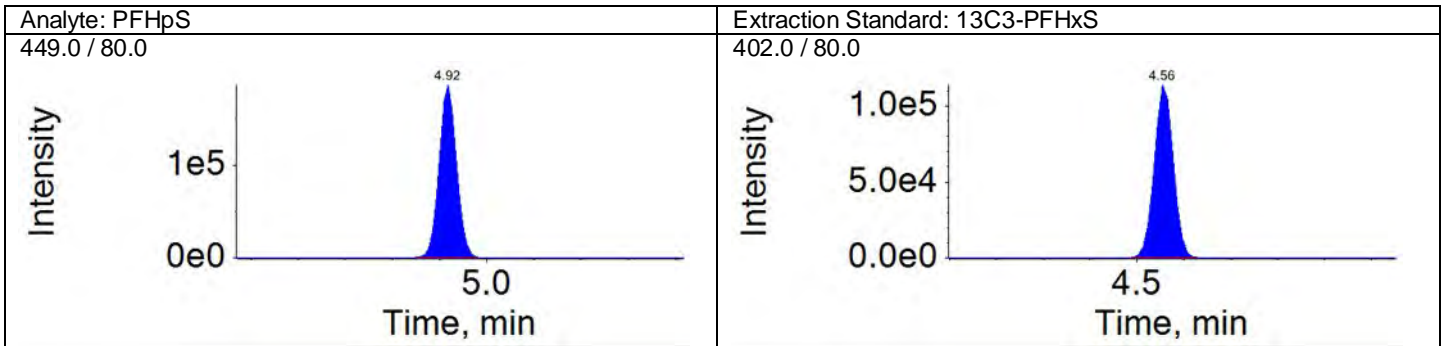
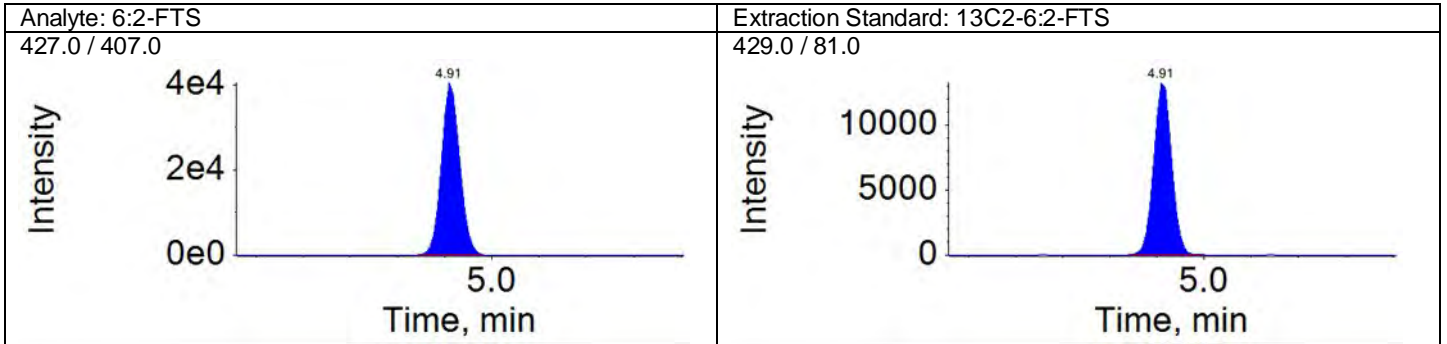
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



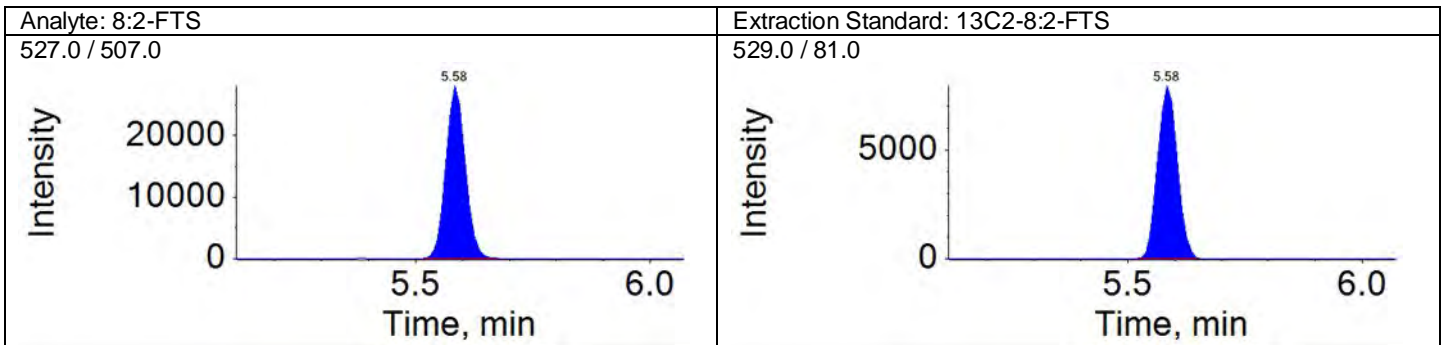
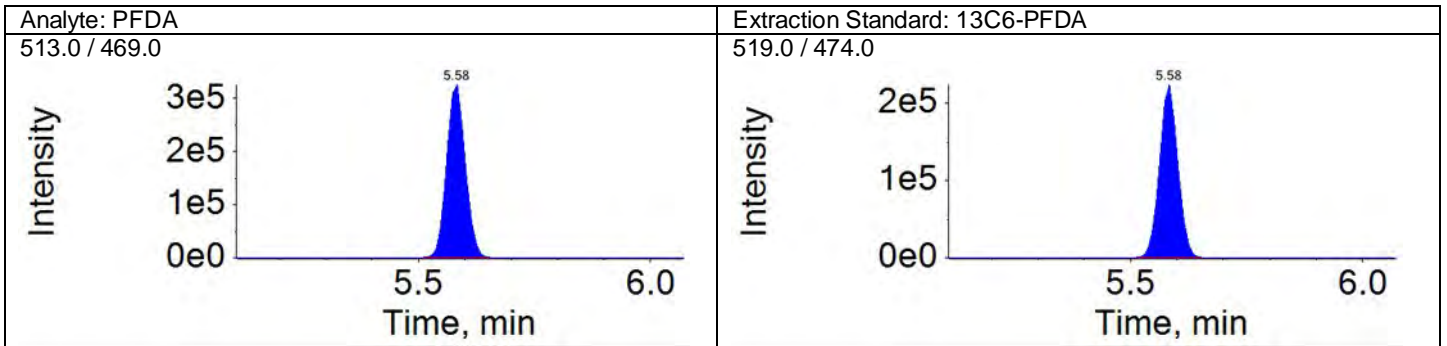
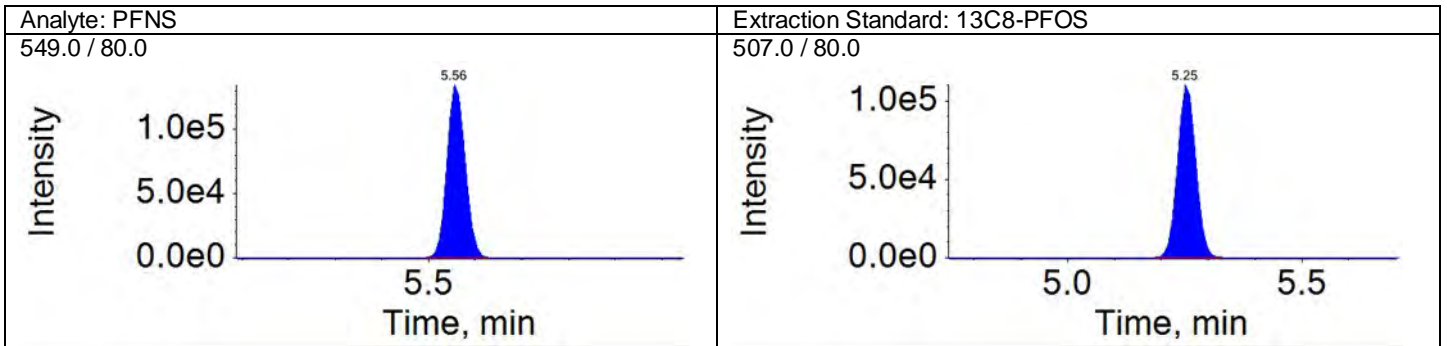
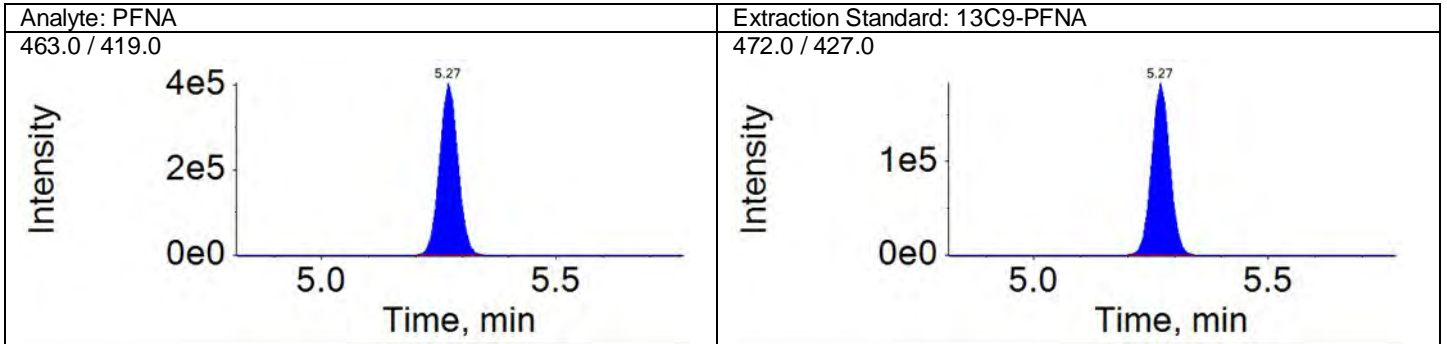
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



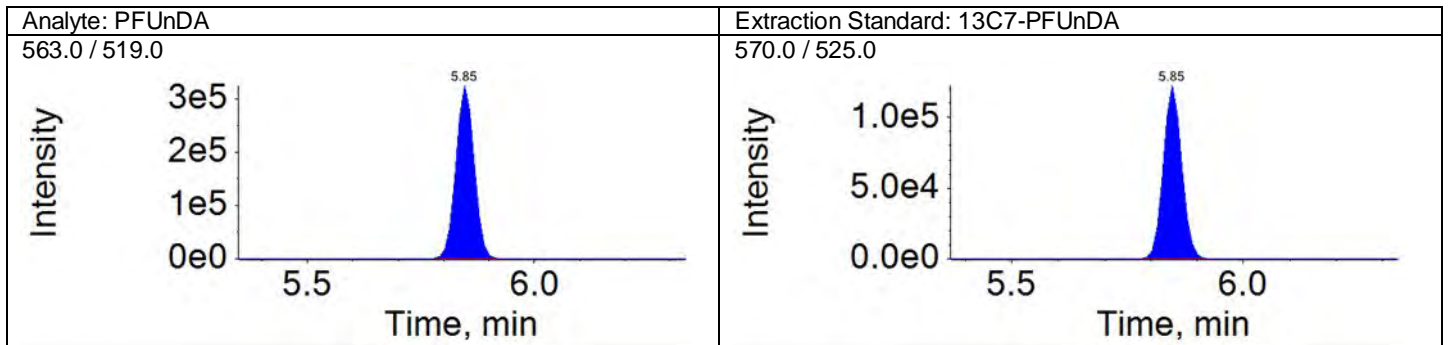
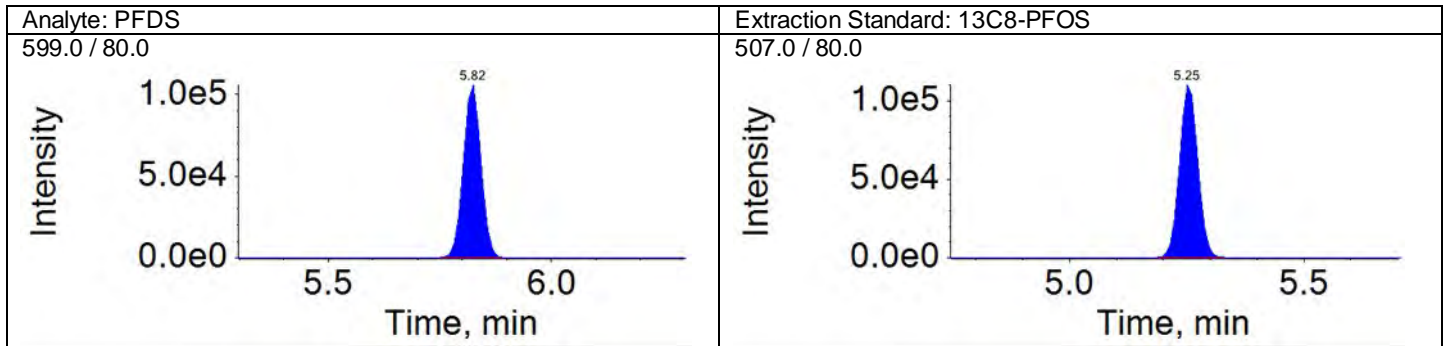
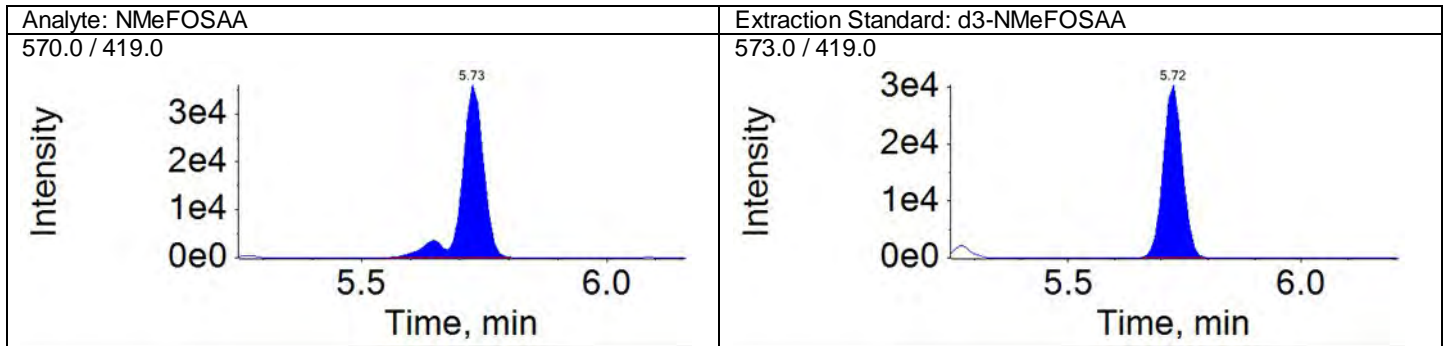
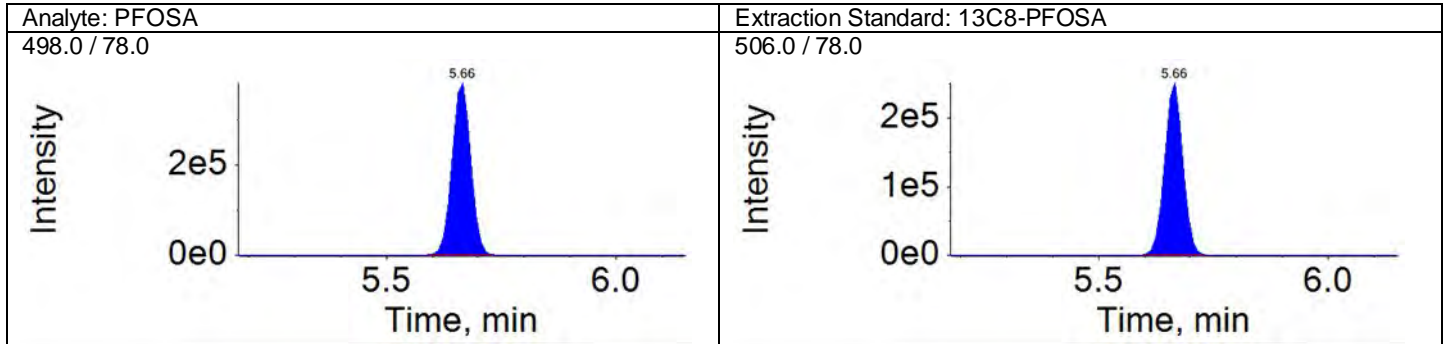
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

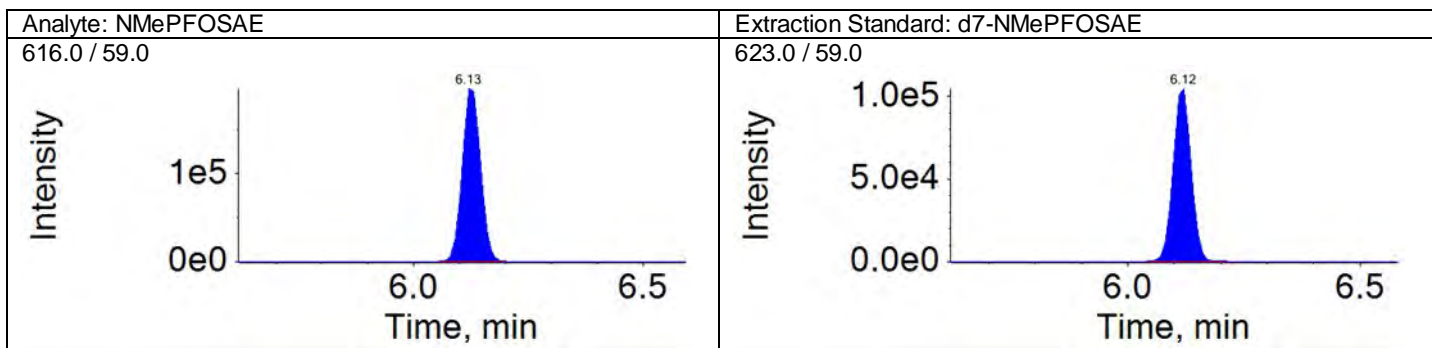
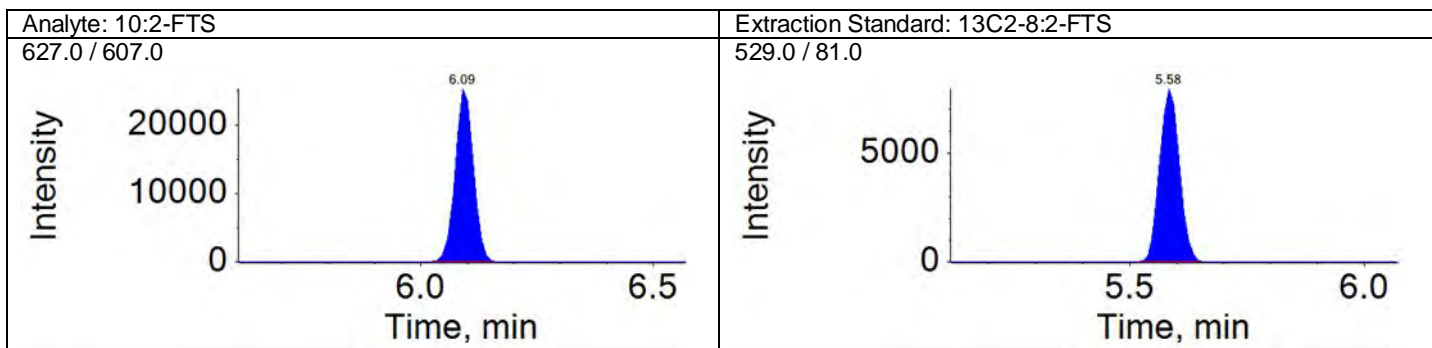
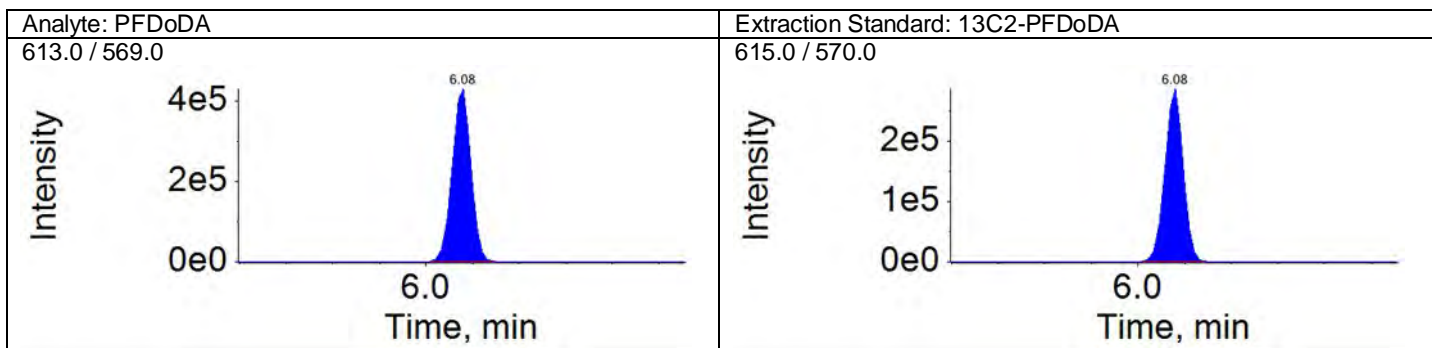
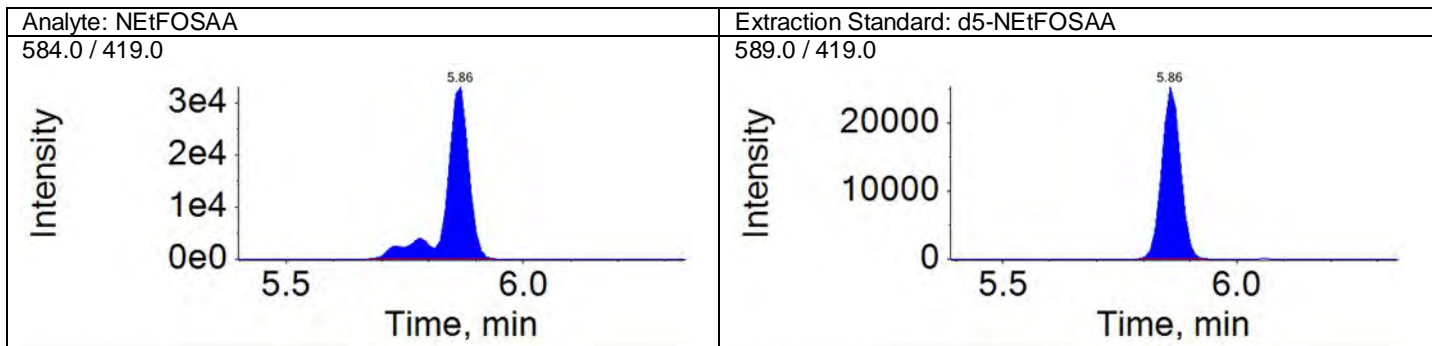
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Acquisition Method: 18AUG13\_3uL.dam





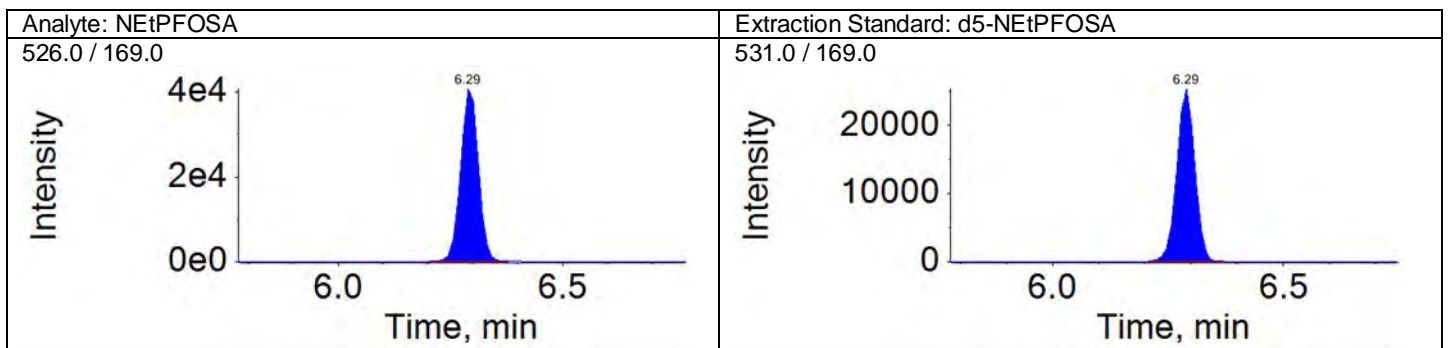
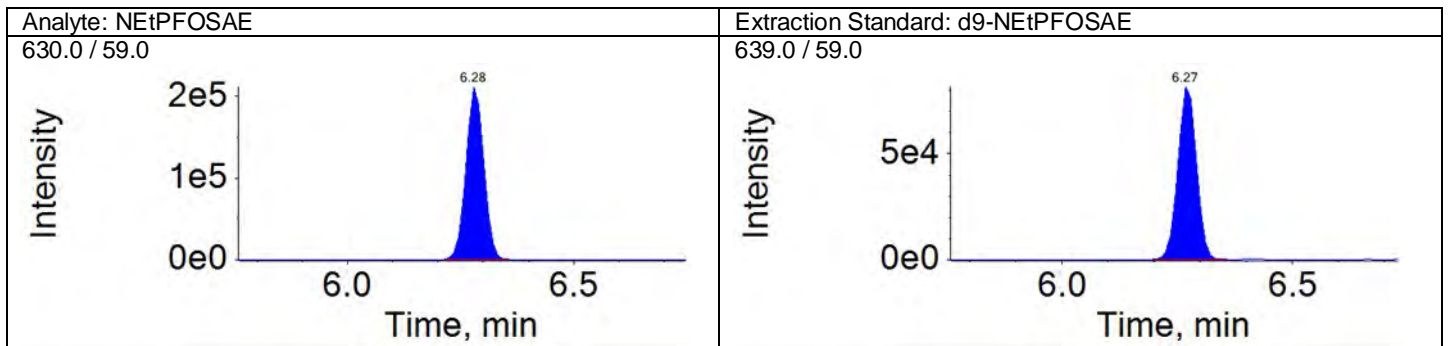
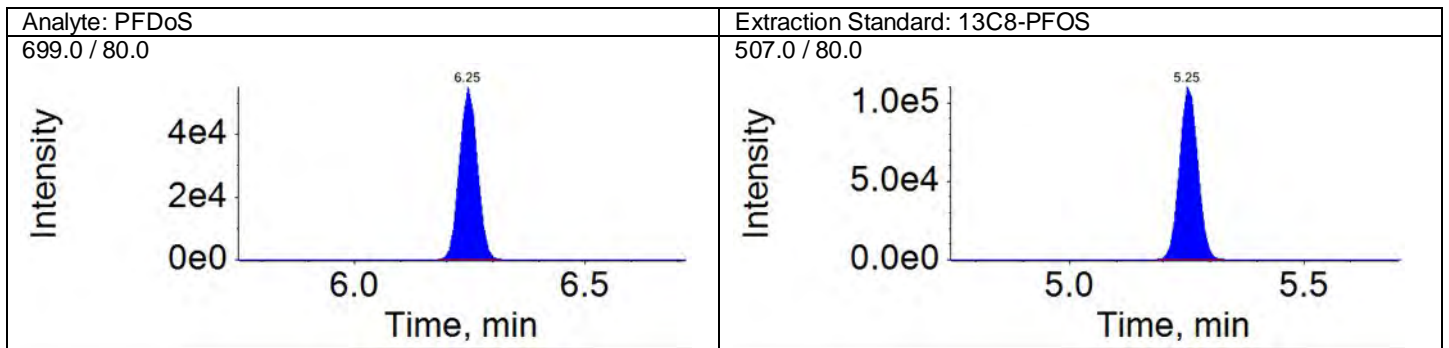
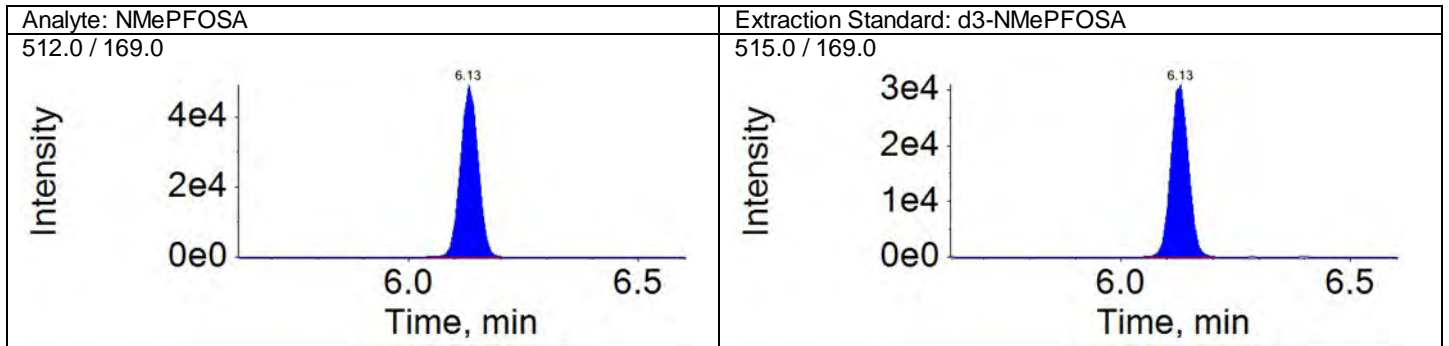
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

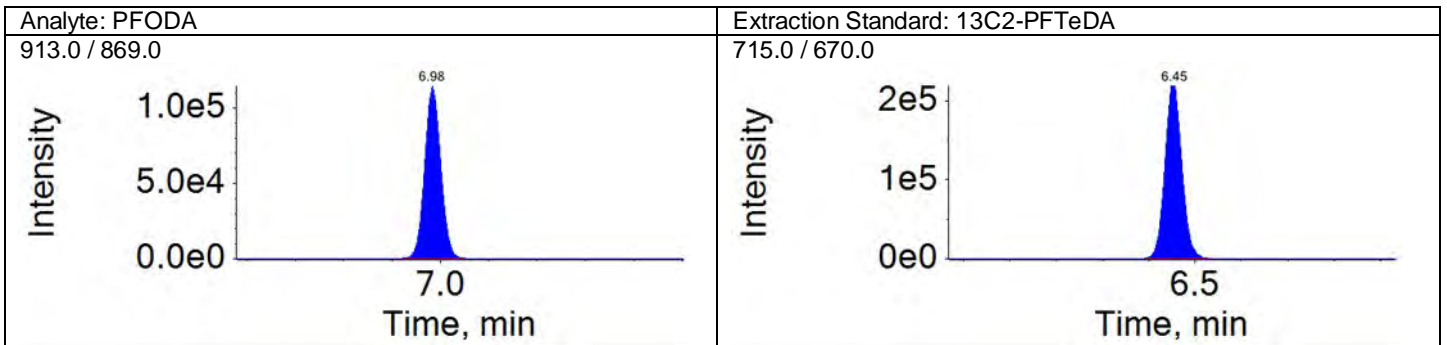
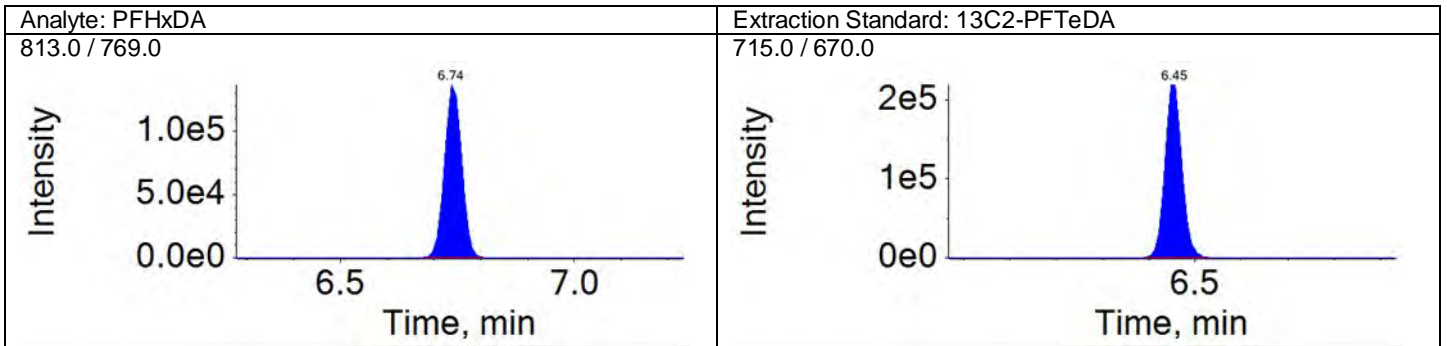
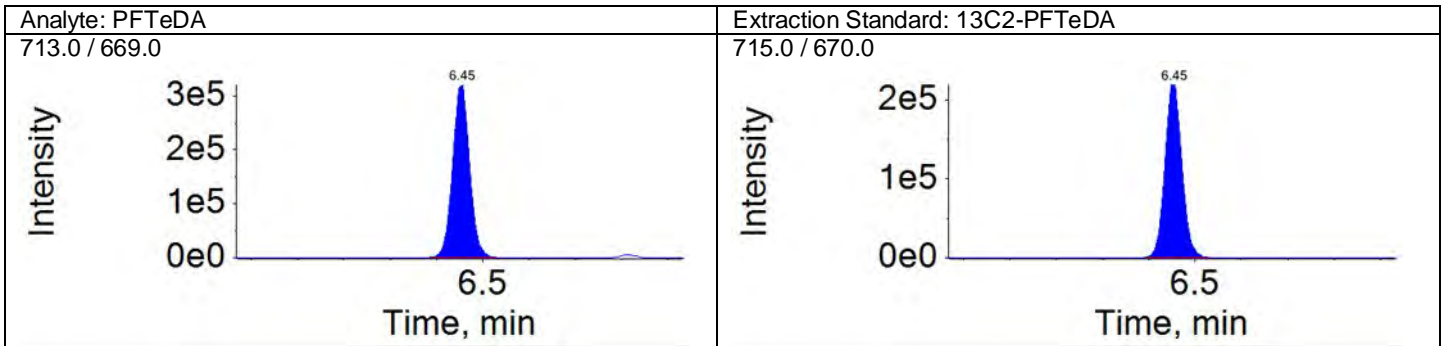
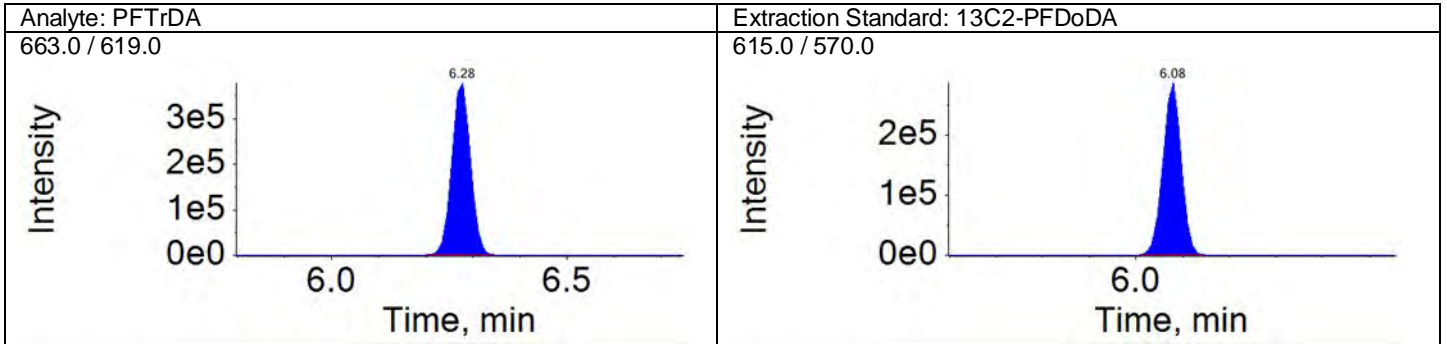
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Acquisition Method: 18AUG13\_3uL.dam





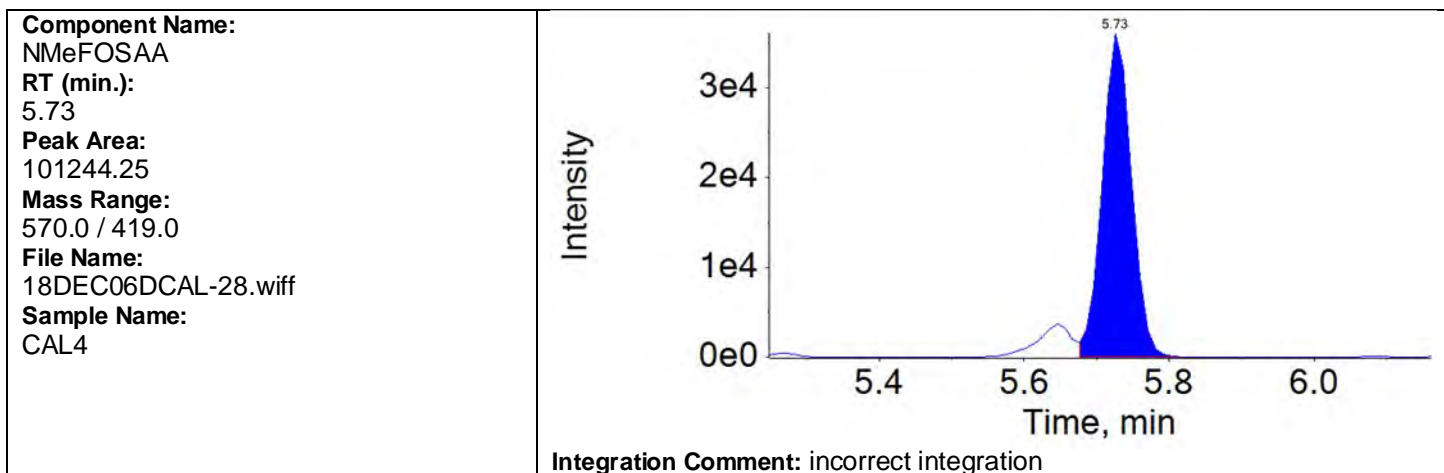
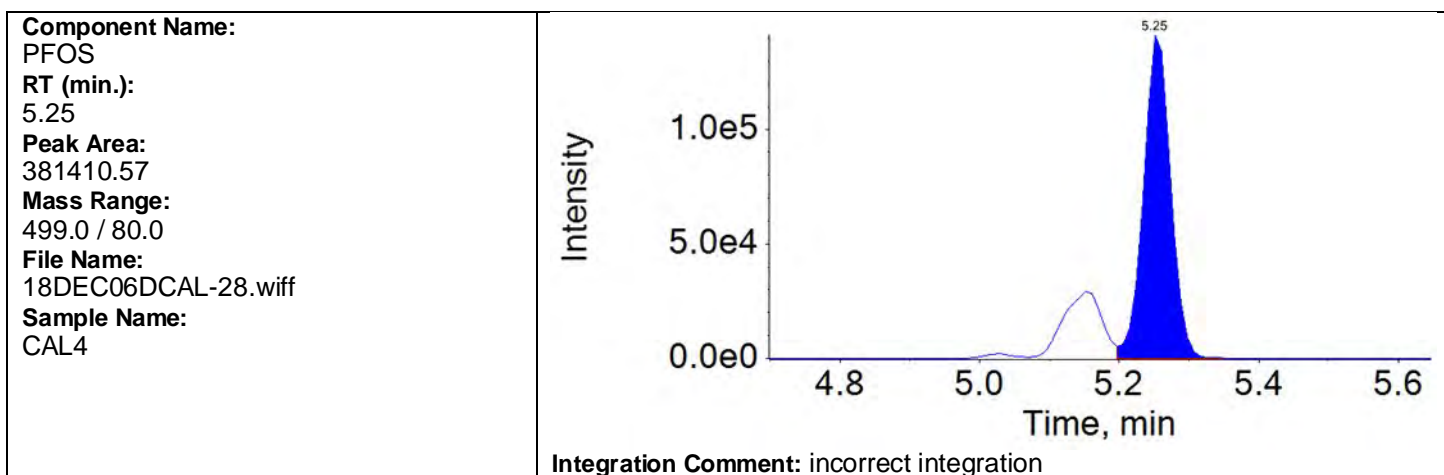
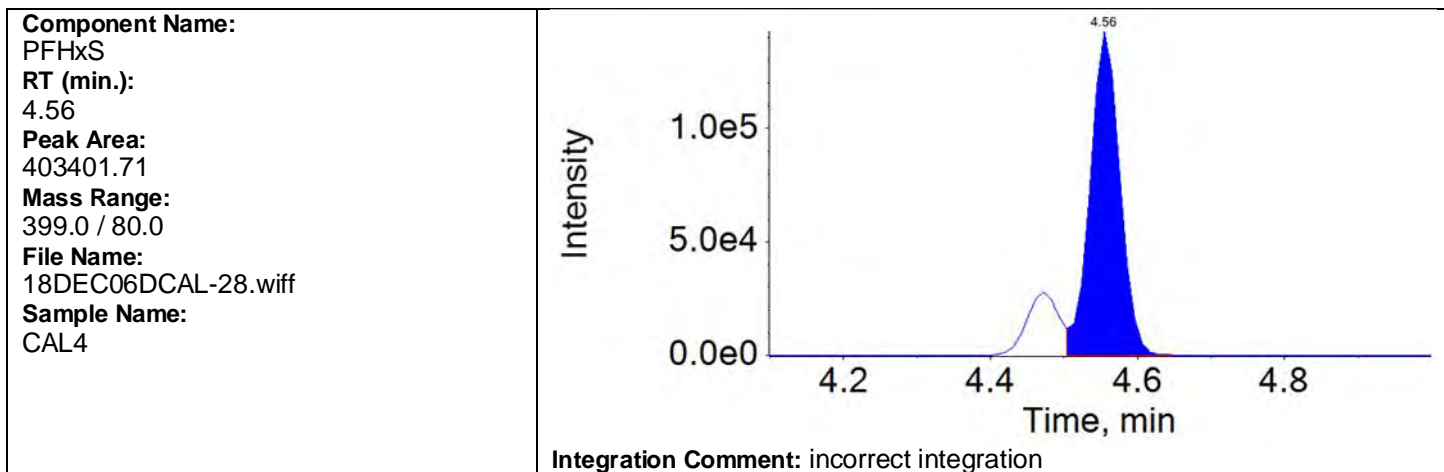
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



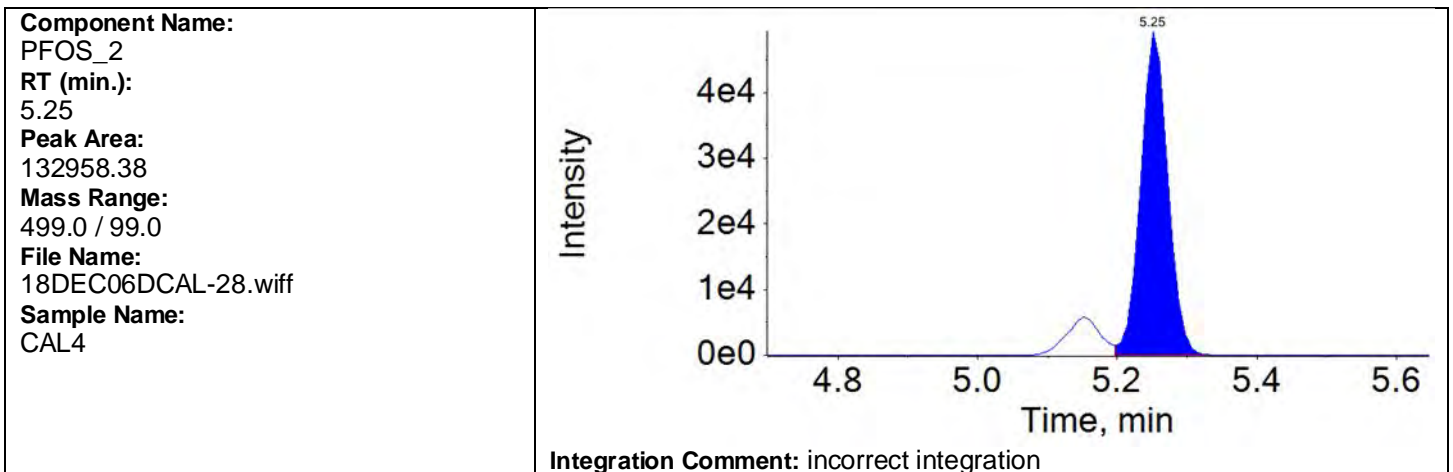
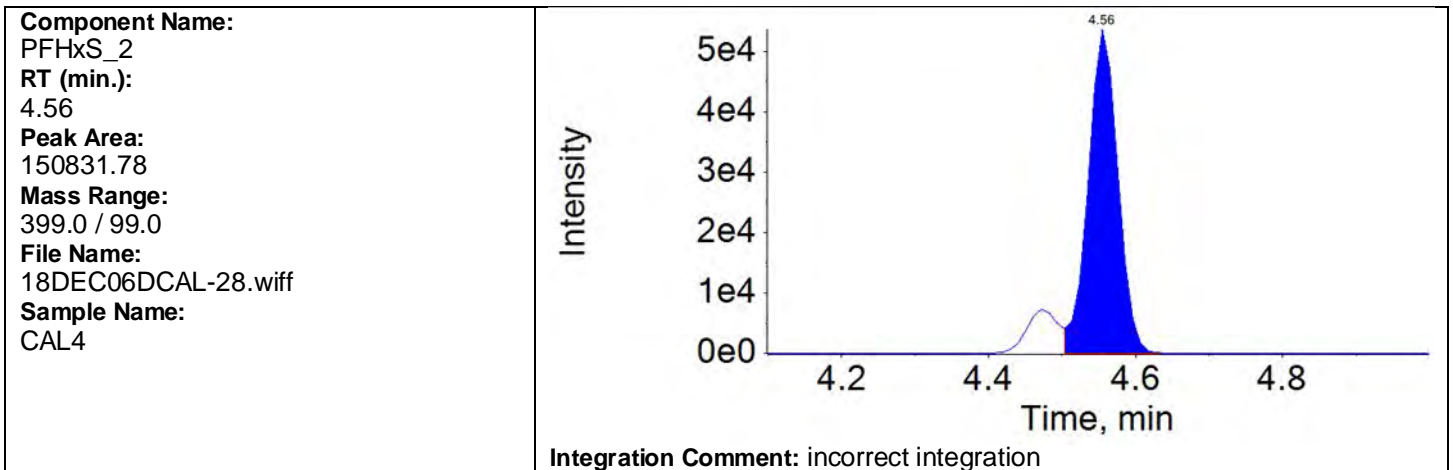
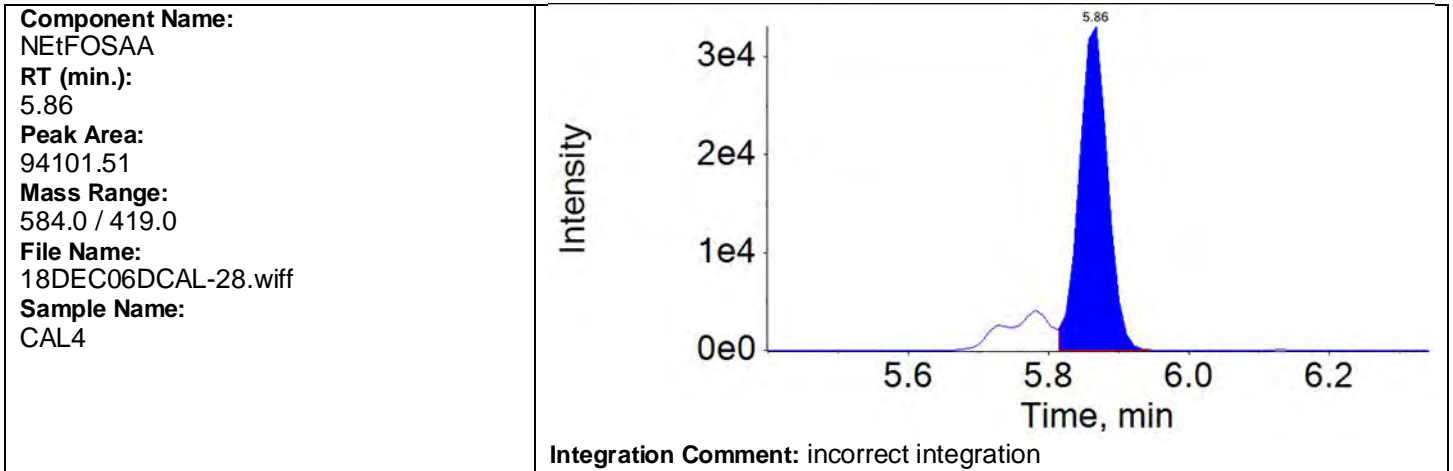
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QMethod File: 18AUG20QM



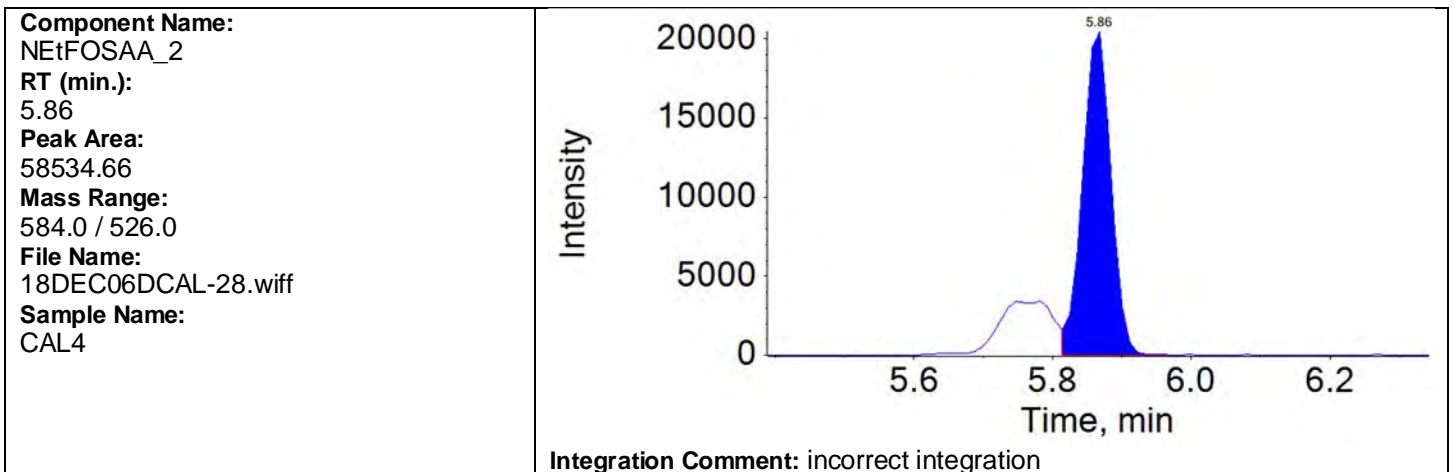
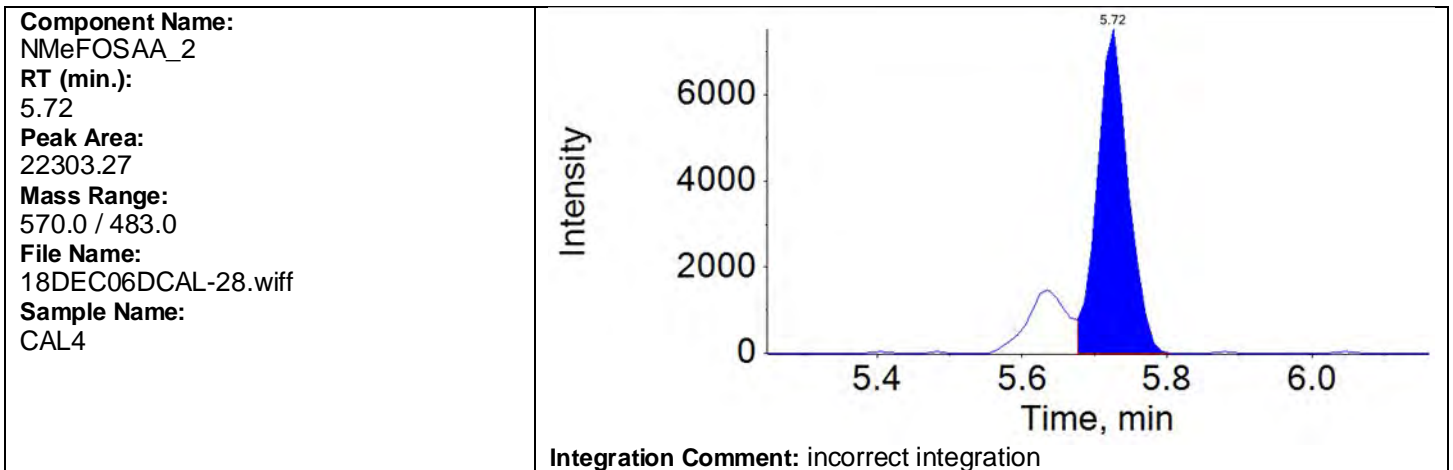
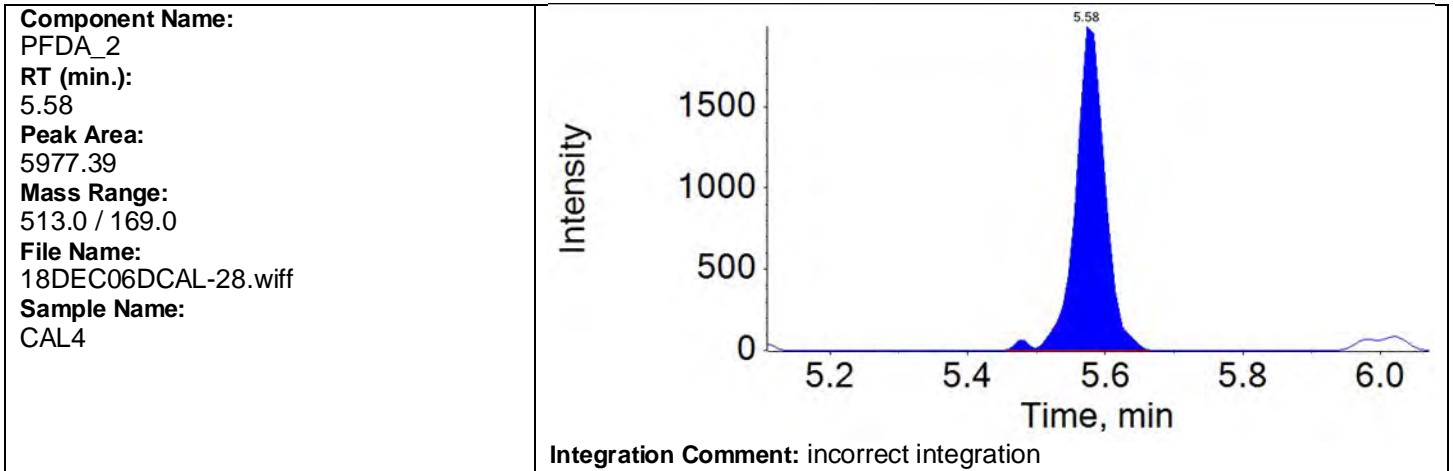
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Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18

Ion Ratio Report

Sample Name: CAL4

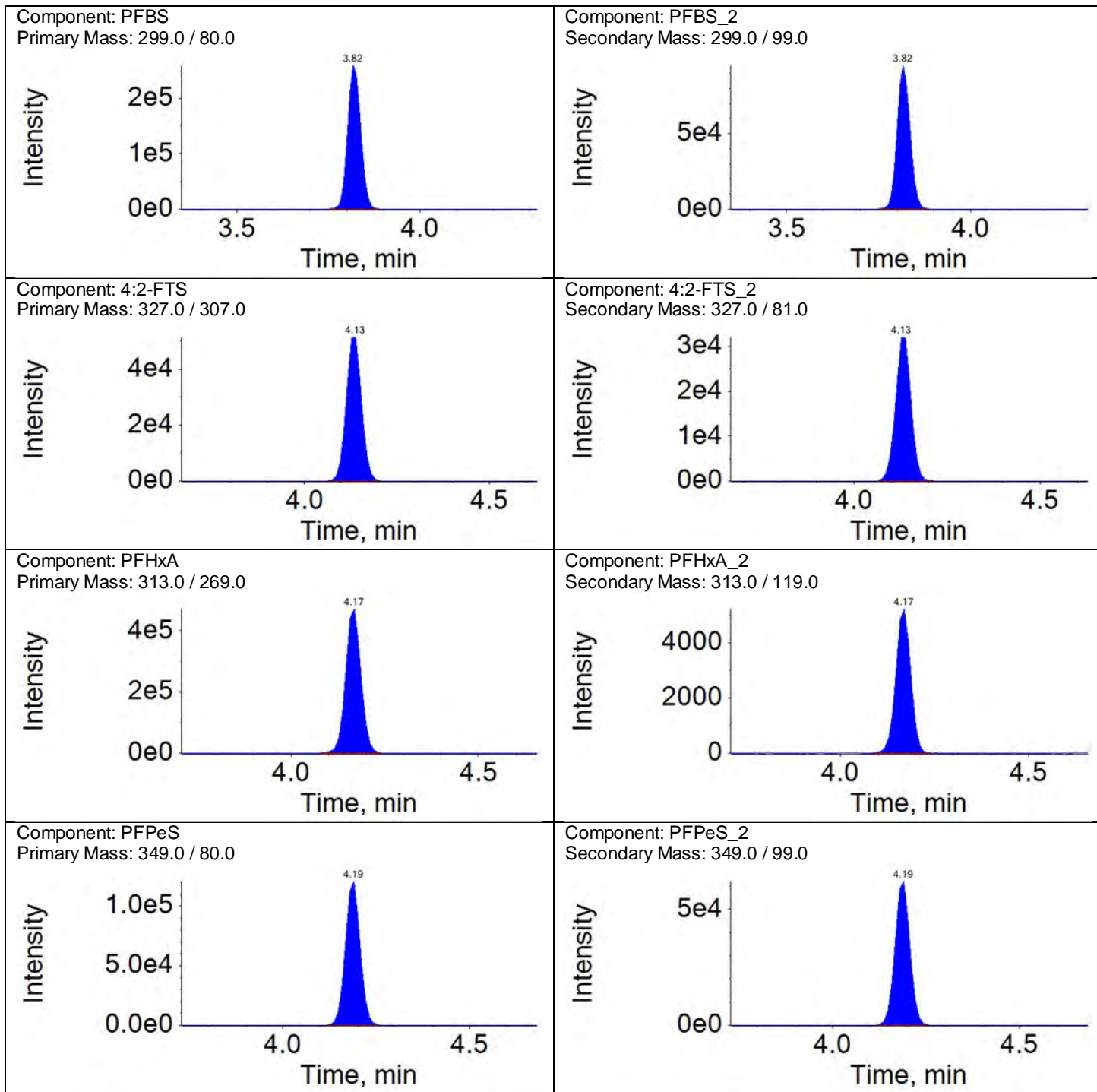
Instrument Name: LM27631

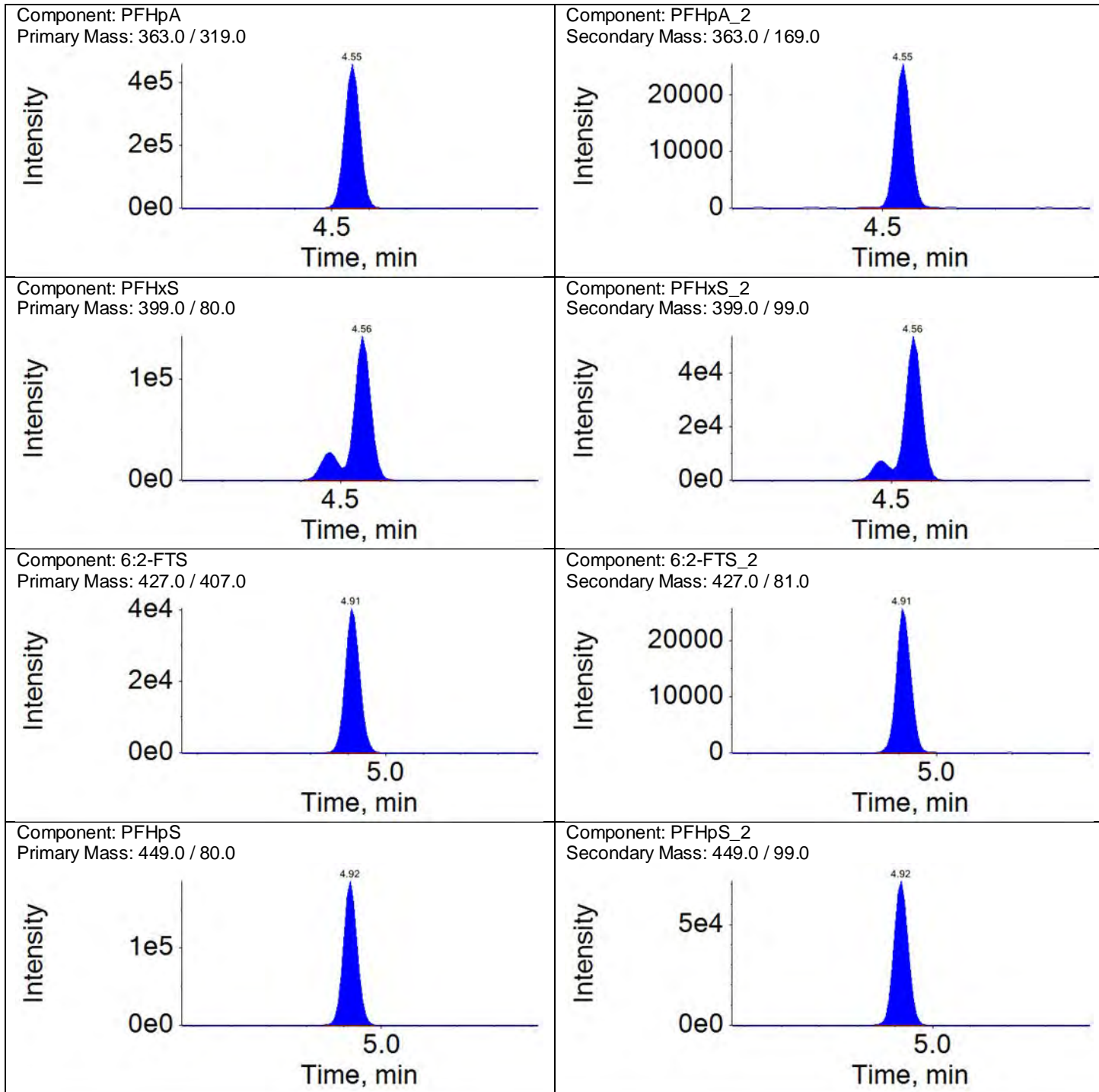
File Name: 18DEC06DCAL-28.wiff

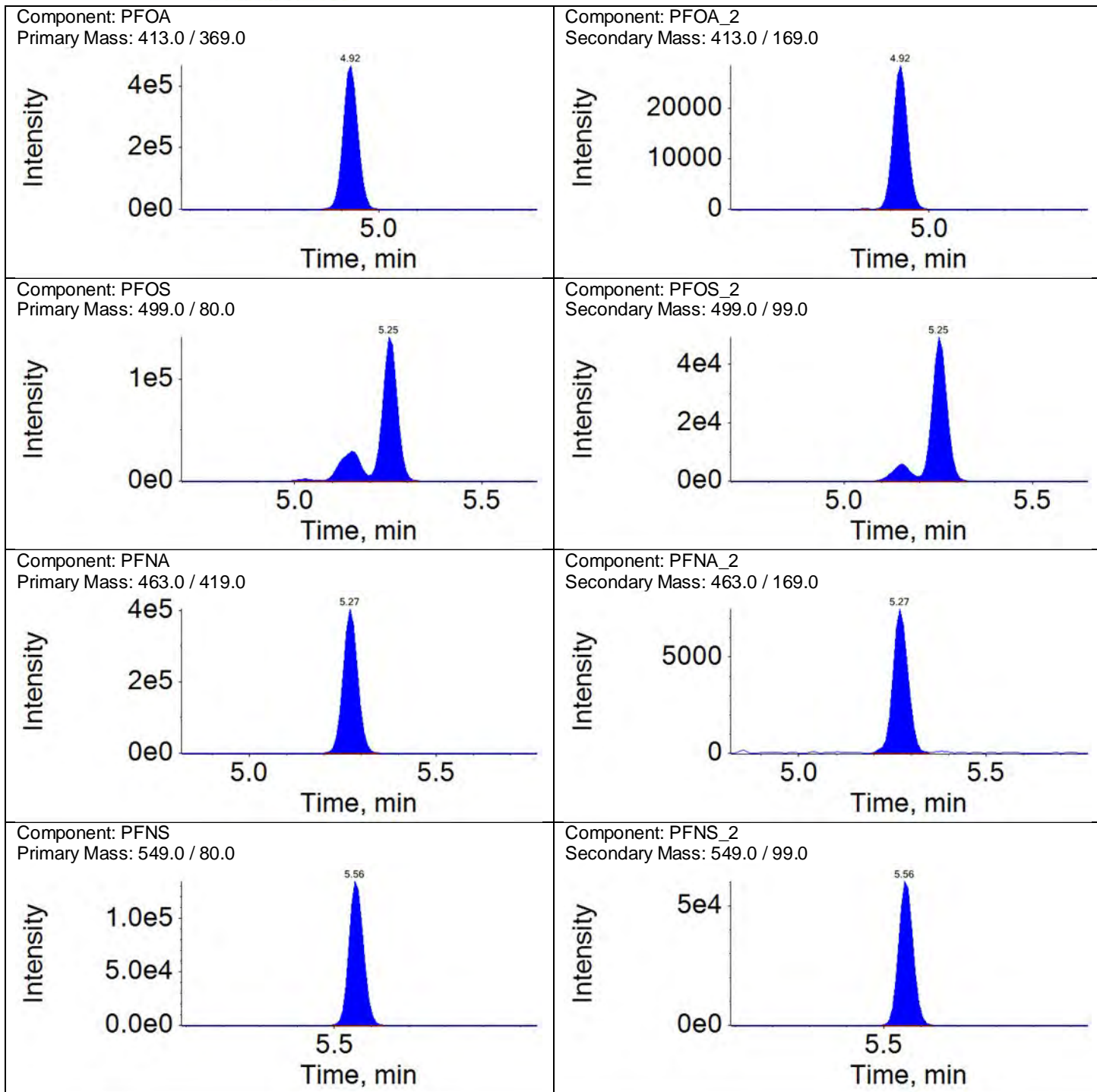
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	641650.74	A	1.0000	1.0000			
PFBS_2	3.82	1.00	233199.18	A	0.3627	0.3634	0	50	
4:2-FTS	4.13	1.00	148072.82	A	1.0000	1.0000			
4:2-FTS_2	4.13	1.00	92618.82	A	0.6542	0.6255	-4	50	
PFHxA	4.17	1.00	1336811.10	A	1.0000	1.0000			
PFHxA_2	4.17	1.00	14402.09	A	0.0097	0.0108	11	50	
PFPeS	4.19	1.10	330977.55	A	1.0000	1.0000			
PFPeS_2	4.19	1.10	171284.90	A	0.5262	0.5175	-2	50	
PFHpA	4.55	1.00	1312251.02	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	73217.19	A	0.0565	0.0558	-1	50	
PFHxS	4.56	1.00	486027.42	M	1.0000	1.0000			
PFHxS_2	4.56	1.00	172186.82	M	0.3645	0.3543	-3	50	
6:2-FTS	4.91	1.00	108350.61	A	1.0000	1.0000			
6:2-FTS_2	4.91	1.00	67977.03	A	0.6273	0.6274	0	50	
PFHpS	4.92	1.08	475629.59	A	1.0000	1.0000			
PFHpS_2	4.92	1.08	189242.72	A	0.4162	0.3979	-4	50	
PFOA	4.92	1.00	1259378.83	A	1.0000	1.0000			
PFOA_2	4.92	1.00	75979.90	A	0.0616	0.0603	-2	50	
PFOS	5.25	1.00	499514.66	M	1.0000	1.0000			
PFOS_2	5.25	1.00	152723.72	M	0.3021	0.3057	1	50	
PFNA	5.27	1.00	1095142.56	A	1.0000	1.0000			
PFNA_2	5.27	1.00	20893.87	A	0.0192	0.0191	-1	50	
PFNS	5.56	1.06	364043.01	A	1.0000	1.0000			
PFNS_2	5.56	1.06	162563.48	A	0.4845	0.4466	-8	50	
PFDA	5.58	1.00	911932.08	A	1.0000	1.0000			
PFDA_2	5.58	1.00	5879.06	M	0.0096	0.0064	-33	50	
8:2-FTS	5.58	1.00	80381.54	A	1.0000	1.0000			
8:2-FTS_2	5.58	1.00	49434.26	A	0.6117	0.6150	1	50	
NMeFOSAA	5.73	1.00	113391.52	M	1.0000	1.0000			
NMeFOSAA_2	5.72	1.00	27920.58	M	0.2673	0.2462	-8	50	
PFDS	5.82	1.11	290693.23	A	1.0000	1.0000			
PFDS_2	5.82	1.11	140839.99	A	0.4952	0.4845	-2	50	
PFOA_2	5.85	1.00	899827.44	A	1.0000	1.0000			
PFOA_2	5.85	1.00	2795.14	A	0.0041	0.0031	-24	50	
NEtFOSAA	5.86	1.00	112530.30	M	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	76785.73	M	0.6726	0.6824	1	50	
PFOA_2	6.08	1.00	1203364.64	A	1.0000	1.0000			
PFOA_2	6.08	1.00	14171.27	A	0.0133	0.0118	-12	50	
10:2-FTS	6.09	1.09	68099.46	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	52642.81	A	0.6969	0.7730	11	50	
PFOA_2	6.28	1.03	1039364.46	A	1.0000	1.0000			
PFOA_2	6.28	1.03	8849.02	A	0.0075	0.0085	13	50	
PFOA_2	6.45	1.00	814575.84	A	1.0000	1.0000			
PFOA_2	6.45	1.00	4817.92	A	0.0066	0.0059	-11	50	
PFOA_2	6.74	1.04	349067.59	A	1.0000	1.0000			
PFOA_2	6.74	1.04	20892.57	A	0.0616	0.0599	-3	50	
PFOA_2	6.98	1.08	262292.75	A	1.0000	1.0000			
PFOA_2	6.98	1.08	6843.13	A	0.0272	0.0261	-4	50	

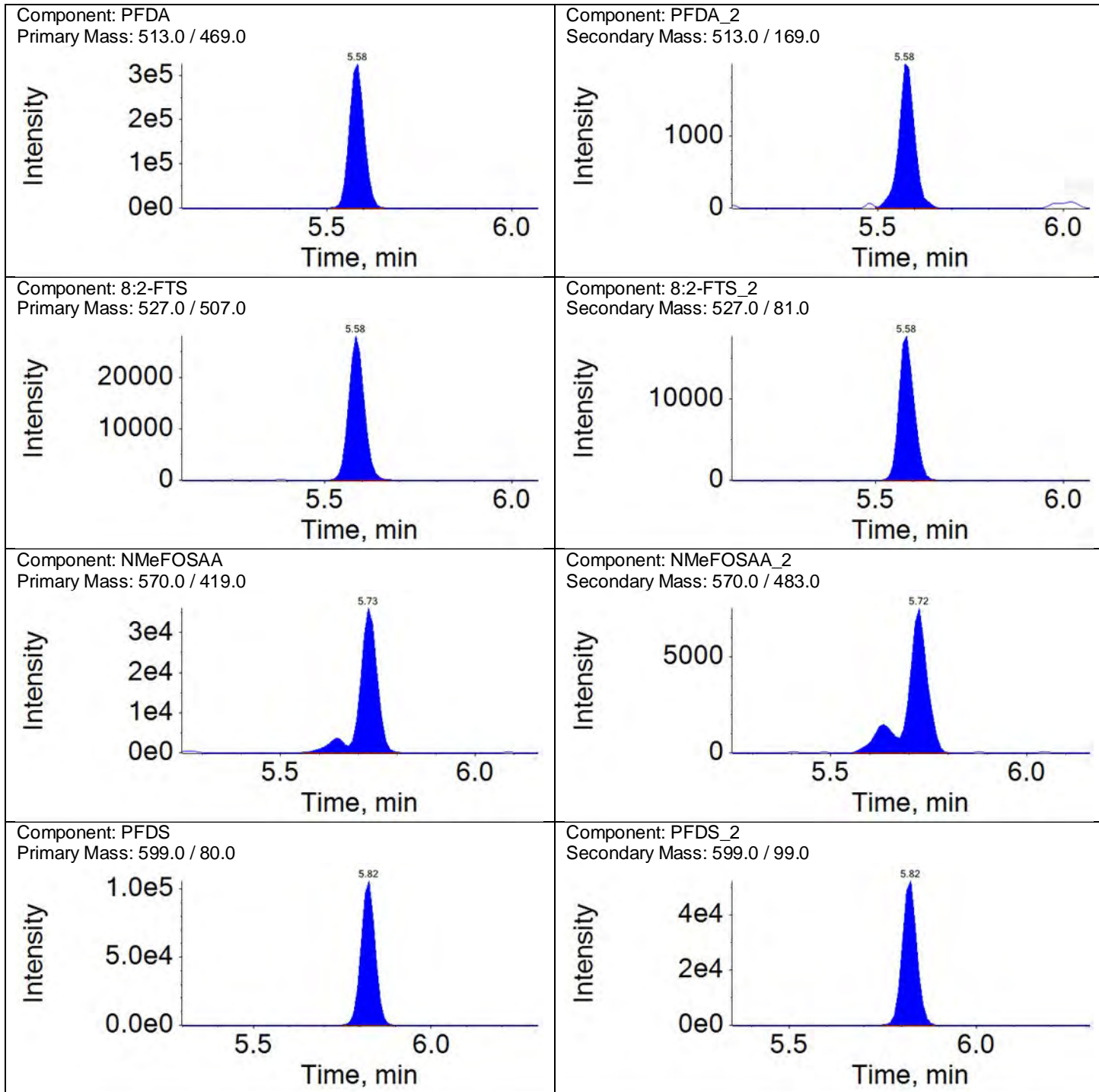




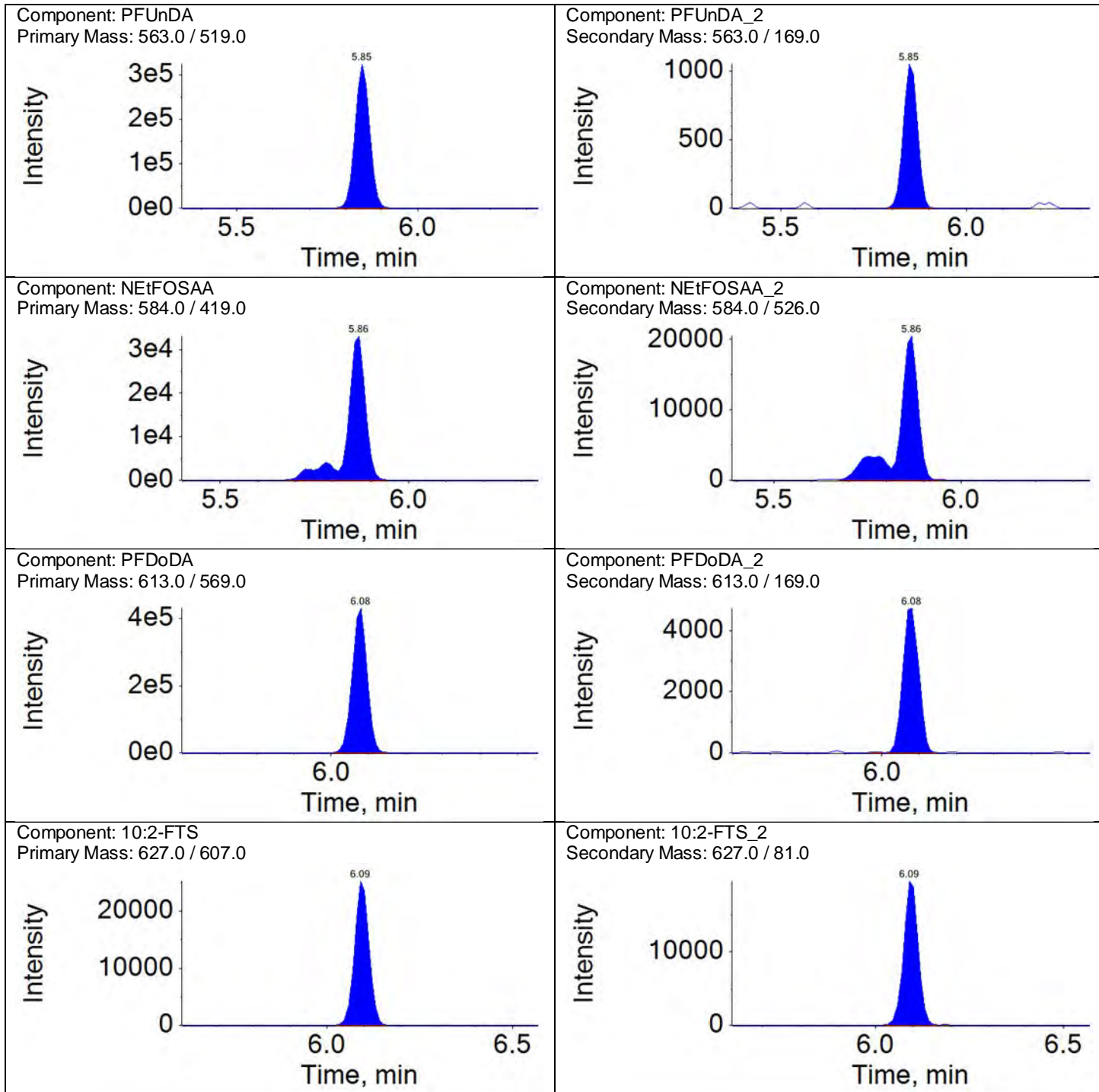


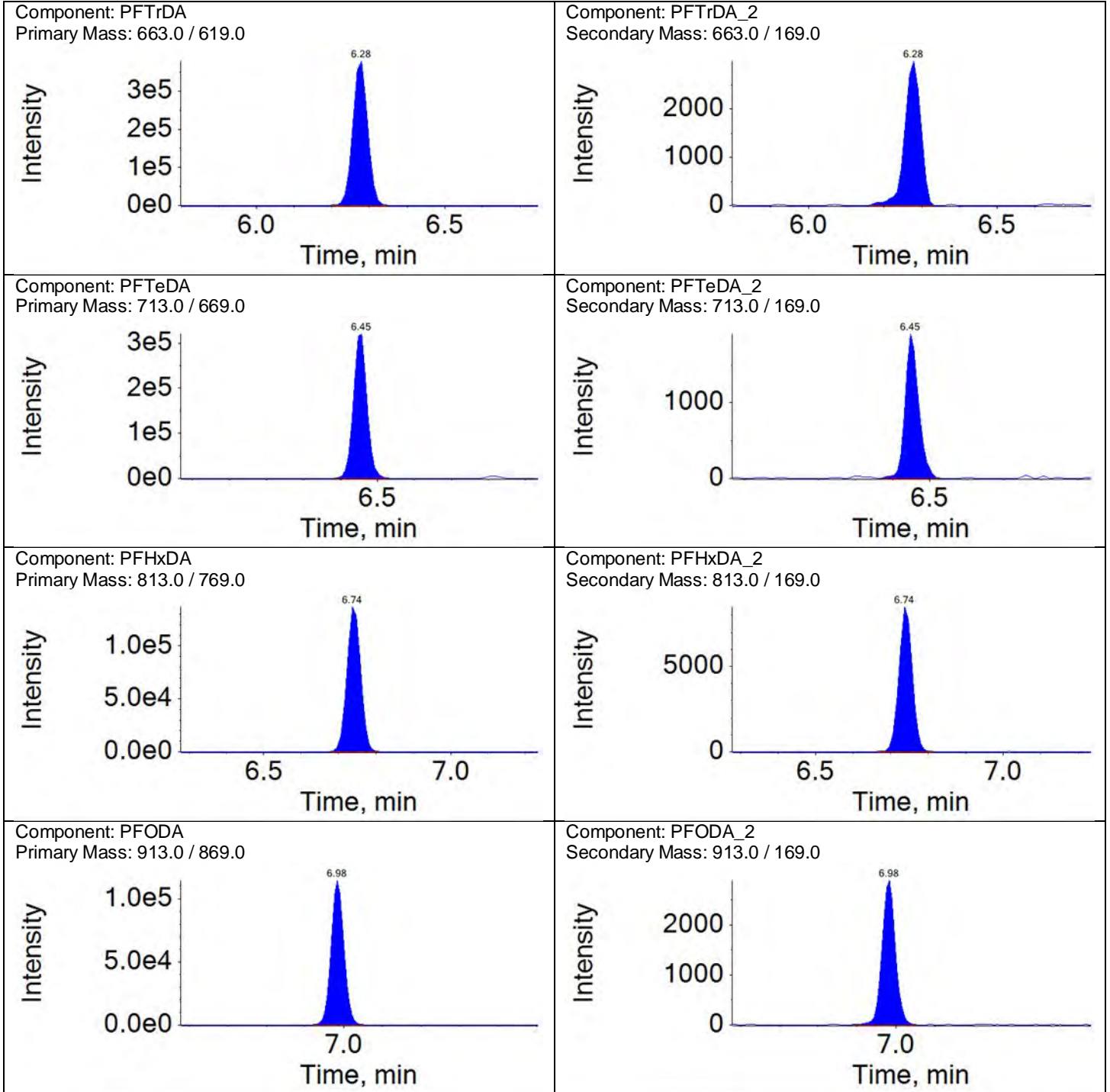














ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL5	Data File:	18DEC06DCAL-29.wiff
Sample ID:	CALBRN51833B	Acquis Date:	2018-12-07T00:13:31
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	7	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	764407.0	825688.9	-7	50	
13C2-PFOA	5.0	422543.9	449802.8	-6	50	
13C4-PFOS	4.8	261977.4	276858.3	-5	50	
13C2-PFDA	5.0	286526.0	315428.3	-9	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	852222.8	13C3-PFBA	764407.0	1.115	5.000	4.934	99	70-130	
E13C5-PFPeA	807458.3	13C3-PFBA	764407.0	1.056	5.000	5.017	100	70-130	
E13C3-PFBS	415721.1	13C3-PFBA	764407.0	0.544	4.650	4.610	99	70-130	
E13C2-4:2-FTS	49011.4	13C2-PFOA	422543.9	0.116	4.670	4.545	97	70-130	
E13C5-PFHxA	650822.8	13C2-PFOA	422543.9	1.540	5.000	5.171	103	70-130	
E13C3-PFHxS	328924.3	13C2-PFOA	422543.9	0.778	4.730	4.993	106	70-130	
E13C4-PFHpA	506360.3	13C2-PFOA	422543.9	1.198	5.000	5.095	102	70-130	
E13C2-6:2-FTS	31346.8	13C2-PFOA	422543.9	0.074	4.750	4.596	97	70-130	
E13C8-PFOA	739531.4	13C2-PFOA	422543.9	1.750	5.000	4.947	99	70-130	
E13C8-PFOS	286479.9	13C4-PFOS	261977.4	1.094	4.780	4.908	103	70-130	
E13C9-PFNA	459963.4	13C4-PFOS	261977.4	1.756	5.000	4.961	99	70-130	
E13C6-PFDA	550668.3	13C2-PFDA	286526.0	1.922	5.000	5.093	102	70-130	
E13C2-8:2-FTS	18960.2	13C2-PFDA	286526.0	0.066	4.790	4.320	90	70-130	
E13C8-PFOA	617622.8	13C2-PFDA	286526.0	2.156	5.000	5.098	102	70-130	
Ed3-NMeFOSAA	83194.5	13C2-PFDA	286526.0	0.290	5.000	5.146	103	70-130	
E13C7-PFUnDA	305265.8	13C2-PFDA	286526.0	1.065	5.000	5.226	105	70-130	
Ed5-NEtFOSAA	67520.9	13C2-PFDA	286526.0	0.236	5.000	5.202	104	70-130	
E13C2-PFDoDA	706411.1	13C2-PFDA	286526.0	2.465	5.000	5.174	103	70-130	
Ed7-NMePFOSAE	244218.5	13C2-PFDA	286526.0	0.852	5.000	4.910	98	70-130	
Ed3-NMePFOSA	84514.9	13C2-PFDA	286526.0	0.295	5.000	5.374	107	70-130	
Ed9-NEtPFOSAE	215847.0	13C2-PFDA	286526.0	0.753	5.000	5.195	104	70-130	
Ed5-NEtPFOSA	65432.9	13C2-PFDA	286526.0	0.228	5.000	5.139	103	70-130	
E13C2-PFTeDA	520852.4	13C2-PFDA	286526.0	1.818	5.000	5.395	108	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

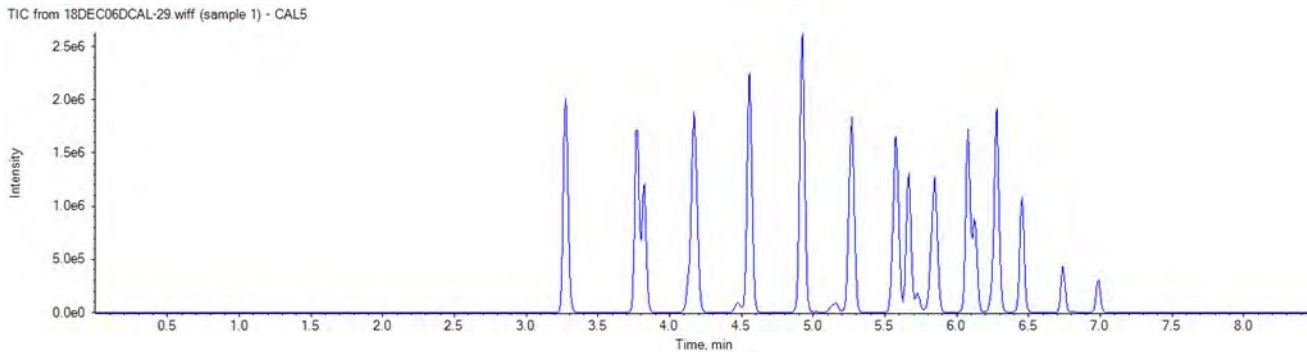
Analyte Quantitation Peak Table

Sample Name: CAL5 Instrument Name: LM27631 File Name: 18DEC06DCAL-29.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

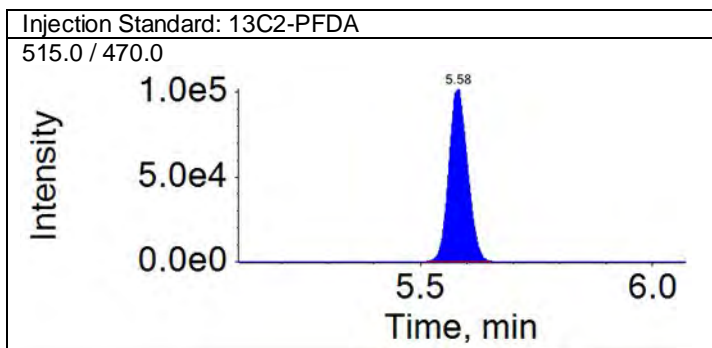
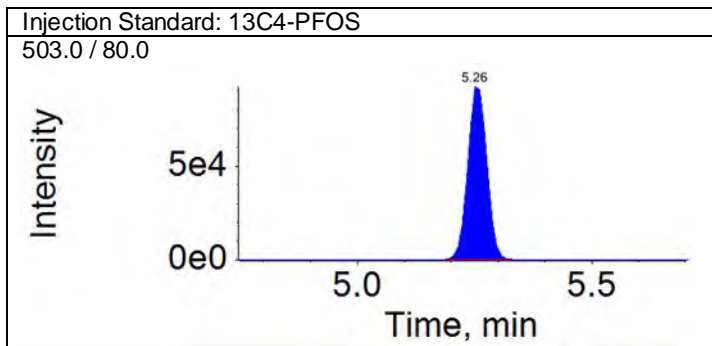
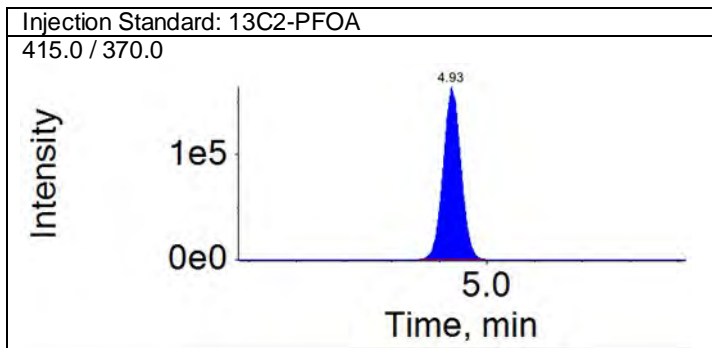
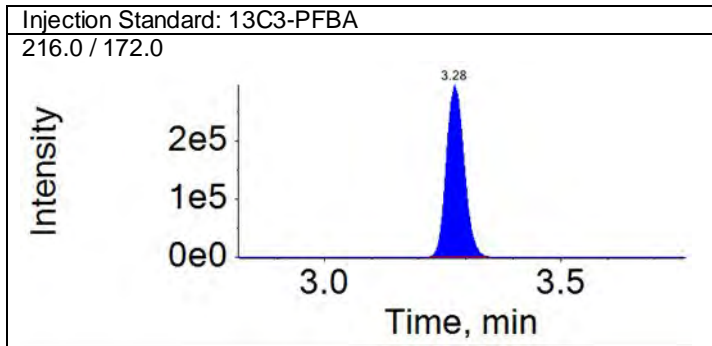
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	3186861.8		A	13C4-PFBA	3.27	852222.8	3.739	20.632
PFPeA	3.77	1.000	3191751.1		A	13C5-PFPeA	3.77	807458.3	3.953	20.794
PFBS	3.82	1.000	1560425.1		A	13C3-PFBS	3.82	415721.1	3.754	18.605
4:2-FTS	4.13	1.000	374067.1		A	13C2-4:2-FTS	4.13	49011.4	7.632	20.457
PFHxA	4.17	1.000	3100313.2		A	13C5-PFHxA	4.17	650822.8	4.764	20.758
PFPeS	4.19	1.100	825391.6		A	13C3-PFBS	3.82	415721.1	1.985	19.660
PFHpA	4.56	1.000	3016454.0		A	13C4-PFHpA	4.56	506360.3	5.957	19.614
PFHxS	4.56	1.000	1191013.5		M	13C3-PFHxS	4.56	328924.3	3.621	17.156
6:2-FTS	4.91	1.000	243777.5		A	13C2-6:2-FTS	4.91	31346.8	7.777	19.310
PFHpS	4.92	1.080	1127510.8		A	13C3-PFHxS	4.56	328924.3	3.428	18.817
PFOA	4.93	1.000	2945282.0		A	13C8-PFOA	4.93	739531.4	3.983	21.765
PFOS	5.26	1.000	1193441.8		M	13C8-PFOS	5.26	286479.9	4.166	17.279
PFNA	5.27	1.000	2562019.3		A	13C9-PFNA	5.27	459963.4	5.570	20.527
PFNS	5.56	1.060	868436.2		A	13C8-PFOS	5.26	286479.9	3.031	19.506
PFDA	5.58	1.000	2165925.6		A	13C6-PFDA	5.58	550668.3	3.933	22.139
8:2-FTS	5.58	1.000	180667.1		A	13C2-8:2-FTS	5.58	18960.2	9.529	20.646
PFOSA	5.66	1.000	2495160.4		A	13C8-PFOSA	5.67	617622.8	4.040	20.959
NMeFOSAA	5.73	1.000	273175.2		M	d3-NMeFOSAA	5.72	83194.5	3.284	21.719
PFDS	5.82	1.110	656687.7		A	13C8-PFOS	5.26	286479.9	2.292	18.534
PUnDA	5.85	1.000	2053634.1		A	13C7-PUnDA	5.85	305265.8	6.727	20.598
NEtFOSAA	5.86	1.000	261138.2		M	d5-NEtFOSAA	5.86	67520.9	3.868	19.546
PFDaDA	6.08	1.000	2804098.5		A	13C2-PFDaDA	6.08	706411.1	3.969	20.895
10:2-FTS	6.09	1.090	178277.7		A	13C2-8:2-FTS	5.58	18960.2	9.403	24.907
NMePFOSAE	6.13	1.000	1300871.8		A	d7-NMePFOSAE	6.12	244218.5	5.327	23.147
NMePFOSA	6.13	1.000	340769.0		A	d3-NMePFOSA	6.13	84514.9	4.032	20.344
PFDoS	6.25	1.190	357990.6		A	13C8-PFOS	5.26	286479.9	1.250	19.051
NEtPFOSAE	6.28	1.000	1386117.7		A	d9-NEtPFOSAE	6.27	215847.0	6.422	21.516
NEtPFOSA	6.29	1.000	295448.6		A	d5-NEtPFOSA	6.29	65432.9	4.515	21.615
PFTrDA	6.28	1.030	2289996.0		A	13C2-PFDaDA	6.08	706411.1	3.242	21.232
PFTeDA	6.45	1.000	1865922.9		A	13C2-PFTeDA	6.45	520852.4	3.582	20.486
PFHxDA	6.74	1.040	856972.0		A	13C2-PFTeDA	6.45	520852.4	1.645	20.605
PFOA	6.99	1.080	651553.0		A	13C2-PFTeDA	6.45	520852.4	1.251	20.081

Total Ion Chromatogram



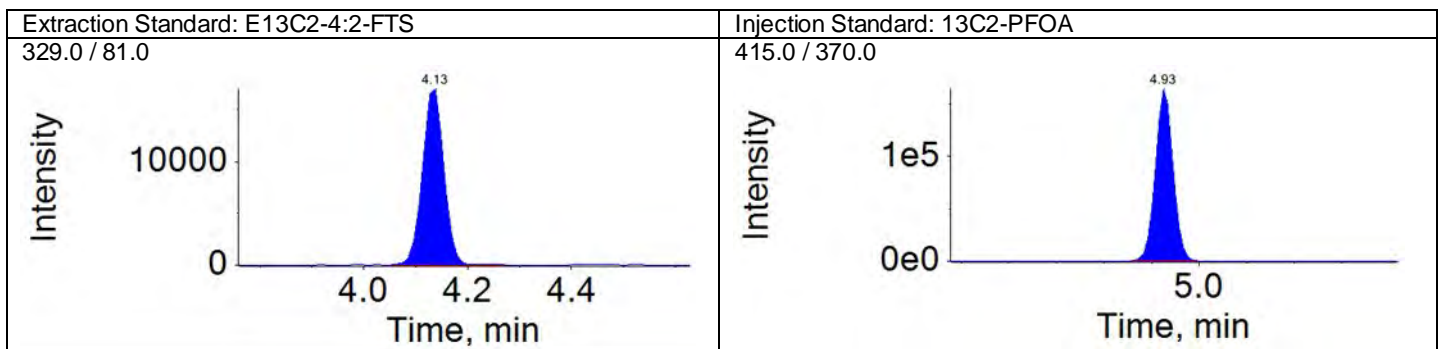
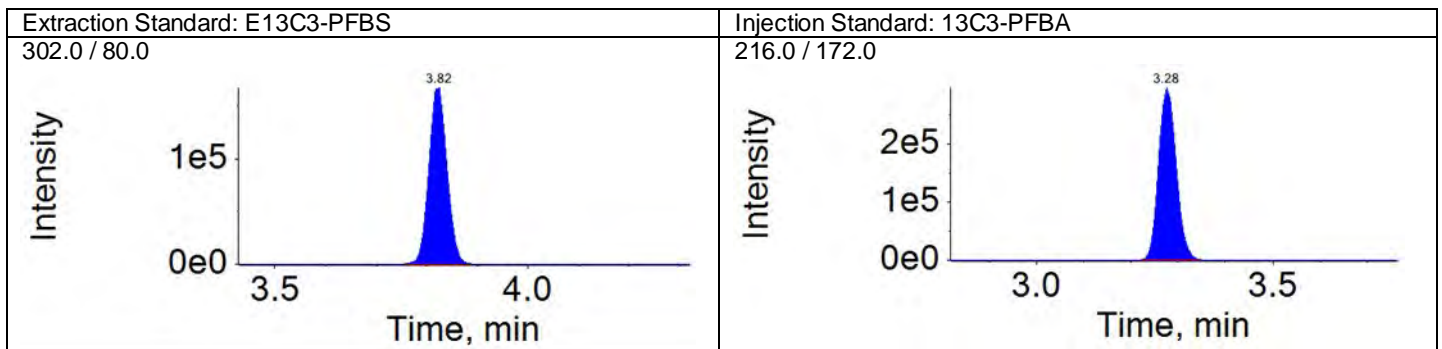
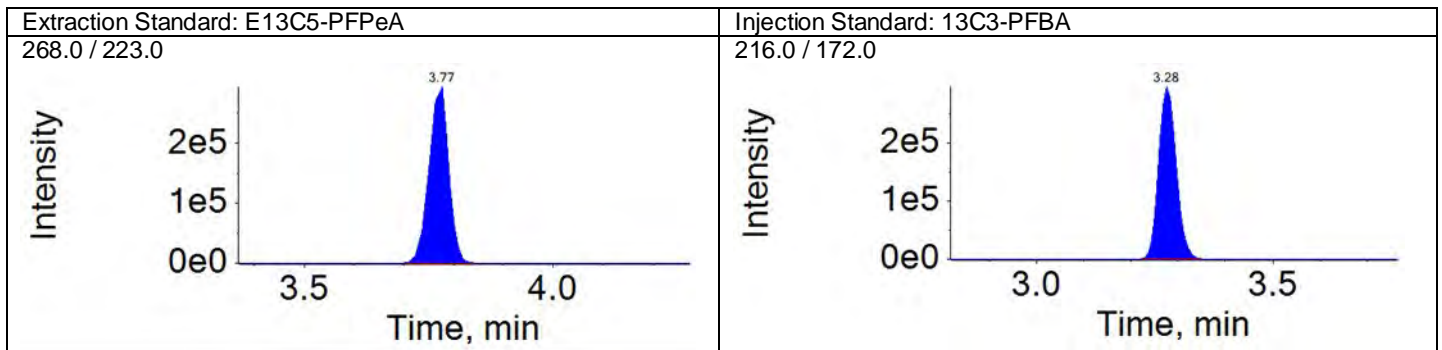
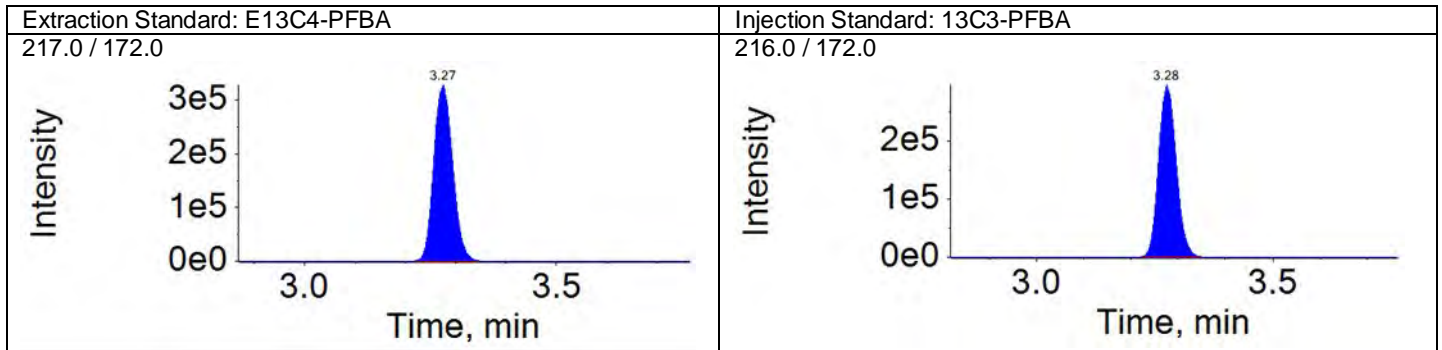
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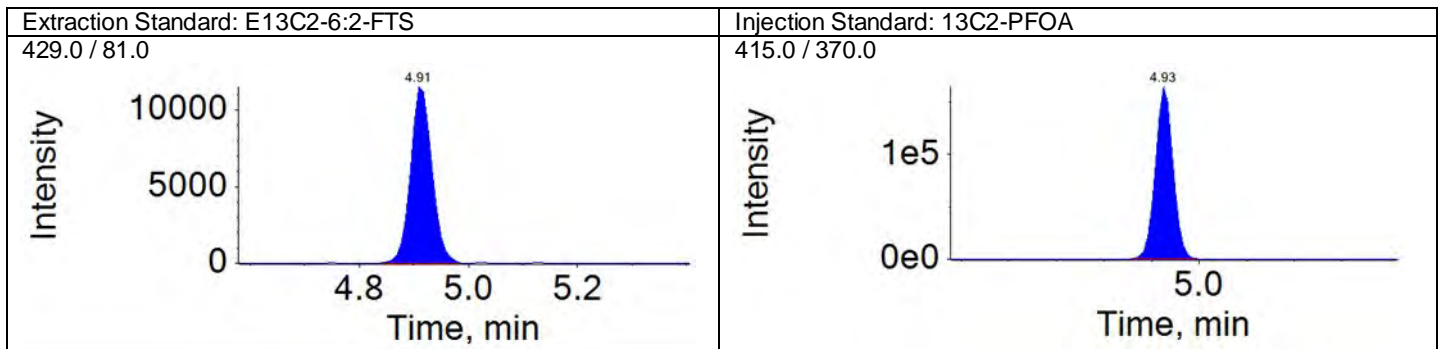
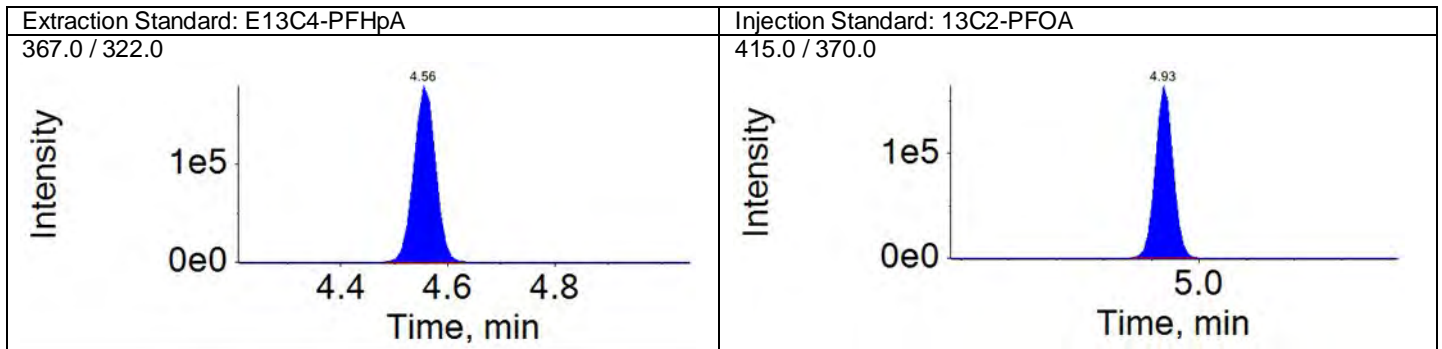
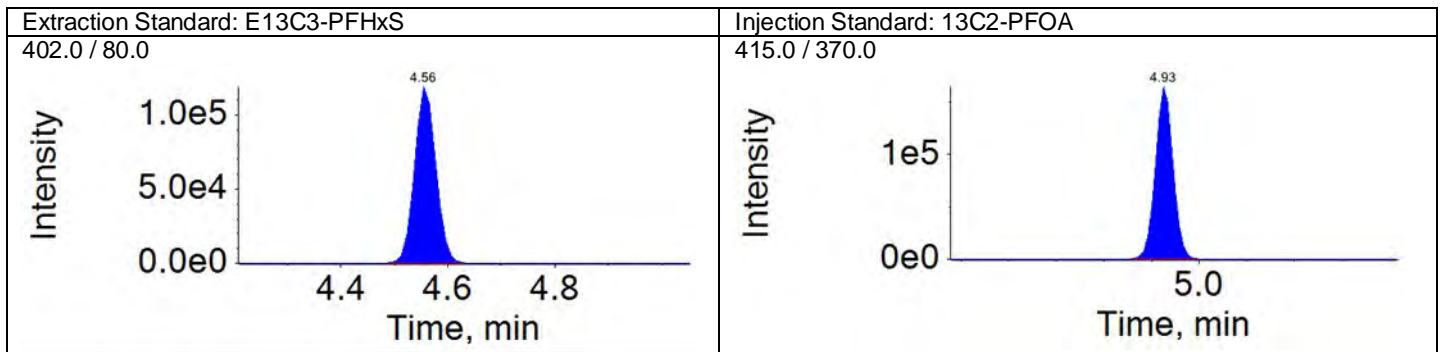
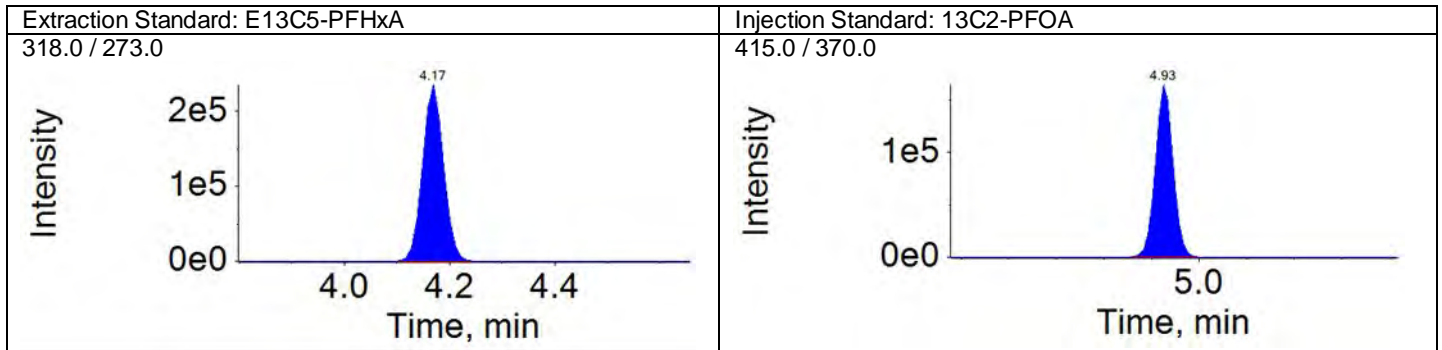
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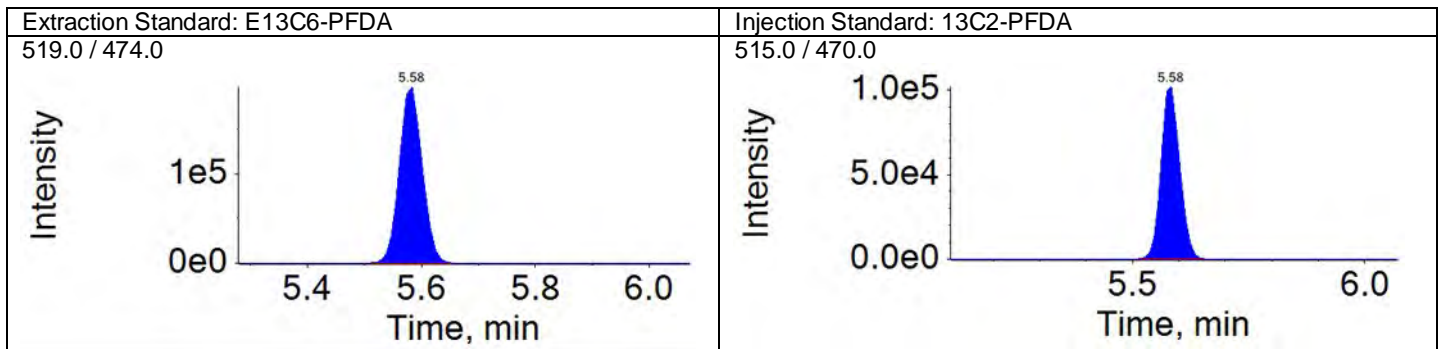
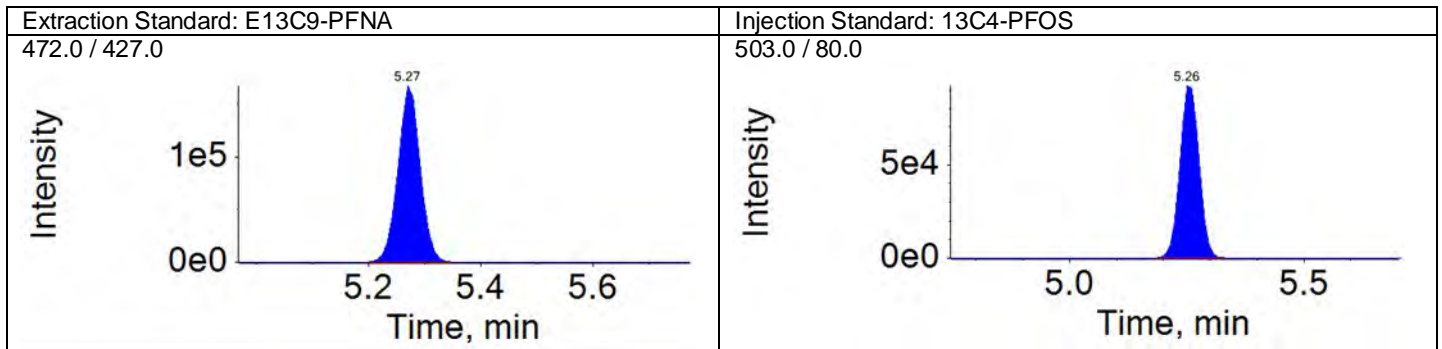
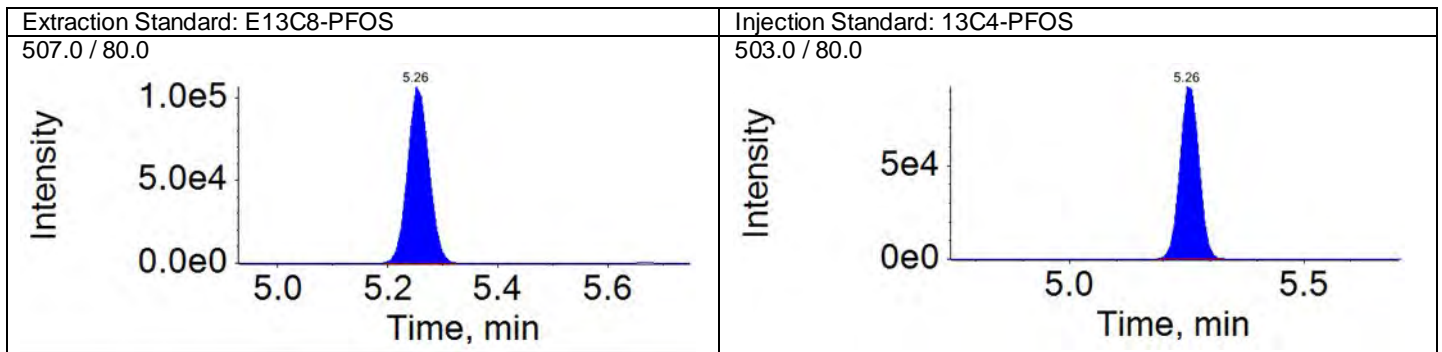
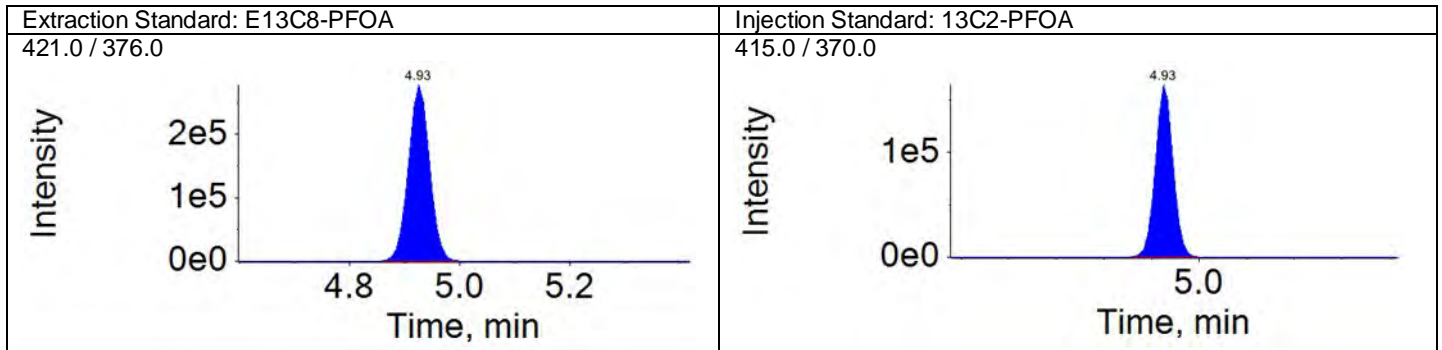
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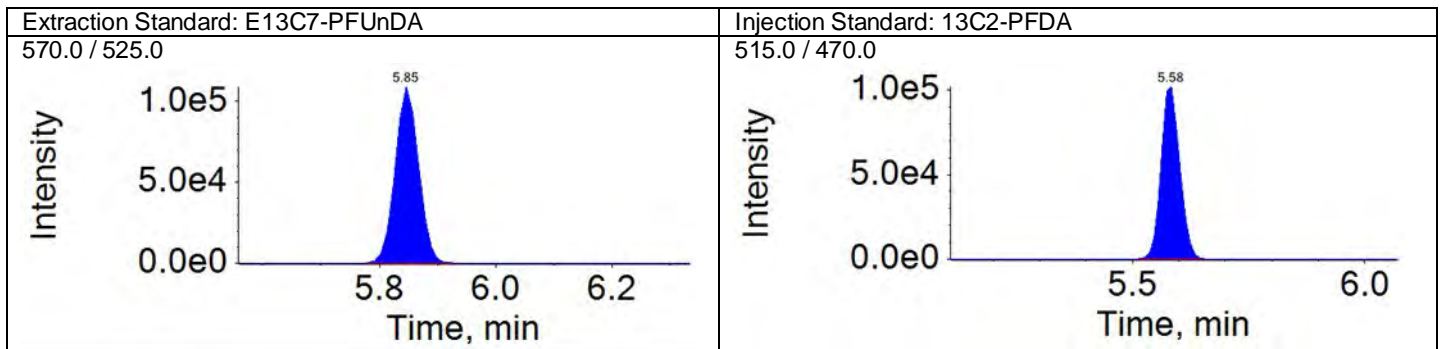
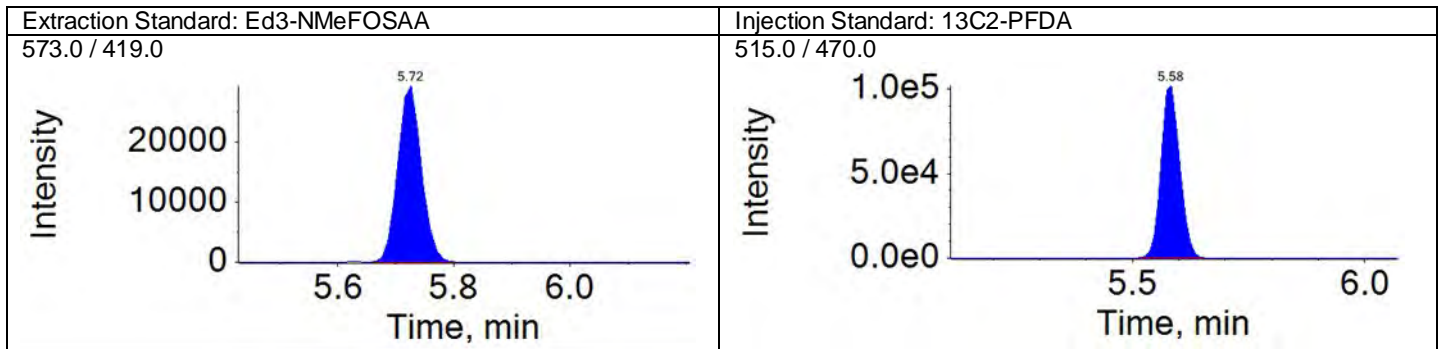
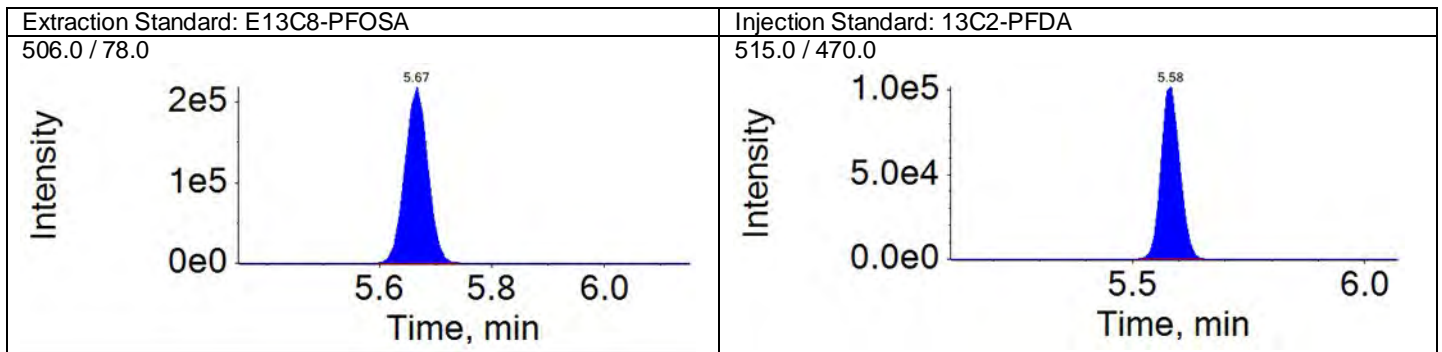
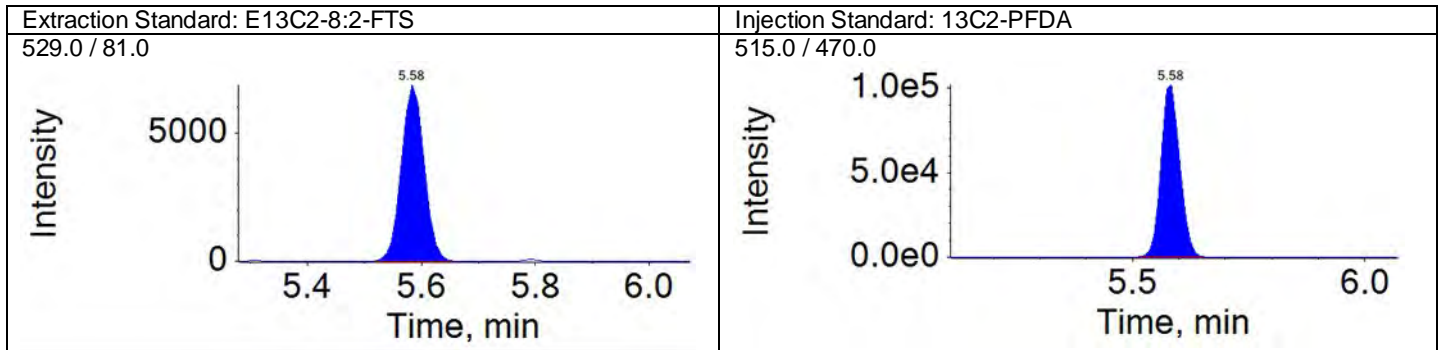
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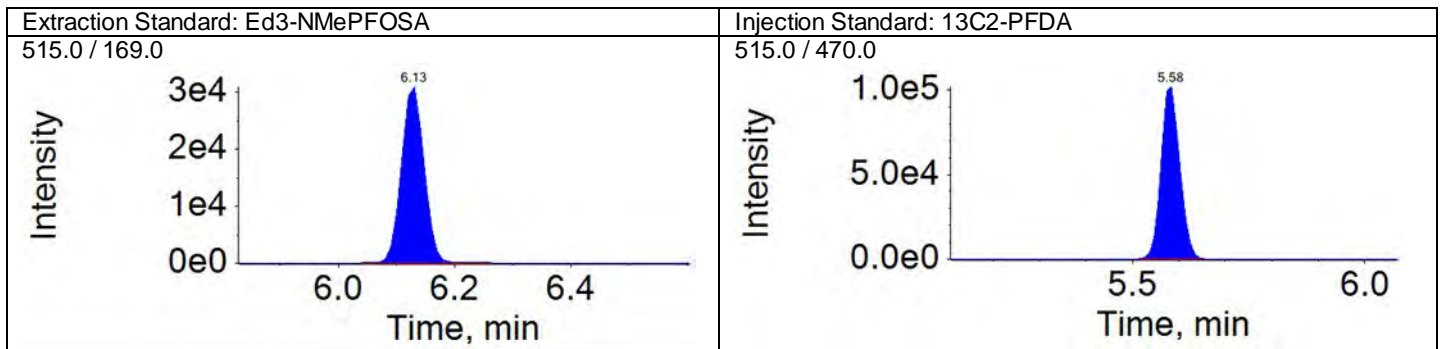
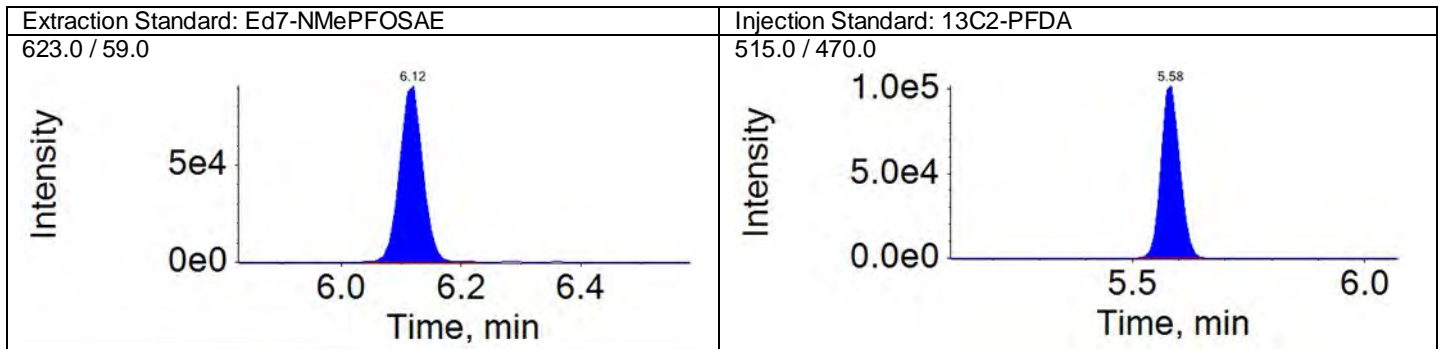
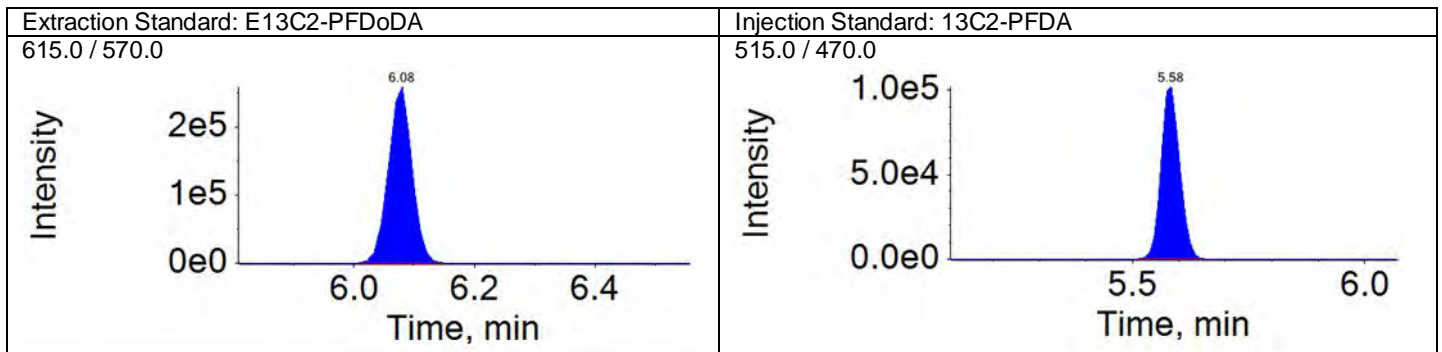
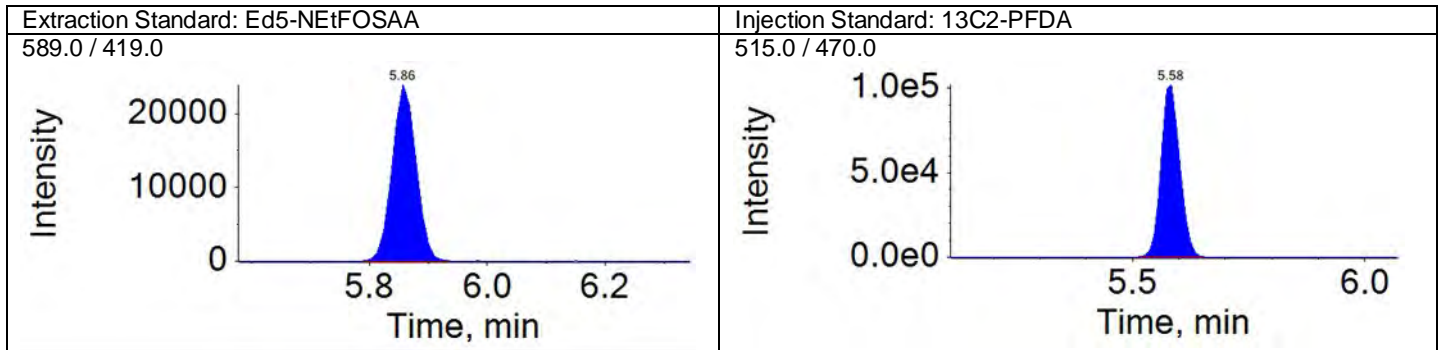
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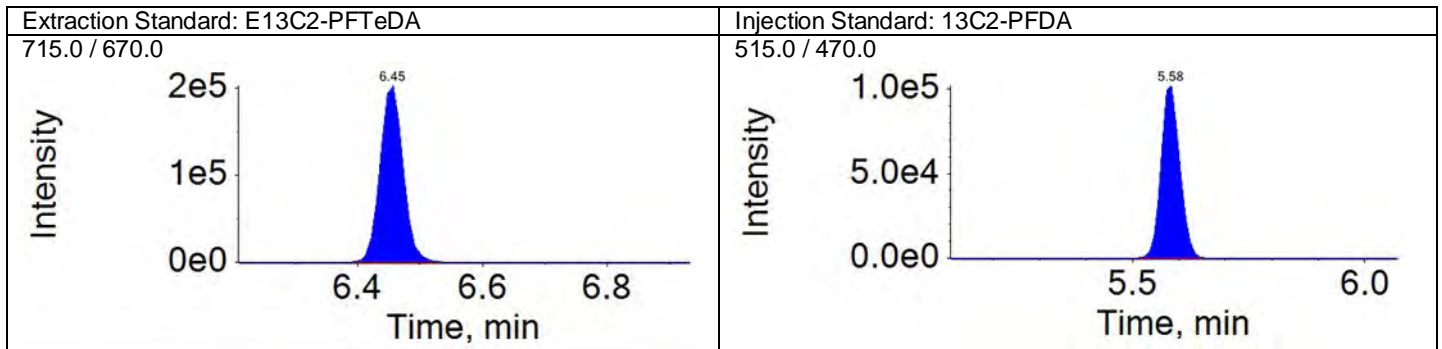
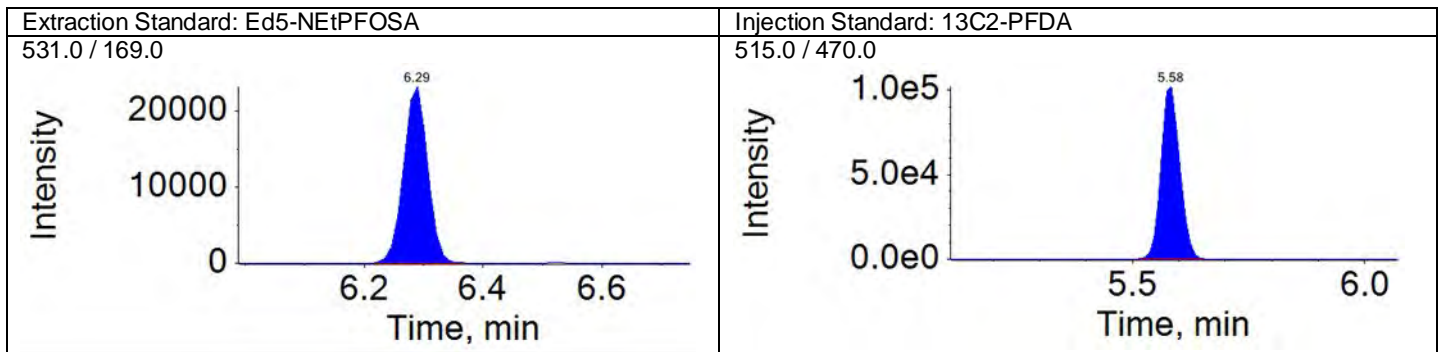
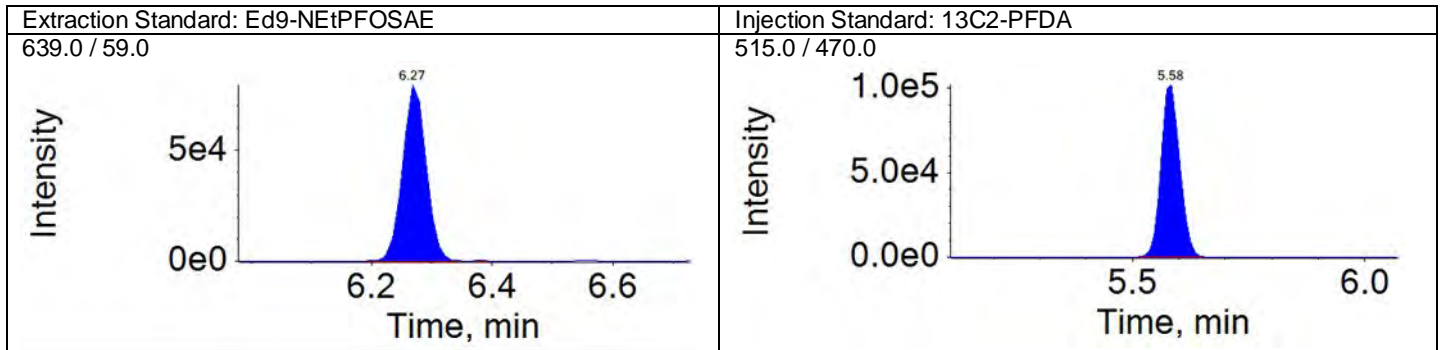
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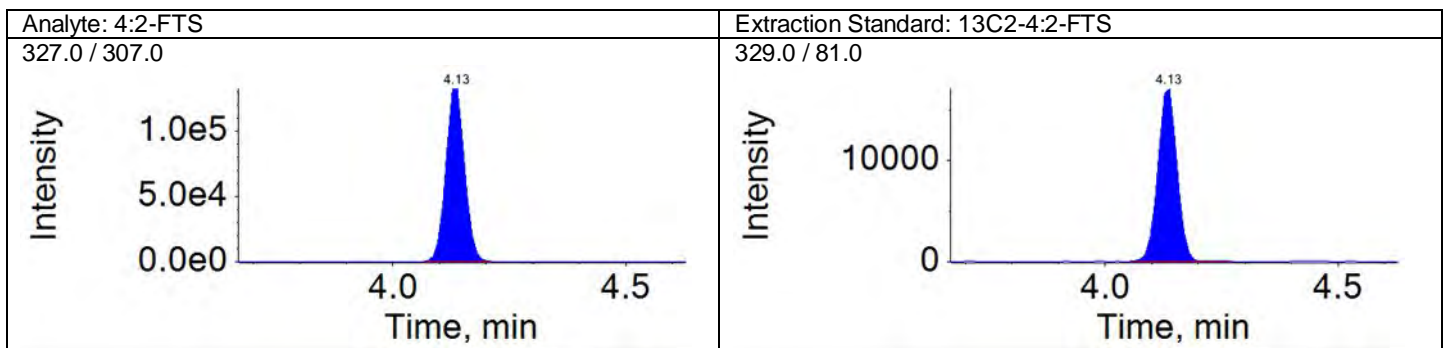
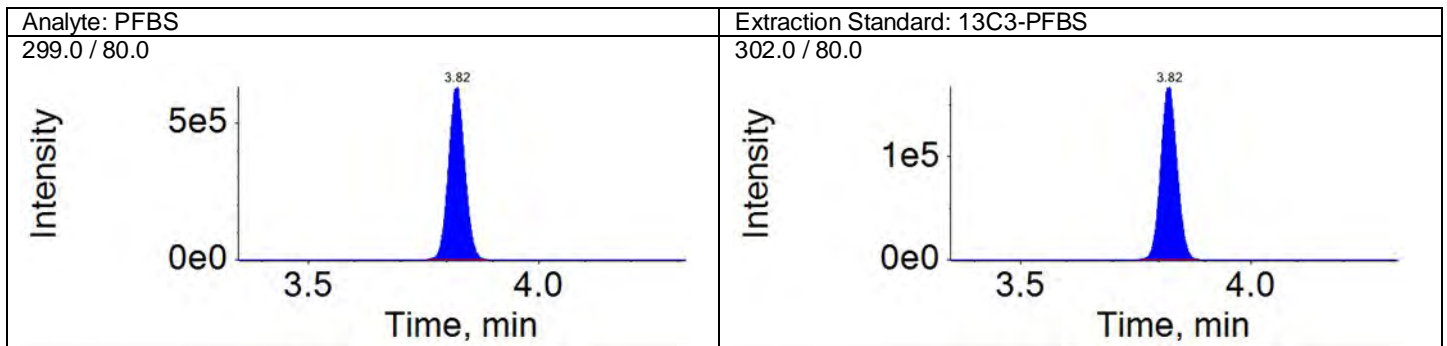
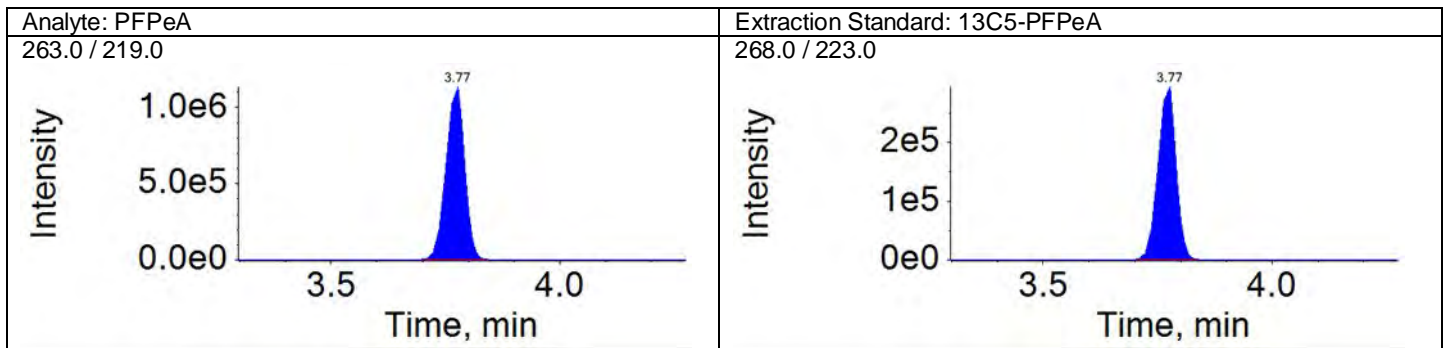
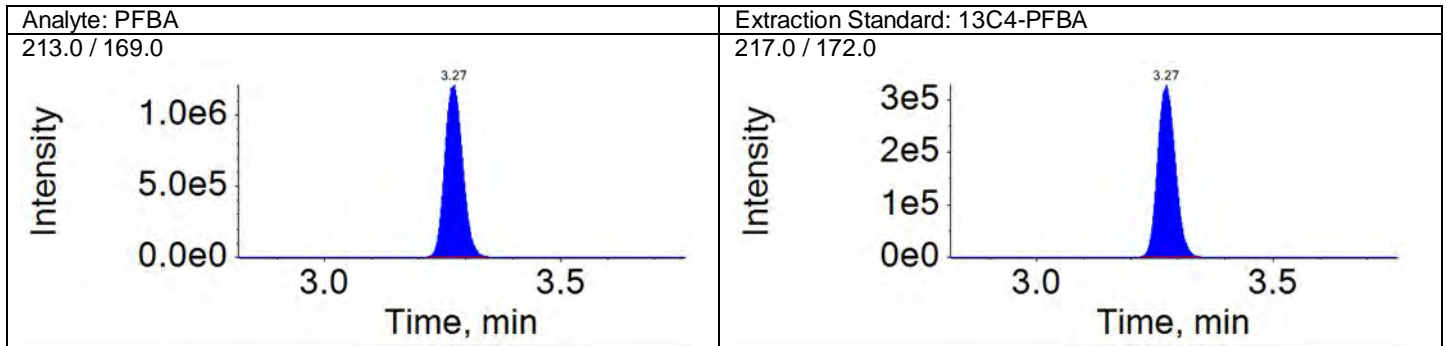
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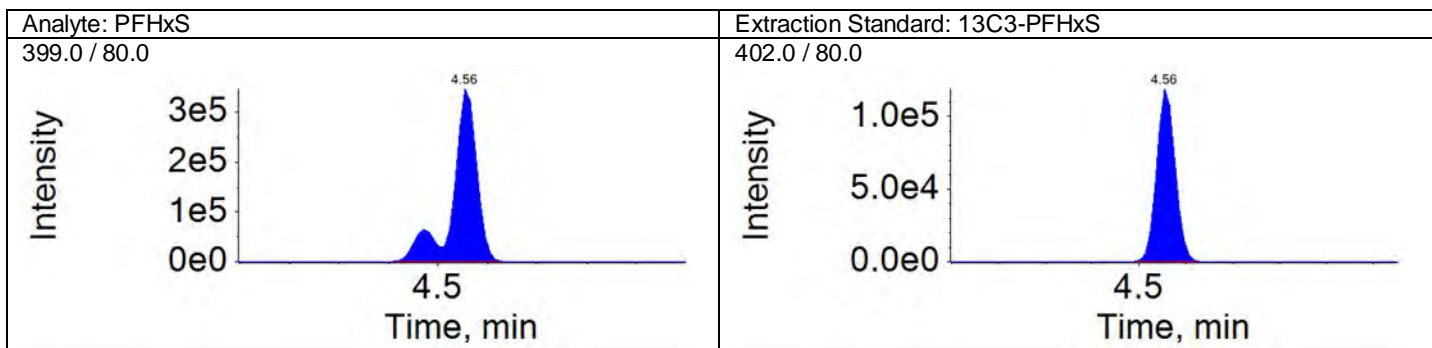
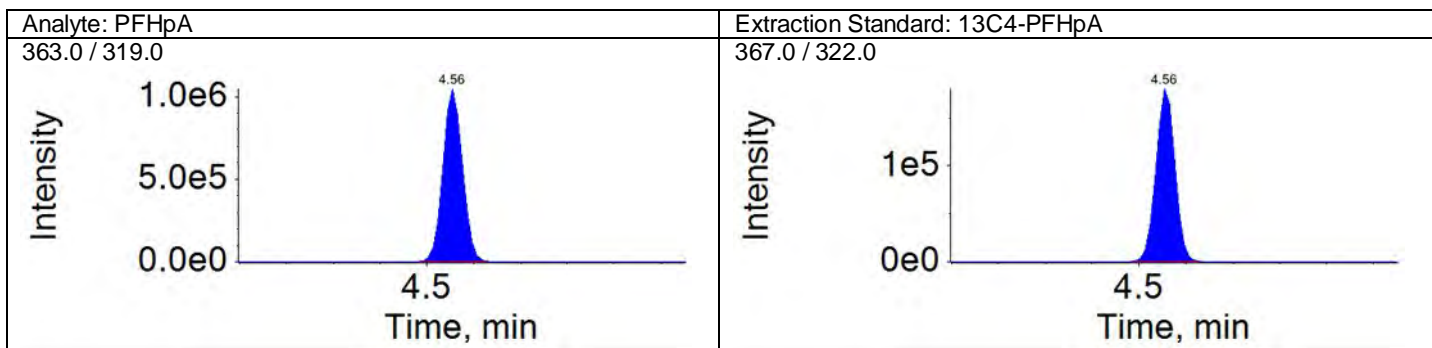
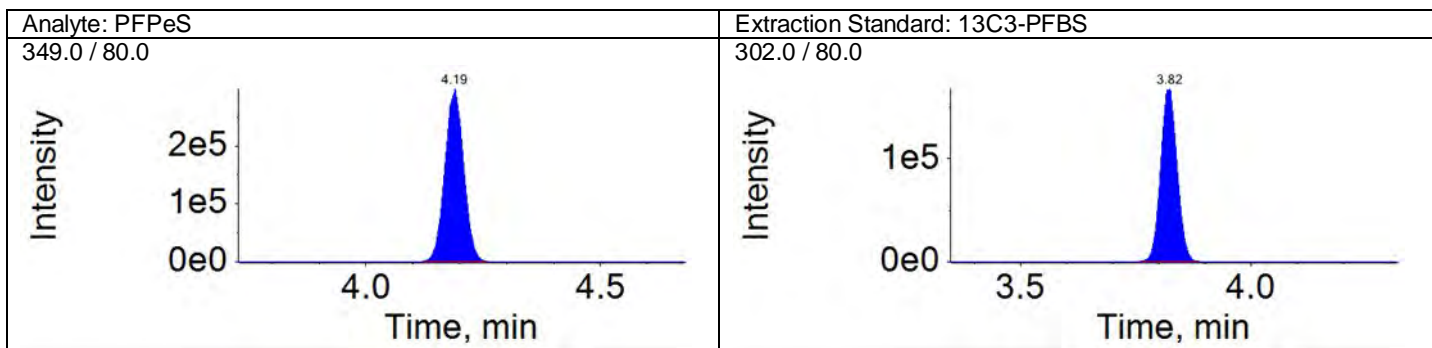
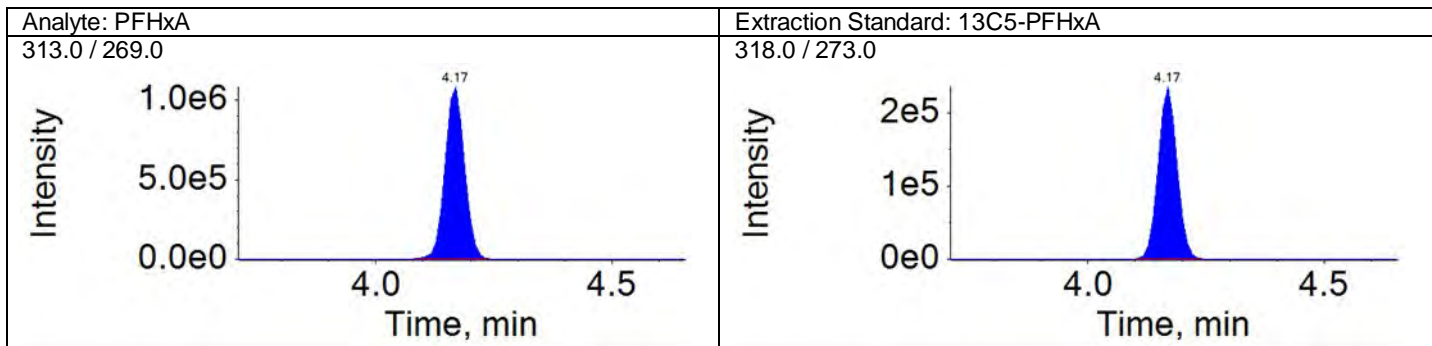
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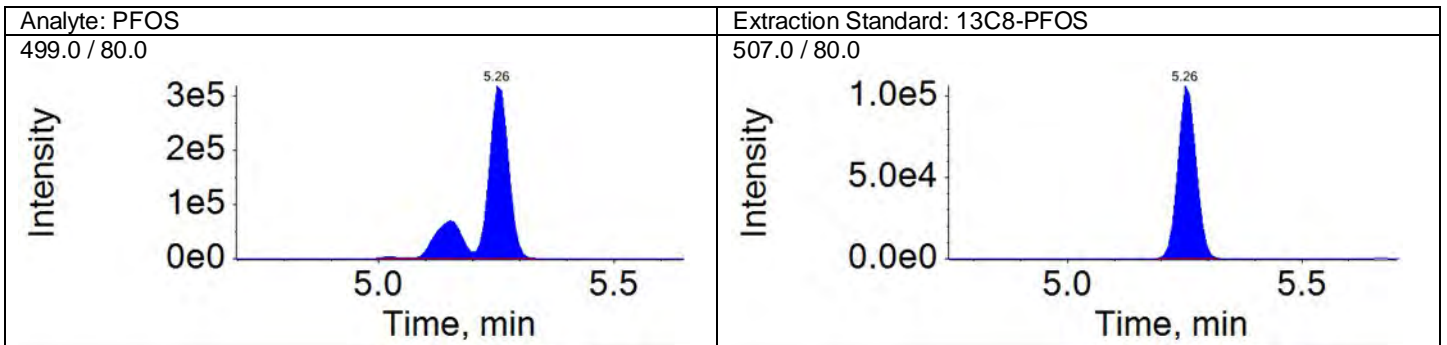
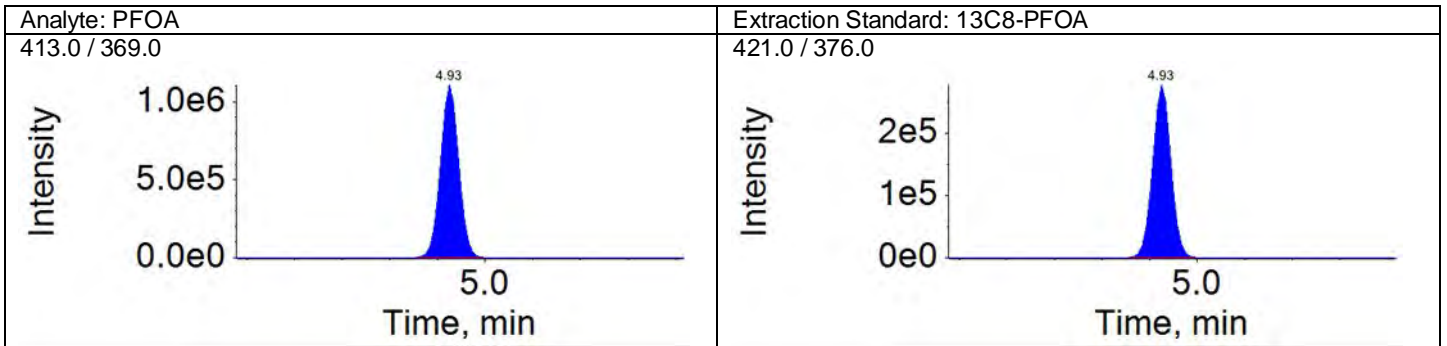
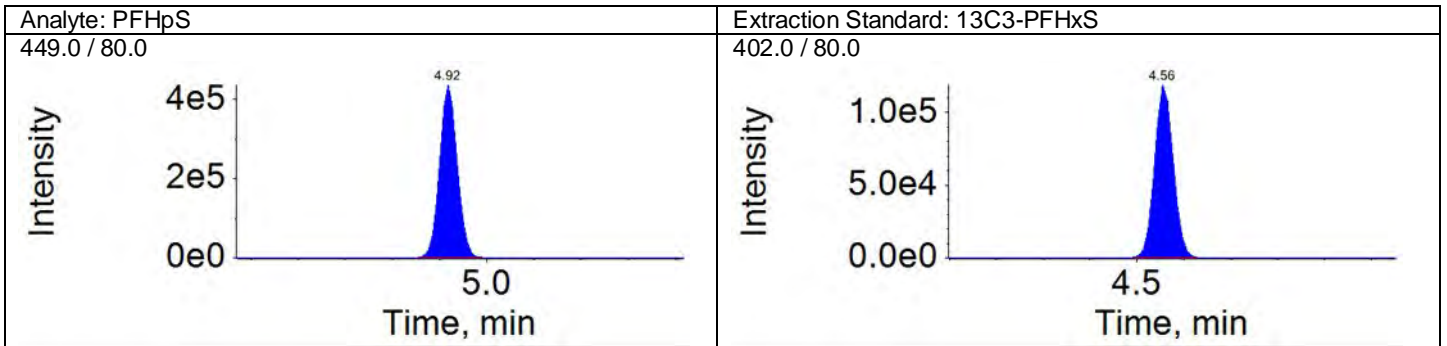
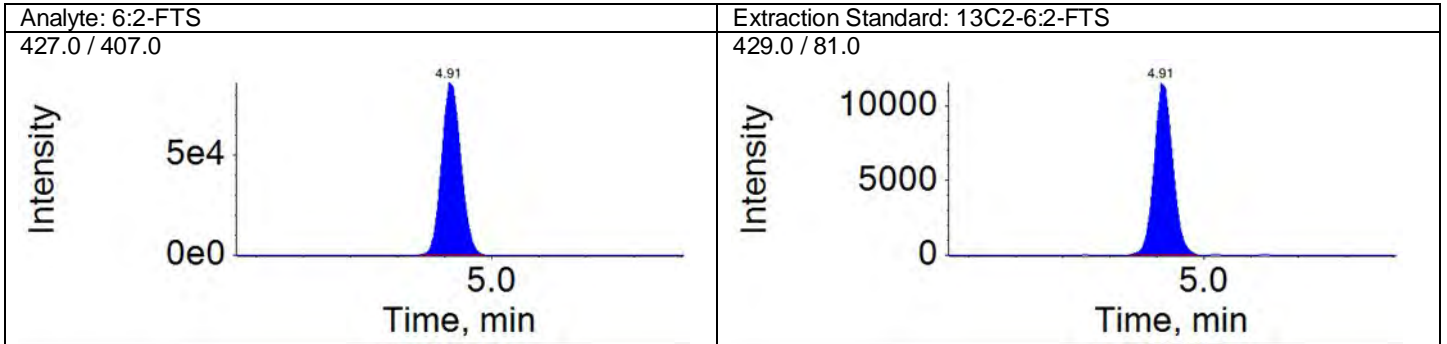
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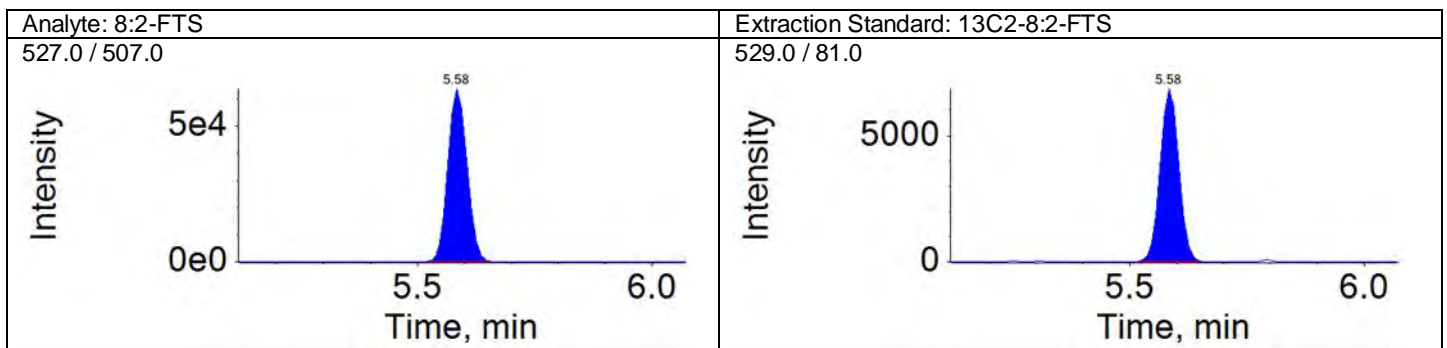
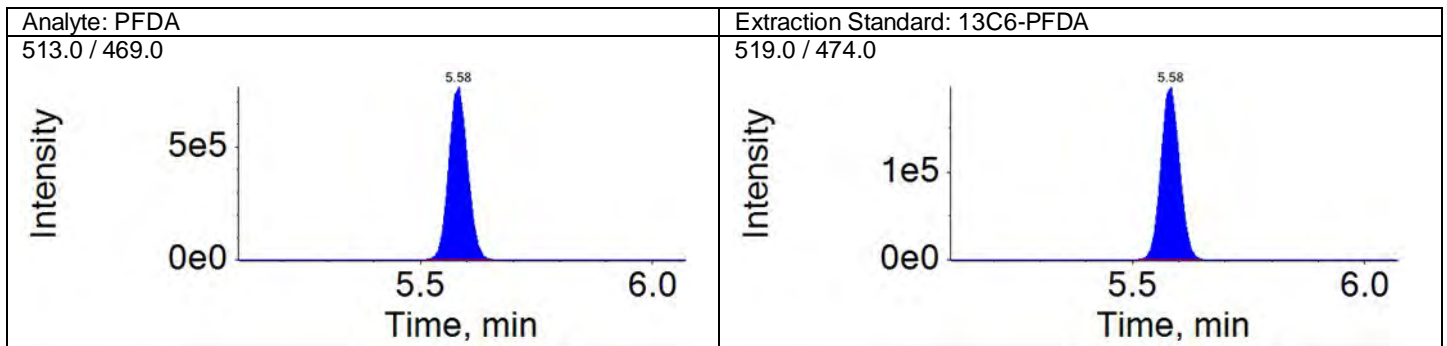
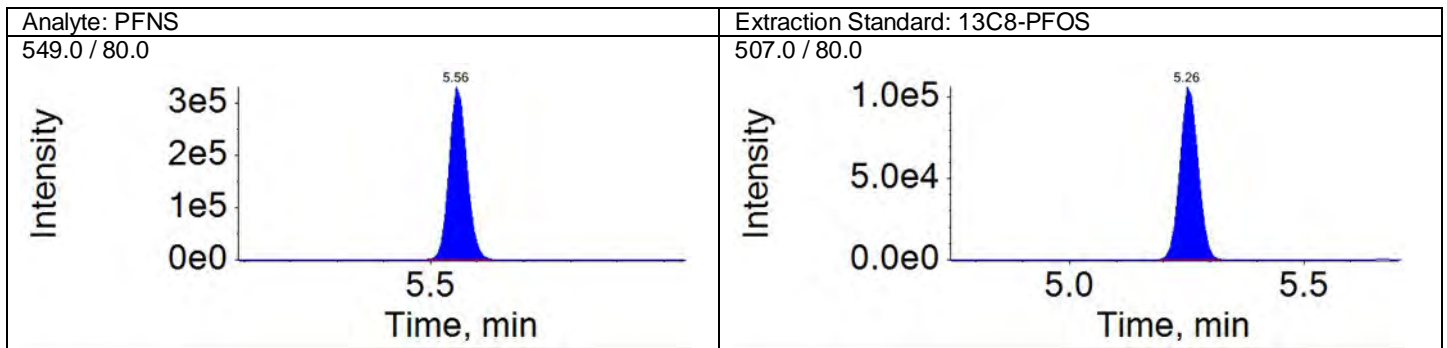
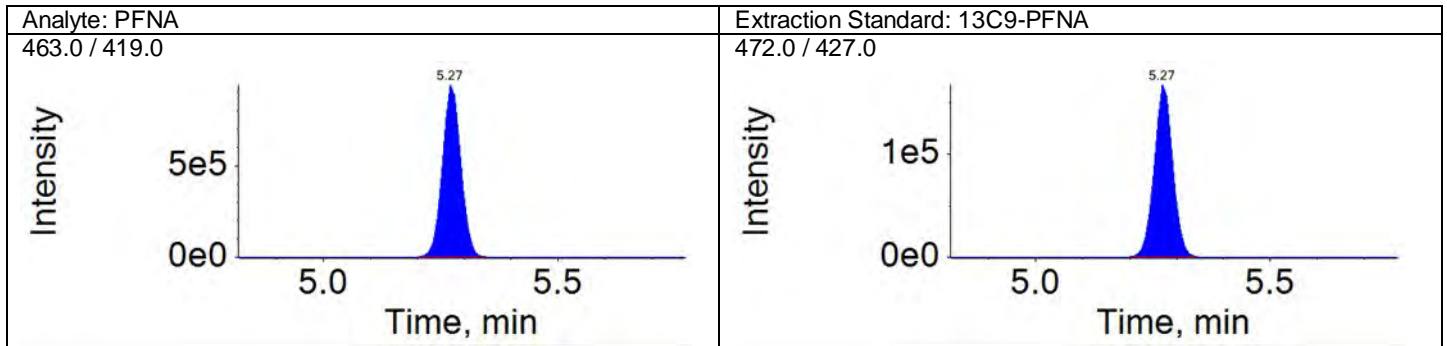
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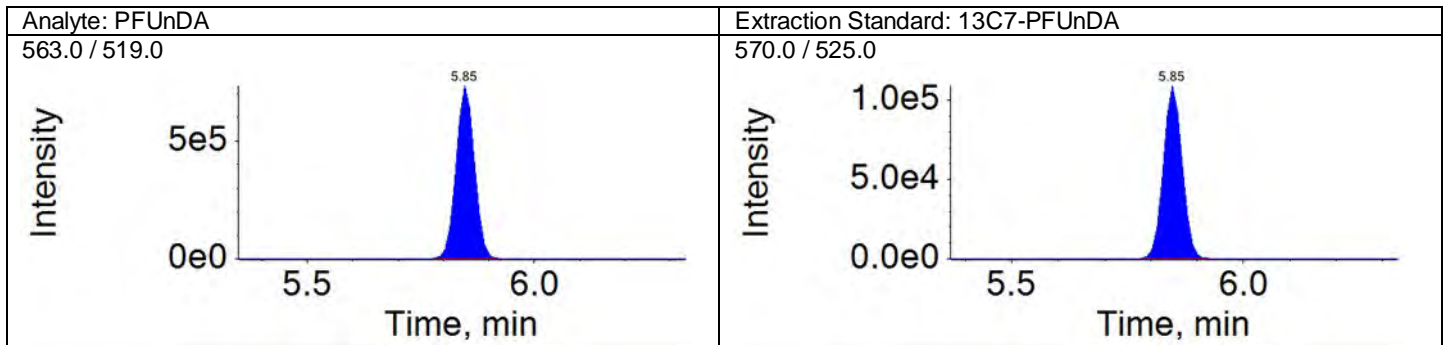
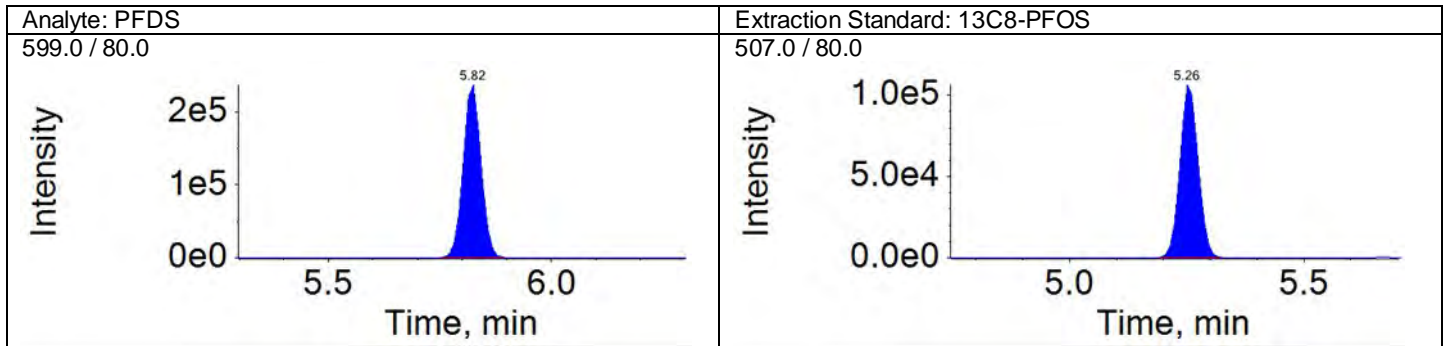
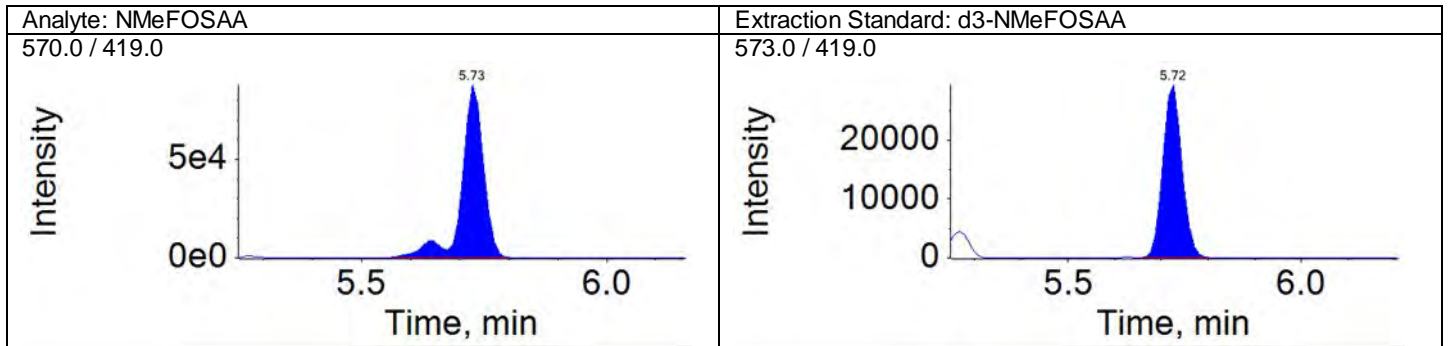
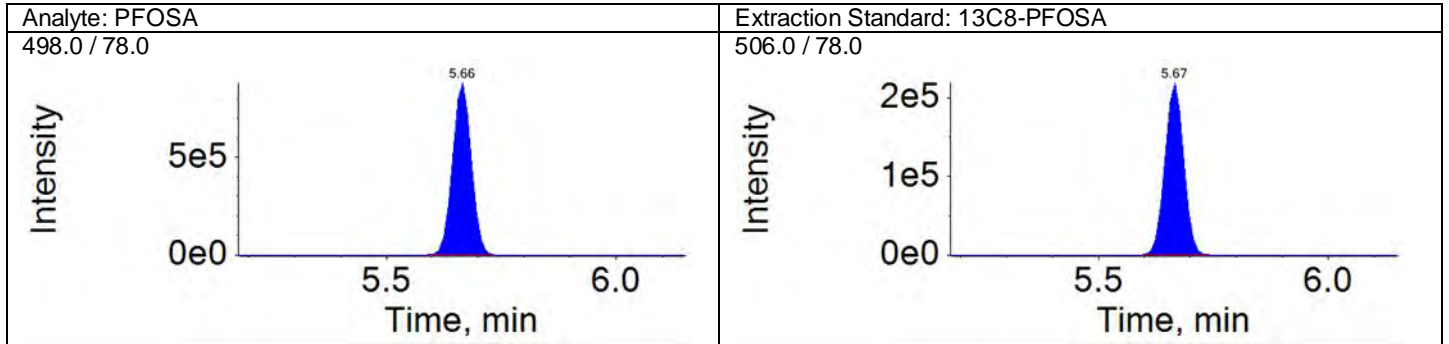
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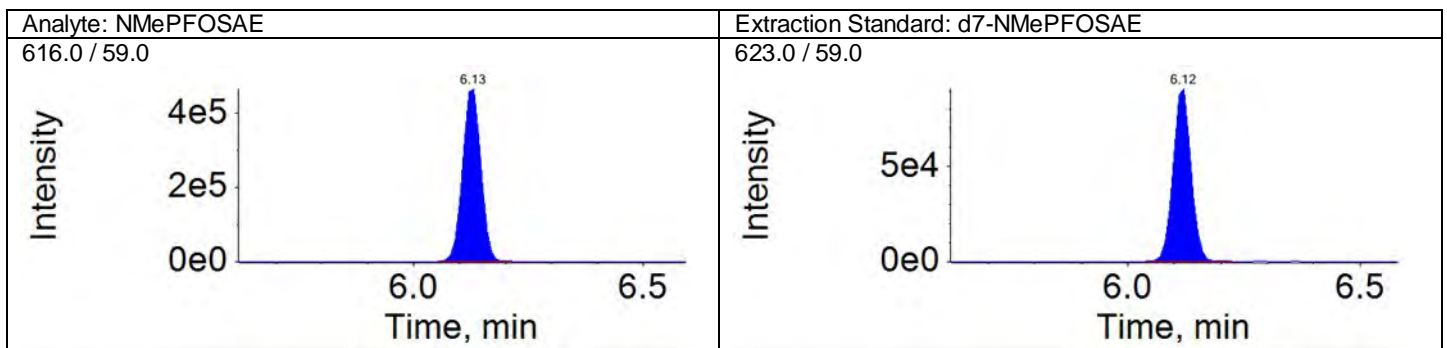
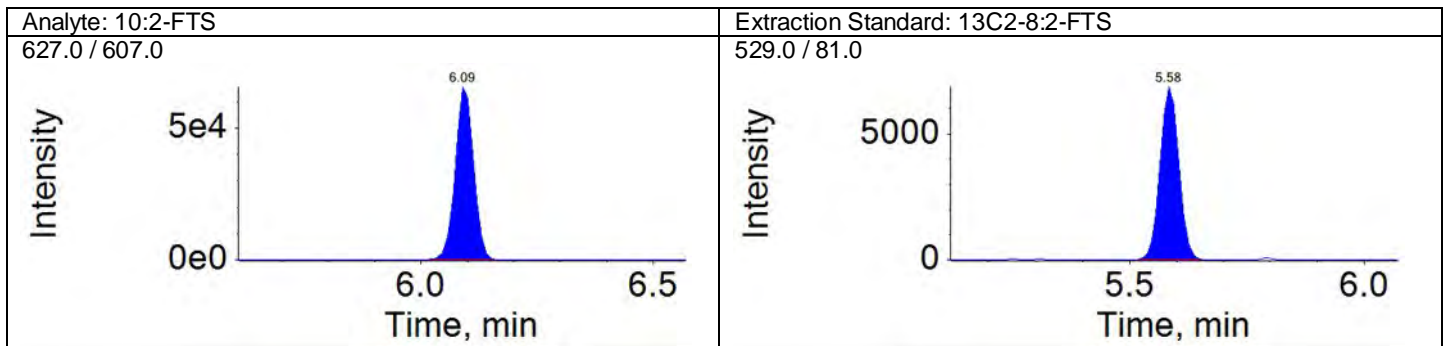
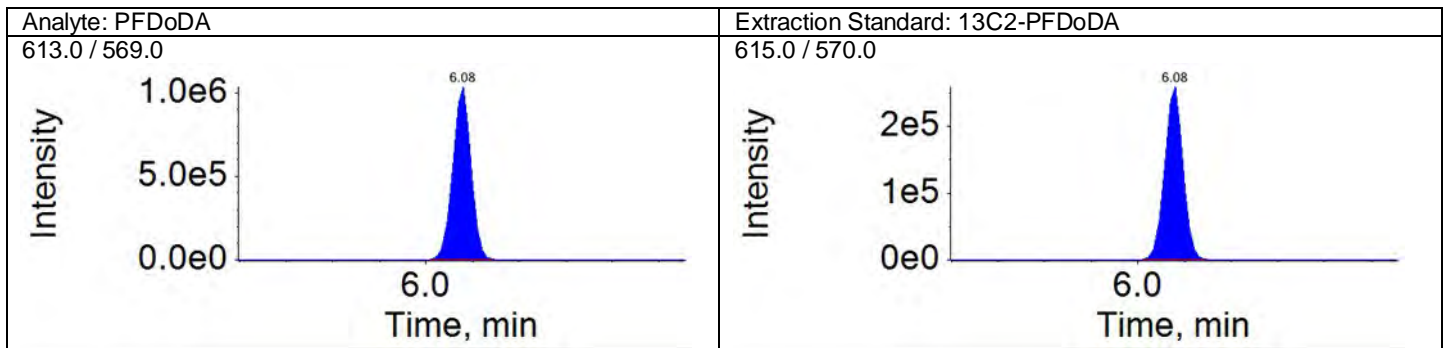
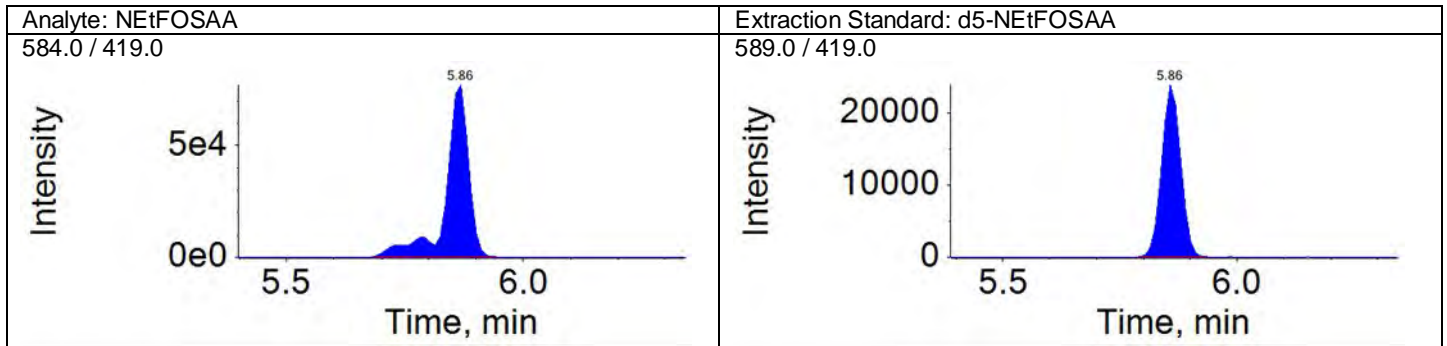
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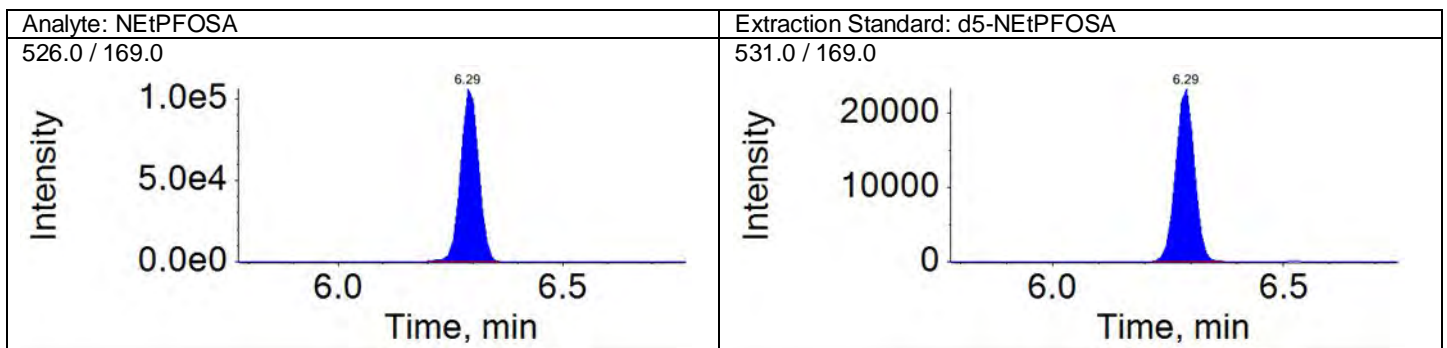
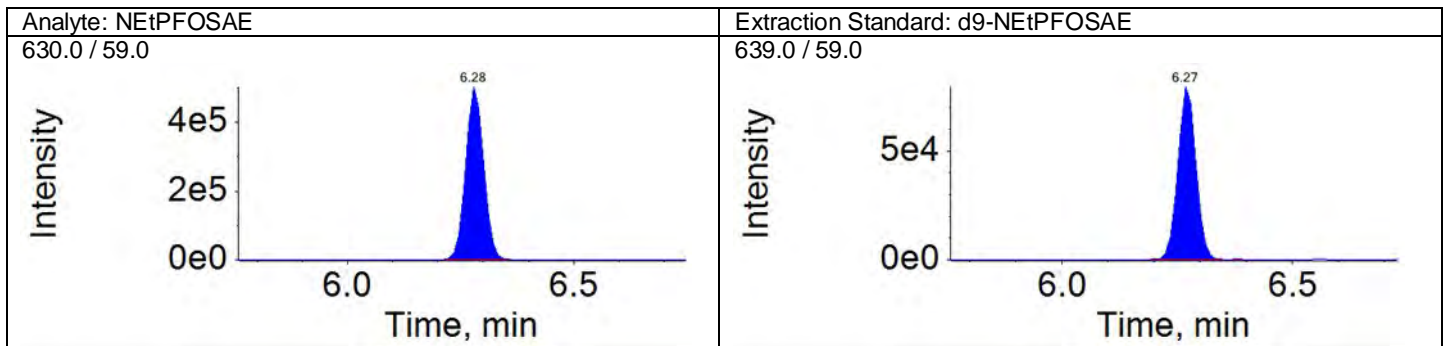
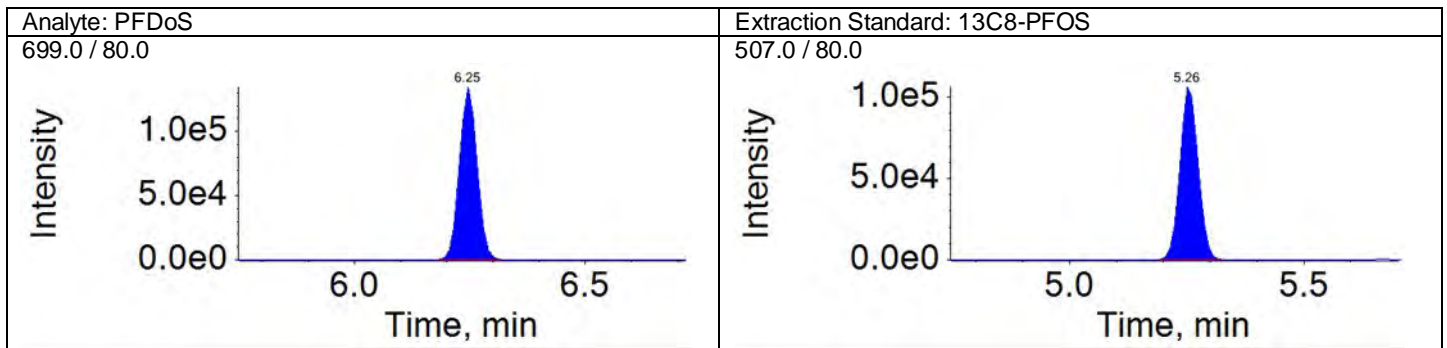
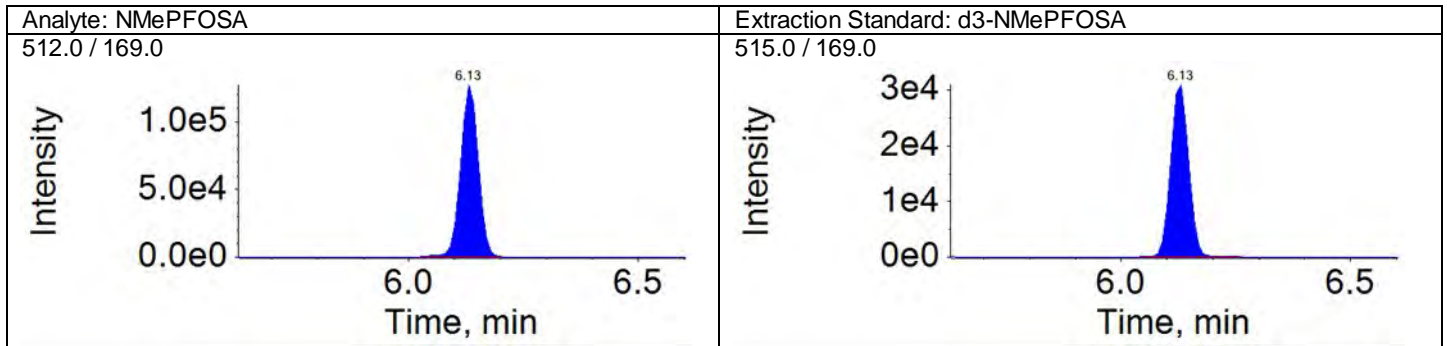
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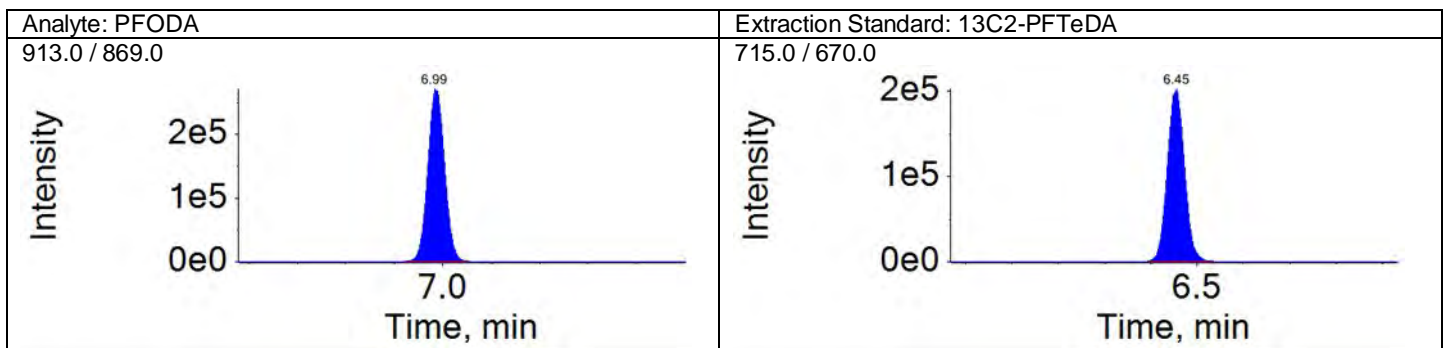
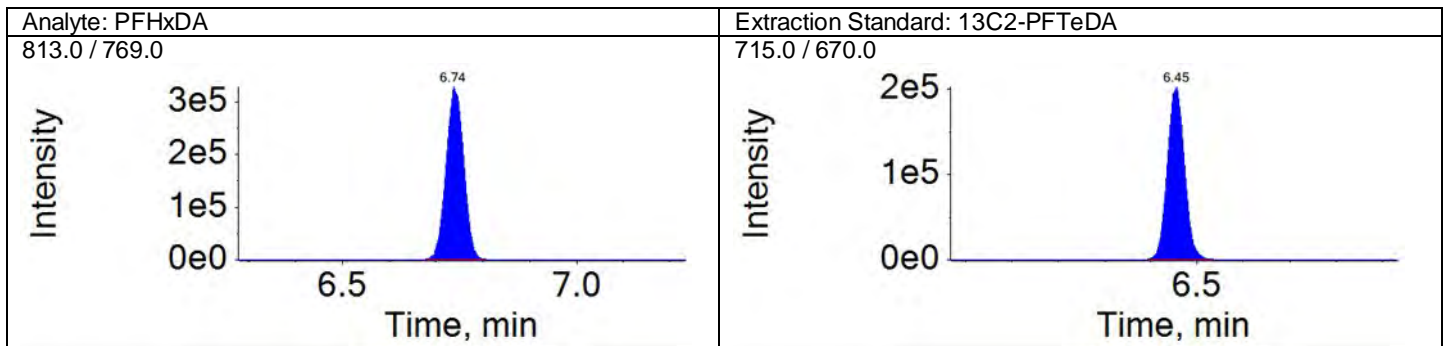
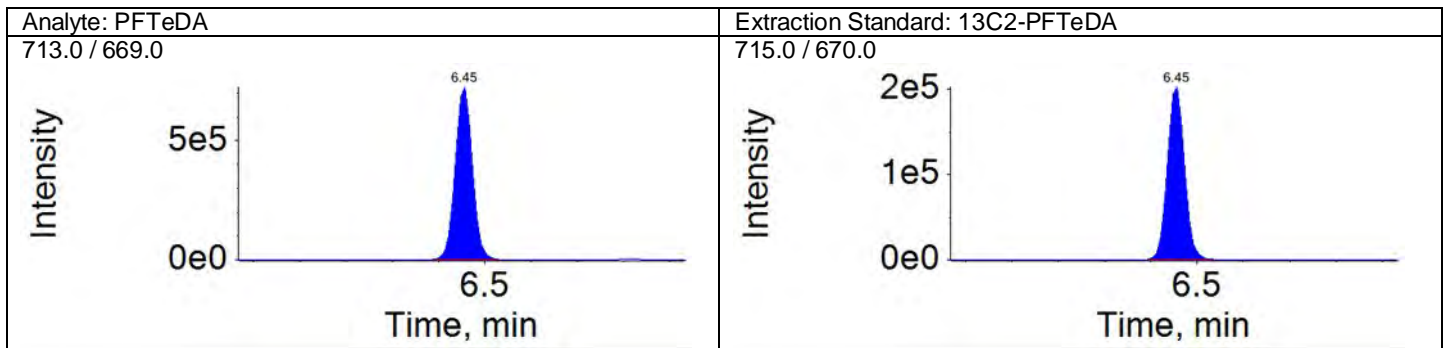
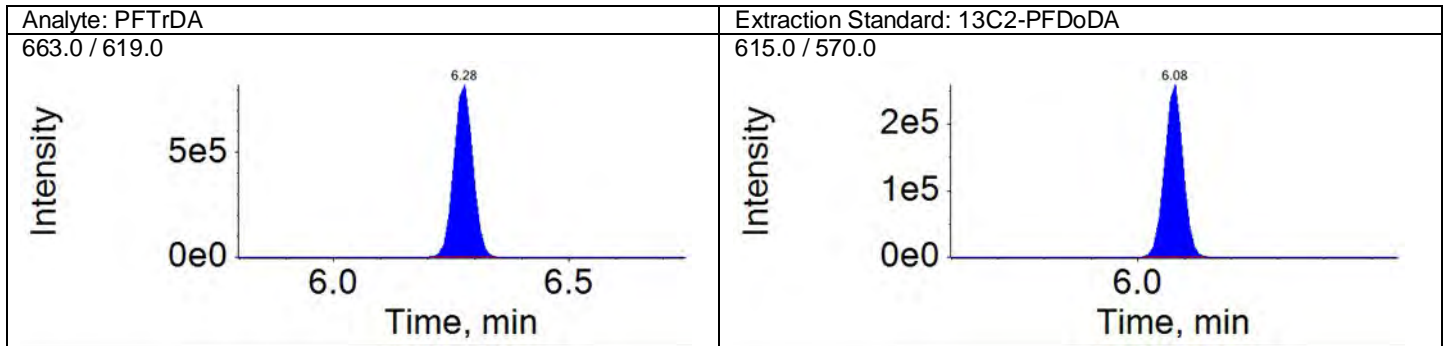
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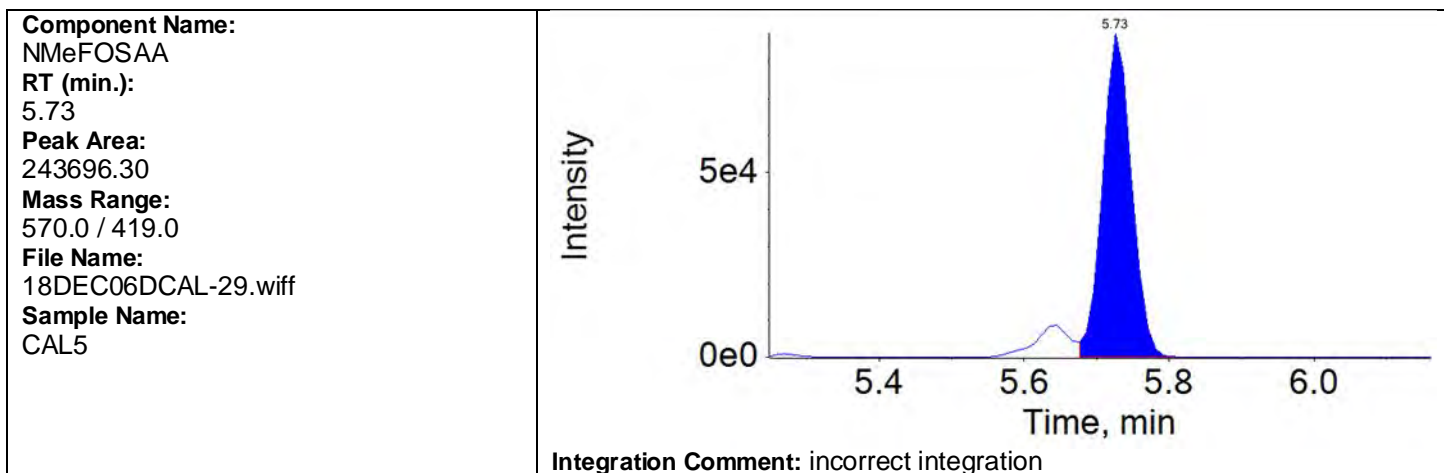
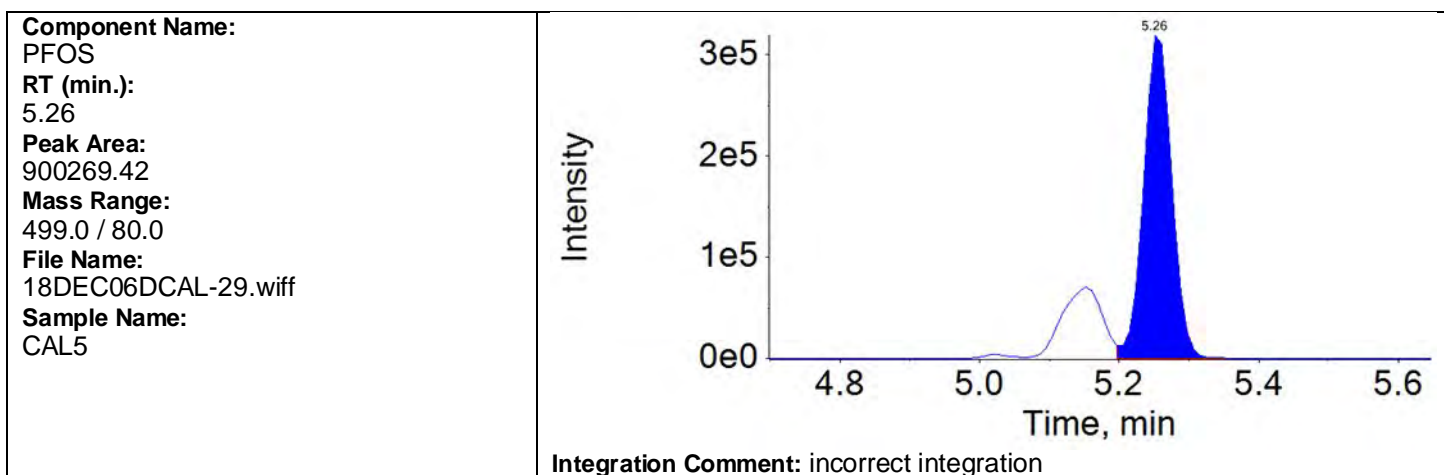
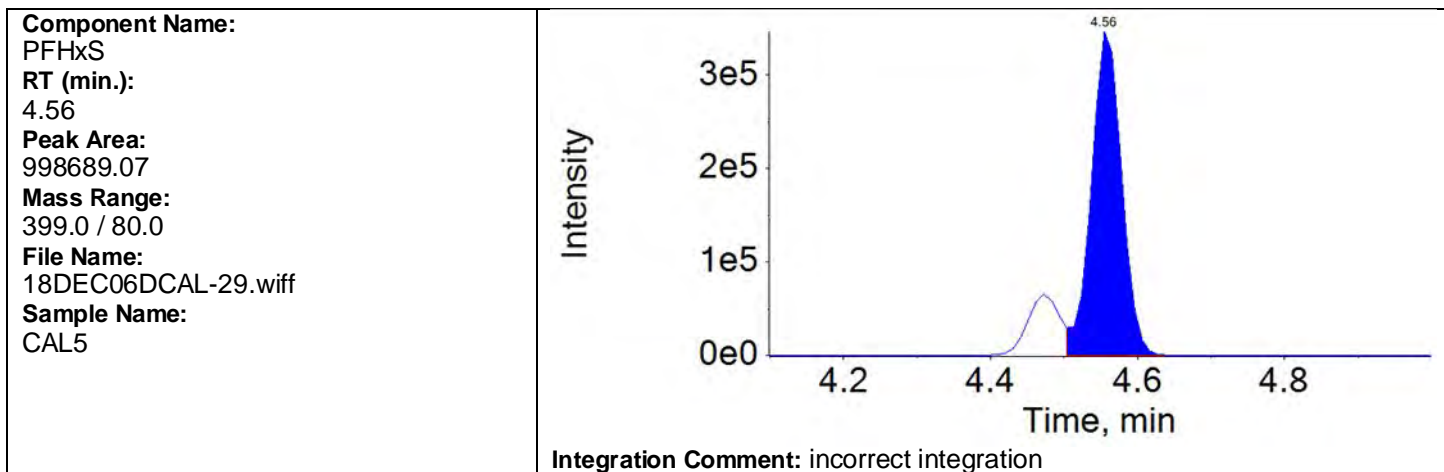
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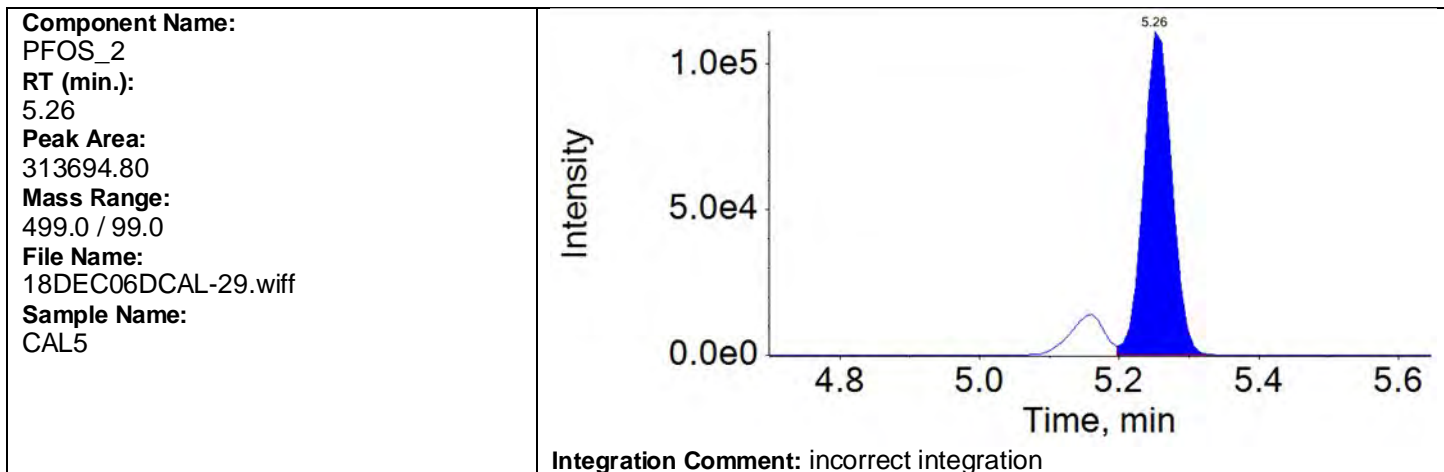
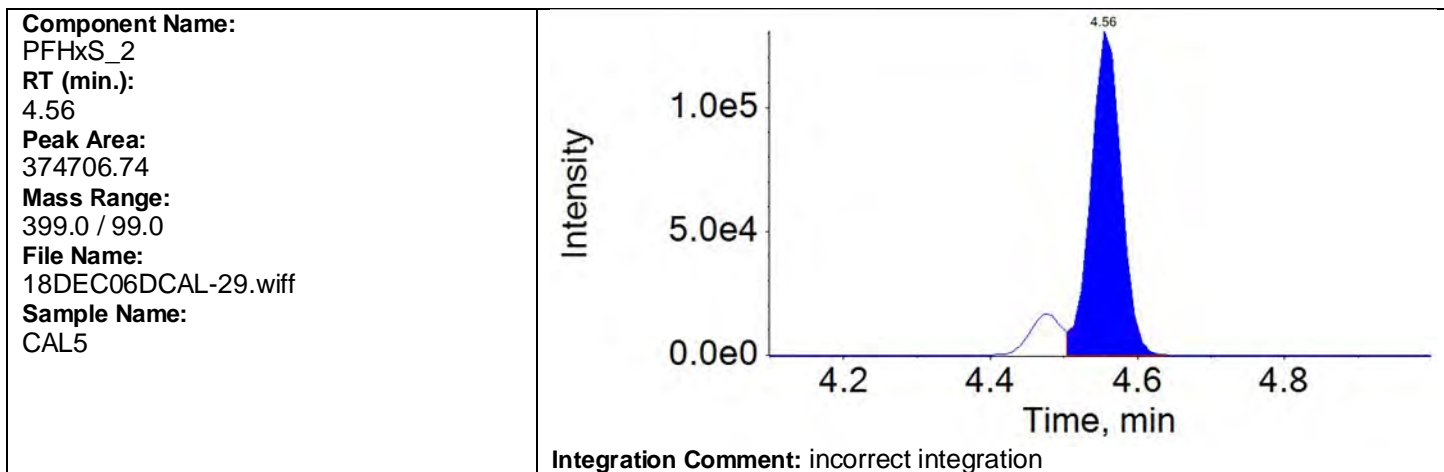
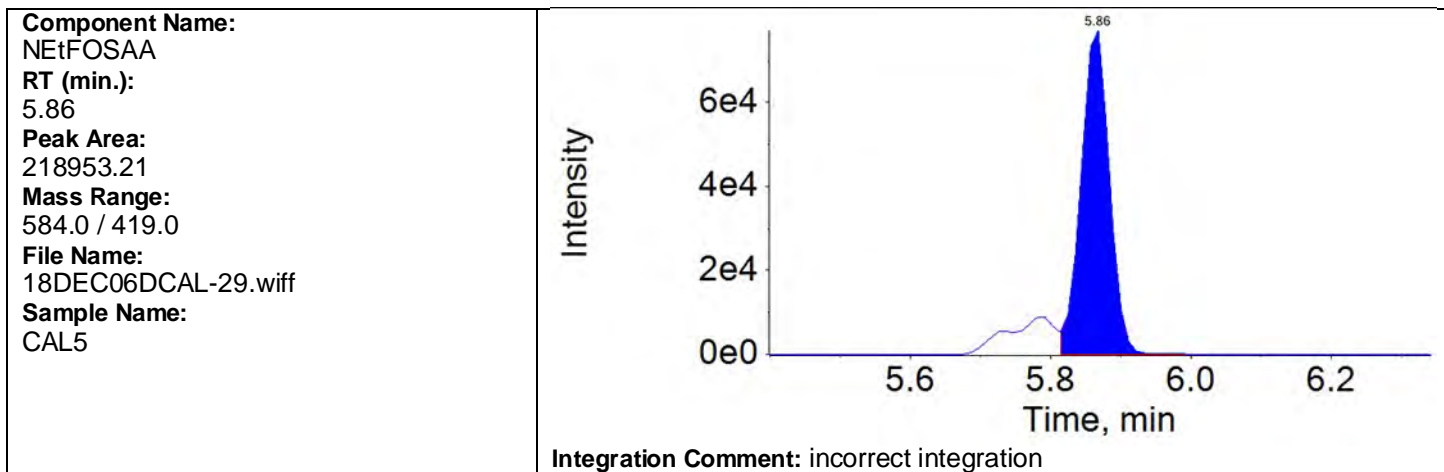
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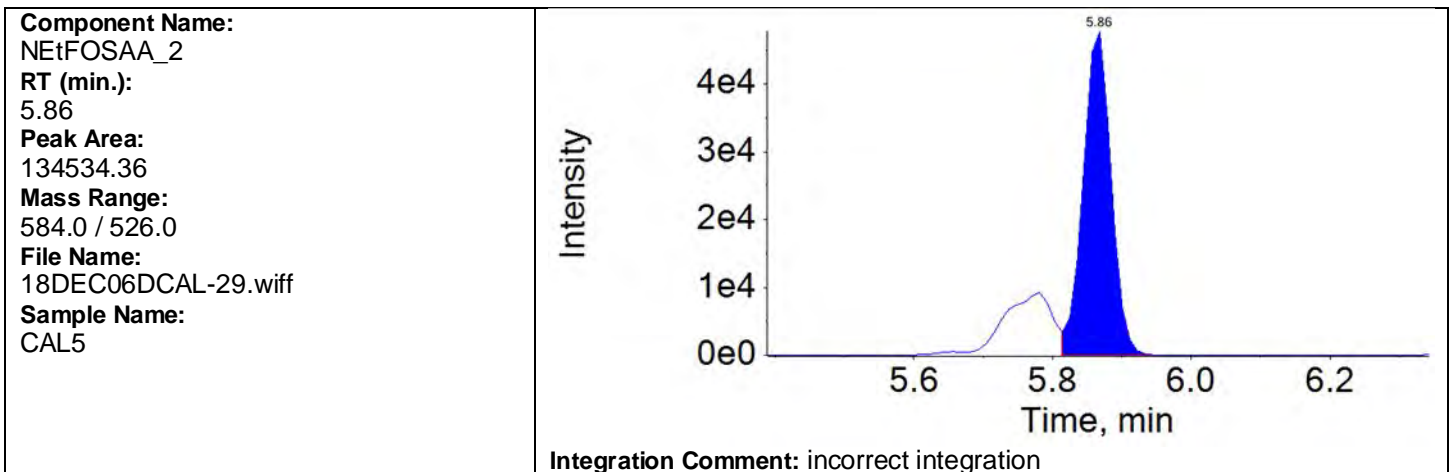
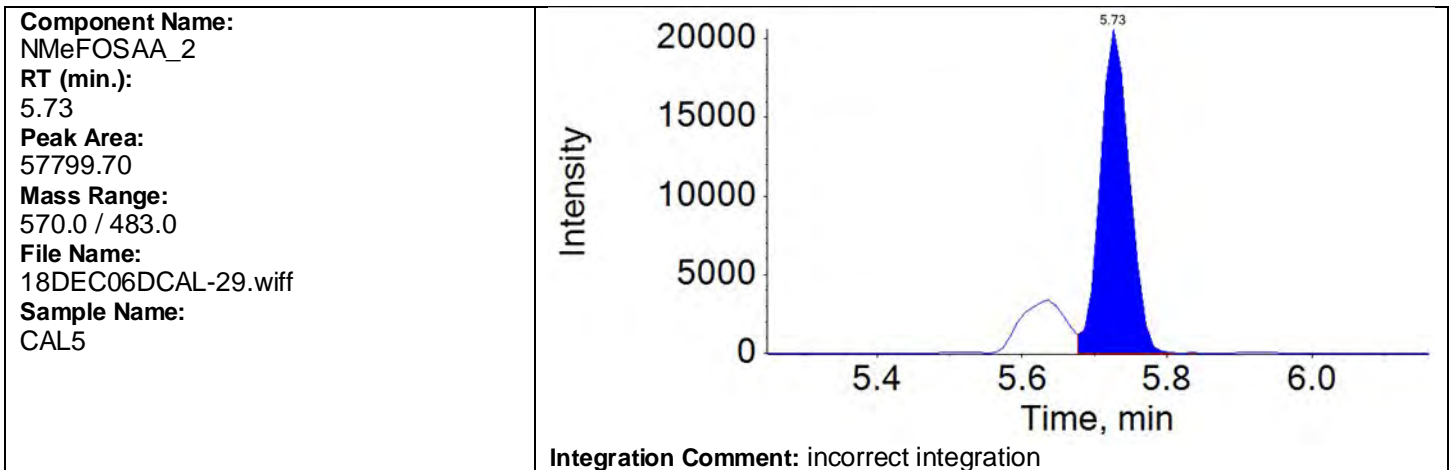
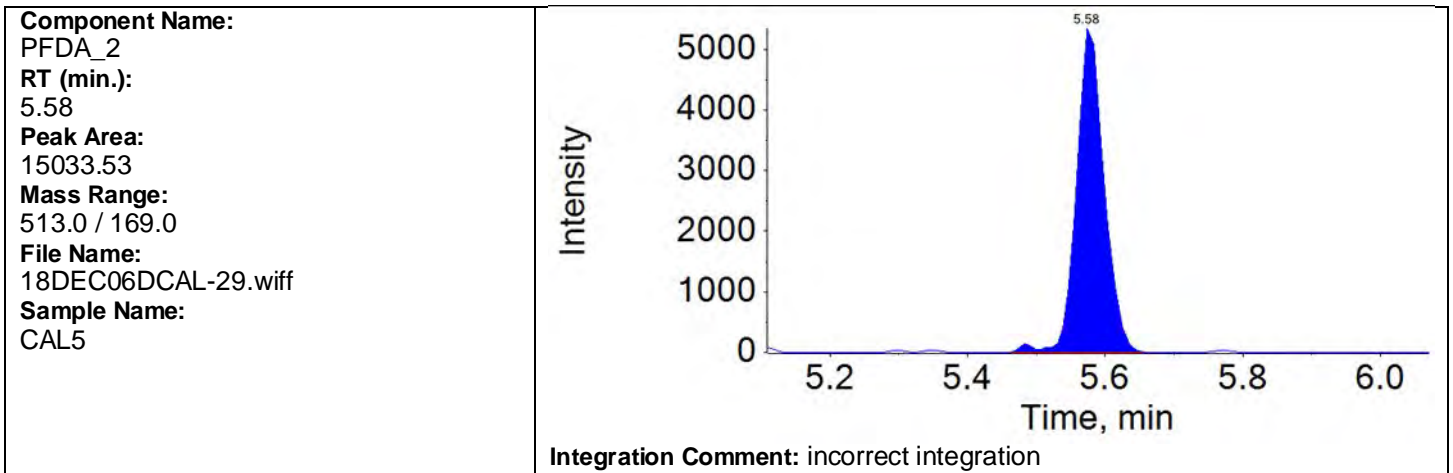
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**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18

Ion Ratio Report

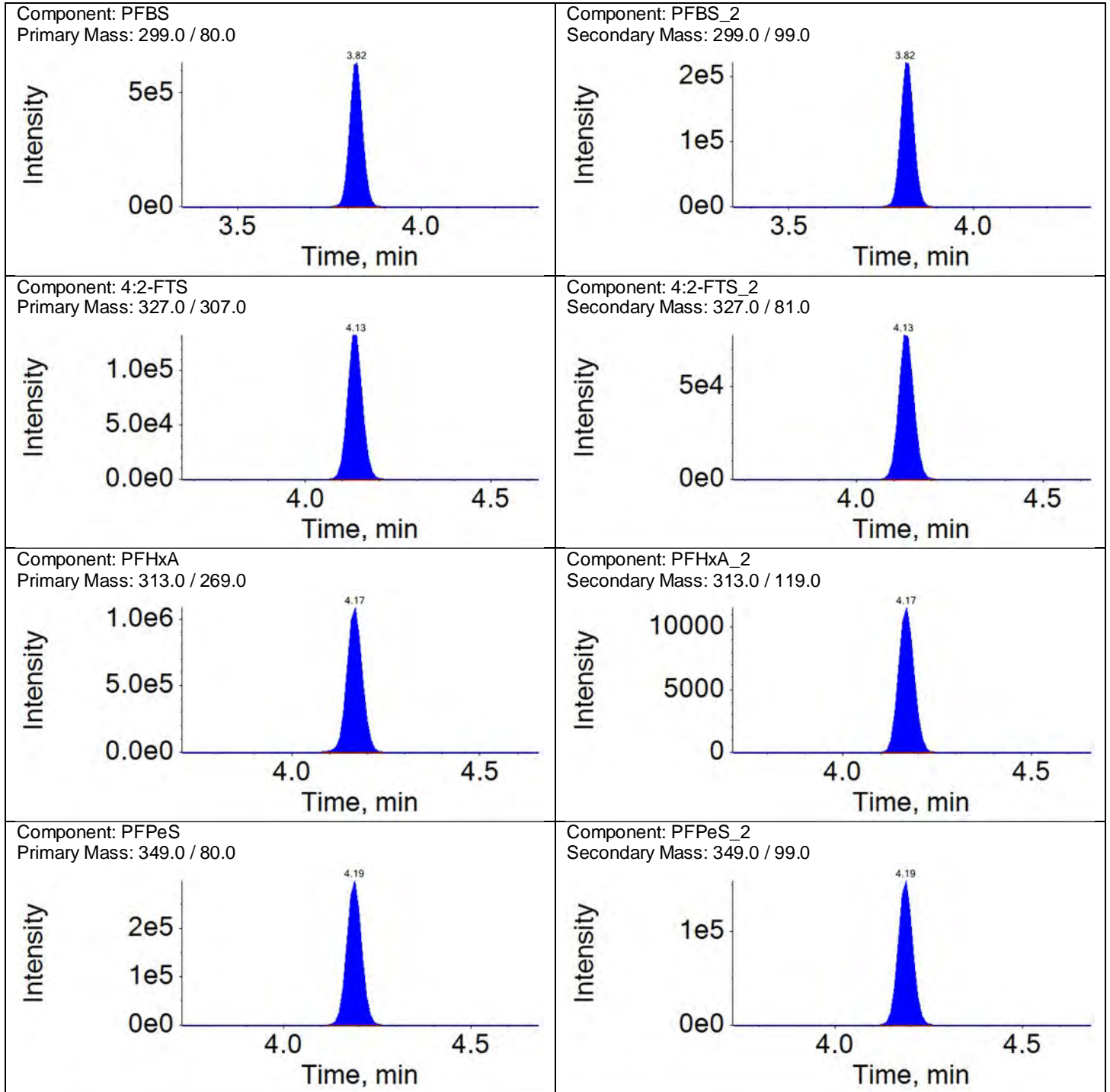
Sample Name: CAL5

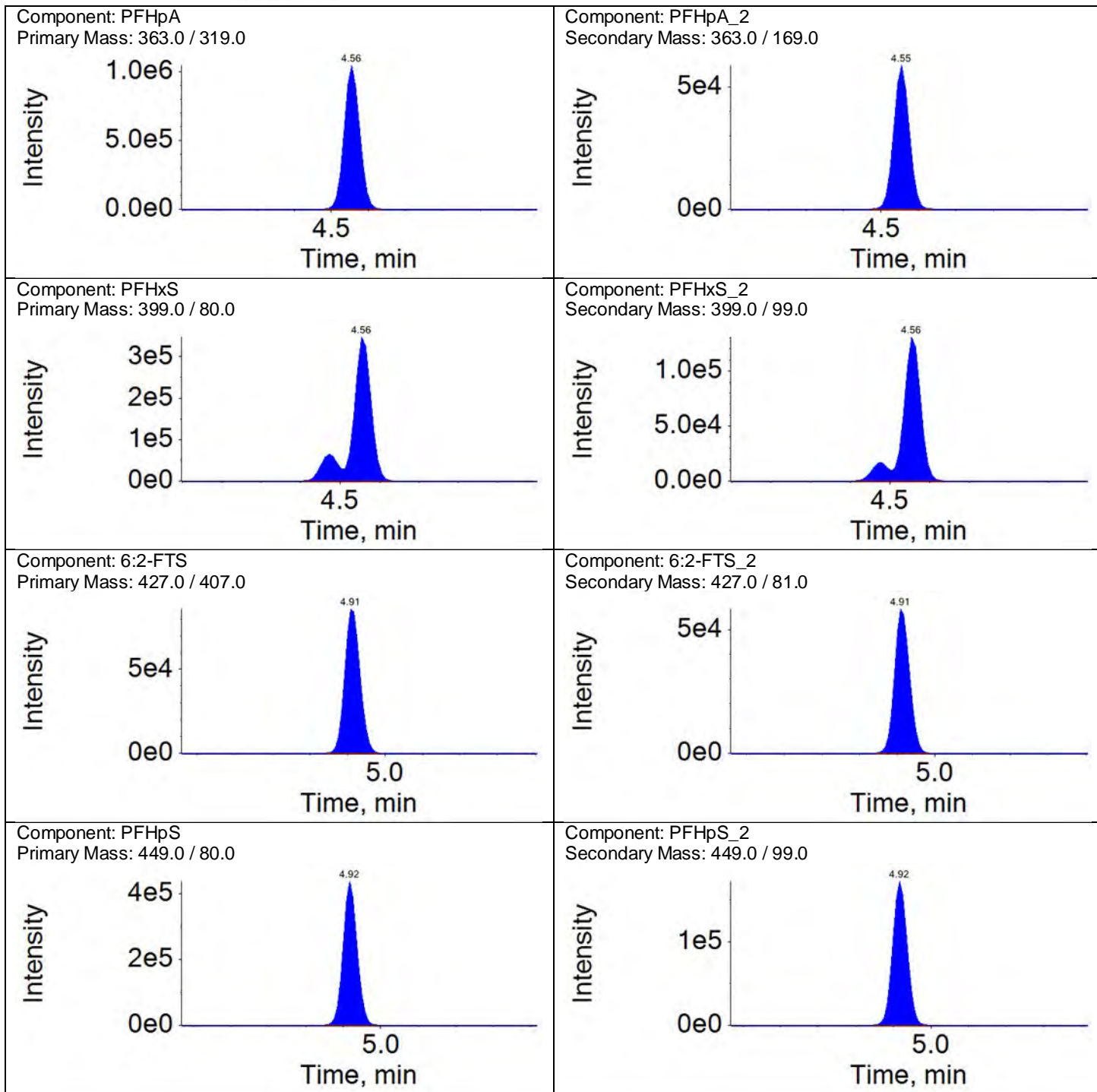
Instrument Name: LM27631

File Name: 18DEC06DCAL-29.wiff

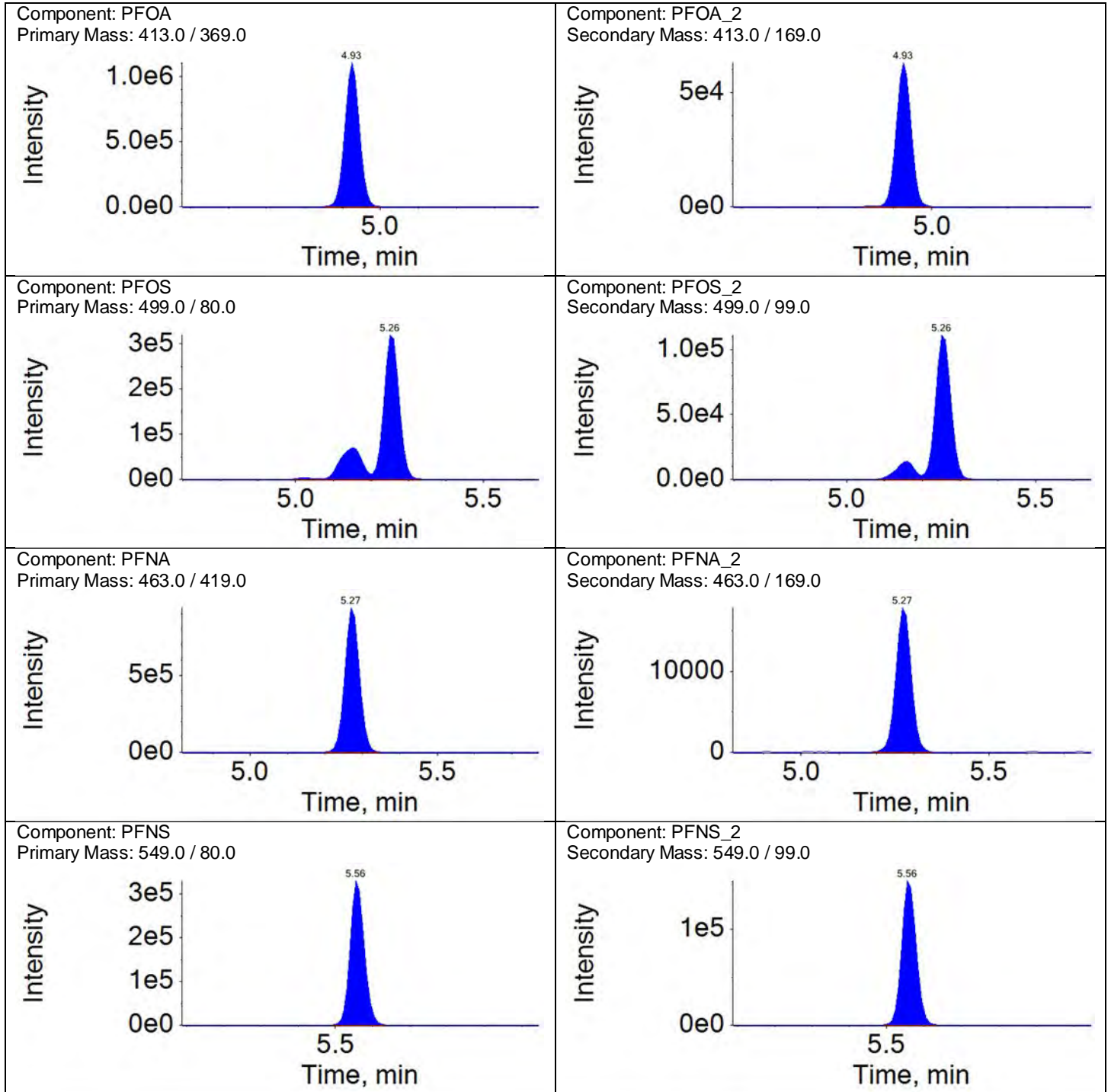
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	1560425.11	A	1.0000	1.0000			
PFBS_2	3.82	1.00	555472.10	A	0.3627	0.3560	-2	50	
4:2-FTS	4.13	1.00	374067.13	A	1.0000	1.0000			
4:2-FTS_2	4.13	1.00	223628.02	A	0.6542	0.5978	-9	50	
PFHxA	4.17	1.00	3100313.22	A	1.0000	1.0000			
PFHxA_2	4.17	1.00	33272.26	A	0.0097	0.0107	11	50	
PFPeS	4.19	1.10	825391.64	A	1.0000	1.0000			
PFPeS_2	4.19	1.10	418523.26	A	0.5262	0.5071	-4	50	
PFHpA	4.56	1.00	3016454.01	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	169832.77	A	0.0565	0.0563	0	50	
PFHxS	4.56	1.00	1191013.53	M	1.0000	1.0000			
PFHxS_2	4.56	1.00	423394.72	M	0.3645	0.3555	-2	50	
6:2-FTS	4.91	1.00	243777.52	A	1.0000	1.0000			
6:2-FTS_2	4.91	1.00	161589.36	A	0.6273	0.6629	6	50	
PFHpS	4.92	1.08	1127510.75	A	1.0000	1.0000			
PFHpS_2	4.92	1.08	461784.24	A	0.4162	0.4096	-2	50	
PFOA	4.93	1.00	2945282.04	A	1.0000	1.0000			
PFOA_2	4.93	1.00	171051.71	A	0.0616	0.0581	-6	50	
PFOS	5.26	1.00	1193441.80	M	1.0000	1.0000			
PFOS_2	5.26	1.00	361837.23	M	0.3021	0.3032	0	50	
PFNA	5.27	1.00	2562019.26	A	1.0000	1.0000			
PFNA_2	5.27	1.00	50952.71	A	0.0192	0.0199	3	50	
PFNS	5.56	1.06	868436.21	A	1.0000	1.0000			
PFNS_2	5.56	1.06	405294.79	A	0.4845	0.4667	-4	50	
PFDA	5.58	1.00	2165925.64	A	1.0000	1.0000			
PFDA_2	5.58	1.00	14850.29	M	0.0096	0.0069	-29	50	
8:2-FTS	5.58	1.00	180667.13	A	1.0000	1.0000			
8:2-FTS_2	5.59	1.00	114489.18	A	0.6117	0.6337	4	50	
NMeFOSAA	5.73	1.00	273175.18	M	1.0000	1.0000			
NMeFOSAA_2	5.73	1.00	72263.23	M	0.2673	0.2645	-1	50	
PFDS	5.82	1.11	656687.67	A	1.0000	1.0000			
PFDS_2	5.82	1.11	332927.54	A	0.4952	0.5070	2	50	
PFOA_2	5.85	1.00	2053634.11	A	1.0000	1.0000			
PFOA_2	5.85	1.00	9041.78	A	0.0041	0.0044	7	50	
NEtFOSAA	5.86	1.00	261138.15	M	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	179526.32	M	0.6726	0.6875	2	50	
PFOA_2	6.08	1.00	2804098.45	A	1.0000	1.0000			
PFOA_2	6.08	1.00	38761.37	A	0.0133	0.0138	4	50	
10:2-FTS	6.09	1.09	178277.68	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	118471.68	A	0.6969	0.6645	-5	50	
PFOA_2	6.28	1.03	2289995.99	A	1.0000	1.0000			
PFOA_2	6.28	1.03	18323.66	A	0.0075	0.0080	6	50	
PFOA_2	6.45	1.00	1865922.85	A	1.0000	1.0000			
PFOA_2	6.45	1.00	10732.53	A	0.0066	0.0058	-13	50	
PFOA_2	6.74	1.04	856971.96	A	1.0000	1.0000			
PFOA_2	6.74	1.04	53401.51	A	0.0616	0.0623	1	50	
PFOA_2	6.99	1.08	651552.95	A	1.0000	1.0000			
PFOA_2	6.98	1.08	16332.39	A	0.0272	0.0251	-8	50	

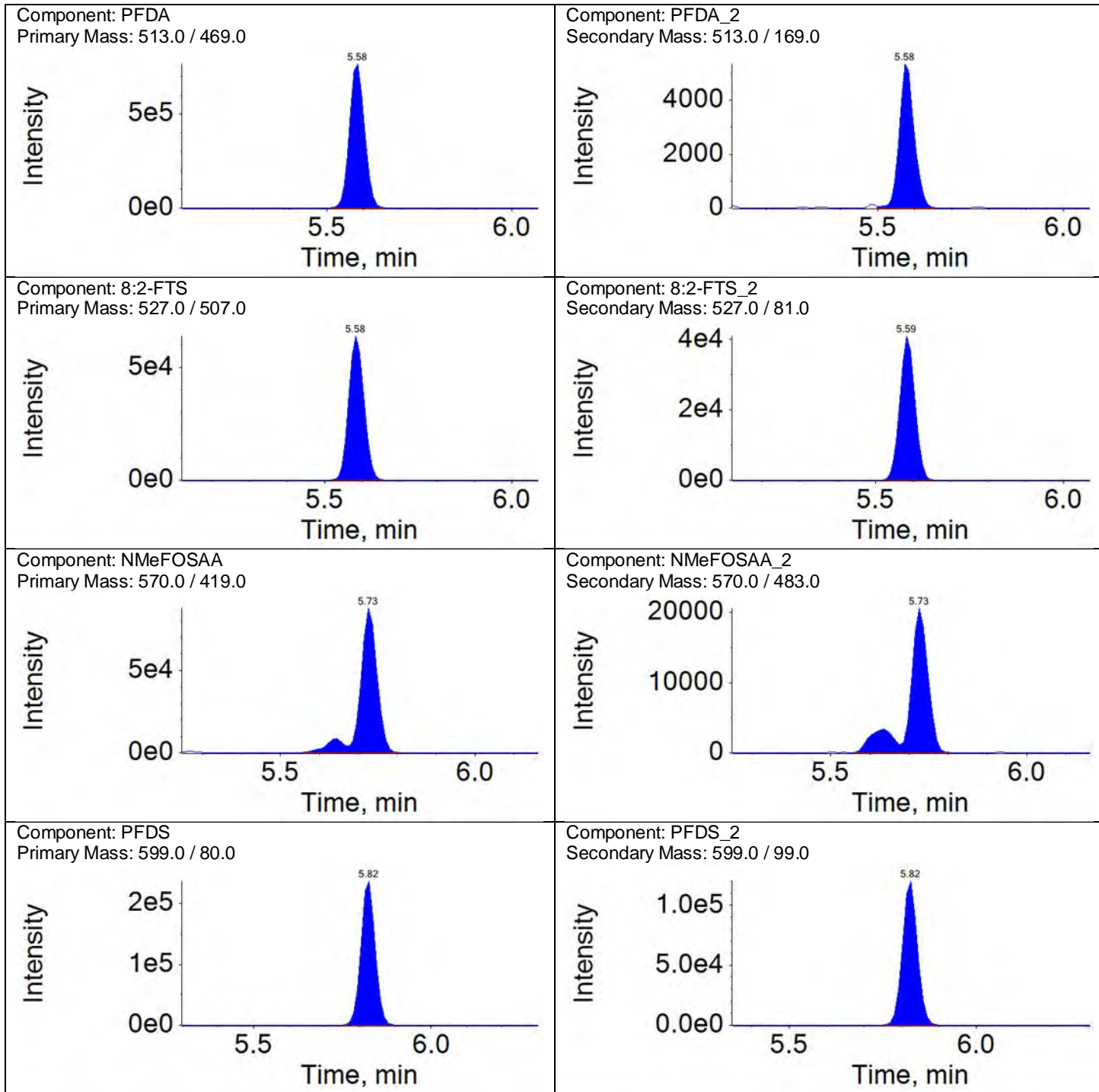


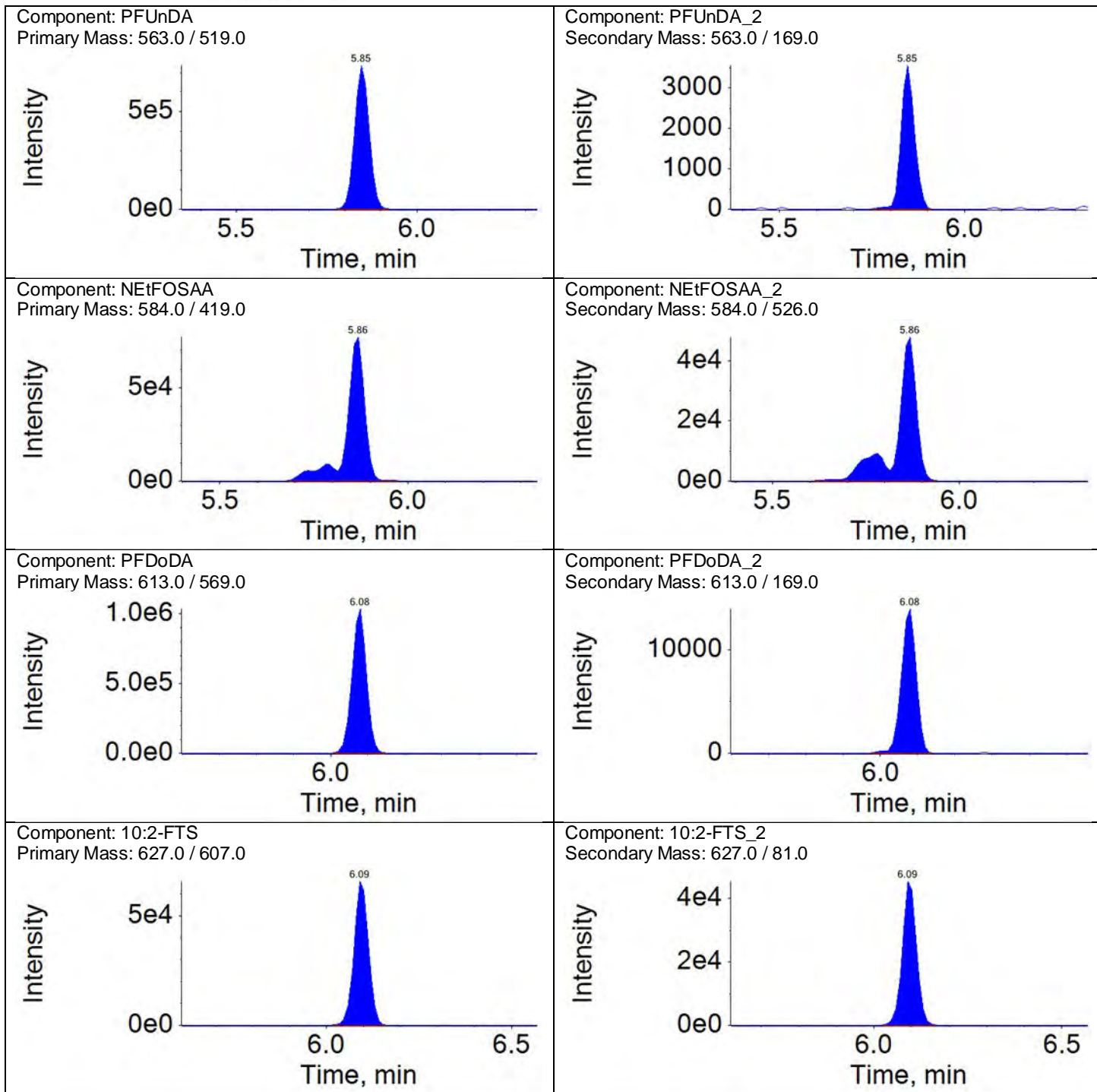


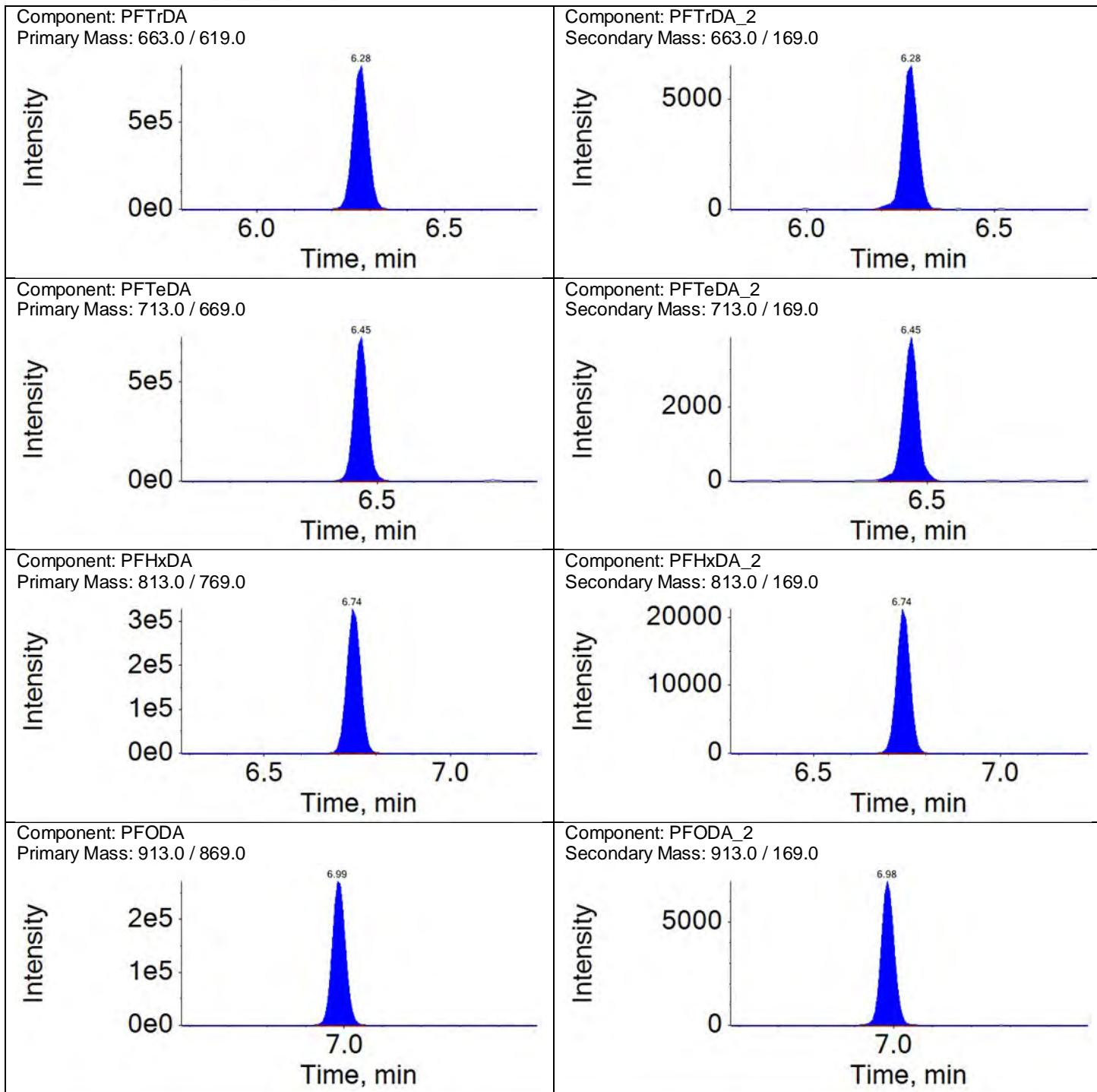














ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL6	Data File:	18DEC06DCAL-30.wiff
Sample ID:	CALBRN61833B	Acquis Date:	2018-12-07T00:22:31
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	8	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	677846.0	825688.9	-18	50	
13C2-PFOA	5.0	407328.5	449802.8	-9	50	
13C4-PFOS	4.8	247949.8	276858.3	-10	50	
13C2-PFDA	5.0	272997.0	315428.3	-13	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	779560.6	13C3-PFBA	677846.0	1.150	5.000	5.090	102	70-130	
E13C5-PFPeA	735887.1	13C3-PFBA	677846.0	1.086	5.000	5.156	103	70-130	
E13C3-PFBS	392877.3	13C3-PFBA	677846.0	0.580	4.650	4.913	106	70-130	
E13C2-4:2-FTS	49555.0	13C2-PFOA	407328.5	0.122	4.670	4.767	102	70-130	
E13C5-PFHxA	606649.2	13C2-PFOA	407328.5	1.489	5.000	5.000	100	70-130	
E13C3-PFHxS	295455.6	13C2-PFOA	407328.5	0.725	4.730	4.652	98	70-130	
E13C4-PFHpA	489476.9	13C2-PFOA	407328.5	1.202	5.000	5.109	102	70-130	
E13C2-6:2-FTS	27234.8	13C2-PFOA	407328.5	0.067	4.750	4.142	87	70-130	
E13C8-PFOA	664219.2	13C2-PFOA	407328.5	1.631	5.000	4.609	92	70-130	
E13C8-PFOS	255714.8	13C4-PFOS	247949.8	1.031	4.780	4.628	97	70-130	
E13C9-PFNA	445443.1	13C4-PFOS	247949.8	1.797	5.000	5.077	102	70-130	
E13C6-PFDA	541153.2	13C2-PFDA	272997.0	1.982	5.000	5.253	105	70-130	
E13C2-8:2-FTS	20179.0	13C2-PFDA	272997.0	0.074	4.790	4.826	101	70-130	
E13C8-PFOSA	576971.5	13C2-PFDA	272997.0	2.113	5.000	4.999	100	70-130	
Ed3-NMeFOSAA	86838.4	13C2-PFDA	272997.0	0.318	5.000	5.637	113	70-130	
E13C7-PFUnDA	297859.0	13C2-PFDA	272997.0	1.091	5.000	5.352	107	70-130	
Ed5-NEtFOSAA	64805.9	13C2-PFDA	272997.0	0.237	5.000	5.240	105	70-130	
E13C2-PFDoDA	670197.9	13C2-PFDA	272997.0	2.455	5.000	5.152	103	70-130	
Ed7-NMePFOSAE	260658.2	13C2-PFDA	272997.0	0.955	5.000	5.500	110	70-130	
Ed3-NMePFOSA	82601.0	13C2-PFDA	272997.0	0.303	5.000	5.513	110	70-130	
Ed9-NEtPFOSAE	214650.5	13C2-PFDA	272997.0	0.786	5.000	5.422	108	70-130	
Ed5-NEtPFOSA	65686.6	13C2-PFDA	272997.0	0.241	5.000	5.415	108	70-130	
E13C2-PFTeDA	481845.9	13C2-PFDA	272997.0	1.765	5.000	5.239	105	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

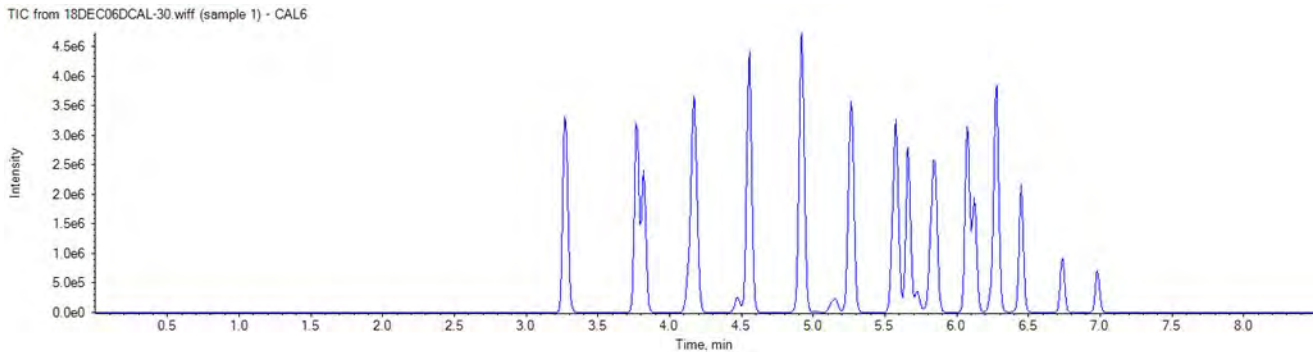
Analyte Quantitation Peak Table

Sample Name: CAL6 Instrument Name: LM27631 File Name: 18DEC06DCAL-30.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	6933920.3		A	13C4-PFBA	3.27	779560.6	8.895	49.074
PFPeA	3.77	1.000	6852617.3		A	13C5-PFPeA	3.77	735887.1	9.312	48.987
PFBS	3.82	1.000	3497912.0		A	13C3-PFBS	3.82	392877.3	8.903	44.131
4:2-FTS	4.13	1.000	825733.7		A	13C2-4:2-FTS	4.13	49555.0	16.663	44.662
PFHxA	4.16	1.000	6667267.4		A	13C5-PFHxA	4.16	606649.2	10.990	47.890
PFPeS	4.19	1.100	1887536.7		A	13C3-PFBS	3.82	392877.3	4.804	47.573
PFHpA	4.55	1.000	6544306.5		A	13C4-PFHpA	4.55	489476.9	13.370	44.021
PFHxS	4.56	1.000	2776076.0		M	13C3-PFHxS	4.56	295455.6	9.396	44.518
6:2-FTS	4.91	1.000	513358.2		A	13C2-6:2-FTS	4.91	27234.8	18.849	46.805
PFHpS	4.91	1.080	2478350.6		A	13C3-PFHxS	4.56	295455.6	8.388	46.046
PFOA	4.92	1.000	6289920.1		A	13C8-PFOA	4.92	664219.2	9.470	51.751
PFOS	5.25	1.000	2854538.8		M	13C8-PFOS	5.25	255714.8	11.163	46.302
PFNA	5.27	1.000	5937972.0		A	13C9-PFNA	5.27	445443.1	13.330	49.127
PFNS	5.56	1.060	1952695.3		A	13C8-PFOS	5.25	255714.8	7.636	49.137
PFDA	5.58	1.000	4838370.8		A	13C6-PFDA	5.58	541153.2	8.941	50.325
8:2-FTS	5.58	1.000	434056.1		A	13C2-8:2-FTS	5.58	20179.0	21.510	46.607
PFOSA	5.66	1.000	5808768.5		A	13C8-PFOSA	5.66	576971.5	10.068	52.230
NMeFOSAA	5.72	1.000	636332.6		M	d3-NMeFOSAA	5.72	86838.4	7.328	48.469
PFDS	5.82	1.110	1557080.1		A	13C8-PFOS	5.25	255714.8	6.089	49.234
PUnDA	5.84	1.000	4768074.3		A	13C7-PUnDA	5.85	297859.0	16.008	49.014
NEtFOSAA	5.86	1.000	643440.7		A	d5-NEtFOSAA	5.86	64805.9	9.929	50.179
PFDoDA	6.07	1.000	6214332.3		A	13C2-PFDoDA	6.07	670197.9	9.272	48.809
10:2-FTS	6.09	1.090	373461.1		A	13C2-8:2-FTS	5.58	20179.0	18.507	49.024
NMePFOSAE	6.12	1.000	3077102.2		A	d7-NMePFOSAE	6.11	260658.2	11.805	51.300
NMePFOSA	6.13	1.000	783375.4		A	d3-NMePFOSA	6.13	82601.0	9.484	47.852
PFDoS	6.24	1.190	815763.7		A	13C8-PFOS	5.25	255714.8	3.190	48.634
NEtPFOSAE	6.28	1.000	3150024.0		A	d9-NEtPFOSAE	6.27	214650.5	14.675	49.168
NEtPFOSA	6.29	1.000	692421.7		A	d5-NEtPFOSA	6.28	65686.6	10.541	50.462
PFTeDA	6.27	1.030	4879343.8		A	13C2-PFDoDA	6.07	670197.9	7.280	47.684
PFTeDA	6.45	1.000	4117781.1		A	13C2-PFTeDA	6.45	481845.9	8.546	48.870
PFHxDA	6.74	1.040	1913602.8		A	13C2-PFTeDA	6.45	481845.9	3.971	49.736
PFODA	6.98	1.080	1488718.8		A	13C2-PFTeDA	6.45	481845.9	3.090	49.596

Total Ion Chromatogram



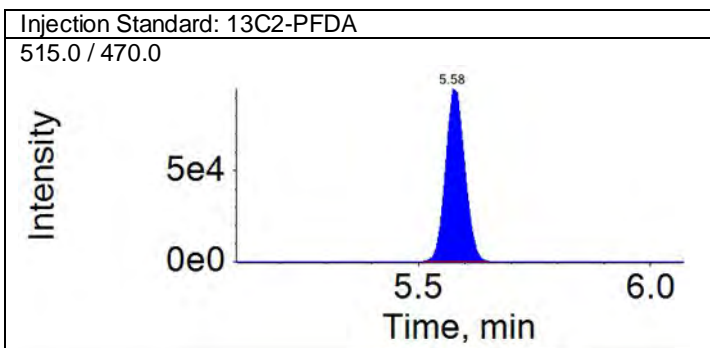
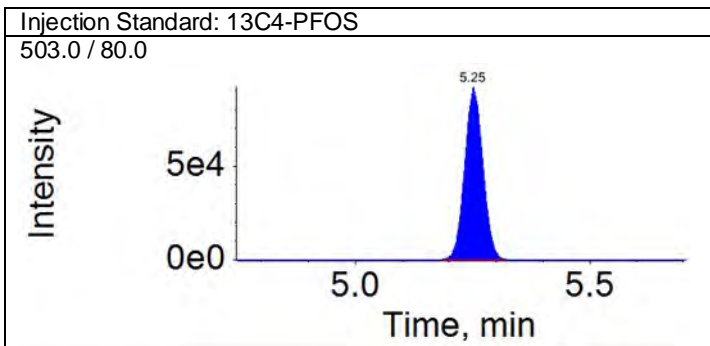
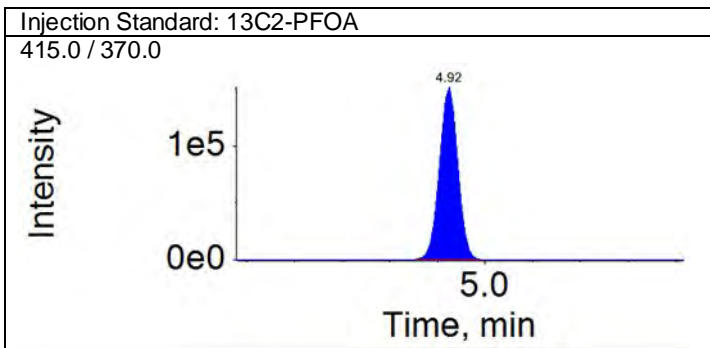
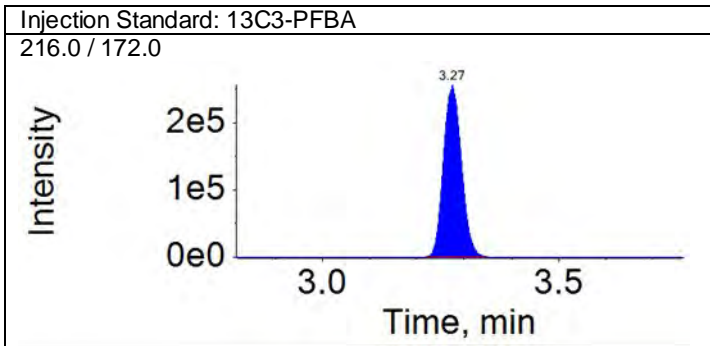
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By MSM at 1:53 pm, 12/7/18

REVIEWED  
By HMK at 1:54 pm, 12/9/18



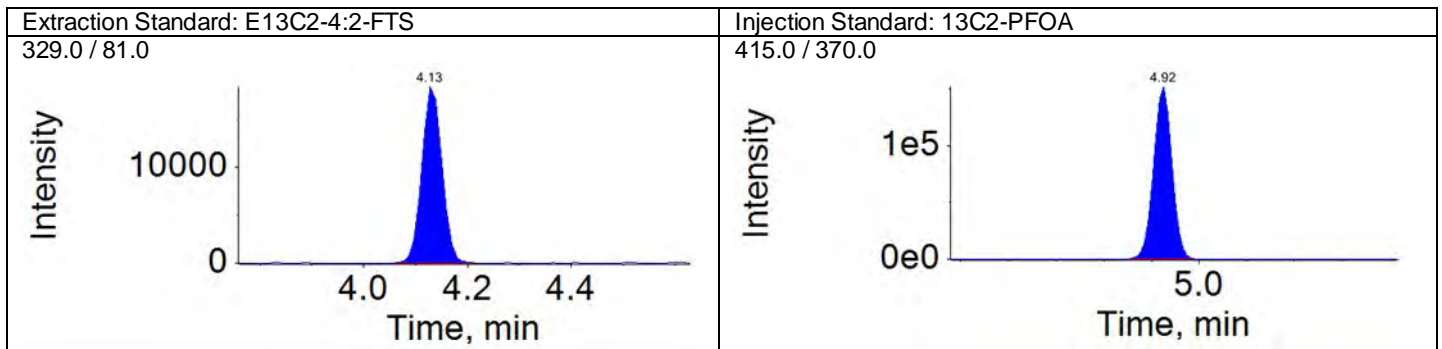
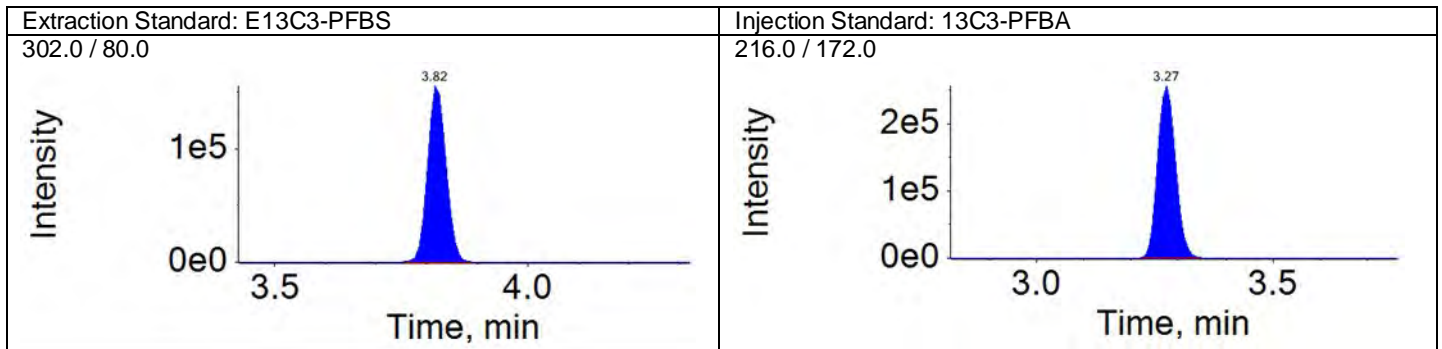
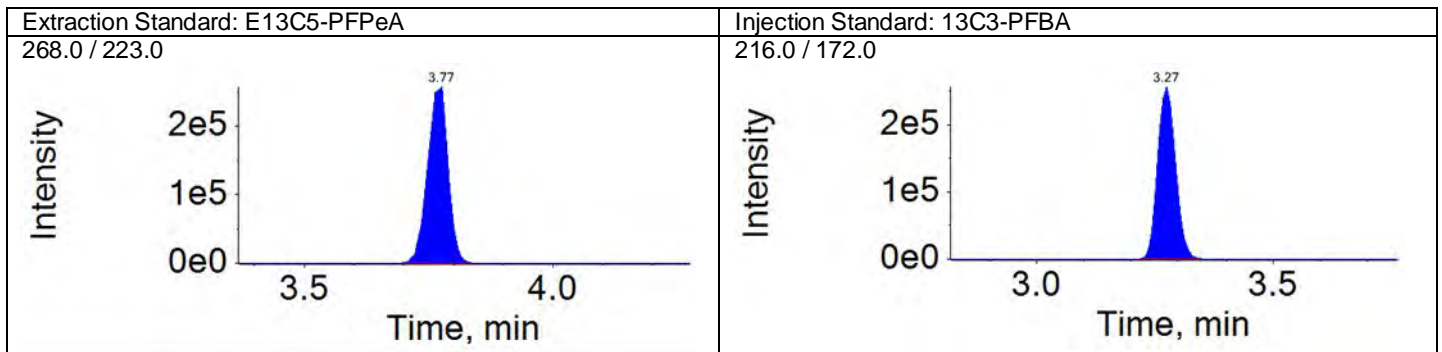
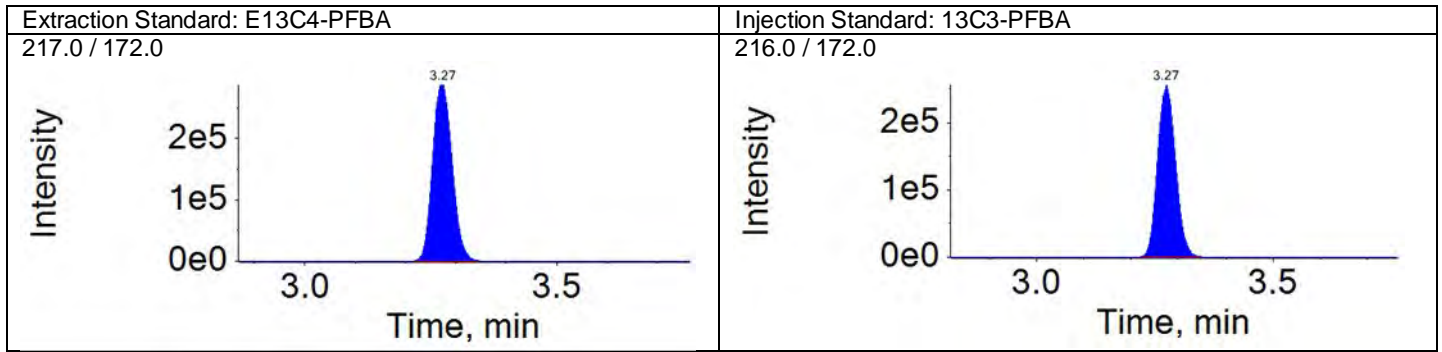
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



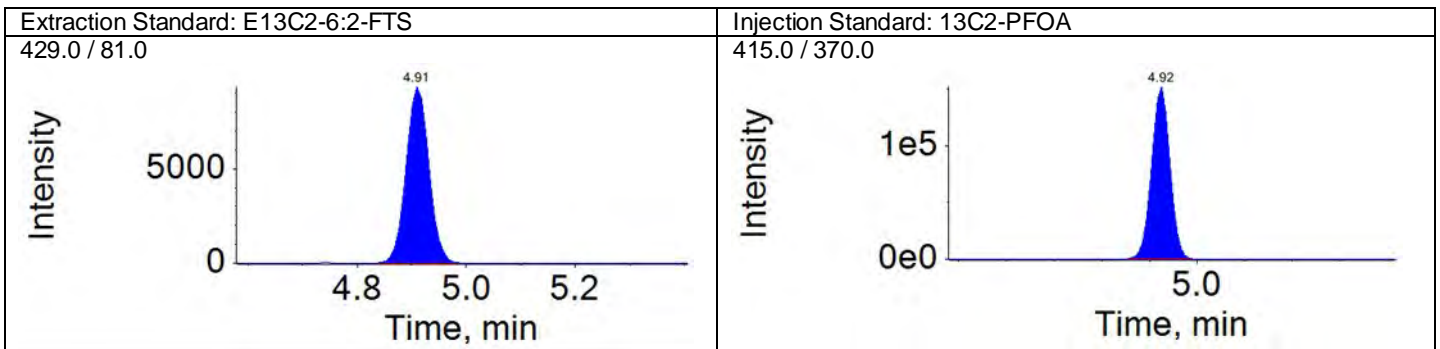
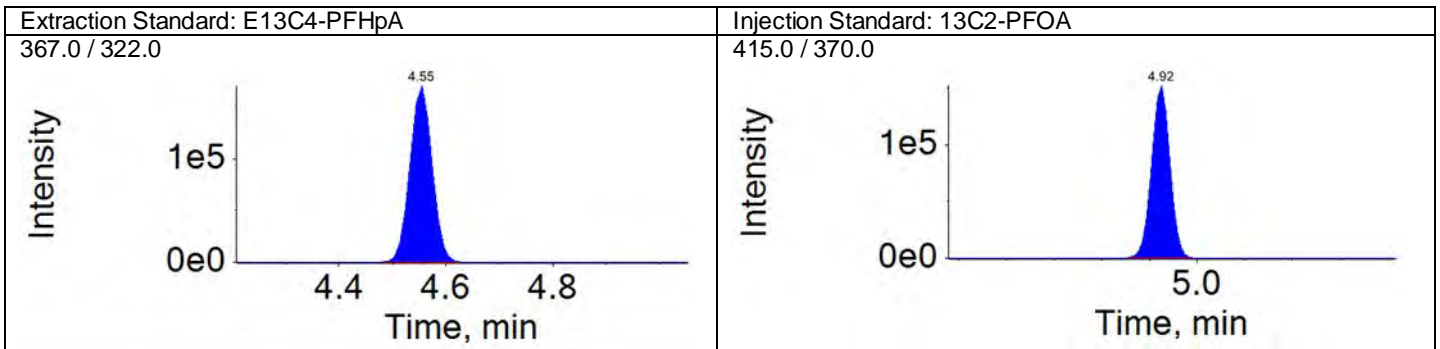
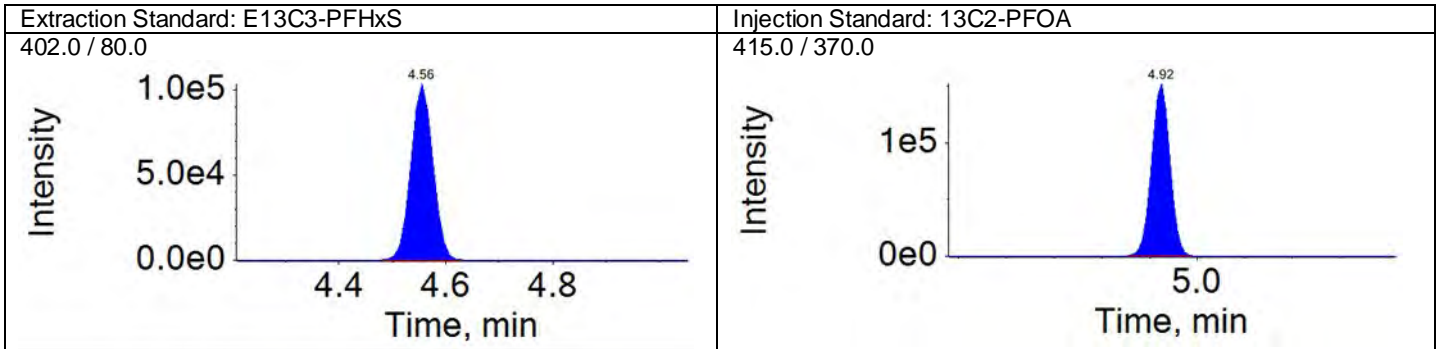
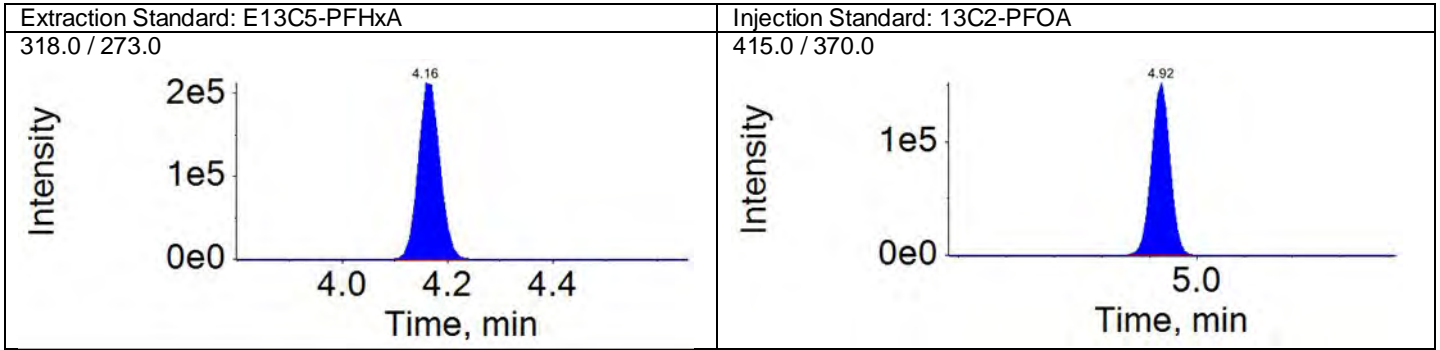
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



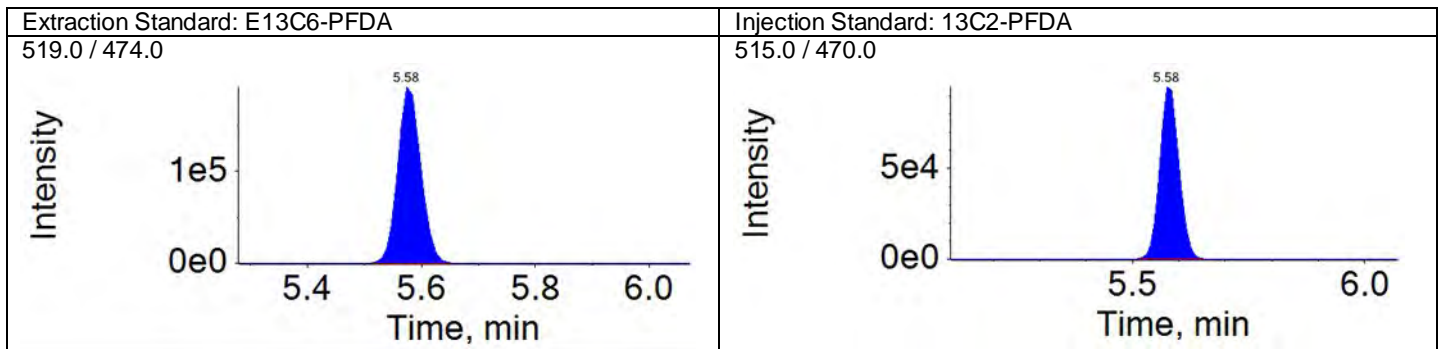
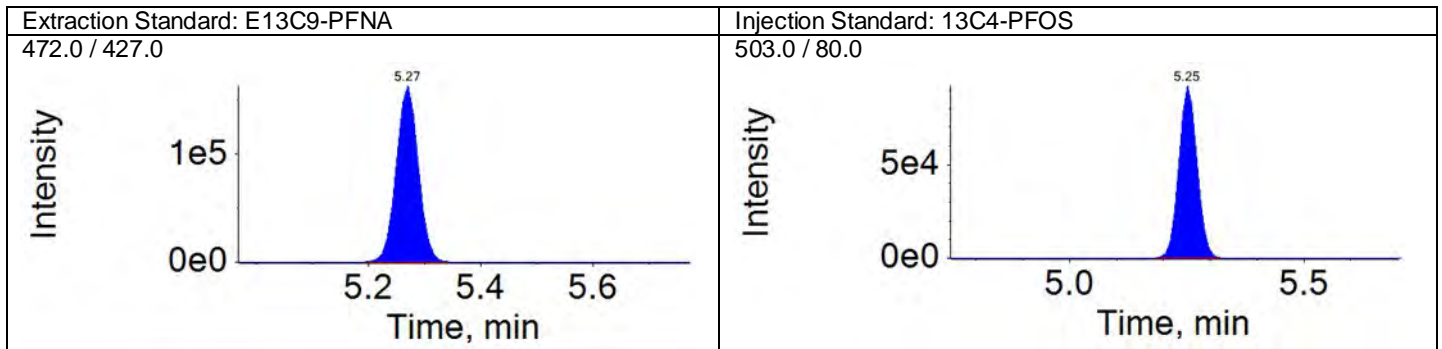
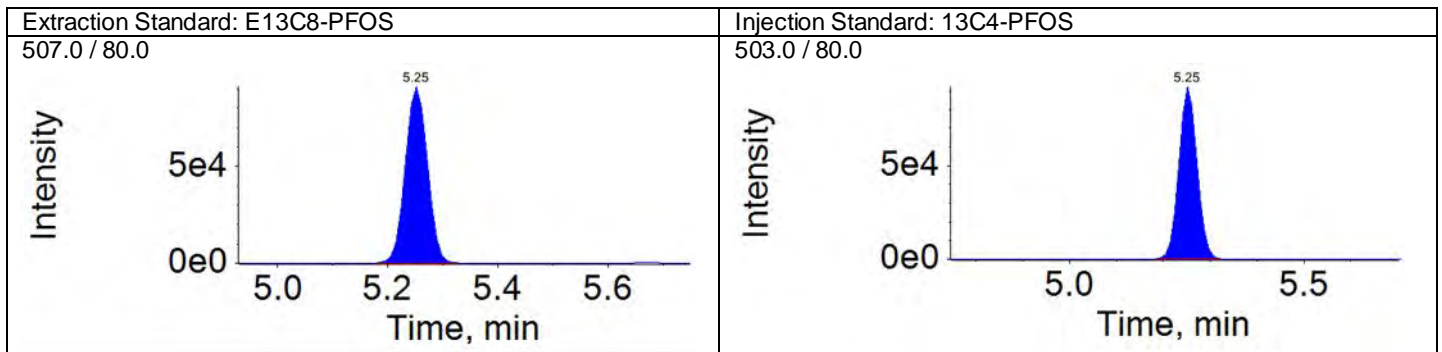
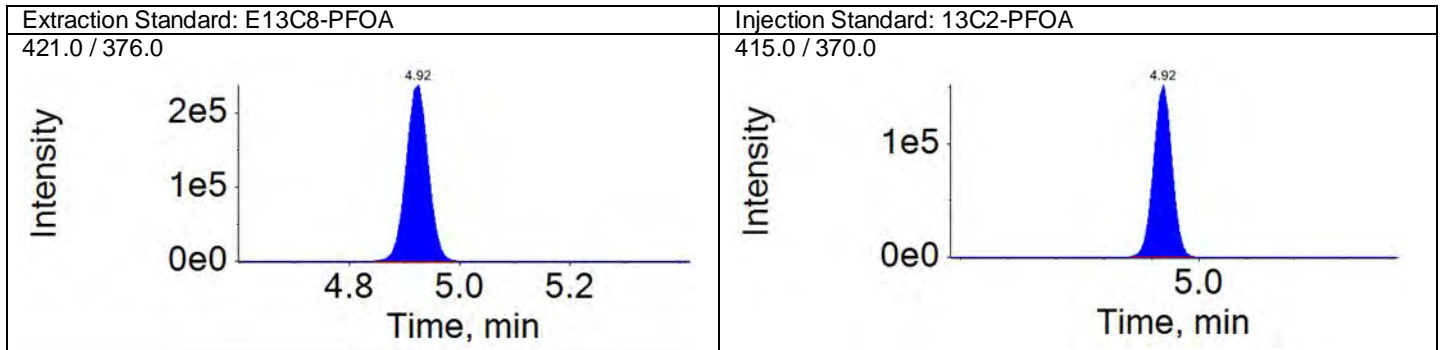
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

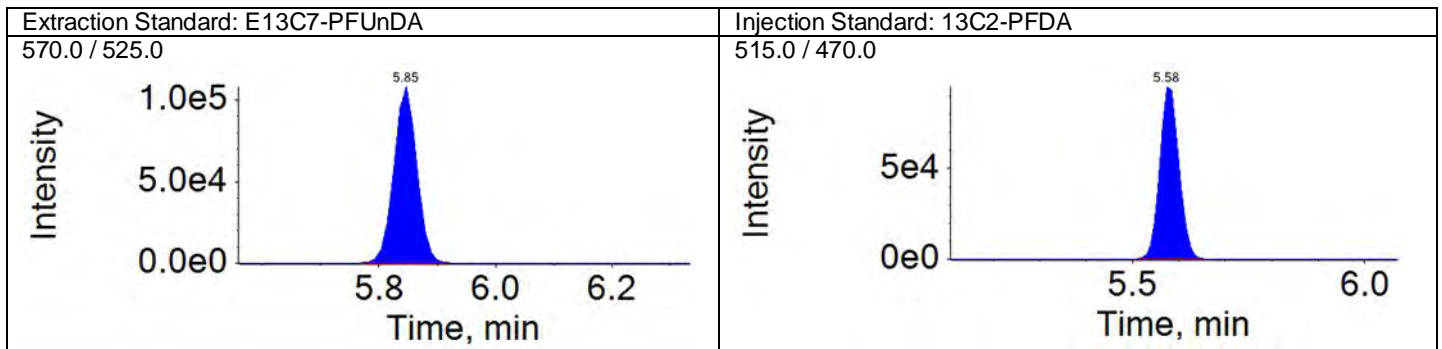
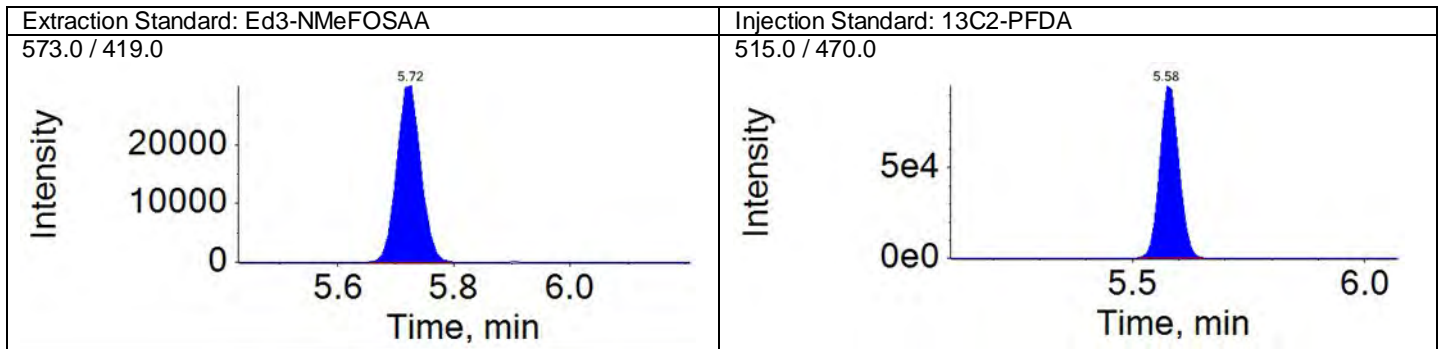
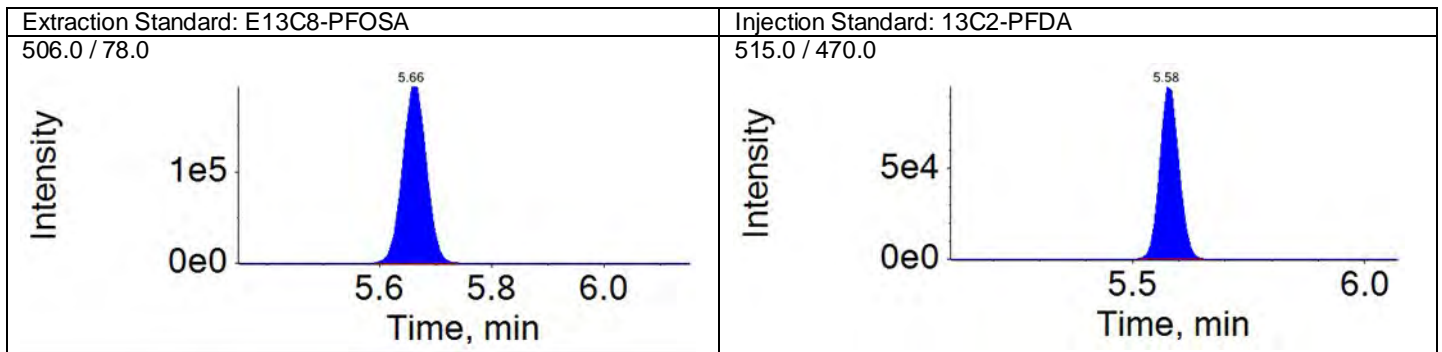
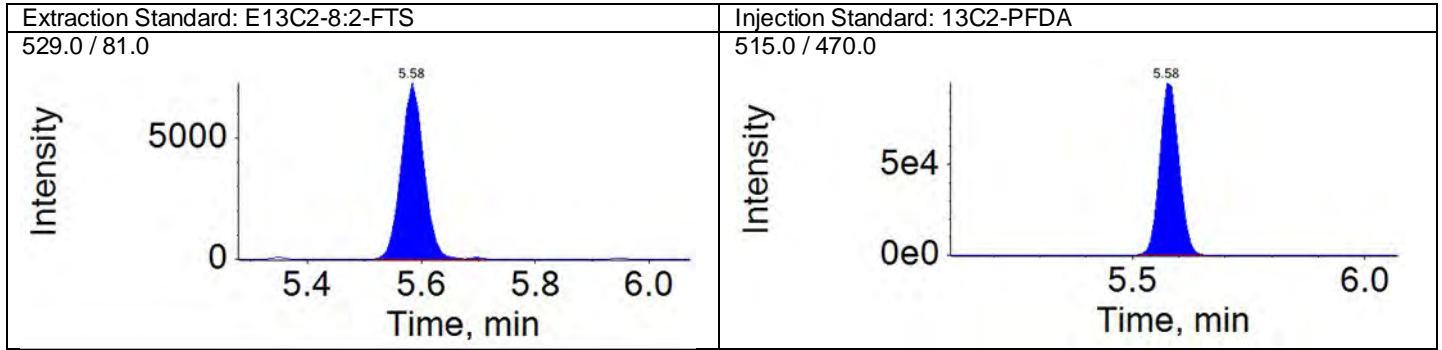
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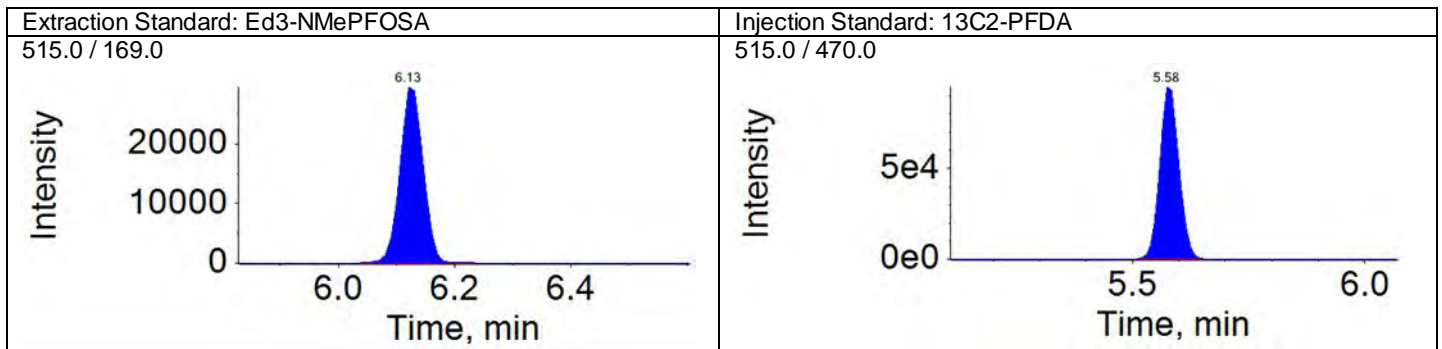
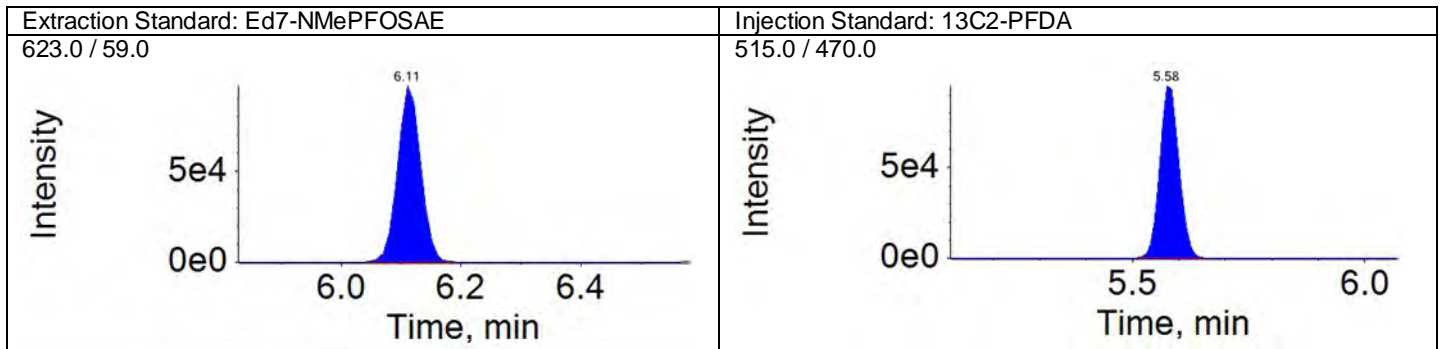
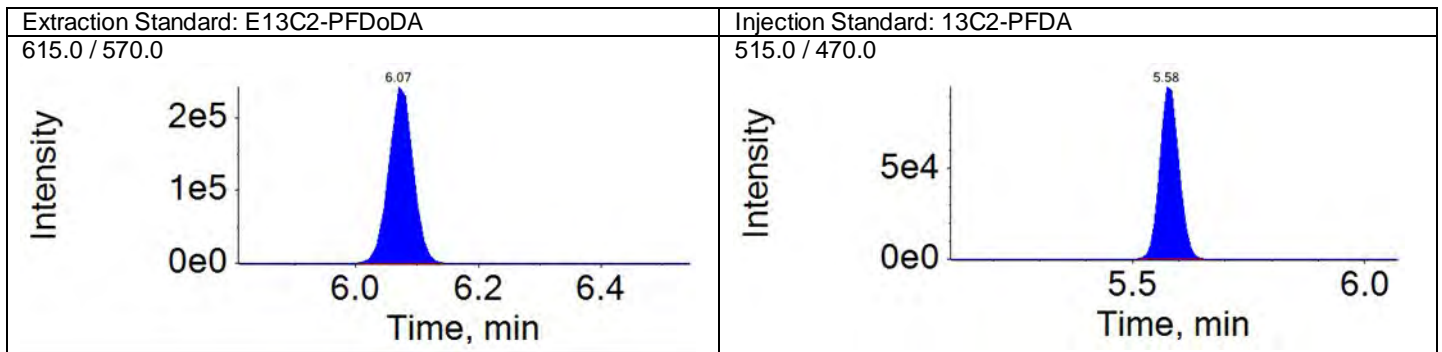
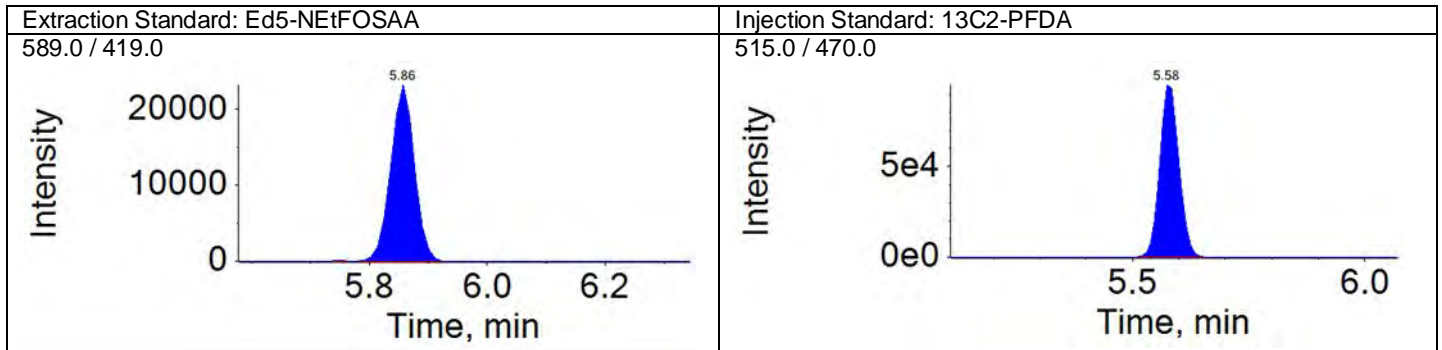
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

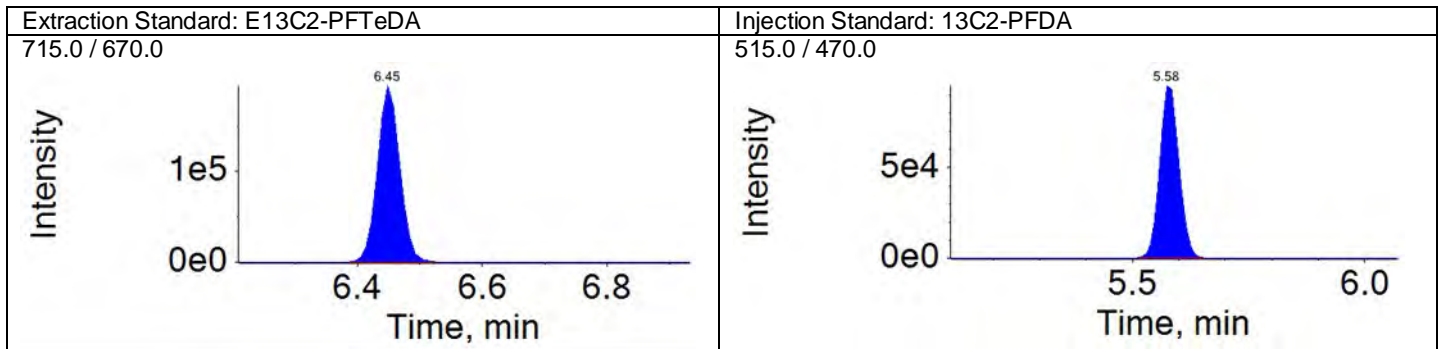
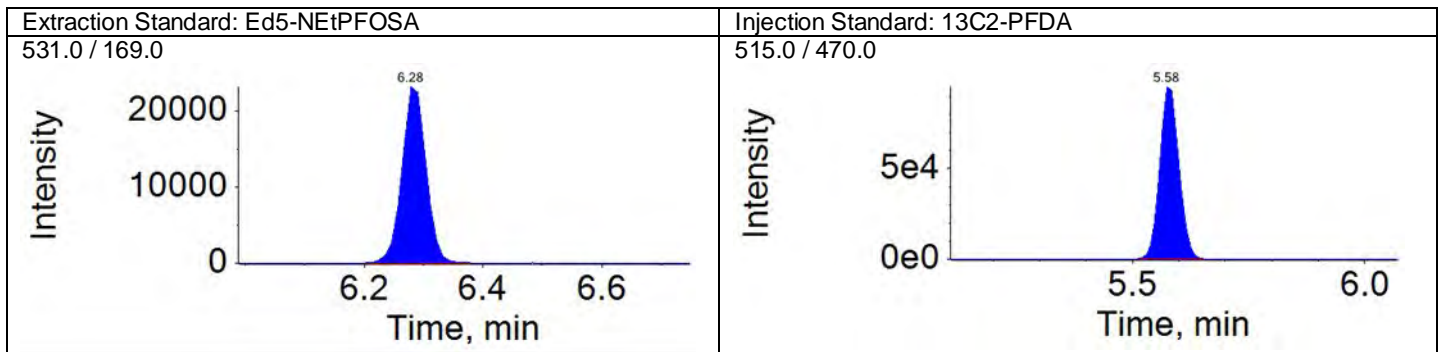
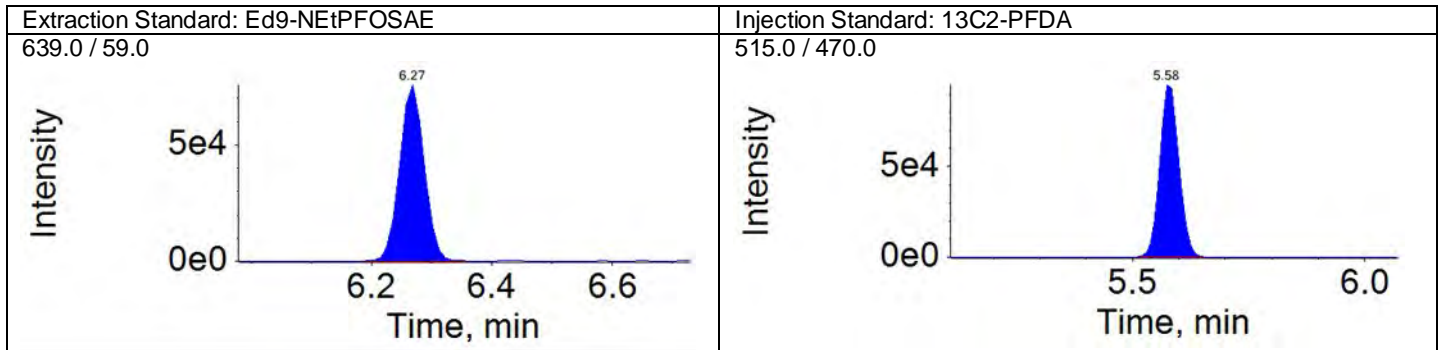
Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam





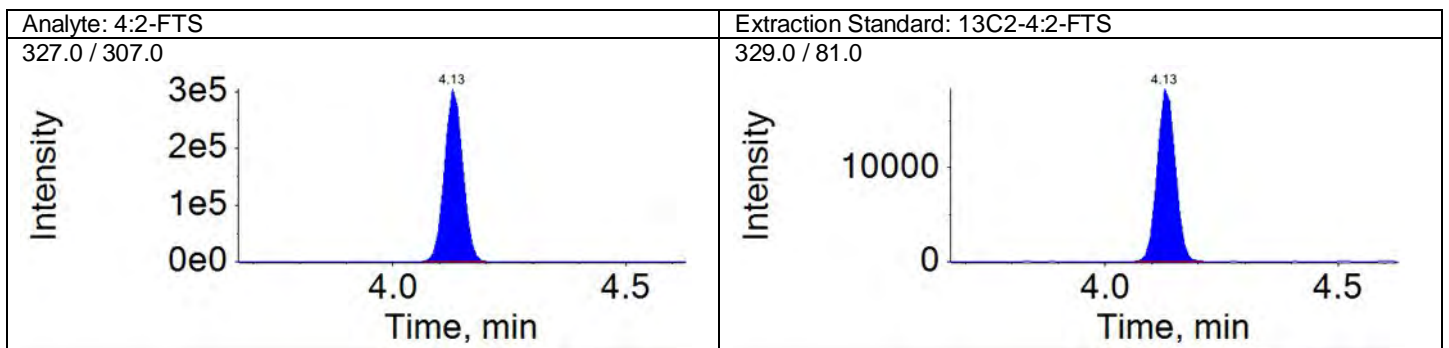
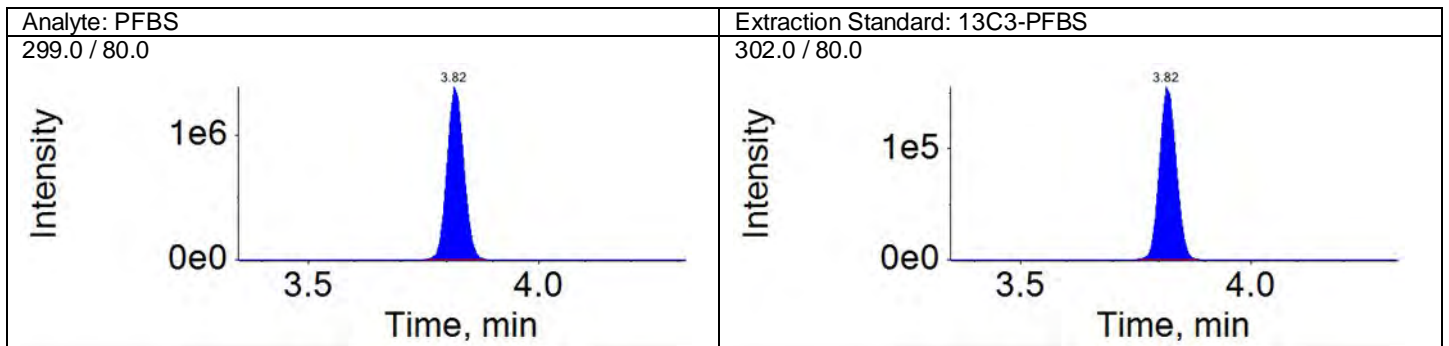
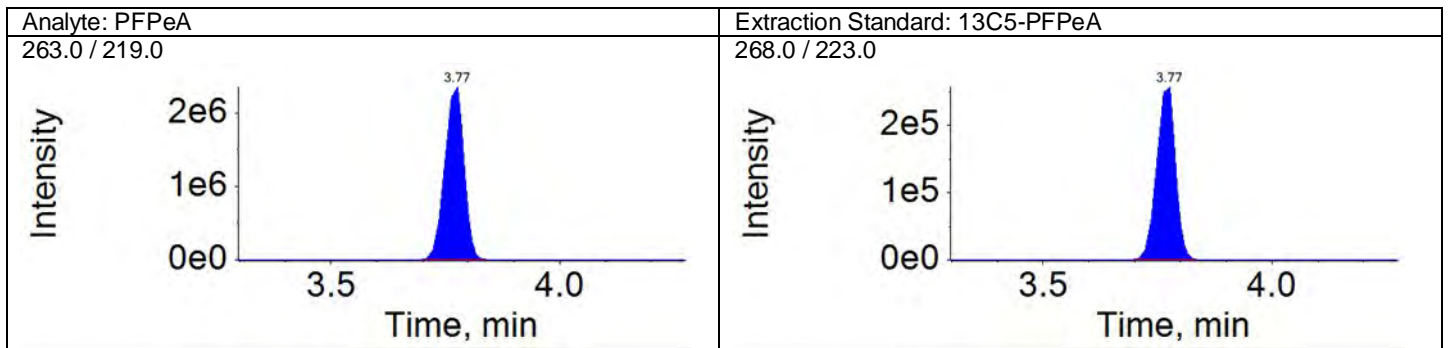
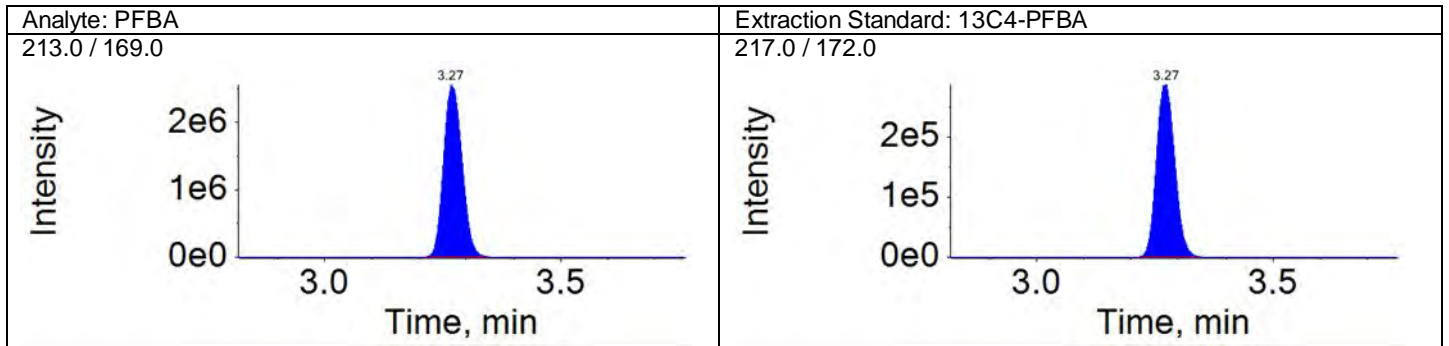
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



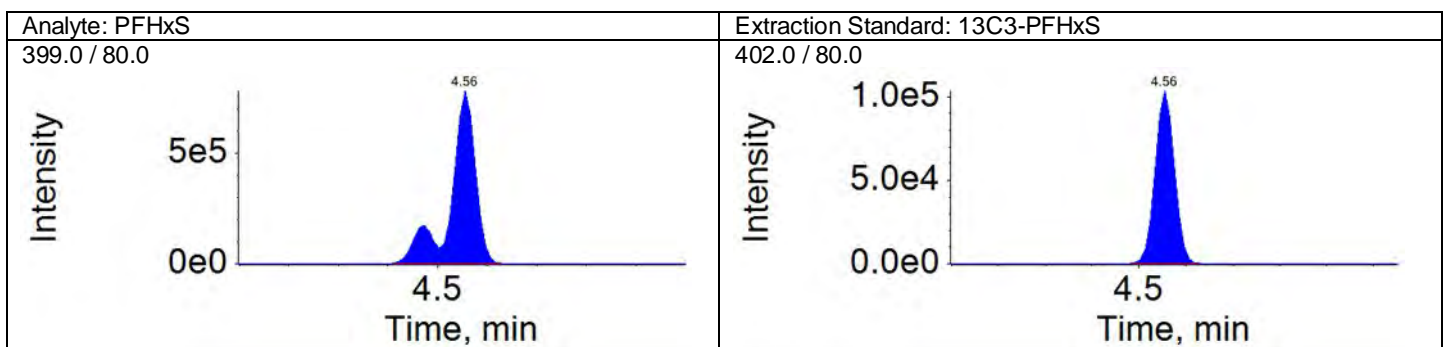
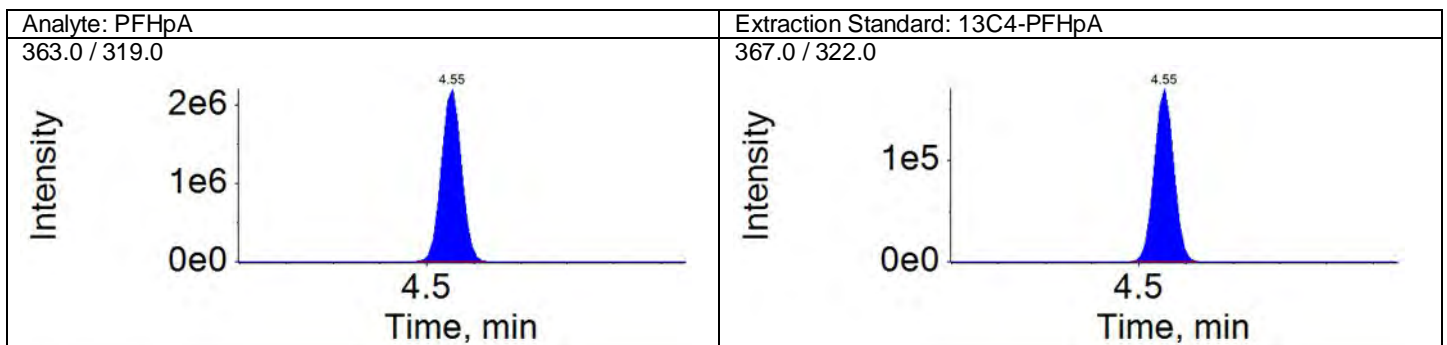
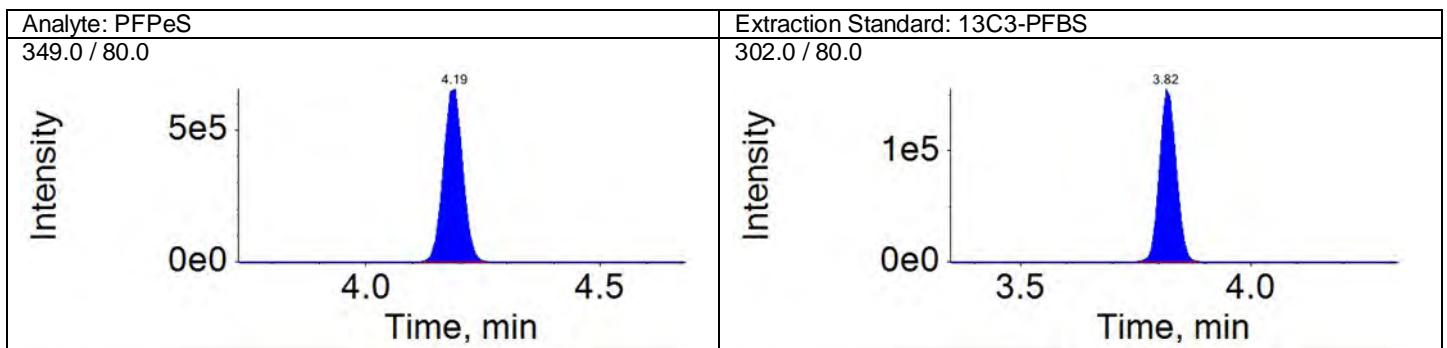
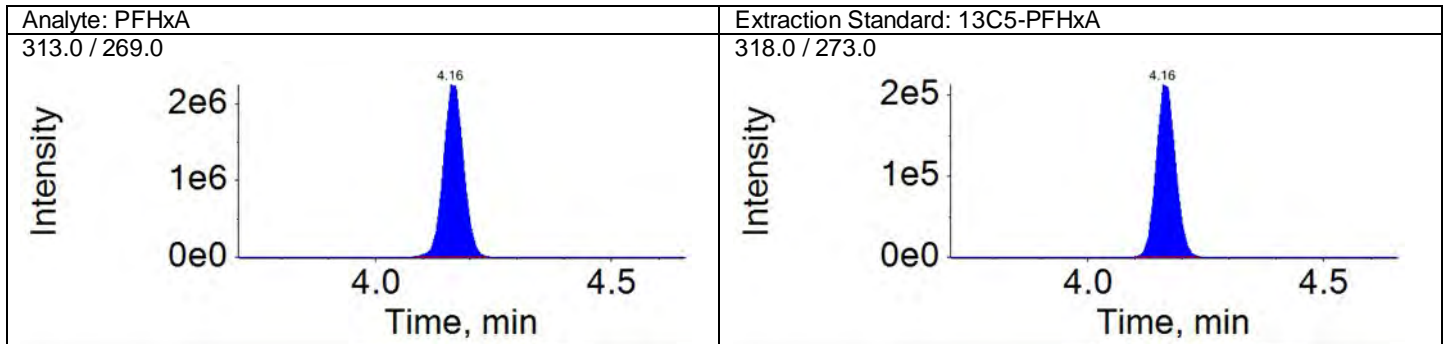
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



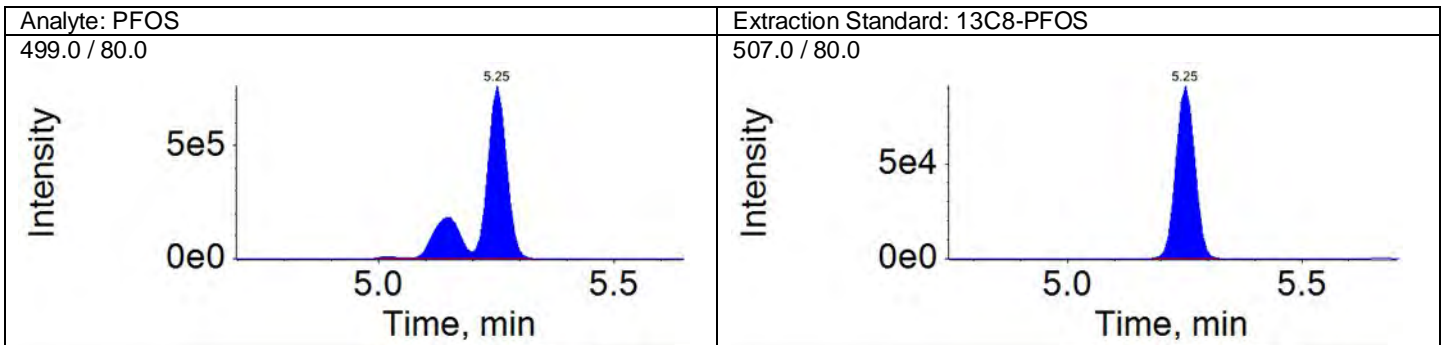
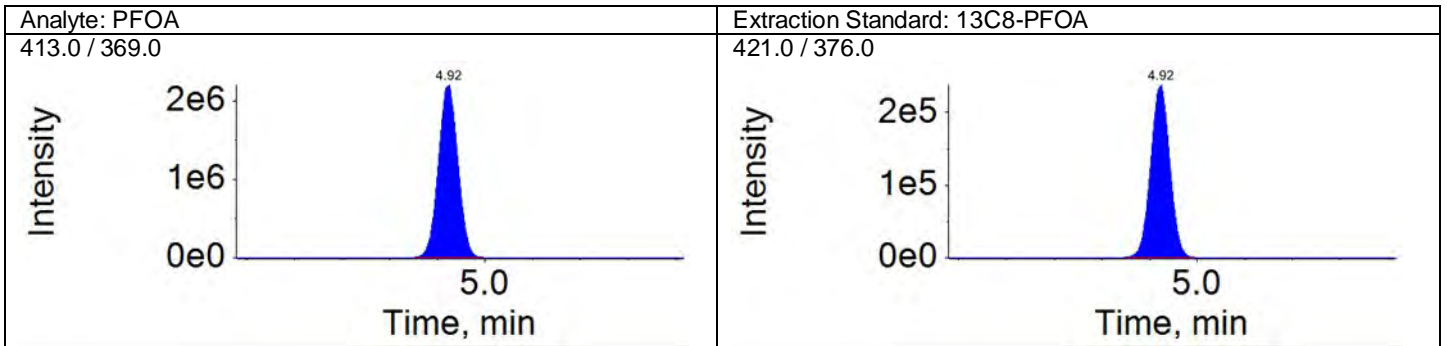
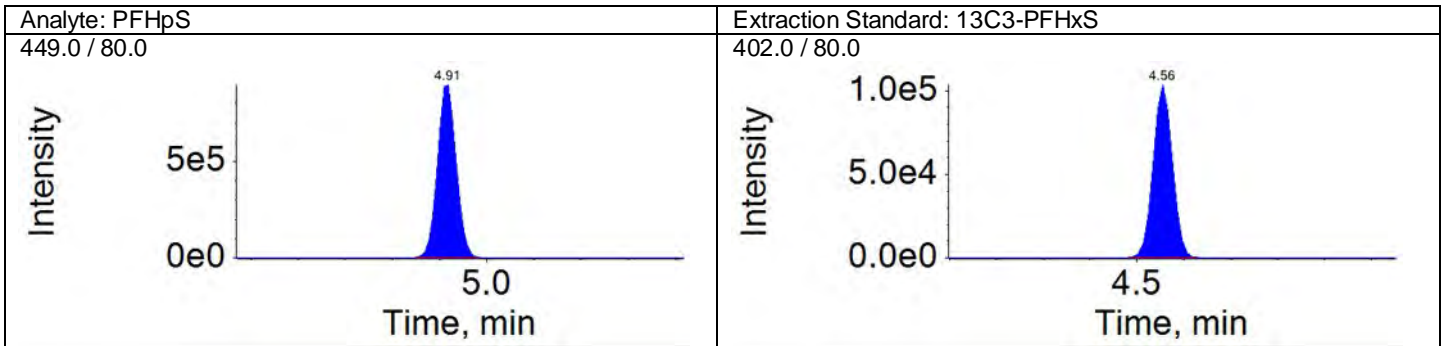
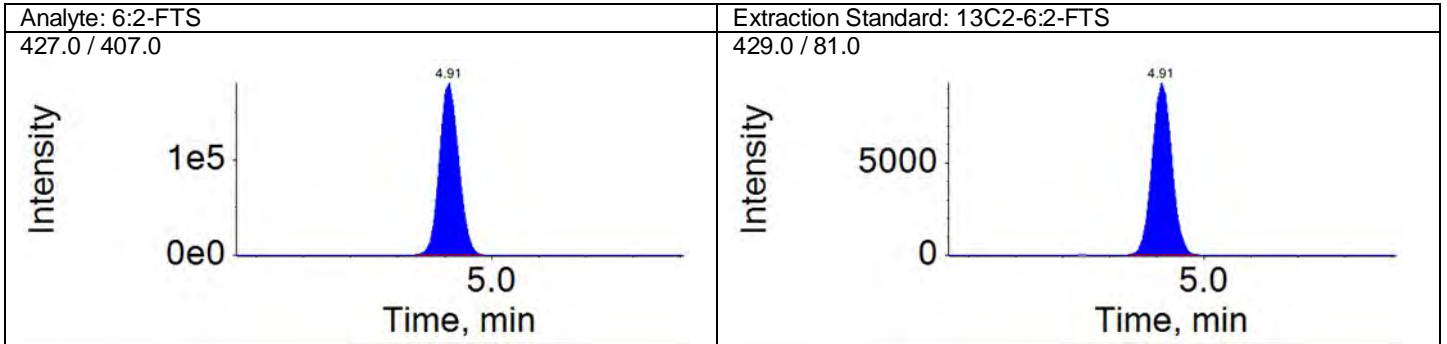
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

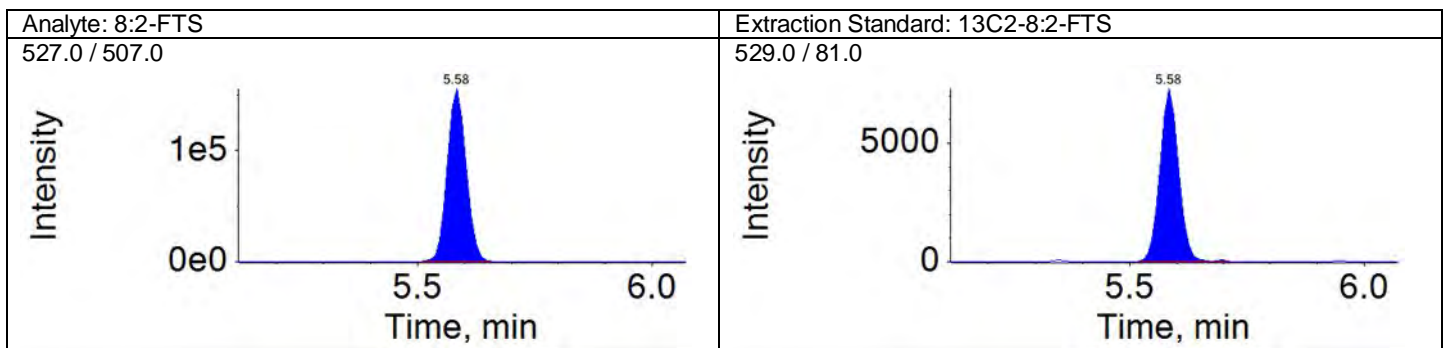
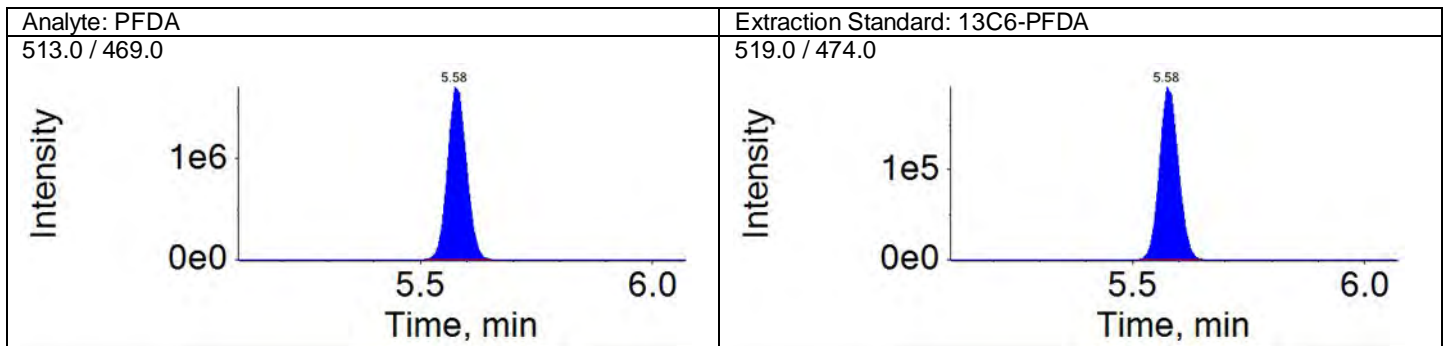
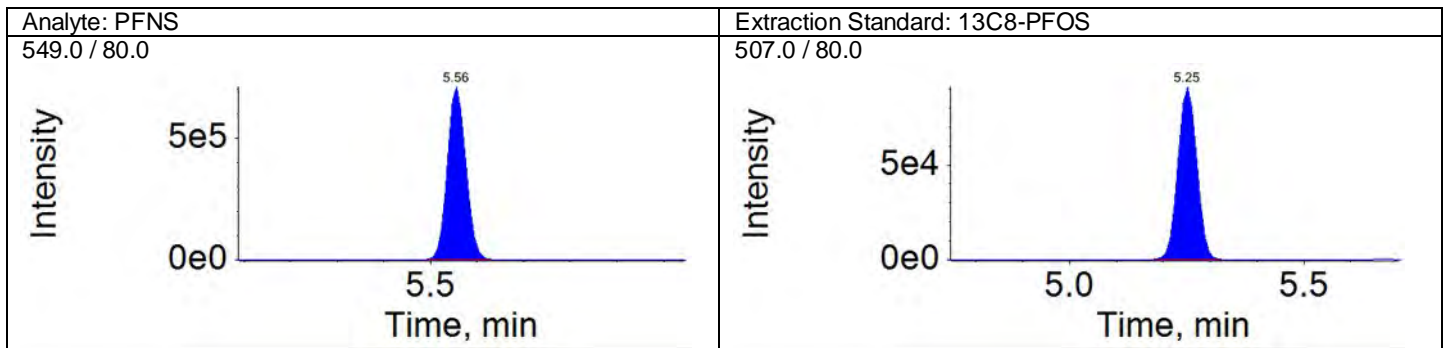
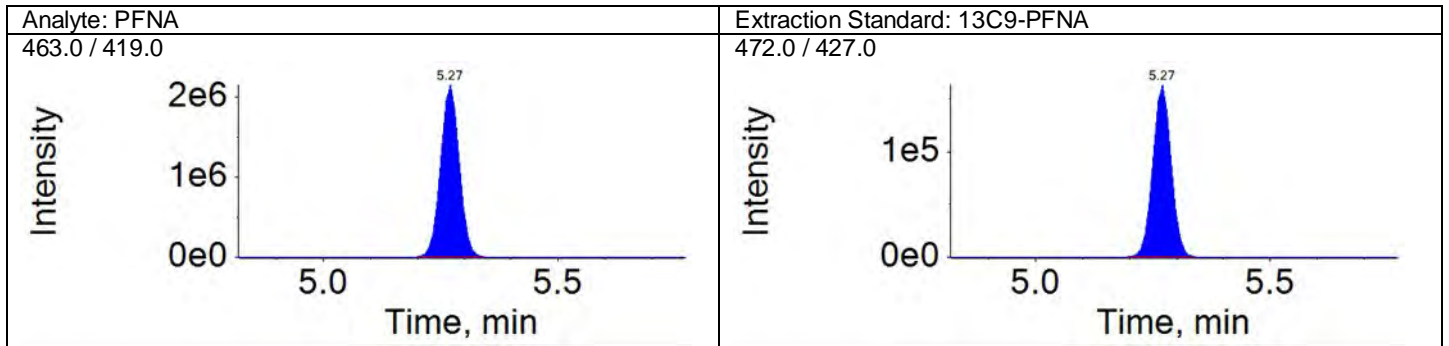
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Acquisition Method: 18AUG13\_3uL.dam





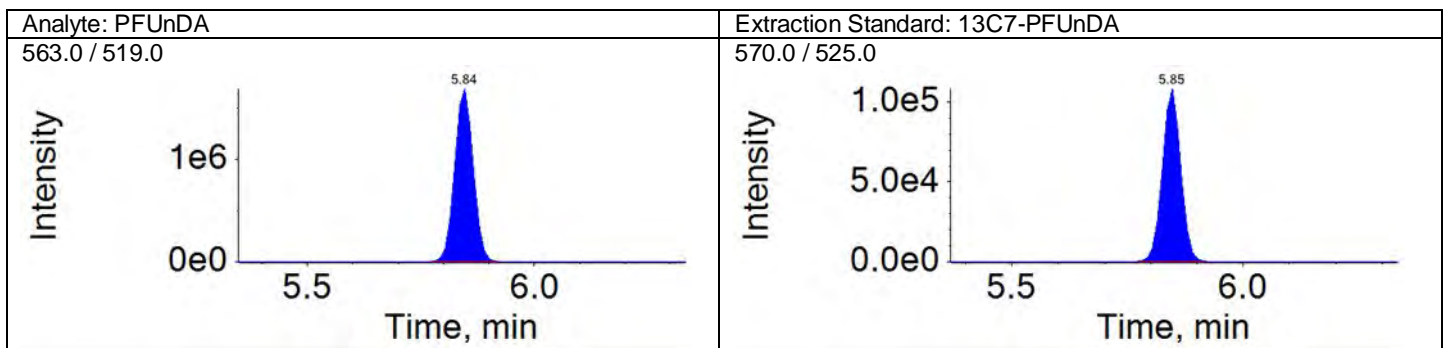
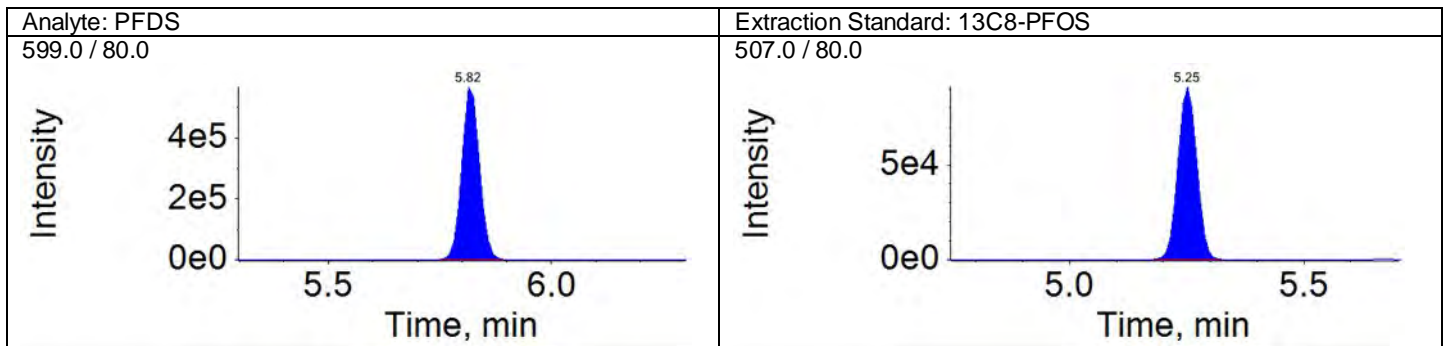
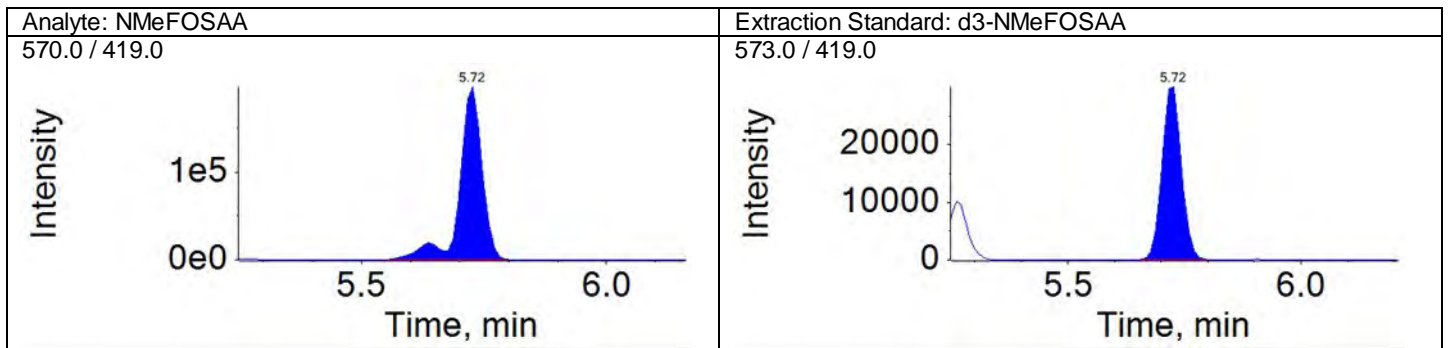
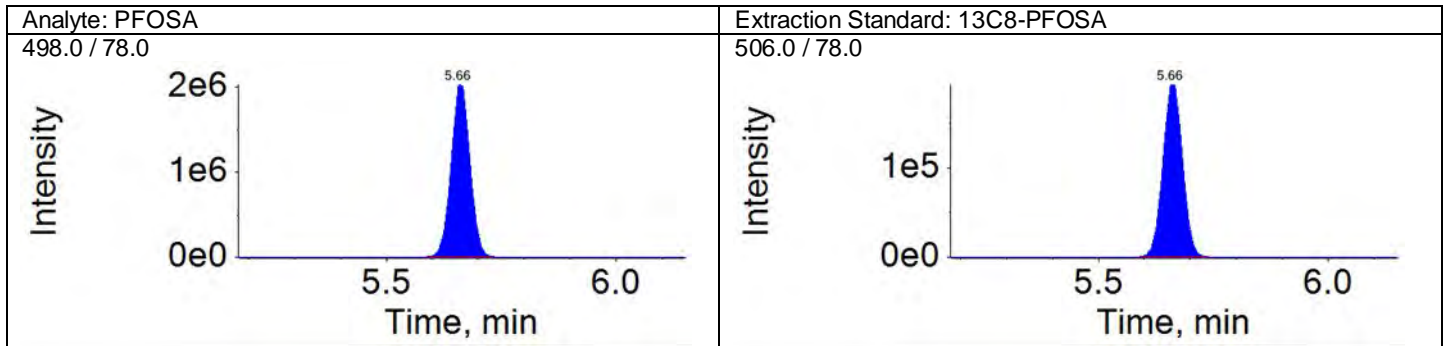
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

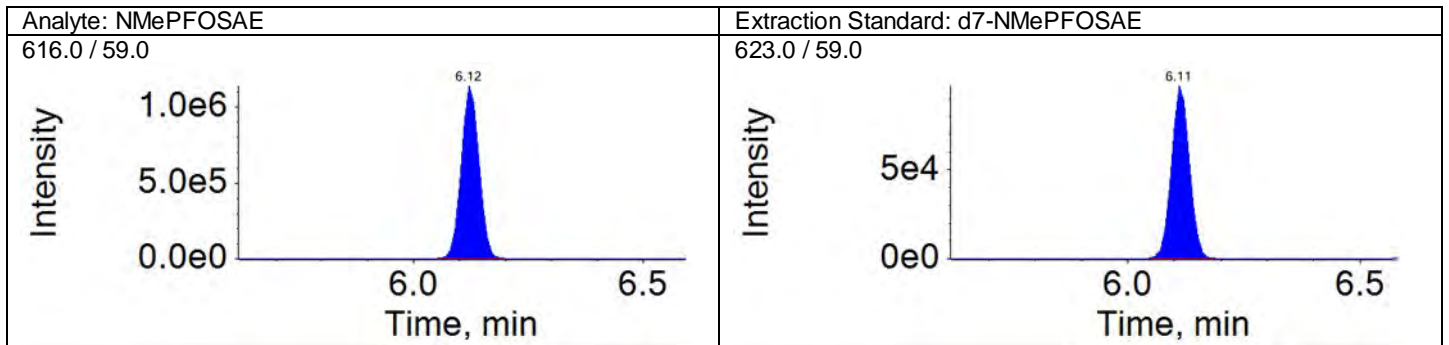
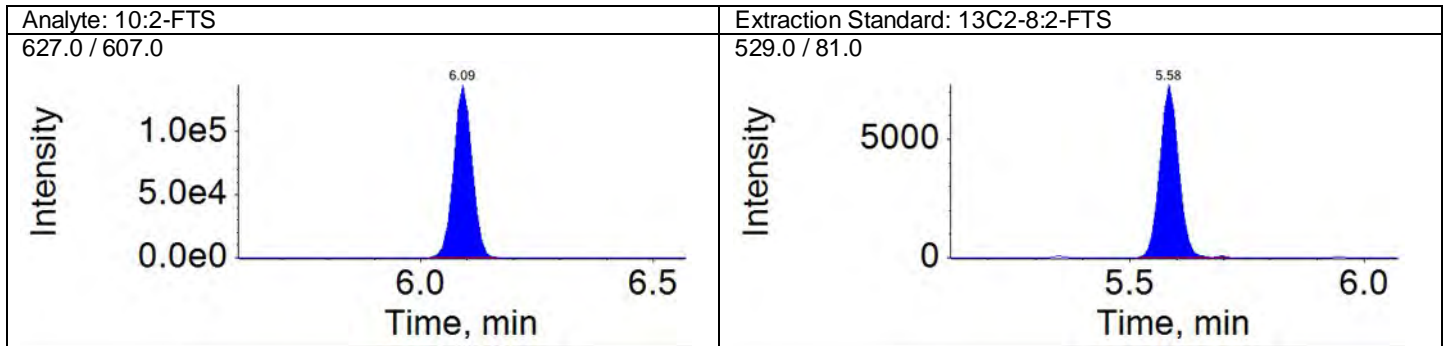
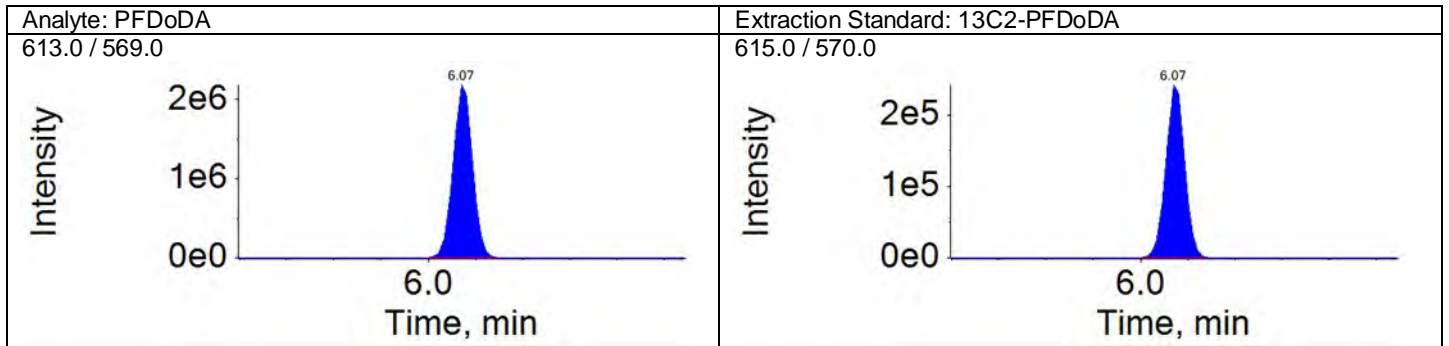
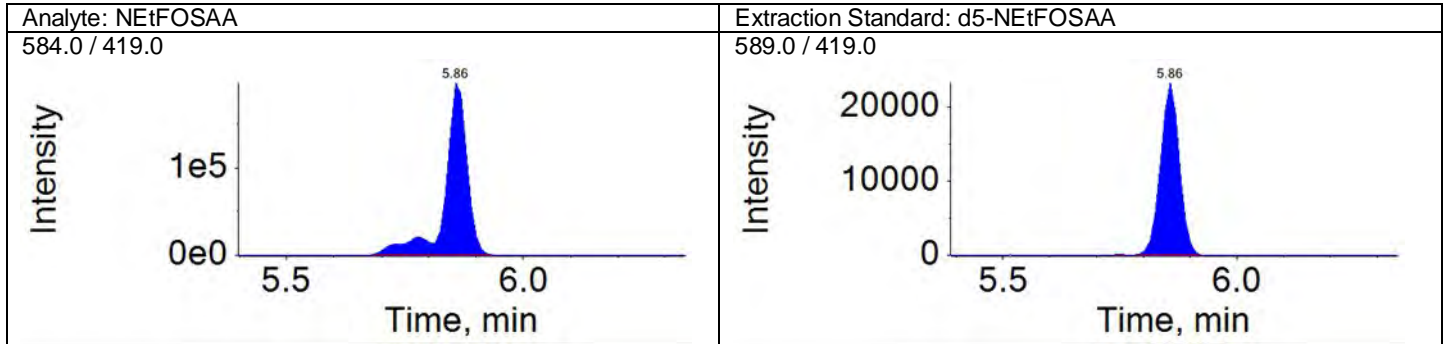
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Acquisition Method: 18AUG13\_3uL.dam





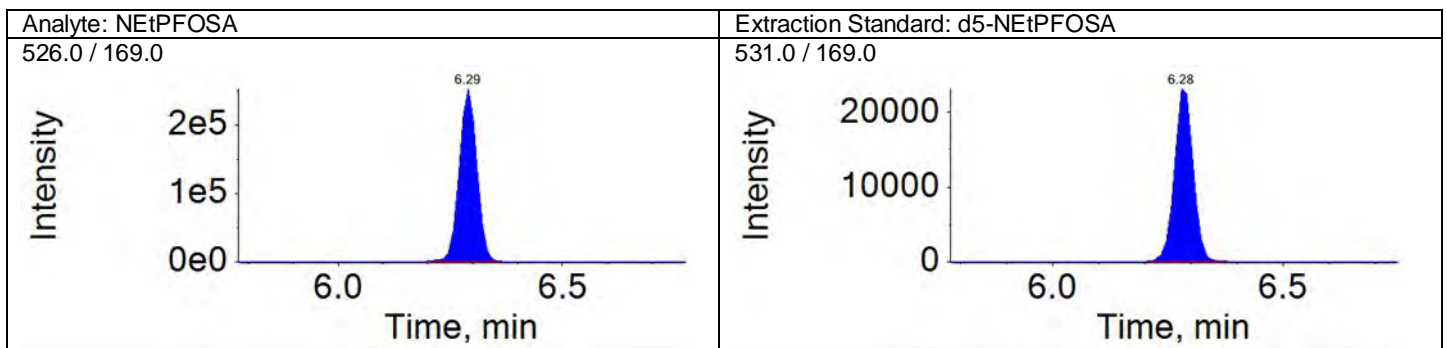
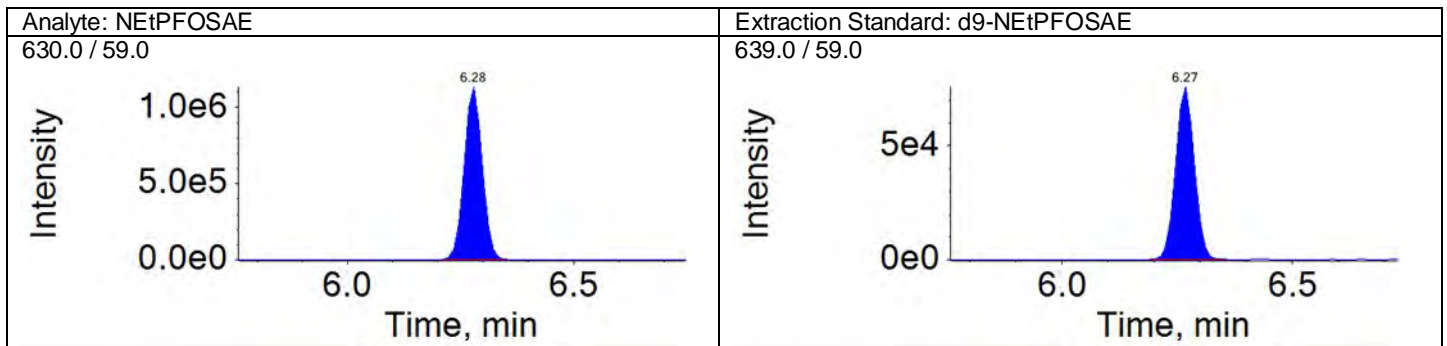
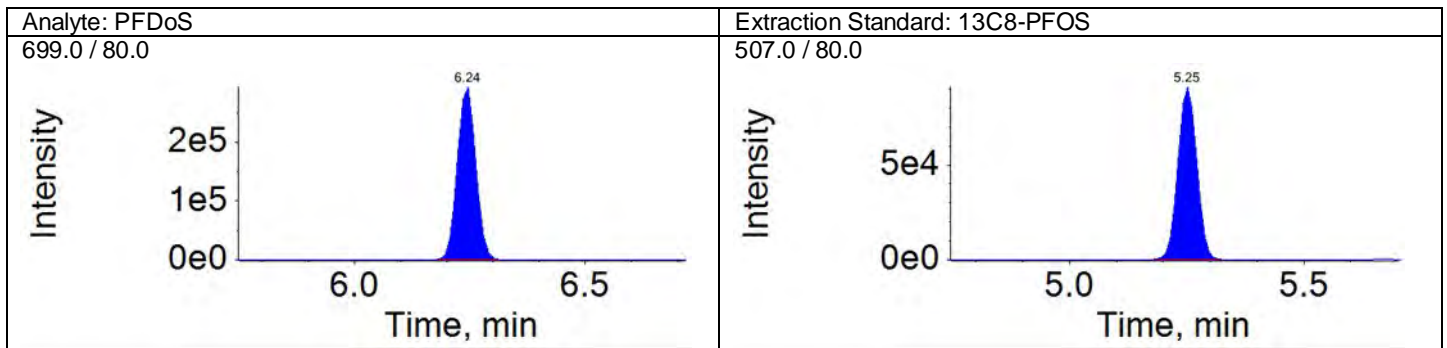
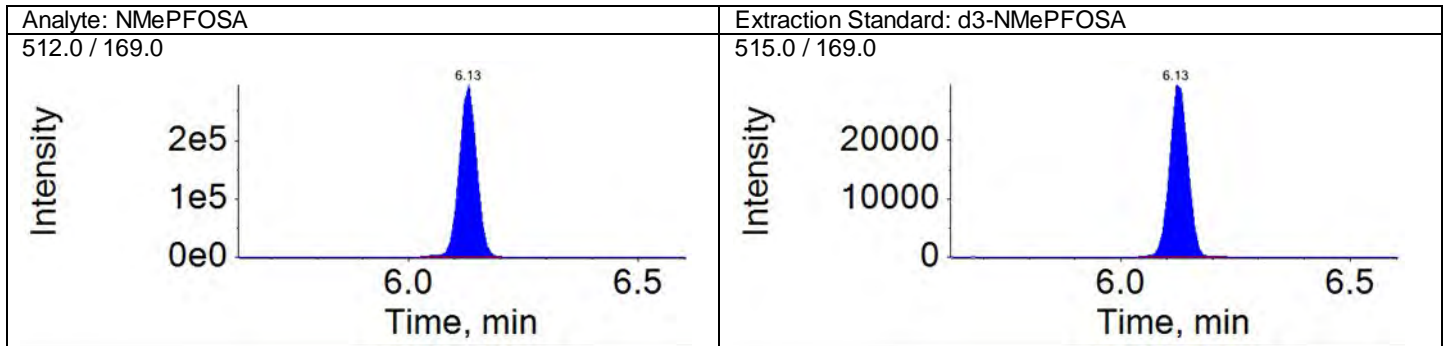
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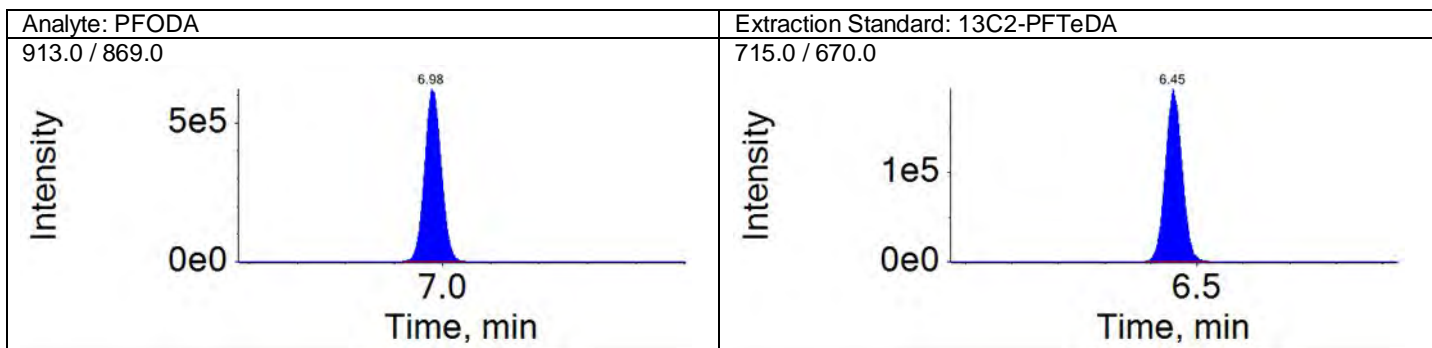
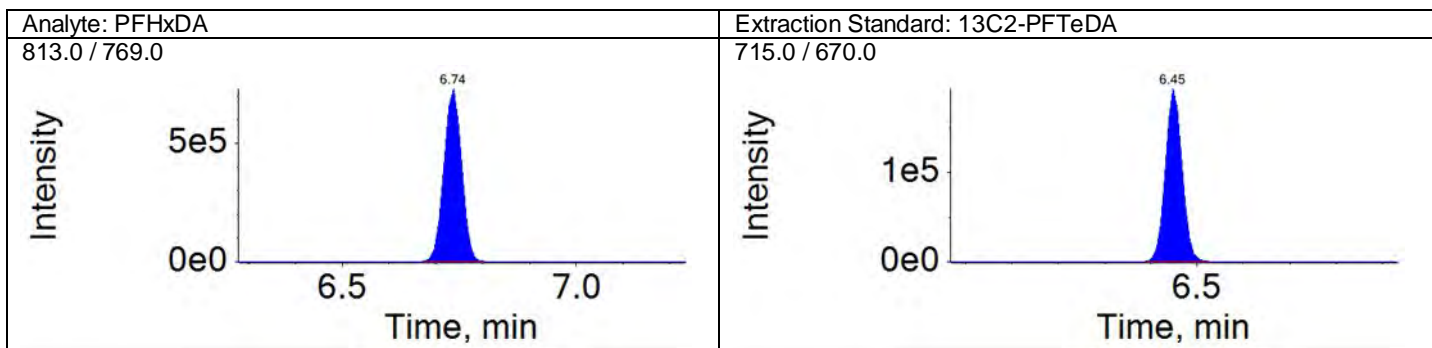
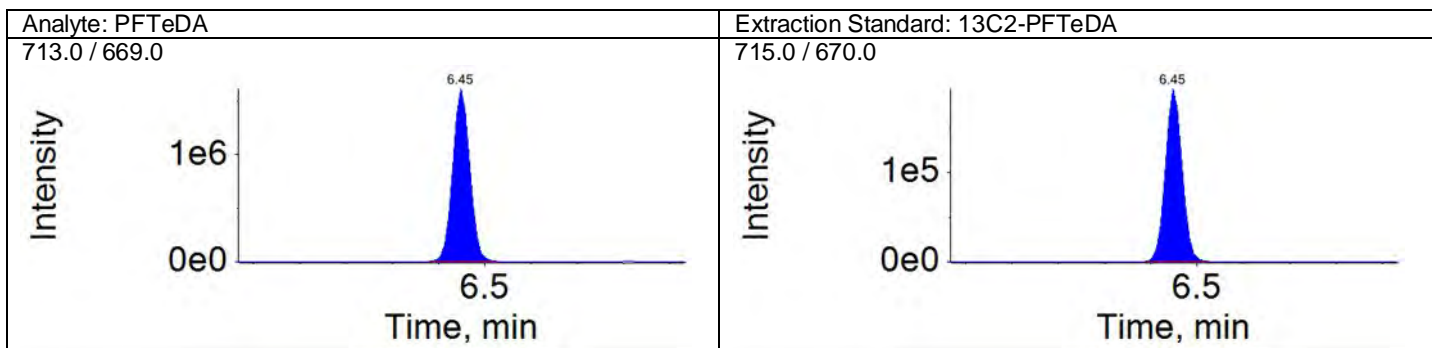
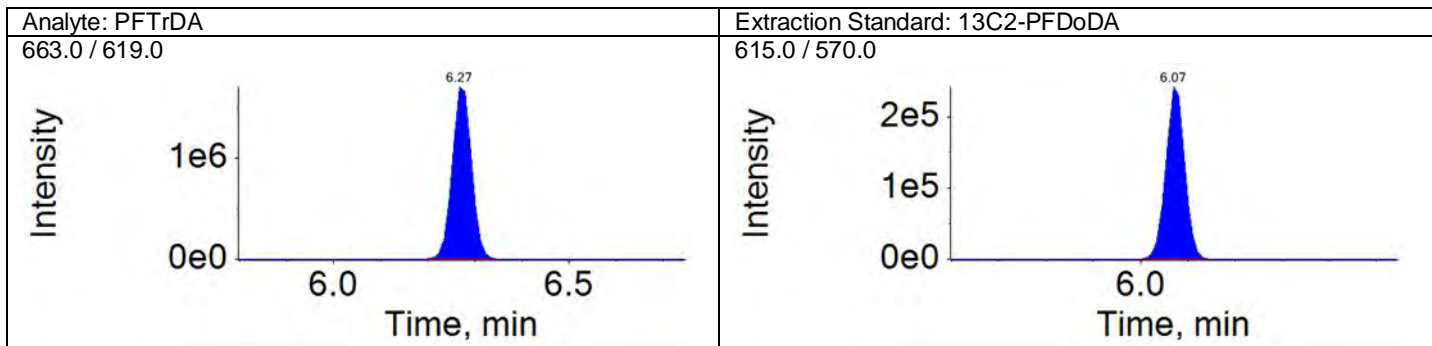
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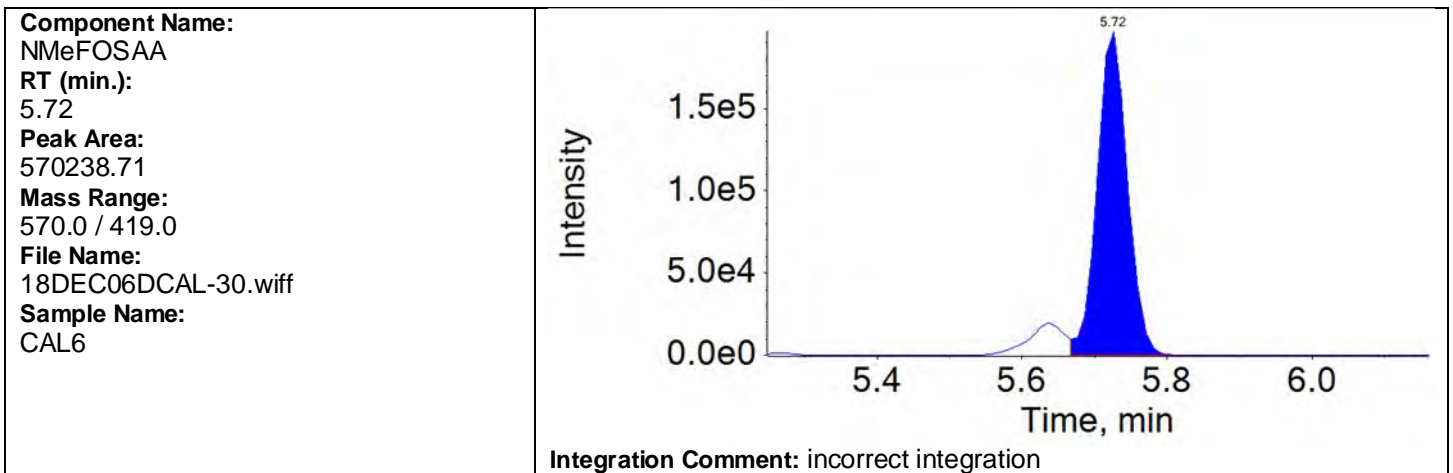
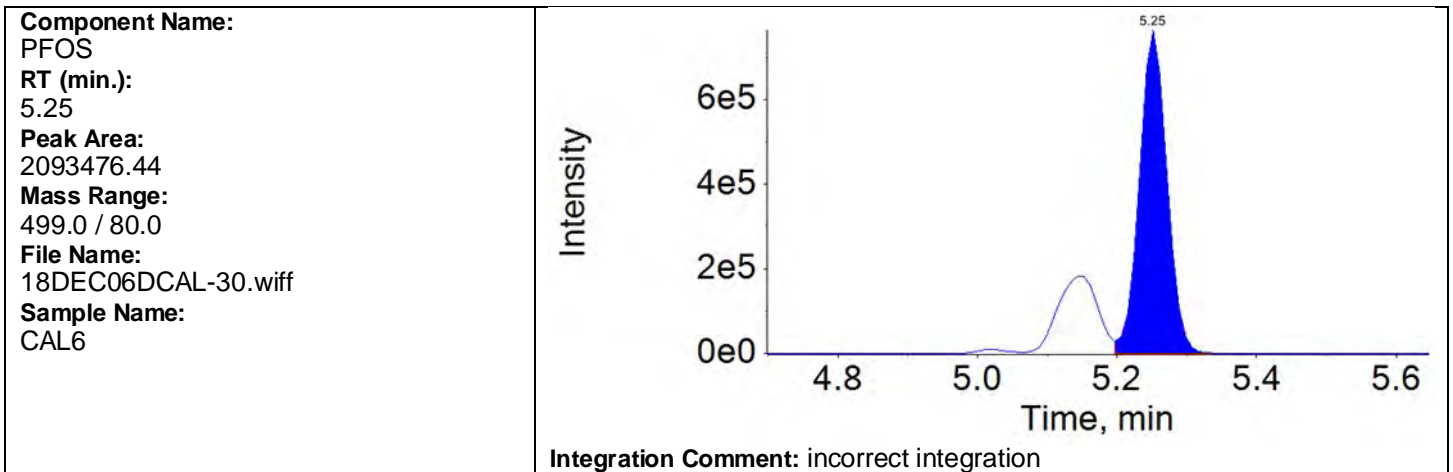
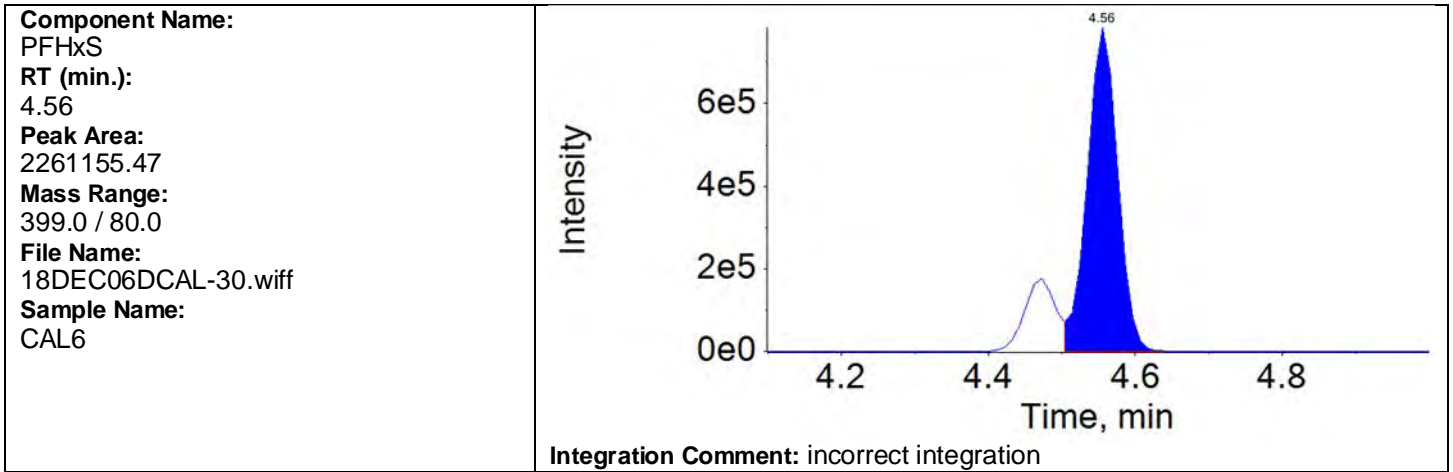
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

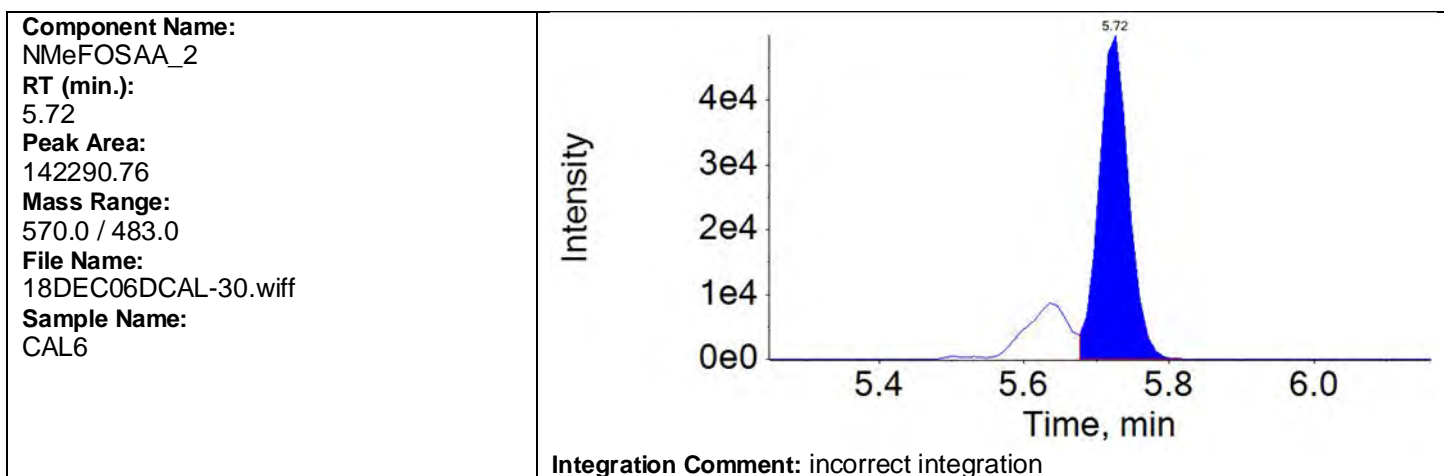
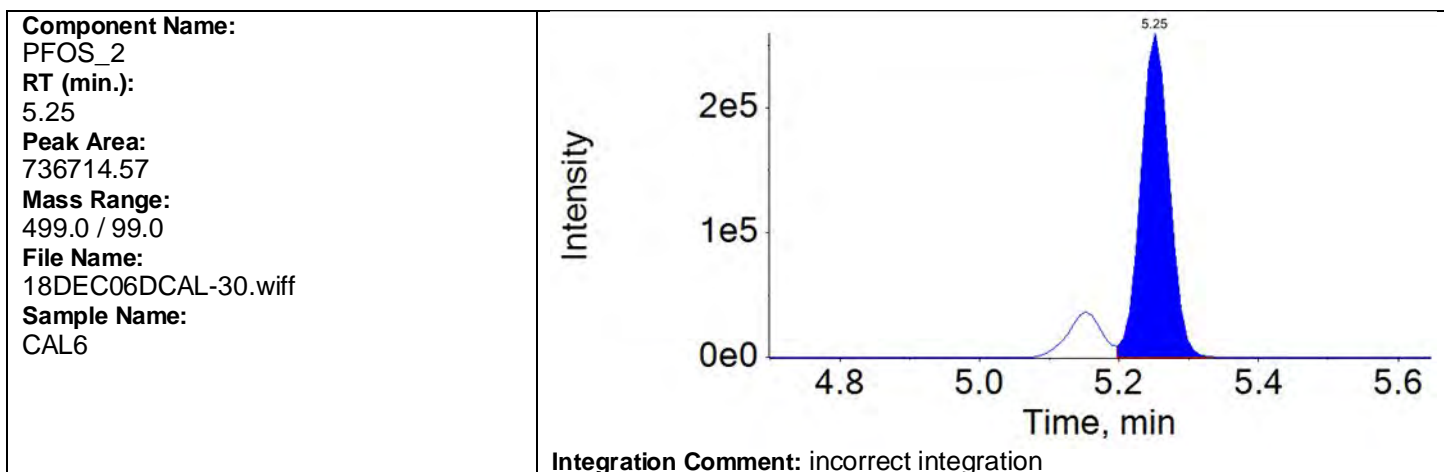
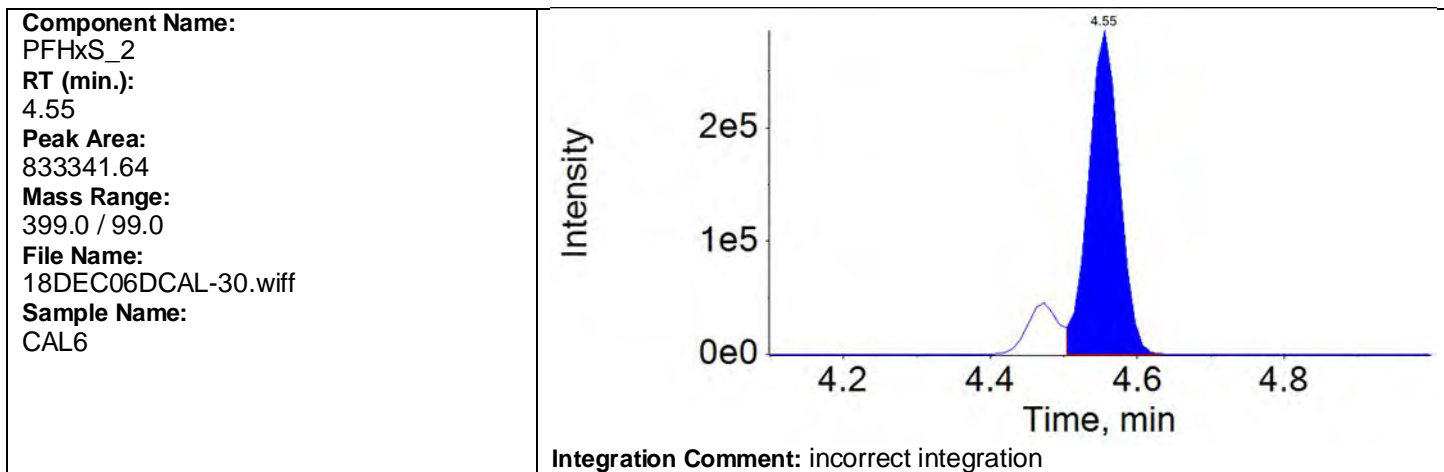
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QMethod File: 18AUG20QM





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

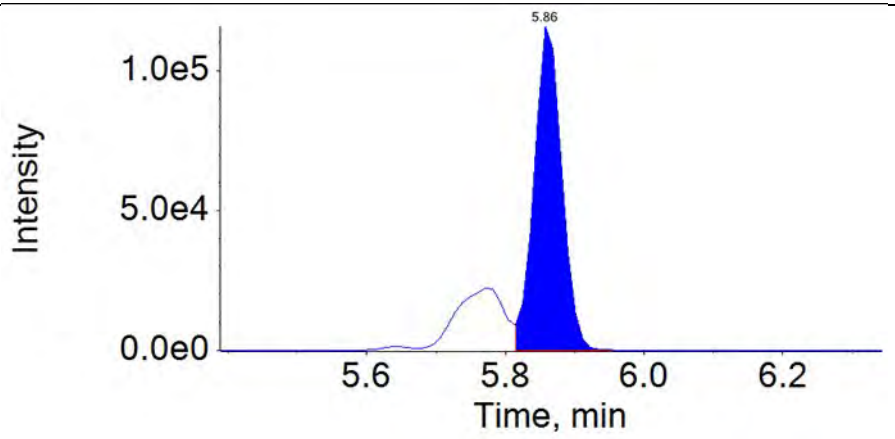
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
NEtFOSAA\_2  
RT (min.):  
5.86  
Peak Area:  
321671.92  
Mass Range:  
584.0 / 526.0  
File Name:  
18DEC06DCAL-30.wiff  
Sample Name:  
CAL6



Integration Comment: incorrect integration



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:54 pm, 12/9/18

Ion Ratio Report

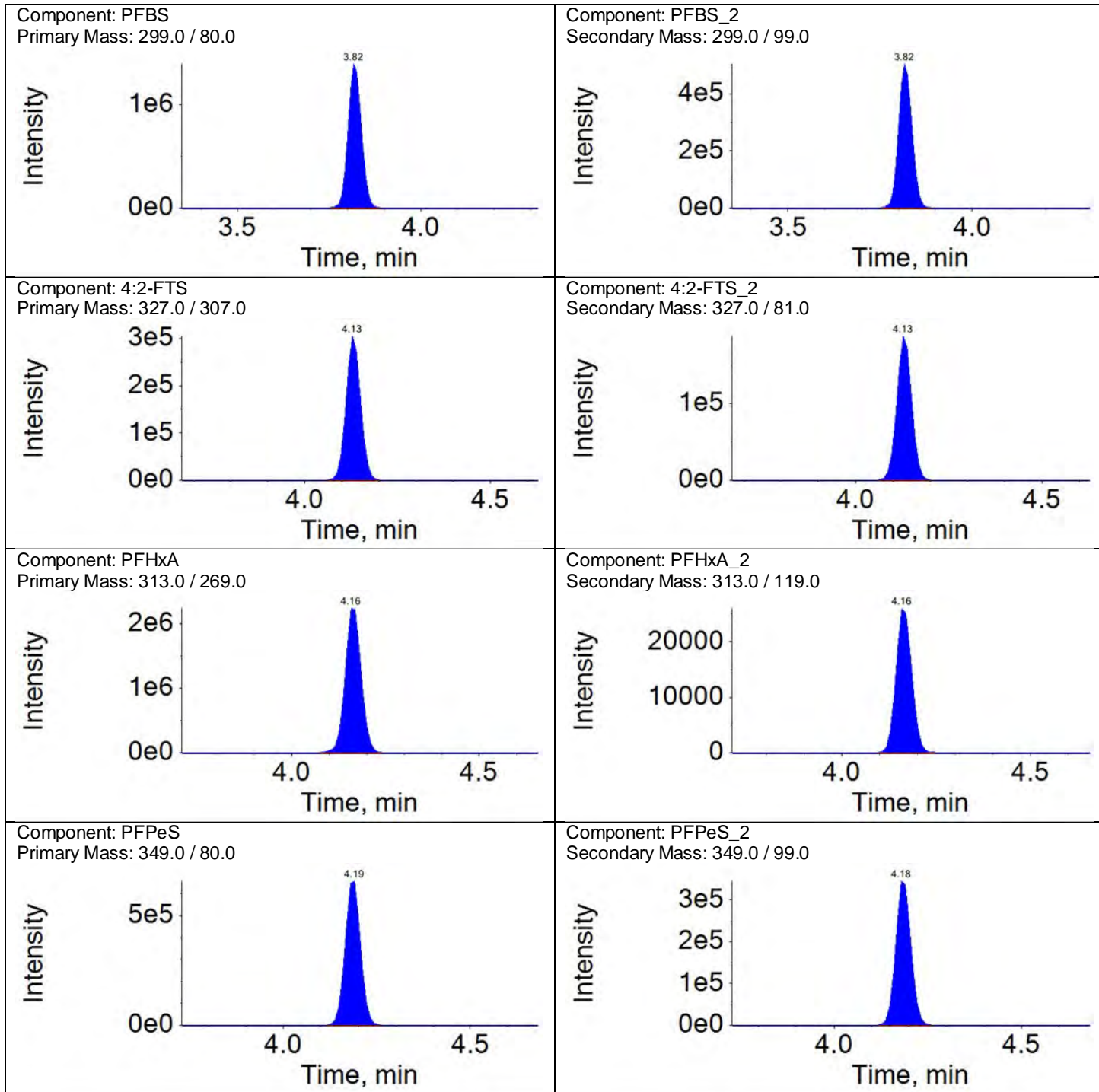
Sample Name: CAL6

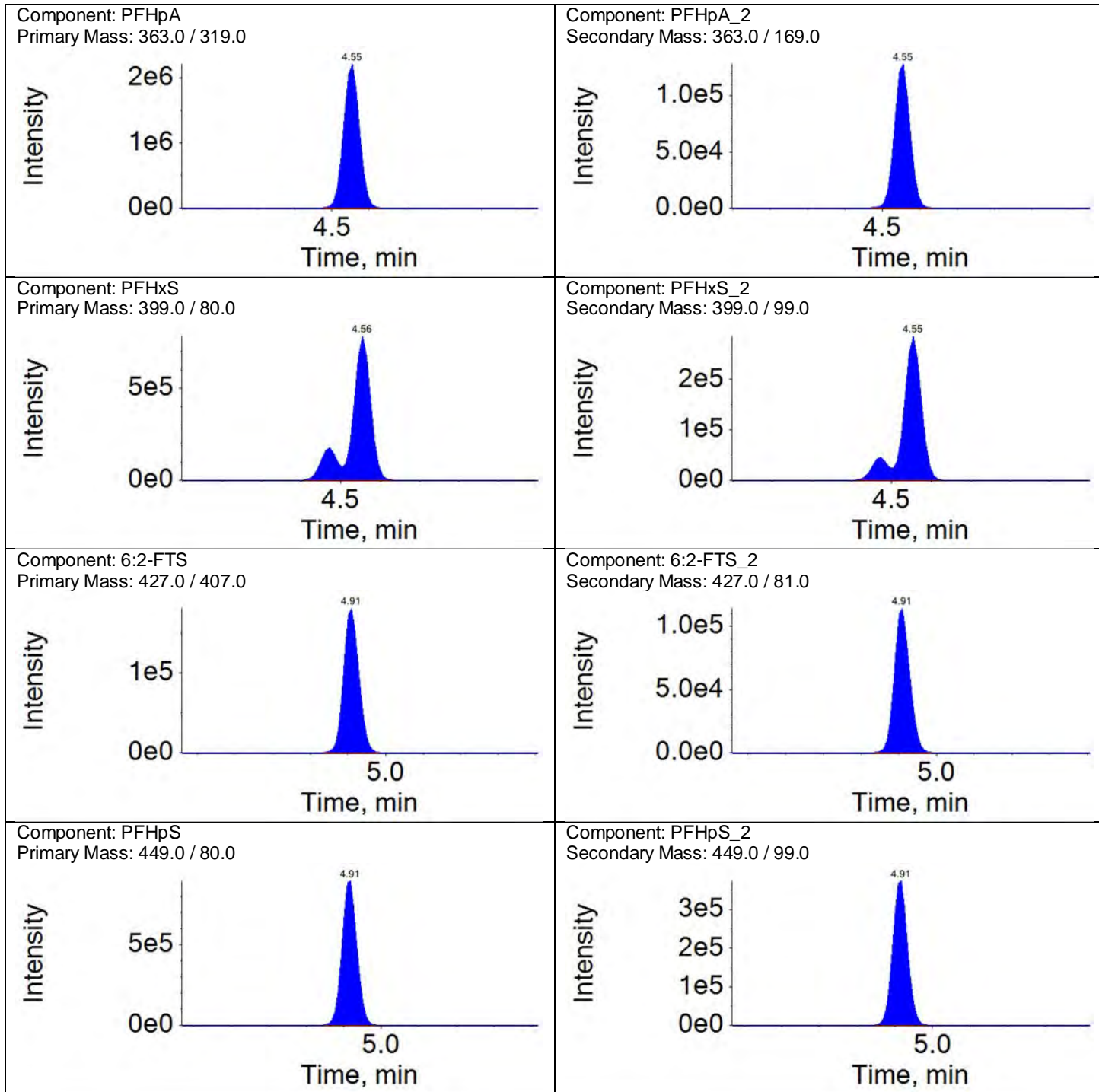
Instrument Name: LM27631

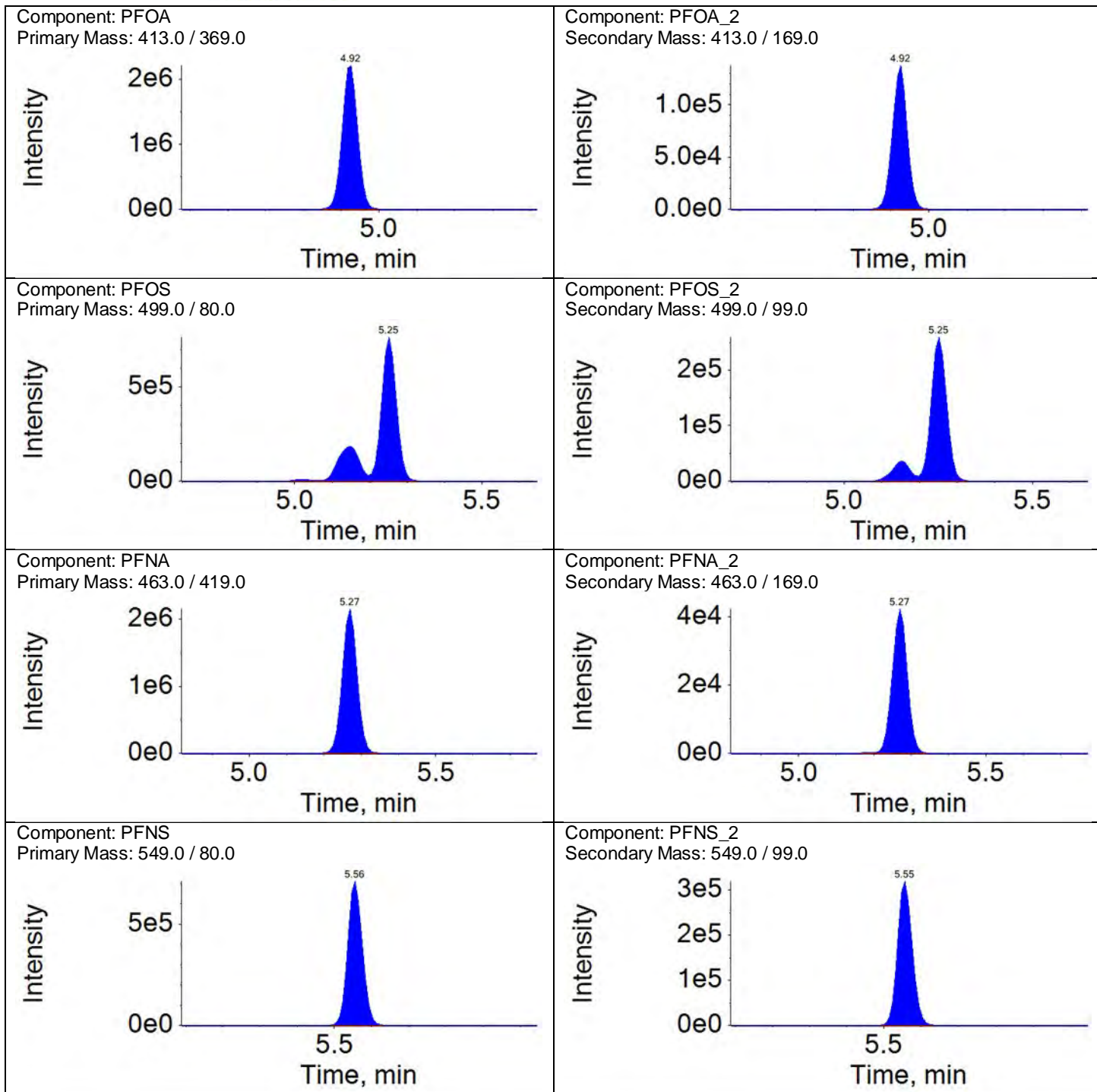
File Name: 18DEC06DCAL-30.wiff

Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	3497911.96	A	1.0000	1.0000			
PFBS_2	3.82	1.00	1278491.18	A	0.3627	0.3655	1	50	
4:2-FTS	4.13	1.00	825733.73	A	1.0000	1.0000			
4:2-FTS_2	4.13	1.00	521508.66	A	0.6542	0.6316	-3	50	
PFHxA	4.16	1.00	6667267.35	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	76003.03	A	0.0097	0.0114	17	50	
PFPeS	4.19	1.10	1887536.71	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	978361.30	A	0.5262	0.5183	-1	50	
PFHpA	4.55	1.00	6544306.50	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	373504.77	A	0.0565	0.0571	1	50	
PFHxS	4.56	1.00	2776076.01	M	1.0000	1.0000			
PFHxS_2	4.55	1.00	965694.50	M	0.3645	0.3479	-5	50	
6:2-FTS	4.91	1.00	513358.22	A	1.0000	1.0000			
6:2-FTS_2	4.91	1.00	326991.44	A	0.6273	0.6370	2	50	
PFHpS	4.91	1.08	2478350.56	A	1.0000	1.0000			
PFHpS_2	4.91	1.08	1035767.36	A	0.4162	0.4179	0	50	
PFOA	4.92	1.00	6289920.12	A	1.0000	1.0000			
PFOA_2	4.92	1.00	372201.11	A	0.0616	0.0592	-4	50	
PFOS	5.25	1.00	2854538.75	M	1.0000	1.0000			
PFOS_2	5.25	1.00	861234.48	M	0.3021	0.3017	0	50	
PFNA	5.27	1.00	5937971.99	A	1.0000	1.0000			
PFNA_2	5.27	1.00	117948.24	A	0.0192	0.0199	3	50	
PFNS	5.56	1.06	1952695.25	A	1.0000	1.0000			
PFNS_2	5.55	1.06	878403.63	A	0.4845	0.4498	-7	50	
PFDA	5.58	1.00	4838370.82	A	1.0000	1.0000			
PFDA_2	5.58	1.00	33749.49	A	0.0096	0.0070	-28	50	
8:2-FTS	5.58	1.00	434056.07	A	1.0000	1.0000			
8:2-FTS_2	5.58	1.00	248832.47	A	0.6117	0.5733	-6	50	
NMeFOSAA	5.72	1.00	636332.60	M	1.0000	1.0000			
NMeFOSAA_2	5.72	1.00	177297.12	M	0.2673	0.2786	4	50	
PFDS	5.82	1.11	1557080.12	A	1.0000	1.0000			
PFDS_2	5.82	1.11	785473.26	A	0.4952	0.5045	2	50	
PFOA	5.84	1.00	4768074.33	A	1.0000	1.0000			
PFOA_2	5.85	1.00	18411.21	A	0.0041	0.0039	-6	50	
NEtFOSAA	5.86	1.00	643440.74	A	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	428857.37	M	0.6726	0.6665	-1	50	
PFOA	6.07	1.00	6214332.27	A	1.0000	1.0000			
PFOA_2	6.07	1.00	77512.80	A	0.0133	0.0125	-6	50	
10:2-FTS	6.09	1.09	373461.12	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	275107.59	A	0.6969	0.7366	6	50	
PFOA	6.27	1.03	4879343.81	A	1.0000	1.0000			
PFOA_2	6.27	1.03	43132.10	A	0.0075	0.0088	17	50	
PFOA	6.45	1.00	4117781.14	A	1.0000	1.0000			
PFOA_2	6.45	1.00	26641.55	A	0.0066	0.0065	-2	50	
PFHxDA	6.74	1.04	1913602.75	A	1.0000	1.0000			
PFHxDA_2	6.73	1.04	125292.33	A	0.0616	0.0655	6	50	
PFOA	6.98	1.08	1488718.76	A	1.0000	1.0000			
PFOA_2	6.98	1.08	39725.29	A	0.0272	0.0267	-2	50	

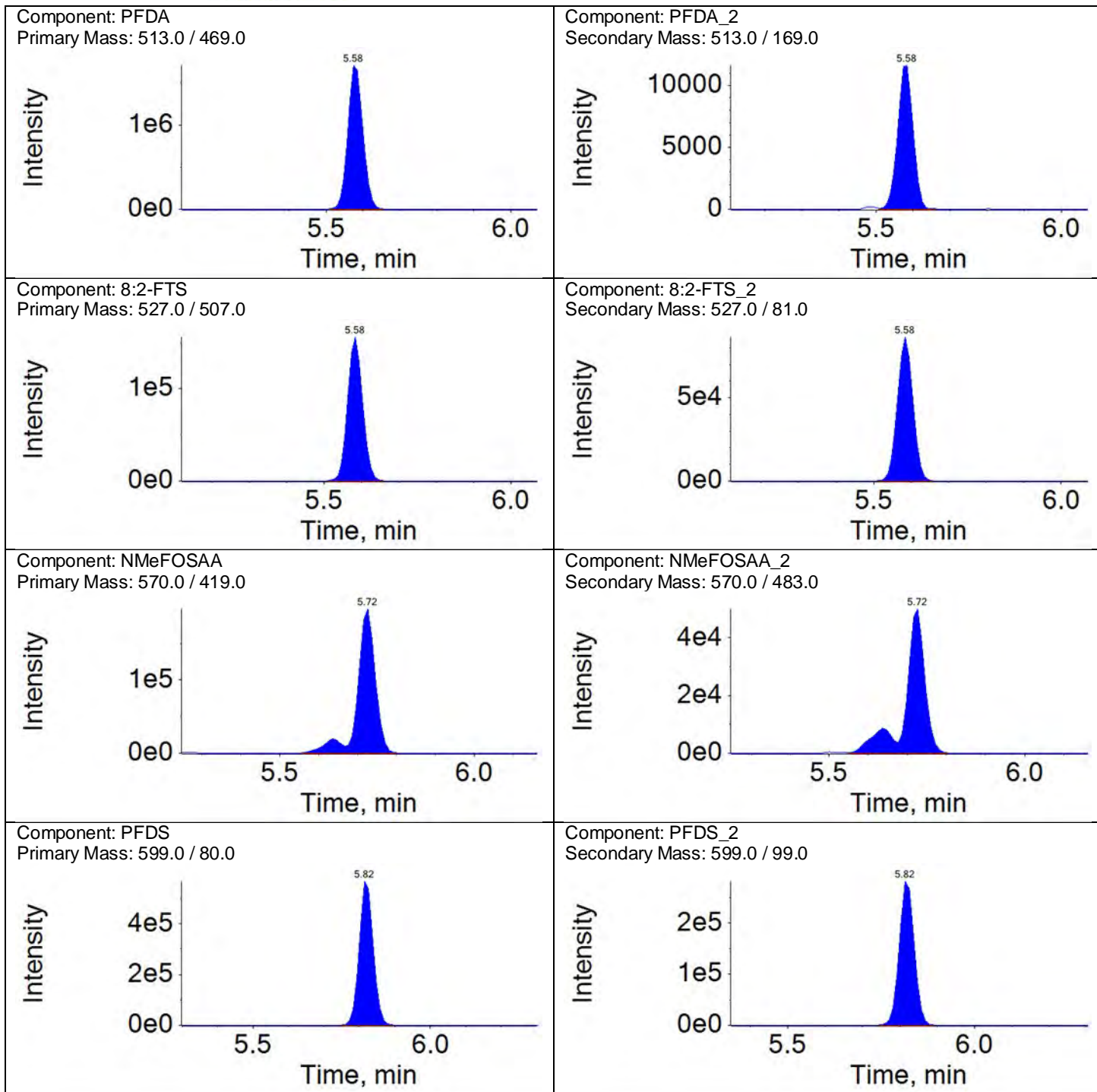




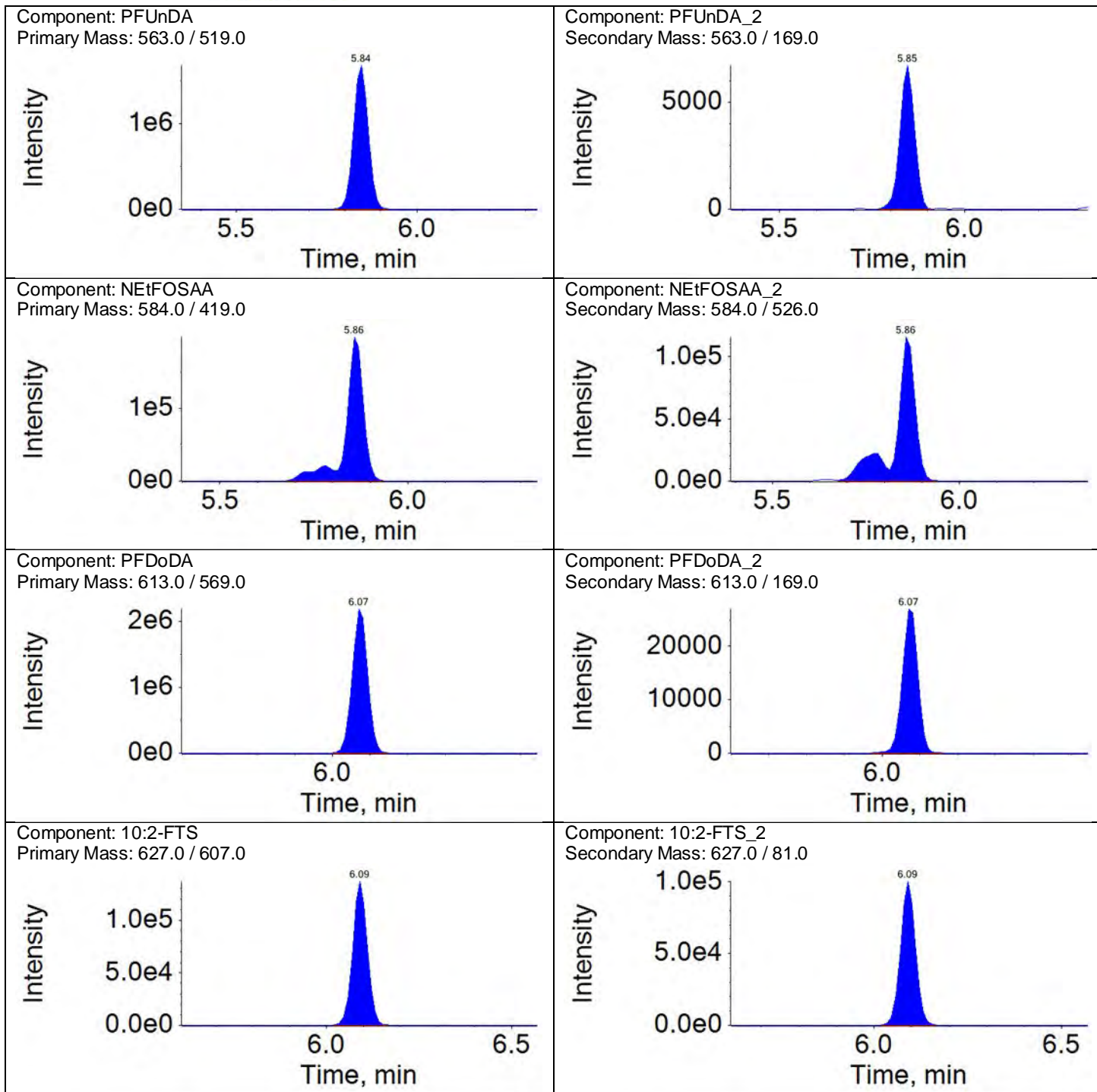


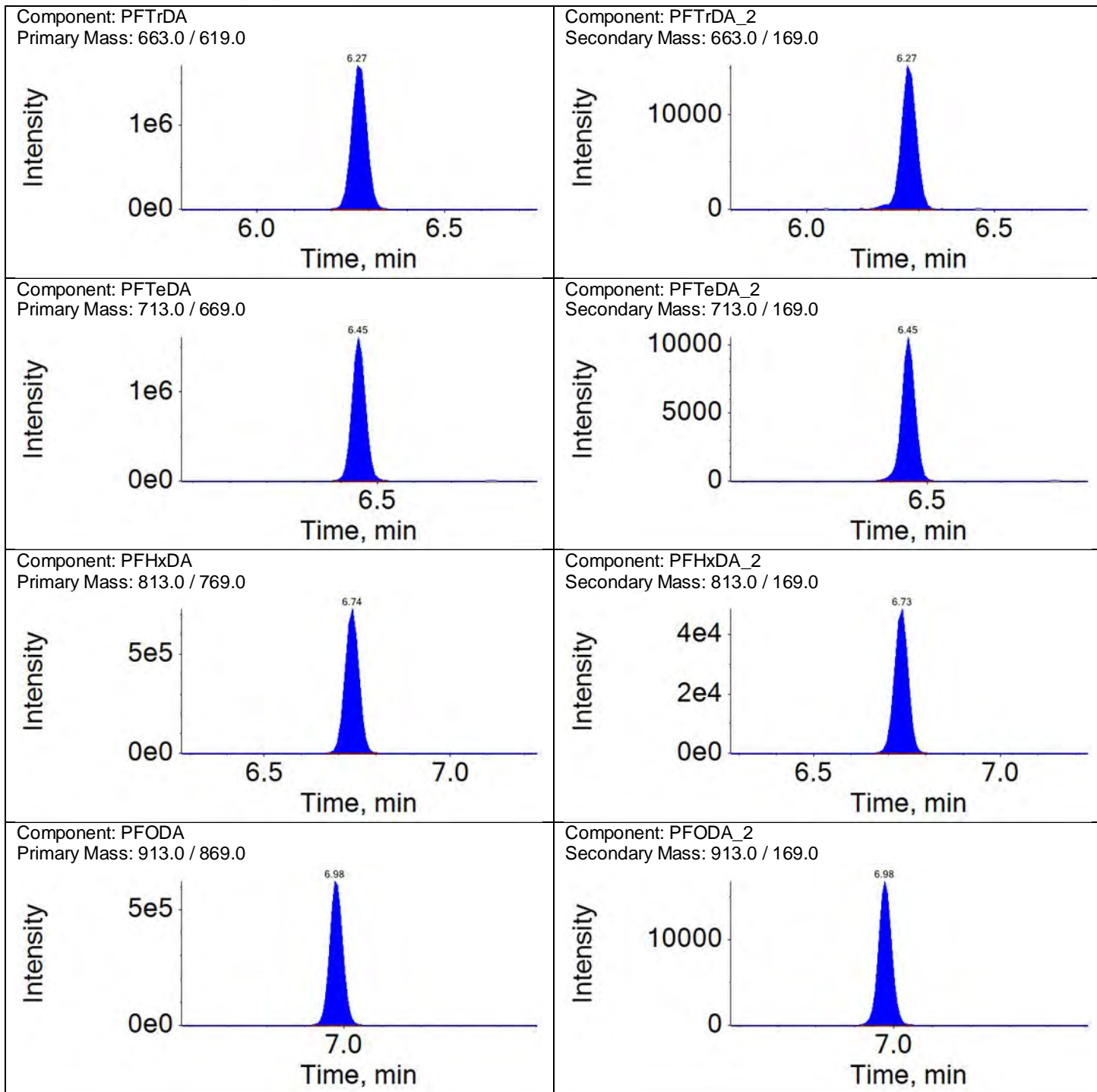












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL7	Data File:	18DEC06DCAL-31.wiff
Sample ID:	CALBRN71833B	Acquis Date:	2018-12-07T00:31:34
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	9	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	601926.9	825688.9	-27	50	
13C2-PFOA	5.0	387778.1	449802.8	-14	50	
13C4-PFOS	4.8	216503.6	276858.3	-22	50	
13C2-PFDA	5.0	267511.1	315428.3	-15	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	674364.9	13C3-PFBA	601926.9	1.120	5.000	4.958	99	70-130	
E13C5-PFPeA	649808.3	13C3-PFBA	601926.9	1.080	5.000	5.127	103	70-130	
E13C3-PFBS	343547.9	13C3-PFBA	601926.9	0.571	4.650	4.838	104	70-130	
E13C2-4:2-FTS	49950.5	13C2-PFOA	387778.1	0.129	4.670	5.047	108	70-130	
E13C5-PFHxA	549743.2	13C2-PFOA	387778.1	1.418	5.000	4.760	95	70-130	
E13C3-PFHxS	246441.2	13C2-PFOA	387778.1	0.636	4.730	4.076	86	70-130	
E13C4-PFHpA	435799.6	13C2-PFOA	387778.1	1.124	5.000	4.778	96	70-130	
E13C2-6:2-FTS	27219.5	13C2-PFOA	387778.1	0.070	4.750	4.349	92	70-130	
E13C8-PFOA	608500.4	13C2-PFOA	387778.1	1.569	5.000	4.436	89	70-130	
E13C8-PFOS	231168.3	13C4-PFOS	216503.6	1.068	4.780	4.792	100	70-130	
E13C9-PFNA	415771.2	13C4-PFOS	216503.6	1.920	5.000	5.427	109	70-130	
E13C6-PFDA	491017.3	13C2-PFDA	267511.1	1.836	5.000	4.864	97	70-130	
E13C2-8:2-FTS	20381.4	13C2-PFDA	267511.1	0.076	4.790	4.974	104	70-130	
E13C8-PFOA	544579.3	13C2-PFDA	267511.1	2.036	5.000	4.815	96	70-130	
Ed3-NMeFOSAA	84863.1	13C2-PFDA	267511.1	0.317	5.000	5.622	112	70-130	
E13C7-PFUnDA	249018.7	13C2-PFDA	267511.1	0.931	5.000	4.566	91	70-130	
Ed5-NEtFOSAA	64018.9	13C2-PFDA	267511.1	0.239	5.000	5.283	106	70-130	
E13C2-PFDoDA	593609.9	13C2-PFDA	267511.1	2.219	5.000	4.657	93	70-130	
Ed7-NMePFOSAE	256769.2	13C2-PFDA	267511.1	0.960	5.000	5.529	111	70-130	
Ed3-NMePFOSA	73831.6	13C2-PFDA	267511.1	0.276	5.000	5.029	101	70-130	
Ed9-NEtPFOSAE	199424.7	13C2-PFDA	267511.1	0.745	5.000	5.141	103	70-130	
Ed5-NEtPFOSA	65852.5	13C2-PFDA	267511.1	0.246	5.000	5.540	111	70-130	
E13C2-PFTeDA	451368.8	13C2-PFDA	267511.1	1.687	5.000	5.008	100	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

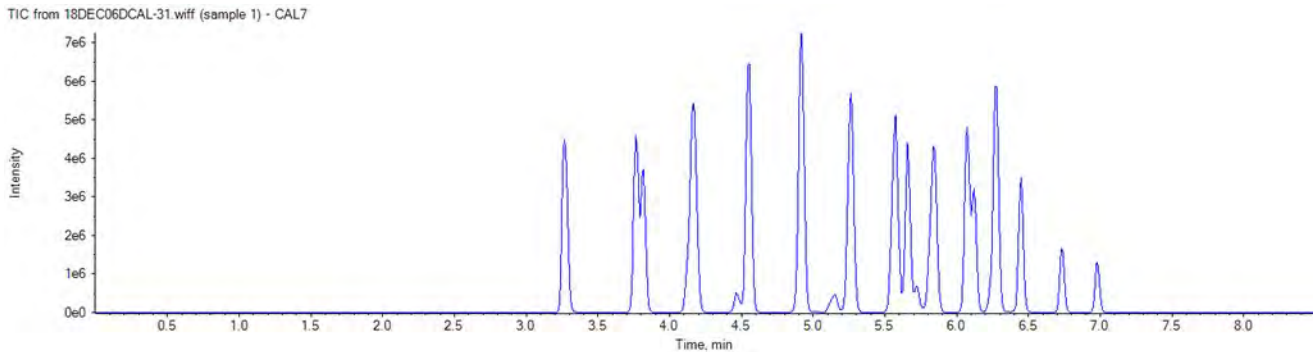
Analyte Quantitation Peak Table

Sample Name: CAL7 Instrument Name: LM27631 File Name: 18DEC06DCAL-31.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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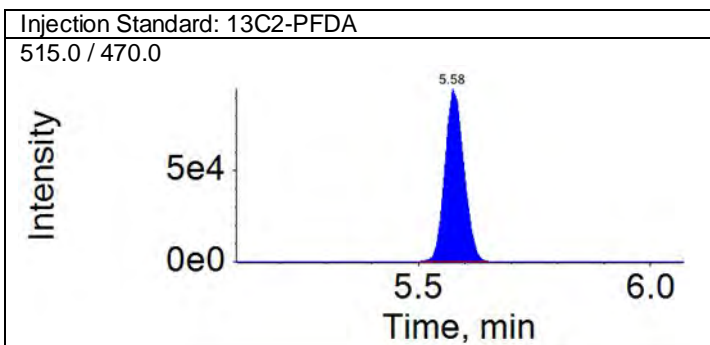
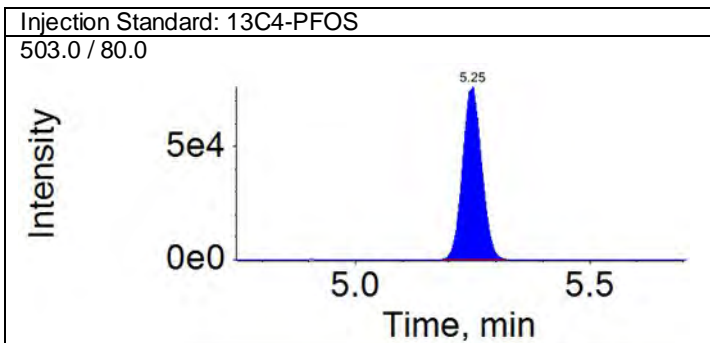
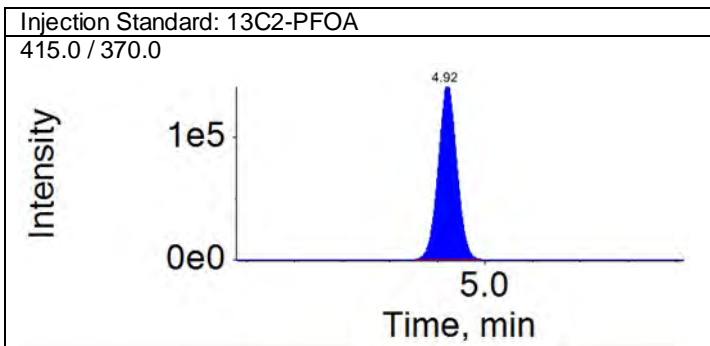
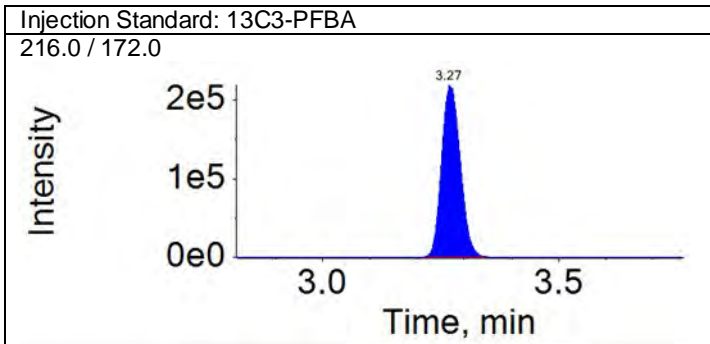
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	11149178.6		A	13C4-PFBA	3.27	674364.9	16.533	91.216
PFPeA	3.77	1.000	10952335.1		A	13C5-PFPeA	3.77	649808.3	16.855	88.666
PFBS	3.82	1.000	6058196.4		A	13C3-PFBS	3.82	343547.9	17.634	87.407
4:2-FTS	4.13	1.000	1541772.1		A	13C2-4:2-FTS	4.13	49950.5	30.866	82.731
PFHxA	4.16	1.000	11064156.5		A	13C5-PFHxA	4.16	549743.2	20.126	87.699
PFPeS	4.18	1.100	3202799.2		A	13C3-PFBS	3.82	343547.9	9.323	92.314
PFHpA	4.55	1.000	11333940.4		A	13C4-PFHpA	4.55	435799.6	26.007	85.629
PFHxS	4.55	1.000	4864366.5		M	13C3-PFHxS	4.55	246441.2	19.738	93.522
6:2-FTS	4.91	1.000	852701.2		A	13C2-6:2-FTS	4.91	27219.5	31.327	77.787
PFHpS	4.91	1.080	4320784.8		A	13C3-PFHxS	4.55	246441.2	17.533	96.244
PFOA	4.92	1.000	10664235.9		A	13C8-PFOA	4.92	608500.4	17.525	95.776
PFOS	5.25	1.000	5255335.2		M	13C8-PFOS	5.25	231168.3	22.734	94.295
PFNA	5.27	1.000	10109257.9		A	13C9-PFNA	5.27	415771.2	24.314	89.607
PFNS	5.55	1.060	3387582.4		A	13C8-PFOS	5.25	231168.3	14.654	94.295
PFDA	5.58	1.000	8449610.5		A	13C6-PFDA	5.58	491017.3	17.208	96.860
8:2-FTS	5.58	1.000	758920.2		A	13C2-8:2-FTS	5.58	20381.4	37.236	80.681
PFOSA	5.66	1.000	10135588.9		A	13C8-PFOSA	5.66	544579.3	18.612	96.557
NMeFOSAA	5.72	1.000	1268339.7		M	d3-NMeFOSAA	5.72	84863.1	14.946	98.856
PFDS	5.82	1.110	2738545.0		A	13C8-PFOS	5.25	231168.3	11.847	95.786
PfUnDA	5.84	1.000	8122821.3		A	13C7-PfUnDA	5.84	249018.7	32.619	99.876
NEtFOSAA	5.86	1.000	1198896.2		A	d5-NEtFOSAA	5.85	64018.9	18.727	94.646
PFDaDA	6.07	1.000	10417166.0		A	13C2-PFDaDA	6.07	593609.9	17.549	92.376
10:2-FTS	6.09	1.090	691305.0		A	13C2-8:2-FTS	5.58	20381.4	33.918	89.846
NMePFOSAE	6.12	1.000	5604299.9		A	d7-NMePFOSAE	6.11	256769.2	21.826	94.847
NMePFOSA	6.13	1.000	1487707.2		A	d3-NMePFOSA	6.12	73831.6	20.150	101.669
PFDoS	6.24	1.190	1472050.7		A	13C8-PFOS	5.25	231168.3	6.368	97.080
NEtPFOSAE	6.28	1.000	5855586.8		A	d9-NEtPFOSAE	6.27	199424.7	29.362	98.377
NEtPFOSA	6.29	1.000	1345368.4		A	d5-NEtPFOSA	6.28	65852.5	20.430	97.801
PFTrDA	6.27	1.030	7688079.4		A	13C2-PFDaDA	6.07	593609.9	12.951	84.826
PFTeDA	6.45	1.000	7609017.2		A	13C2-PFTeDA	6.45	451368.8	16.858	96.401
PFHxDA	6.73	1.040	3585505.0		A	13C2-PFTeDA	6.45	451368.8	7.944	99.483
PFOA	6.98	1.080	2832373.9		A	13C2-PFTeDA	6.45	451368.8	6.275	100.731

Total Ion Chromatogram



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

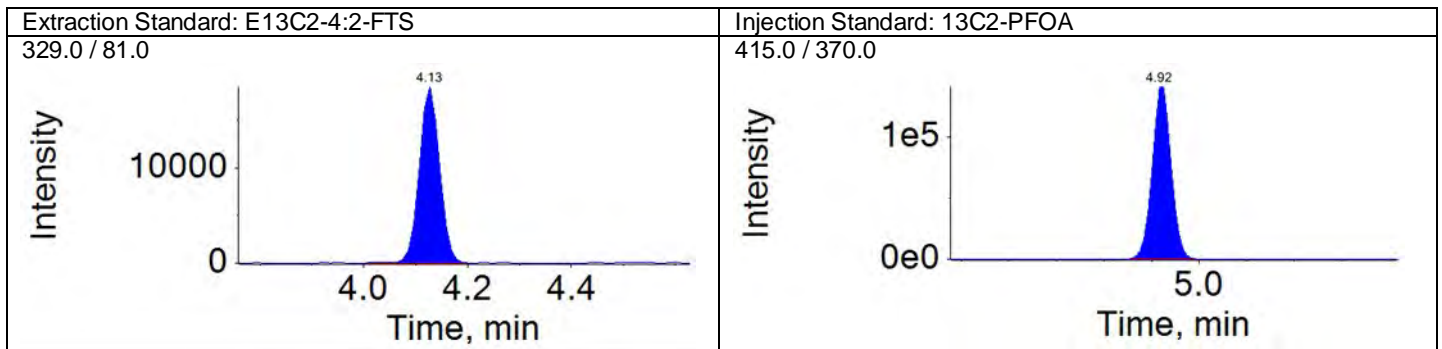
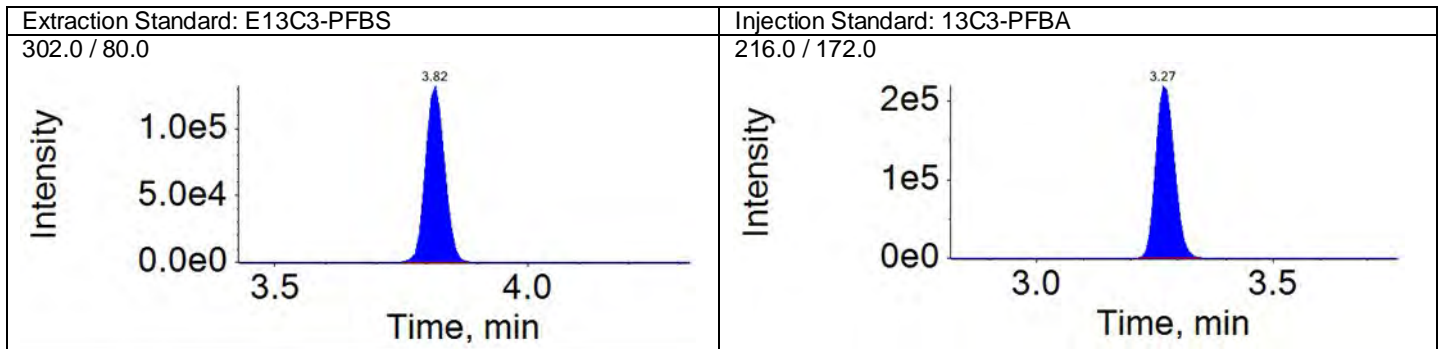
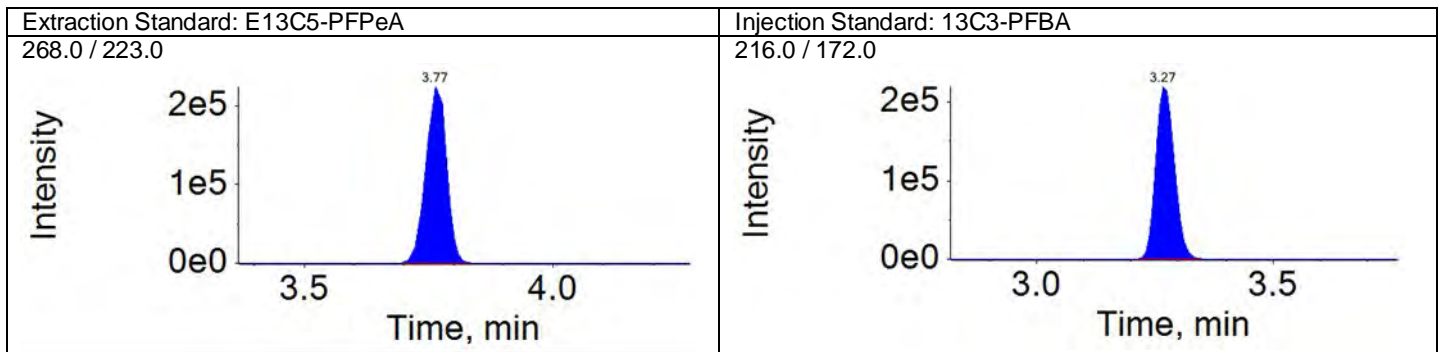
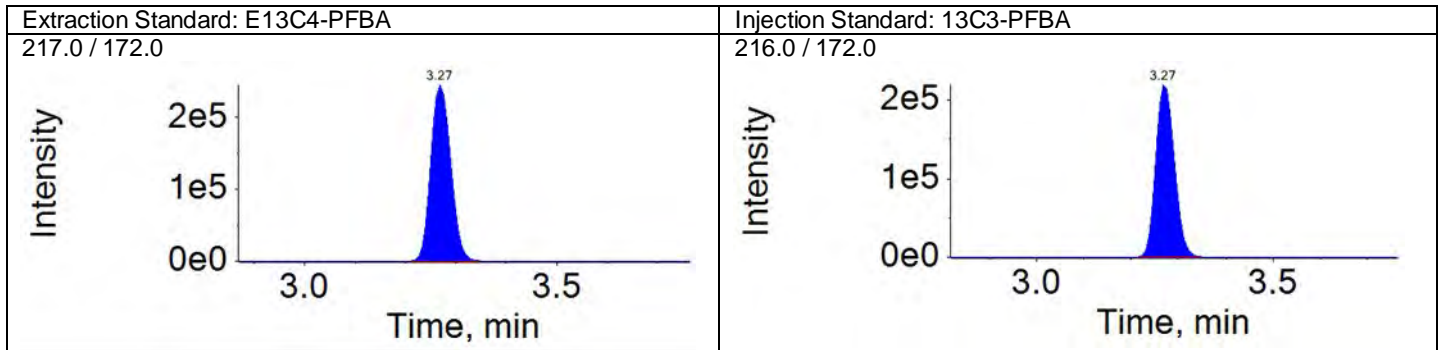
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ICAL Name: 18DEC06DCAL  
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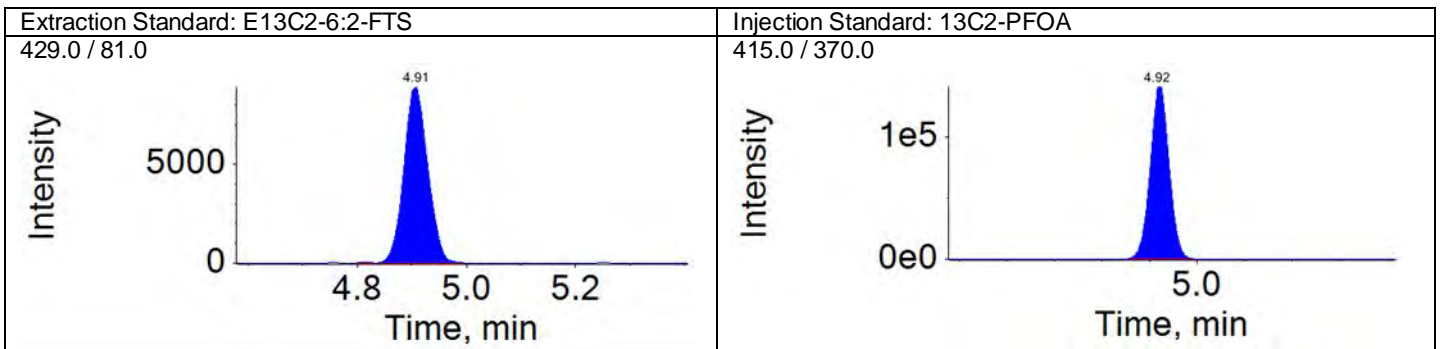
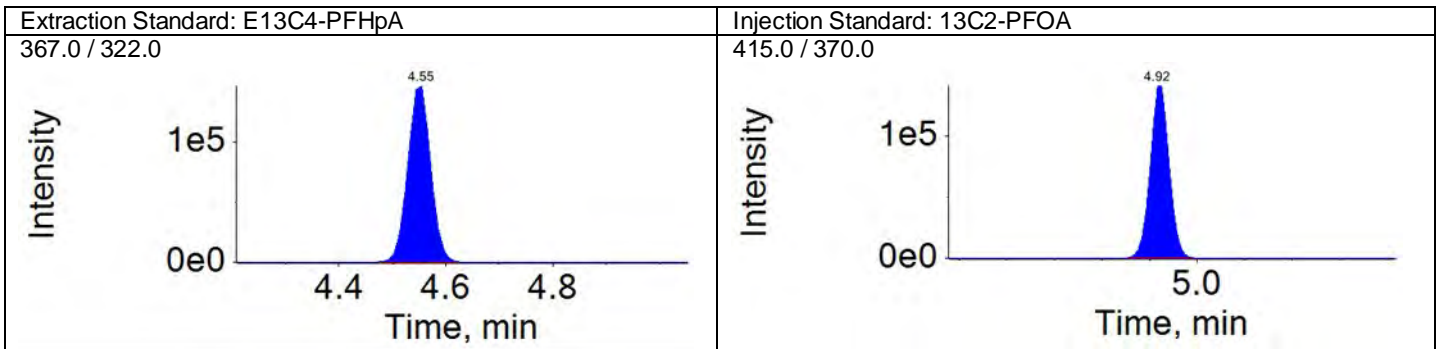
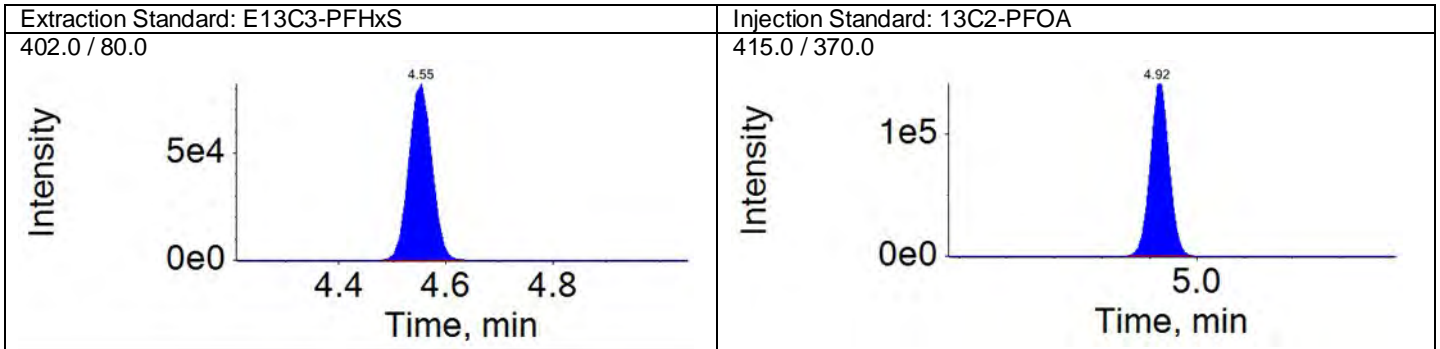
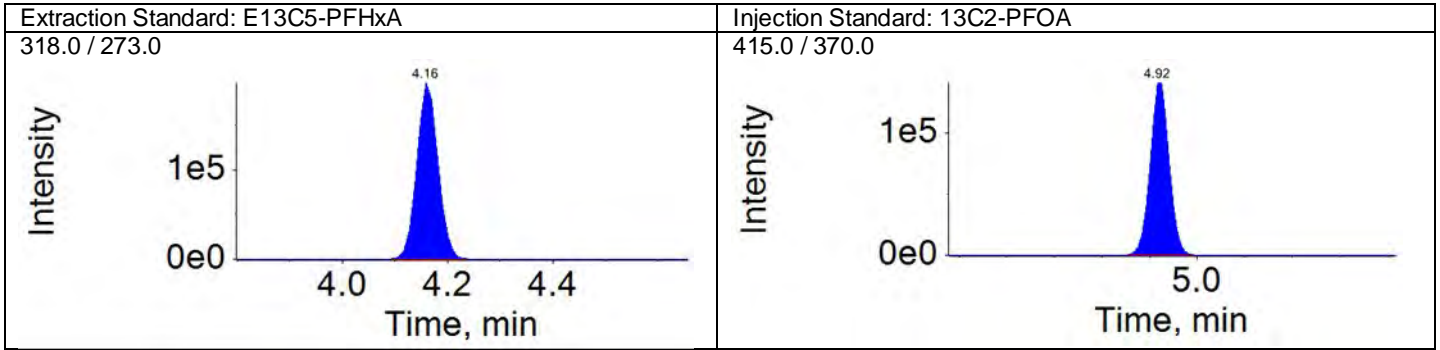
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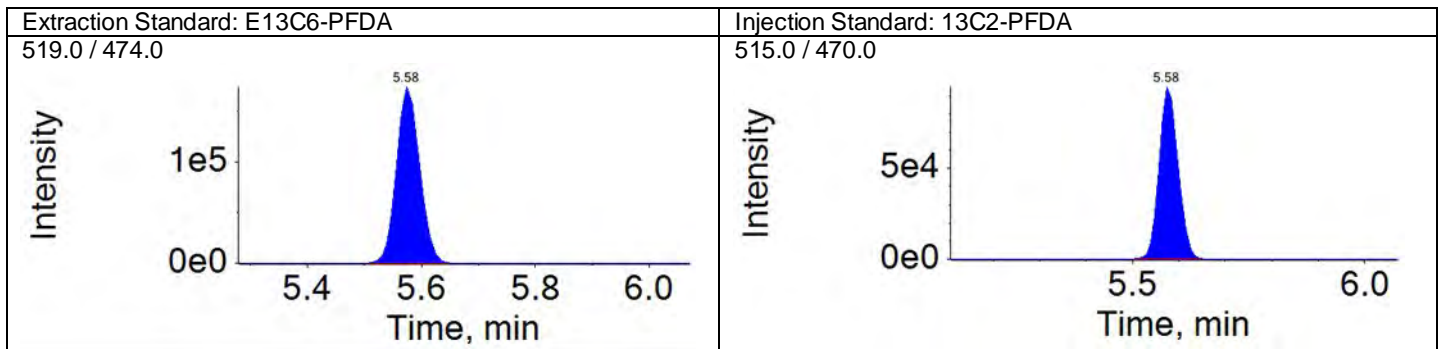
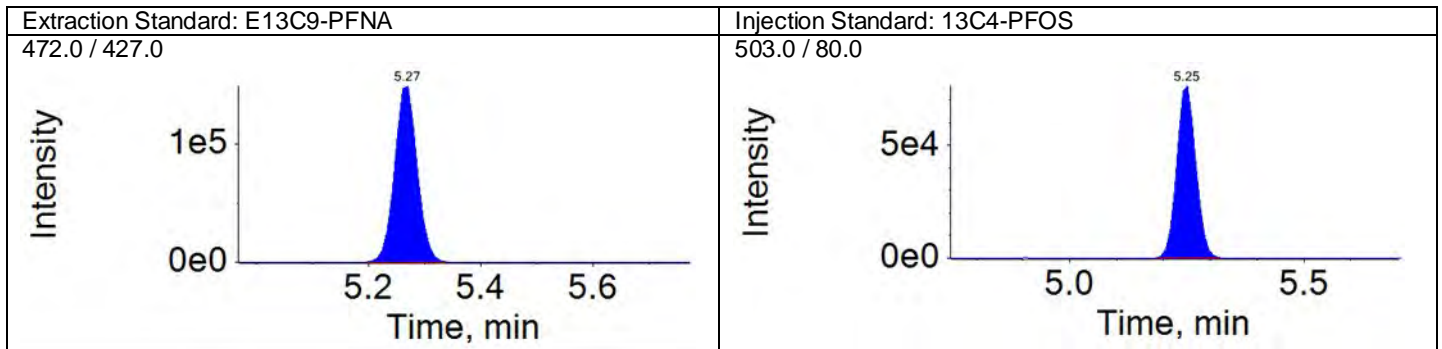
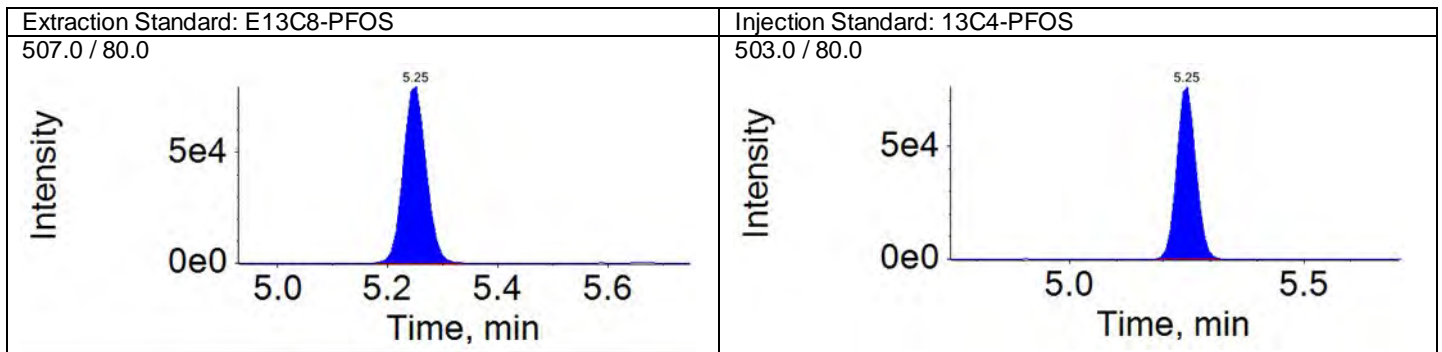
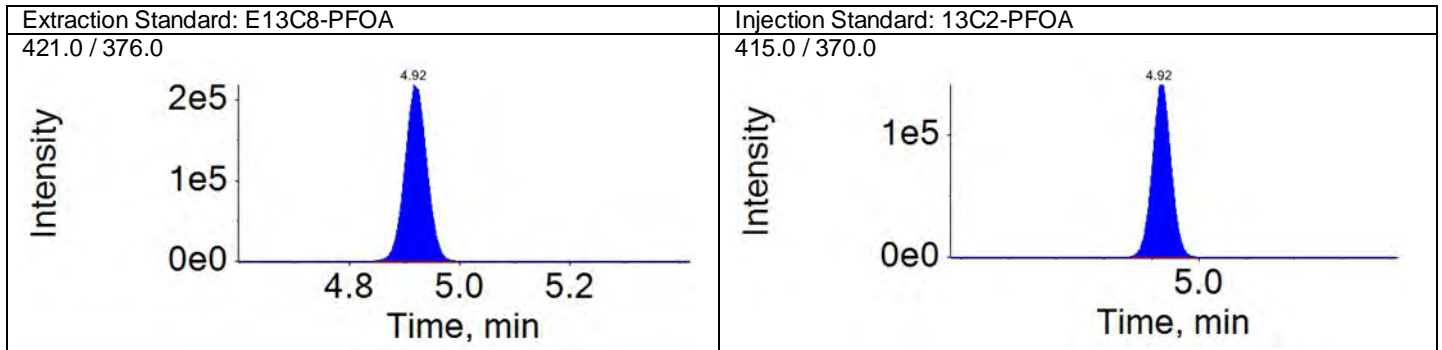
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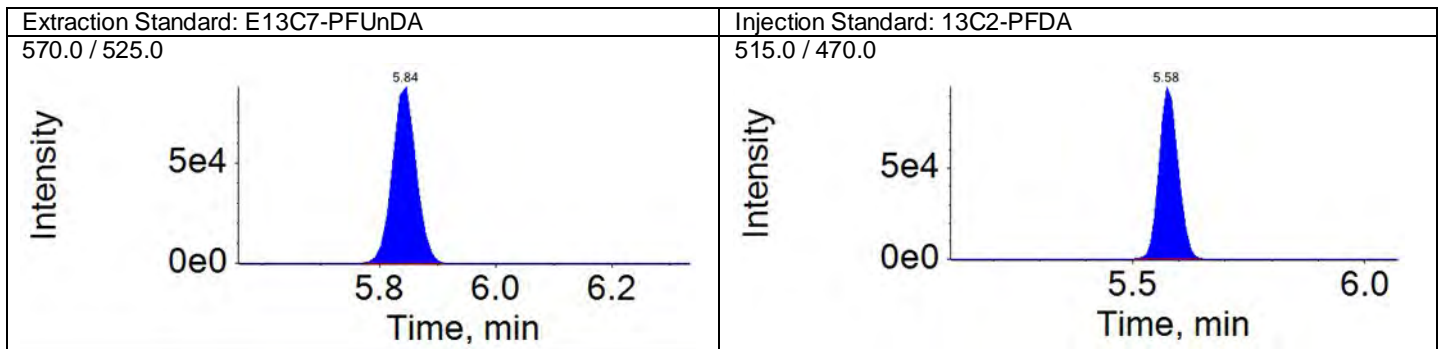
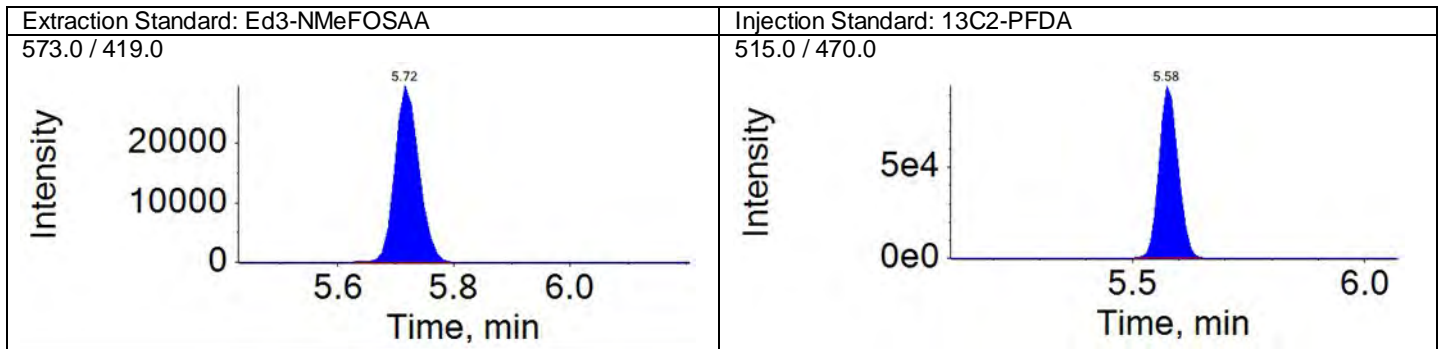
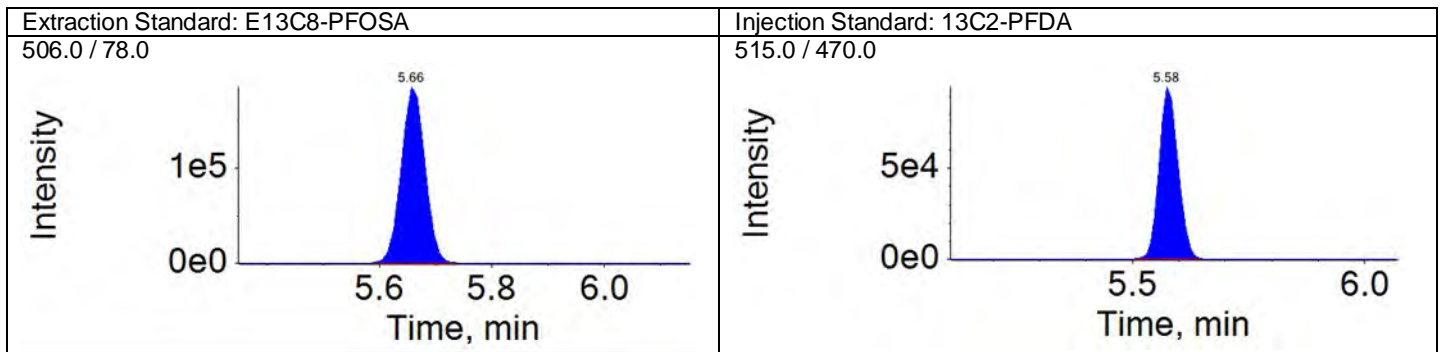
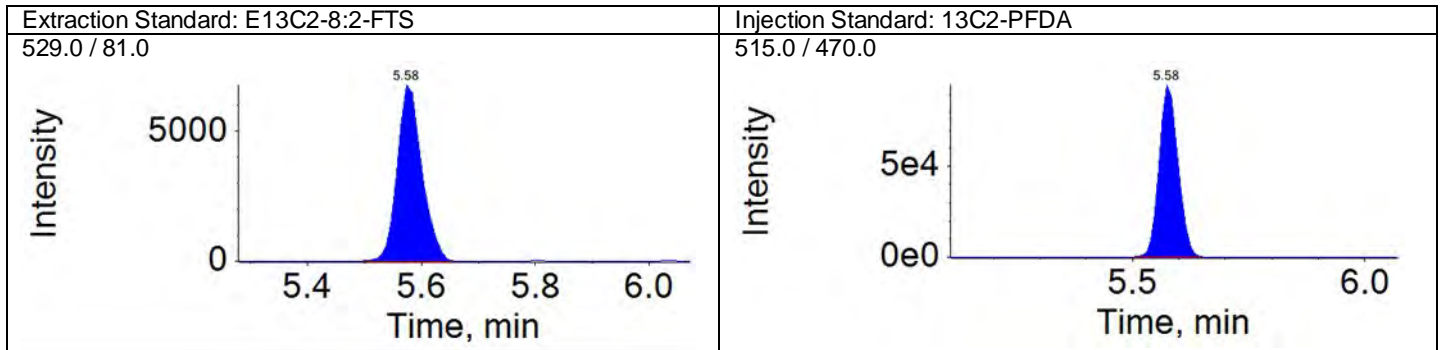
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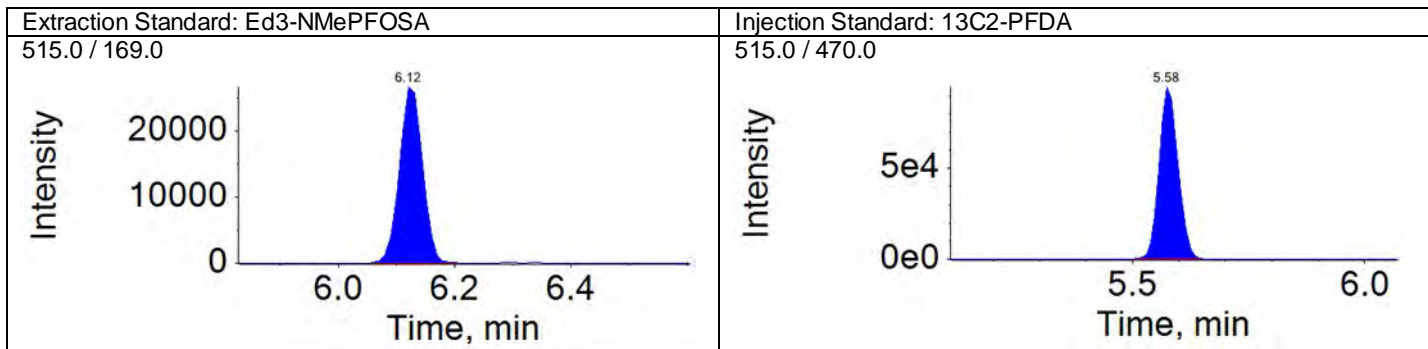
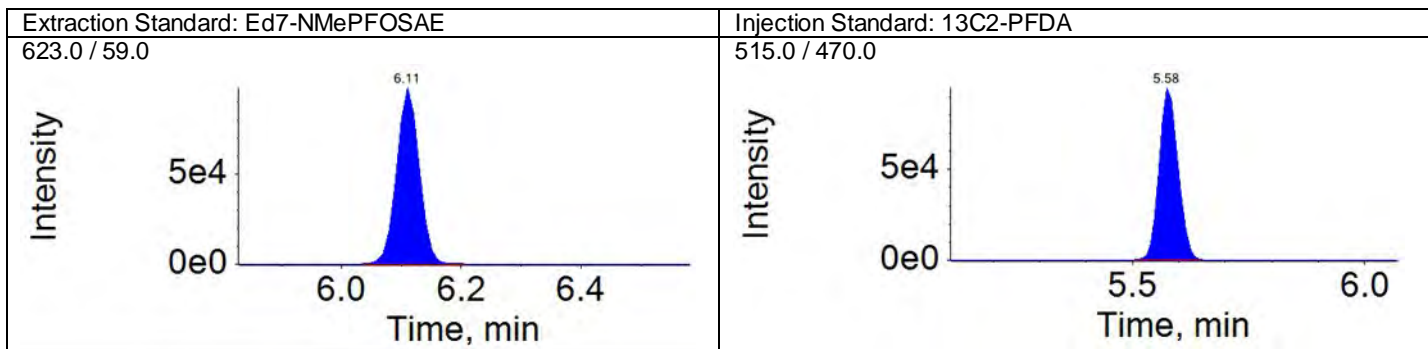
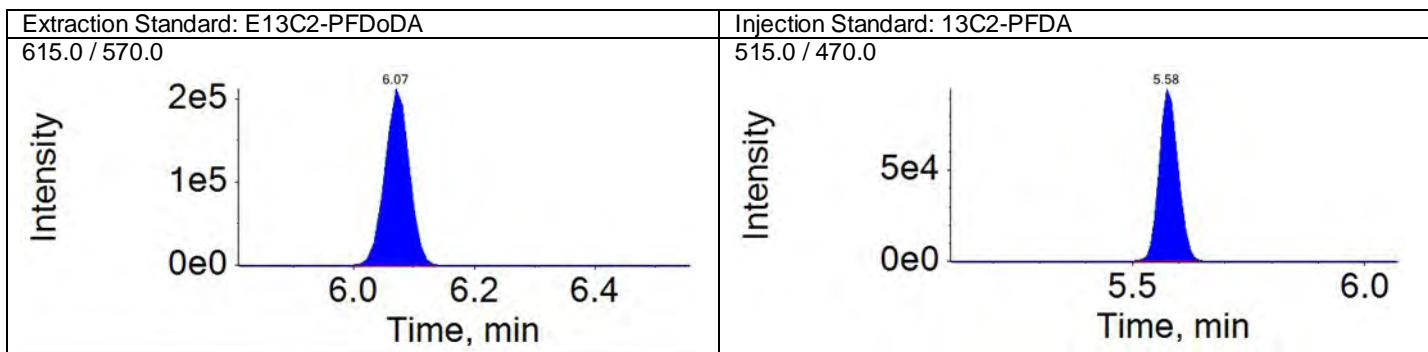
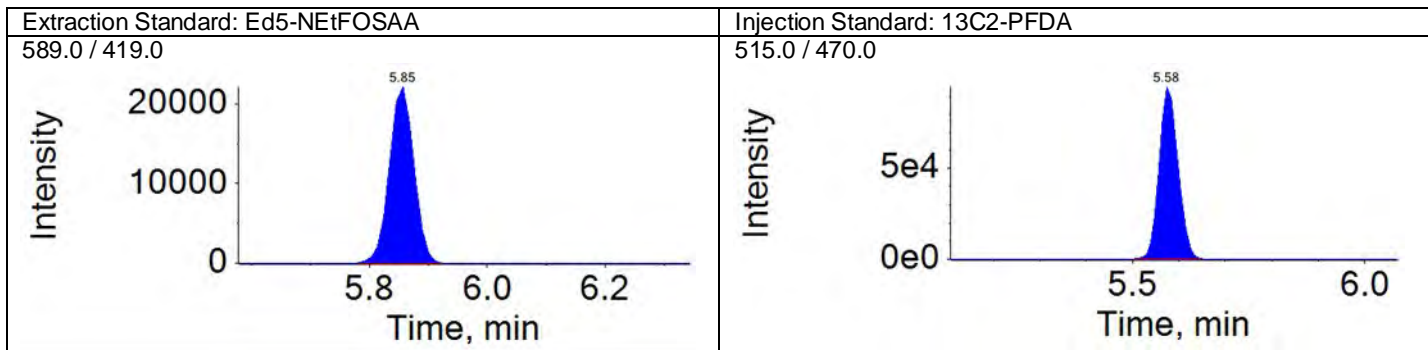
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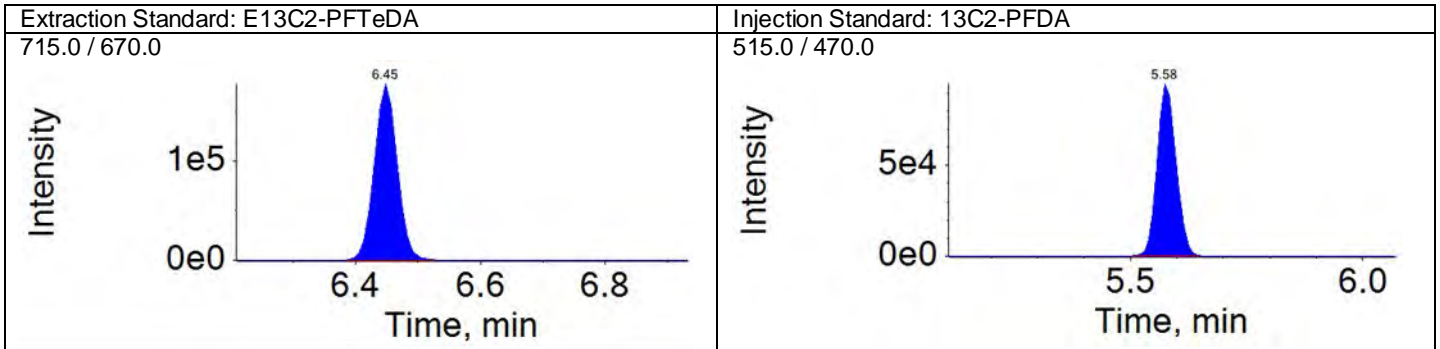
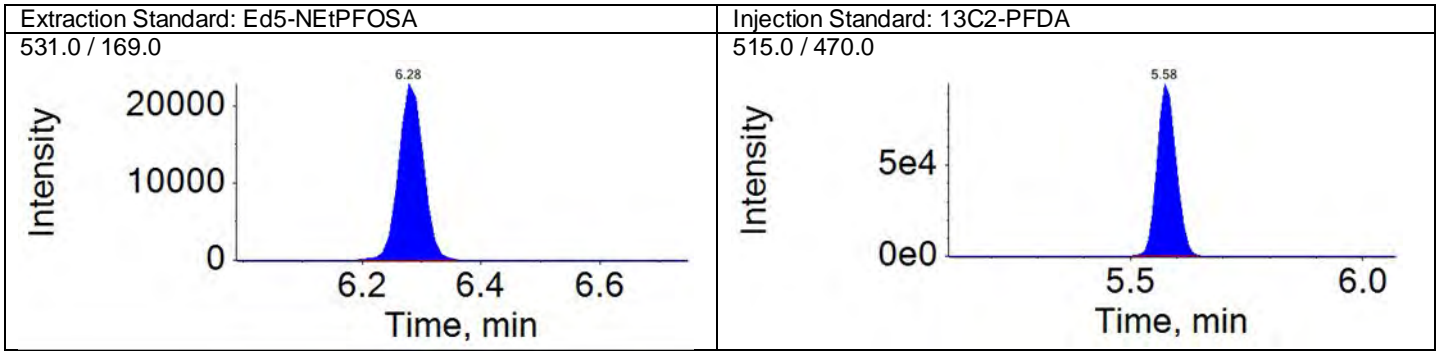
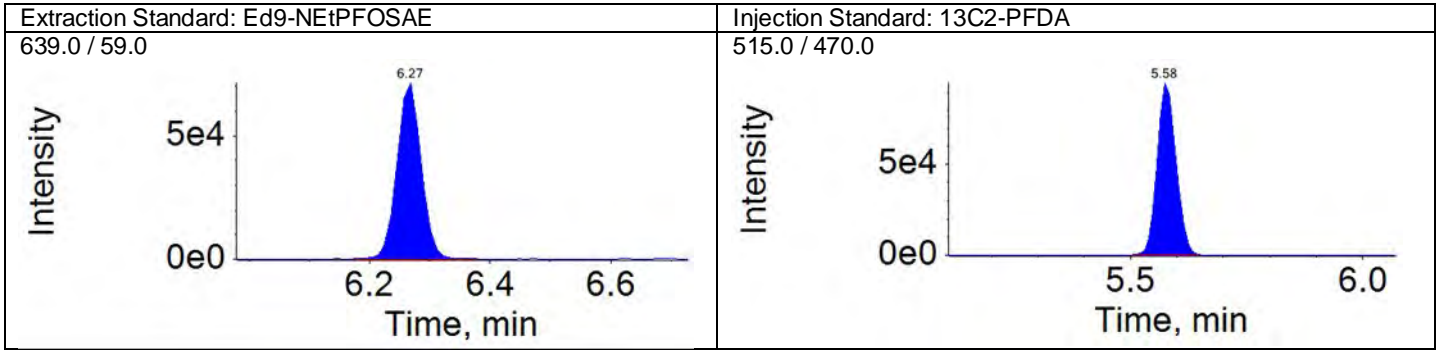
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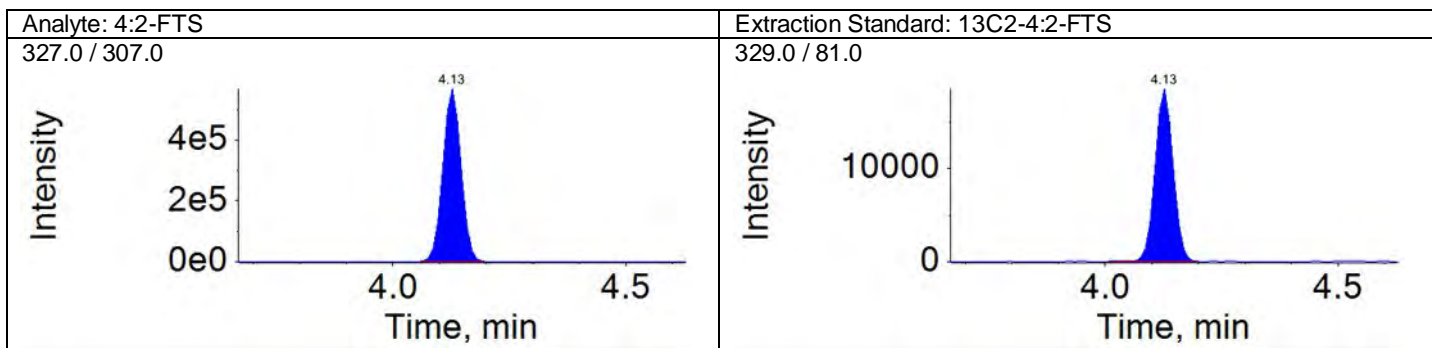
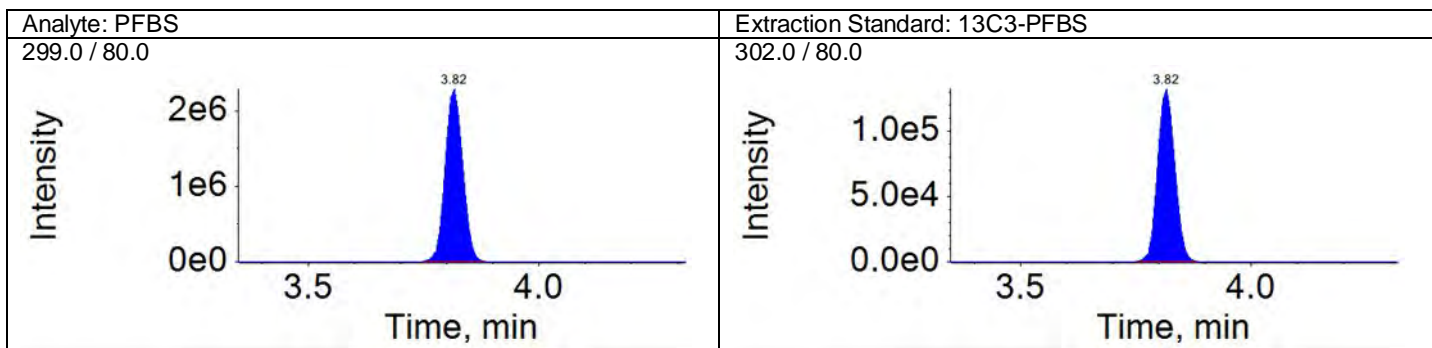
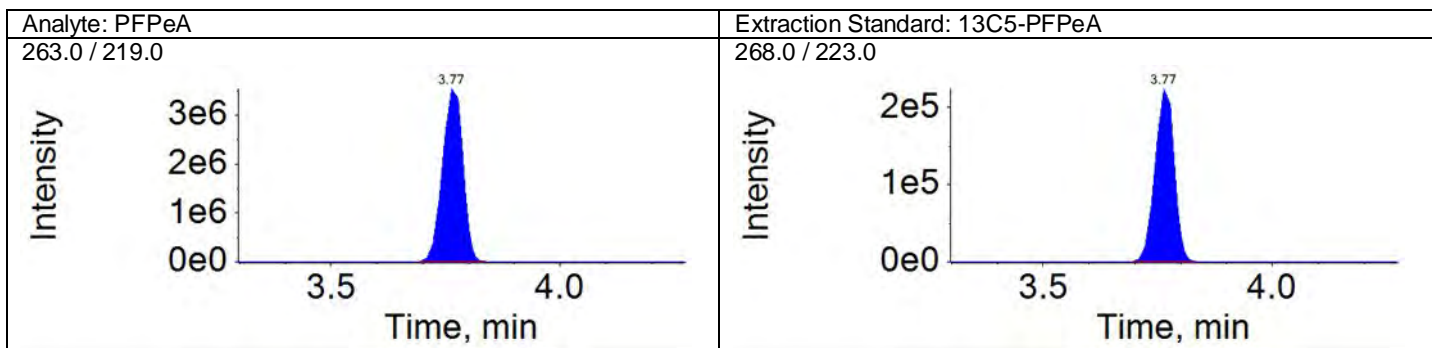
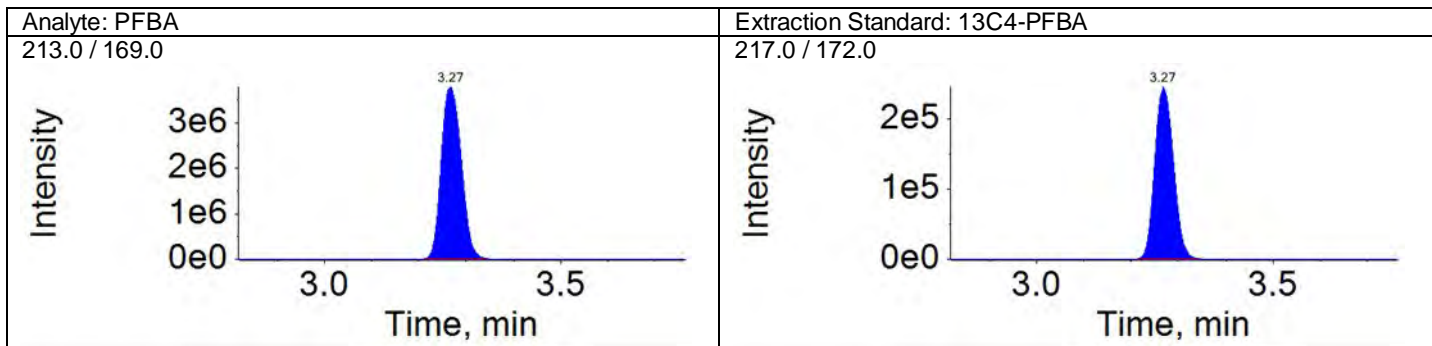
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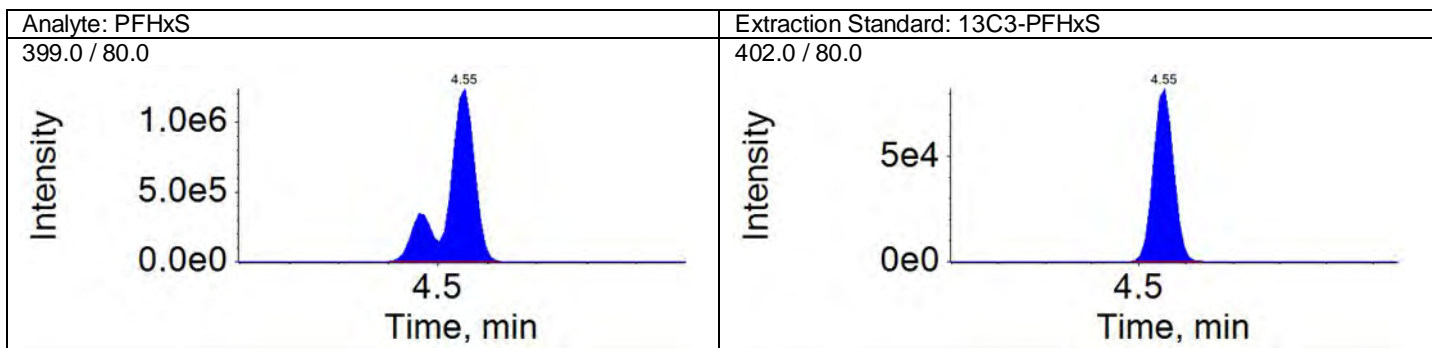
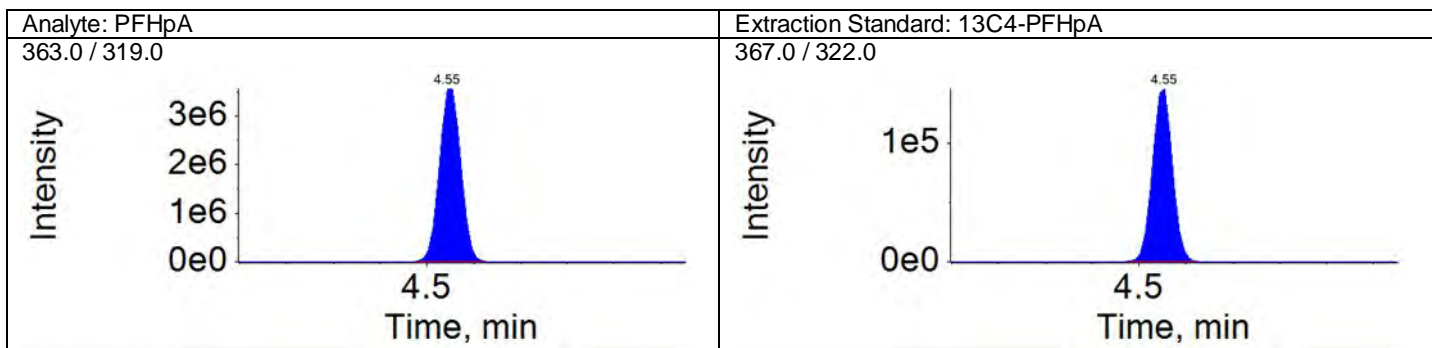
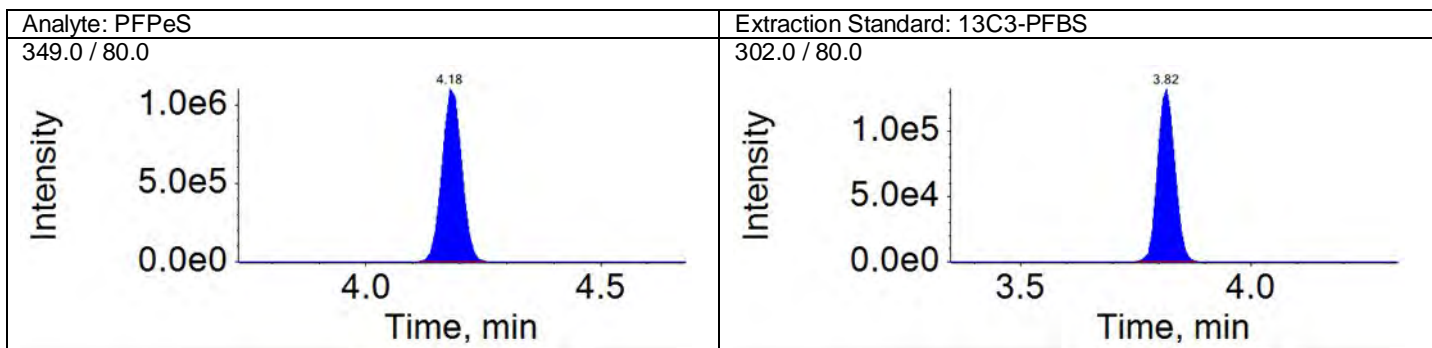
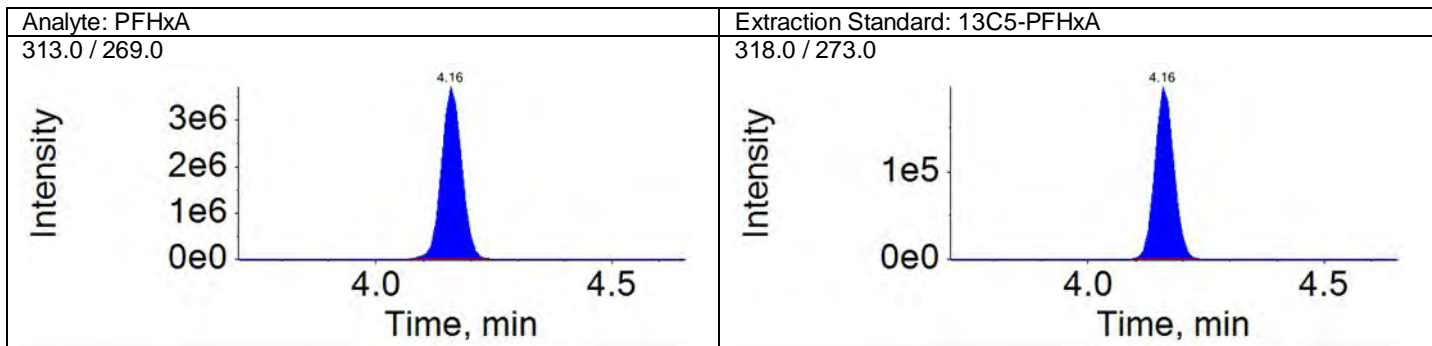
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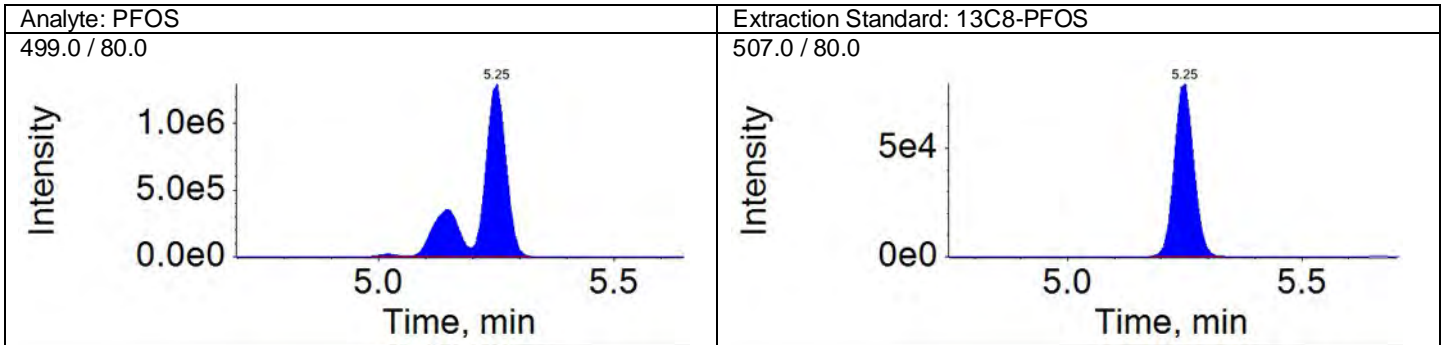
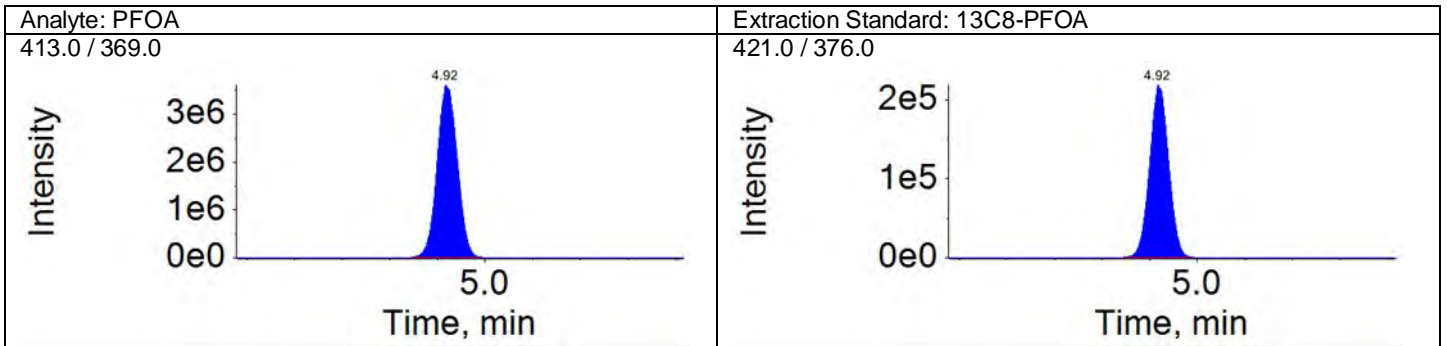
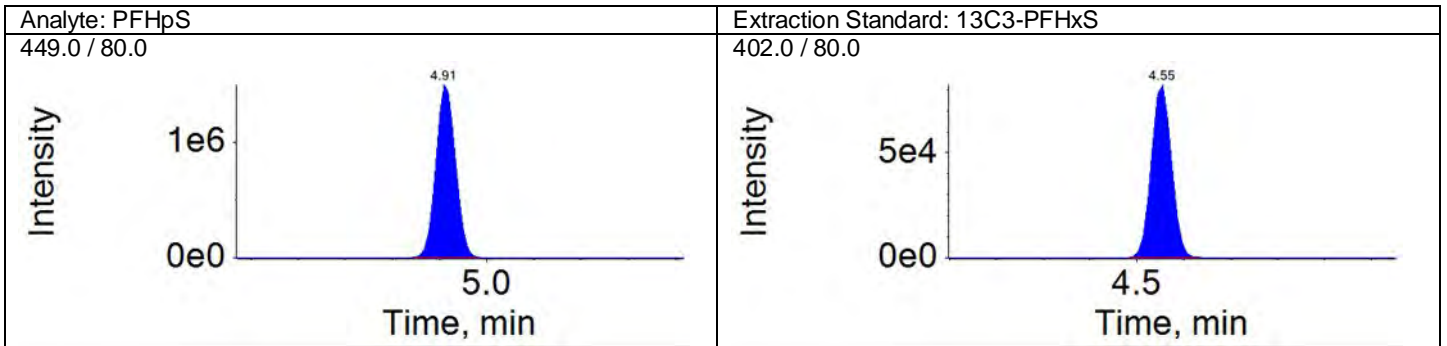
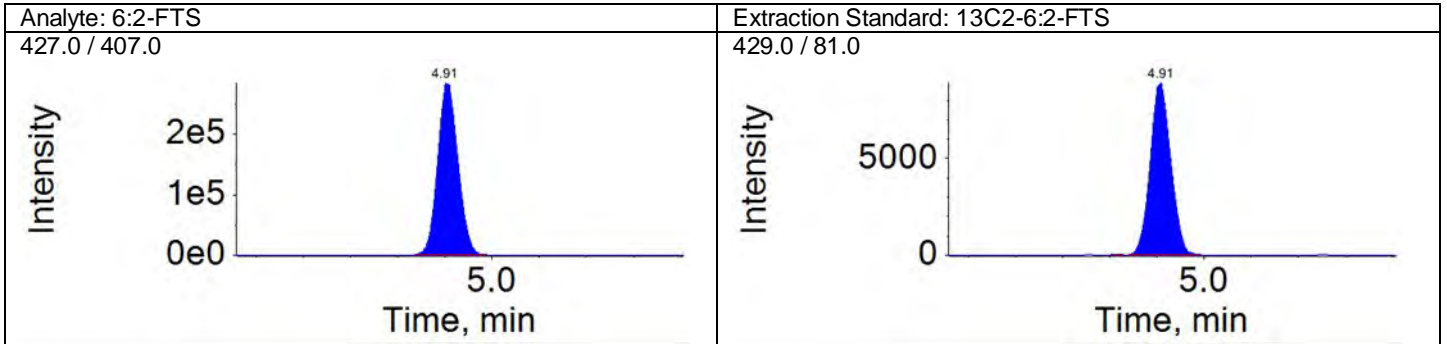
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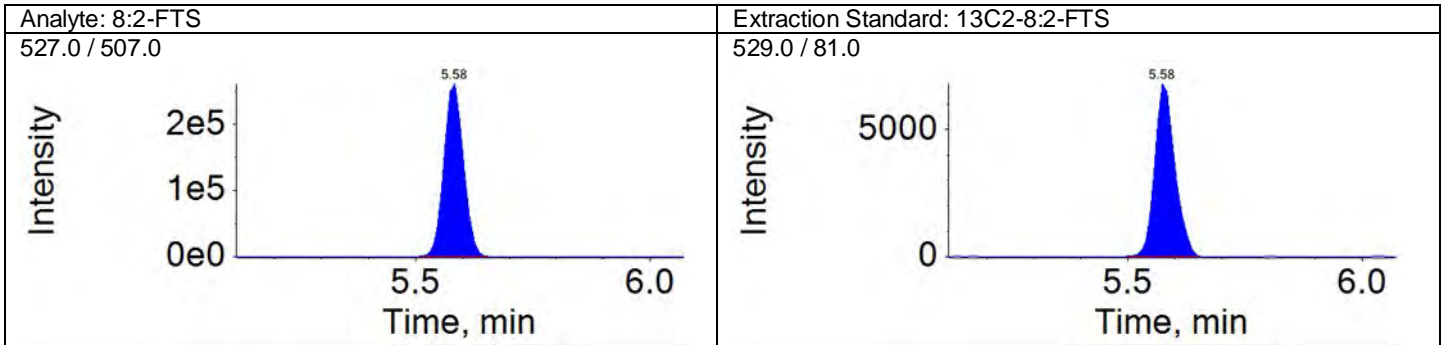
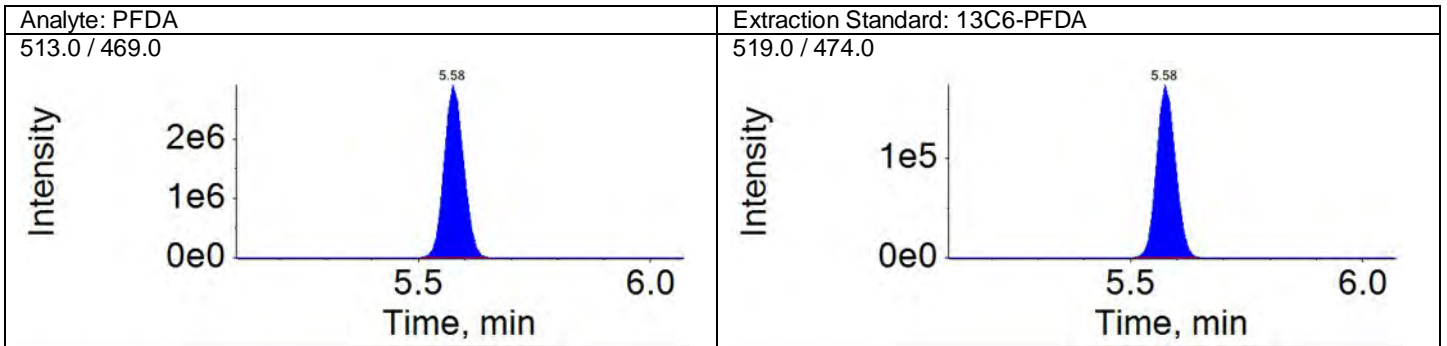
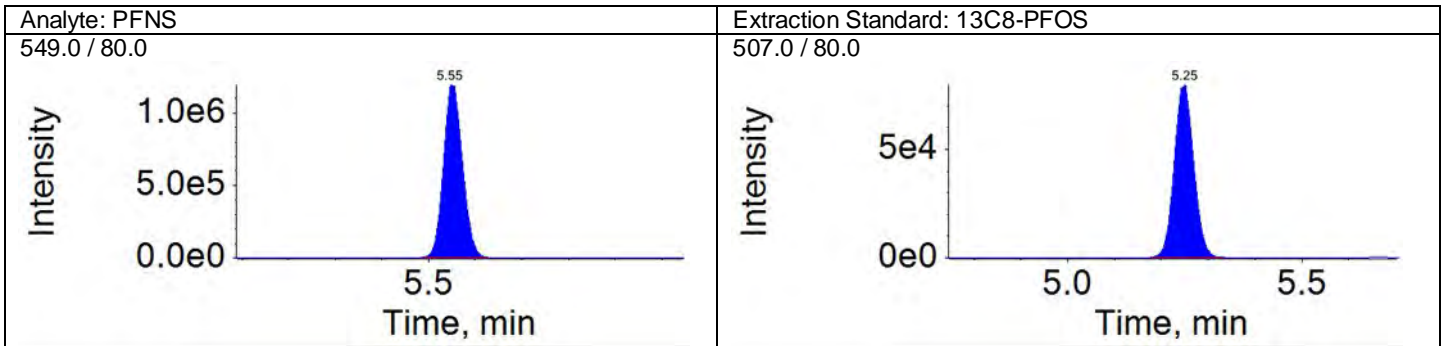
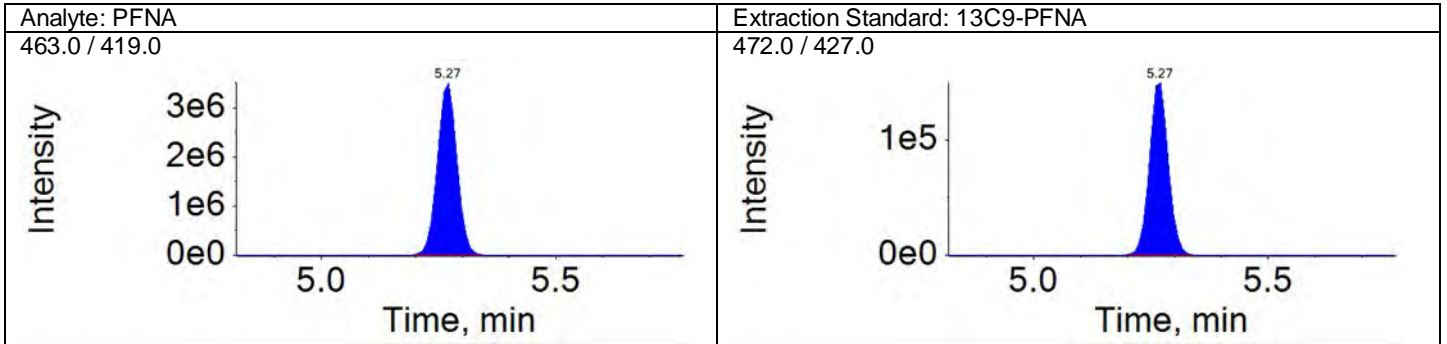
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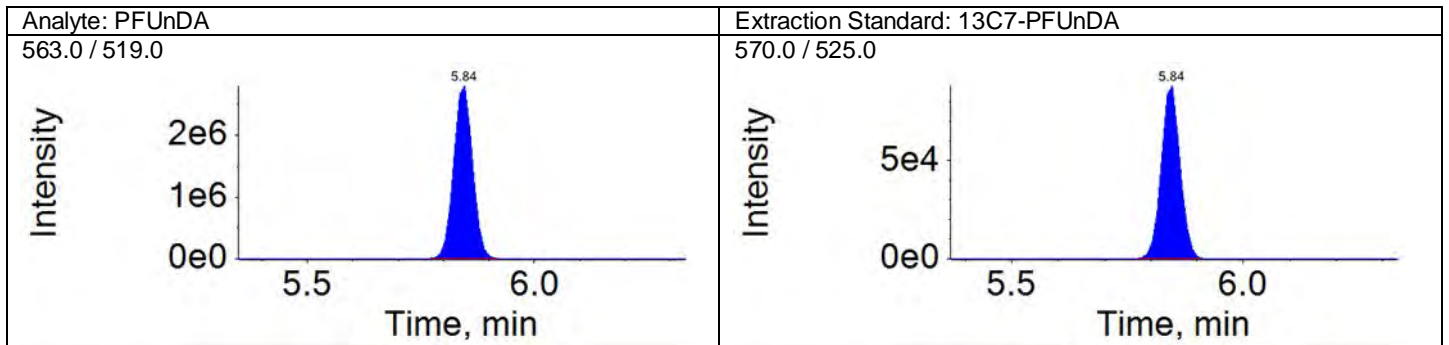
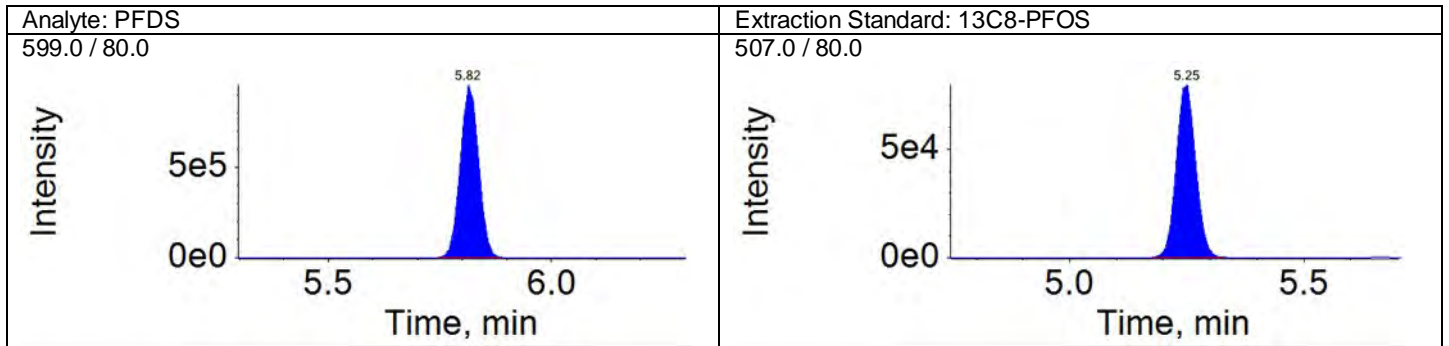
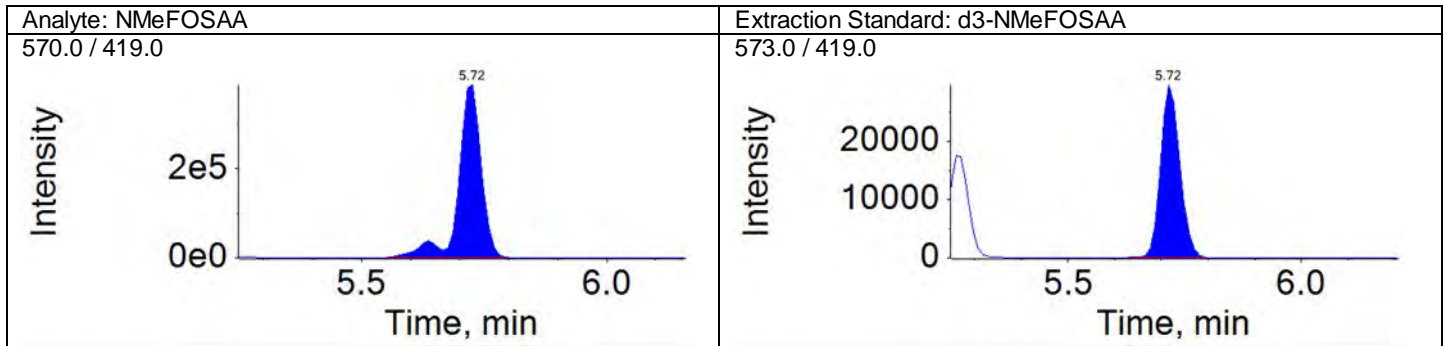
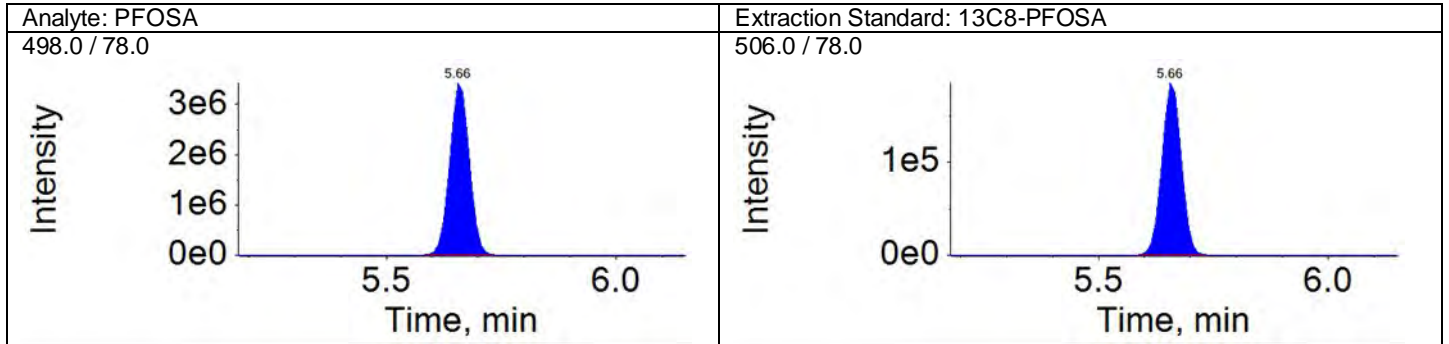
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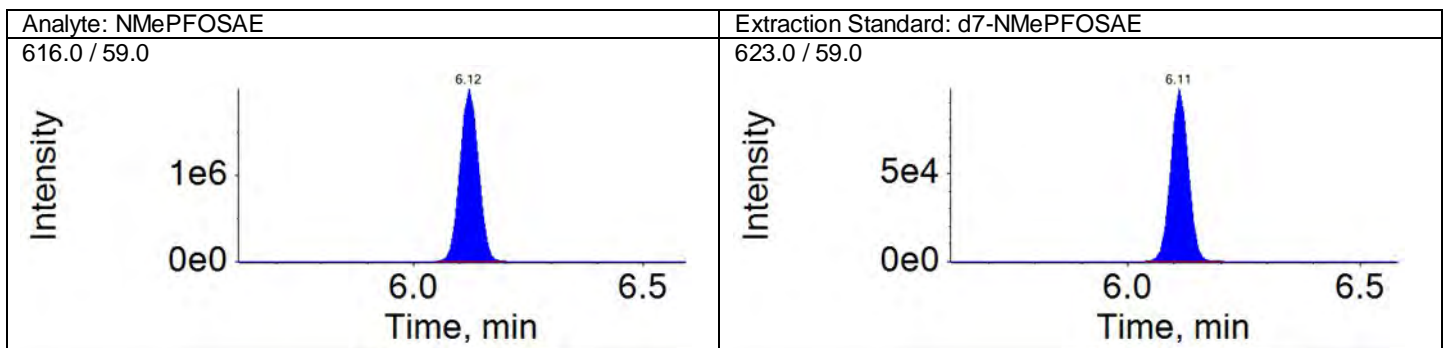
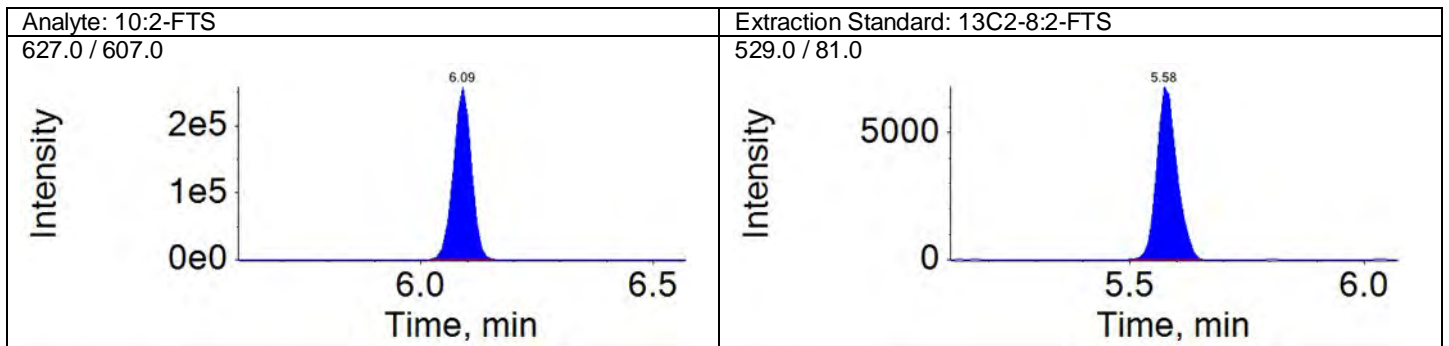
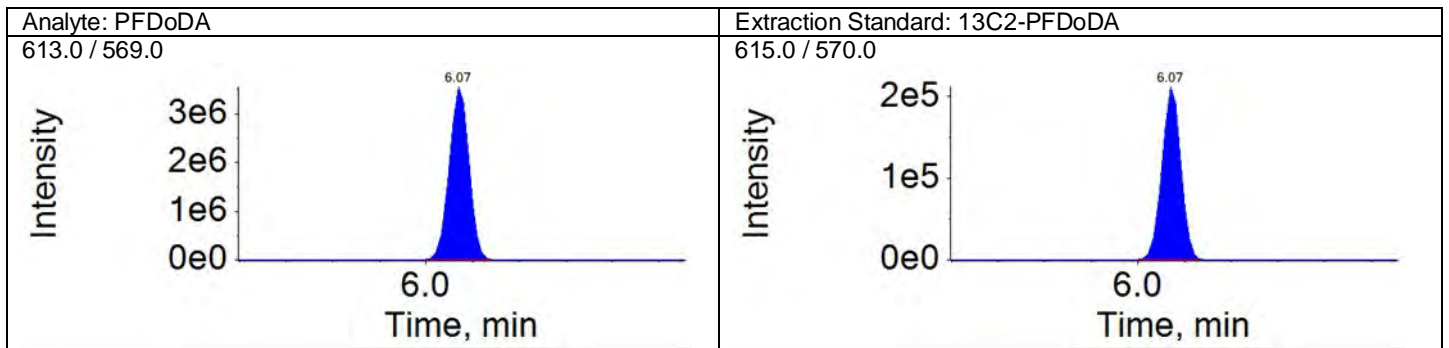
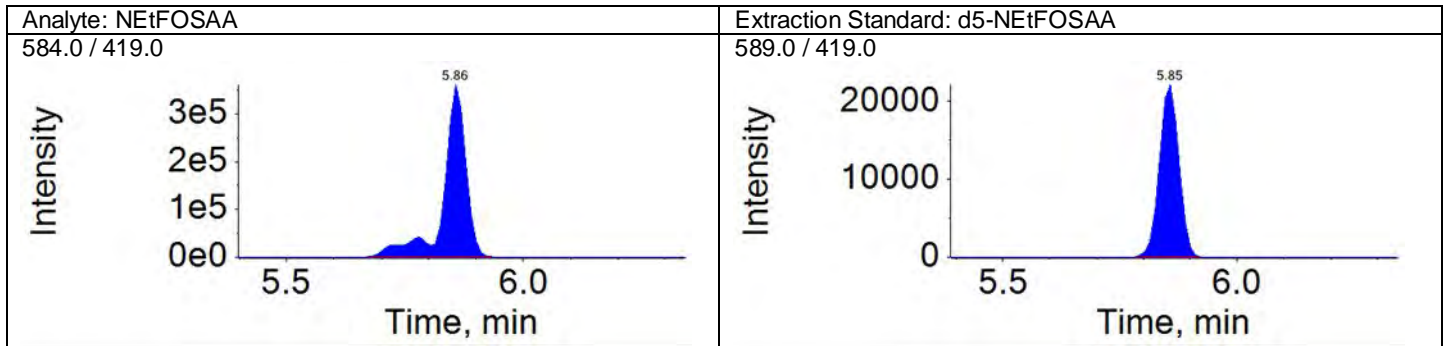
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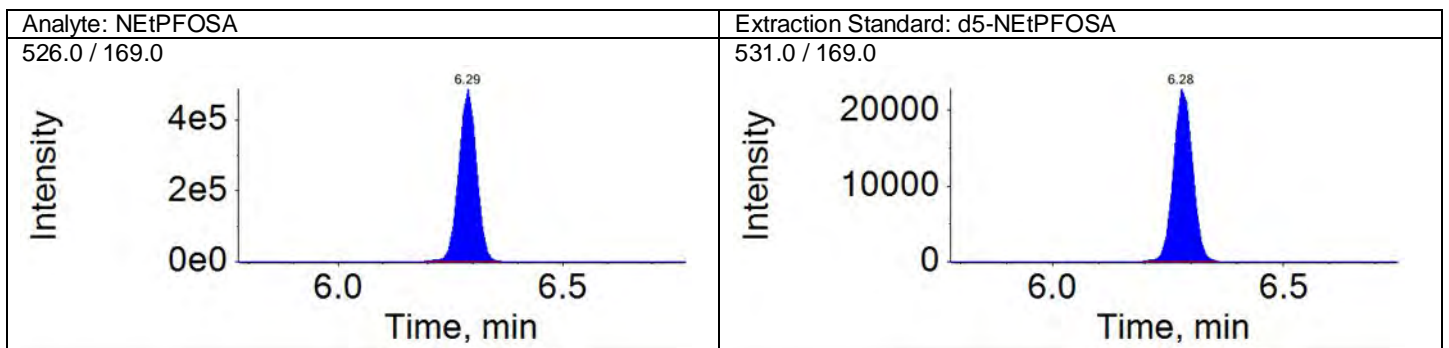
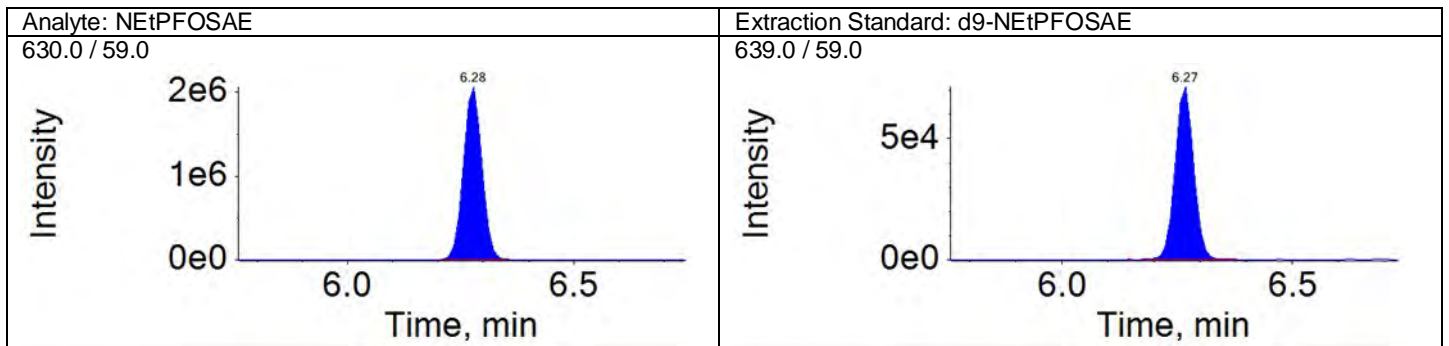
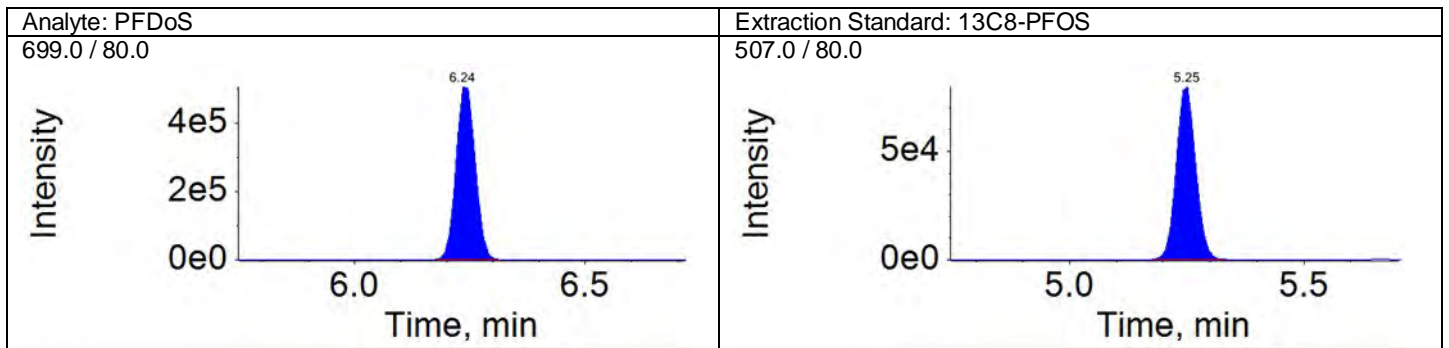
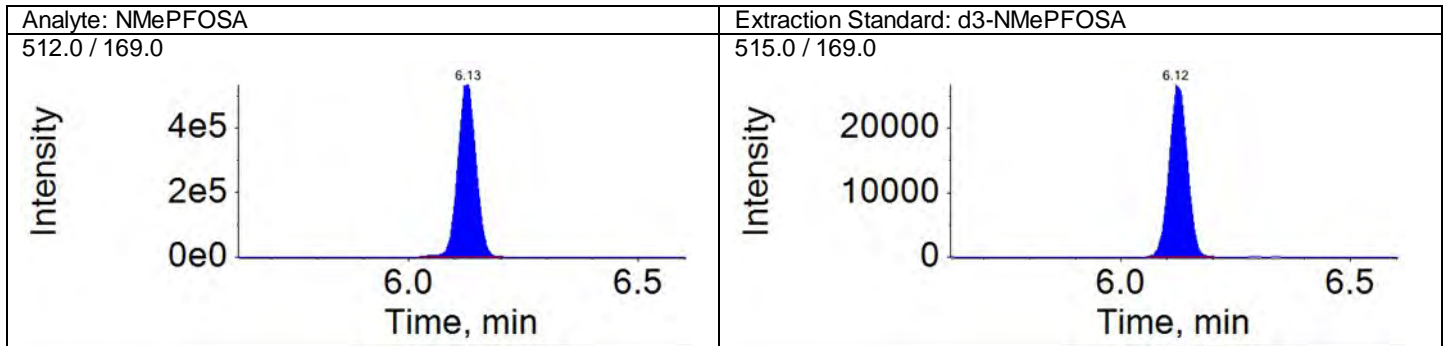
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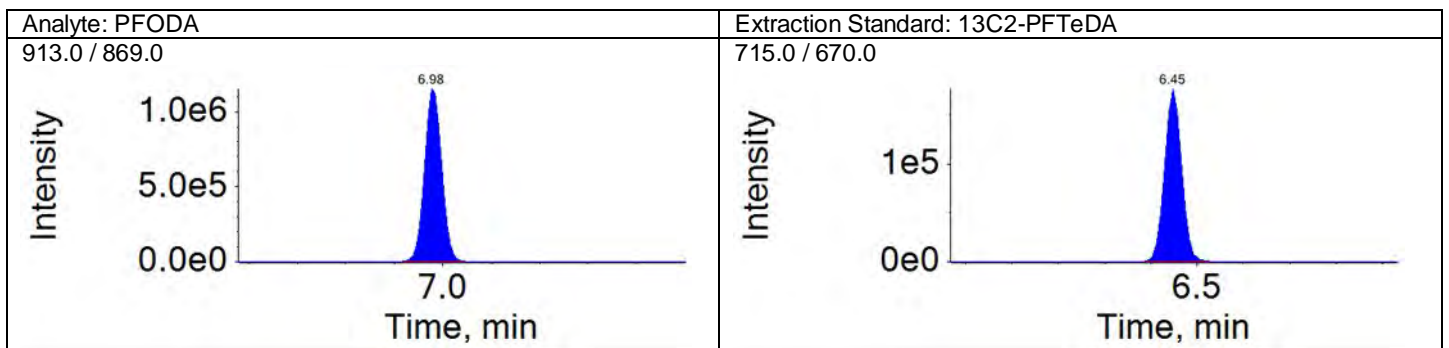
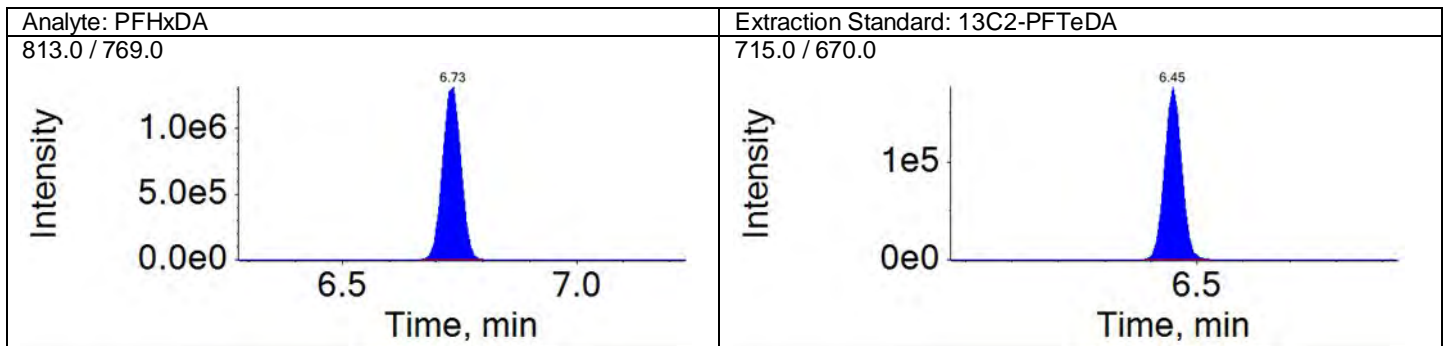
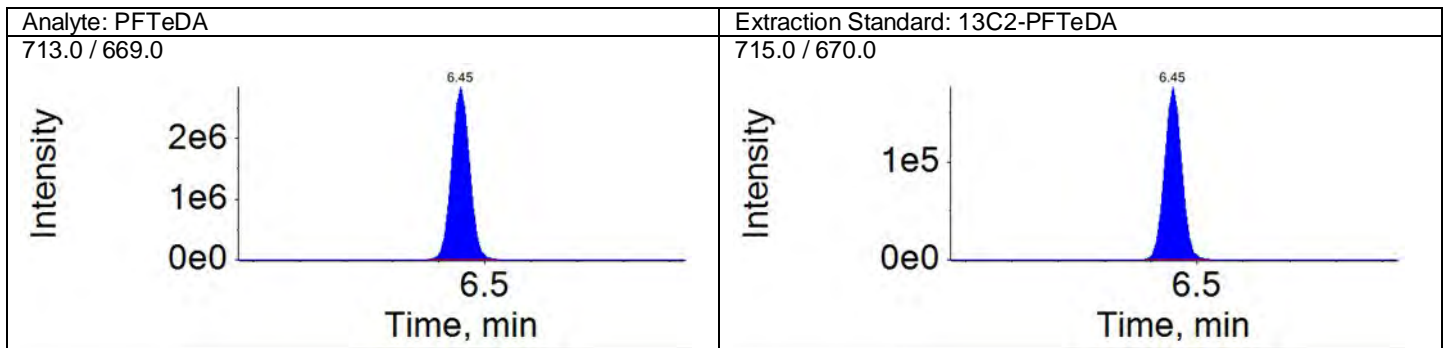
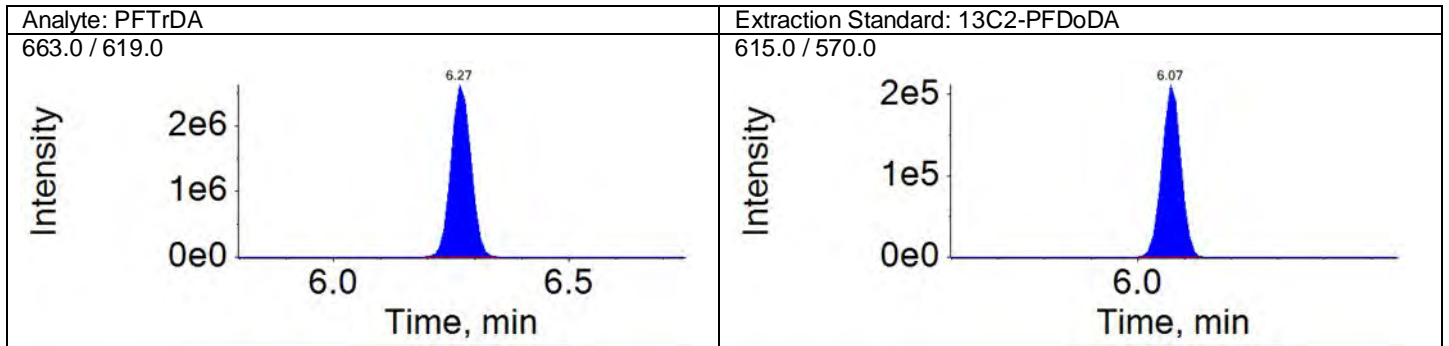
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Acquisition Method: 18AUG13\_3uL.dam





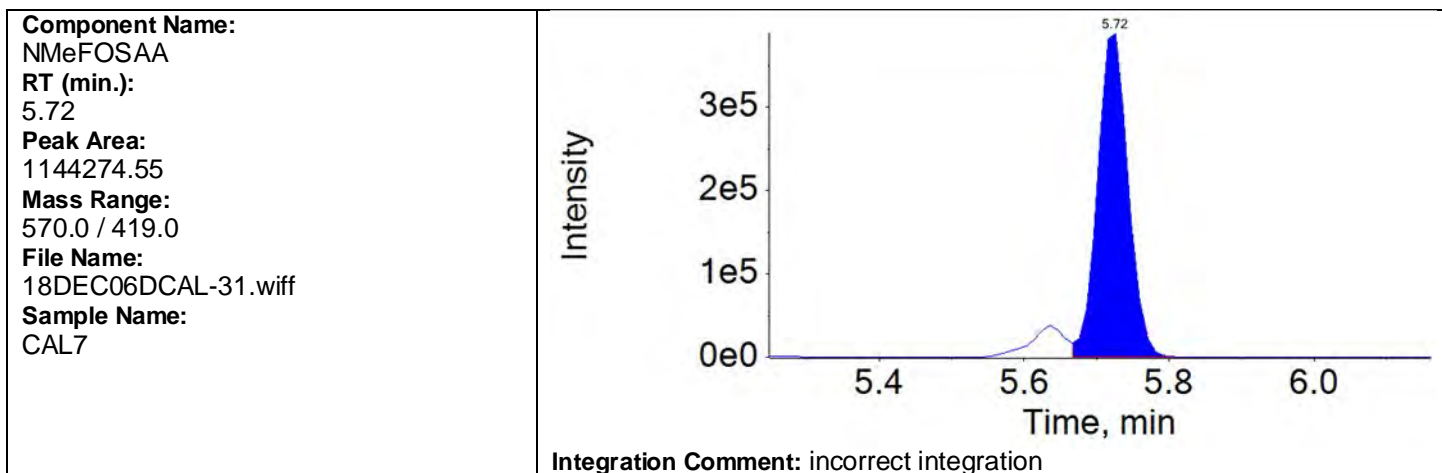
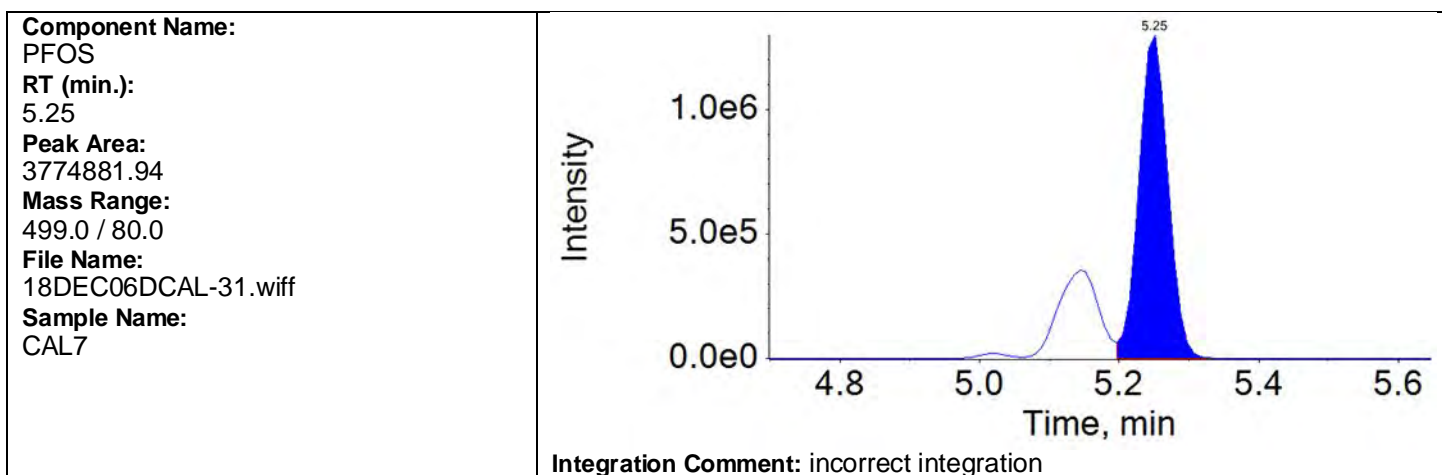
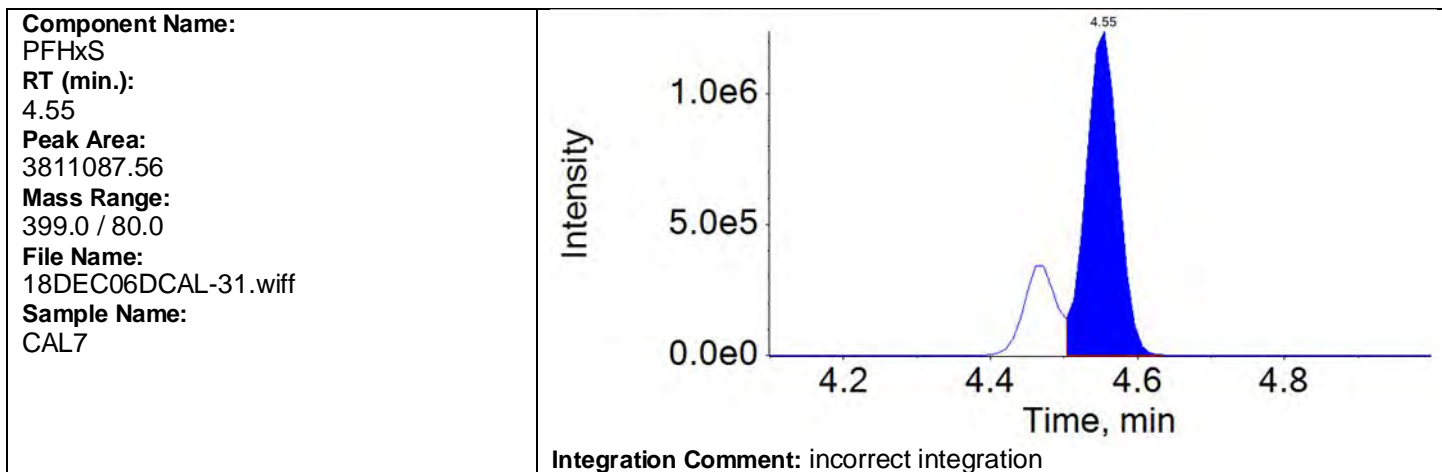
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



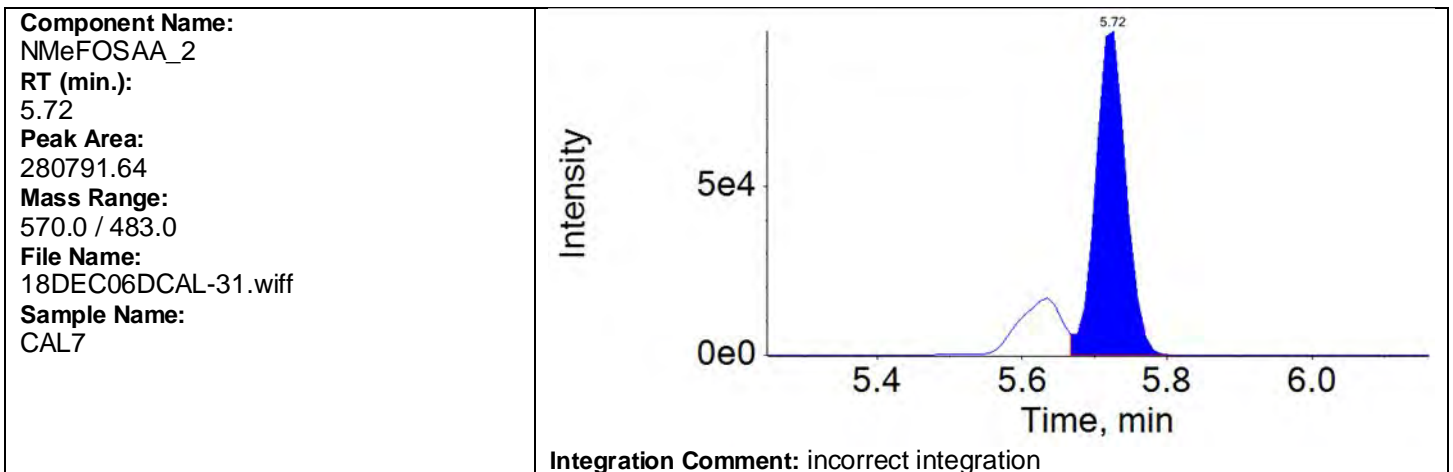
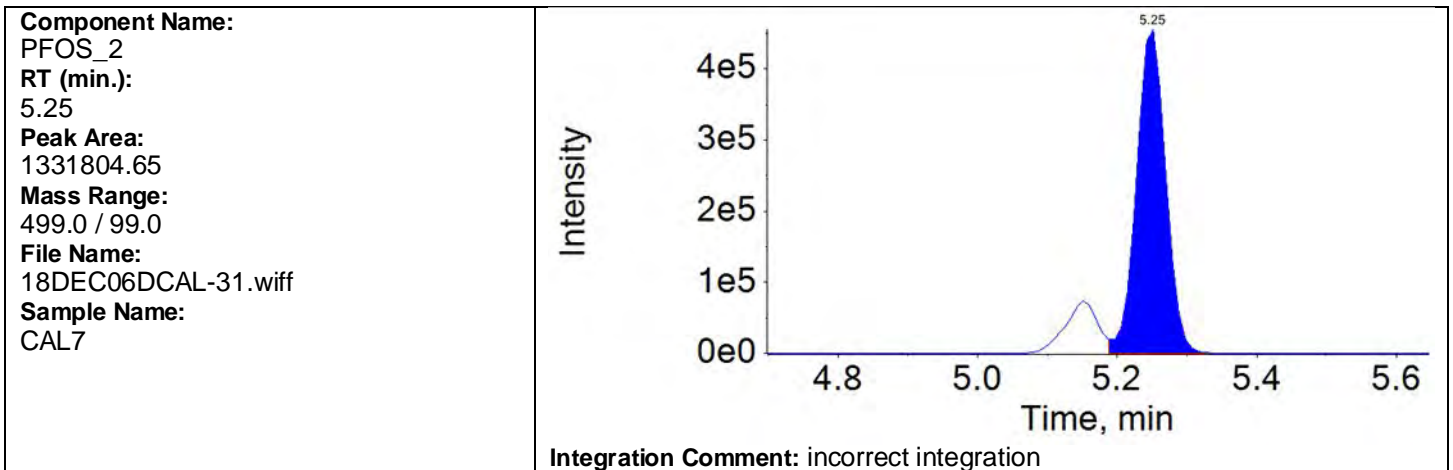
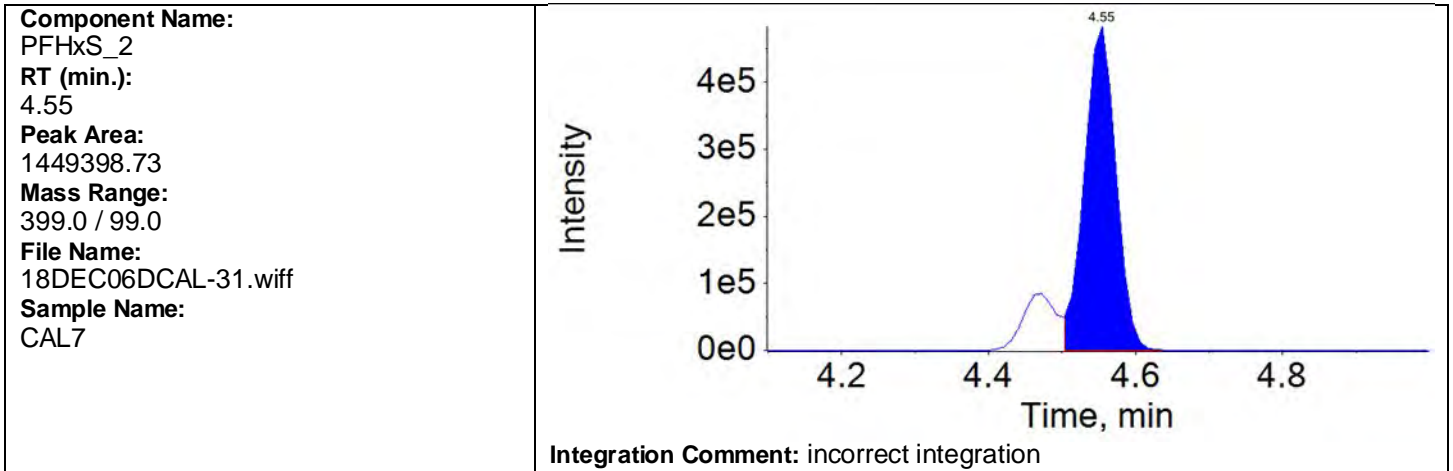
Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

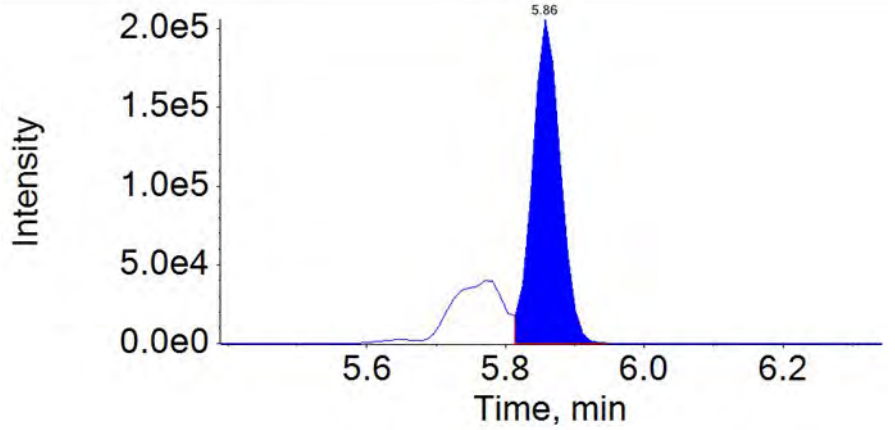
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
NEtFOSAA\_2  
RT (min.):  
5.86  
Peak Area:  
575428.55  
Mass Range:  
584.0 / 526.0  
File Name:  
18DEC06DCAL-31.wiff  
Sample Name:  
CAL7



Integration Comment: incorrect integration

Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18



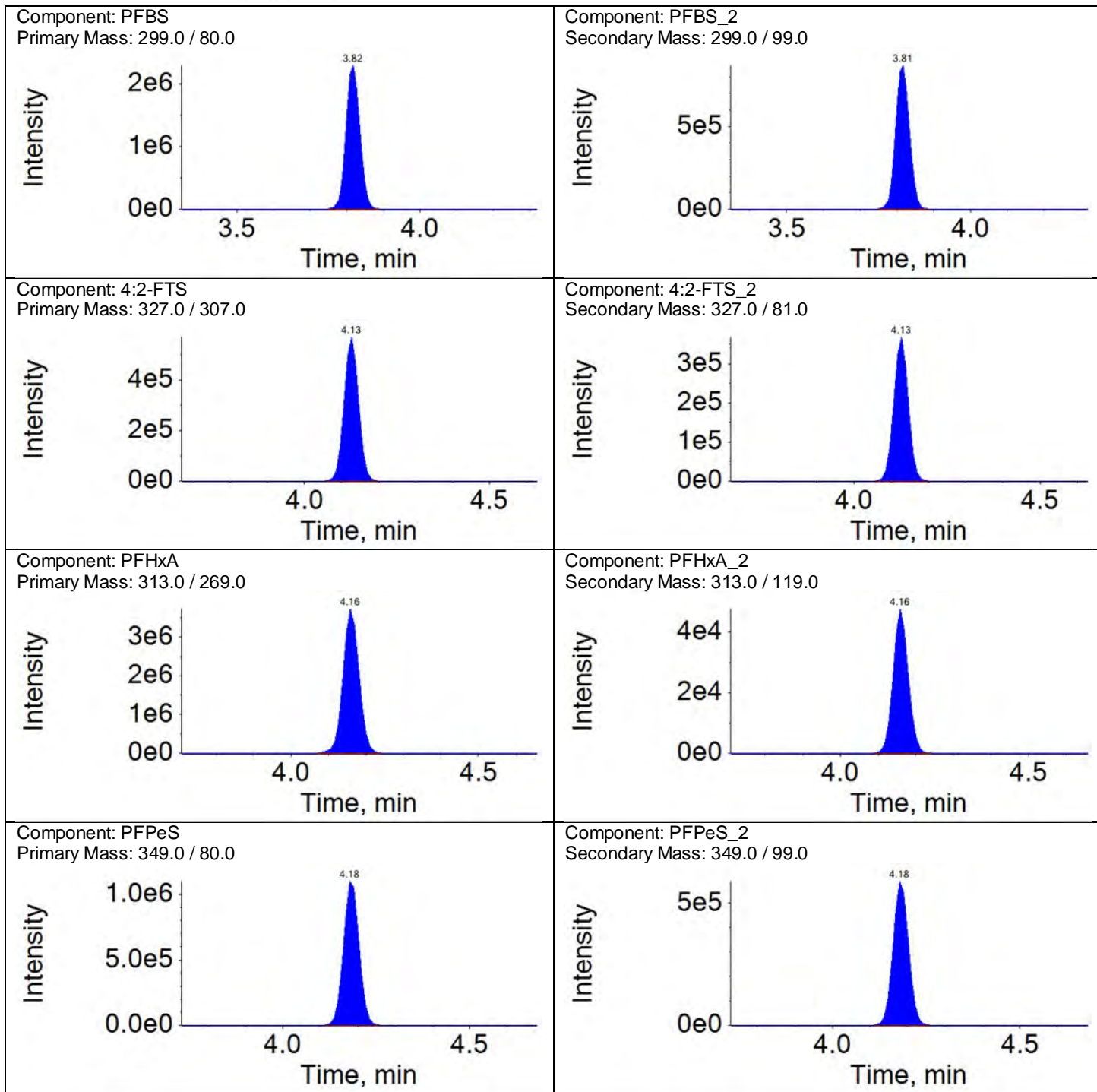
Ion Ratio Report

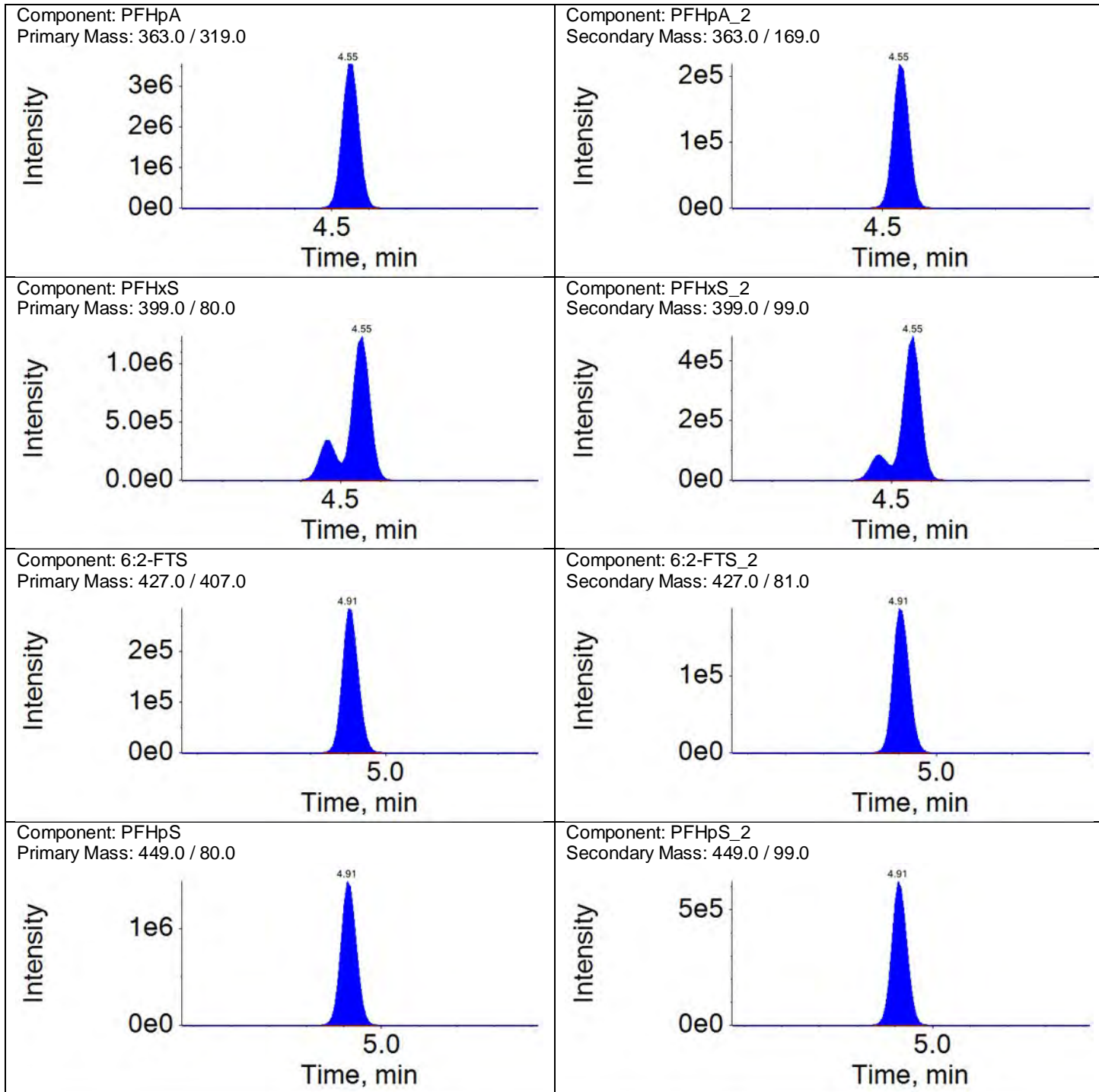
Sample Name: CAL7

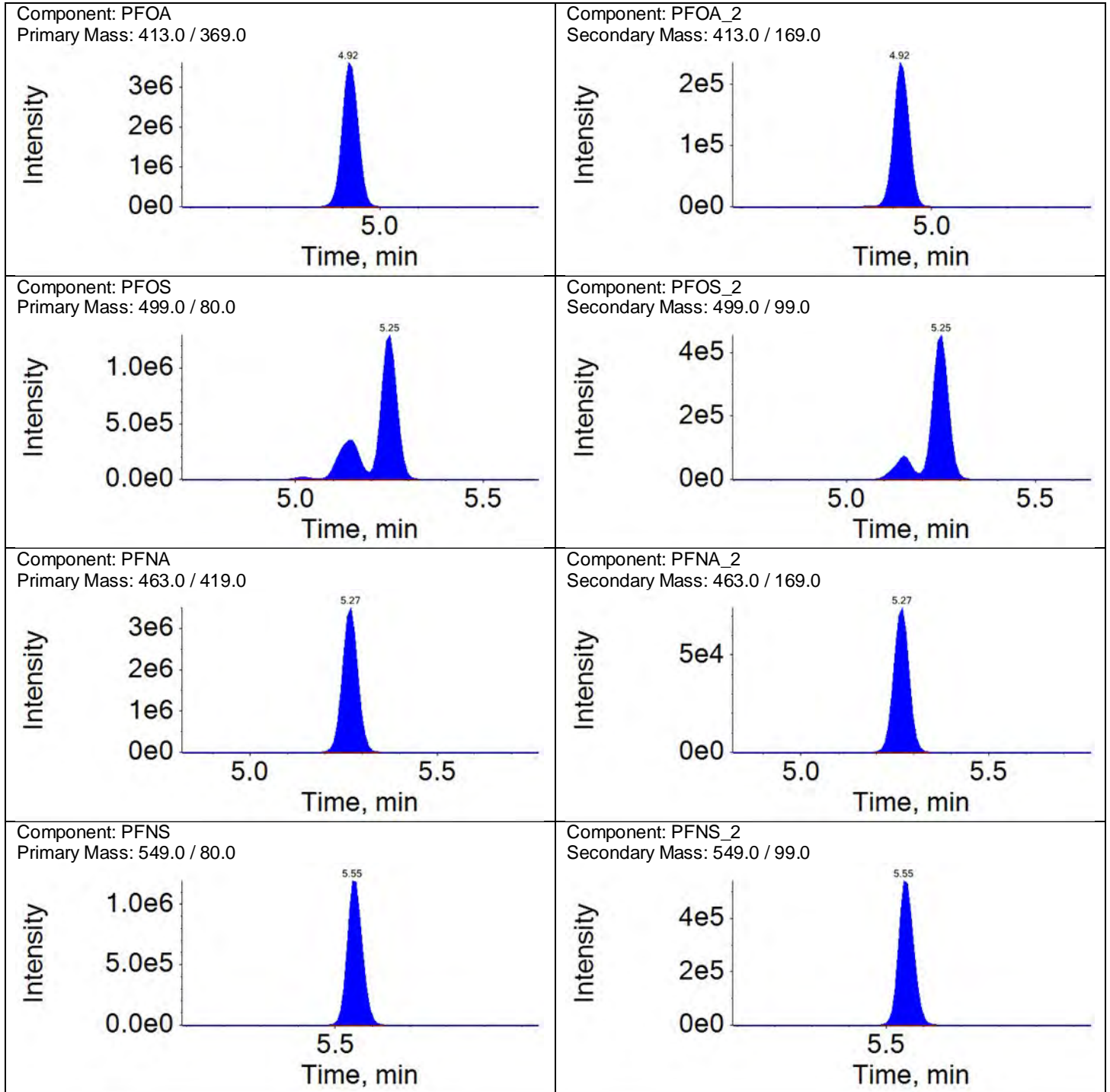
Instrument Name: LM27631

File Name: 18DEC06DCAL-31.wiff

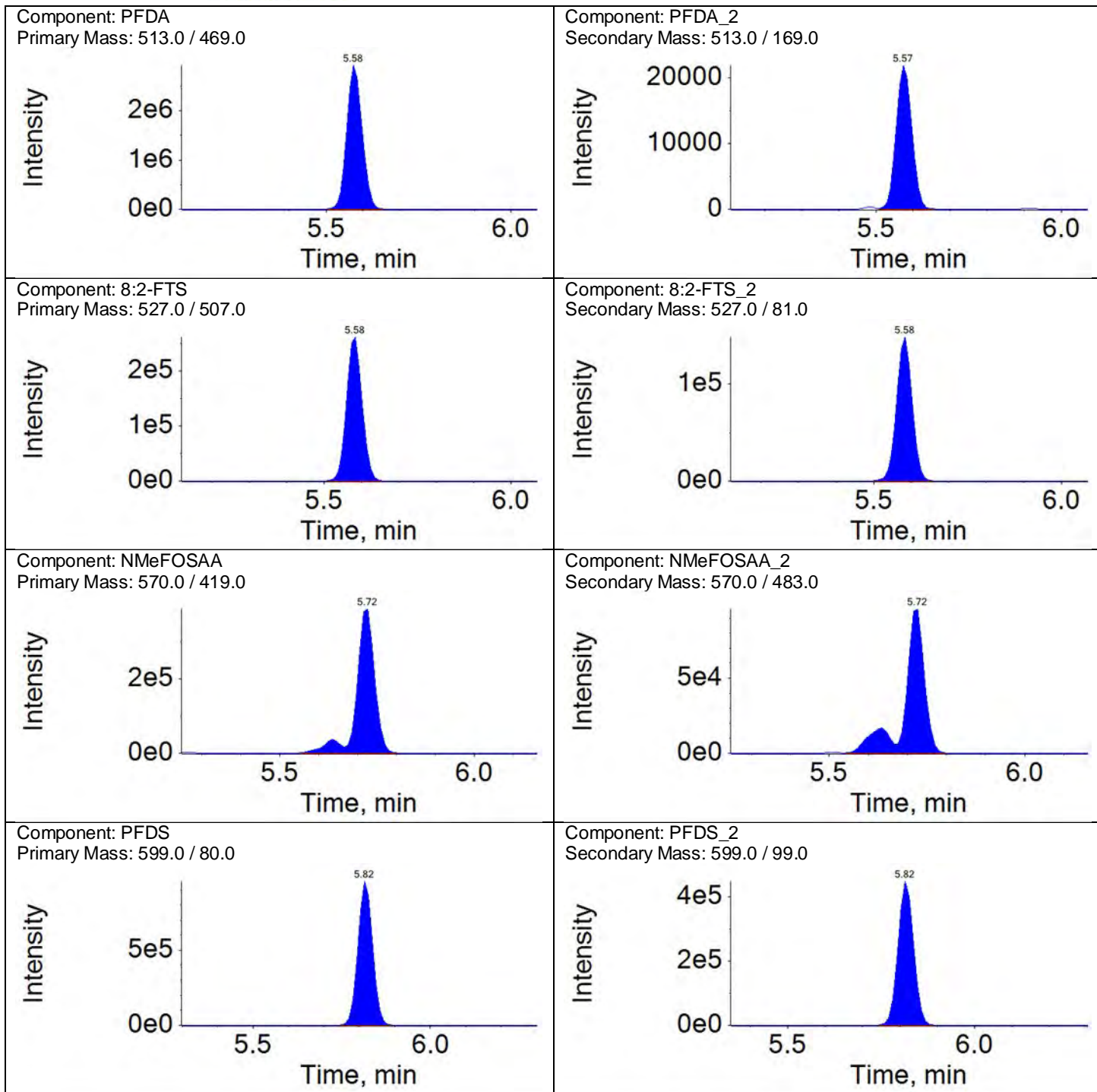
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	6058196.36	A	1.0000	1.0000			
PFBS_2	3.81	1.00	2278418.91	A	0.3627	0.3761	4	50	
4:2-FTS	4.13	1.00	1541772.12	A	1.0000	1.0000			
4:2-FTS_2	4.13	1.00	995700.47	A	0.6542	0.6458	-1	50	
PFHxA	4.16	1.00	11064156.53	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	132572.09	A	0.0097	0.0120	23	50	
PFPeS	4.18	1.10	3202799.19	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	1694418.00	A	0.5262	0.5290	1	50	
PFHpA	4.55	1.00	11333940.43	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	661610.70	A	0.0565	0.0584	3	50	
PFHxS	4.55	1.00	4864366.46	M	1.0000	1.0000			
PFHxS_2	4.55	1.00	1718220.31	M	0.3645	0.3532	-3	50	
6:2-FTS	4.91	1.00	852701.24	A	1.0000	1.0000			
6:2-FTS_2	4.91	1.00	567919.20	A	0.6273	0.6660	6	50	
PFHpS	4.91	1.08	4320784.79	A	1.0000	1.0000			
PFHpS_2	4.91	1.08	1768526.05	A	0.4162	0.4093	-2	50	
PFOA	4.92	1.00	10664235.85	A	1.0000	1.0000			
PFOA_2	4.92	1.00	675344.83	A	0.0616	0.0633	3	50	
PFOS	5.25	1.00	5255335.21	M	1.0000	1.0000			
PFOS_2	5.25	1.00	1570936.44	M	0.3021	0.2989	-1	50	
PFNA	5.27	1.00	10109257.93	A	1.0000	1.0000			
PFNA_2	5.27	1.00	212056.71	A	0.0192	0.0210	9	50	
PFNS	5.55	1.06	3387582.43	A	1.0000	1.0000			
PFNS_2	5.55	1.06	1533093.35	A	0.4845	0.4526	-7	50	
PFDA	5.58	1.00	8449610.52	A	1.0000	1.0000			
PFDA_2	5.57	1.00	64517.32	A	0.0096	0.0076	-21	50	
8:2-FTS	5.58	1.00	758920.24	A	1.0000	1.0000			
8:2-FTS_2	5.58	1.00	428711.02	A	0.6117	0.5649	-8	50	
NMeFOSAA	5.72	1.00	1268339.66	M	1.0000	1.0000			
NMeFOSAA_2	5.72	1.00	348626.55	M	0.2673	0.2749	3	50	
PFDS	5.82	1.11	2738544.97	A	1.0000	1.0000			
PFDS_2	5.82	1.11	1292263.94	A	0.4952	0.4719	-5	50	
PFUnDA	5.84	1.00	8122821.30	A	1.0000	1.0000			
PFUnDA_2	5.84	1.00	32295.67	A	0.0041	0.0040	-3	50	
NEtFOSAA	5.86	1.00	1198896.19	A	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	779169.56	M	0.6726	0.6499	-3	50	
PFDODA	6.07	1.00	10417166.00	A	1.0000	1.0000			
PFDODA_2	6.07	1.00	145771.88	A	0.0133	0.0140	5	50	
10:2-FTS	6.09	1.09	691304.98	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	470658.47	A	0.6969	0.6808	-2	50	
PFTrDA	6.27	1.03	7688079.44	A	1.0000	1.0000			
PFTrDA_2	6.27	1.03	73486.23	A	0.0075	0.0096	27	50	
PFTeDA	6.45	1.00	7609017.15	A	1.0000	1.0000			
PFTeDA_2	6.45	1.00	48594.29	A	0.0066	0.0064	-3	50	
PFHxDA	6.73	1.04	3585505.03	A	1.0000	1.0000			
PFHxDA_2	6.73	1.04	228129.16	A	0.0616	0.0636	3	50	
PFODA	6.98	1.08	2832373.93	A	1.0000	1.0000			
PFODA_2	6.98	1.08	74183.64	A	0.0272	0.0262	-4	50	



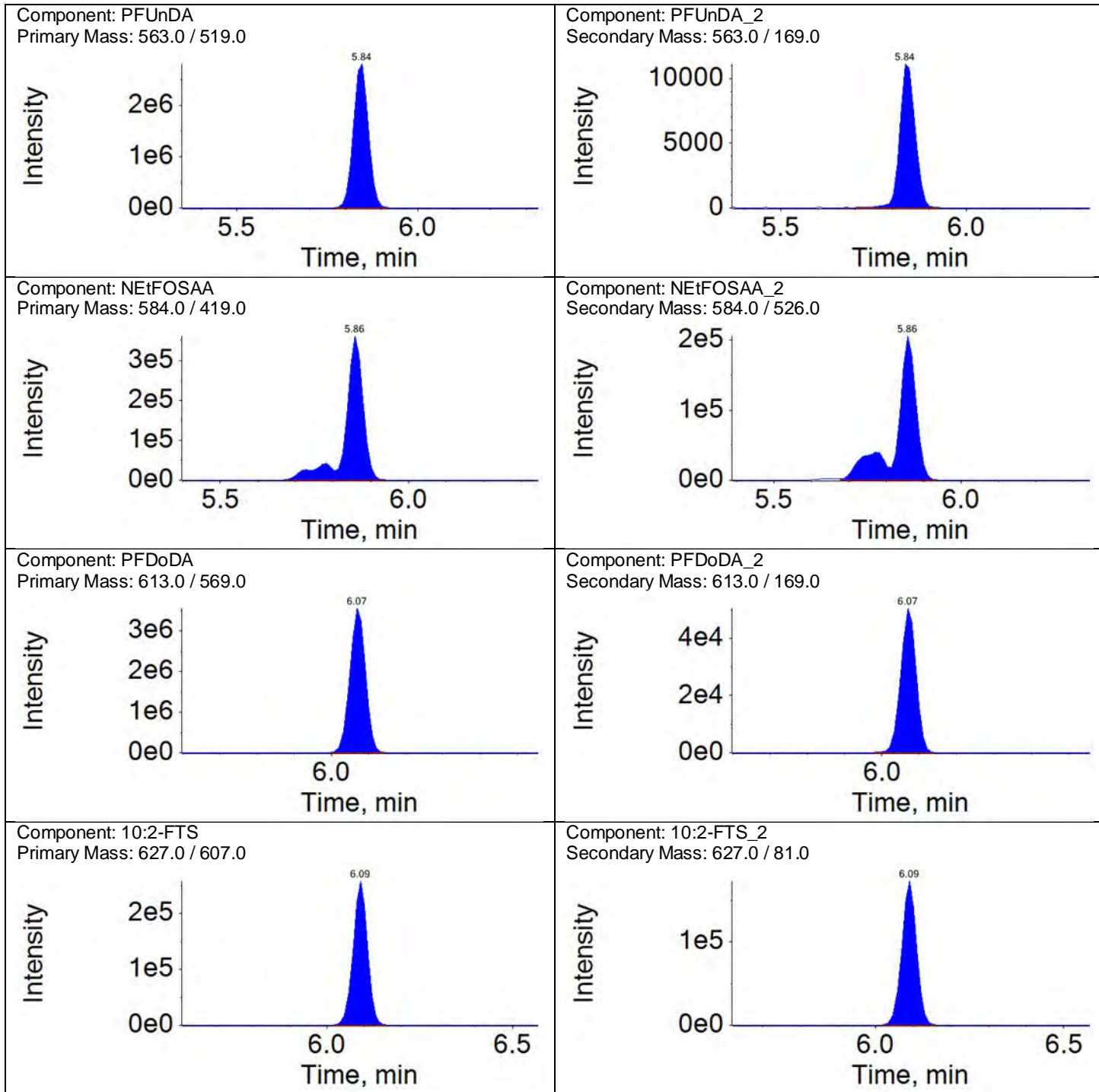


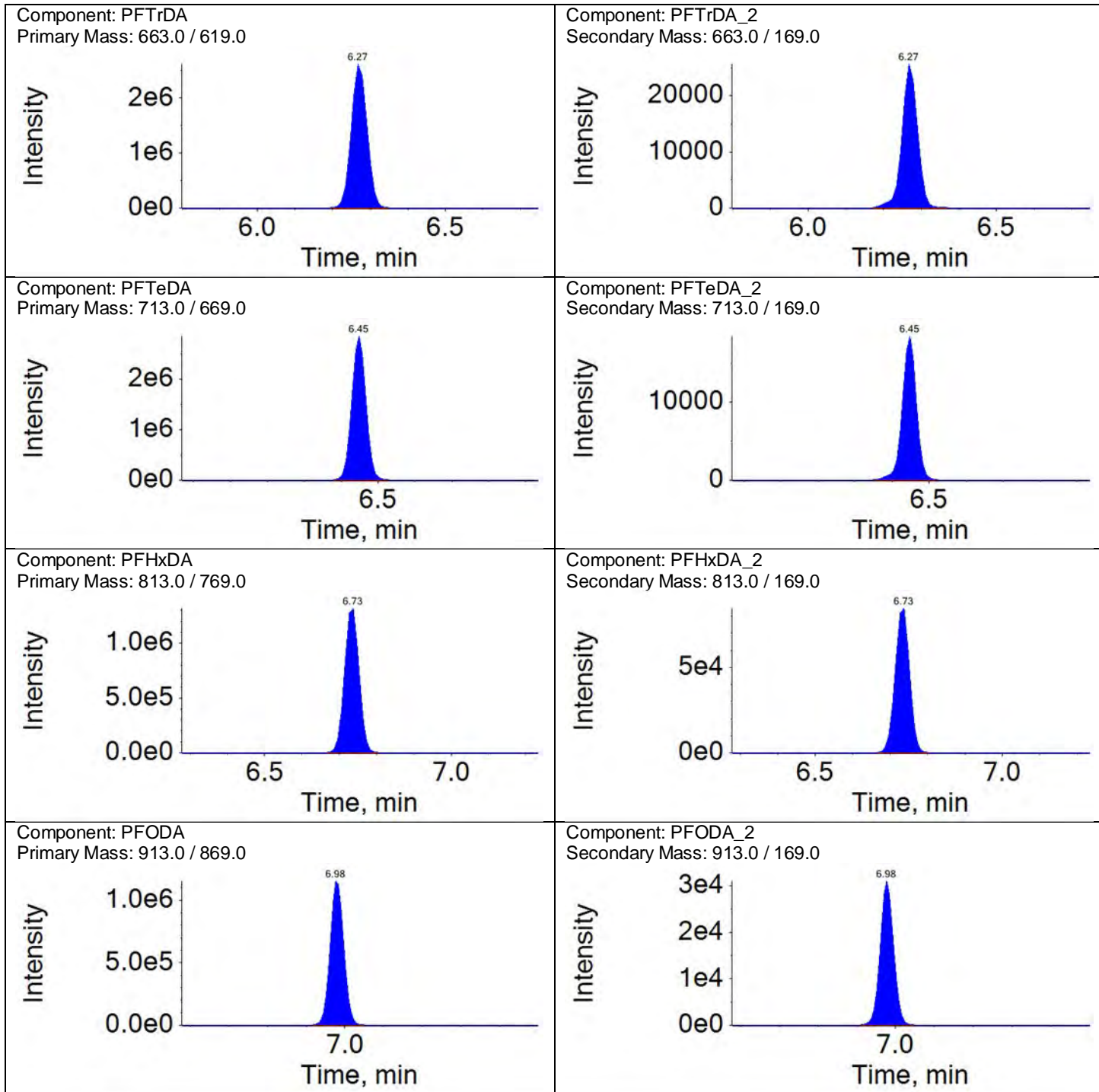












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	MDL	Data File:	18DEC06DCAL-24.wiff
Sample ID:	MDLMODX1833F	Acquis Date:	2018-12-06T23:28:31
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	2	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	781764.8	825688.9	-5	50	
13C2-PFOA	5.0	406191.5	449802.8	-10	50	
13C4-PFOS	4.8	261160.4	276858.3	-6	50	
13C2-PFDA	5.0	296994.7	315428.3	-6	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	874090.9	13C3-PFBA	781764.8	1.118	5.000	4.948	99	70-130	
E13C5-PFPeA	797687.0	13C3-PFBA	781764.8	1.020	5.000	4.846	97	70-130	
E13C3-PFBS	404902.0	13C3-PFBA	781764.8	0.518	4.650	4.390	94	70-130	
E13C2-4:2-FTS	45704.4	13C2-PFOA	406191.5	0.113	4.670	4.409	94	70-130	
E13C5-PFHxA	643875.5	13C2-PFOA	406191.5	1.585	5.000	5.322	106	70-130	
E13C3-PFHxS	319753.7	13C2-PFOA	406191.5	0.787	4.730	5.049	107	70-130	
E13C4-PFHpA	497682.3	13C2-PFOA	406191.5	1.225	5.000	5.209	104	70-130	
E13C2-6:2-FTS	31781.6	13C2-PFOA	406191.5	0.078	4.750	4.847	102	70-130	
E13C8-PFOA	777569.6	13C2-PFOA	406191.5	1.914	5.000	5.411	108	70-130	
E13C8-PFOS	277632.0	13C4-PFOS	261160.4	1.063	4.780	4.771	100	70-130	
E13C9-PFNA	464951.0	13C4-PFOS	261160.4	1.780	5.000	5.031	101	70-130	
E13C6-PFDA	609678.1	13C2-PFDA	296994.7	2.053	5.000	5.440	109	70-130	
E13C2-8:2-FTS	17995.4	13C2-PFDA	296994.7	0.061	4.790	3.956	83	70-130	
E13C8-PFOA	615805.3	13C2-PFDA	296994.7	2.073	5.000	4.904	98	70-130	
Ed3-NMeFOSAA	72142.9	13C2-PFDA	296994.7	0.243	5.000	4.305	86	70-130	
E13C7-PFUnDA	324748.7	13C2-PFDA	296994.7	1.093	5.000	5.364	107	70-130	
Ed5-NEtFOSAA	63782.9	13C2-PFDA	296994.7	0.215	5.000	4.741	95	70-130	
E13C2-PFDoDA	738488.8	13C2-PFDA	296994.7	2.487	5.000	5.218	104	70-130	
Ed7-NMePFOSAE	248907.8	13C2-PFDA	296994.7	0.838	5.000	4.828	97	70-130	
Ed3-NMePFOSA	76397.4	13C2-PFDA	296994.7	0.257	5.000	4.687	94	70-130	
Ed9-NEtPFOSAE	207844.7	13C2-PFDA	296994.7	0.700	5.000	4.826	97	70-130	
Ed5-NEtPFOSA	62333.6	13C2-PFDA	296994.7	0.210	5.000	4.723	94	70-130	
E13C2-PFTeDA	506654.6	13C2-PFDA	296994.7	1.706	5.000	5.063	101	70-130	



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

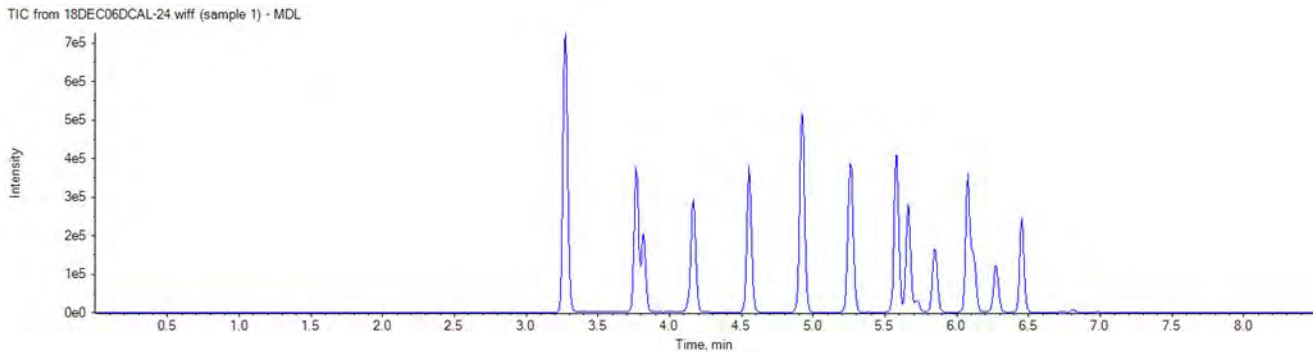
**Analyte Quantitation Peak Table**

Sample Name: MDL Instrument Name: LM27631 File Name: 18DEC06DCAL-24.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	27886.6		A	13C4-PFBA	3.27	874090.9	0.032	0.176
PFPeA	3.77	1.000	21593.9		A	13C5-PFPeA	3.77	797687.0	0.027	0.142
PFBS	3.82	1.000	9483.0		A	13C3-PFBS	3.82	404902.0	0.023	0.116
4:2-FTS	4.13	1.000	2106.2		A	13C2-4:2-FTS	4.13	45704.4	0.046	0.124
PFHxA	4.16	1.000	18868.9		A	13C5-PFHxA	4.16	643875.5	0.029	0.128
PFPeS	4.18	1.100	4848.5		A	13C3-PFBS	3.82	404902.0	0.012	0.119
PFHpA	4.55	1.000	24063.1		A	13C4-PFHpA	4.55	497682.3	0.048	0.159
PFHxS	4.55	1.000	7938.6		A	13C3-PFHxS	4.56	319753.7	0.025	0.118
6:2-FTS	4.92	1.000	1327.1		A	13C2-6:2-FTS	4.91	31781.6	0.042	0.104
PFHpS	4.92	1.080	7210.3		A	13C3-PFHxS	4.56	319753.7	0.023	0.124
PFOA	4.92	1.000	22109.9		A	13C8-PFOA	4.92	777569.6	0.028	0.155
PFOS	5.25	1.000	7643.1		M	13C8-PFOS	5.25	277632.0	0.028	0.114
PFNA	5.27	1.000	16084.7		A	13C9-PFNA	5.27	464951.0	0.035	0.127
PFNS	5.56	1.060	2968.0		A	13C8-PFOS	5.25	277632.0	0.011	0.069
PFDA	5.58	1.000	14132.4		A	13C6-PFDA	5.58	609678.1	0.023	0.130
8:2-FTS	5.58	1.000	998.6		A	13C2-8:2-FTS	5.58	17995.4	0.055	0.120
PFOSA	5.66	1.000	13817.9		A	13C8-PFOSA	5.66	615805.3	0.022	0.116
NMeFOSAA	5.73	1.000	2310.5		A	d3-NMeFOSAA	5.72	72142.9	0.032	0.212
PFDS	5.82	1.110	4986.7		A	13C8-PFOS	5.25	277632.0	0.018	0.145
PUnDA	5.85	1.000	14382.1		A	13C7-PUnDA	5.85	324748.7	0.044	0.136
NEtFOSAA	5.86	1.000	2137.1		A	d5-NEtFOSAA	5.86	63782.9	0.034	0.169
PFDaDA	6.08	1.000	21098.8		A	13C2-PFDaDA	6.08	738488.8	0.029	0.150
10:2-FTS	6.10	1.090	884.4		A	13C2-8:2-FTS	5.58	17995.4	0.049	0.130
NMePFOSAE	6.13	1.000	7300.2		A	d7-NMePFOSAE	6.12	248907.8	0.029	0.127
NMePFOSA	6.13	1.000	1664.8		A	d3-NMePFOSA	6.13	76397.4	0.022	0.110
PFDoS	6.25	1.190	1896.9		A	13C8-PFOS	5.25	277632.0	0.007	0.104
NEtPFOSAE	6.28	1.000	7732.7		A	d9-NEtPFOSAE	6.27	207844.7	0.037	0.125
NEtPFOSA	6.29	1.000	1459.9		A	d5-NEtPFOSA	6.29	62333.6	0.023	0.112
PFTrDA	6.28	1.030	16926.7		A	13C2-PFDaDA	6.08	738488.8	0.023	0.150
PFTeDA	6.45	1.000	13246.8		A	13C2-PFTeDA	6.45	506654.6	0.026	0.150
PFHxDA	6.74	1.040	5459.8		A	13C2-PFTeDA	6.45	506654.6	0.011	0.135
PFOA	6.98	1.080	3730.7		A	13C2-PFTeDA	6.45	506654.6	0.007	0.118

**Total Ion Chromatogram**

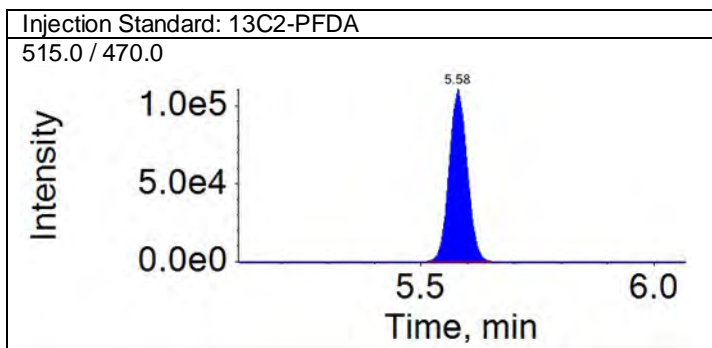
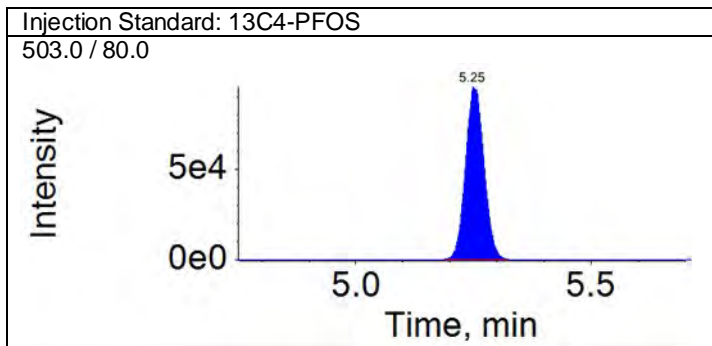
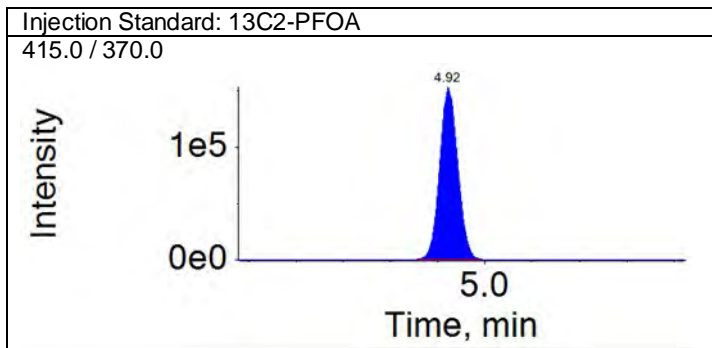
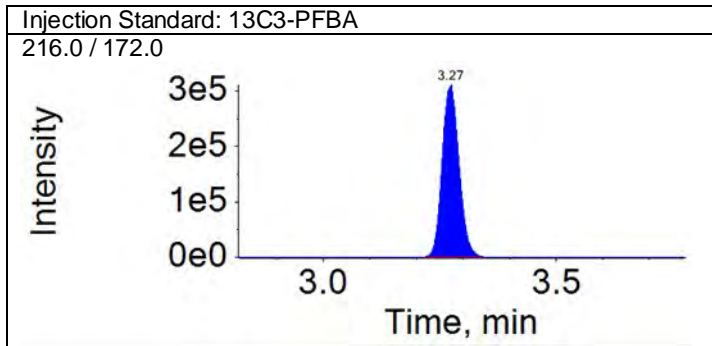


**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

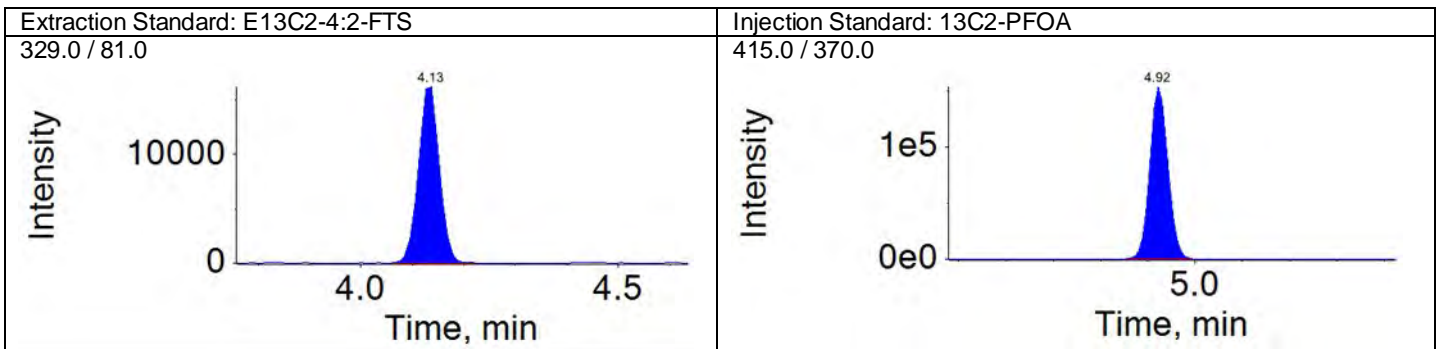
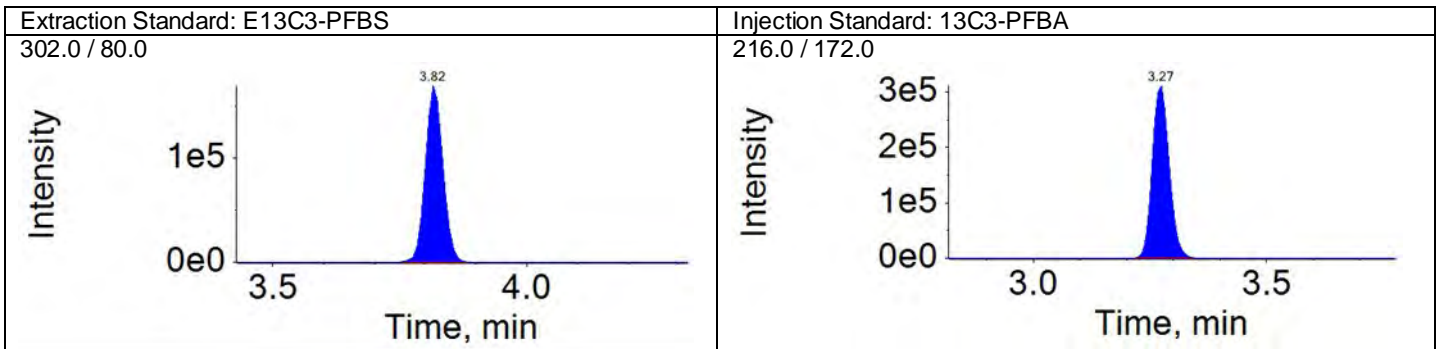
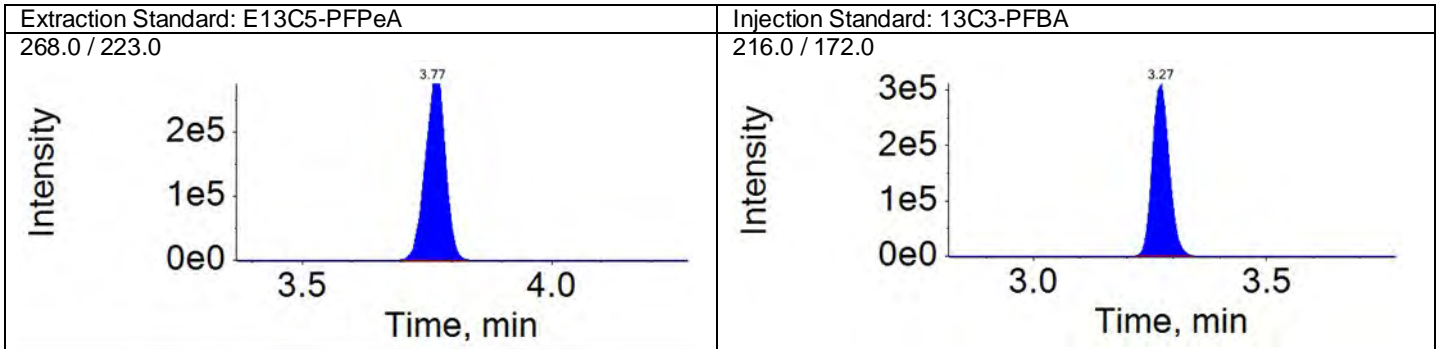
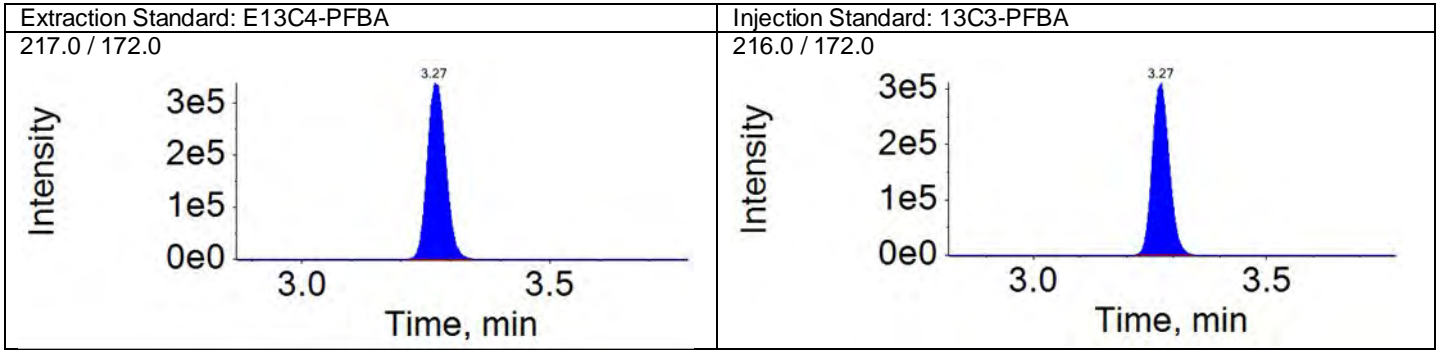
Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam





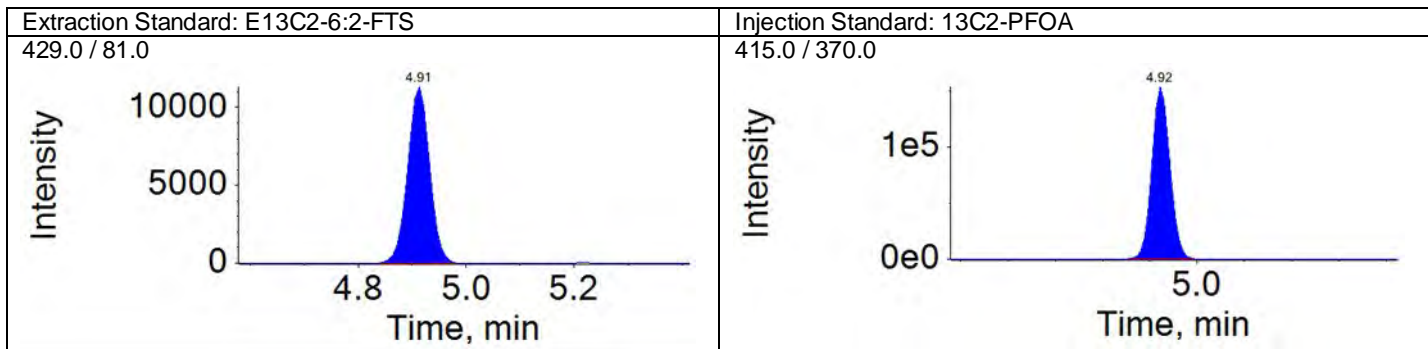
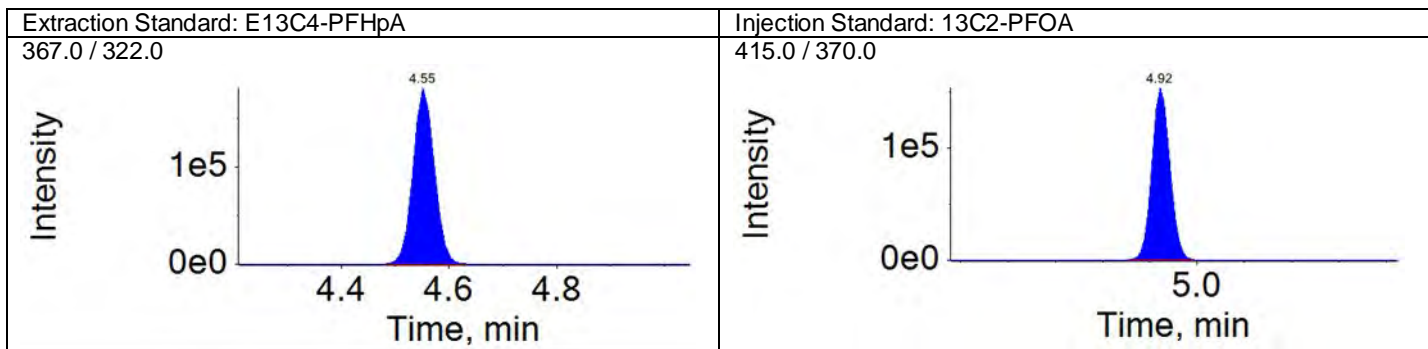
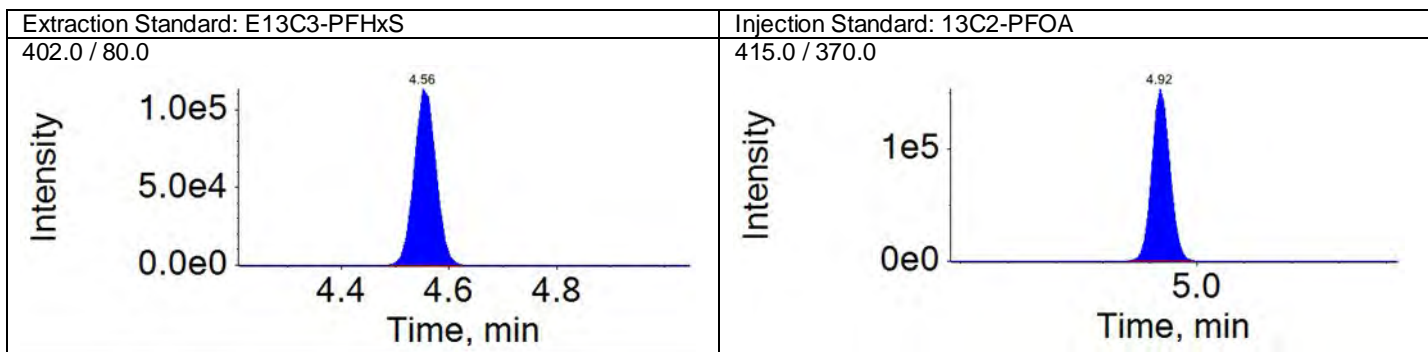
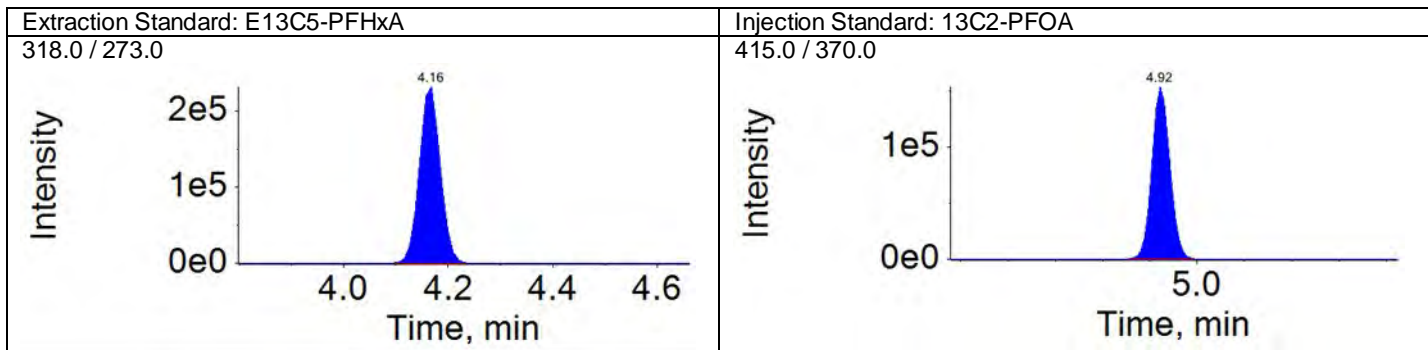
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



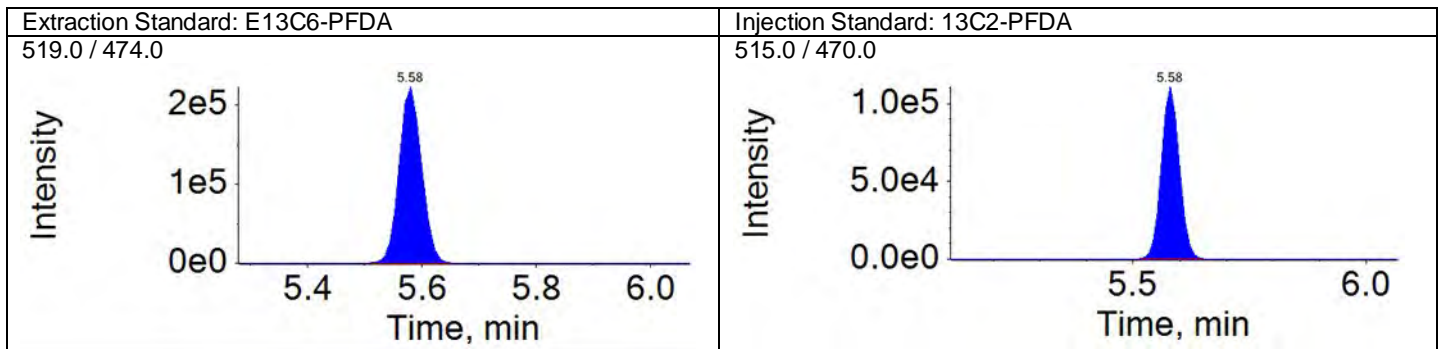
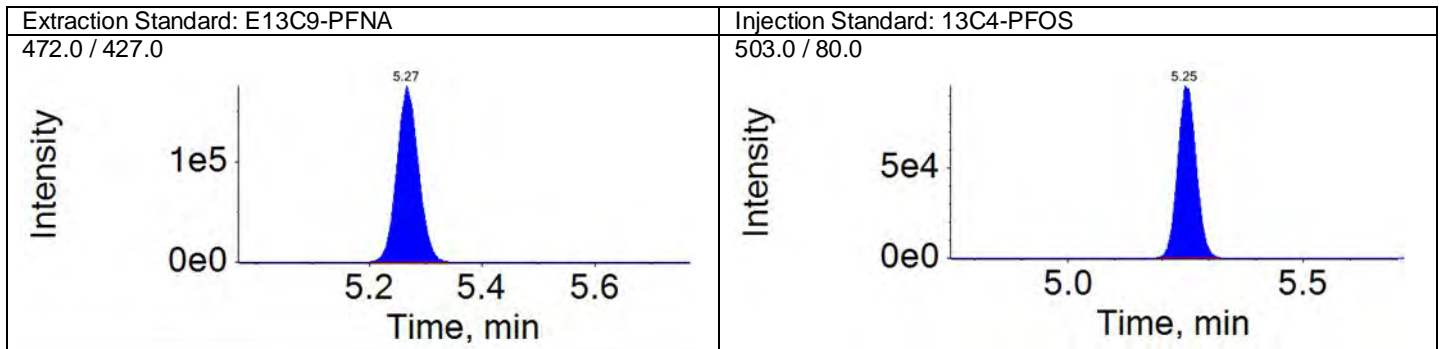
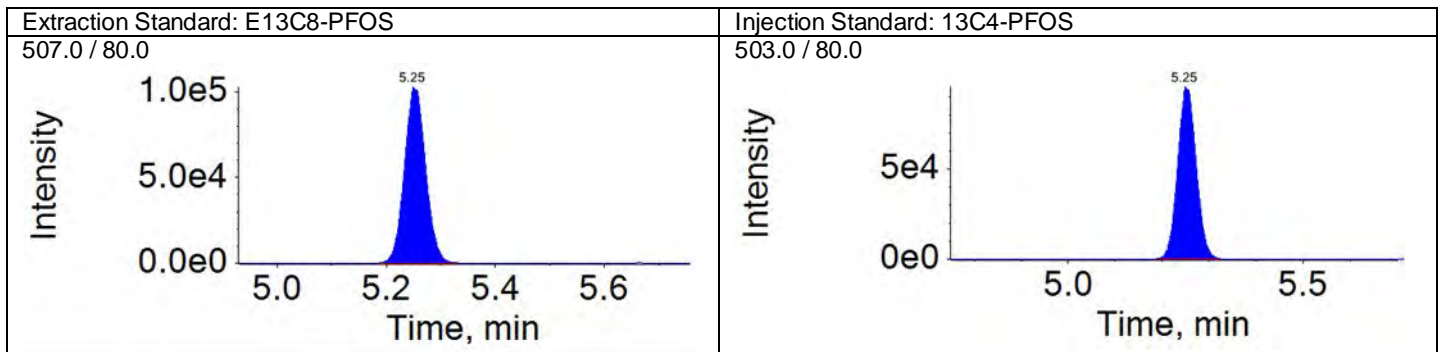
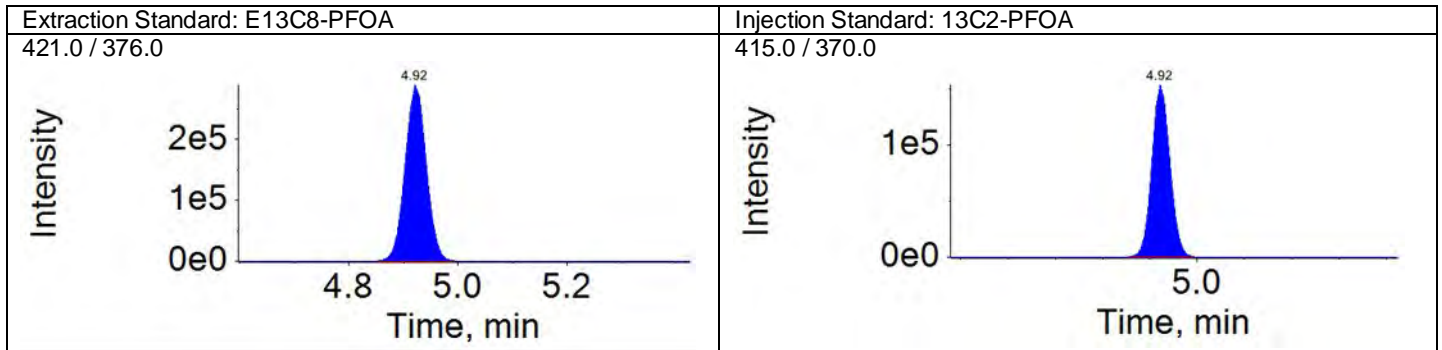
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



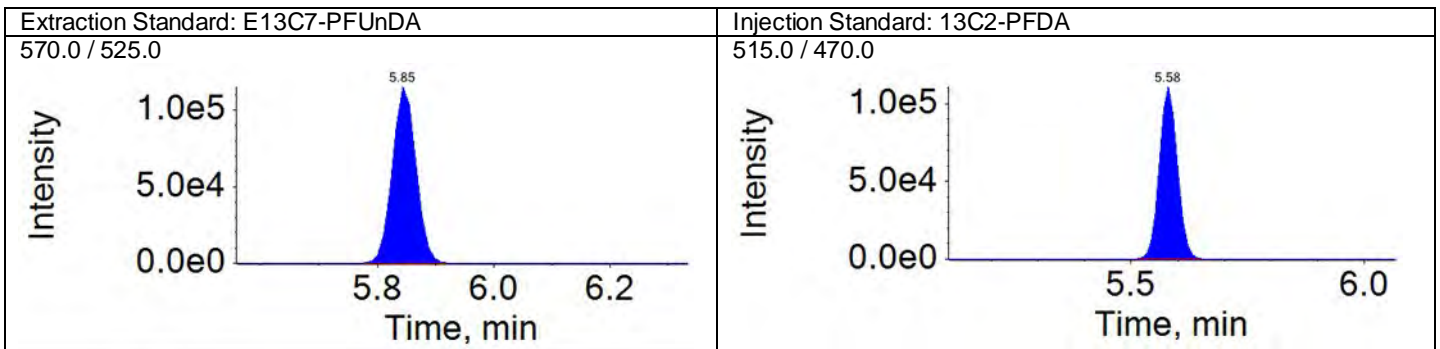
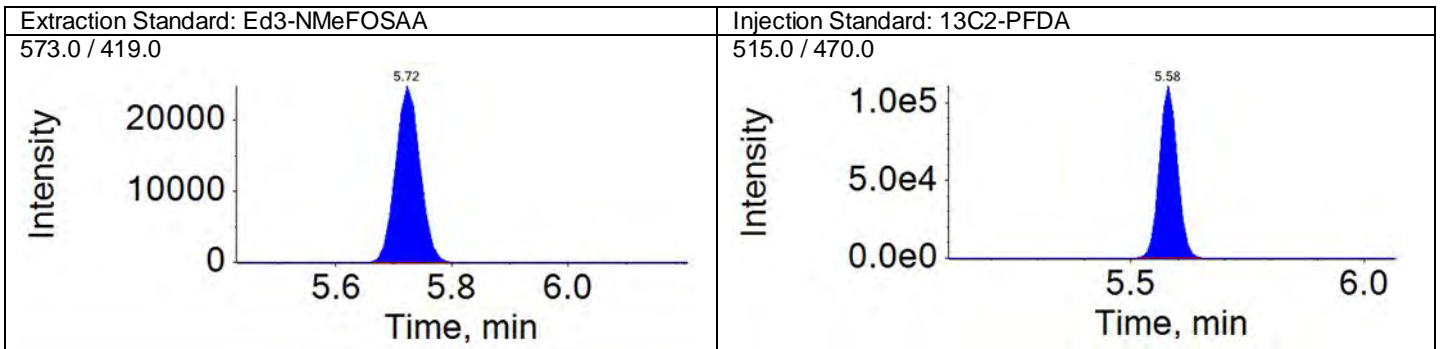
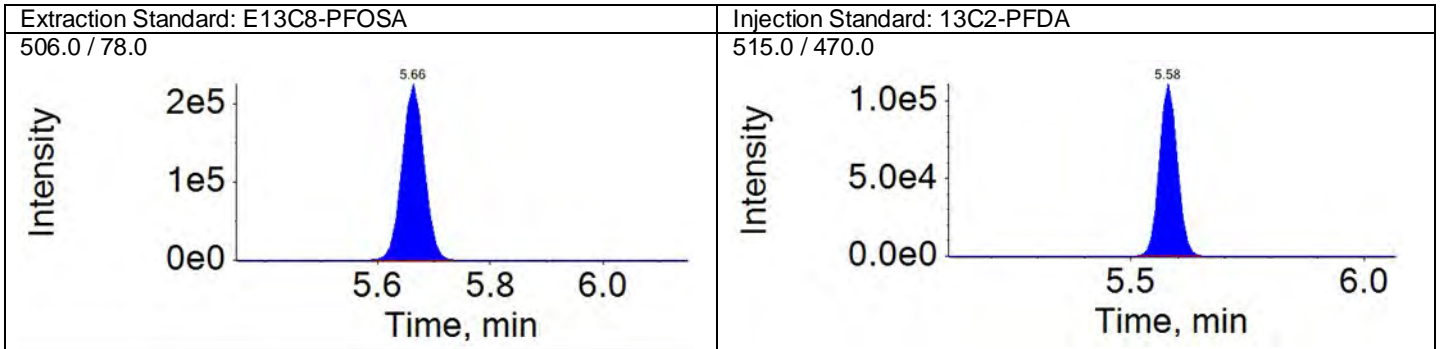
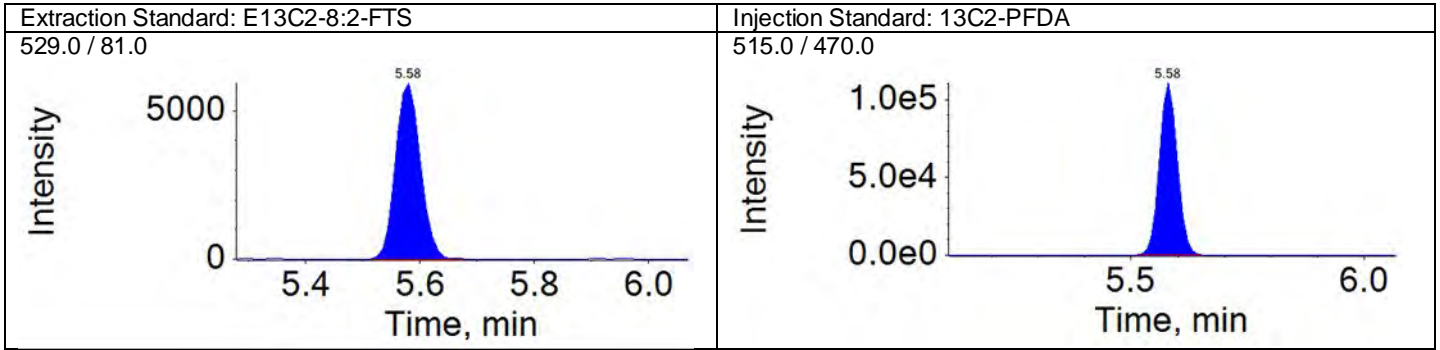
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

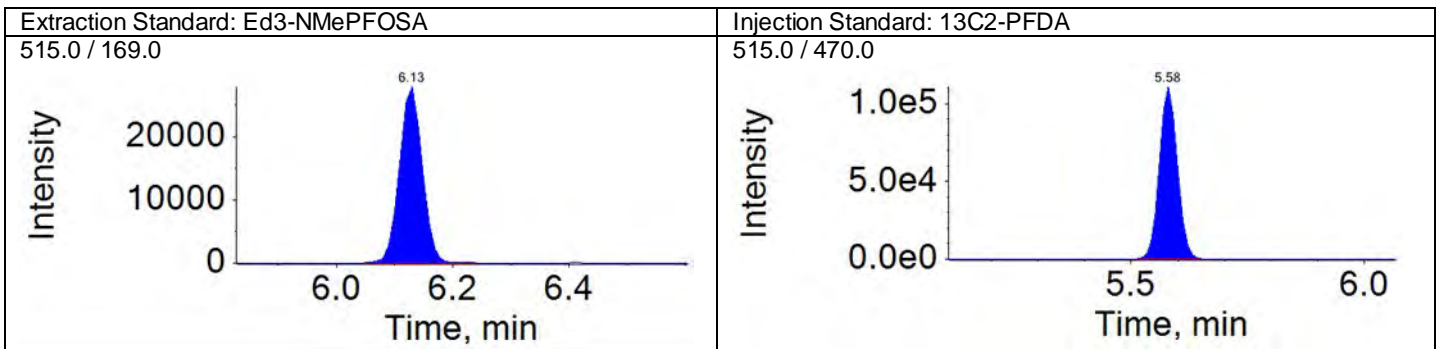
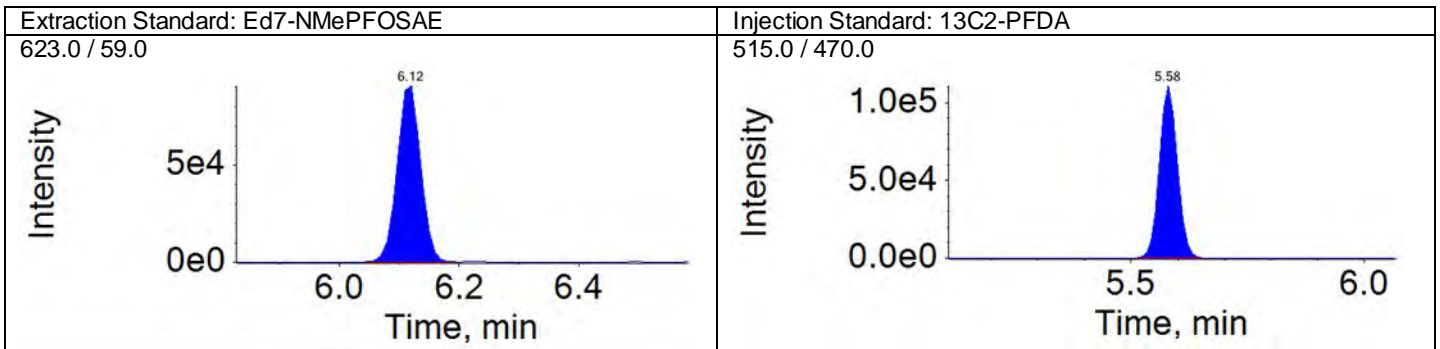
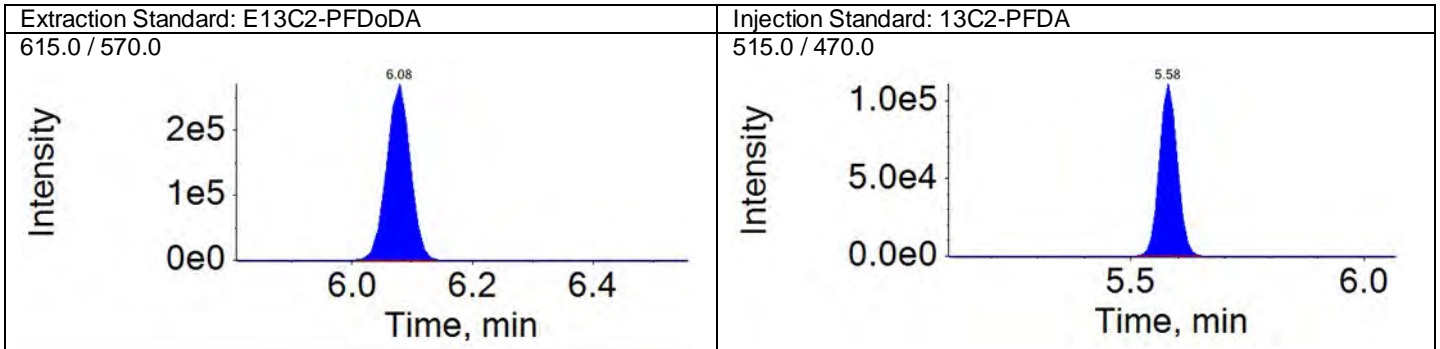
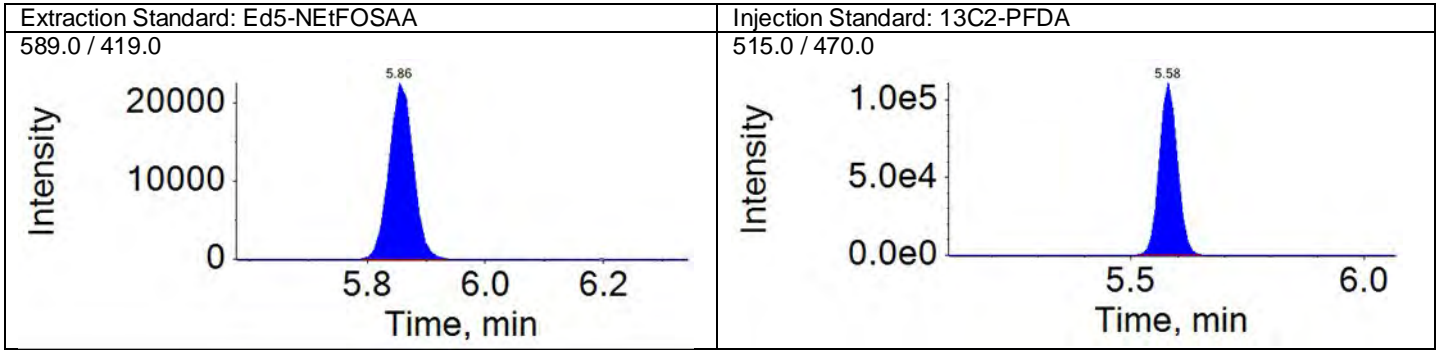
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

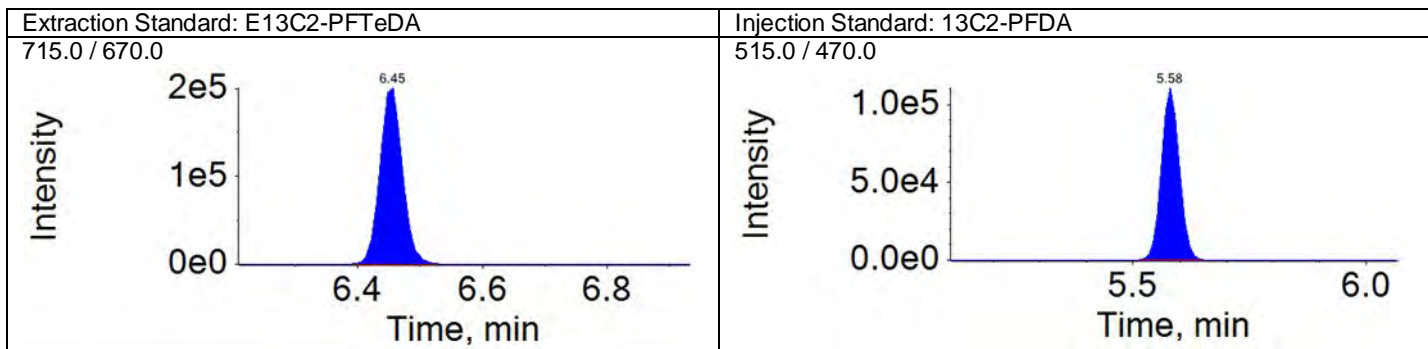
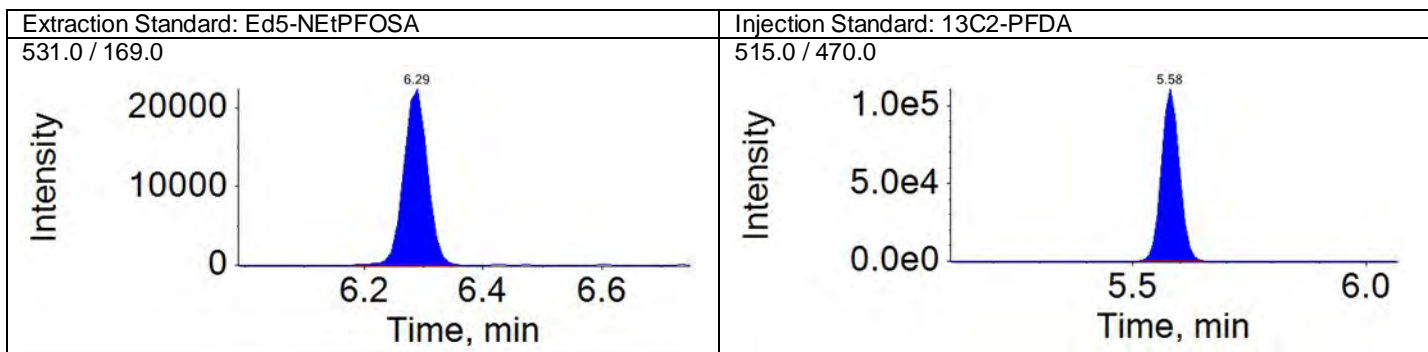
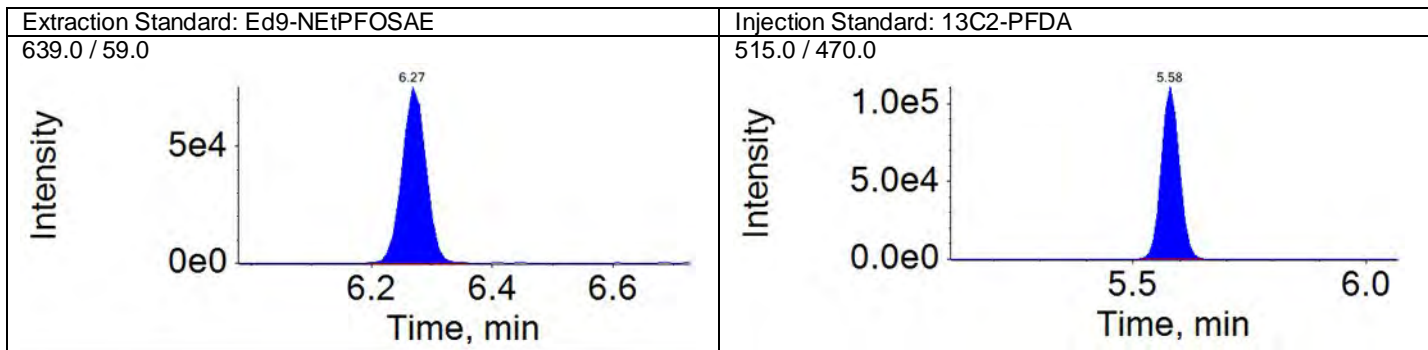
Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam





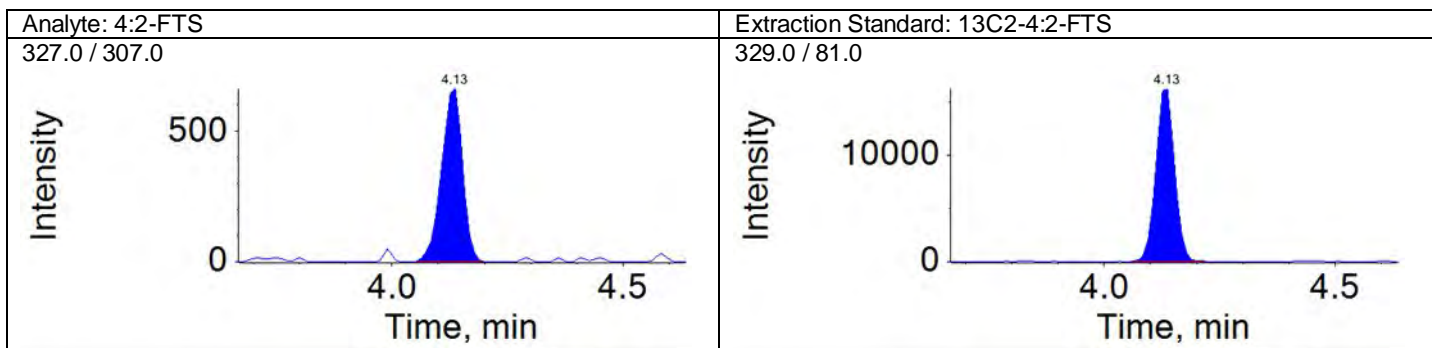
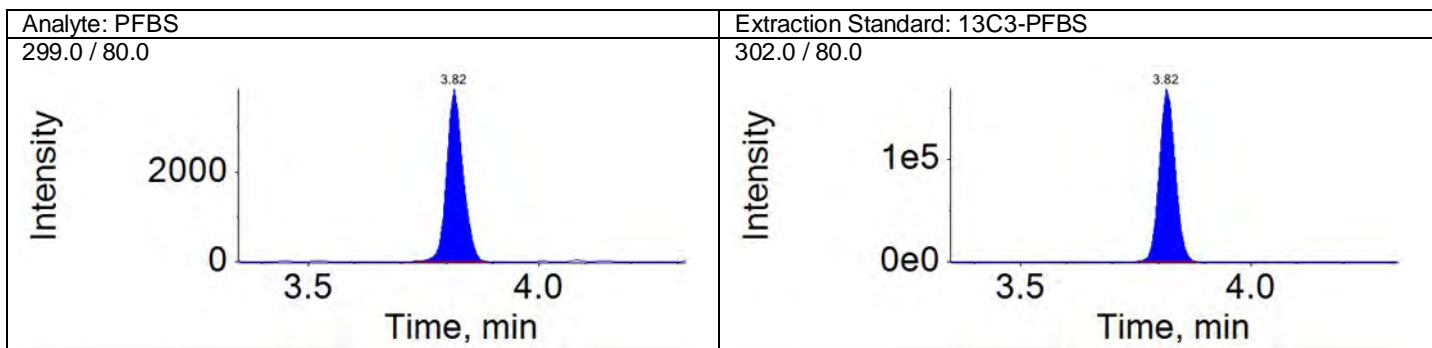
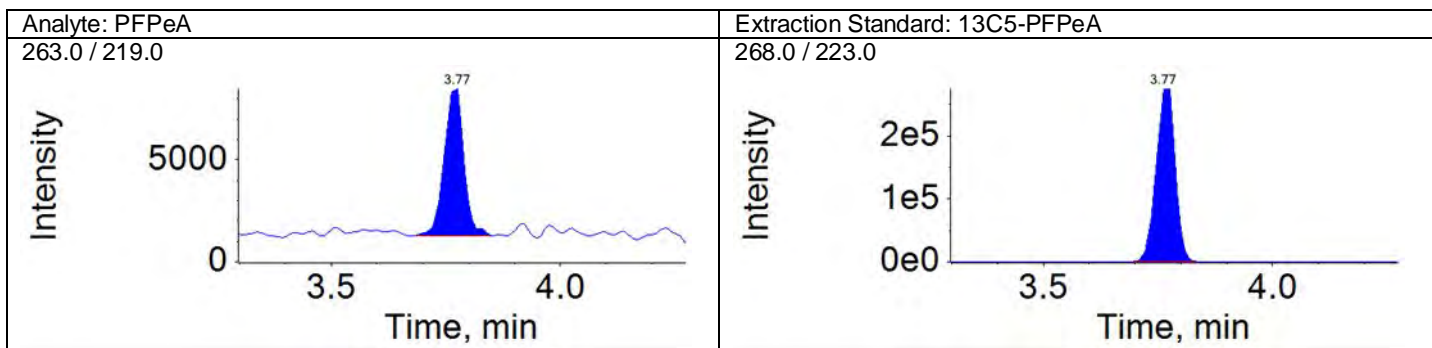
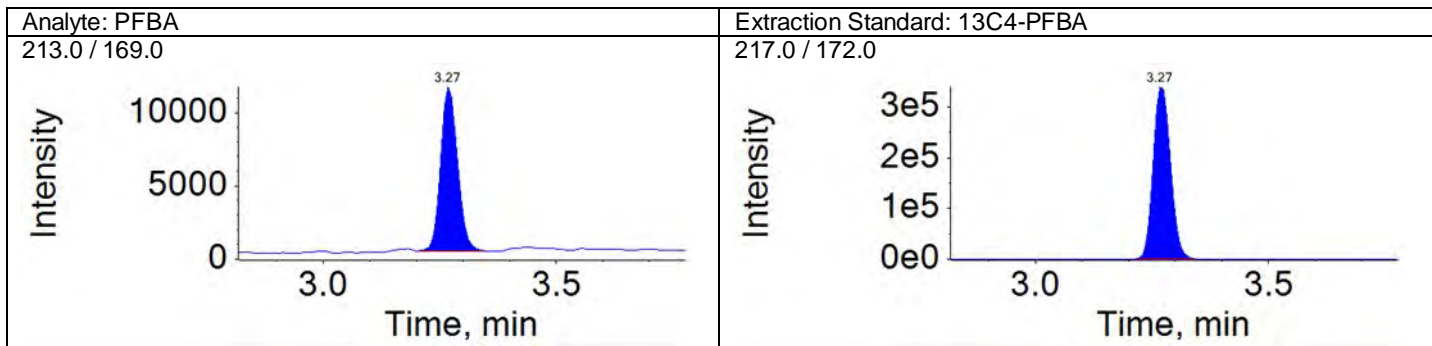
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



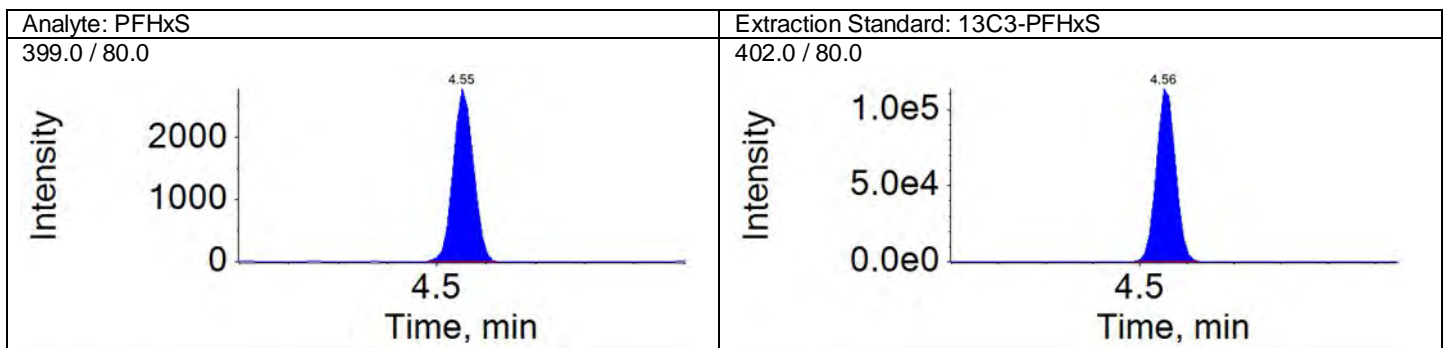
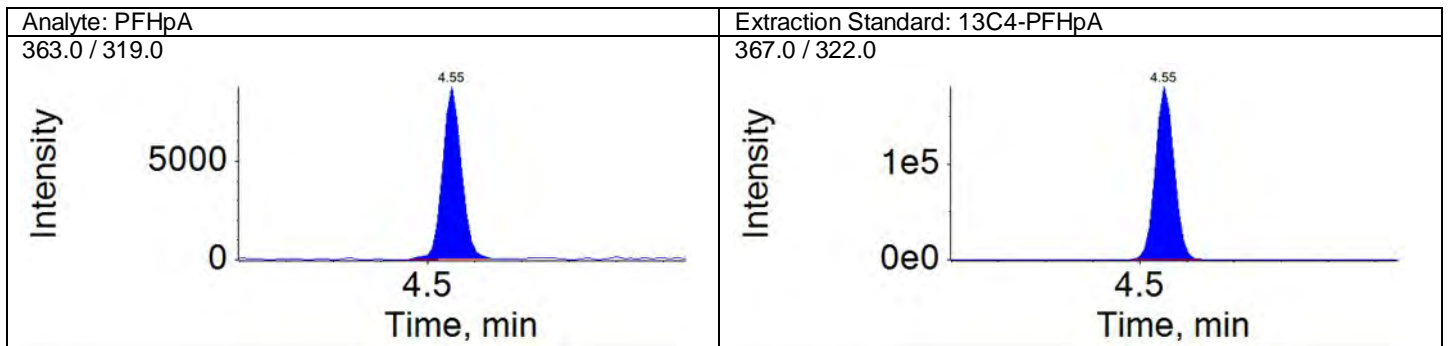
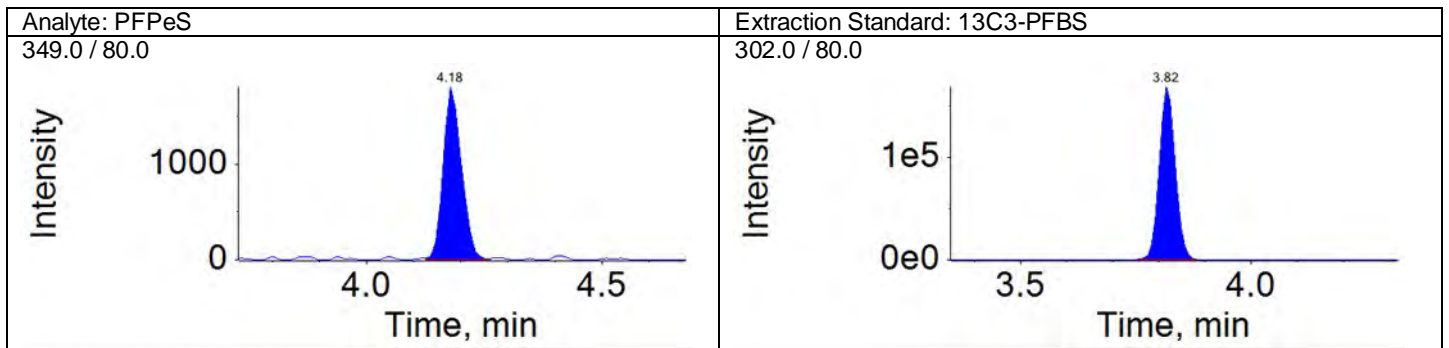
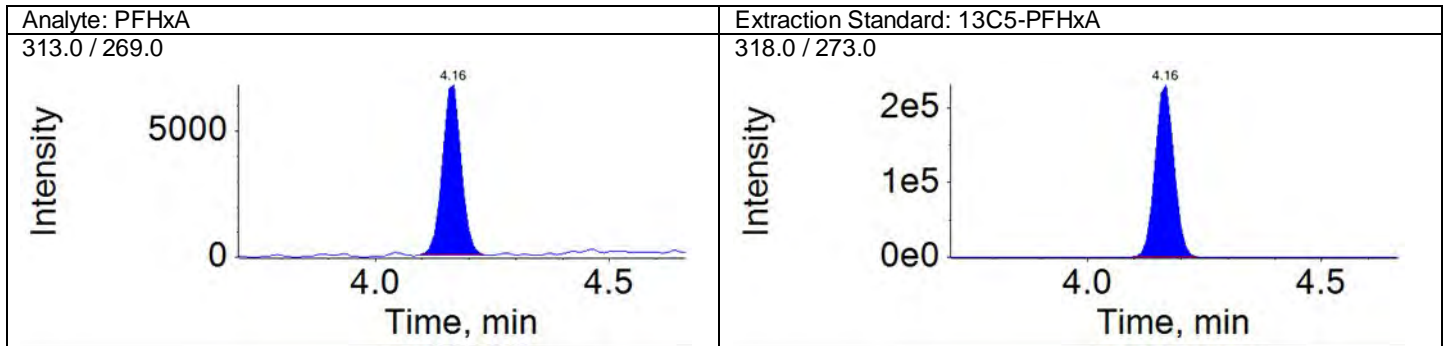
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



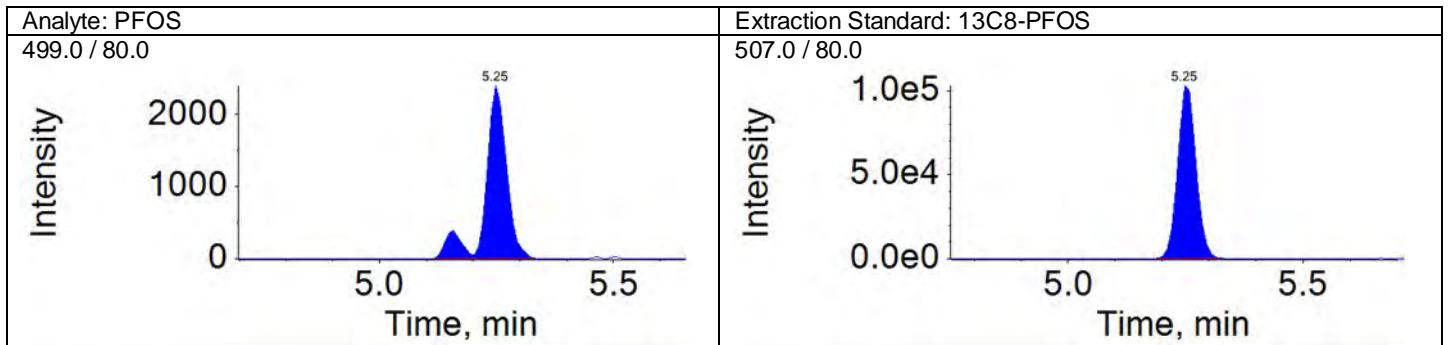
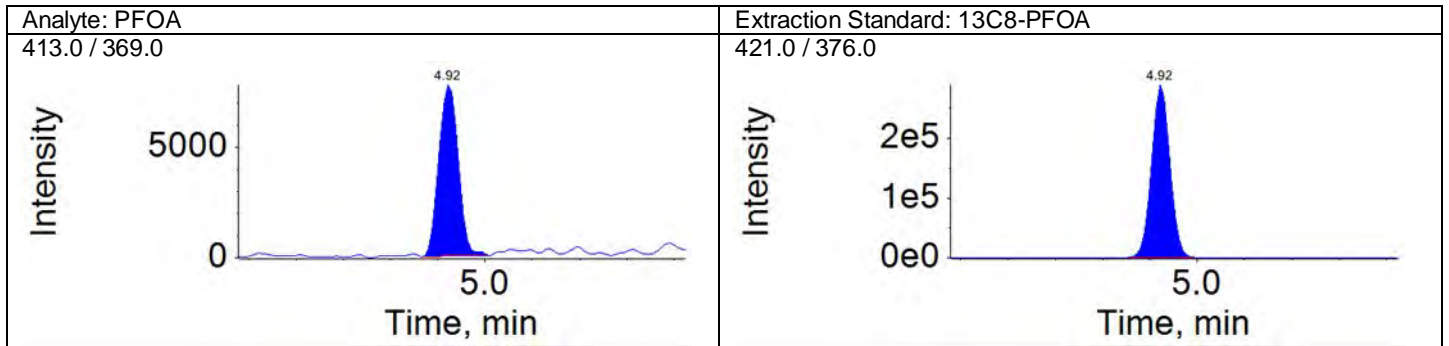
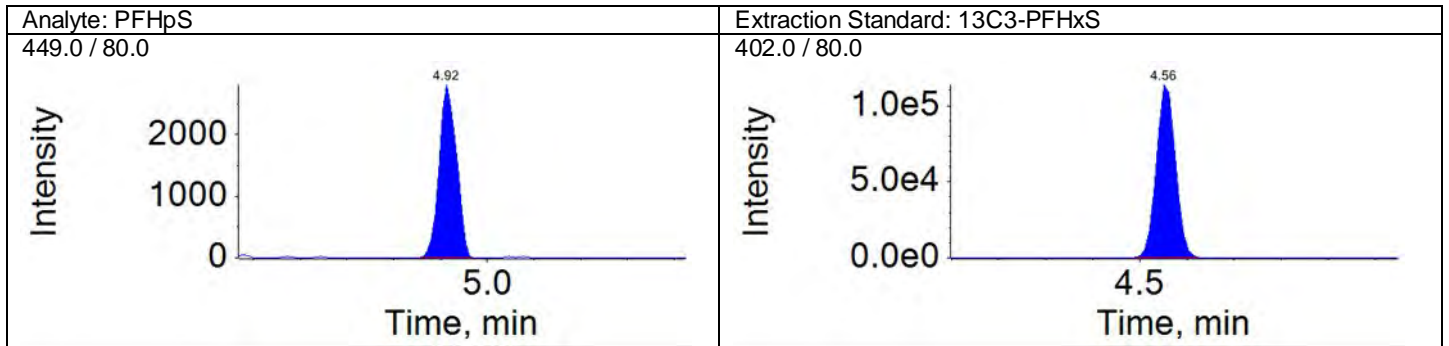
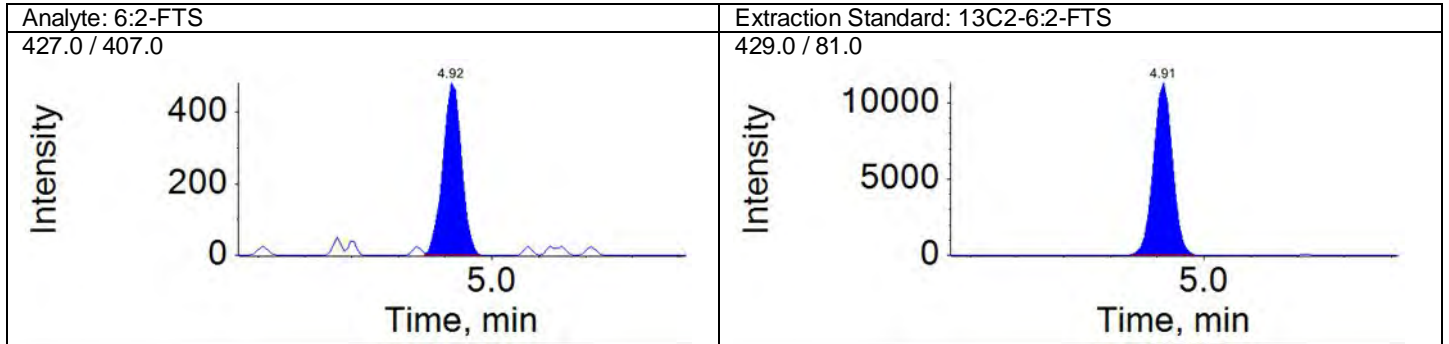
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

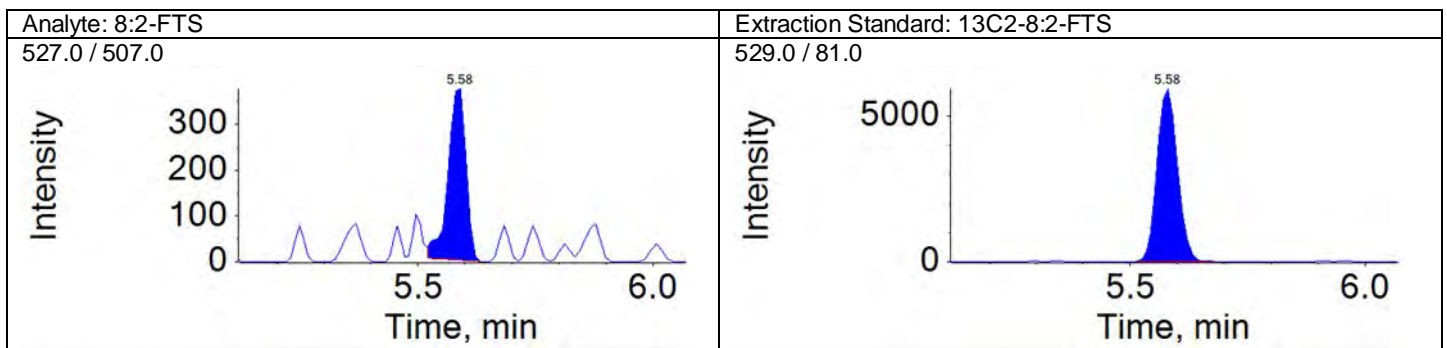
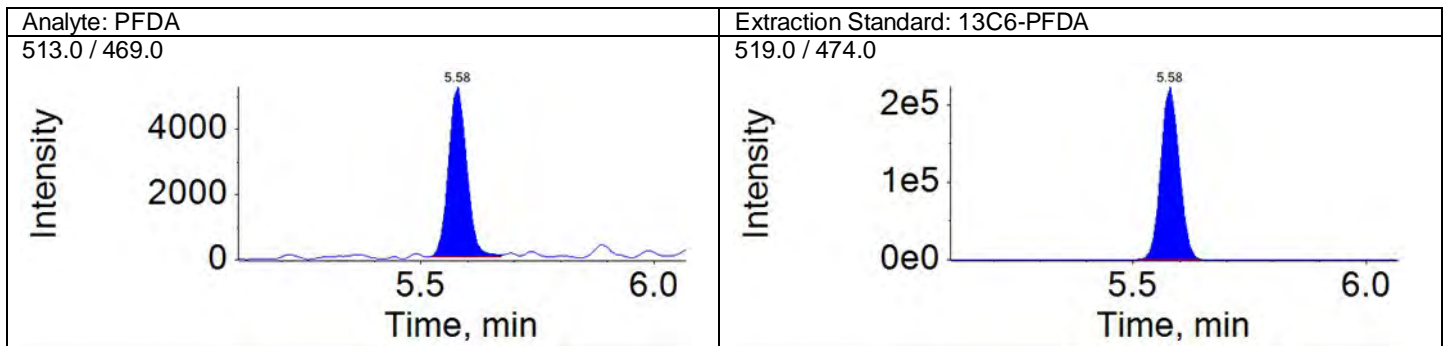
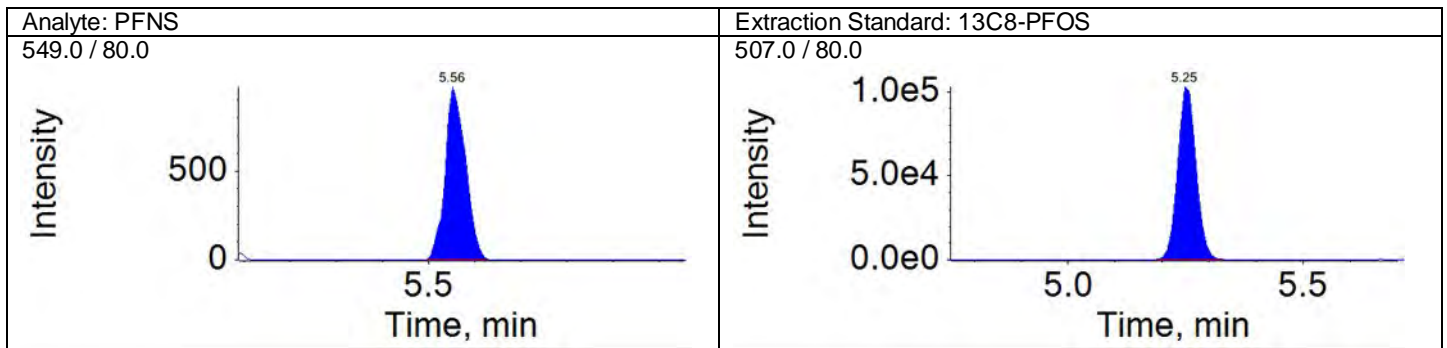
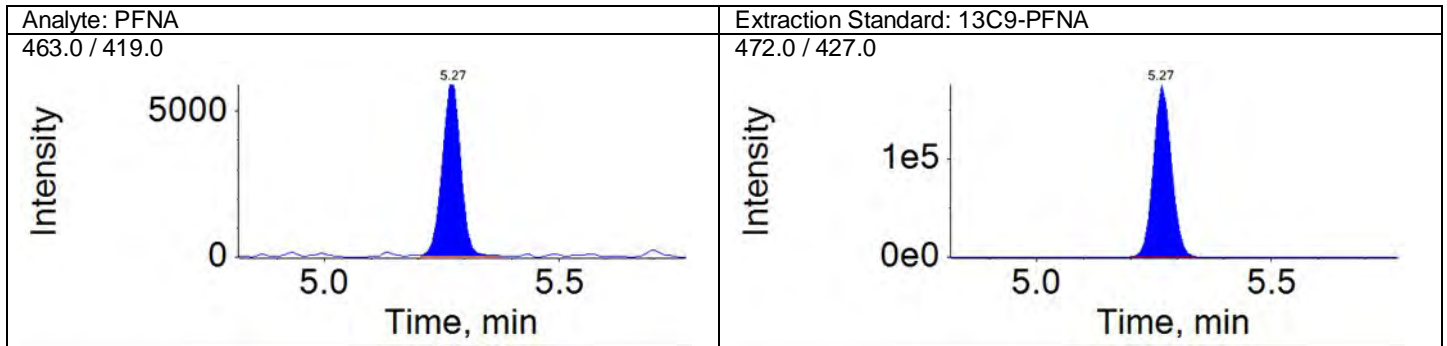
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

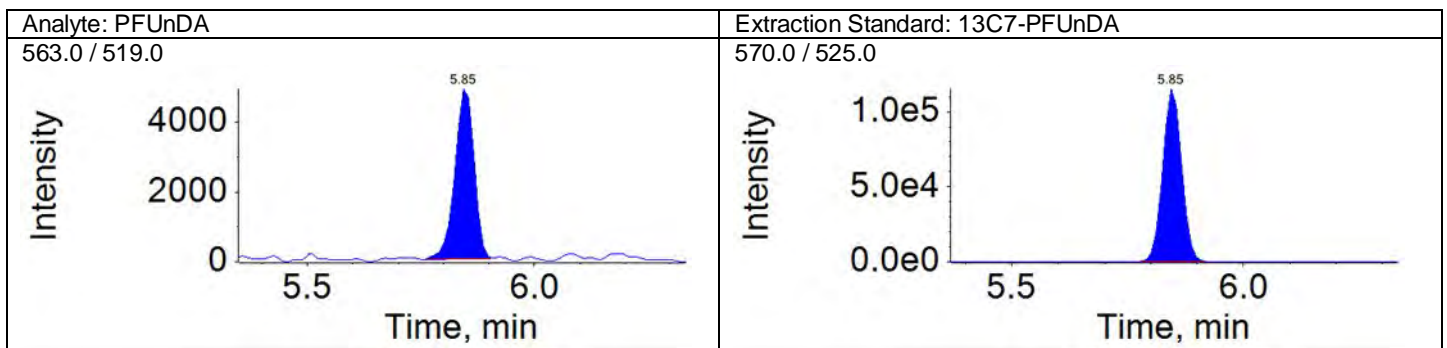
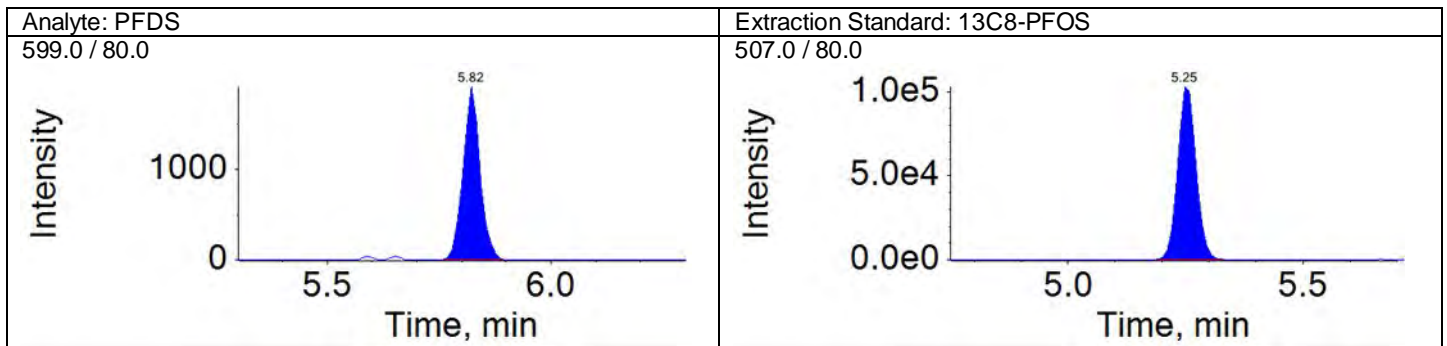
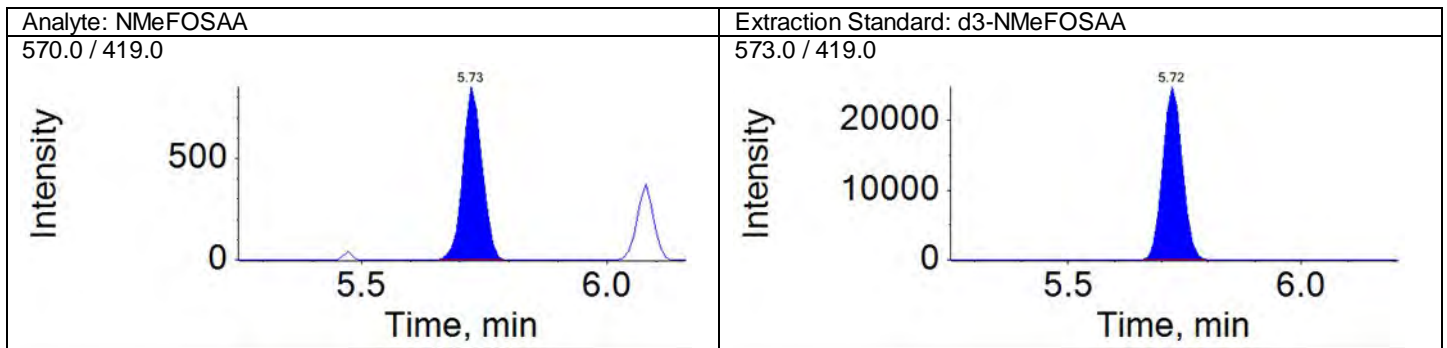
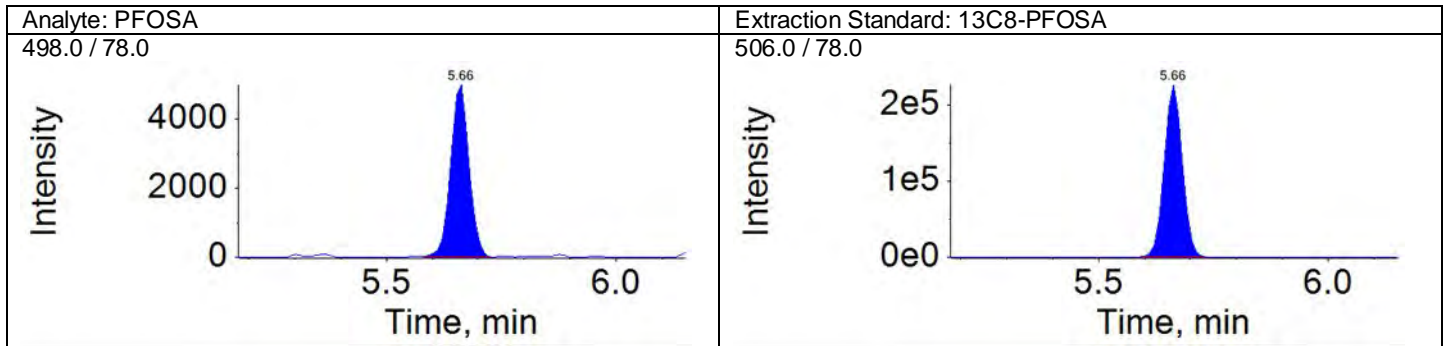
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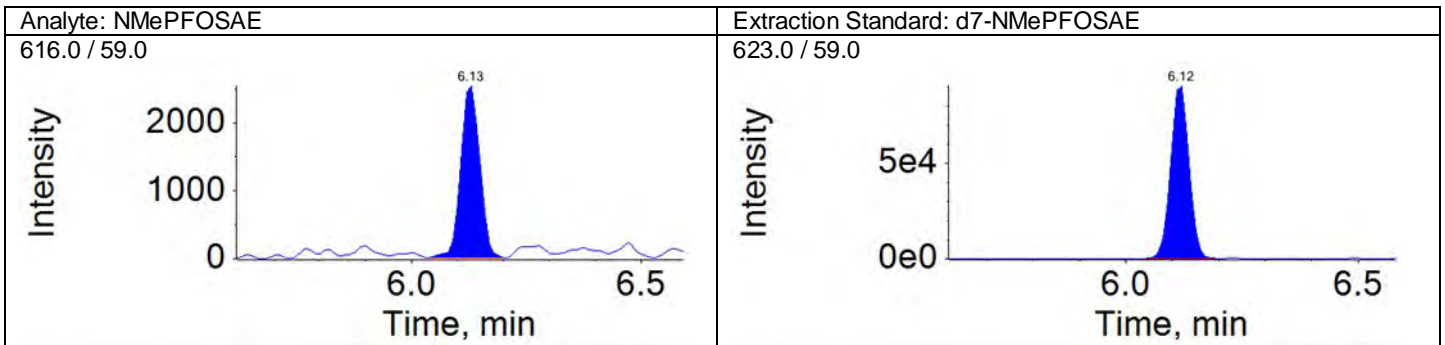
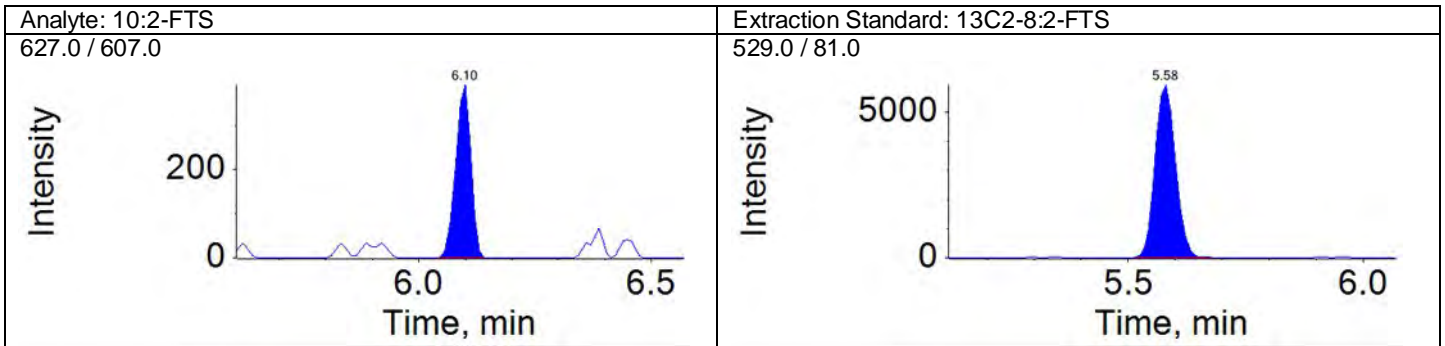
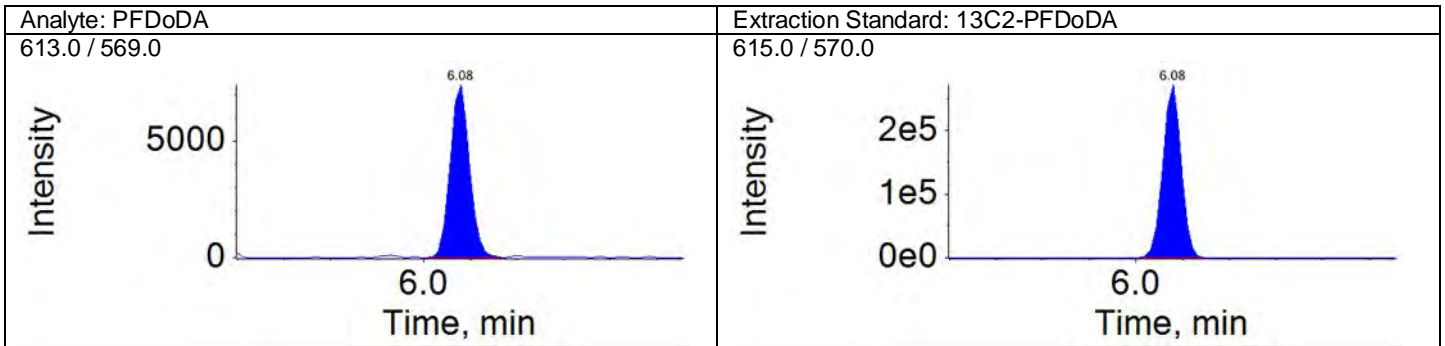
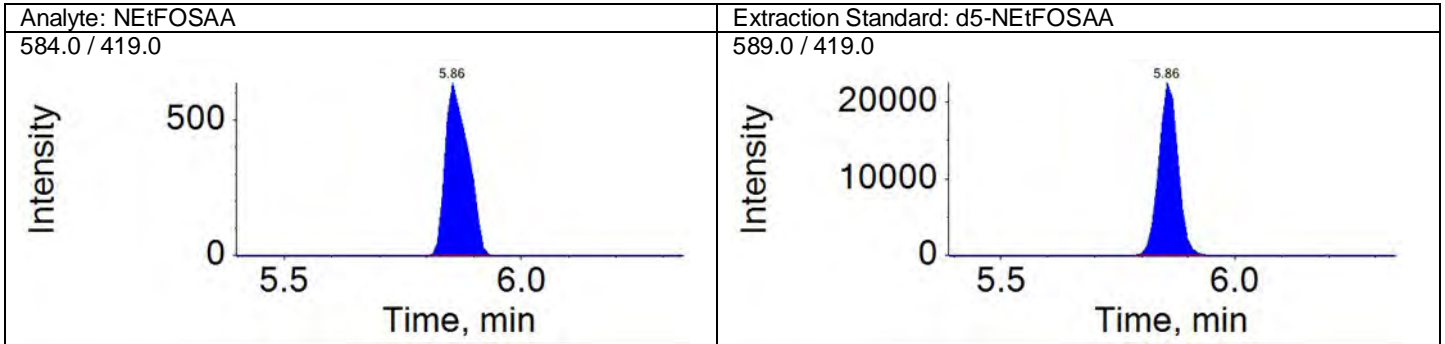
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



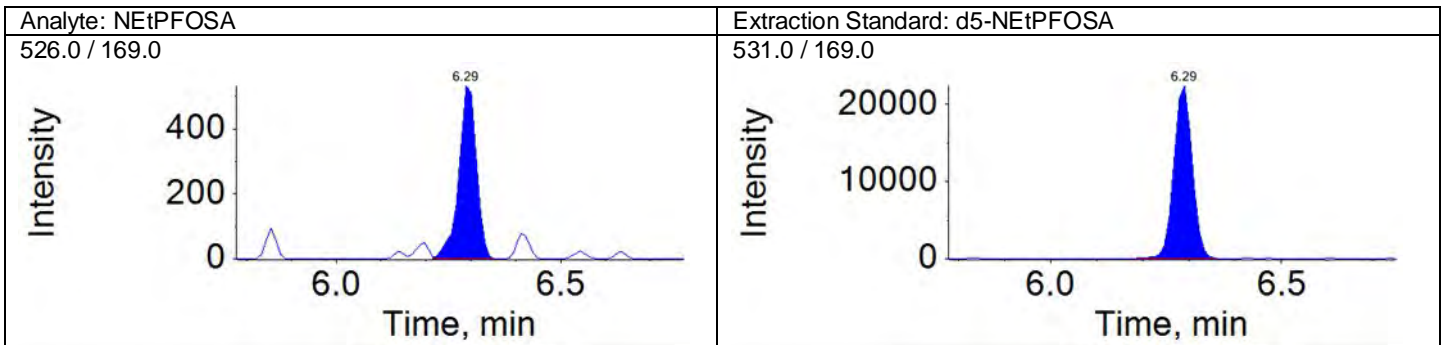
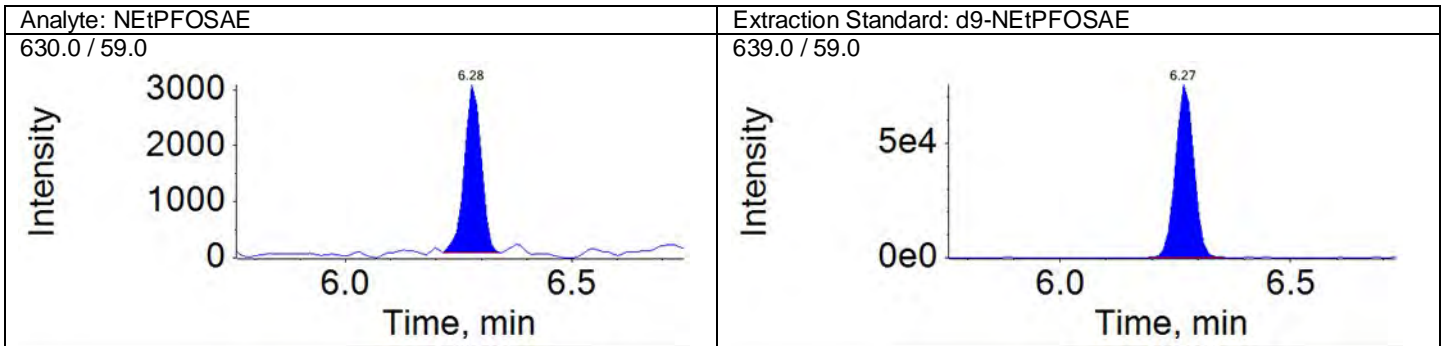
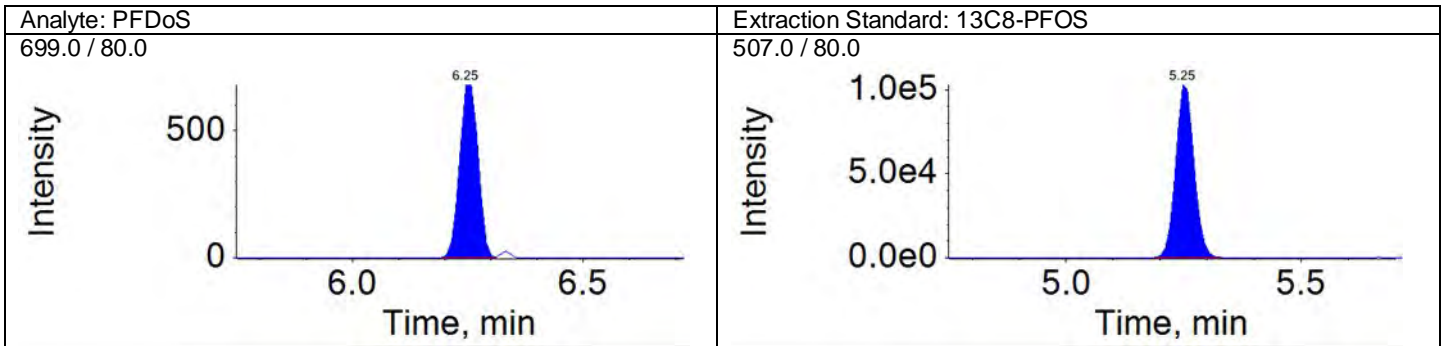
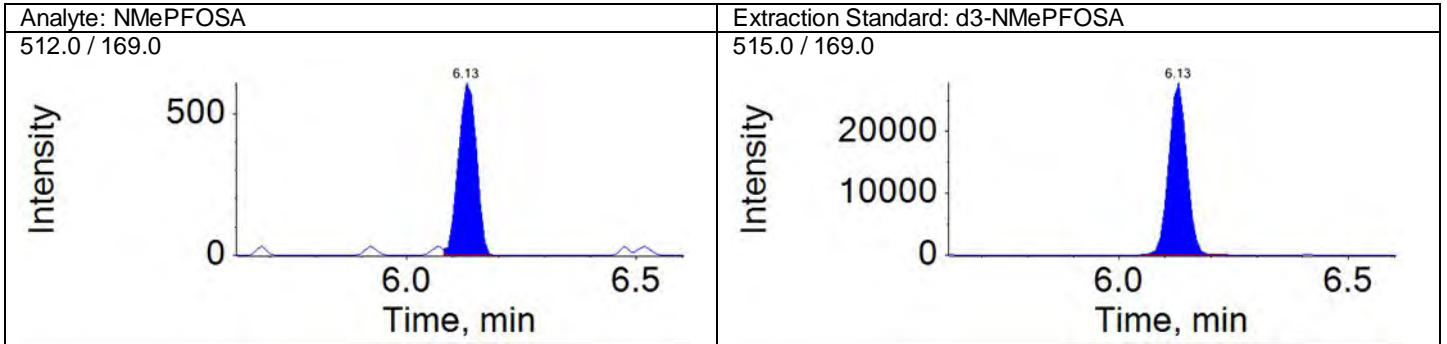
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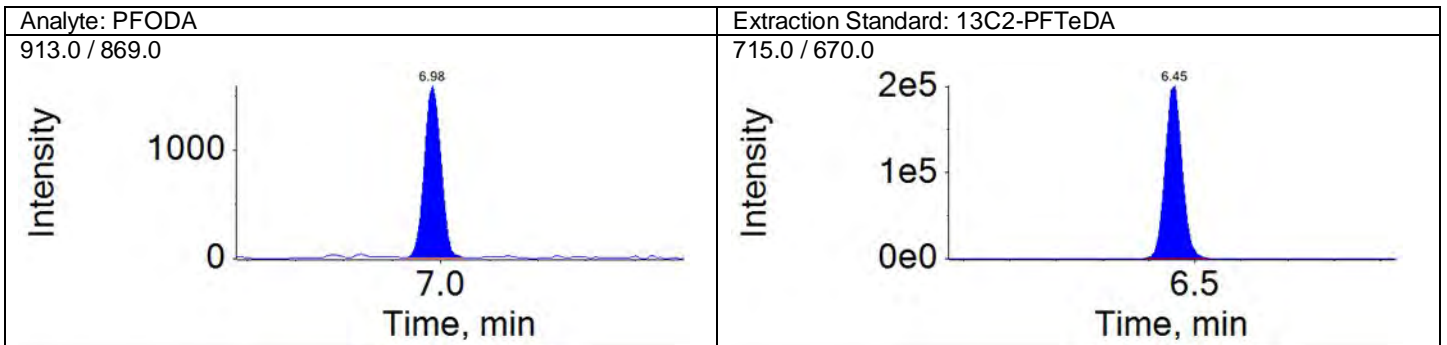
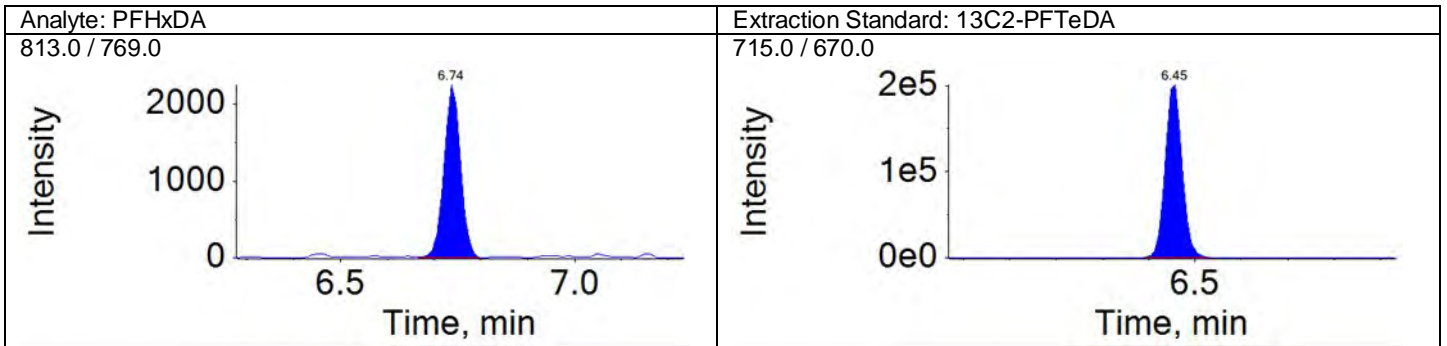
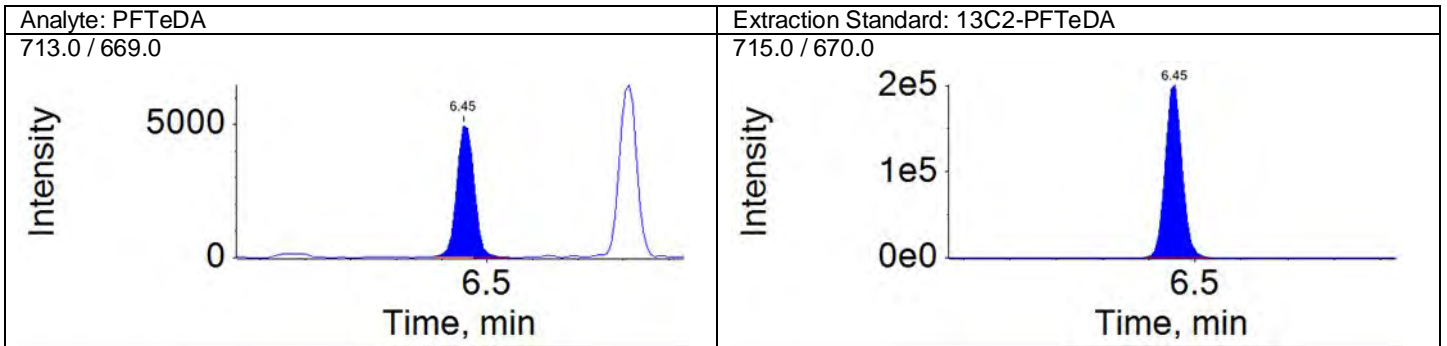
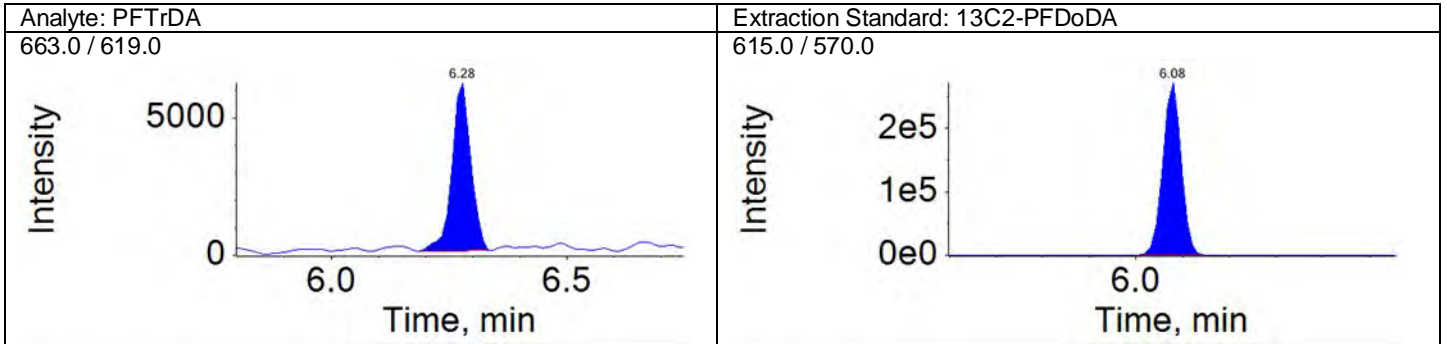
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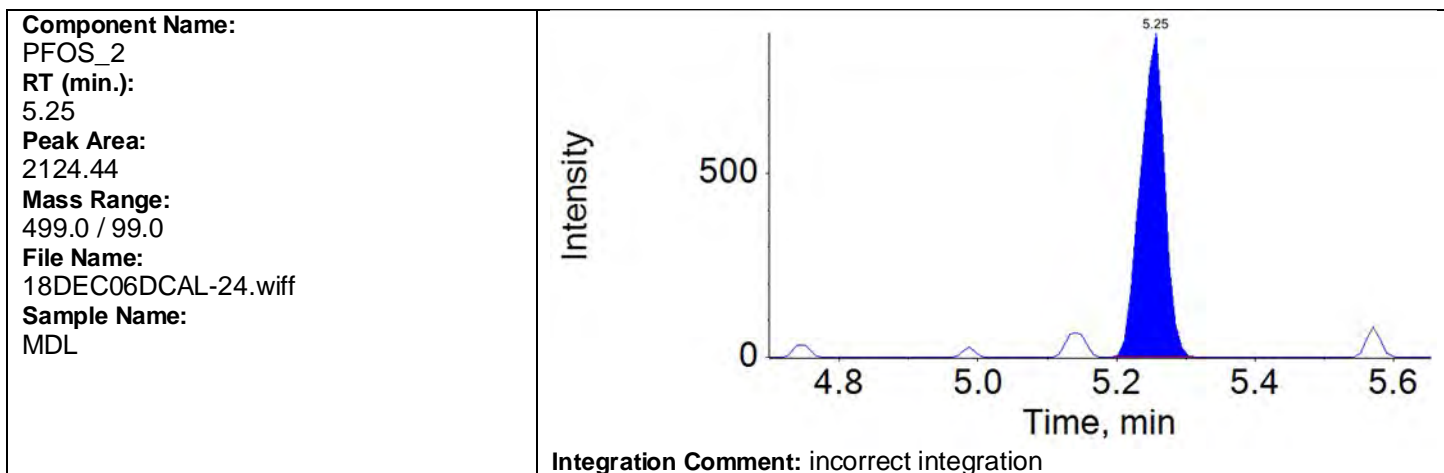
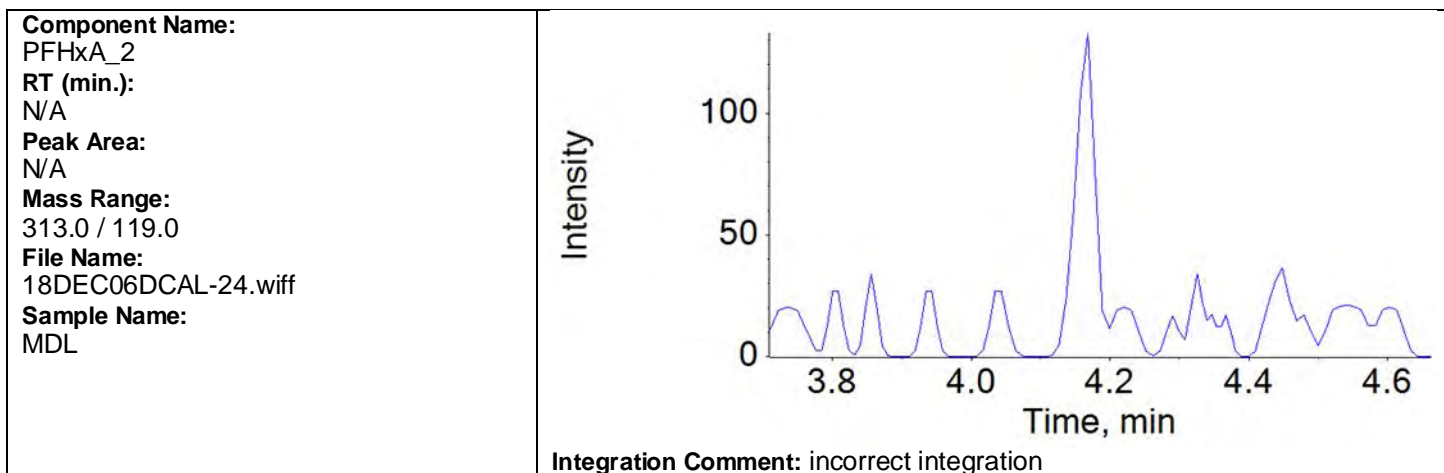
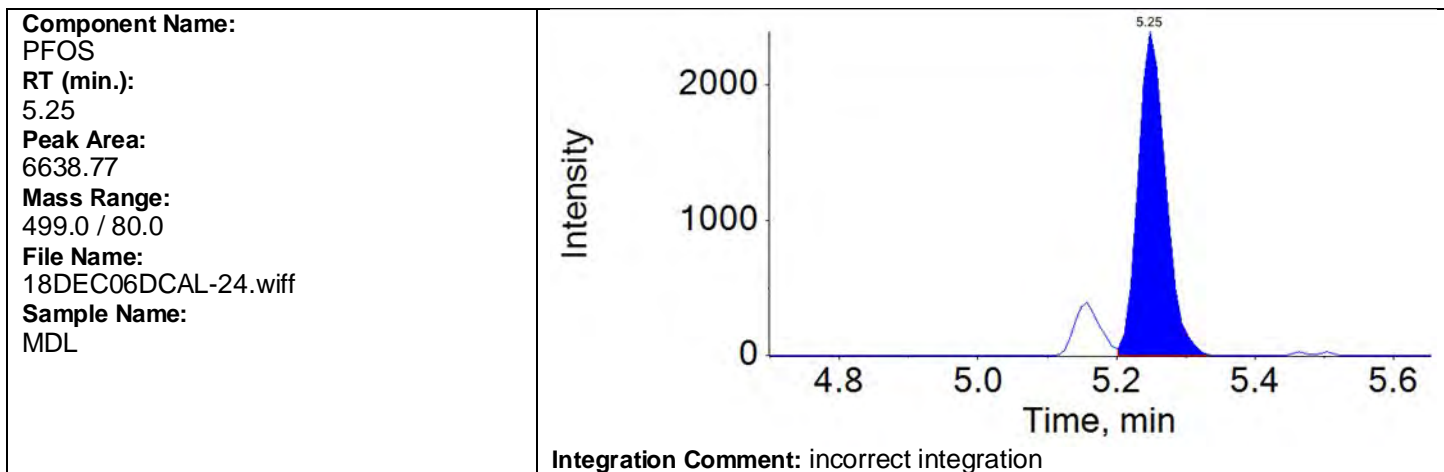
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Acquisition Method: 18AUG13\_3uL.dam





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

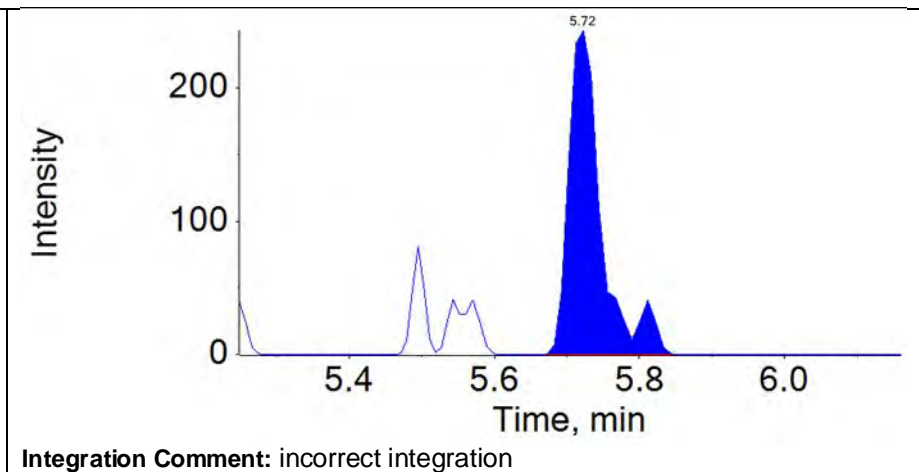




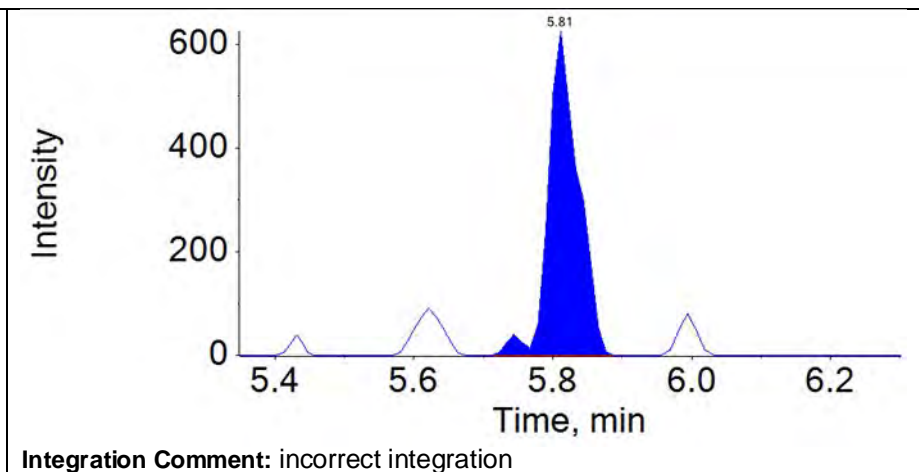
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Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
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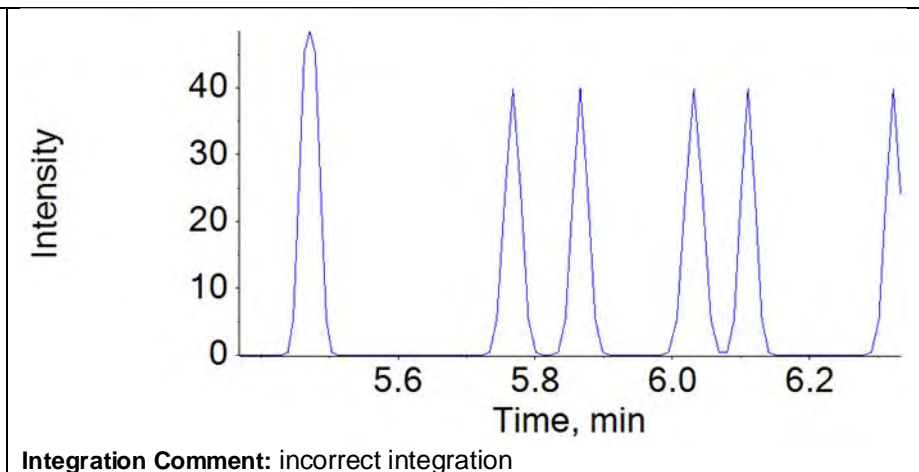
**Component Name:**  
NMeFOSAA\_2  
**RT (min.):**  
5.72  
**Peak Area:**  
770.13  
**Mass Range:**  
570.0 / 483.0  
**File Name:**  
18DEC06DCAL-24.wiff  
**Sample Name:**  
MDL



**Component Name:**  
PFDS\_2  
**RT (min.):**  
5.81  
**Peak Area:**  
1904.94  
**Mass Range:**  
599.0 / 99.0  
**File Name:**  
18DEC06DCAL-24.wiff  
**Sample Name:**  
MDL

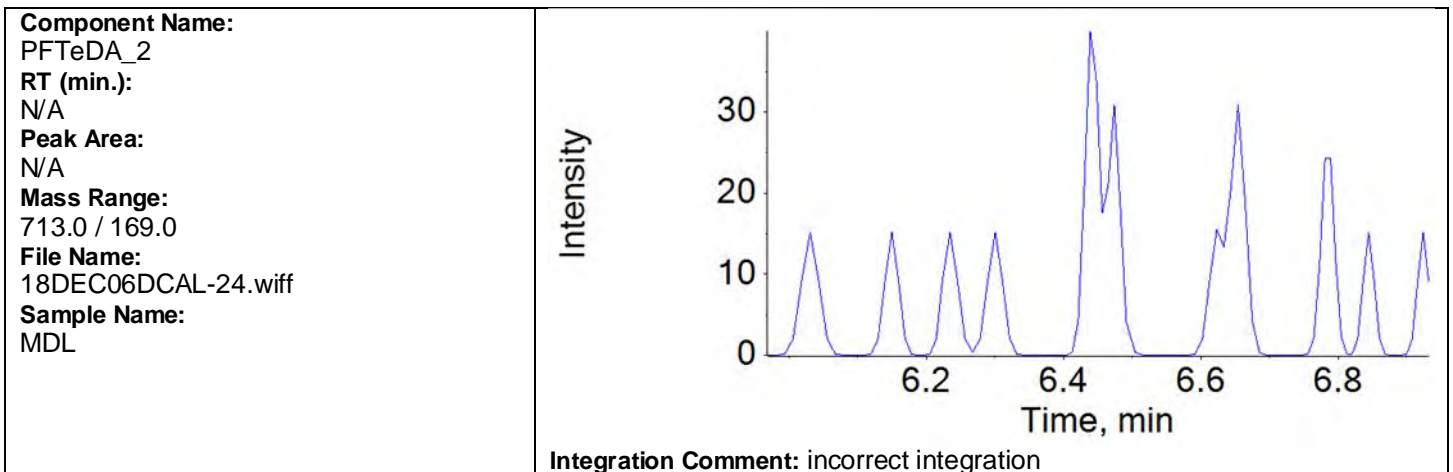
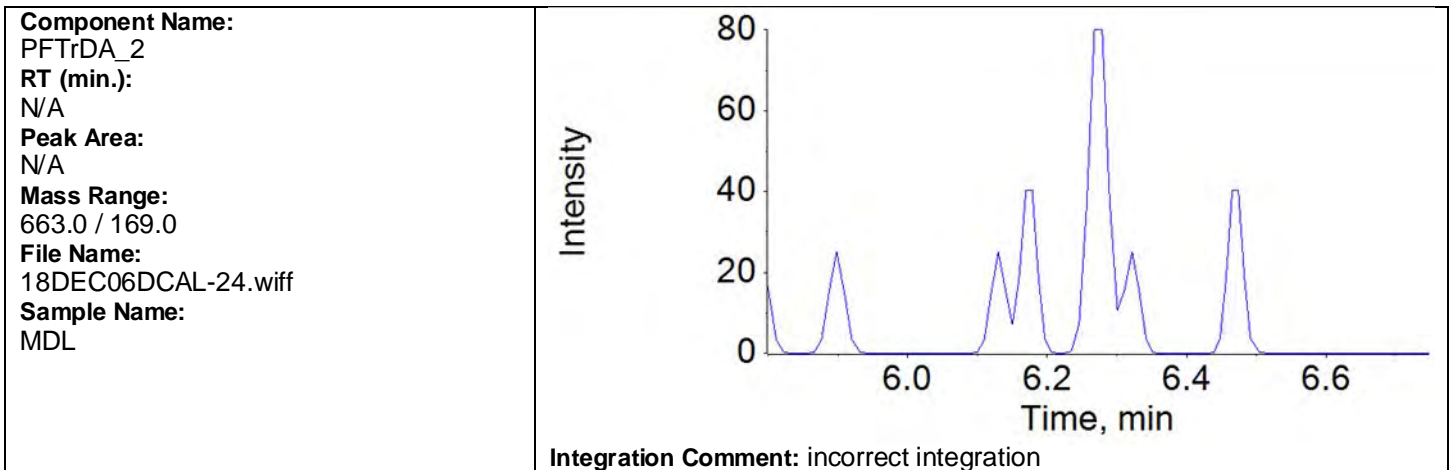
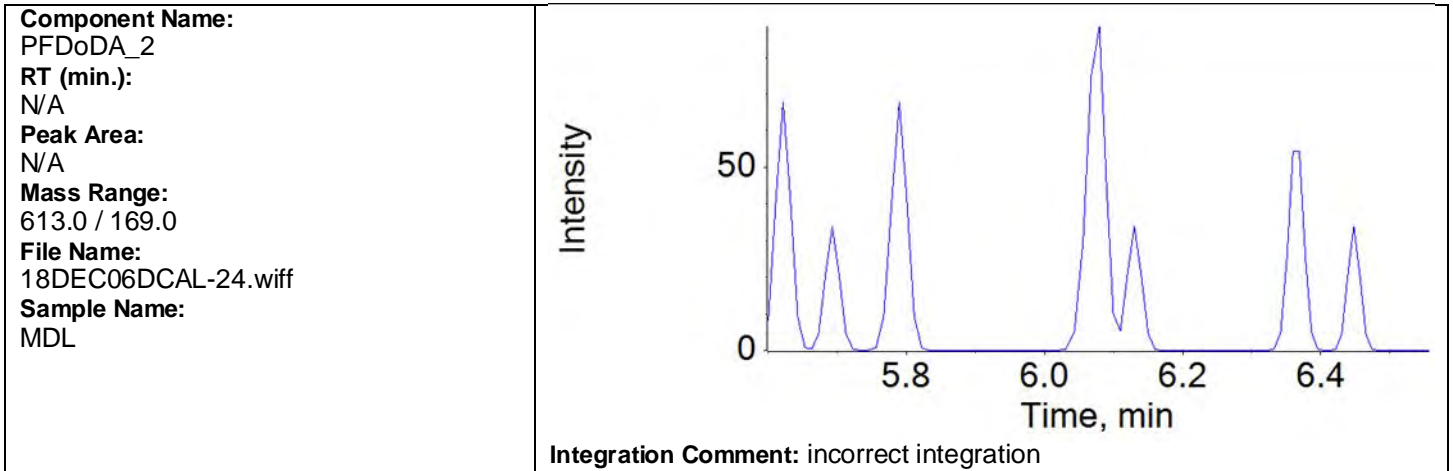


**Component Name:**  
PUnDA\_2  
**RT (min.):**  
N/A  
**Peak Area:**  
N/A  
**Mass Range:**  
563.0 / 169.0  
**File Name:**  
18DEC06DCAL-24.wiff  
**Sample Name:**  
MDL



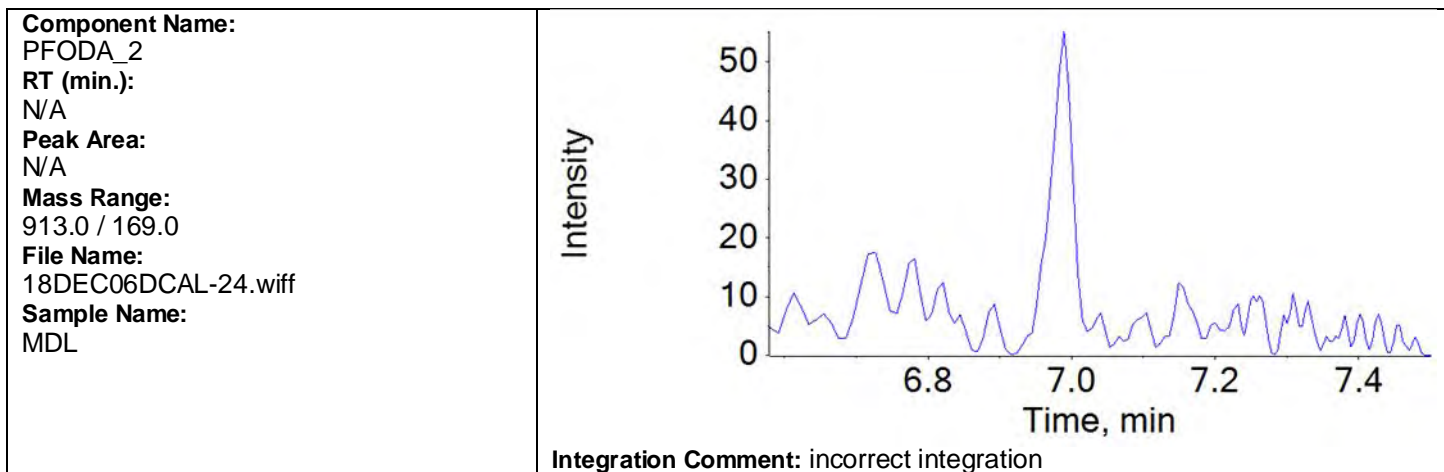
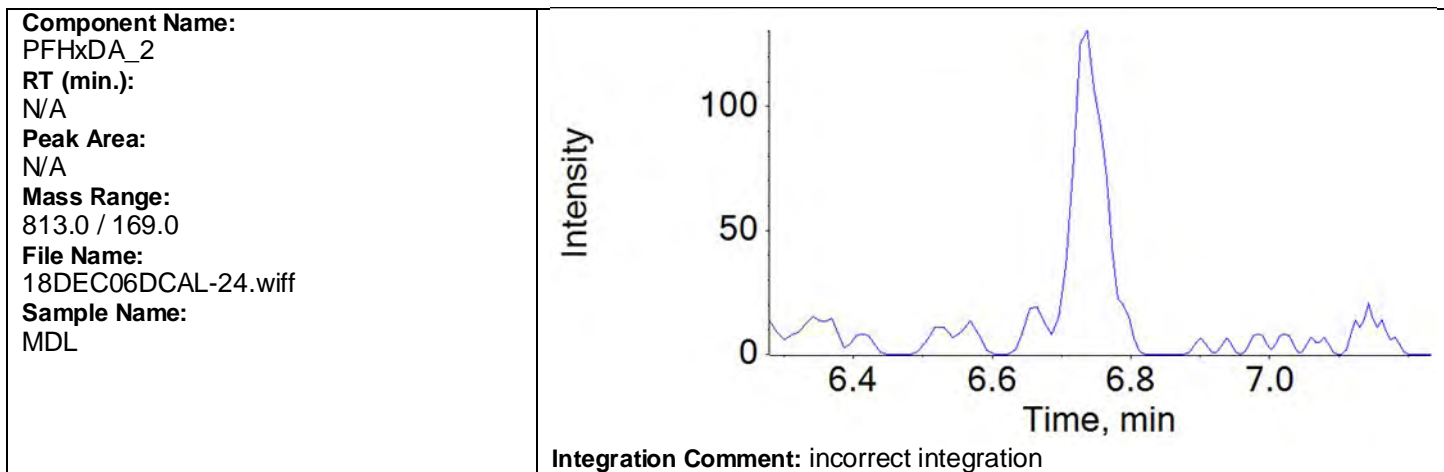
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Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

Ion Ratio Report

Sample Name: MDL

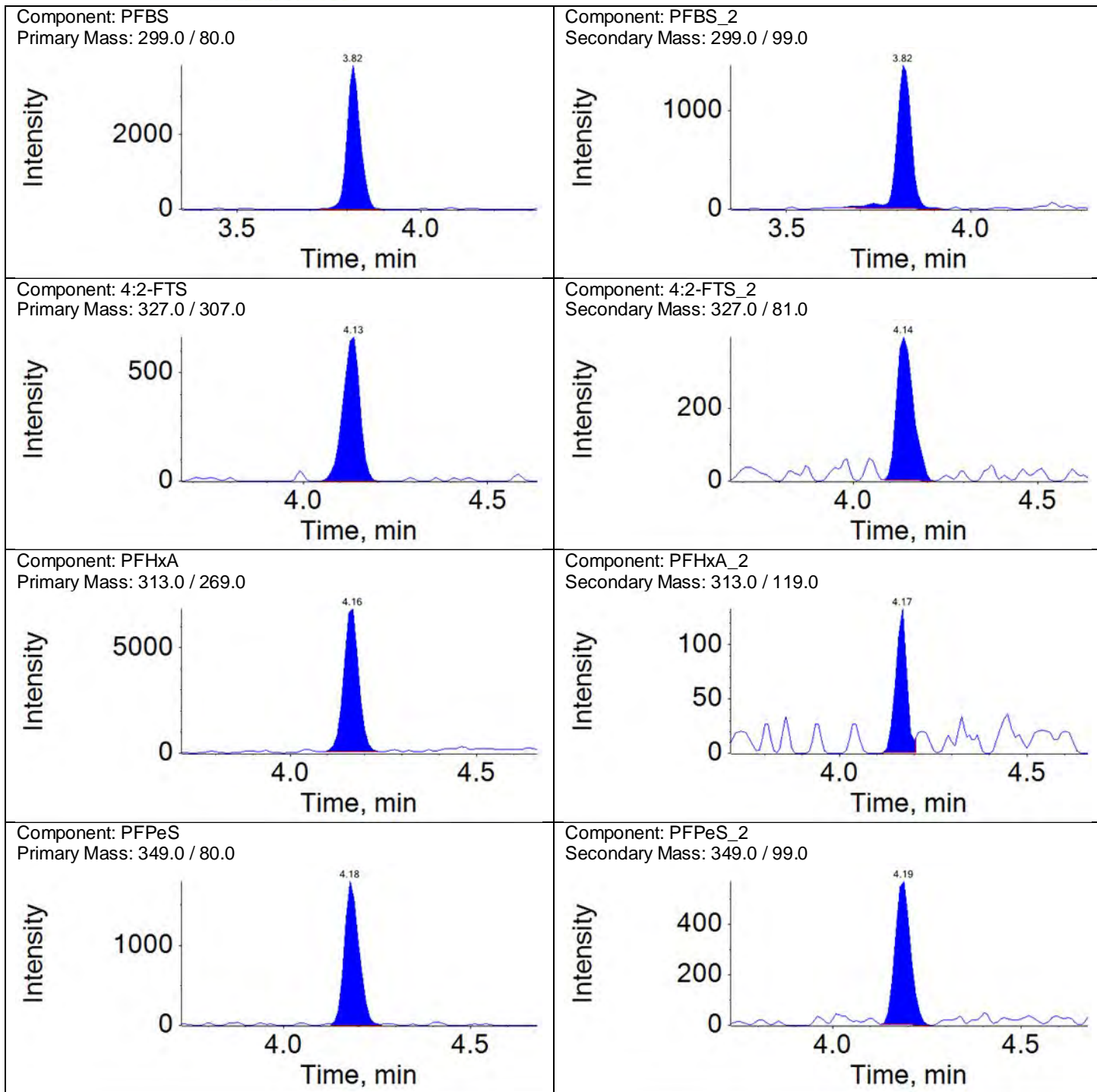
Instrument Name: LM27631

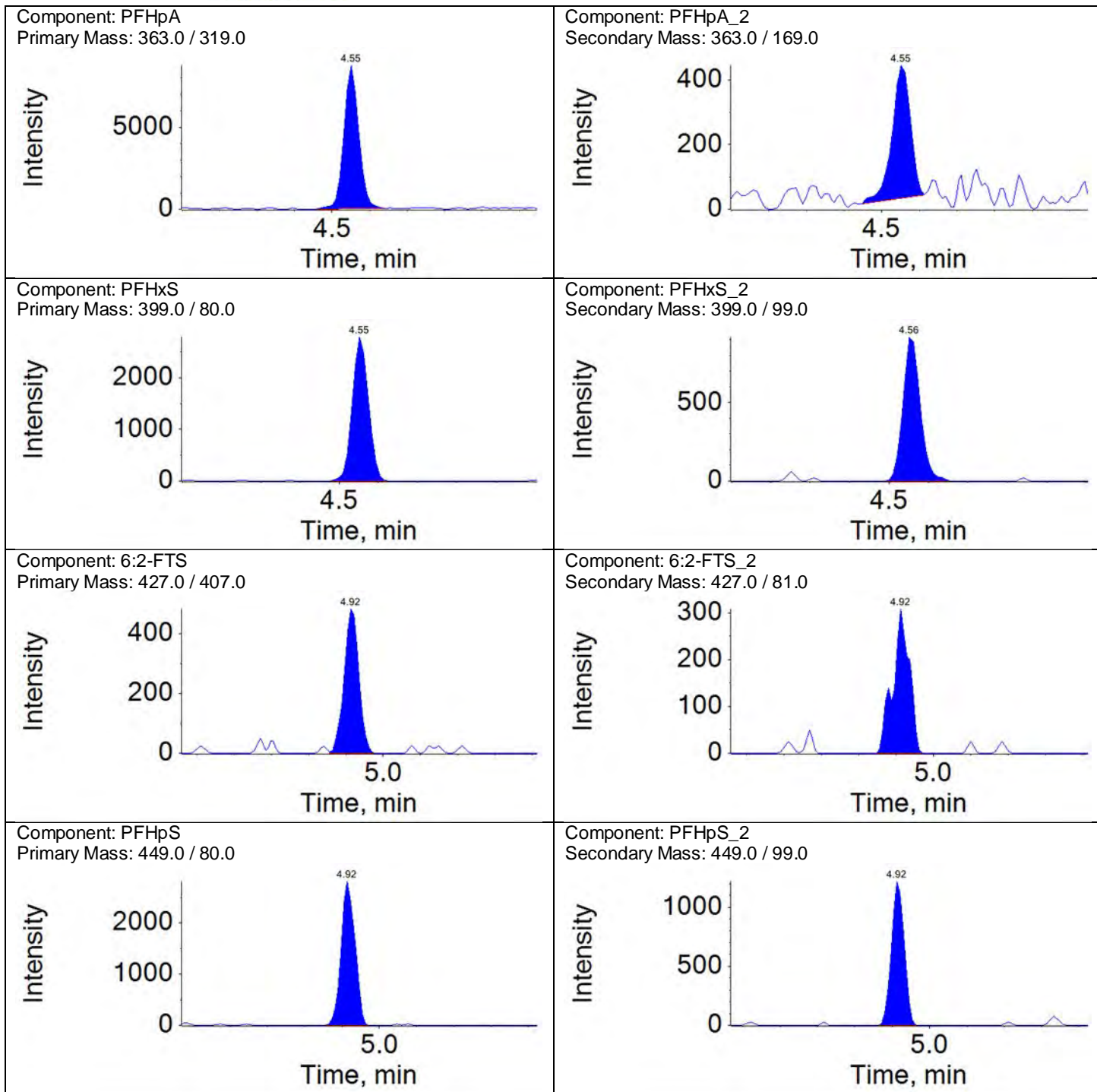
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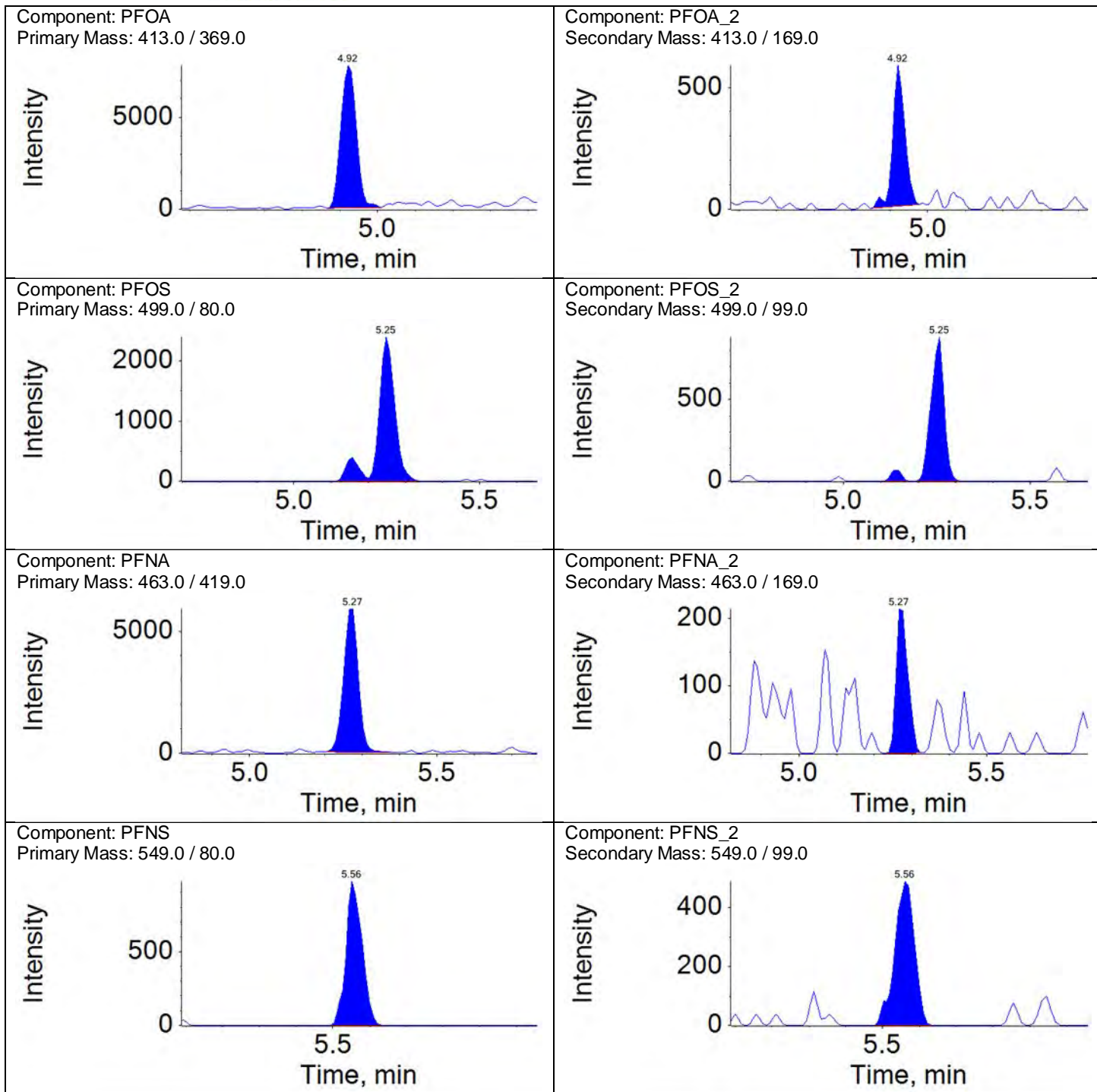
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PFBS	3.82	1.00	9483.02	A	1.0000	1.0000			
PFBS_2	3.82	1.00	3971.02	A	0.3627	0.4188	15	50	
4:2-FTS	4.13	1.00	2106.21	A	1.0000	1.0000			
4:2-FTS_2	4.14	1.00	1244.02	A	0.6542	0.5906	-10	50	
PFHxA	4.16	1.00	18868.89	A	1.0000	1.0000			
PFHxA_2	4.17	1.00	269.03	M	0.0097	0.0143	47	50	
PFPeS	4.18	1.10	4848.46	A	1.0000	1.0000			
PFPeS_2	4.19	1.10	1610.34	A	0.5262	0.3321	-37	50	
PFHpA	4.55	1.00	24063.05	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	1413.73	A	0.0565	0.0588	4	50	
PFHxS	4.55	1.00	7938.60	A	1.0000	1.0000			
PFHxS_2	4.56	1.00	2798.64	A	0.3645	0.3525	-3	50	
6:2-FTS	4.92	1.00	1327.07	A	1.0000	1.0000			
6:2-FTS_2	4.92	1.00	956.20	A	0.6273	0.7205	15	50	
PFHpS	4.92	1.08	7210.33	A	1.0000	1.0000			
PFHpS_2	4.92	1.08	2872.51	A	0.4162	0.3984	-4	50	
PFOA	4.92	1.00	22109.92	A	1.0000	1.0000			
PFOA_2	4.92	1.00	1287.38	A	0.0616	0.0582	-5	50	
PFOS	5.25	1.00	7643.10	M	1.0000	1.0000			
PFOS_2	5.25	1.00	2260.94	M	0.3021	0.2958	-2	50	
PFNA	5.27	1.00	16084.65	A	1.0000	1.0000			
PFNA_2	5.27	1.00	466.23	A	0.0192	0.0290	51	50	OOS
PFNS	5.56	1.06	2967.97	A	1.0000	1.0000			
PFNS_2	5.56	1.06	1822.01	A	0.4845	0.6139	27	50	
PFDA	5.58	1.00	14132.39	A	1.0000	1.0000			
PFDA_2	5.58	1.00	174.83	A	0.0096	0.0124	28	50	
8:2-FTS	5.58	1.00	998.61	A	1.0000	1.0000			
8:2-FTS_2	5.59	1.00	357.51	A	0.6117	0.3580	-41	50	
NMeFOSAA	5.73	1.00	2310.53	A	1.0000	1.0000			
NMeFOSAA_2	5.72	1.00	703.50	M	0.2673	0.3045	14	50	
PFDS	5.82	1.11	4986.65	A	1.0000	1.0000			
PFDS_2	5.81	1.11	1836.26	M	0.4952	0.3682	-26	50	
PUnDA	5.85	1.00	14382.10	A	1.0000	1.0000			
PUnDA_2	5.87	1.00	64.84	M	0.0041	0.0045	10	50	
NEtFOSAA	5.86	1.00	2137.13	A	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	1681.95	A	0.6726	0.7870	17	50	
PFDODA	6.08	1.00	21098.75	A	1.0000	1.0000			
PFDODA_2	6.08	1.00	172.67	M	0.0133	0.0082	-39	50	
10:2-FTS	6.10	1.09	884.39	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	804.58	A	0.6969	0.9098	31	50	
PFTrDA	6.28	1.03	16926.65	A	1.0000	1.0000			
PFTrDA_2	6.27	1.03	162.33	M	0.0075	0.0096	27	50	
PFTeDA	6.45	1.00	13246.77	A	1.0000	1.0000			
PFTeDA_2	6.45	1.00	101.20	M	0.0066	0.0076	16	50	
PFHxDA	6.74	1.04	5459.79	A	1.0000	1.0000			
PFHxDA_2	6.74	1.04	430.83	M	0.0616	0.0789	28	50	
PFOA	6.98	1.08	3730.74	A	1.0000	1.0000			
PFOA_2	6.99	1.08	122.88	M	0.0272	0.0329	21	50	

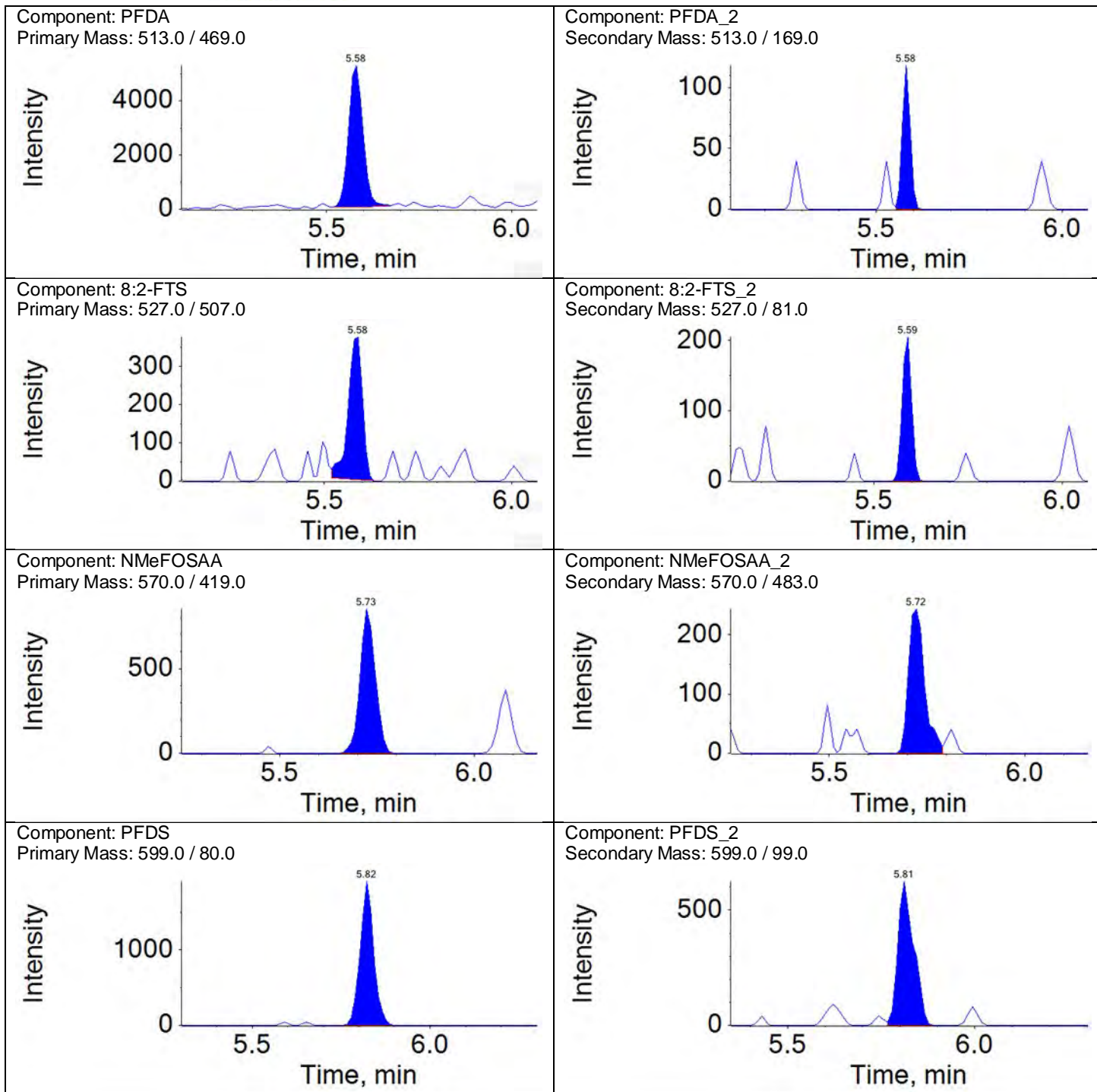




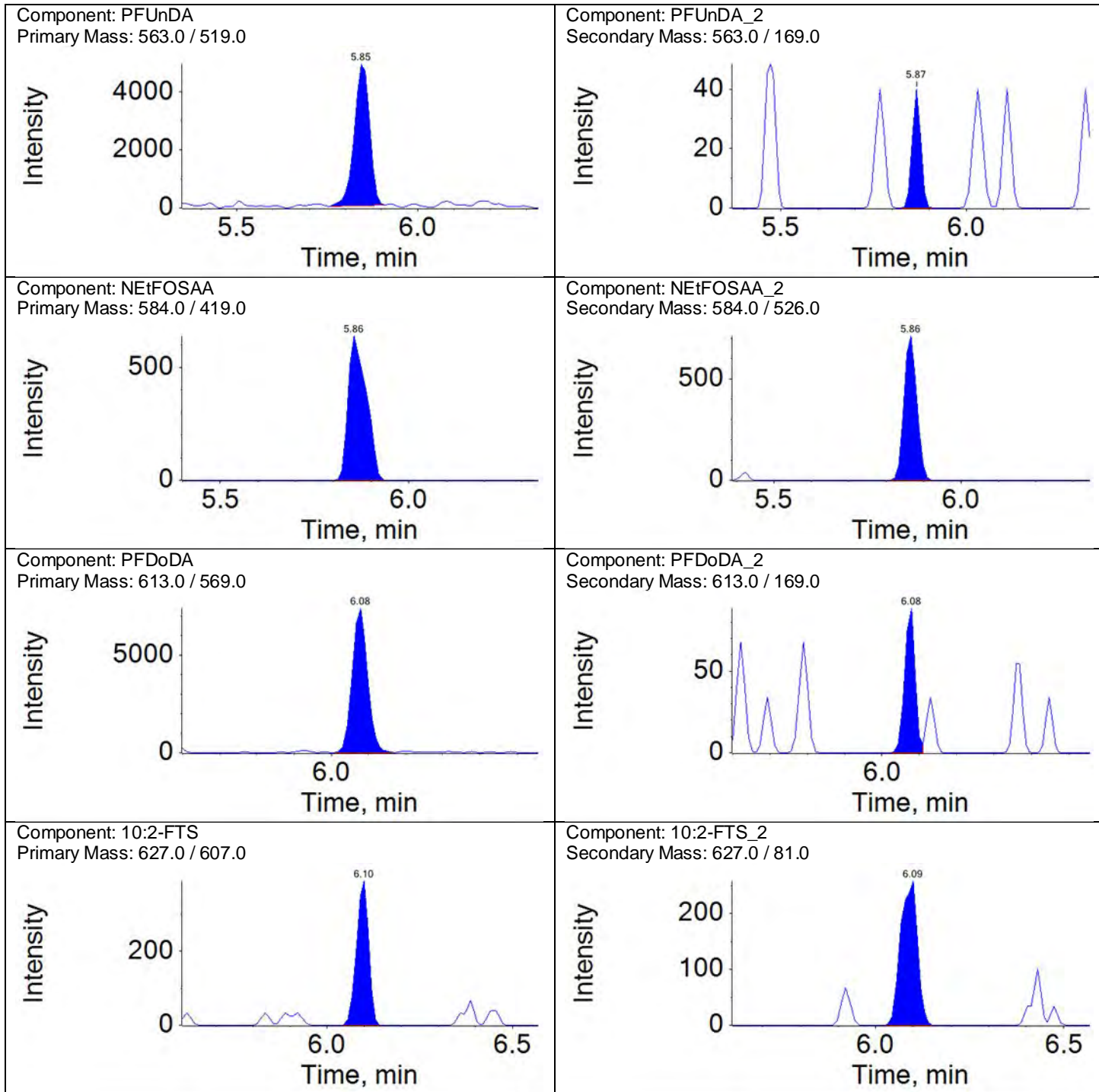




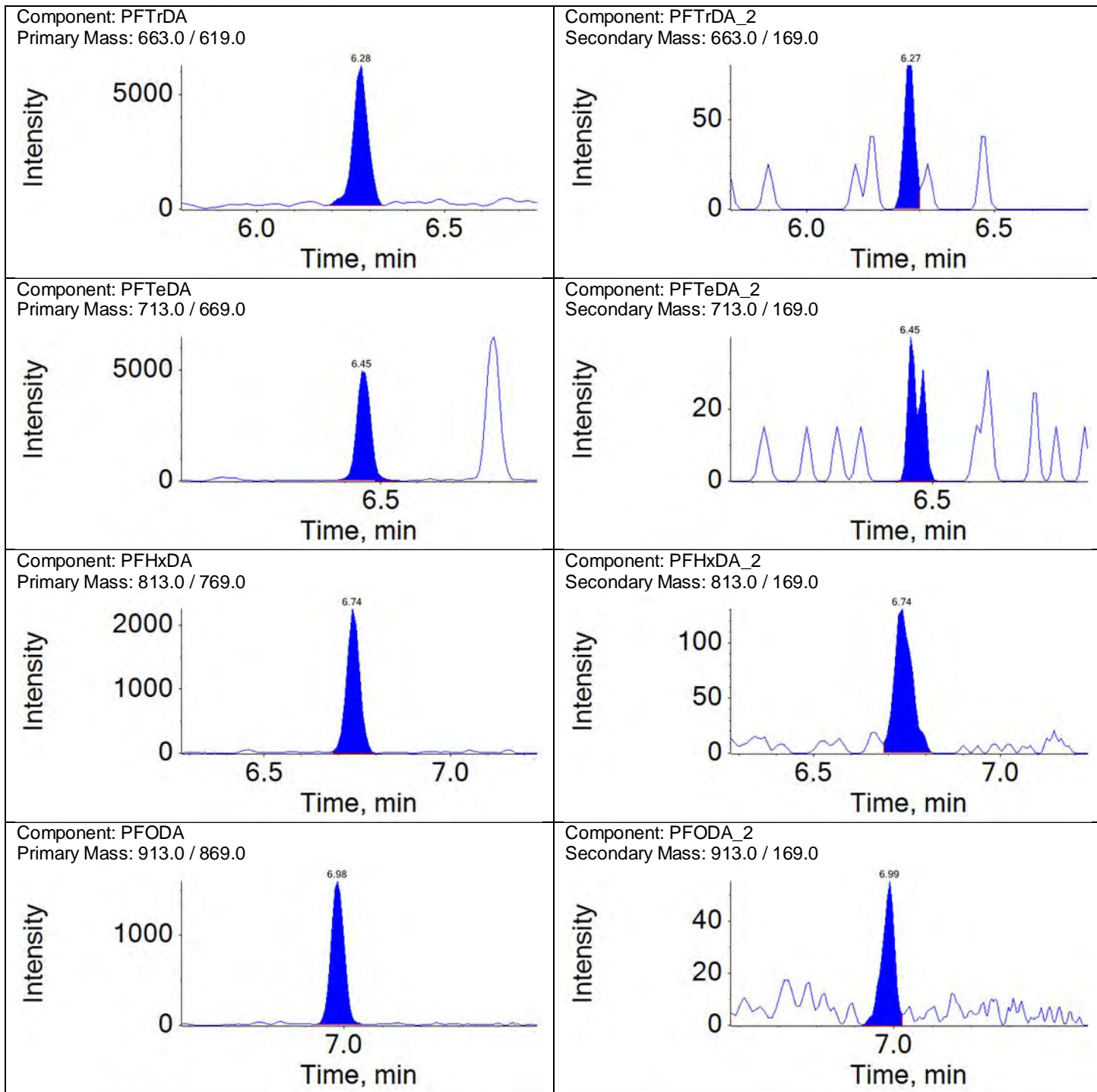












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	Instrument Blank	Data File:	18DEC06DCAL-32.wiff
Sample ID:	methanol + labels	Acquis Date:	2018-12-07T00:40:37
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	1	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	965353.3	825688.9	17	50	
13C2-PFOA	5.0	501345.2	449802.8	11	50	
13C4-PFOS	4.8	333797.5	276858.3	21	50	
13C2-PFDA	5.0	376986.4	315428.3	20	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1052340.0	13C3-PFBA	965353.3	1.090	5.000	4.825	96	70-130	
E13C5-PFPeA	980835.5	13C3-PFBA	965353.3	1.016	5.000	4.826	97	70-130	
E13C3-PFBS	467385.4	13C3-PFBA	965353.3	0.484	4.650	4.104	88	70-130	
E13C2-4:2-FTS	66601.8	13C2-PFOA	501345.2	0.133	4.670	5.205	111	70-130	
E13C5-PFHxA	734638.7	13C2-PFOA	501345.2	1.465	5.000	4.920	98	70-130	
E13C3-PFHxS	376775.1	13C2-PFOA	501345.2	0.752	4.730	4.820	102	70-130	
E13C4-PFHpA	568544.0	13C2-PFOA	501345.2	1.134	5.000	4.821	96	70-130	
E13C2-6:2-FTS	46582.6	13C2-PFOA	501345.2	0.093	4.750	5.756	121	70-130	
E13C8-PFOA	943293.5	13C2-PFOA	501345.2	1.882	5.000	5.319	106	70-130	
E13C8-PFOS	344947.2	13C4-PFOS	333797.5	1.033	4.780	4.638	97	70-130	
E13C9-PFNA	544328.1	13C4-PFOS	333797.5	1.631	5.000	4.608	92	70-130	
E13C6-PFDA	705816.3	13C2-PFDA	376986.4	1.872	5.000	4.961	99	70-130	
E13C2-8:2-FTS	28916.1	13C2-PFDA	376986.4	0.077	4.790	5.008	105	70-130	
E13C8-PFOA	771390.5	13C2-PFDA	376986.4	2.046	5.000	4.839	97	70-130	
Ed3-NMeFOSAA	117345.7	13C2-PFDA	376986.4	0.311	5.000	5.516	110	70-130	
E13C7-PFUnDA	385077.2	13C2-PFDA	376986.4	1.021	5.000	5.011	100	70-130	
Ed5-NEtFOSAA	78461.4	13C2-PFDA	376986.4	0.208	5.000	4.594	92	70-130	
E13C2-PFDoDA	860769.4	13C2-PFDA	376986.4	2.283	5.000	4.792	96	70-130	
Ed7-NMePFOSAE	308677.0	13C2-PFDA	376986.4	0.819	5.000	4.717	94	70-130	
Ed3-NMePFOSA	96489.2	13C2-PFDA	376986.4	0.256	5.000	4.664	93	70-130	
Ed9-NEtPFOSAE	261907.7	13C2-PFDA	376986.4	0.695	5.000	4.791	96	70-130	
Ed5-NEtPFOSA	82337.2	13C2-PFDA	376986.4	0.218	5.000	4.915	98	70-130	
E13C2-PFTeDA	599932.4	13C2-PFDA	376986.4	1.591	5.000	4.723	94	70-130	



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

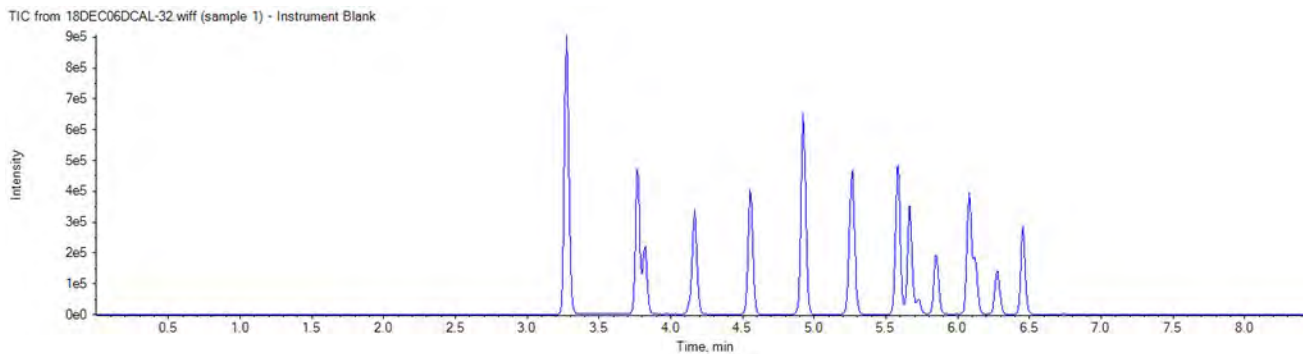
**Analyte Quantitation Peak Table**

Sample Name: Instrument Blank      Instrument Name: LM27631      File Name: 18DEC06DCAL-32.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	N/A	N/A	N/A		A	13C4-PFBA	3.27	1052340.0	N/A	
PFPeA	N/A	N/A	N/A		A	13C5-PFPeA	3.77	980835.5	N/A	
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.82	467385.4	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.13	66601.8	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.17	734638.7	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.82	467385.4	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.55	568544.0	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.56	376775.1	N/A	
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.91	46582.6	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.56	376775.1	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.92	943293.5	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.25	344947.2	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.27	544328.1	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.25	344947.2	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.58	705816.3	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.59	28916.1	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.67	771390.5	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.73	117345.7	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.25	344947.2	N/A	
PfUnDA	N/A	N/A	N/A		A	13C7-PfUnDA	5.85	385077.2	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.86	78461.4	N/A	
PFDODA	N/A	N/A	N/A		A	13C2-PFDODA	6.08	860769.4	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.59	28916.1	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.12	308677.0	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.13	96489.2	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.25	344947.2	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.27	261907.7	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.29	82337.2	N/A	
PFTrDA	N/A	N/A	N/A		A	13C2-PFDODA	6.08	860769.4	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	599932.4	N/A	
PFHxDA	6.74	1.040	3753.2		A	13C2-PFTeDA	6.45	599932.4	0.006	0.078
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	599932.4	N/A	

**Total Ion Chromatogram**

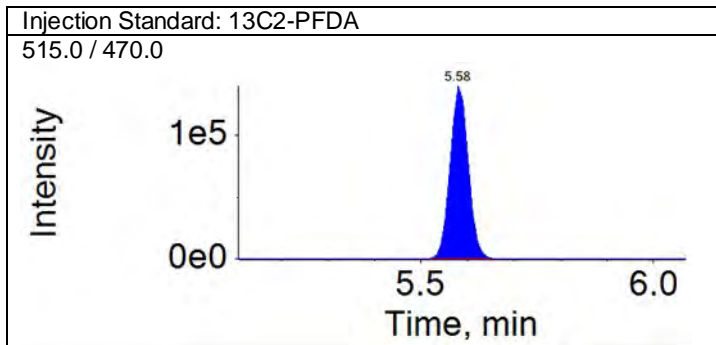
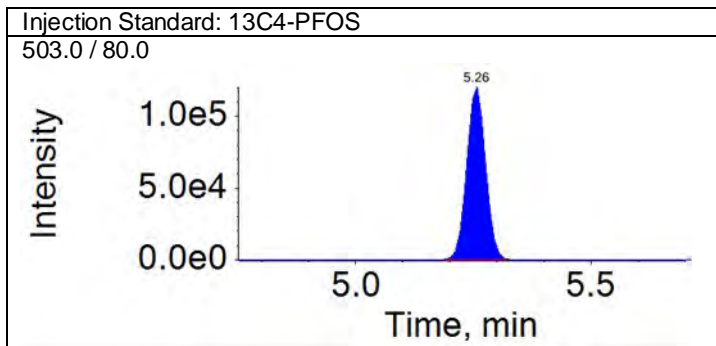
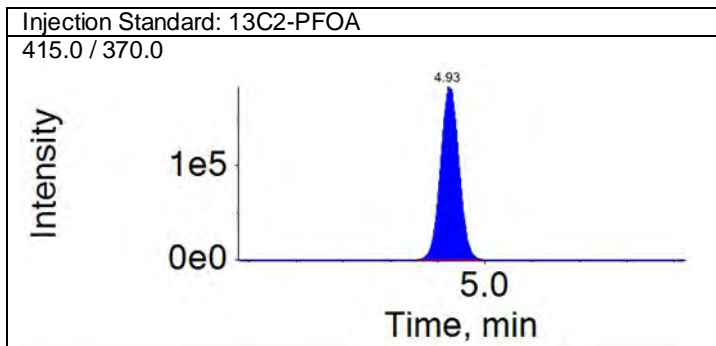
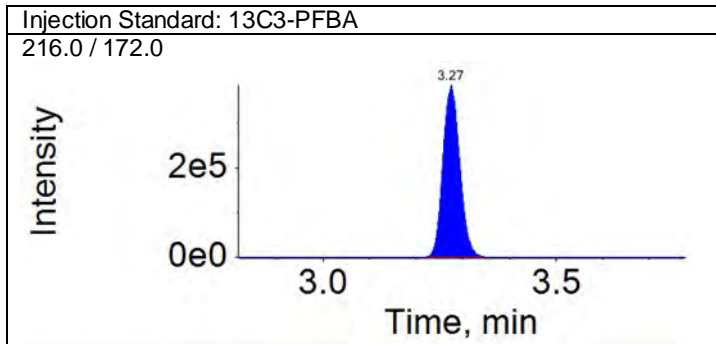


**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

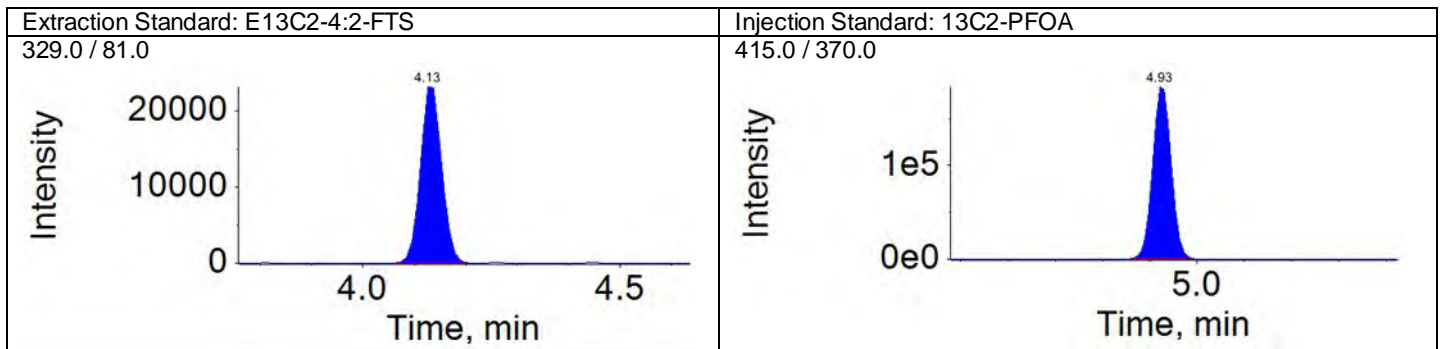
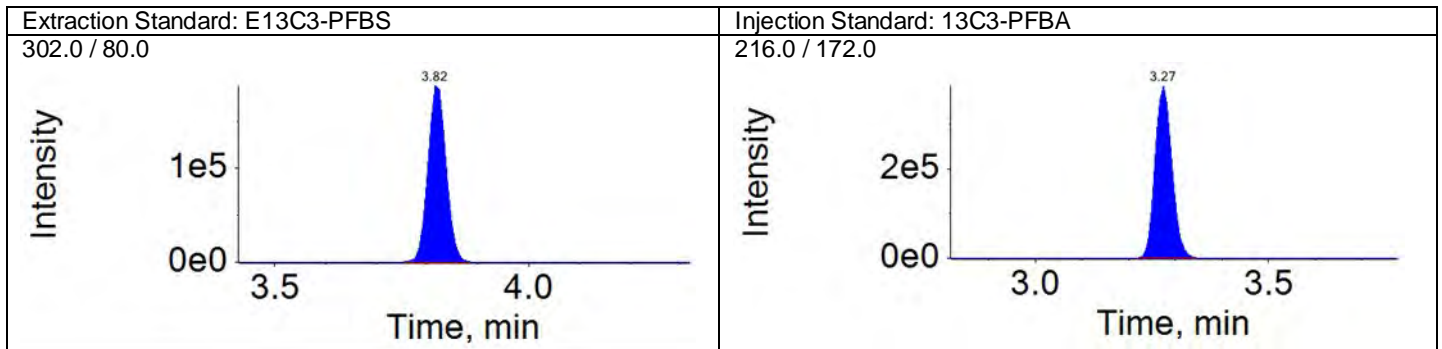
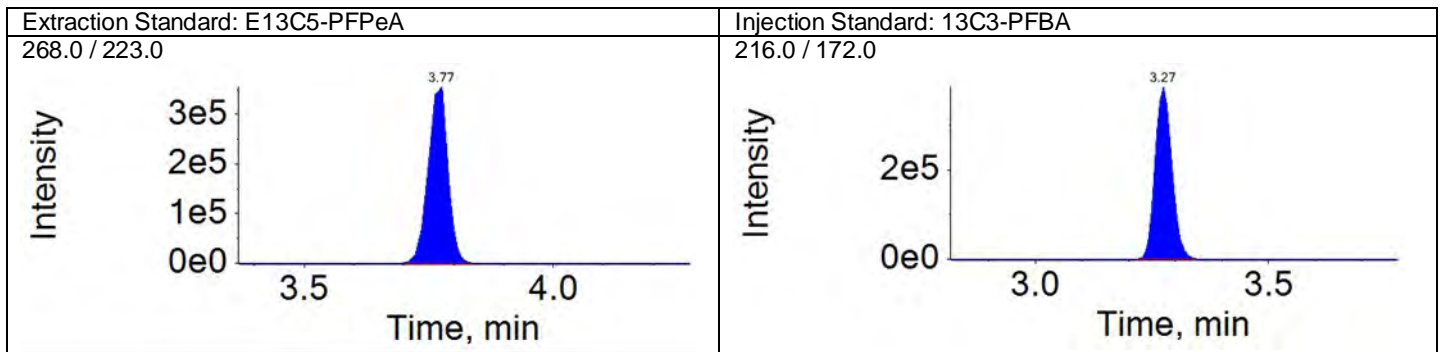
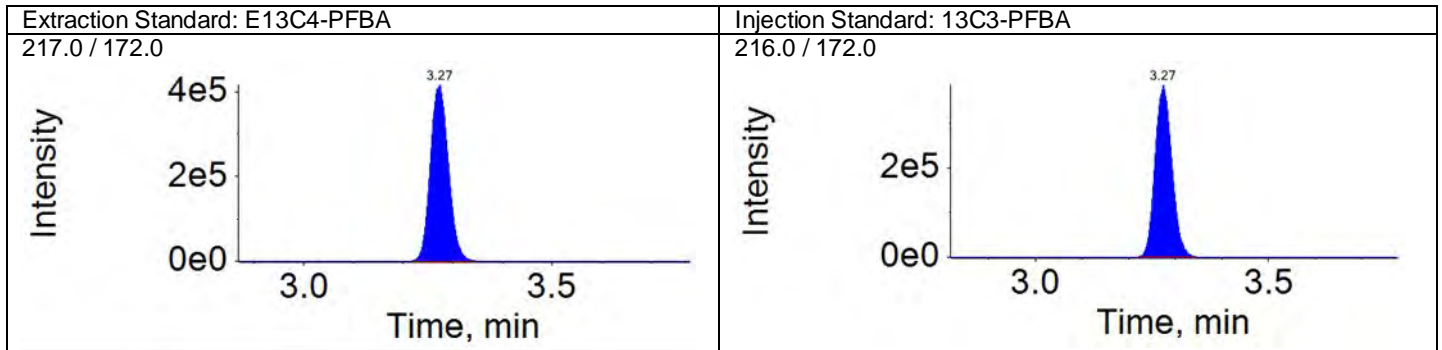
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



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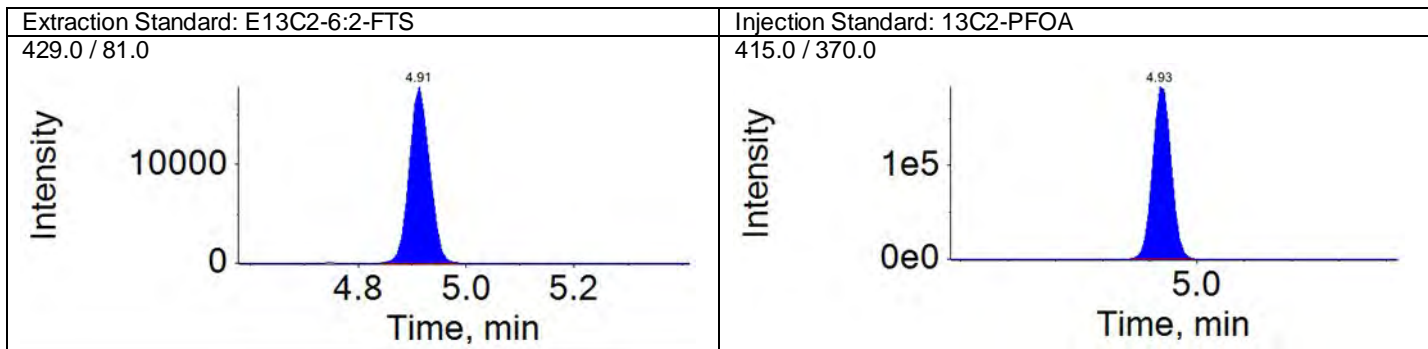
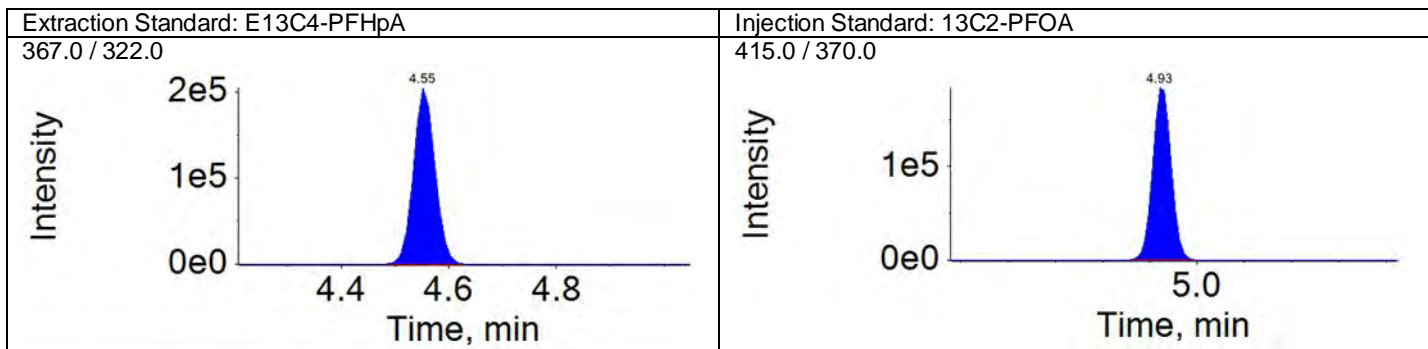
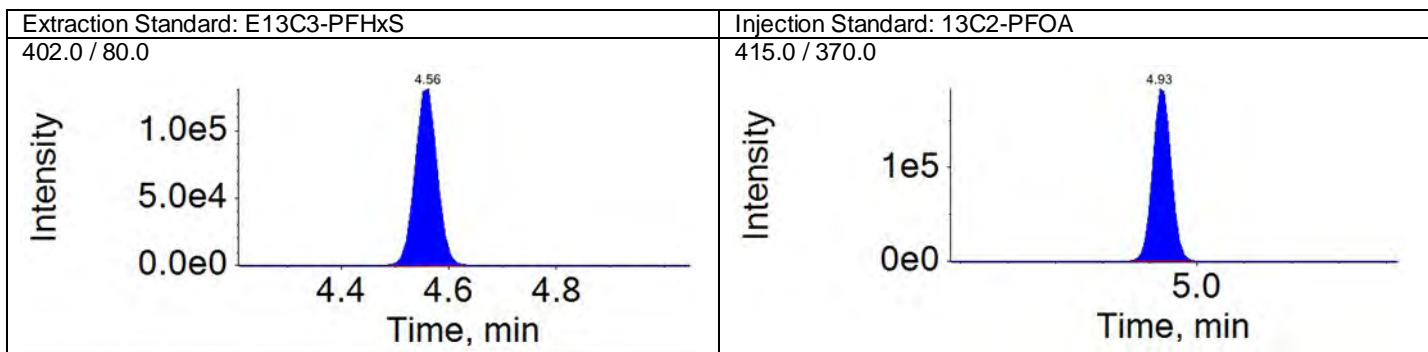
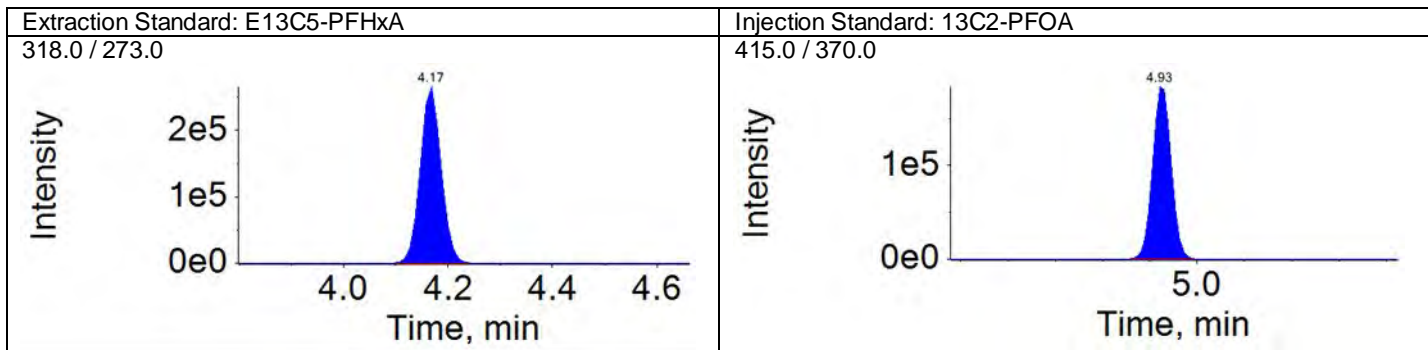
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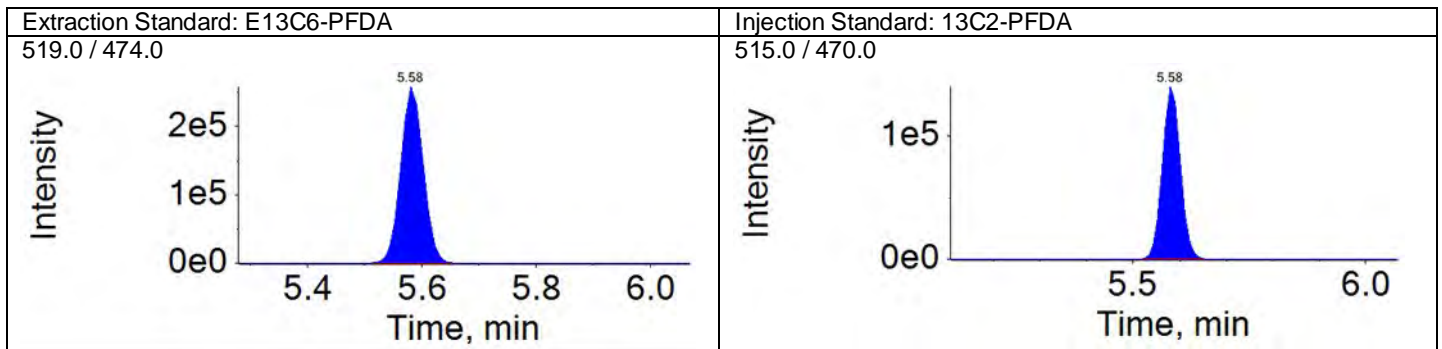
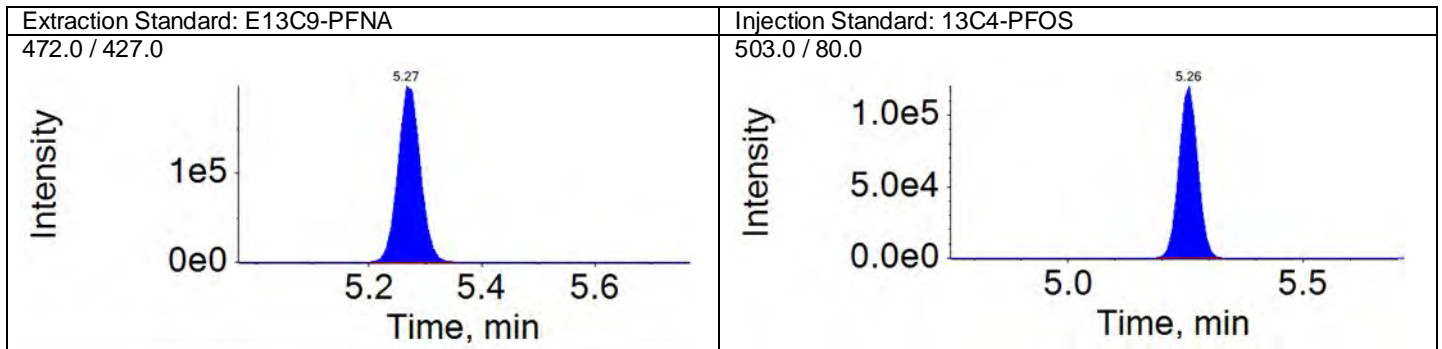
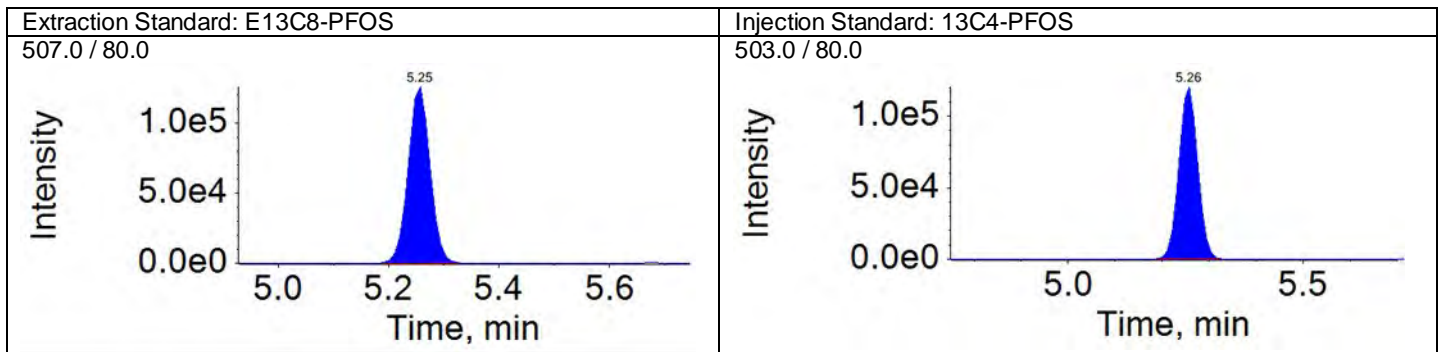
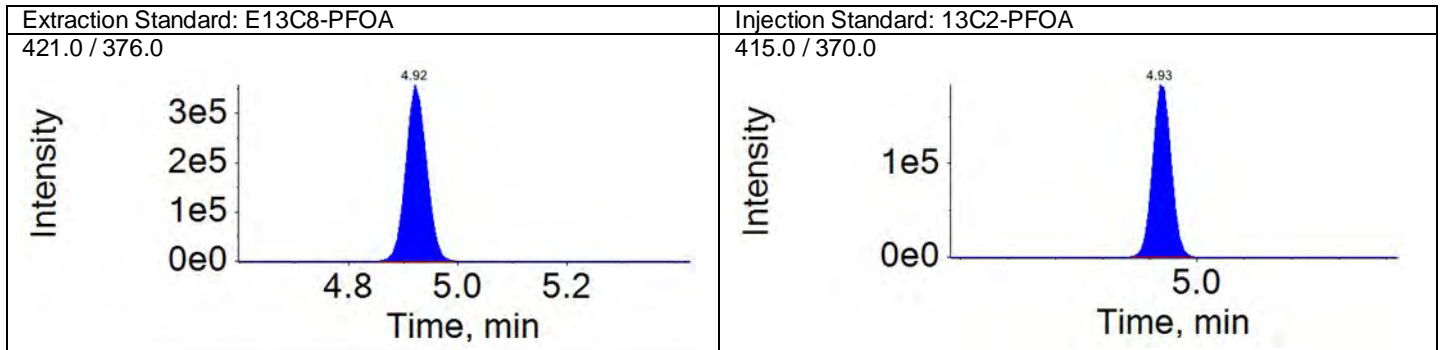
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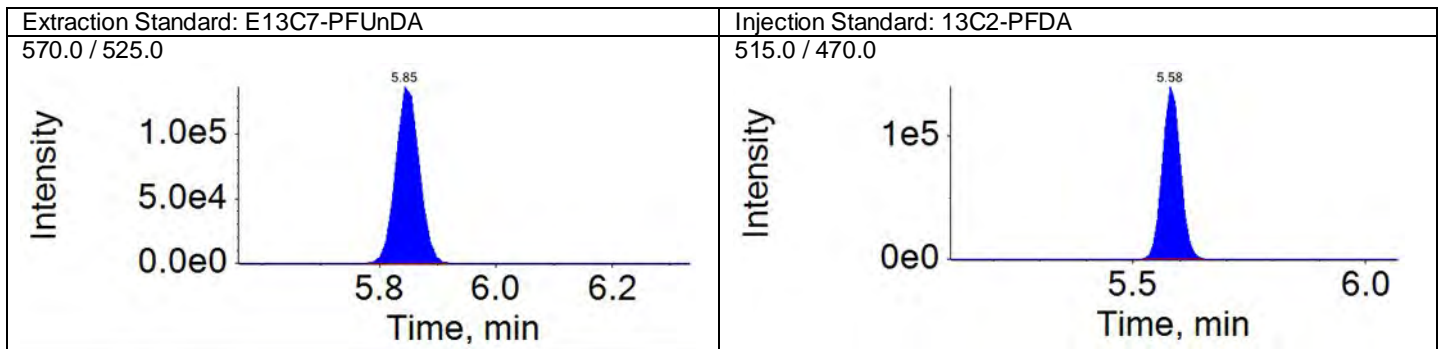
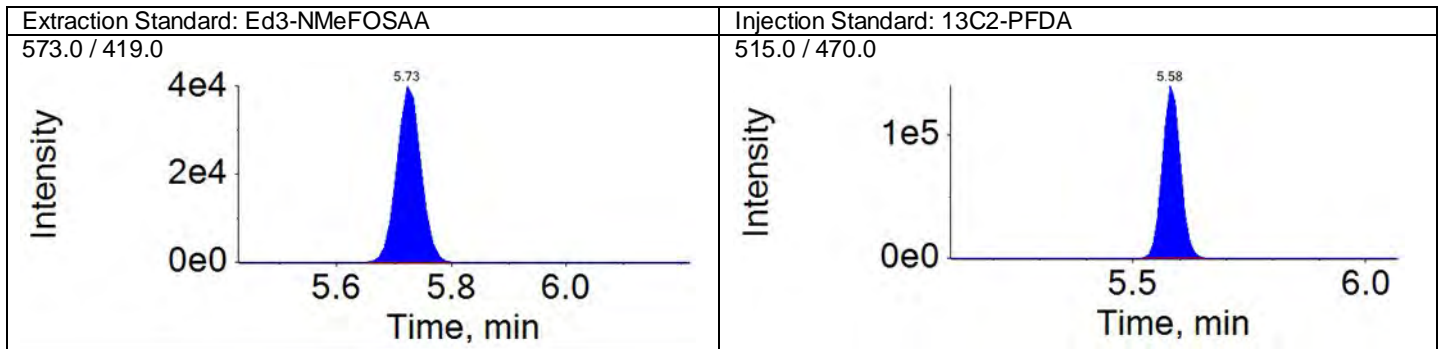
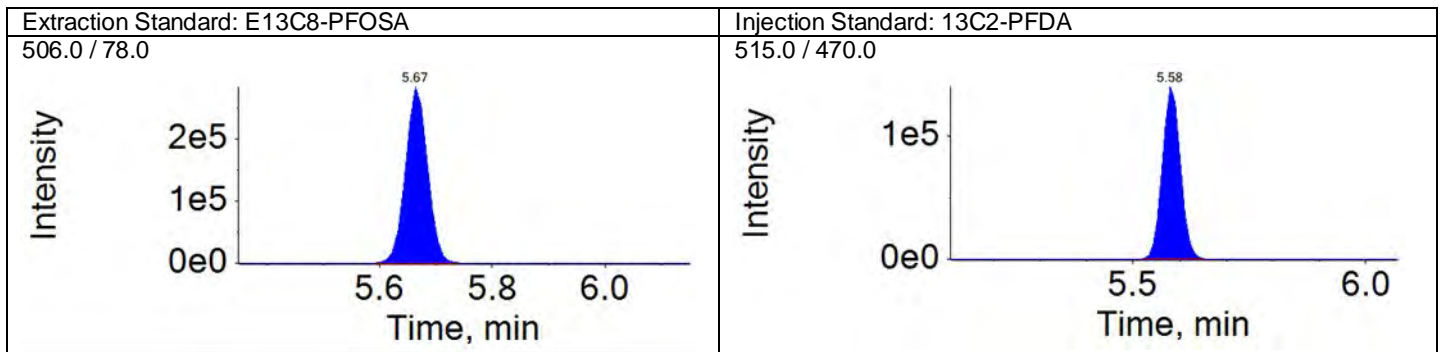
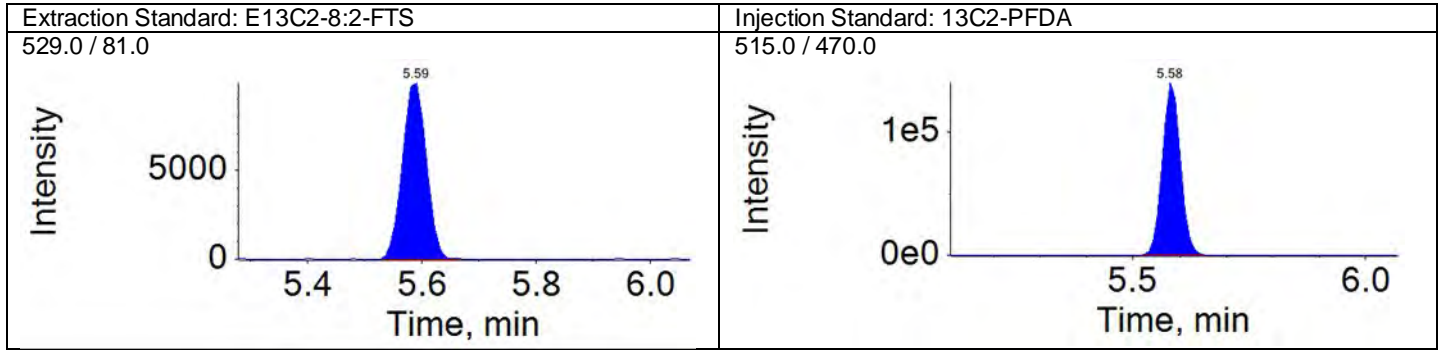
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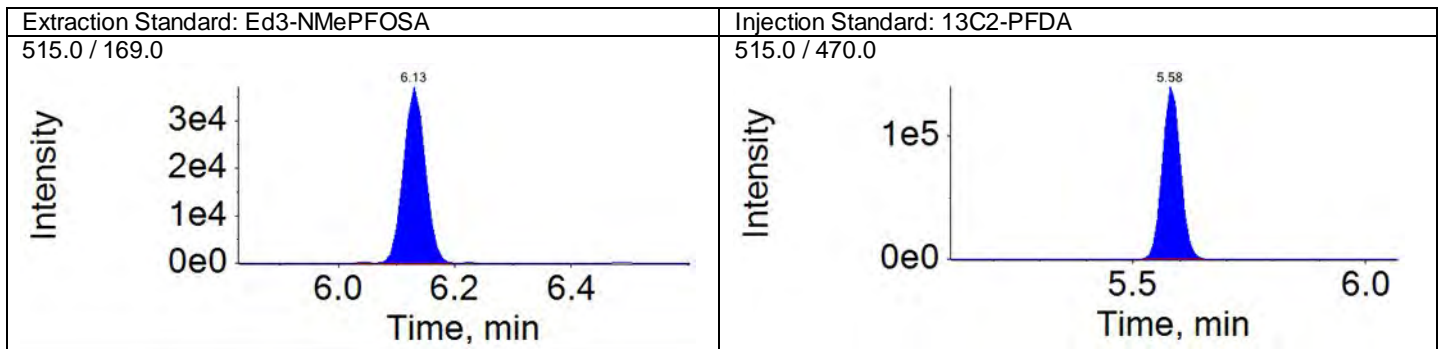
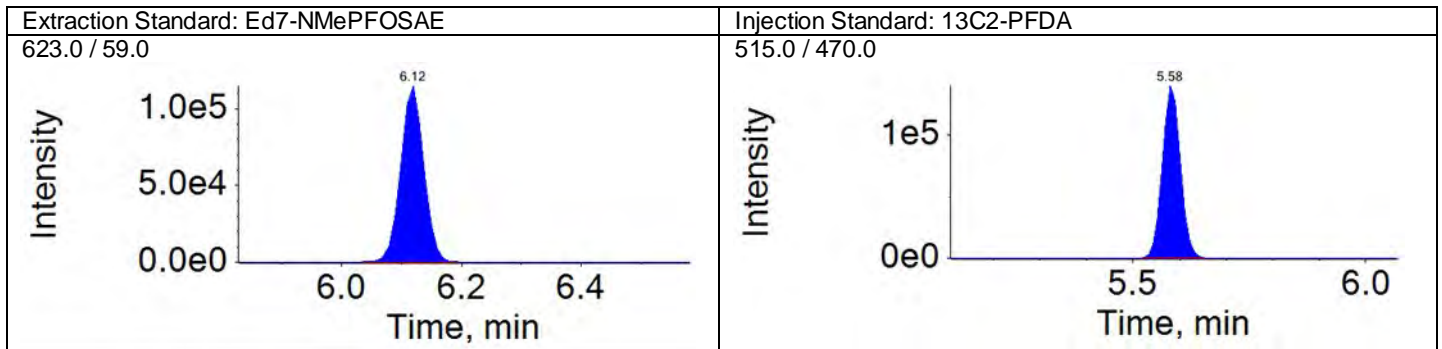
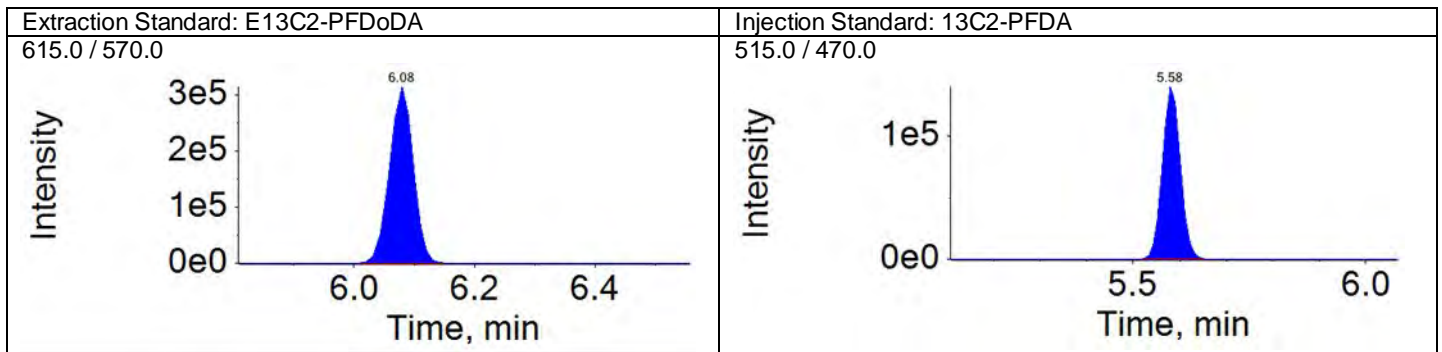
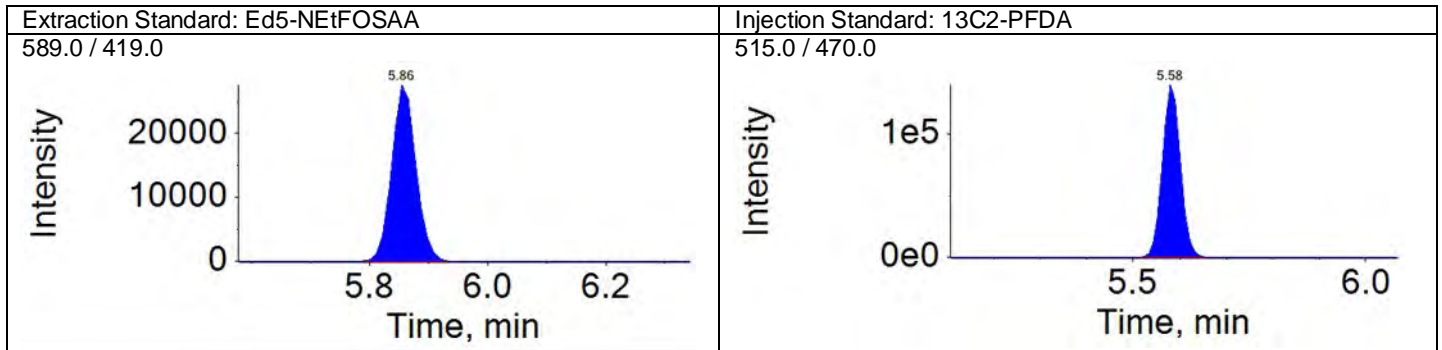
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

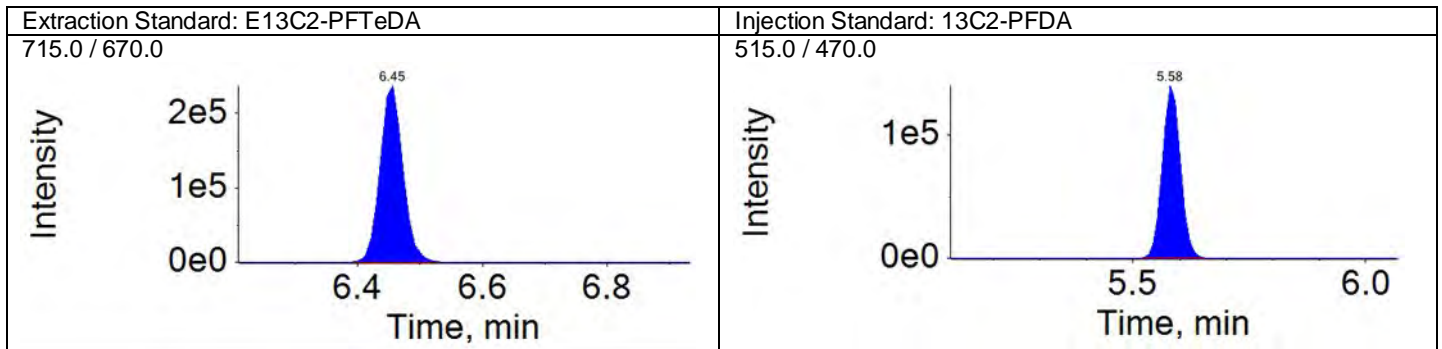
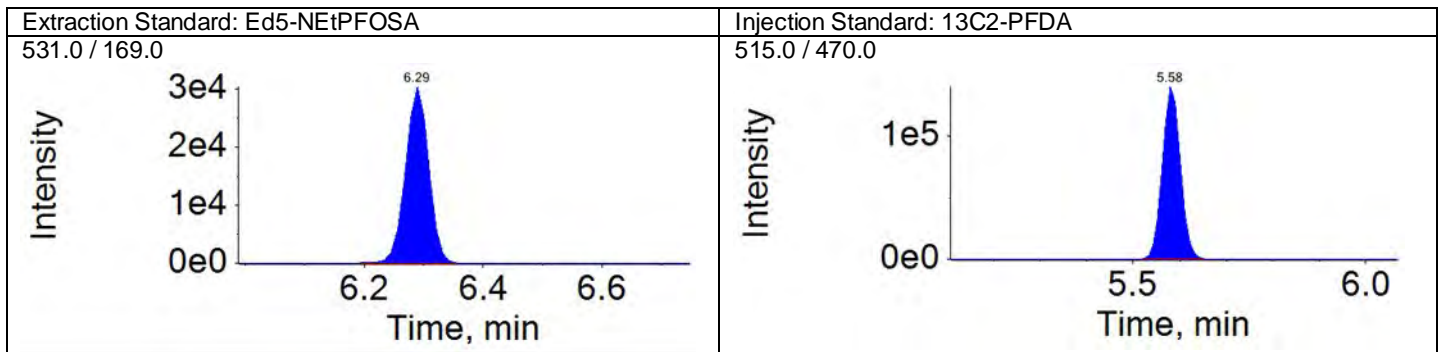
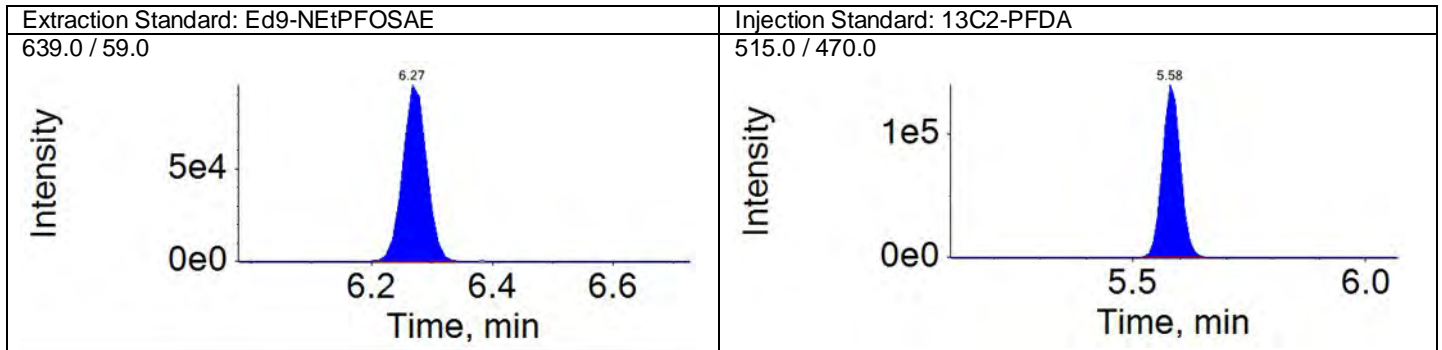
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ICAL Name: 18DEC06DCAL  
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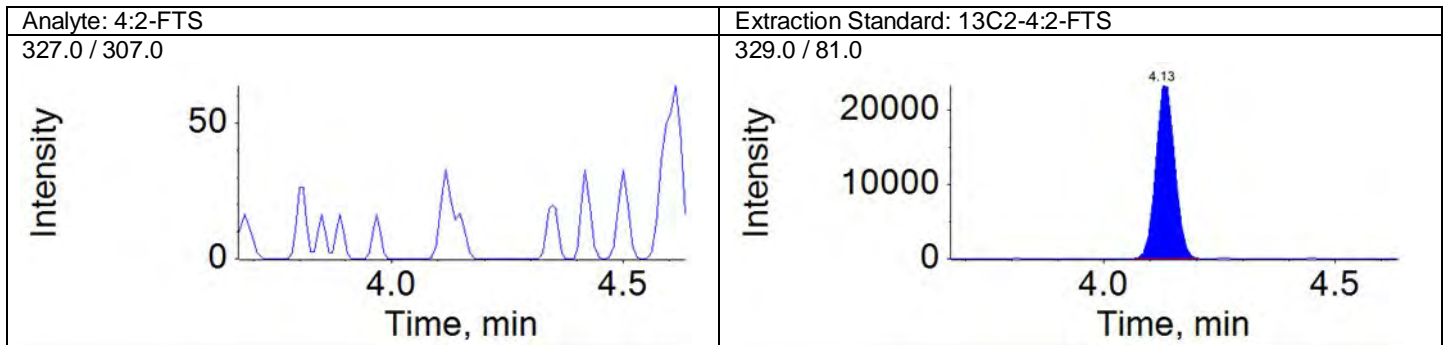
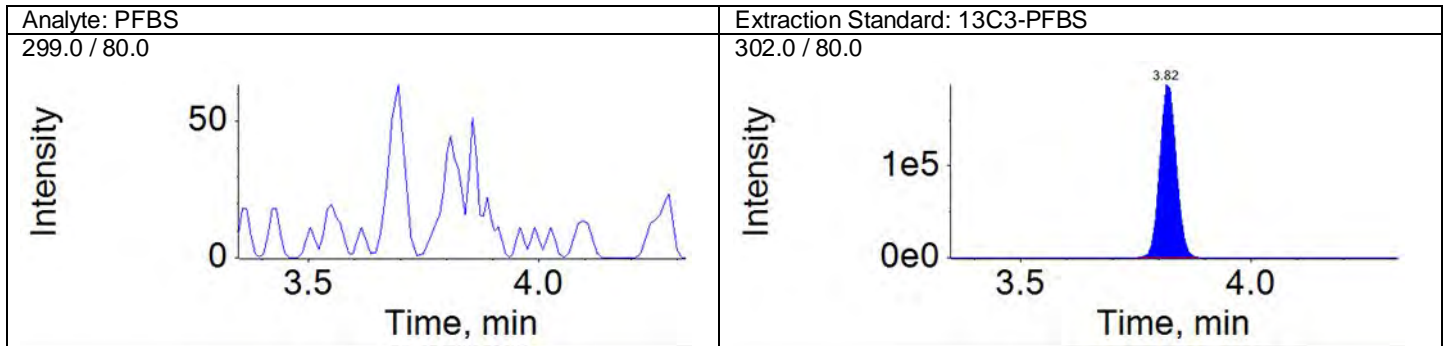
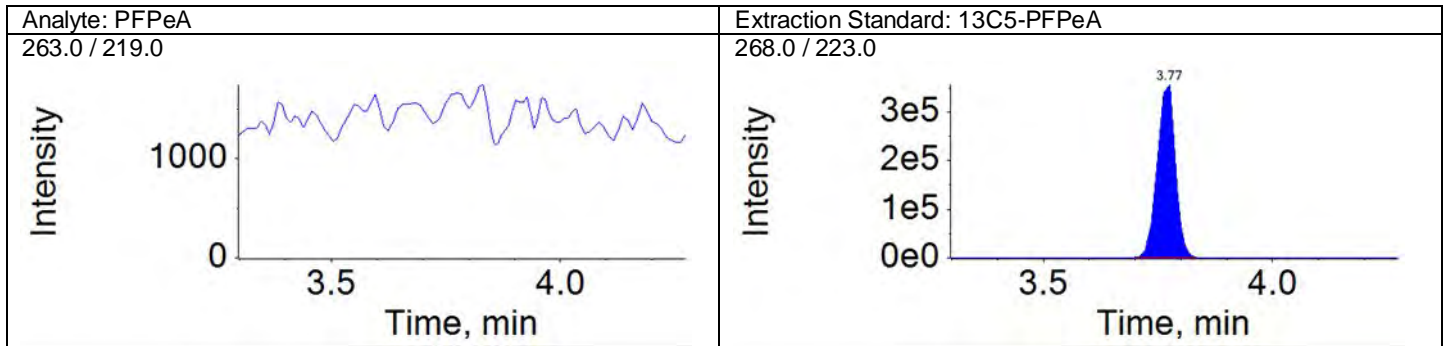
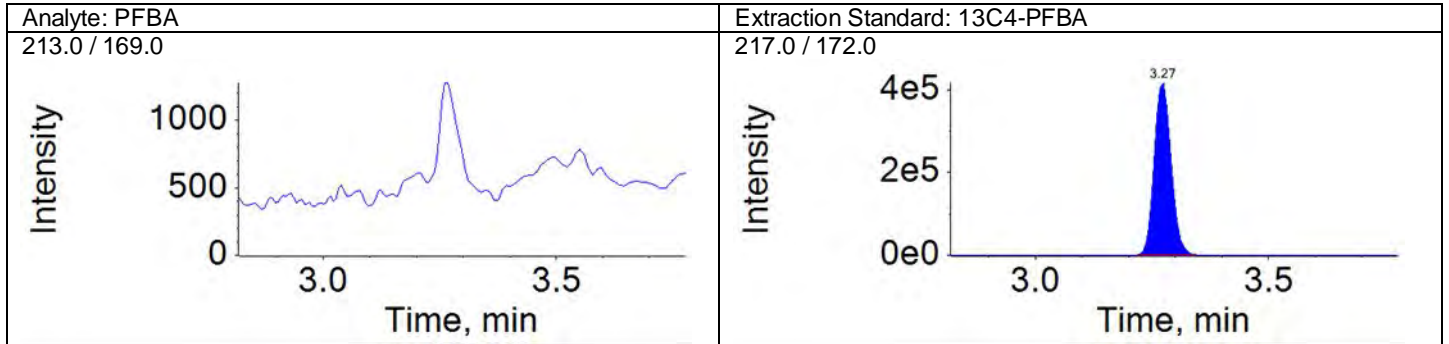
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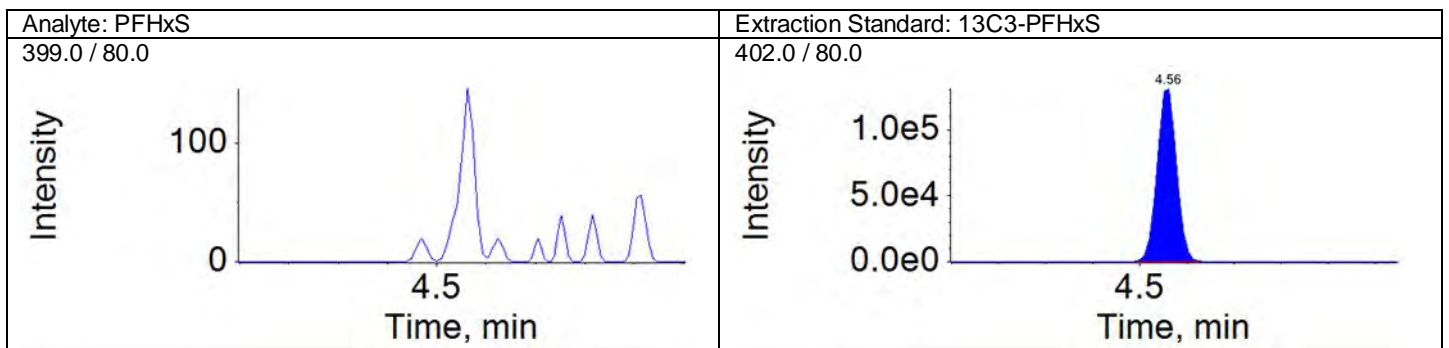
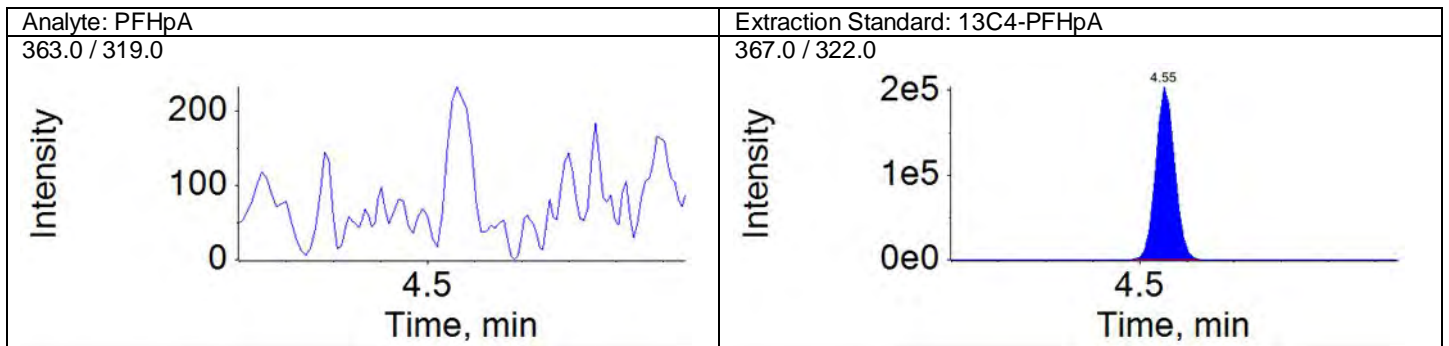
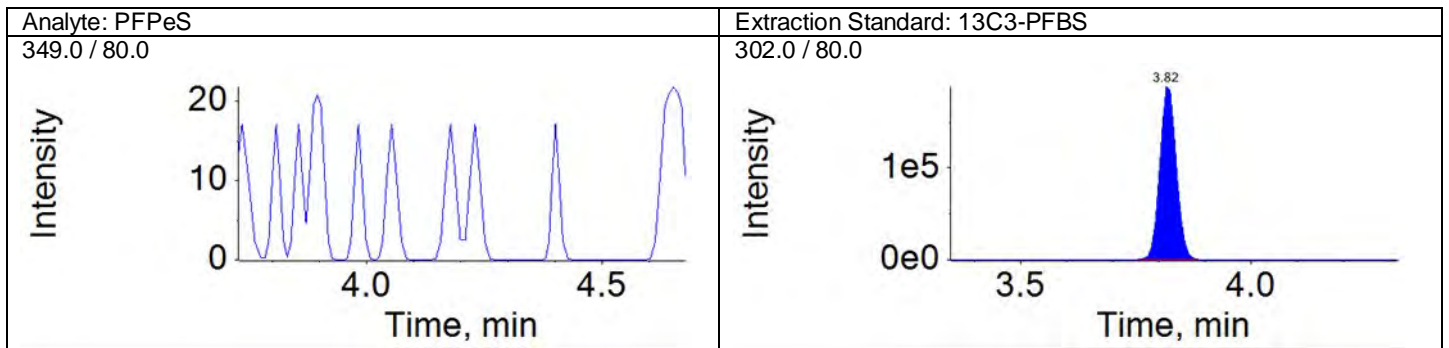
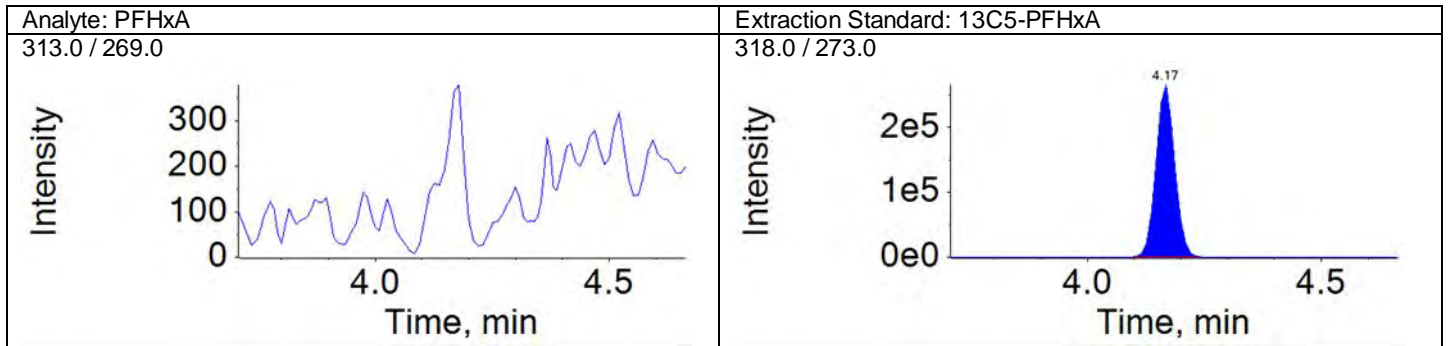
ICAL Name: 18DEC06DCAL  
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
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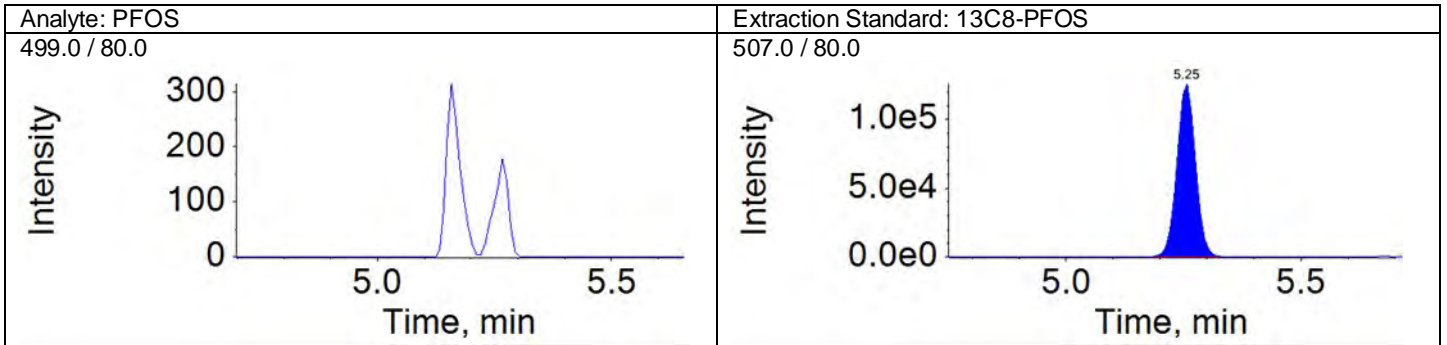
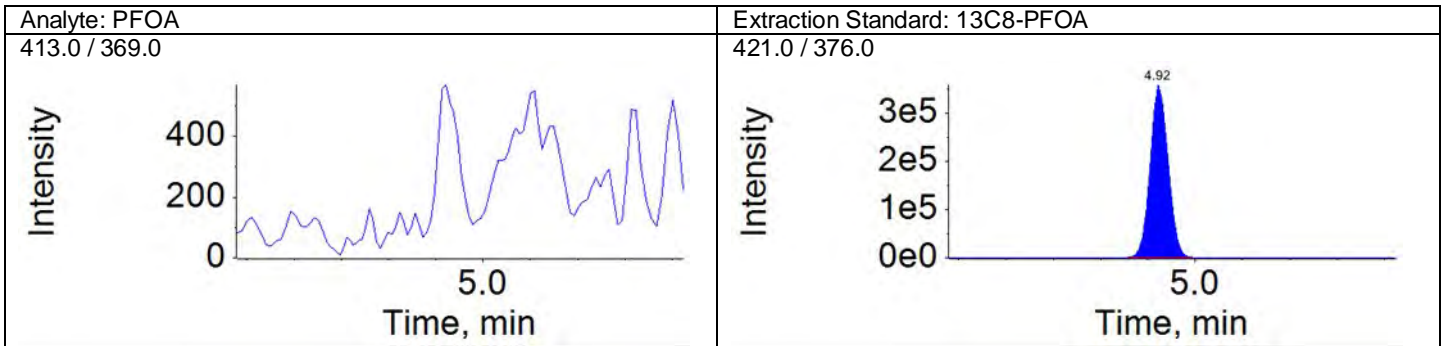
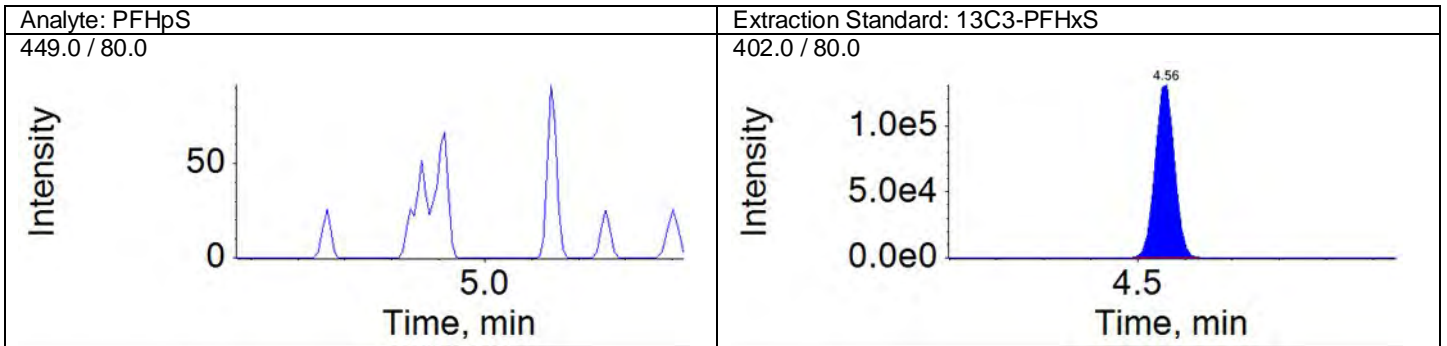
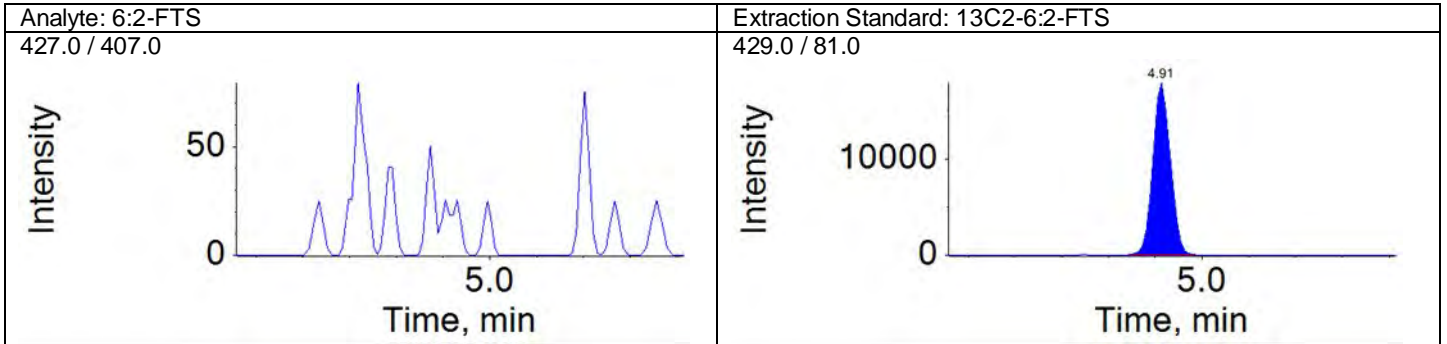
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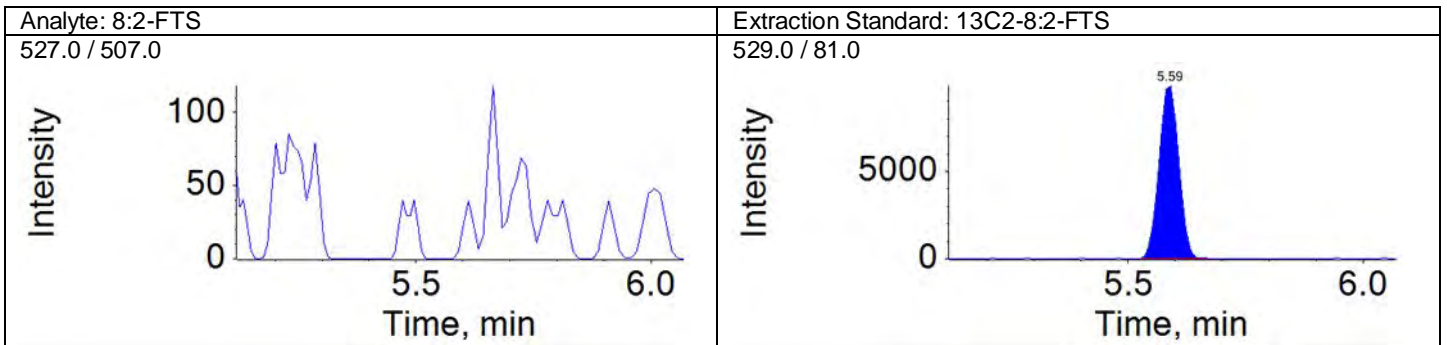
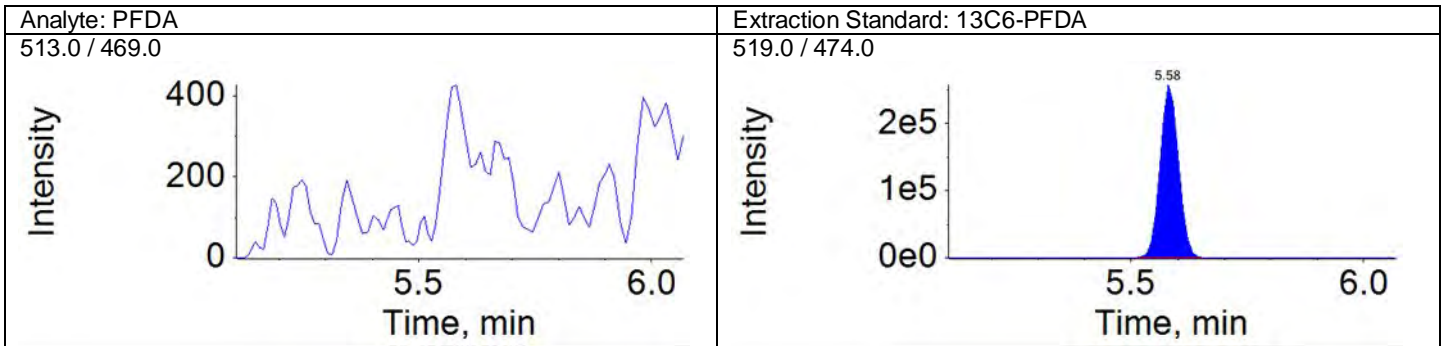
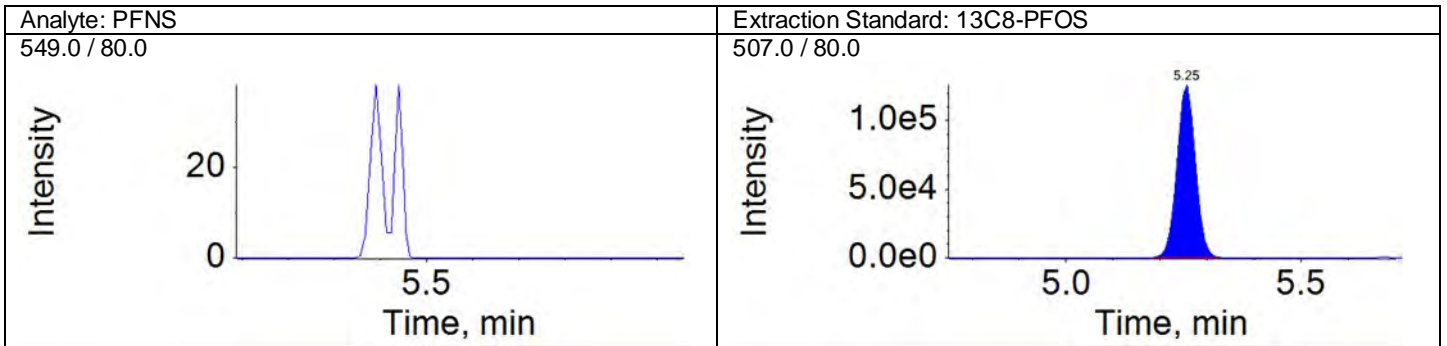
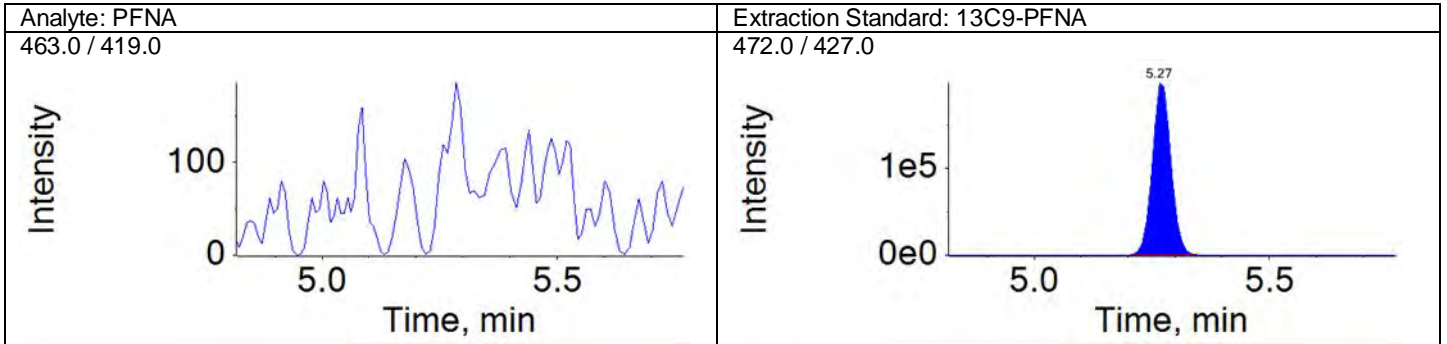
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

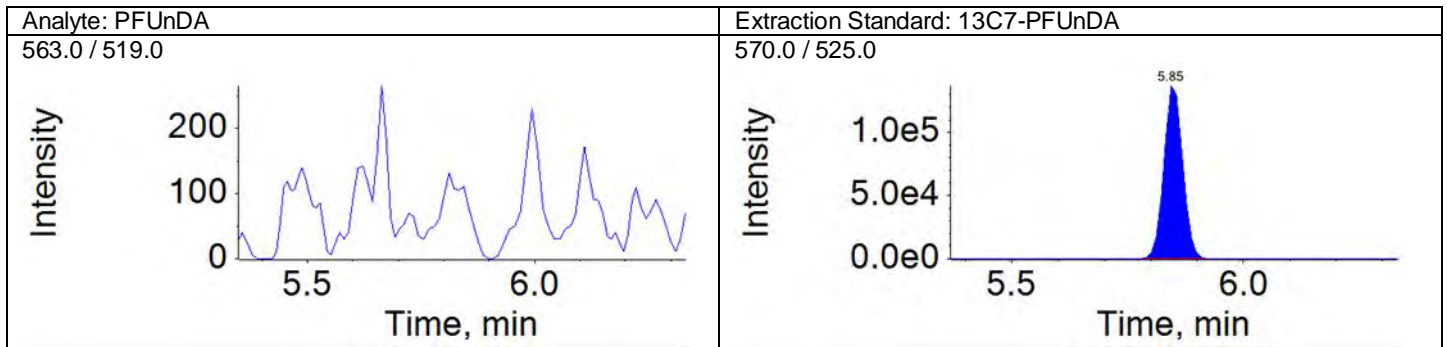
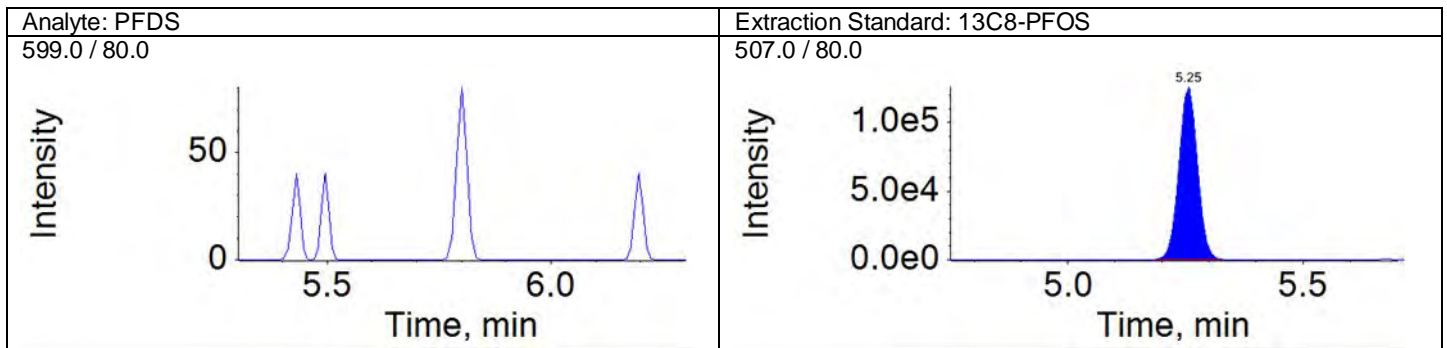
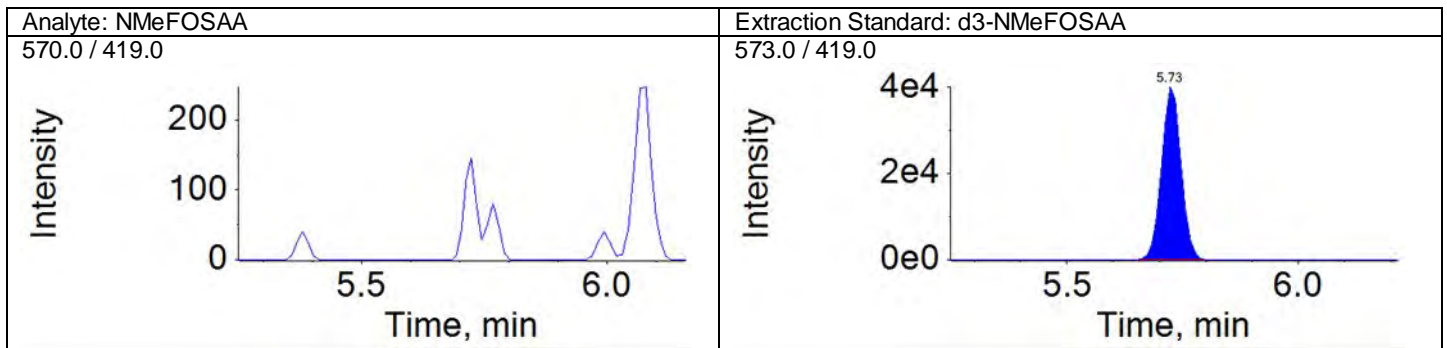
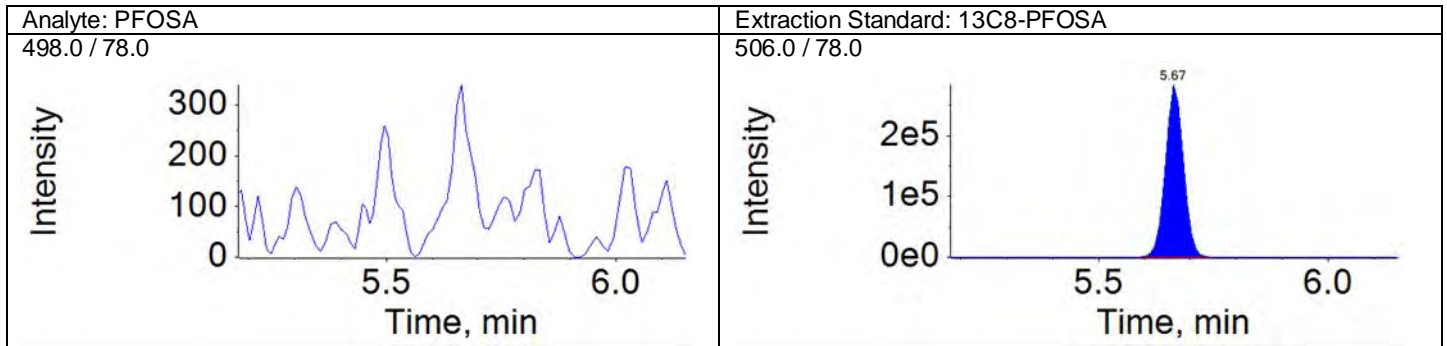
Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

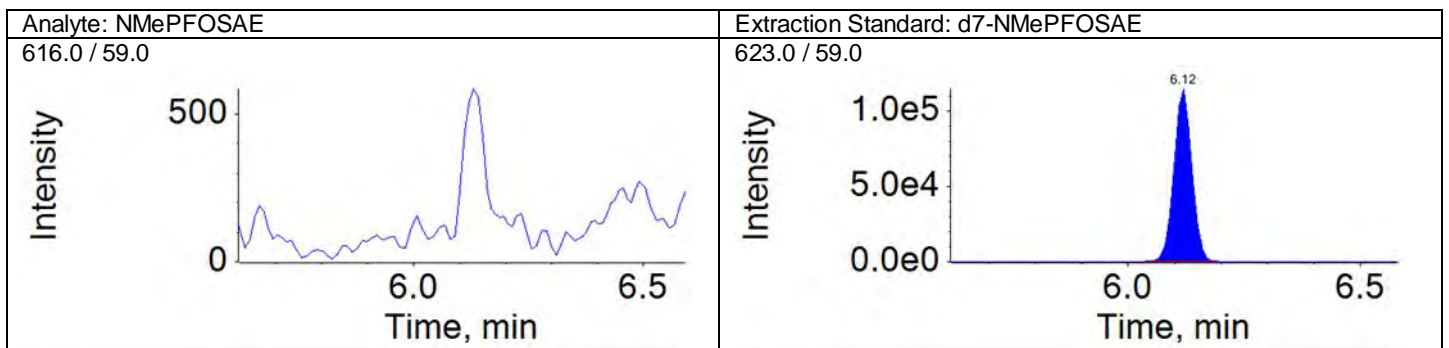
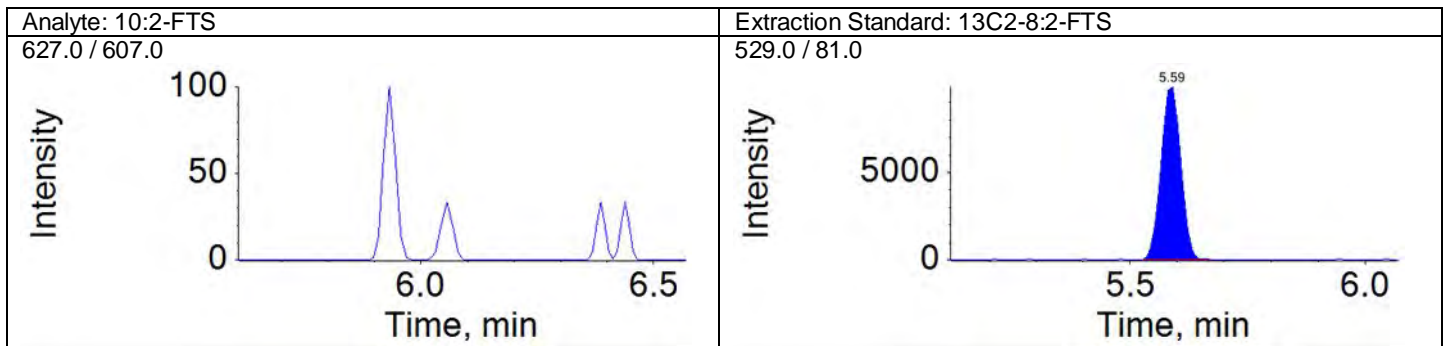
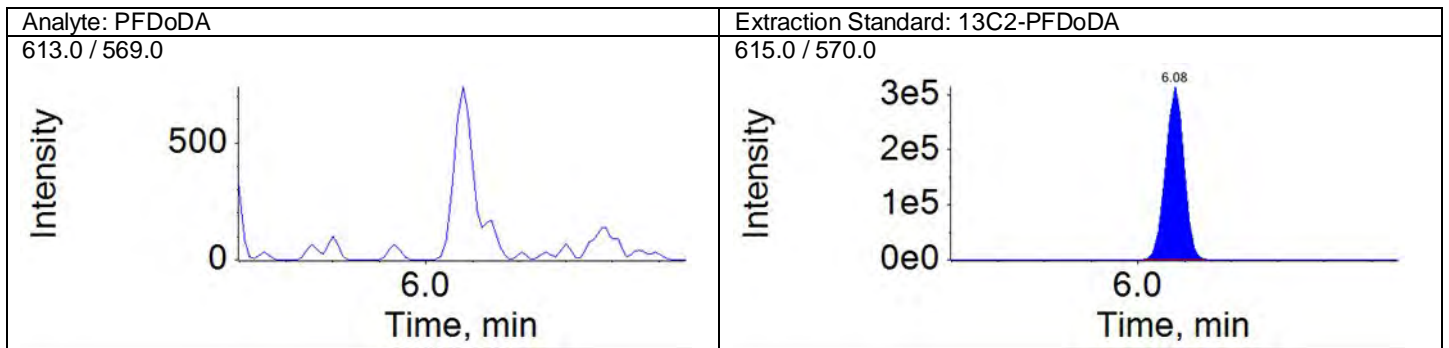
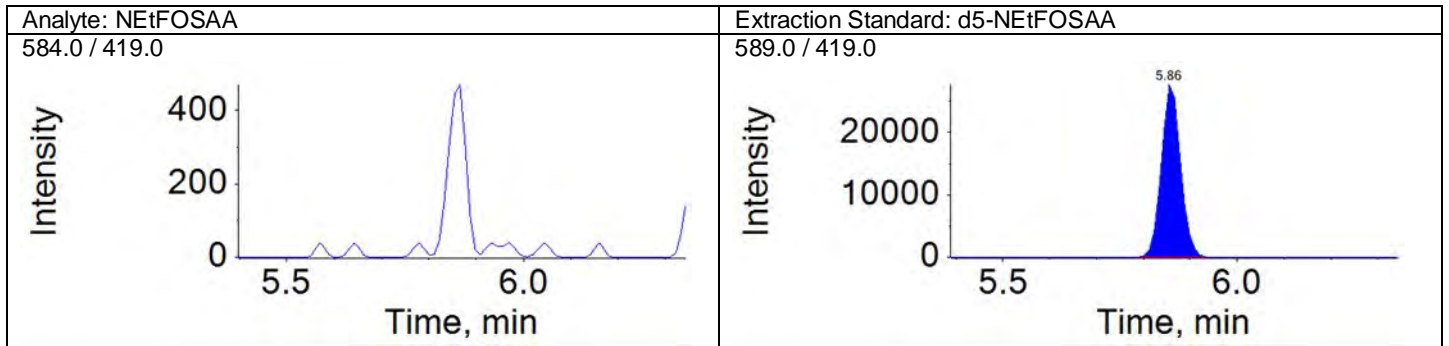
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Acquisition Method: 18AUG13\_3uL.dam





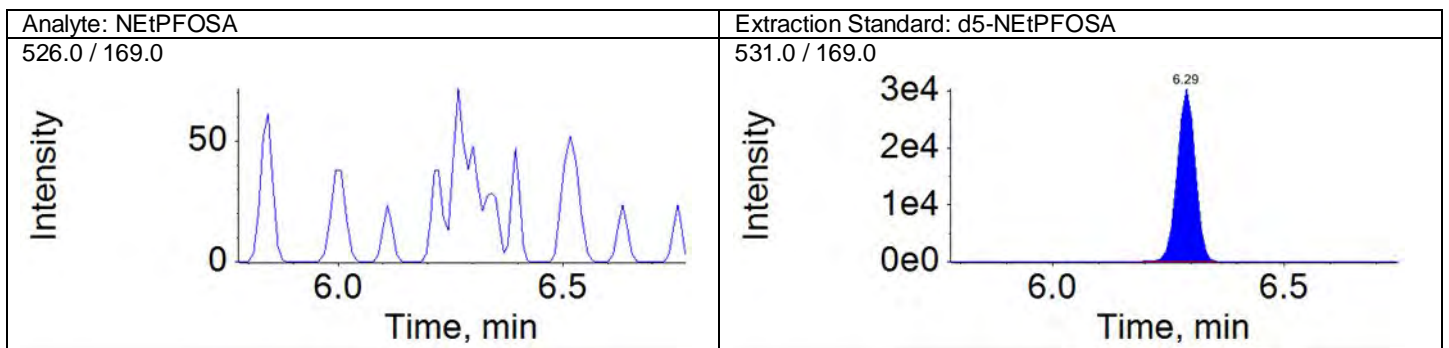
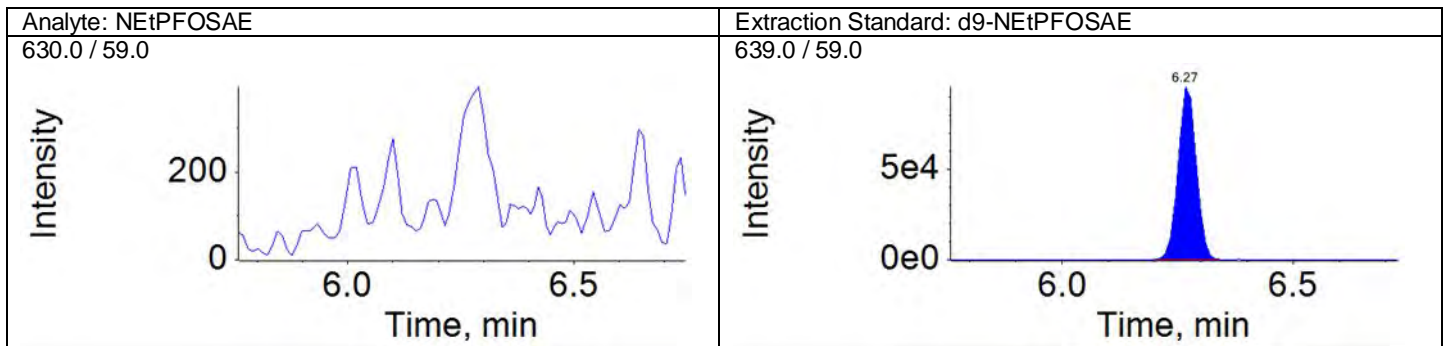
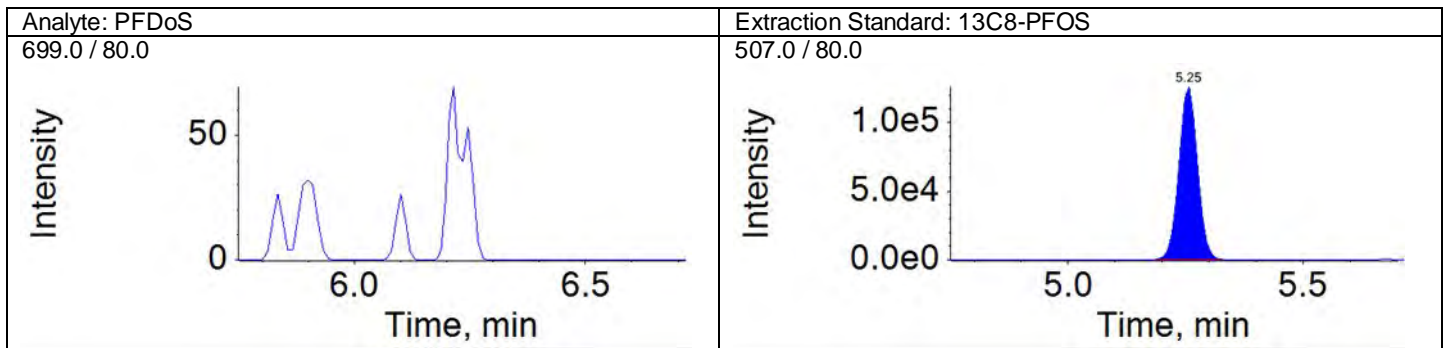
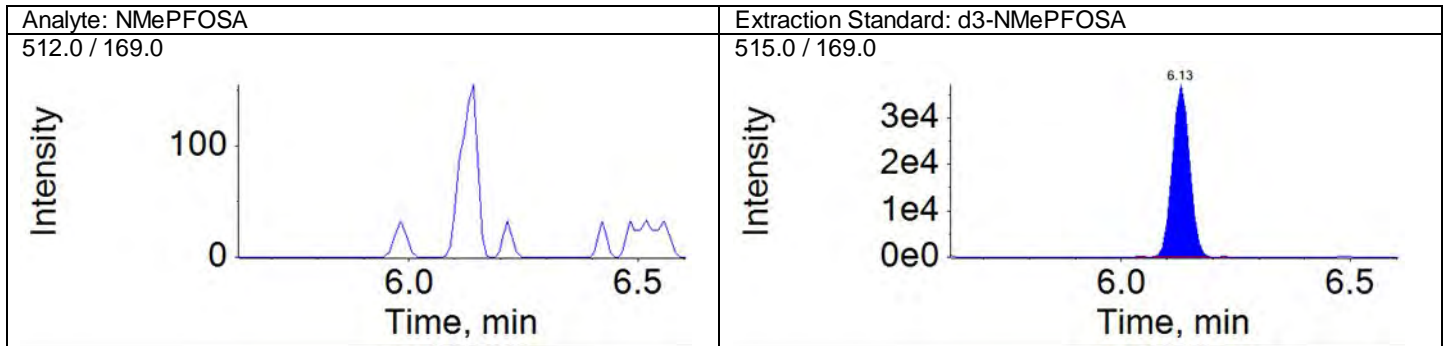
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



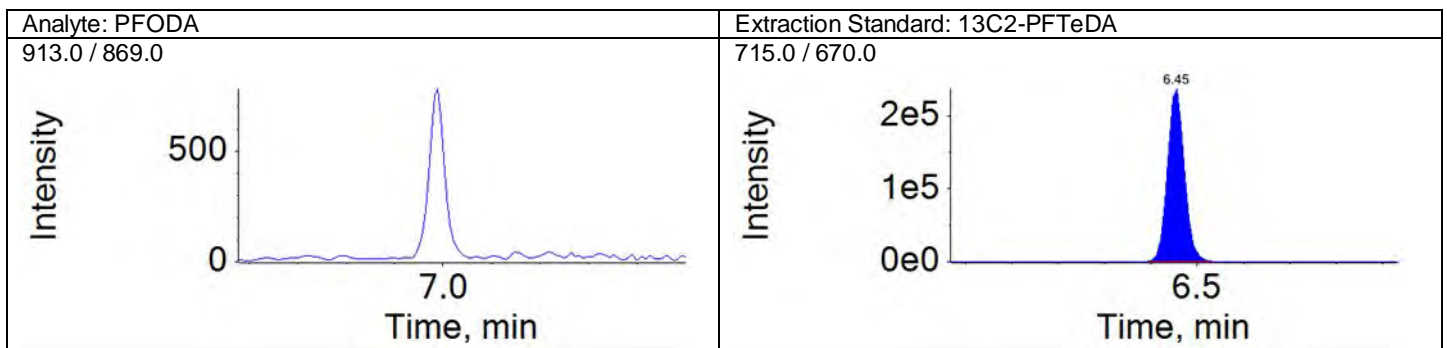
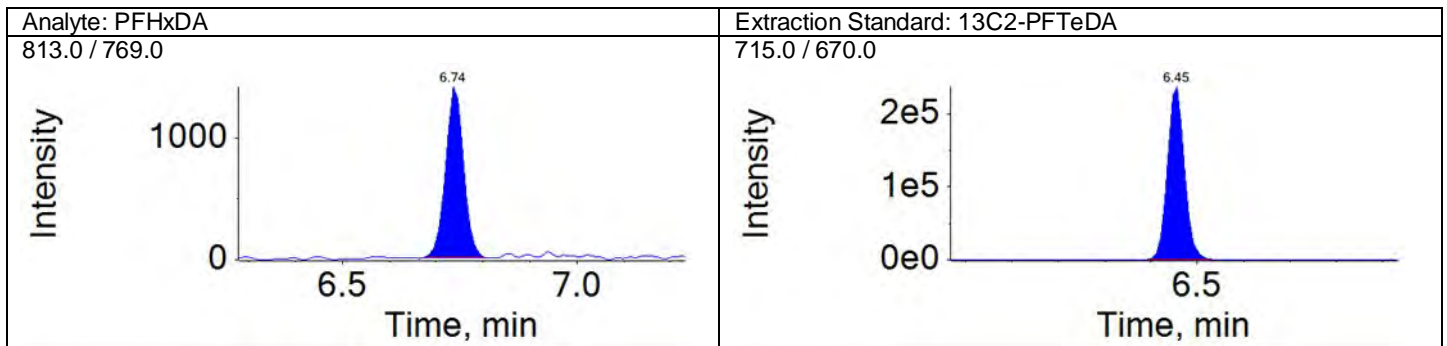
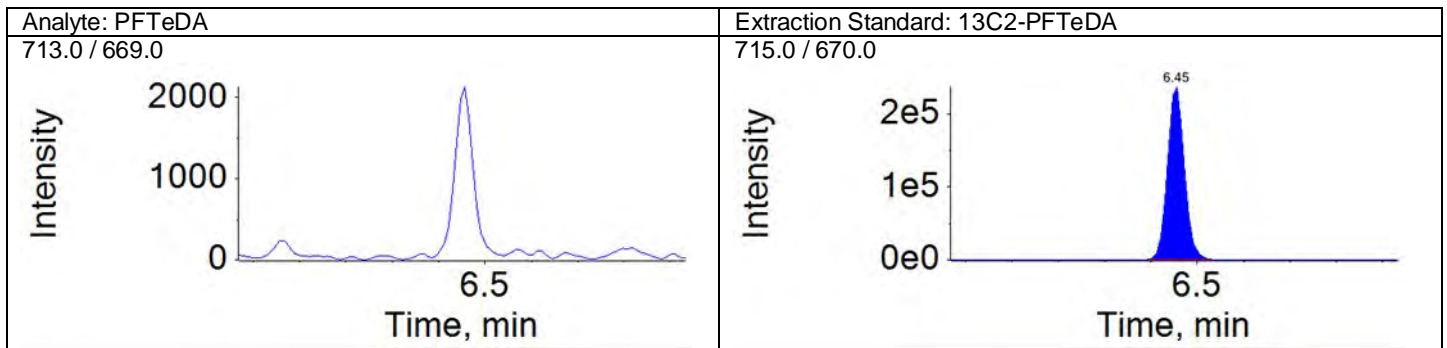
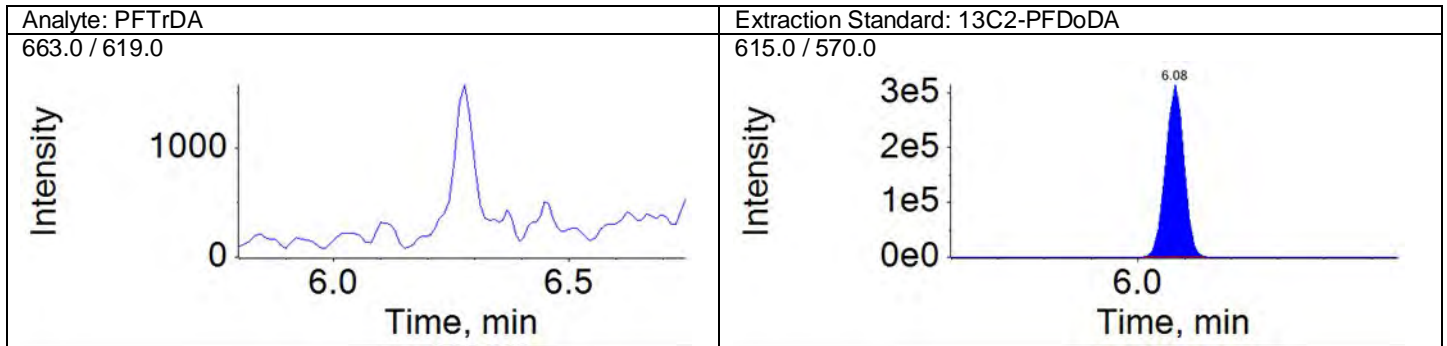
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

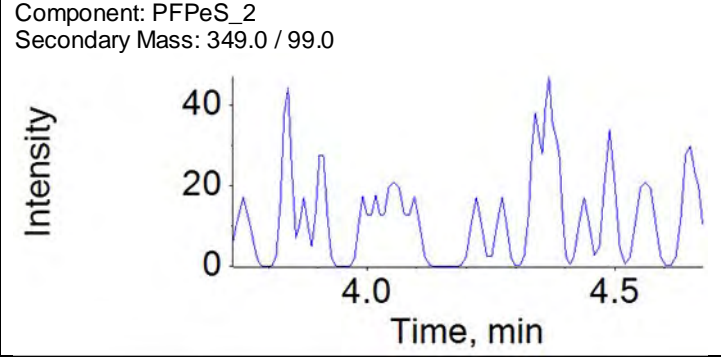
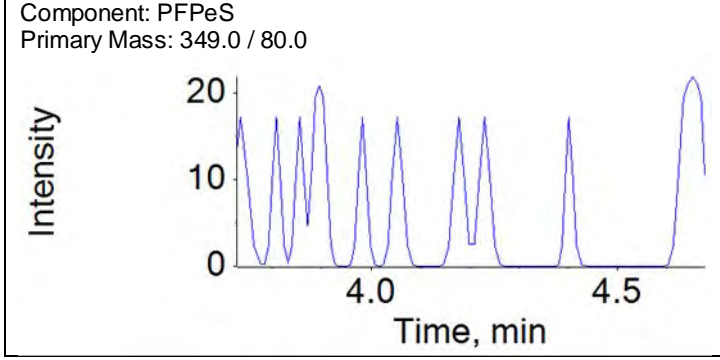
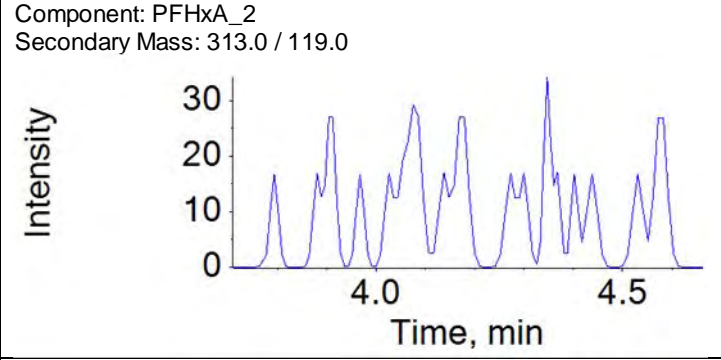
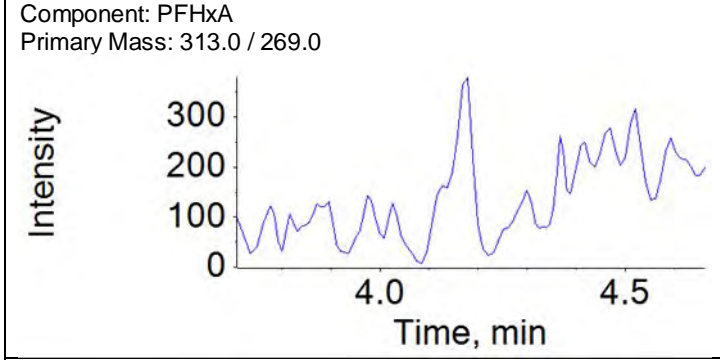
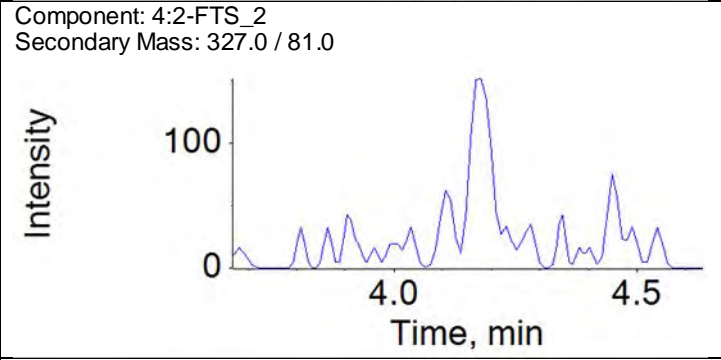
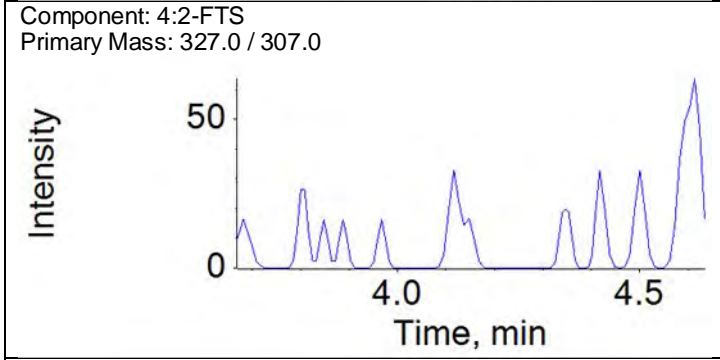
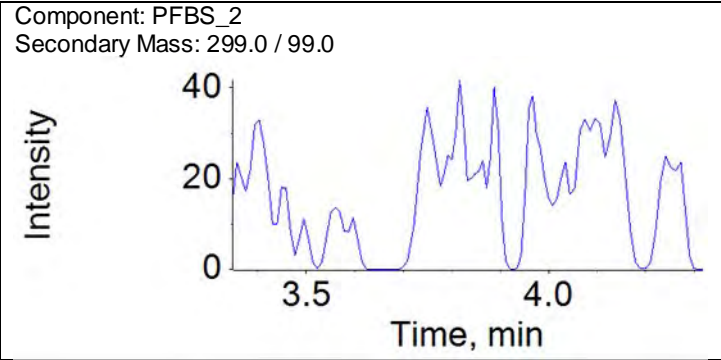
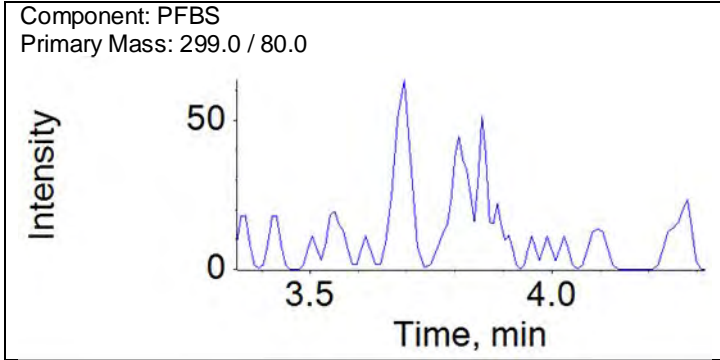


Ion Ratio Report

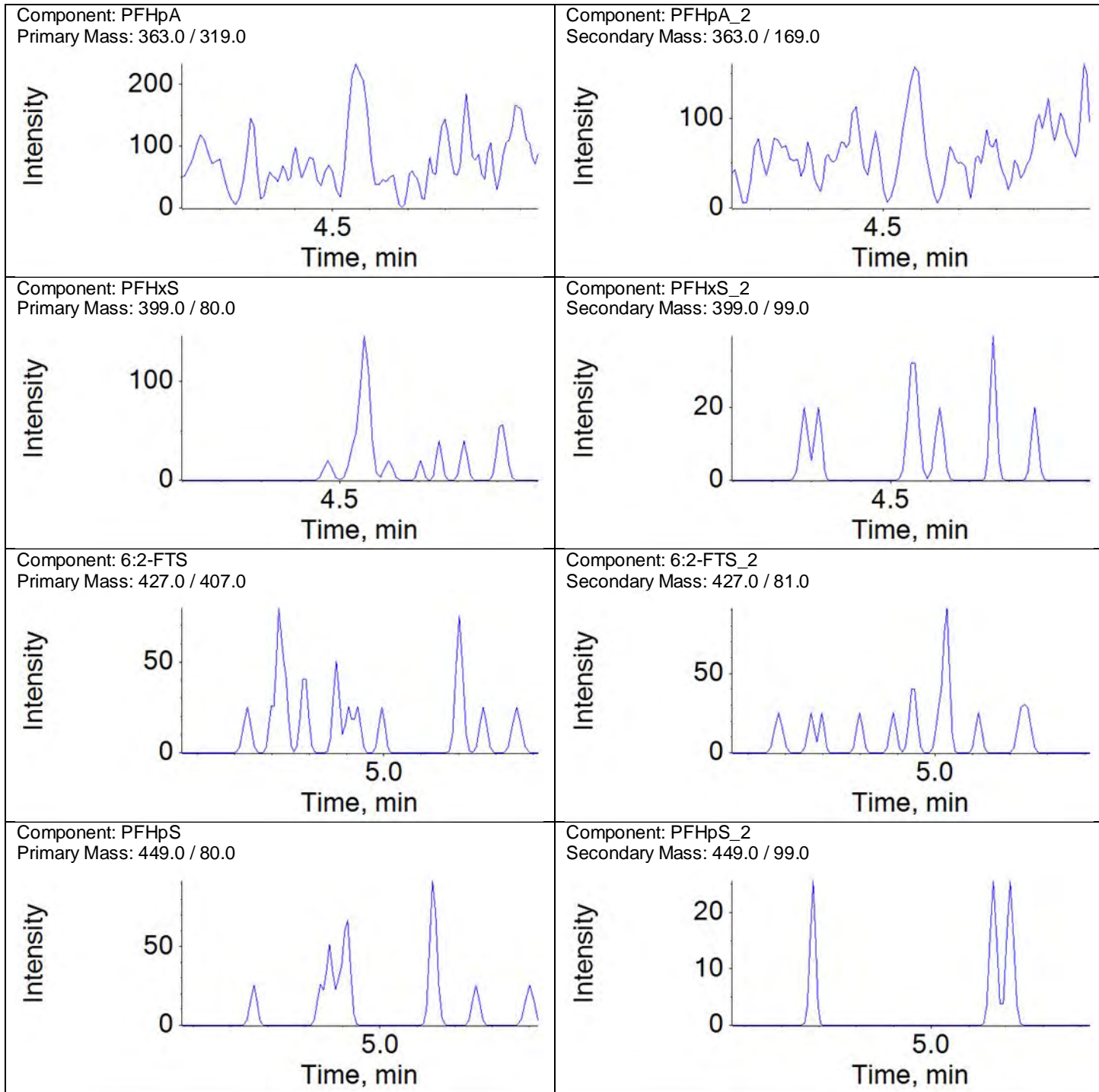
Sample Name: Instrument Blank    Instrument Name: LM27631    File Name: 18DEC06DCAL-32.wiff

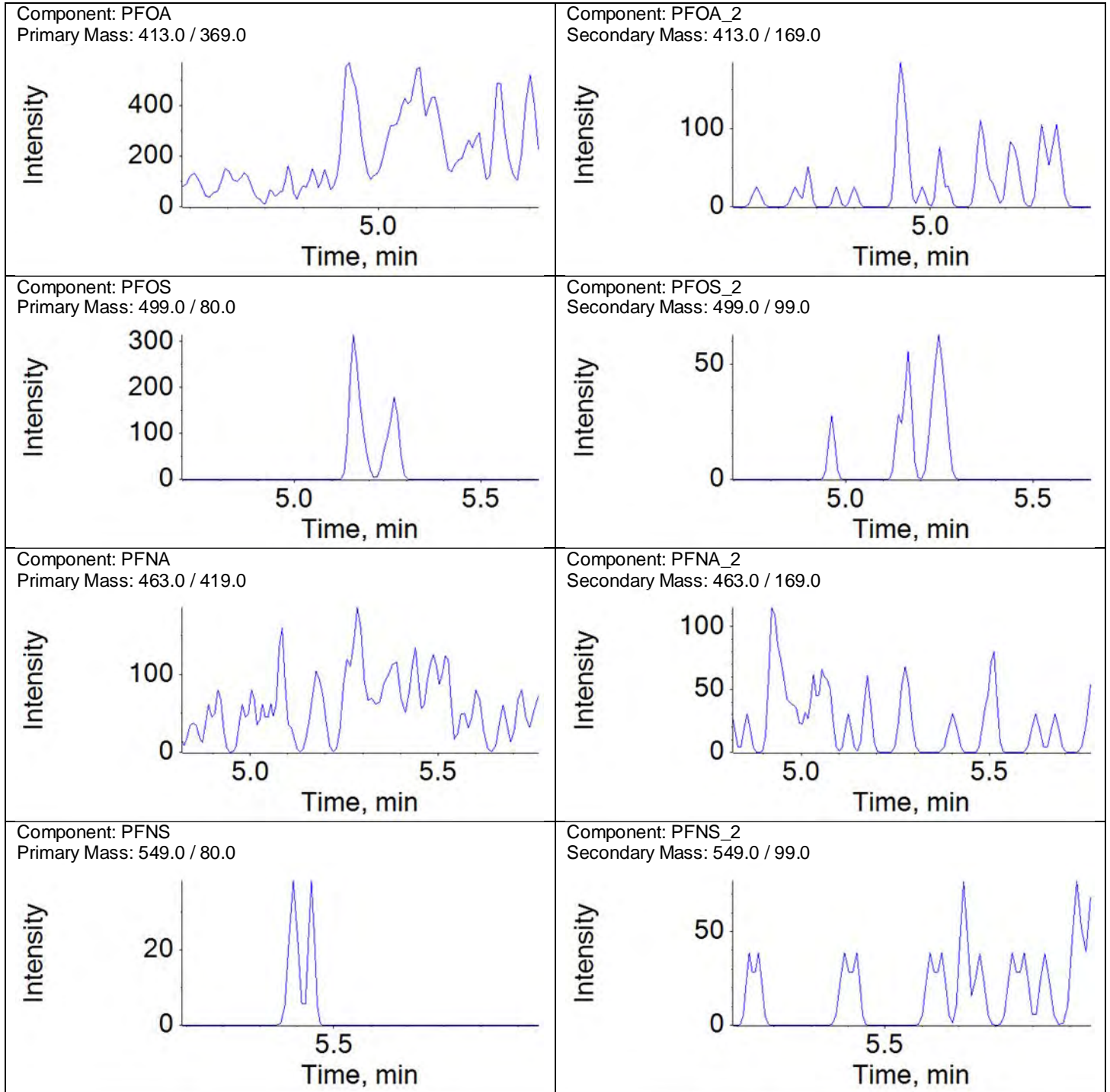
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	1.0000	N/A			
PFBS_2	N/A	N/A	N/A	A	0.3627	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	0.6542	N/A		50	
PFHxA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxA_2	N/A	N/A	N/A	A	0.0097	N/A		50	
PFPeS	N/A	N/A	N/A	A	1.0000	N/A			
PFPeS_2	N/A	N/A	N/A	A	0.5262	N/A		50	
PFHpA	N/A	N/A	N/A	A	1.0000	N/A			
PFHpA_2	N/A	N/A	N/A	A	0.0565	N/A		50	
PFHxS	N/A	N/A	N/A	A	1.0000	N/A			
PFHxS_2	N/A	N/A	N/A	A	0.3645	N/A		50	
6:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	0.6273	N/A		50	
PFHpS	N/A	N/A	N/A	A	1.0000	N/A			
PFHpS_2	N/A	N/A	N/A	A	0.4162	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0616	N/A		50	
PFOS	N/A	N/A	N/A	A	1.0000	N/A			
PFOS_2	N/A	N/A	N/A	A	0.3021	N/A		50	
PFNA	N/A	N/A	N/A	A	1.0000	N/A			
PFNA_2	N/A	N/A	N/A	A	0.0192	N/A		50	
PFNS	N/A	N/A	N/A	A	1.0000	N/A			
PFNS_2	N/A	N/A	N/A	A	0.4845	N/A		50	
PFDA	N/A	N/A	N/A	A	1.0000	N/A			
PFDA_2	N/A	N/A	N/A	A	0.0096	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	0.6117	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	1.0000	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	0.2673	N/A		50	
PFDS	N/A	N/A	N/A	A	1.0000	N/A			
PFDS_2	N/A	N/A	N/A	A	0.4952	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	1.0000	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	0.0041	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	1.0000	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	0.6726	N/A		50	
PFAoDA	N/A	N/A	N/A	A	1.0000	N/A			
PFAoDA_2	N/A	N/A	N/A	A	0.0133	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	0.6969	N/A		50	
PFArDA	N/A	N/A	N/A	A	1.0000	N/A			
PFArDA_2	N/A	N/A	N/A	A	0.0075	N/A		50	
PFAeDA	N/A	N/A	N/A	A	1.0000	N/A			
PFAeDA_2	N/A	N/A	N/A	A	0.0066	N/A		50	
PFHxDA	6.74	1.04	3753.15	A	1.0000	1.0000			
PFHxDA_2	6.74	1.05	261.52	M	0.0616	0.0697	13	50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0272	N/A		50	

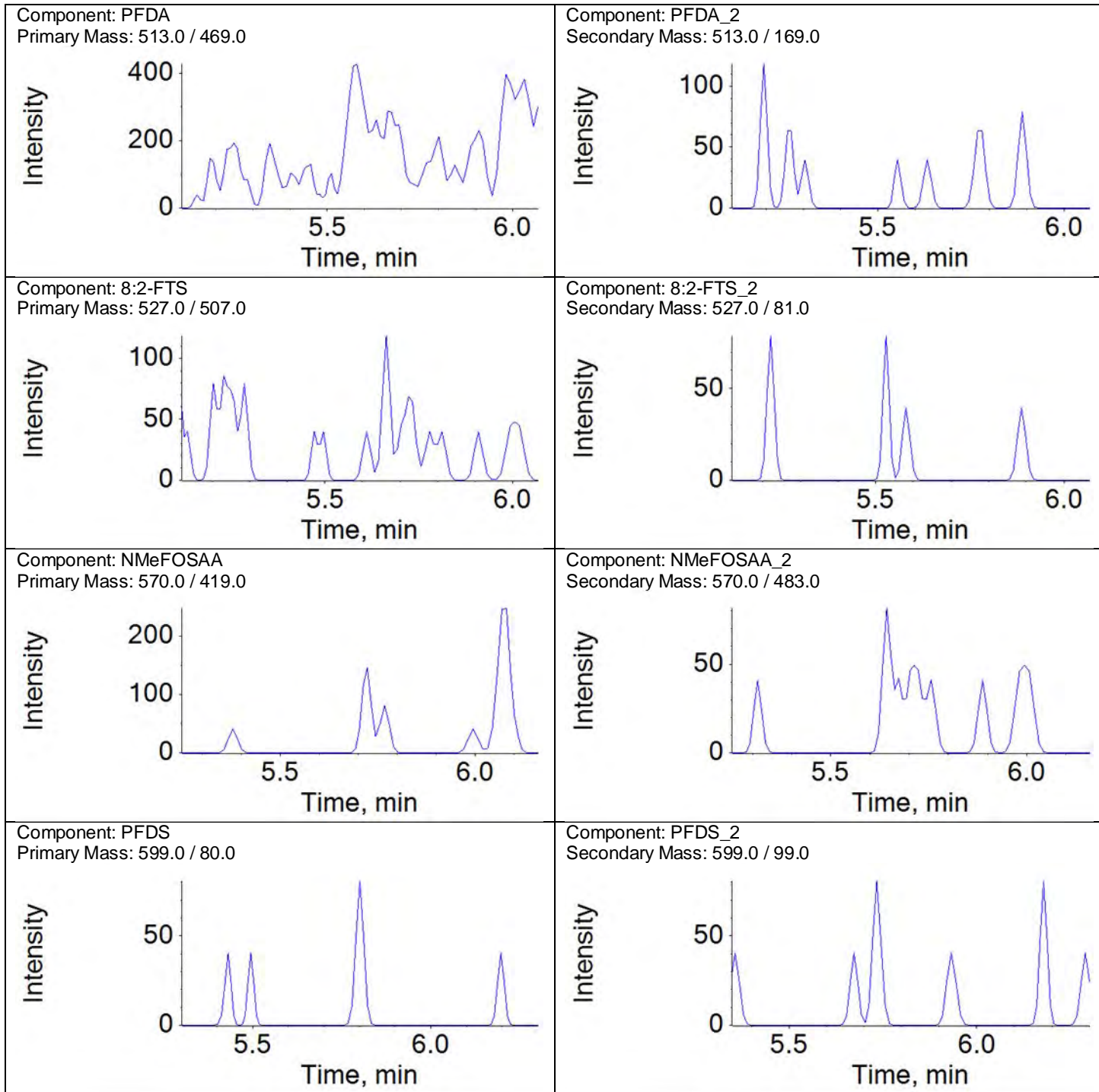


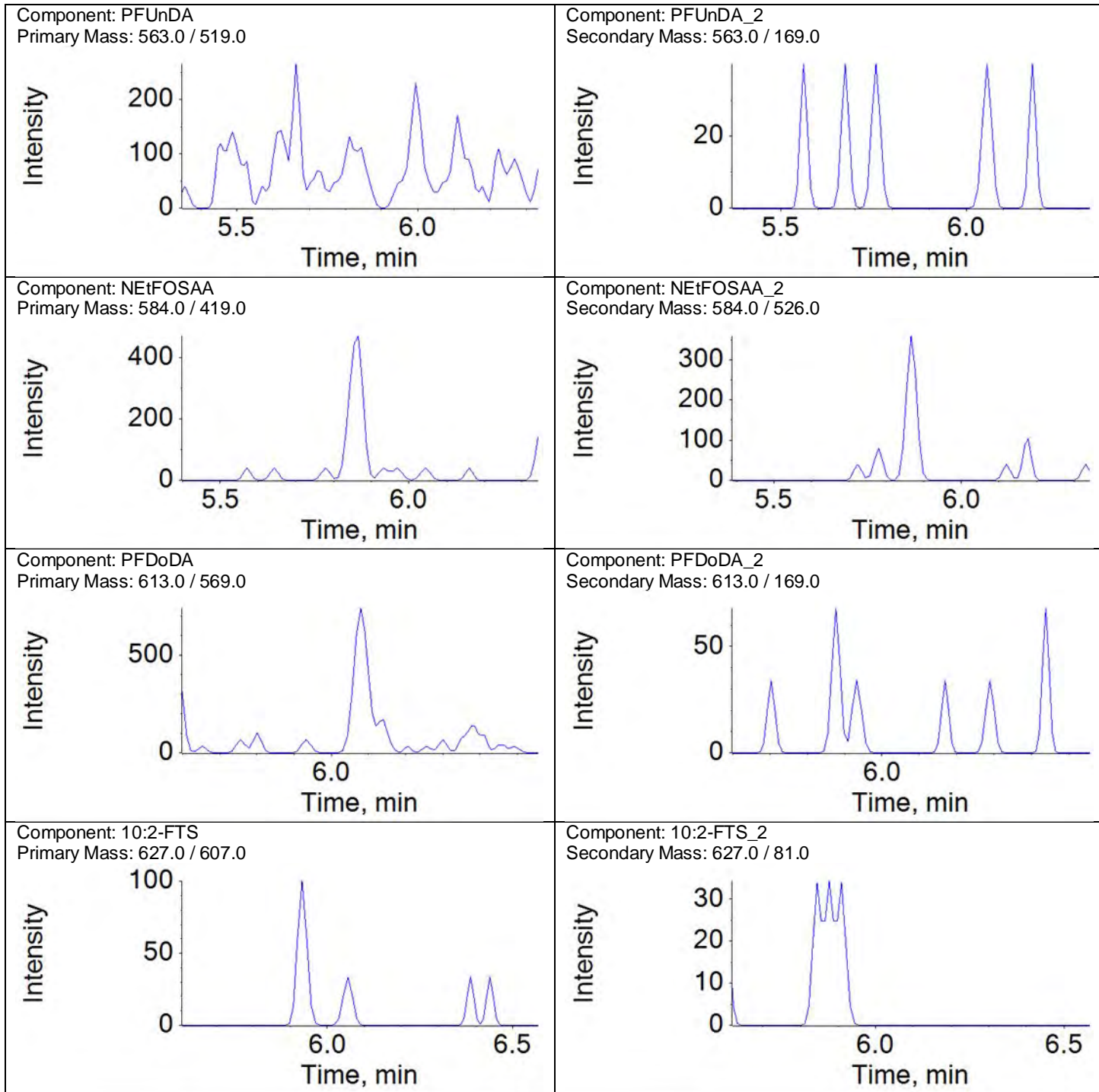




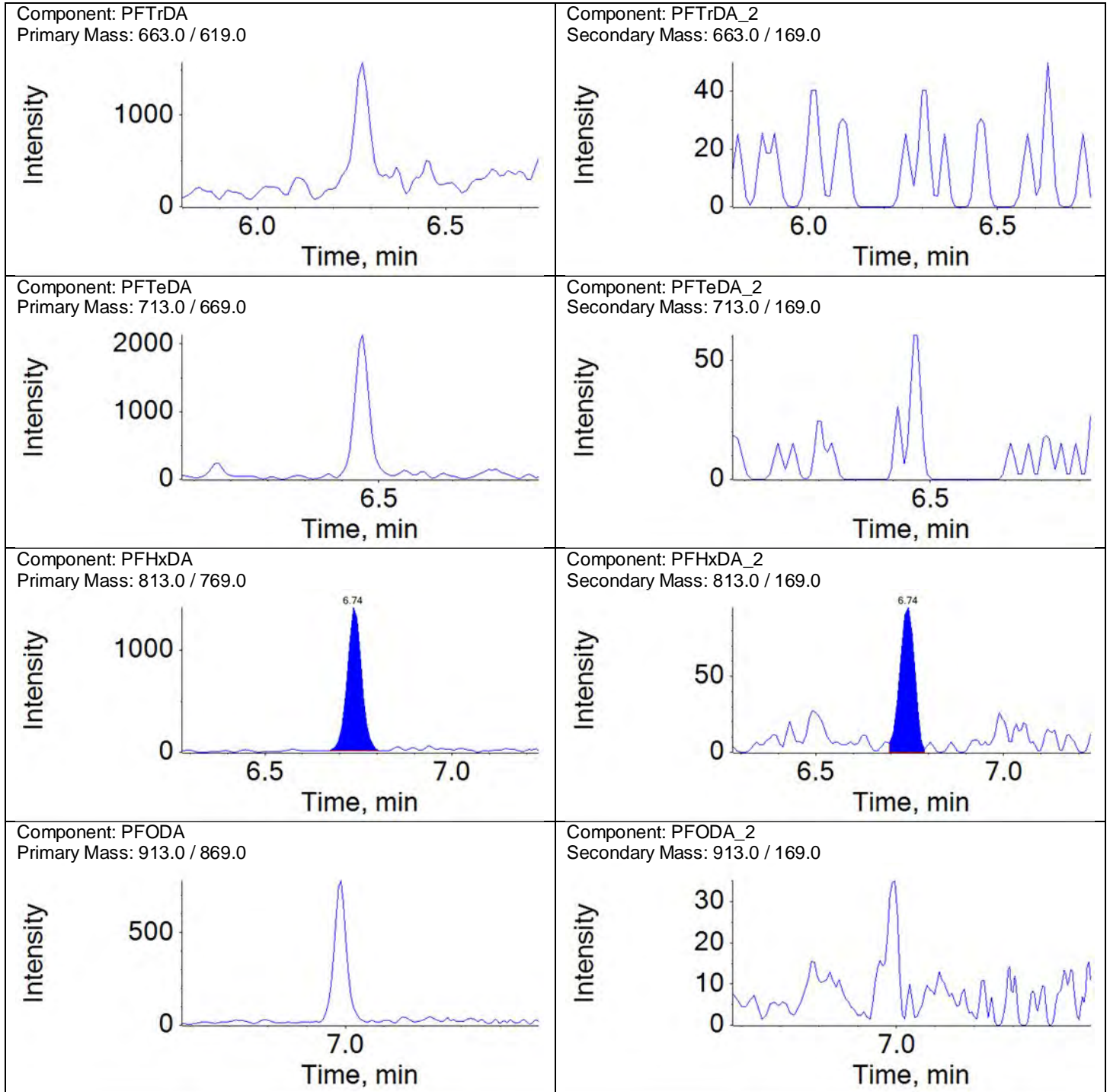














ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	ICV	Data File:	18DEC06DCAL-33.wiff
Sample ID:	ICVMODX1833G	Acquis Date:	2018-12-07T00:49:37
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	10	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	862809.8	825688.9	4	50	
13C2-PFOA	5.0	440385.4	449802.8	-2	50	
13C4-PFOS	4.8	289133.3	276858.3	4	50	
13C2-PFDA	5.0	325898.3	315428.3	3	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	949191.0	13C3-PFBA	862809.8	1.100	5.000	4.869	97	70-130	
E13C5-PFPeA	881736.1	13C3-PFBA	862809.8	1.022	5.000	4.854	97	70-130	
E13C3-PFBS	445541.7	13C3-PFBA	862809.8	0.516	4.650	4.377	94	70-130	
E13C2-4:2-FTS	56764.7	13C2-PFOA	440385.4	0.129	4.670	5.051	108	70-130	
E13C5-PFHxA	656636.4	13C2-PFOA	440385.4	1.491	5.000	5.006	100	70-130	
E13C3-PFHxS	350861.3	13C2-PFOA	440385.4	0.797	4.730	5.110	108	70-130	
E13C4-PFHpA	518050.9	13C2-PFOA	440385.4	1.176	5.000	5.001	100	70-130	
E13C2-6:2-FTS	35235.4	13C2-PFOA	440385.4	0.080	4.750	4.957	104	70-130	
E13C8-PFOA	819462.1	13C2-PFOA	440385.4	1.861	5.000	5.260	105	70-130	
E13C8-PFOS	301700.5	13C4-PFOS	289133.3	1.043	4.780	4.683	98	70-130	
E13C9-PFNA	506111.7	13C4-PFOS	289133.3	1.750	5.000	4.946	99	70-130	
E13C6-PFDA	616493.9	13C2-PFDA	325898.3	1.892	5.000	5.013	100	70-130	
E13C2-8:2-FTS	24386.0	13C2-PFDA	325898.3	0.075	4.790	4.885	102	70-130	
E13C8-PFOA	701268.4	13C2-PFDA	325898.3	2.152	5.000	5.089	102	70-130	
Ed3-NMeFOSAA	87605.1	13C2-PFDA	325898.3	0.269	5.000	4.764	95	70-130	
E13C7-PFUnDA	336301.0	13C2-PFDA	325898.3	1.032	5.000	5.062	101	70-130	
Ed5-NEtFOSAA	71167.6	13C2-PFDA	325898.3	0.218	5.000	4.821	96	70-130	
E13C2-PFDoDA	765392.7	13C2-PFDA	325898.3	2.349	5.000	4.928	99	70-130	
Ed7-NMePFOSAE	282158.8	13C2-PFDA	325898.3	0.866	5.000	4.987	100	70-130	
Ed3-NMePFOSA	89779.4	13C2-PFDA	325898.3	0.275	5.000	5.019	100	70-130	
Ed9-NEtPFOSAE	228783.4	13C2-PFDA	325898.3	0.702	5.000	4.841	97	70-130	
Ed5-NEtPFOSA	72087.8	13C2-PFDA	325898.3	0.221	5.000	4.978	100	70-130	
E13C2-PFTeDA	545334.4	13C2-PFDA	325898.3	1.673	5.000	4.967	99	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

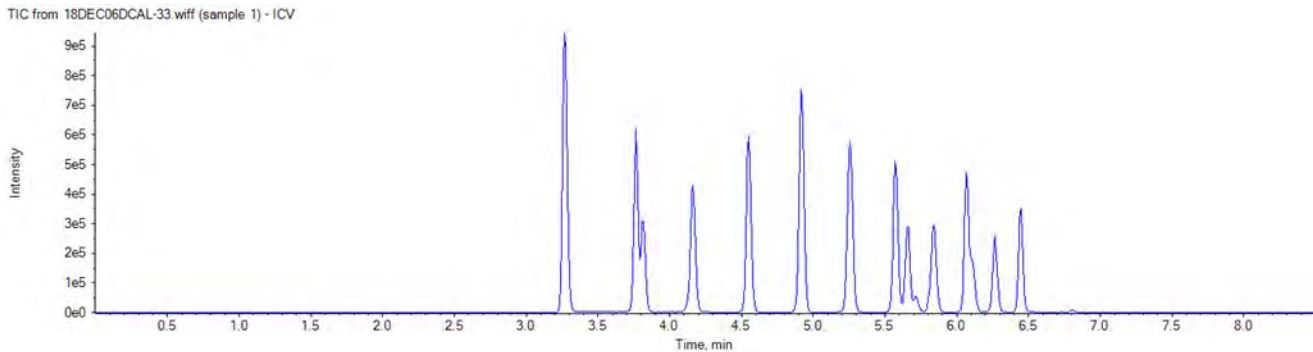
Analyte Quantitation Peak Table

Sample Name: ICV Instrument Name: LM27631 File Name: 18DEC06DCAL-33.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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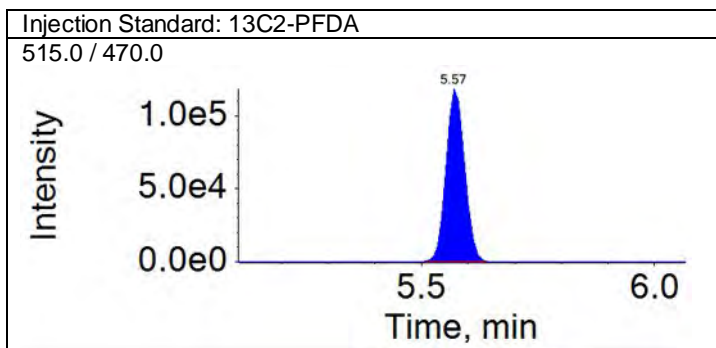
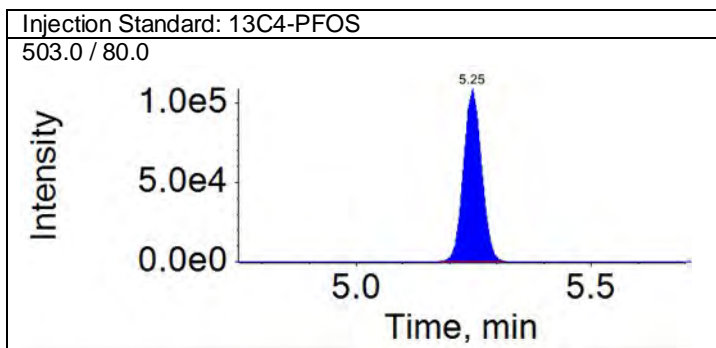
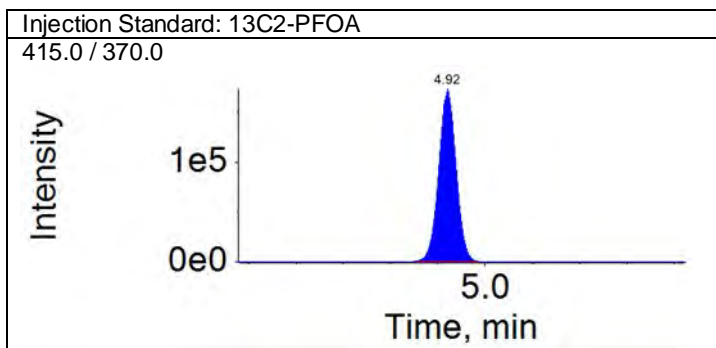
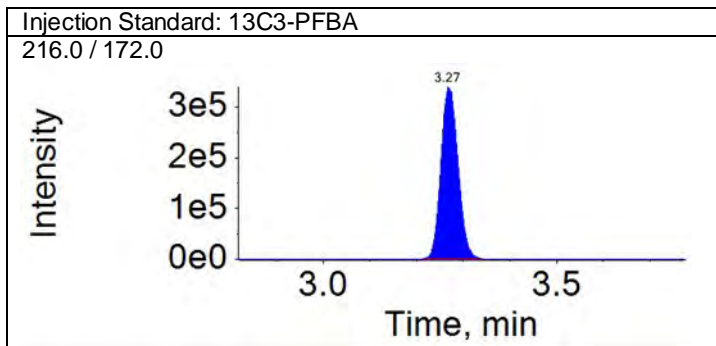
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	365740.6		A	13C4-PFBA	3.27	949191.0	0.385	2.126
PFPeA	3.77	1.000	343574.5		A	13C5-PFPeA	3.77	881736.1	0.390	2.050
PFBS	3.81	1.000	162266.0		A	13C3-PFBS	3.82	445541.7	0.364	1.805
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.13	56764.7	N/A	
PFHxA	4.16	1.000	339202.1		A	13C5-PFHxA	4.16	656636.4	0.517	2.251
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.82	445541.7	N/A	
PFHpA	4.55	1.000	342255.0		A	13C4-PFHpA	4.55	518050.9	0.661	2.175
PFHxS	4.55	1.000	125645.8		A	13C3-PFHxS	4.55	350861.3	0.358	1.697
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.91	35235.4	N/A	
PFHpS	4.91	1.080	124002.4		A	13C3-PFHxS	4.55	350861.3	0.353	1.940
PFOA	4.92	1.000	320848.4		A	13C8-PFOA	4.92	819462.1	0.392	2.140
PFOS	5.25	1.000	119330.2		A	13C8-PFOS	5.25	301700.5	0.396	1.641
PFNA	5.26	1.000	281622.4		A	13C9-PFNA	5.26	506111.7	0.556	2.051
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.25	301700.5	N/A	
PFDA	5.57	1.000	241839.3		A	13C6-PFDA	5.57	616493.9	0.392	2.208
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.58	24386.0	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.66	701268.4	N/A	
NMeFOSAA	5.72	1.000	33150.5		A	d3-NMeFOSAA	5.72	87605.1	0.378	2.503
PFDS	5.81	1.110	72651.6		A	13C8-PFOS	5.25	301700.5	0.241	1.947
PFUnDA	5.84	1.000	236810.3		A	13C7-PFUnDA	5.84	336301.0	0.704	2.156
NEtFOSAA	5.86	1.000	28610.4		A	d5-NEtFOSAA	5.85	71167.6	0.402	2.032
PFDoDA	6.07	1.000	282836.3		A	13C2-PFDoDA	6.07	765392.7	0.370	1.945
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.58	24386.0	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.11	282158.8	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.12	89779.4	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.25	301700.5	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.26	228783.4	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.28	72087.8	N/A	
PFTTrDA	6.27	1.030	269624.2		A	13C2-PFDoDA	6.07	765392.7	0.352	2.307
PFTeDA	6.44	1.000	203997.3		A	13C2-PFTeDA	6.45	545334.4	0.374	2.139
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	545334.4	N/A	
PFODA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	545334.4	N/A	

Total Ion Chromatogram



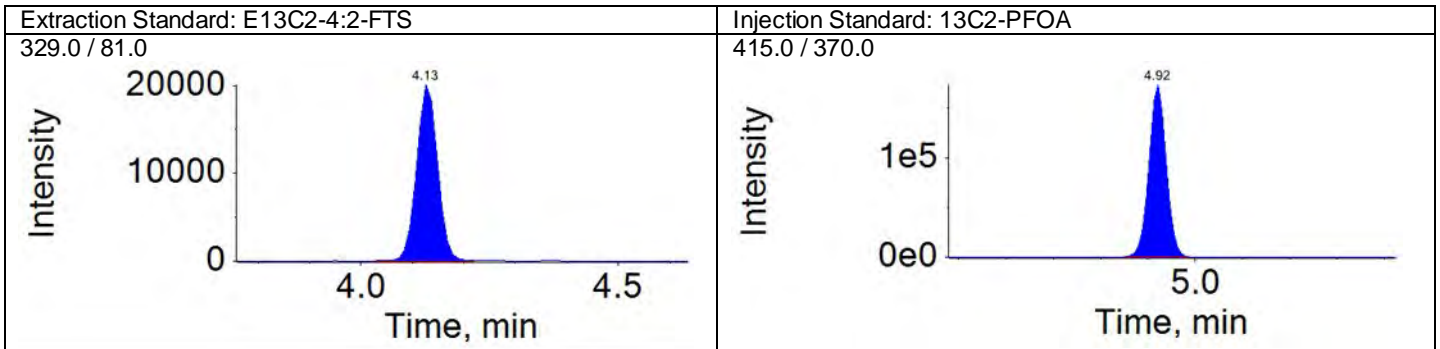
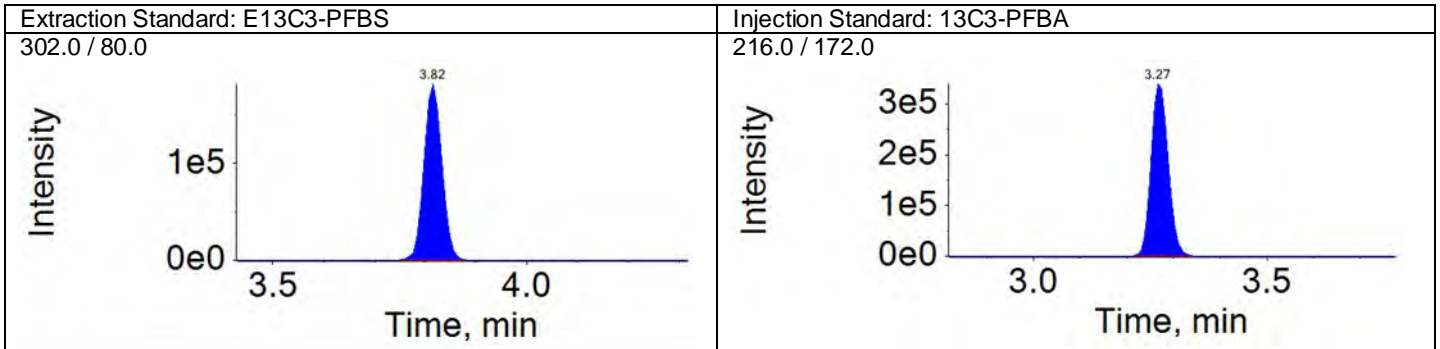
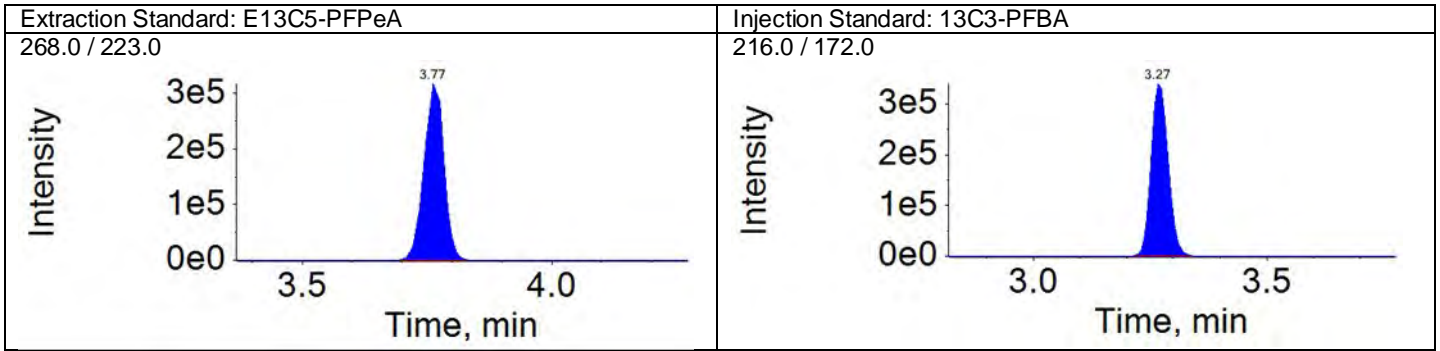
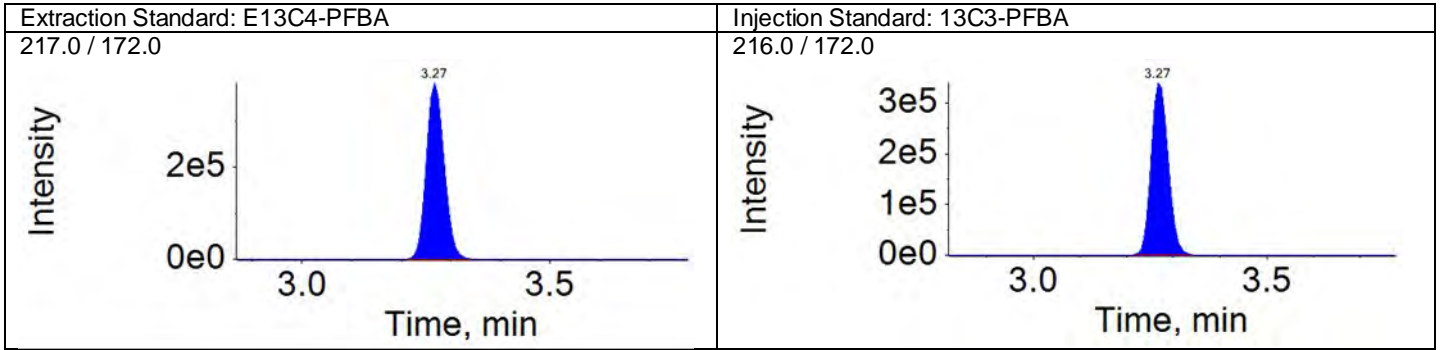
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



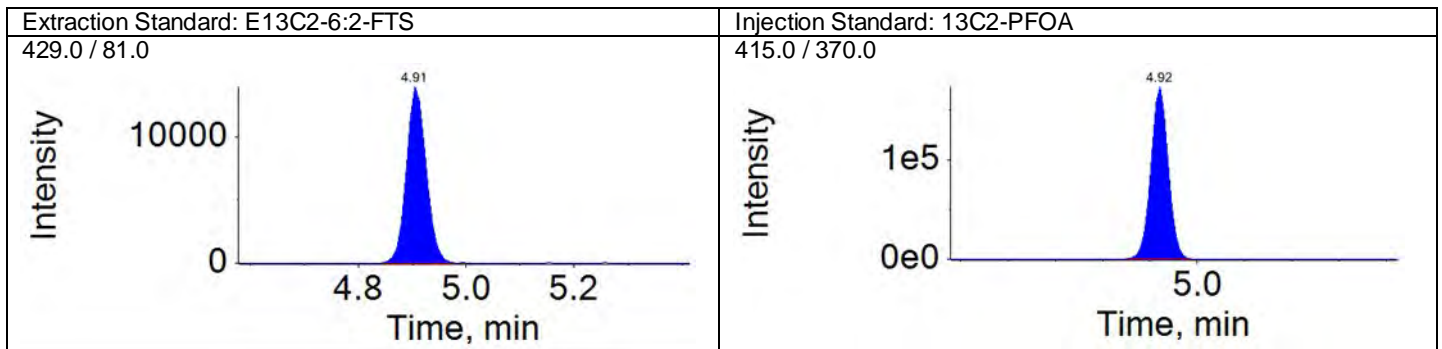
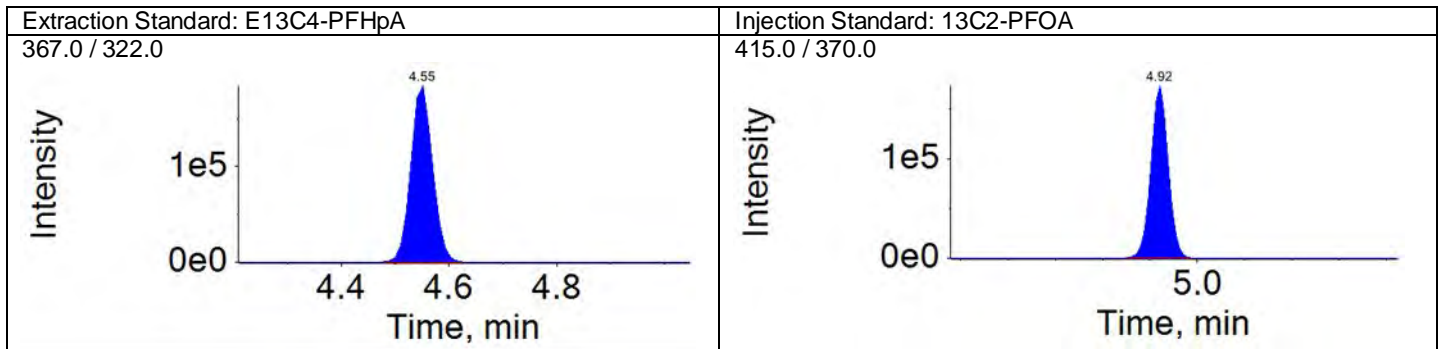
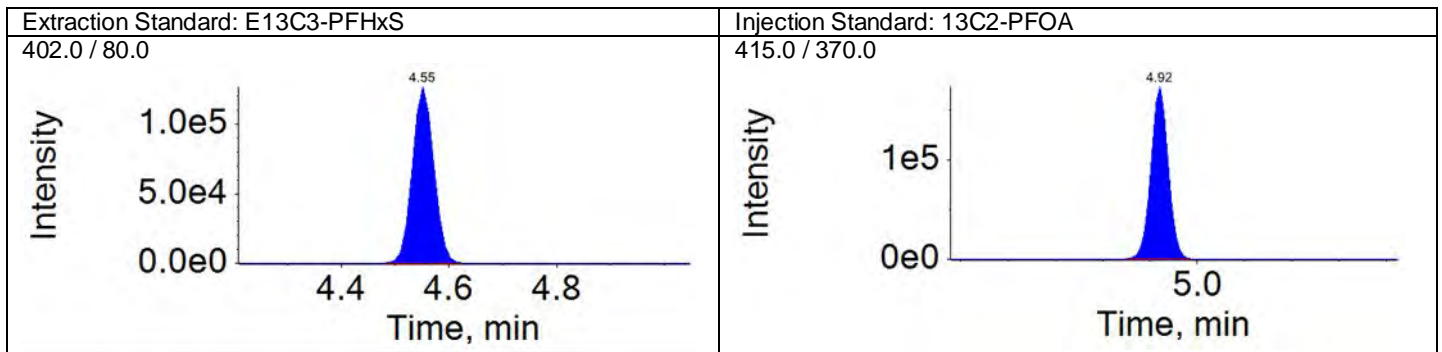
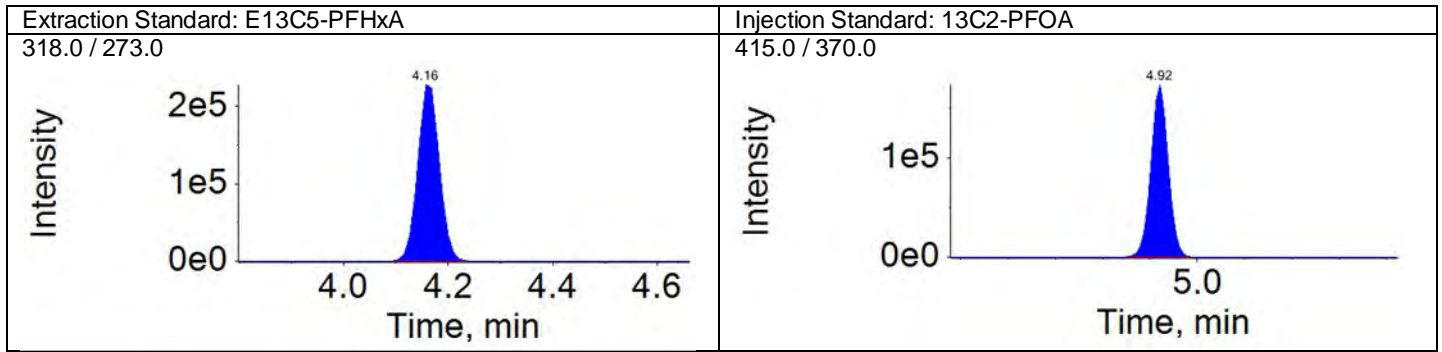
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
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ICAL Name: 18DEC06DCAL  
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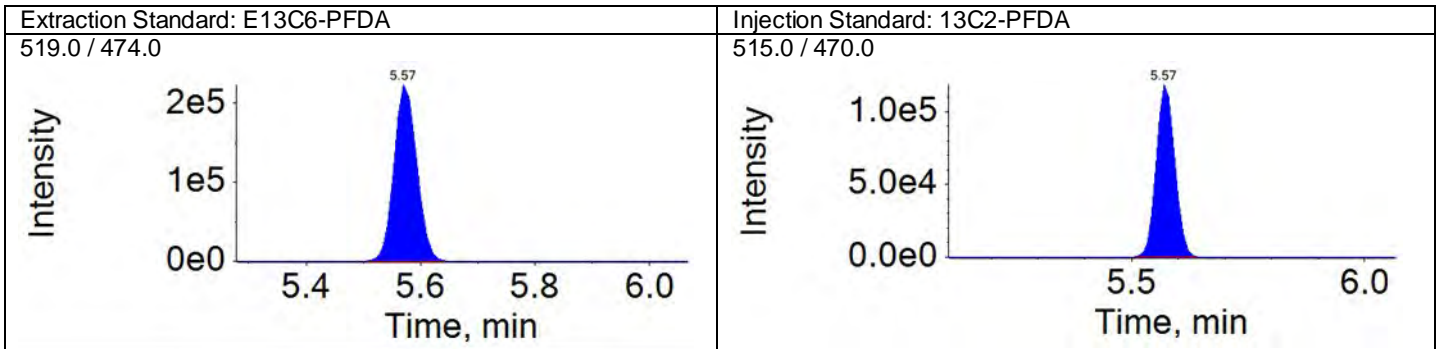
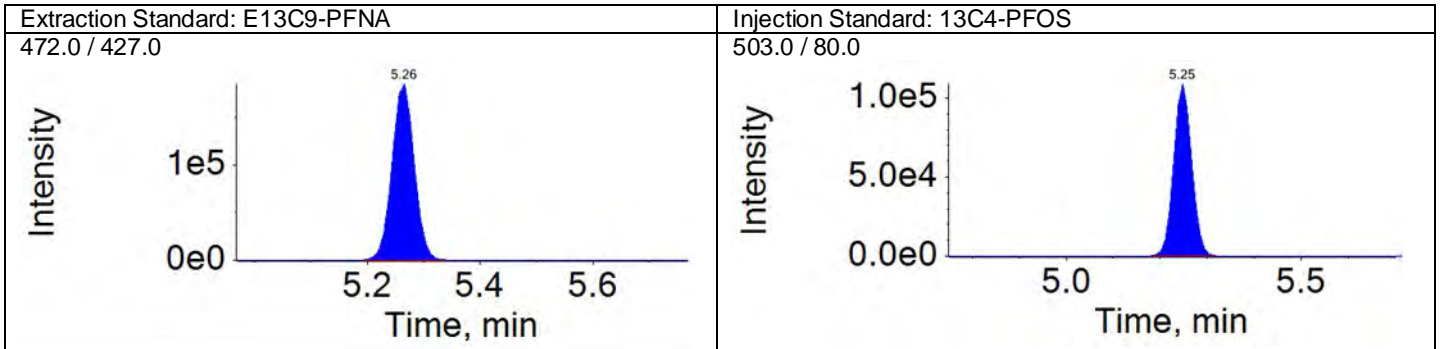
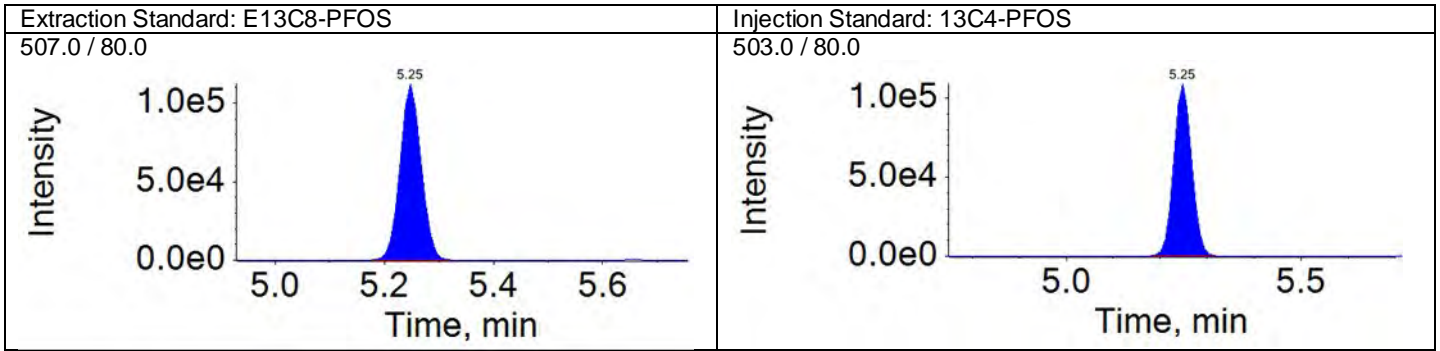
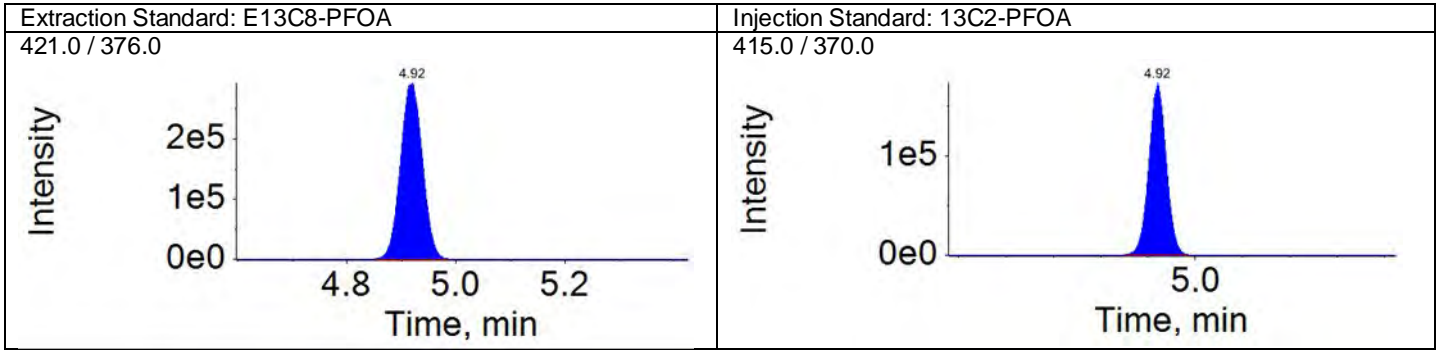
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Acquisition Method: 18AUG13\_3uL.dam





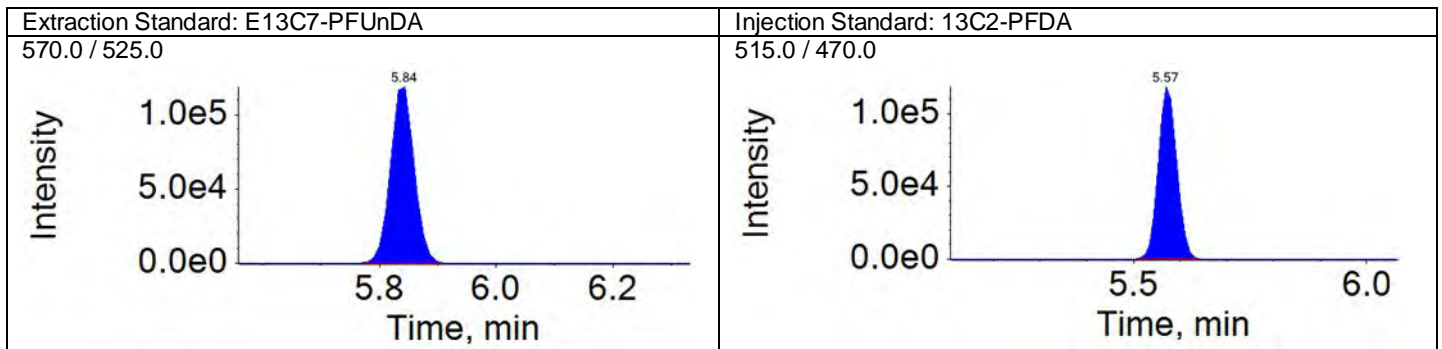
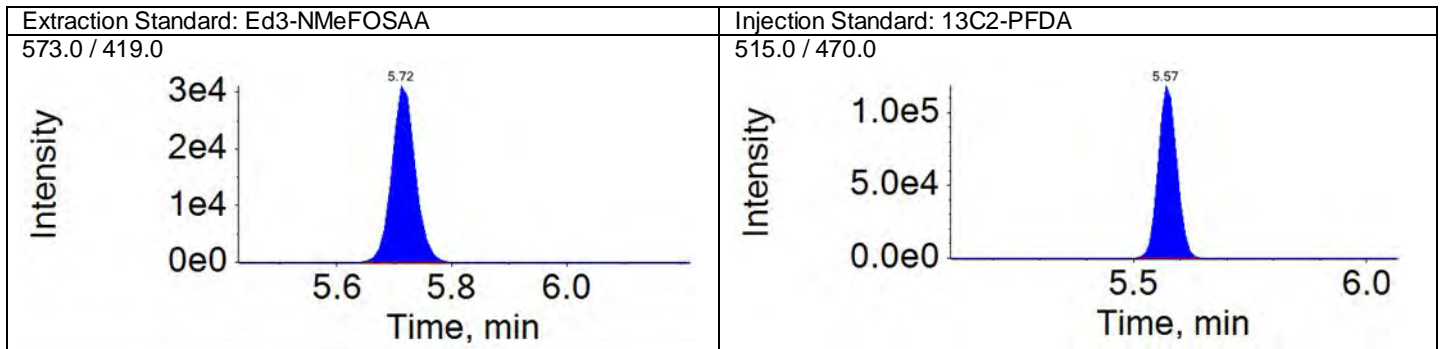
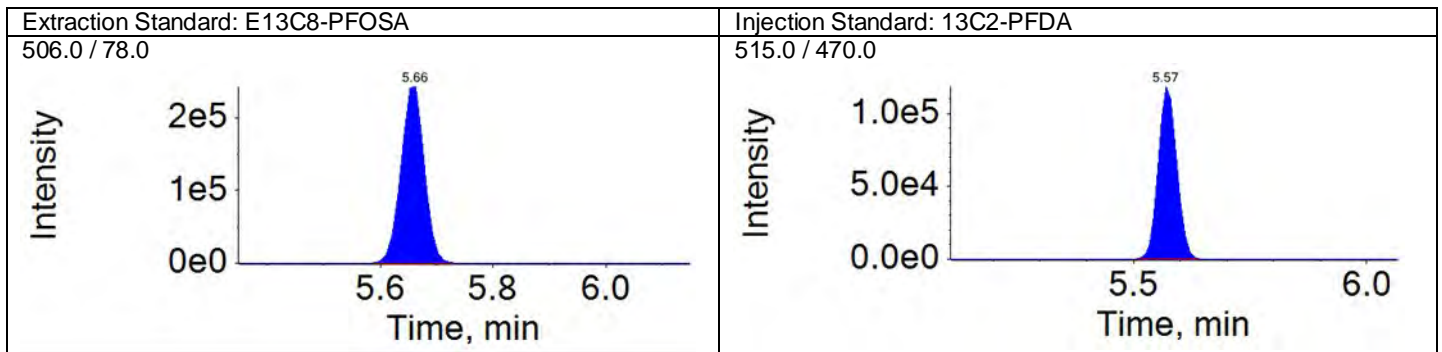
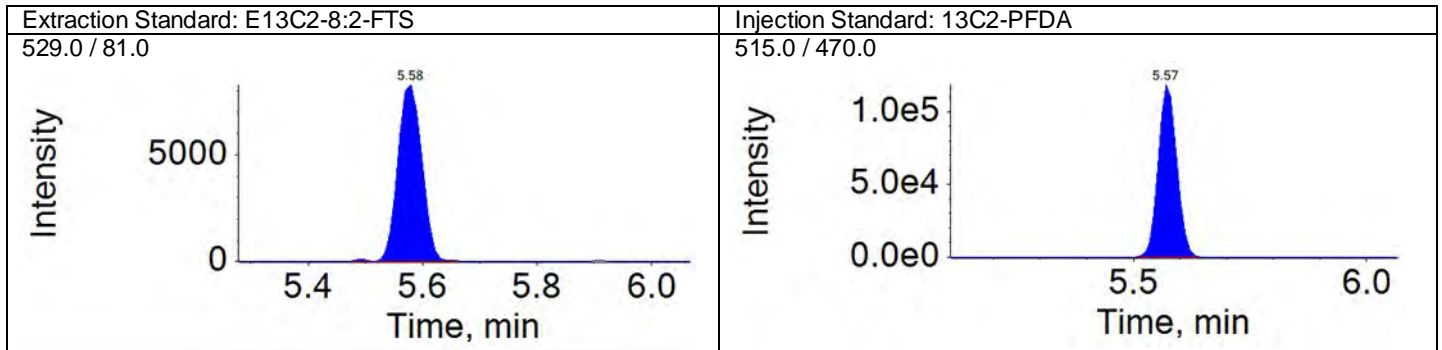
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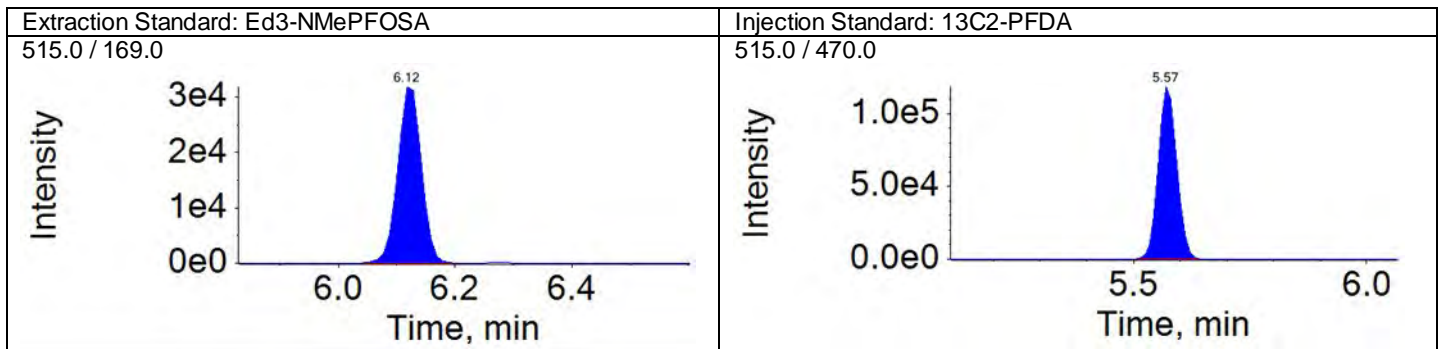
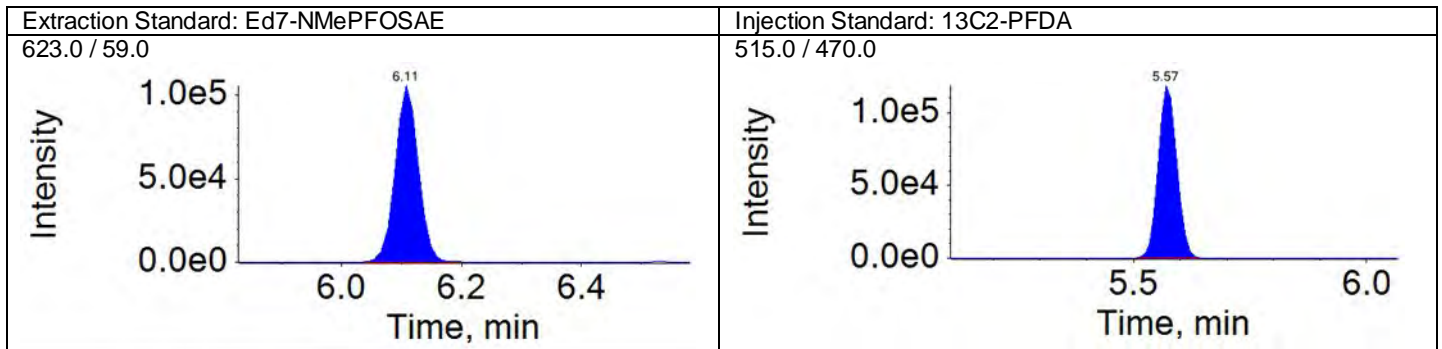
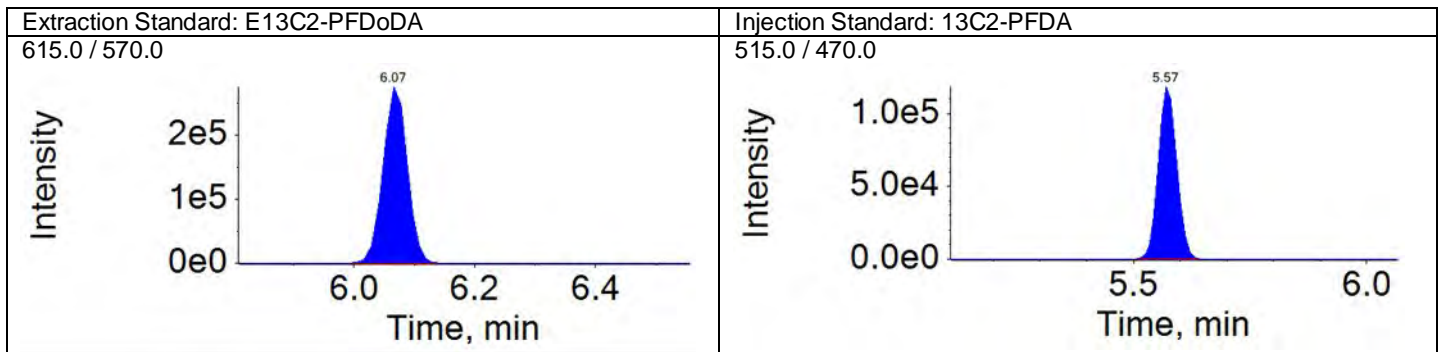
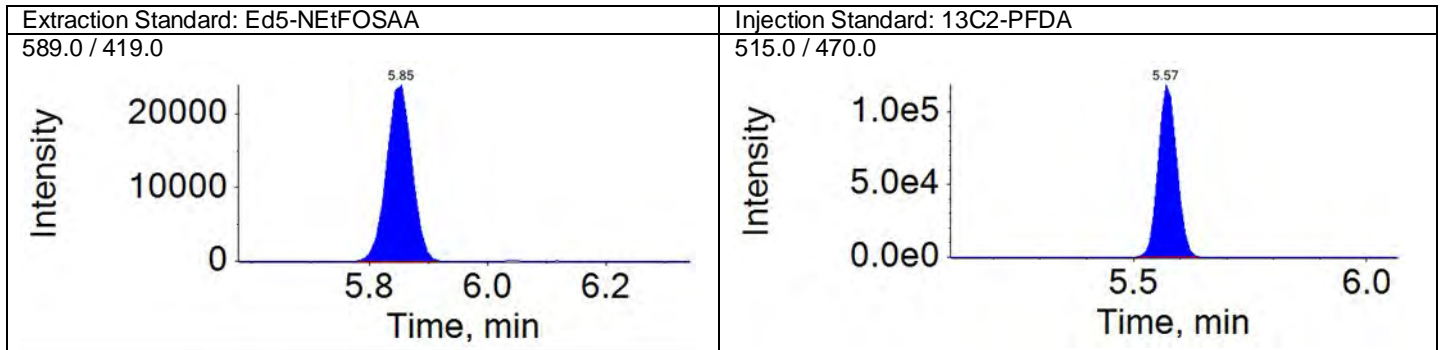
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



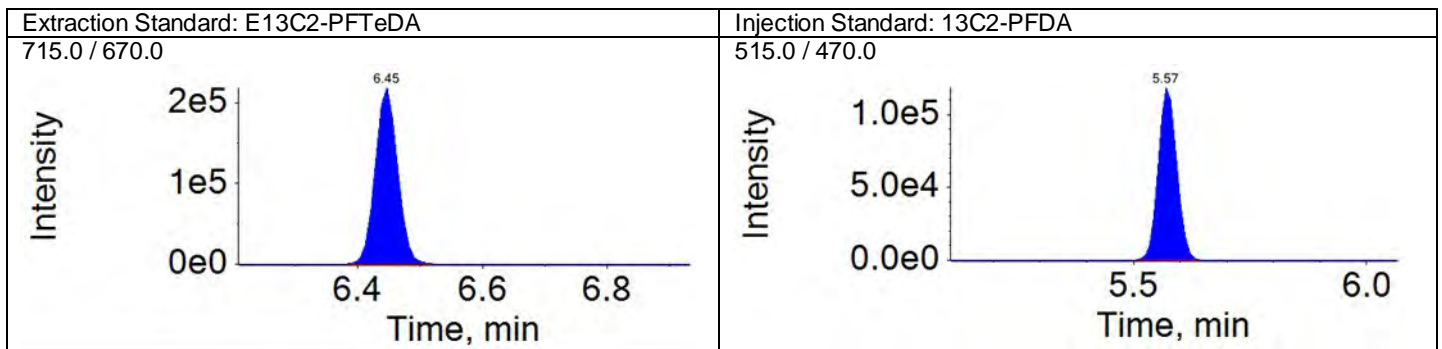
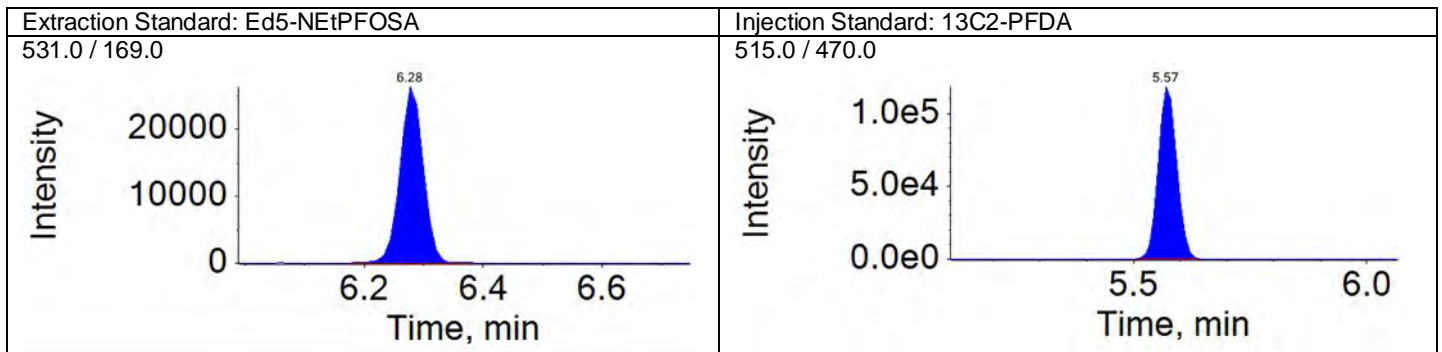
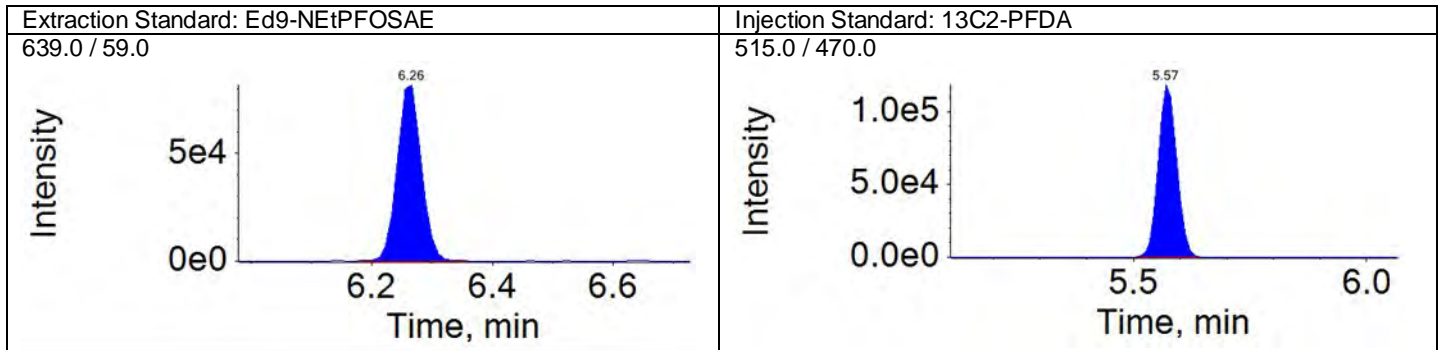
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
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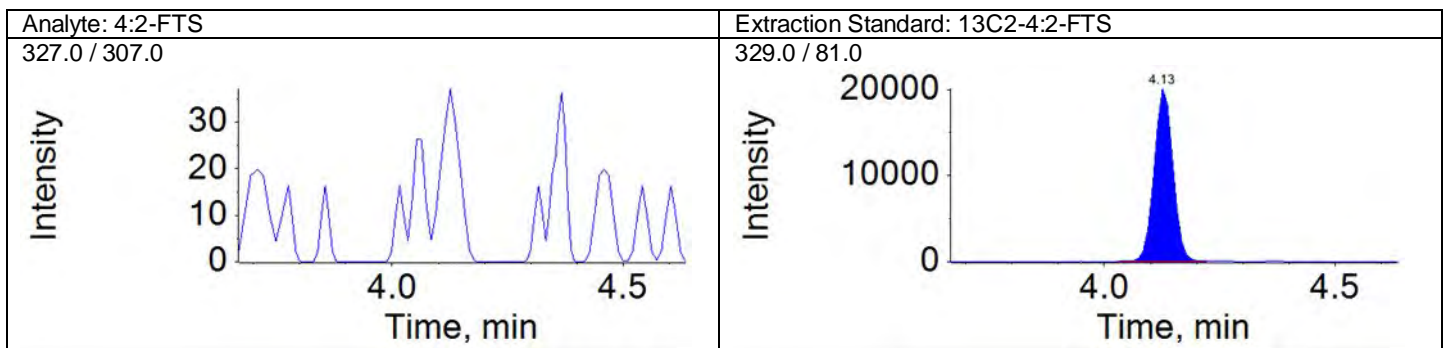
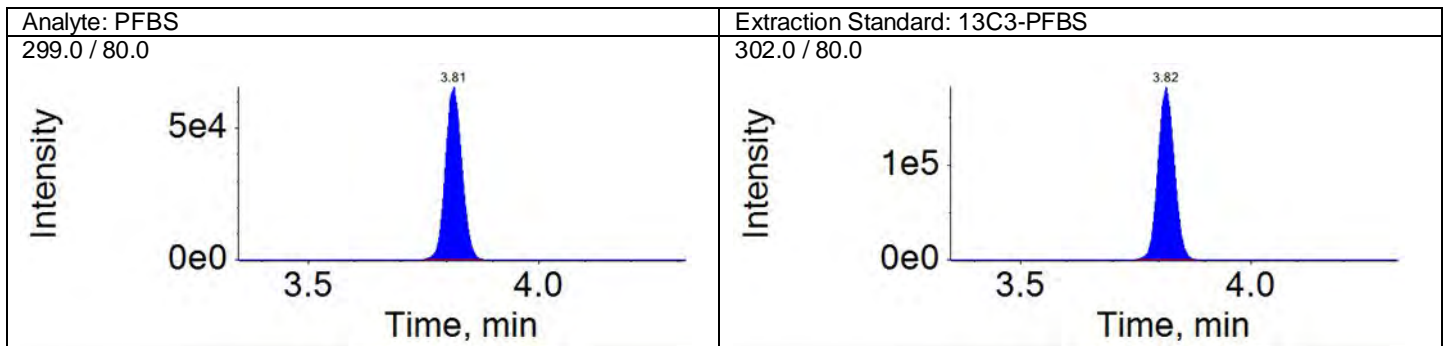
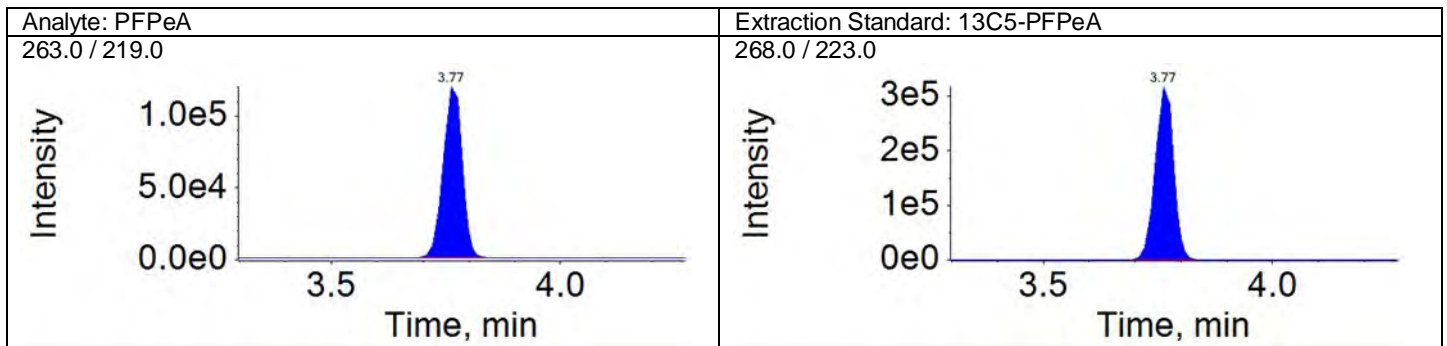
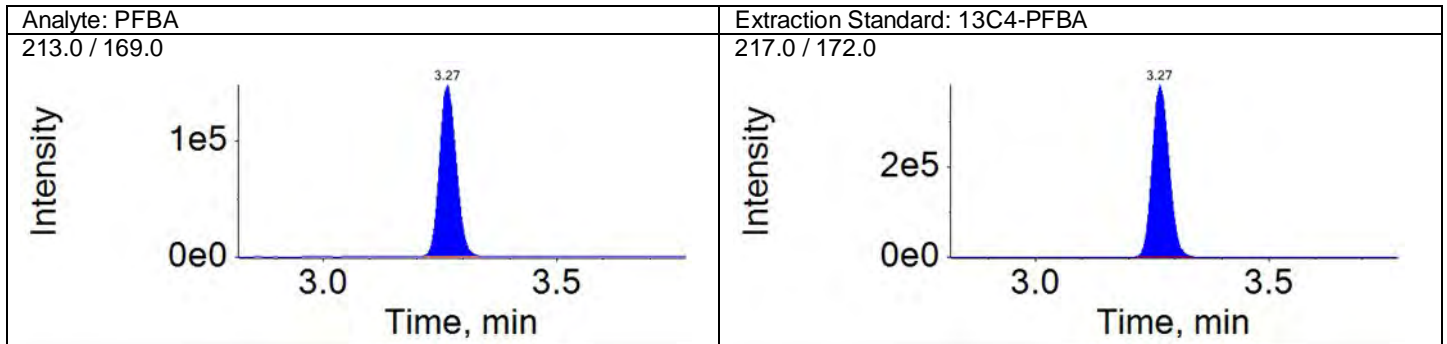
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
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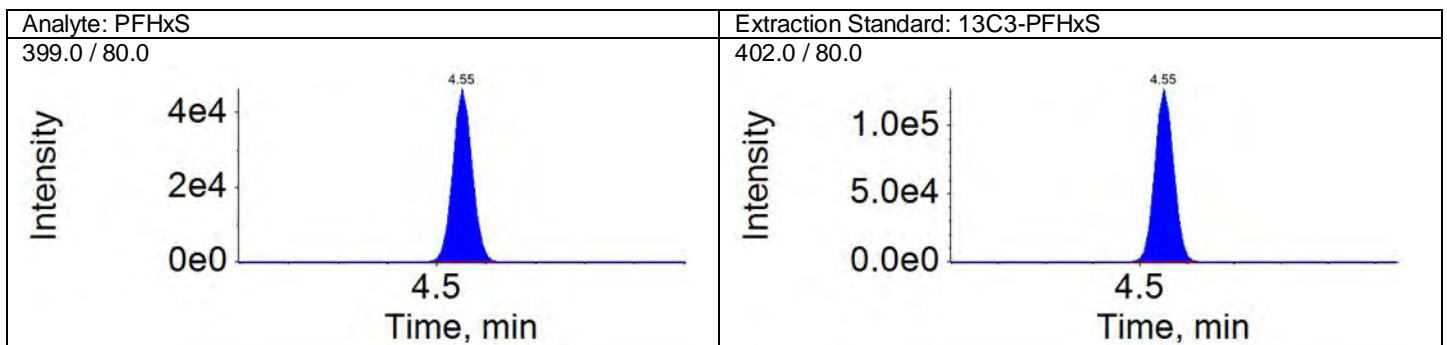
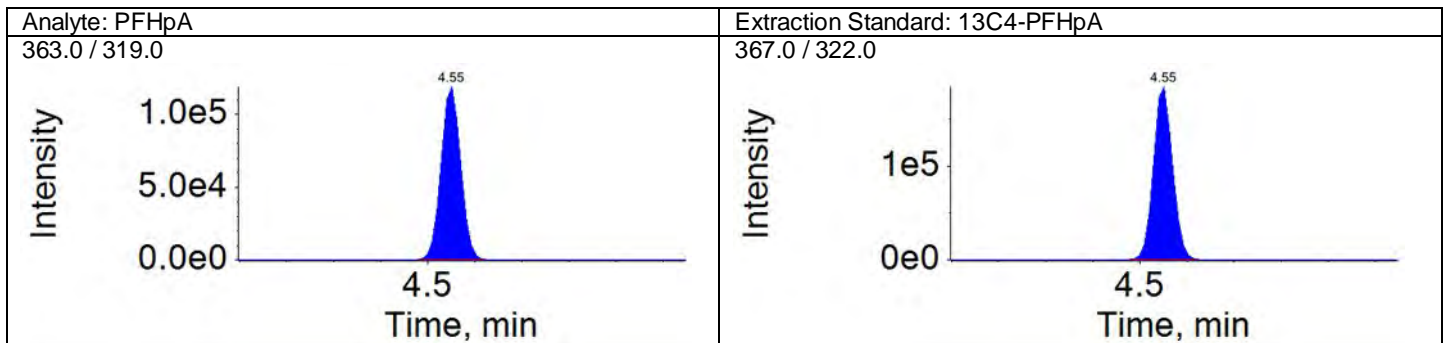
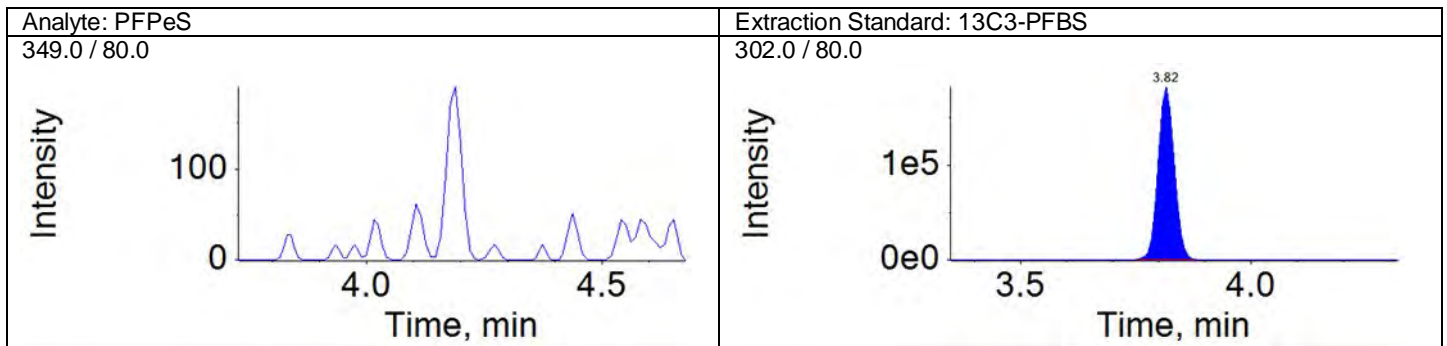
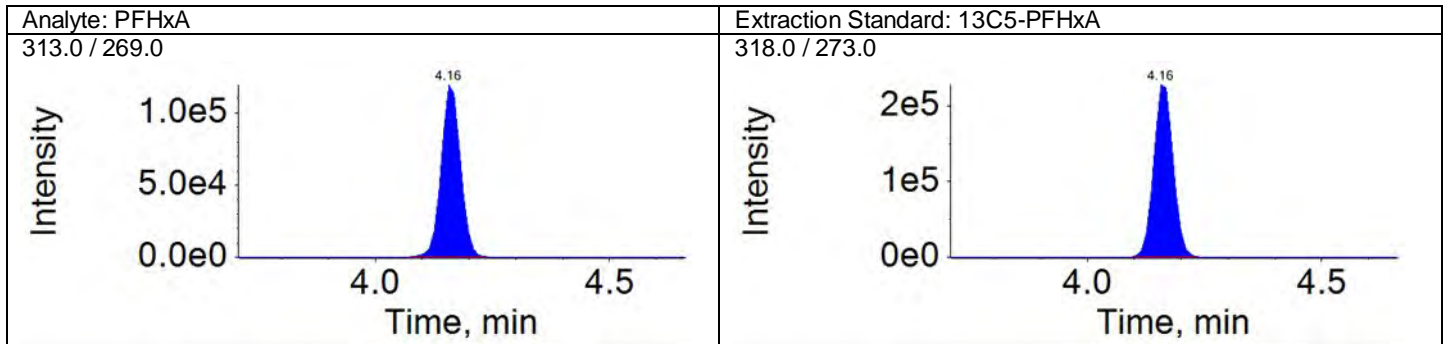
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Acquisition Method: 18AUG13\_3uL.dam





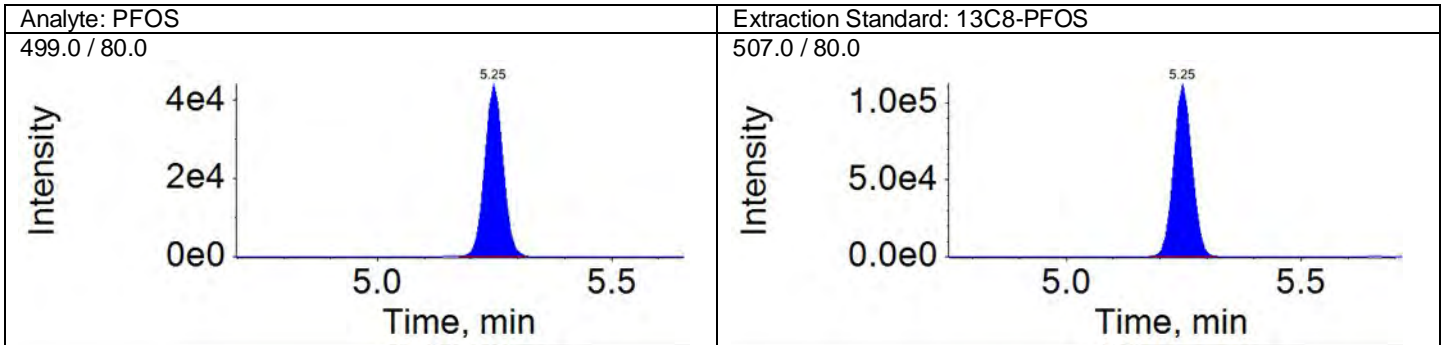
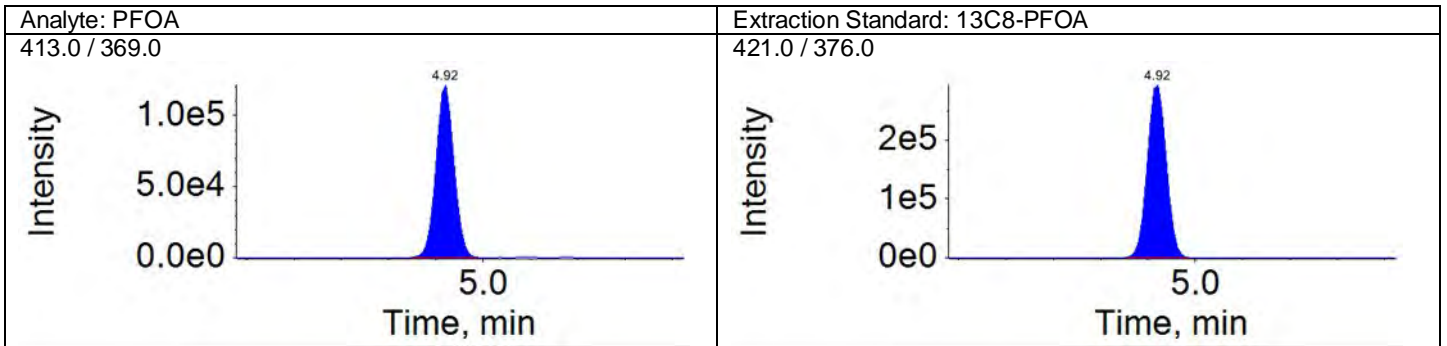
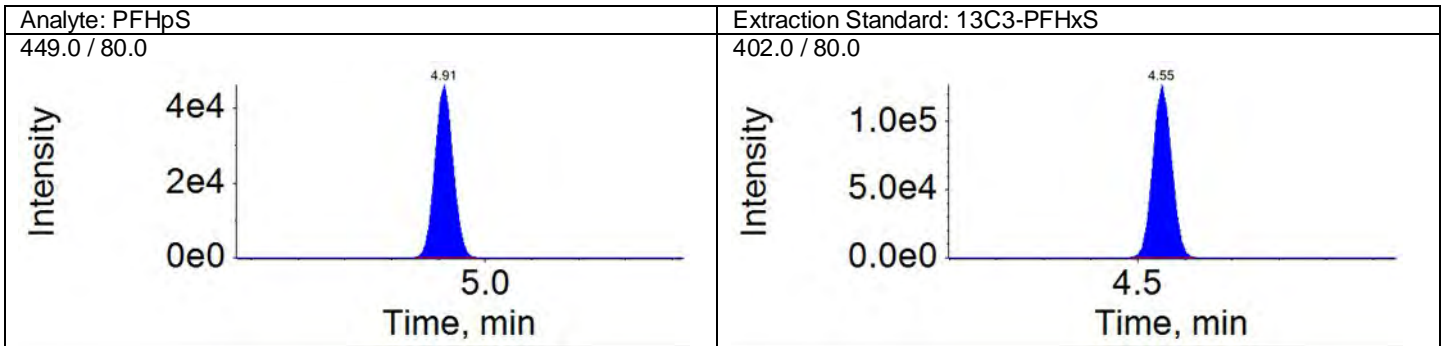
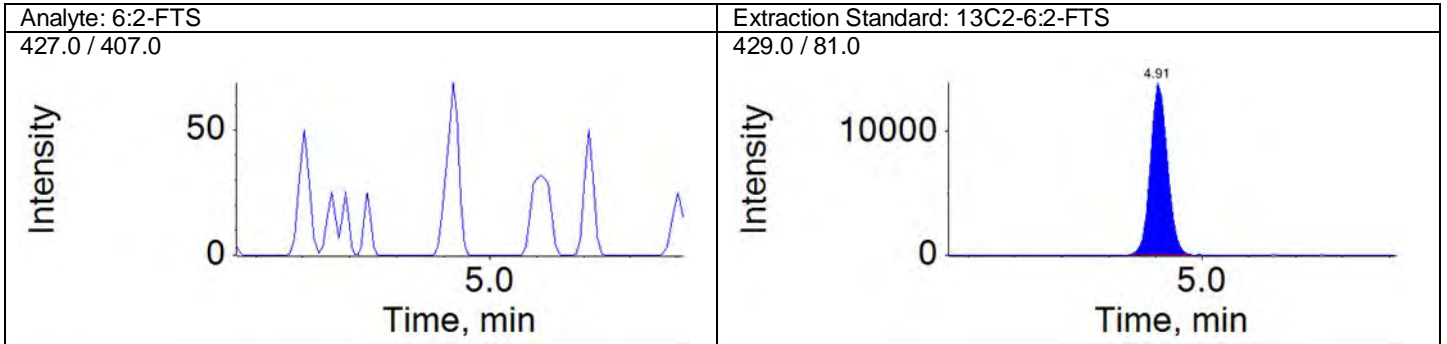
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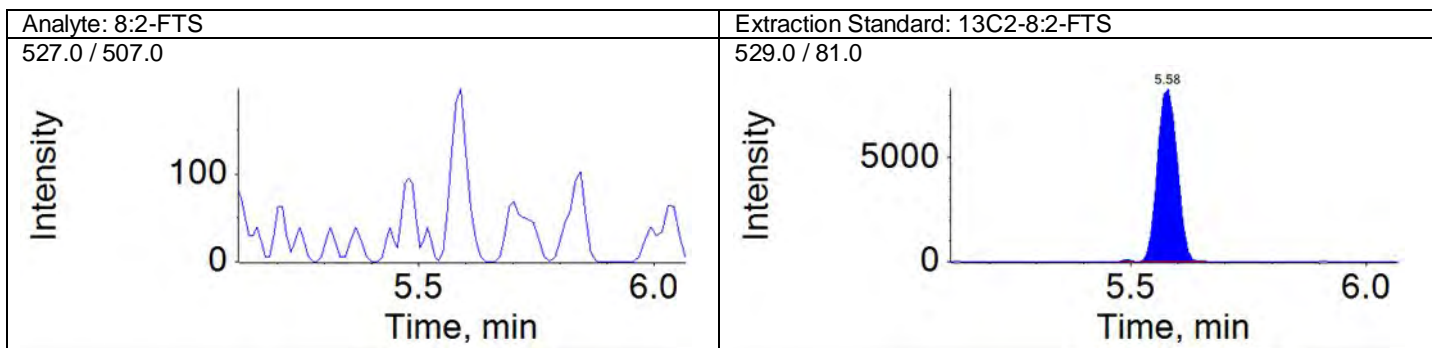
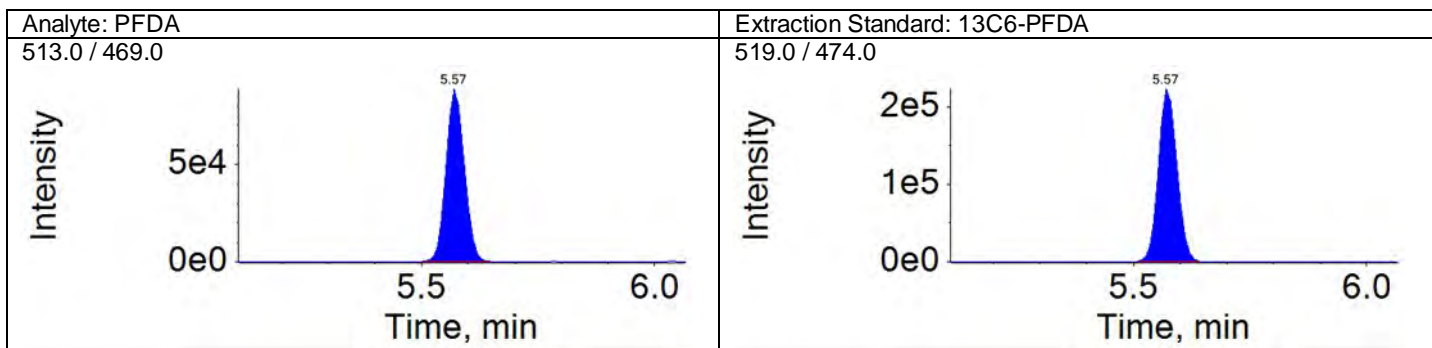
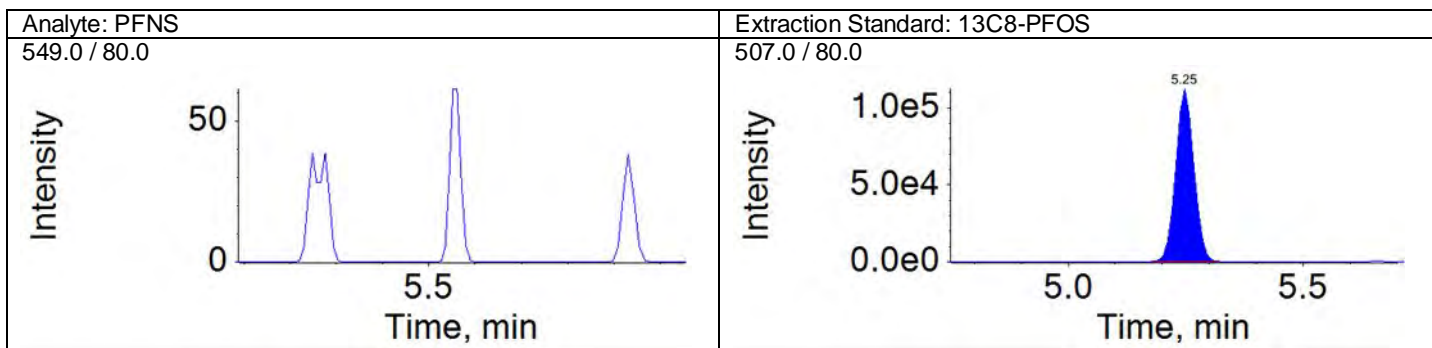
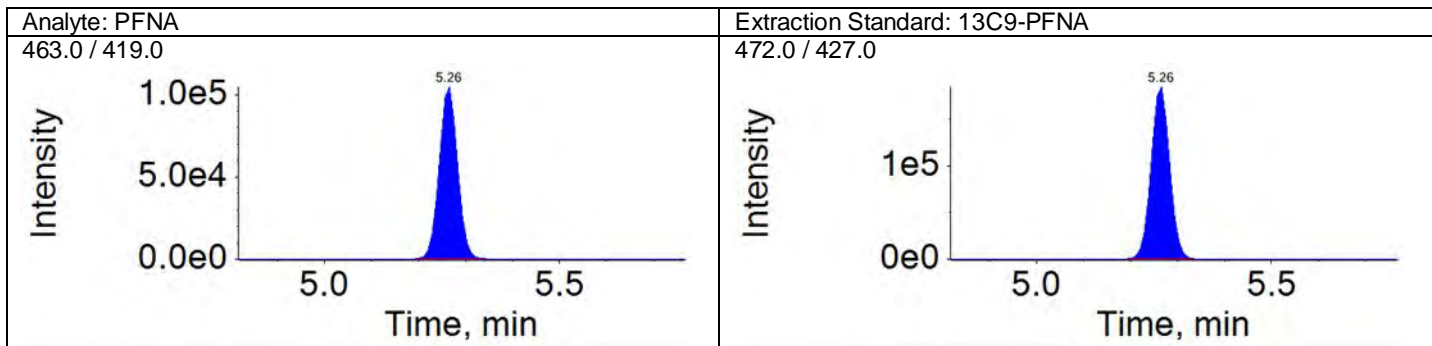
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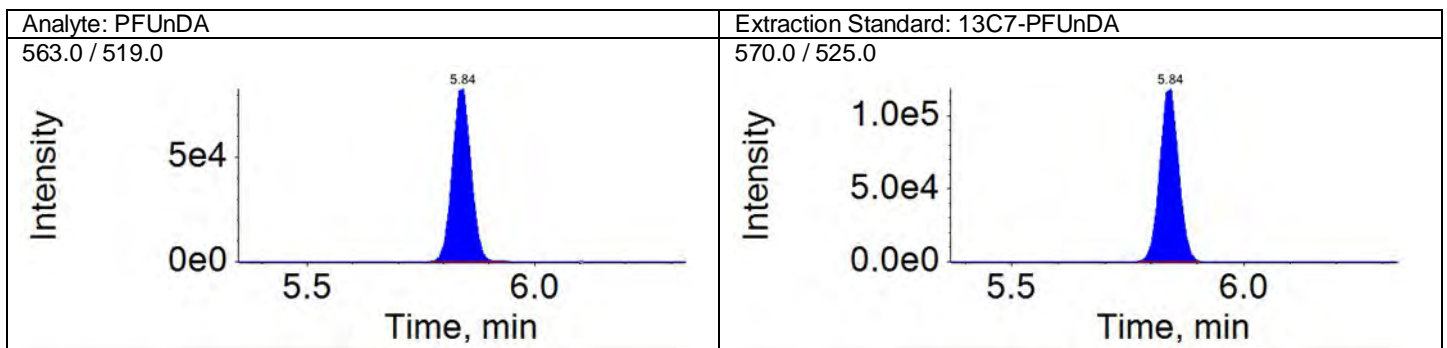
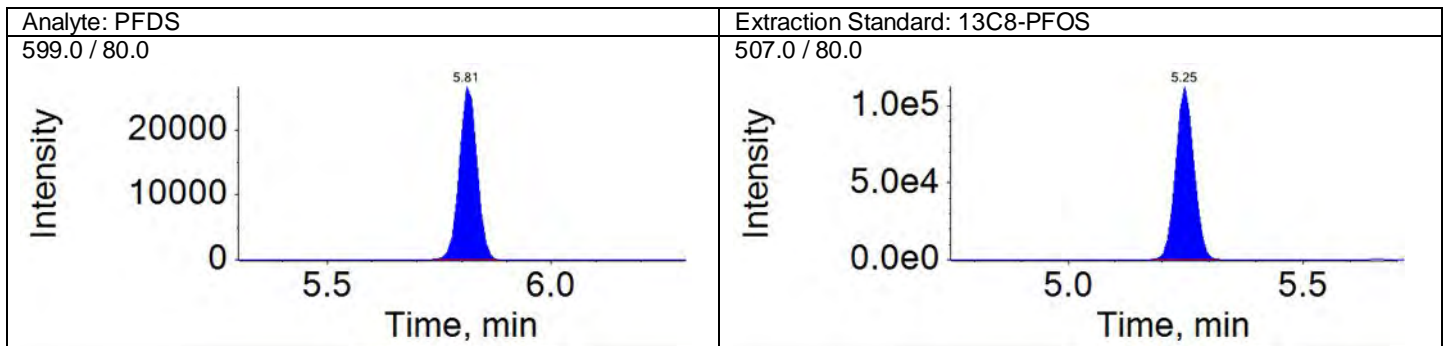
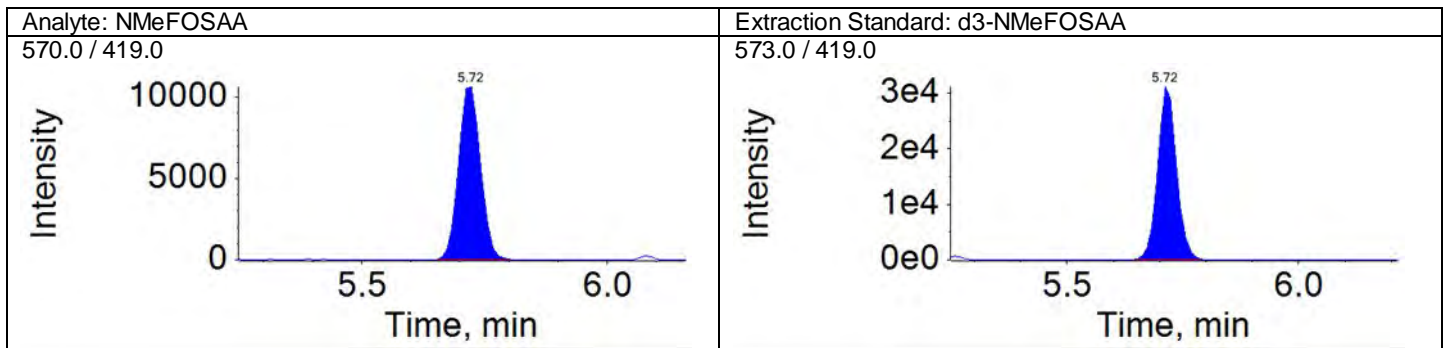
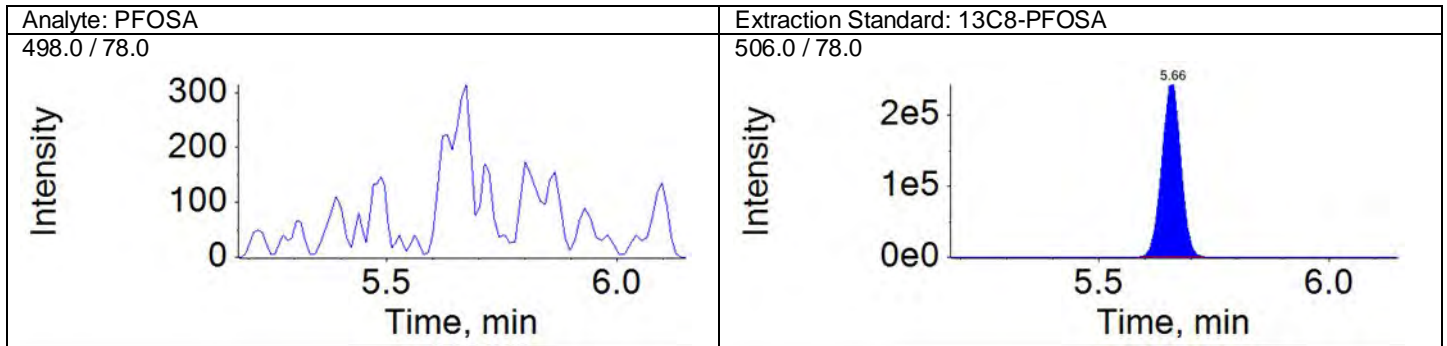
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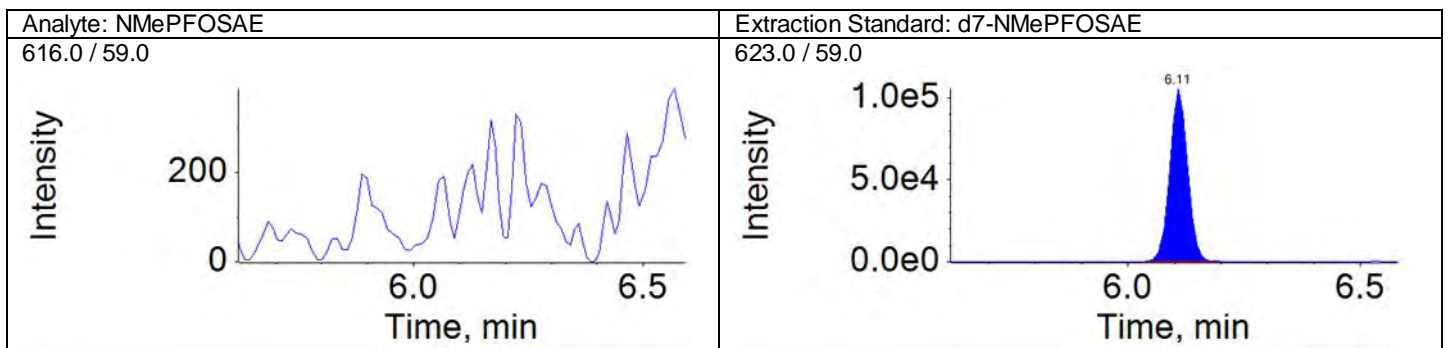
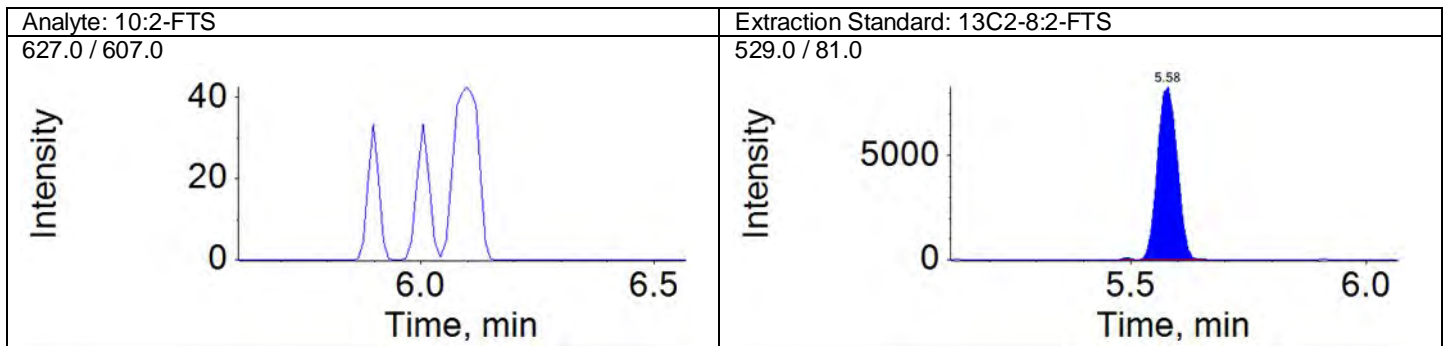
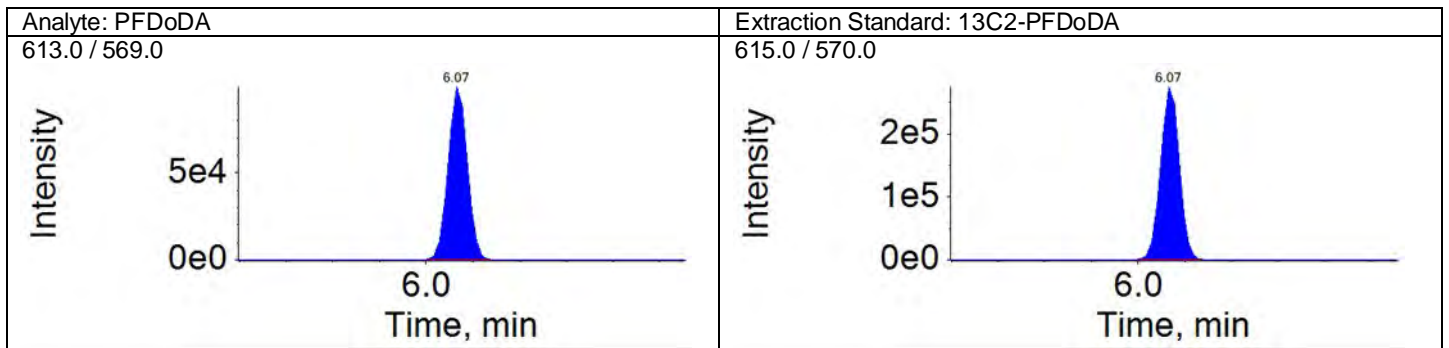
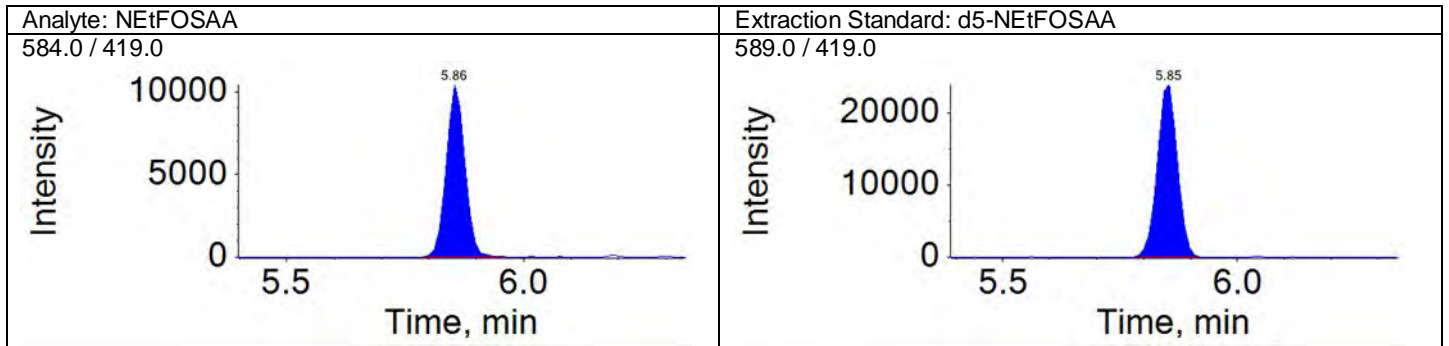
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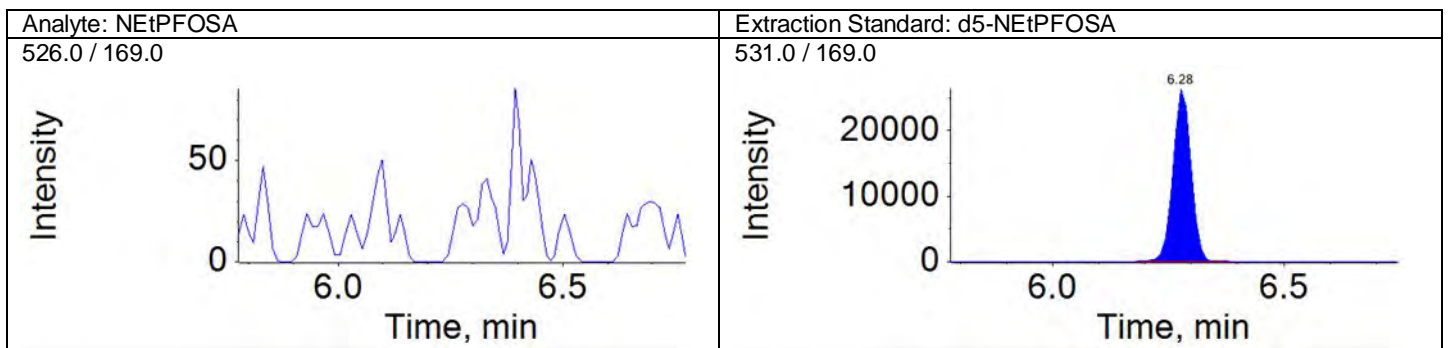
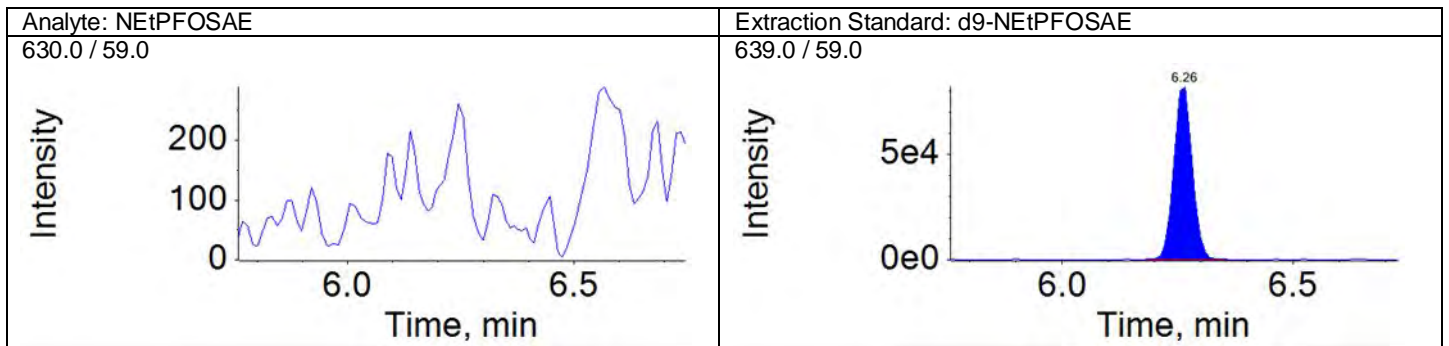
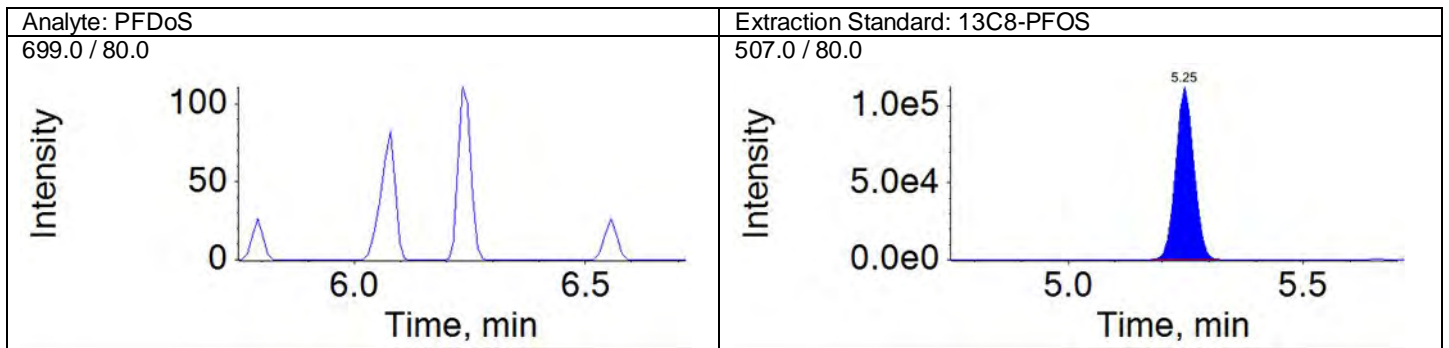
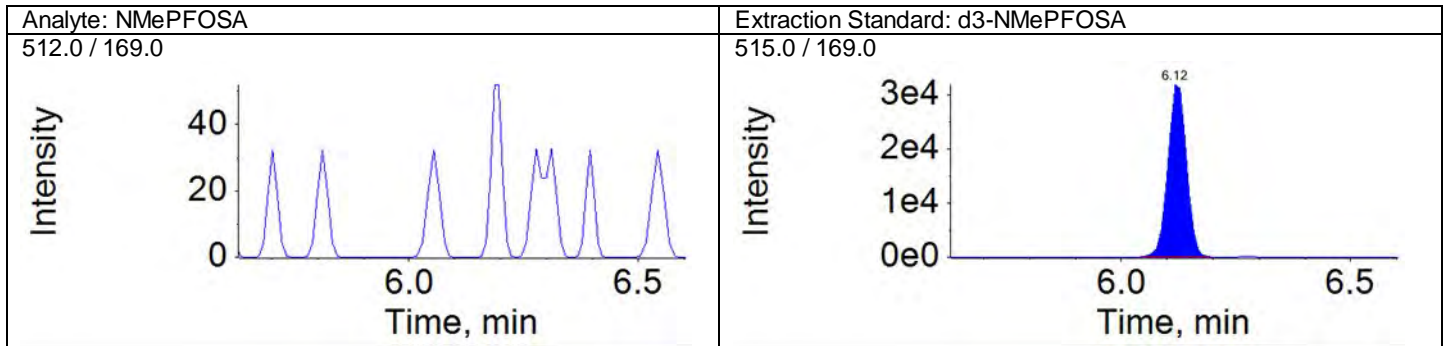
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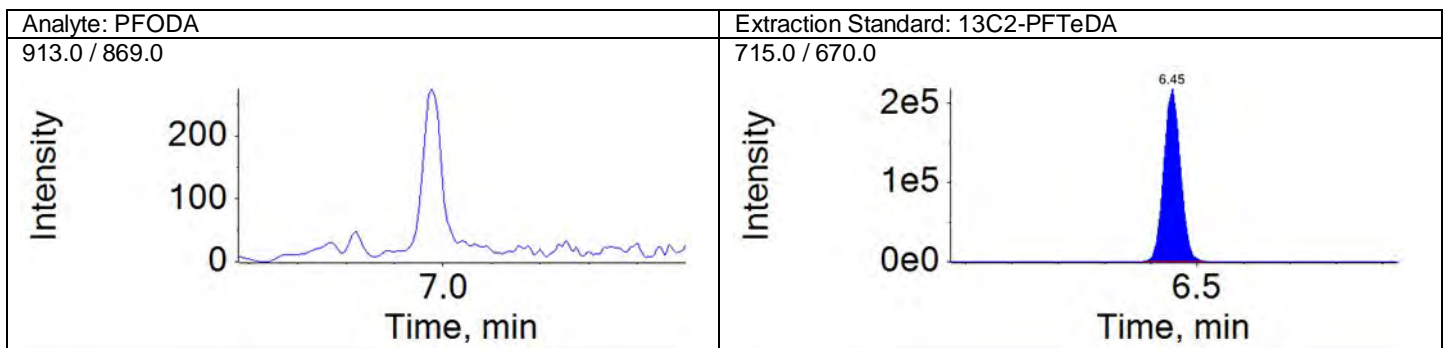
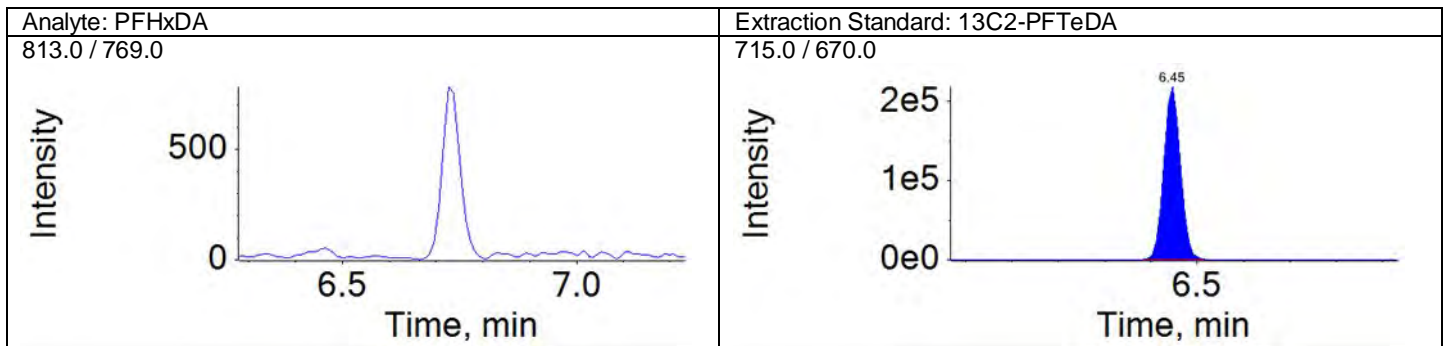
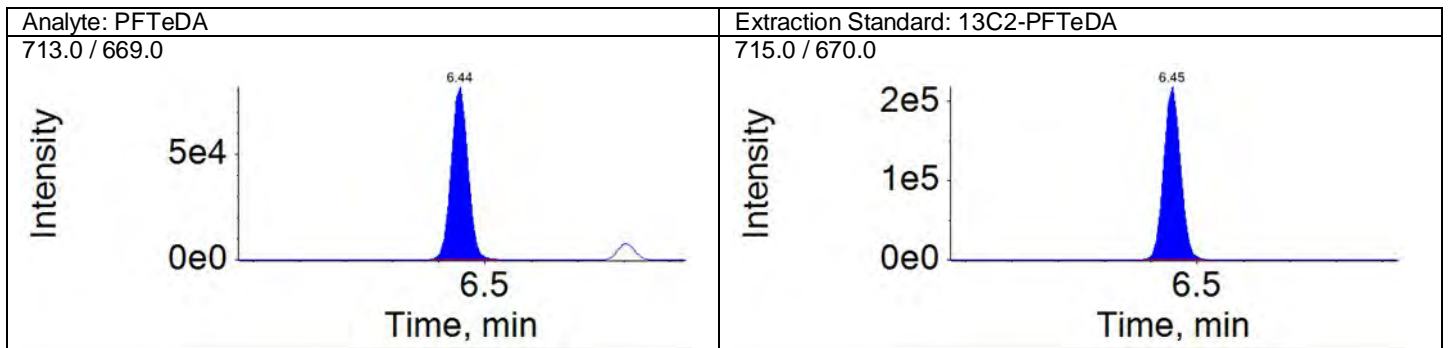
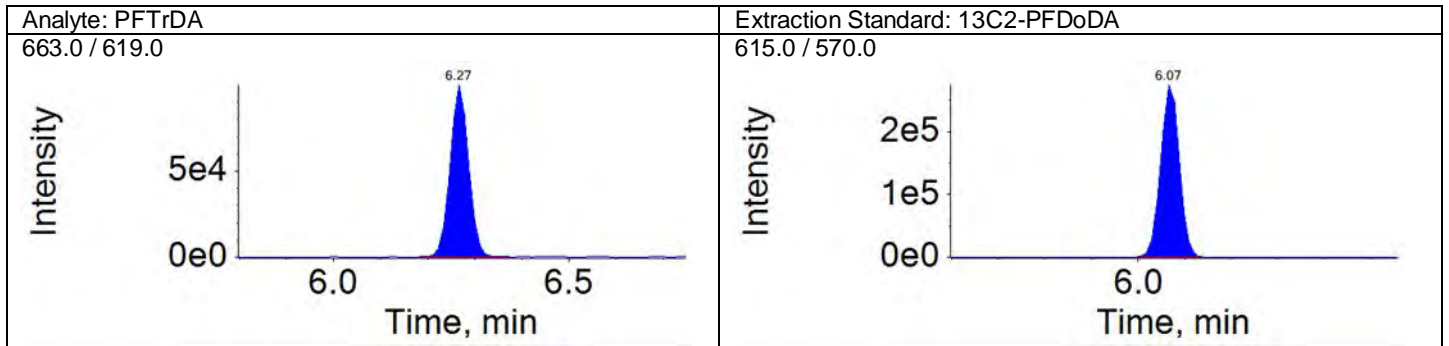
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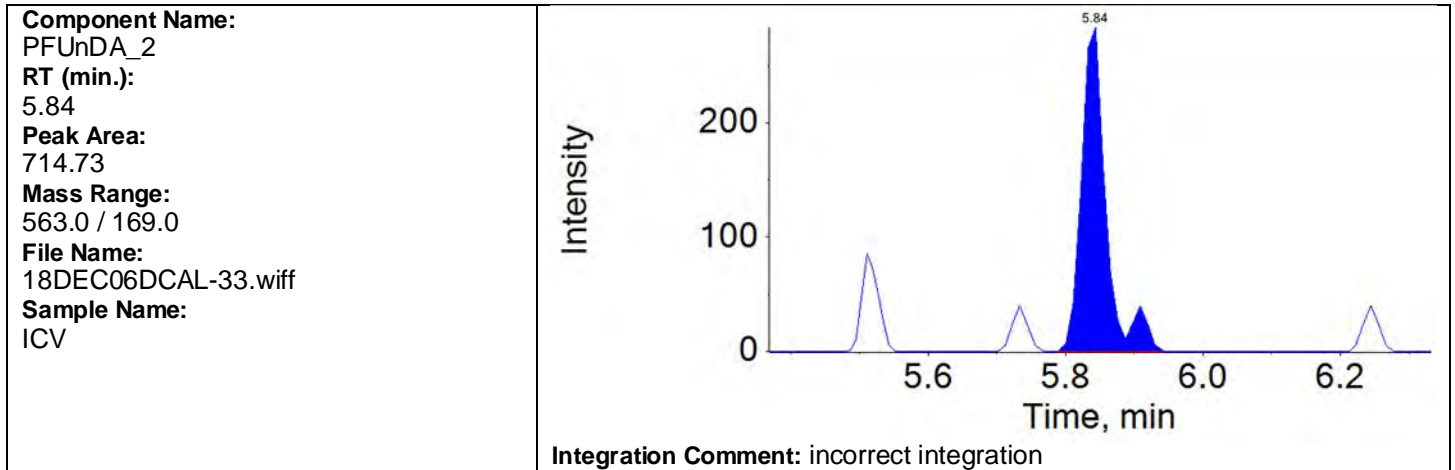
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Acquisition Method: 18AUG13\_3uL.dam



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

Ion Ratio Report

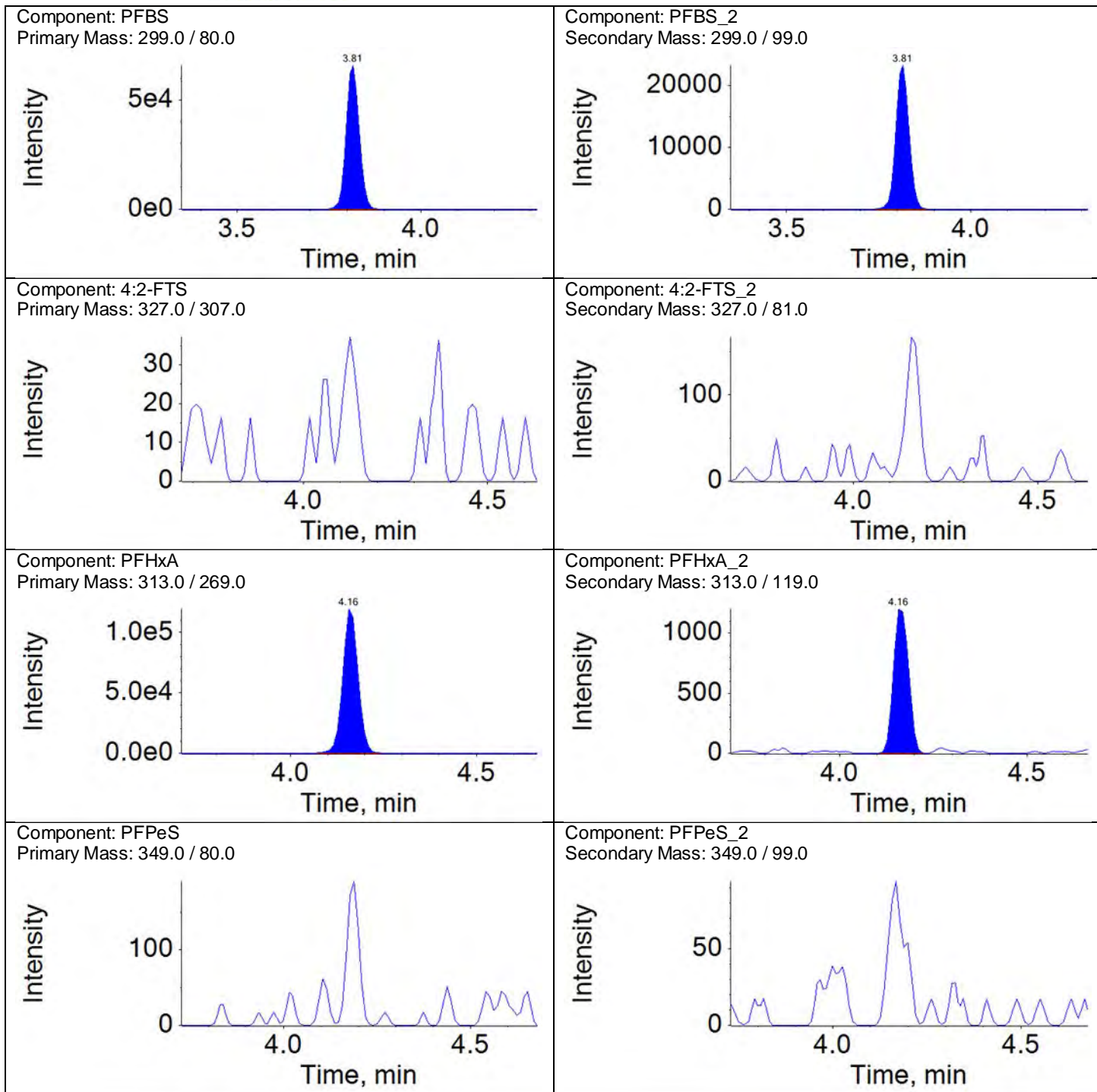
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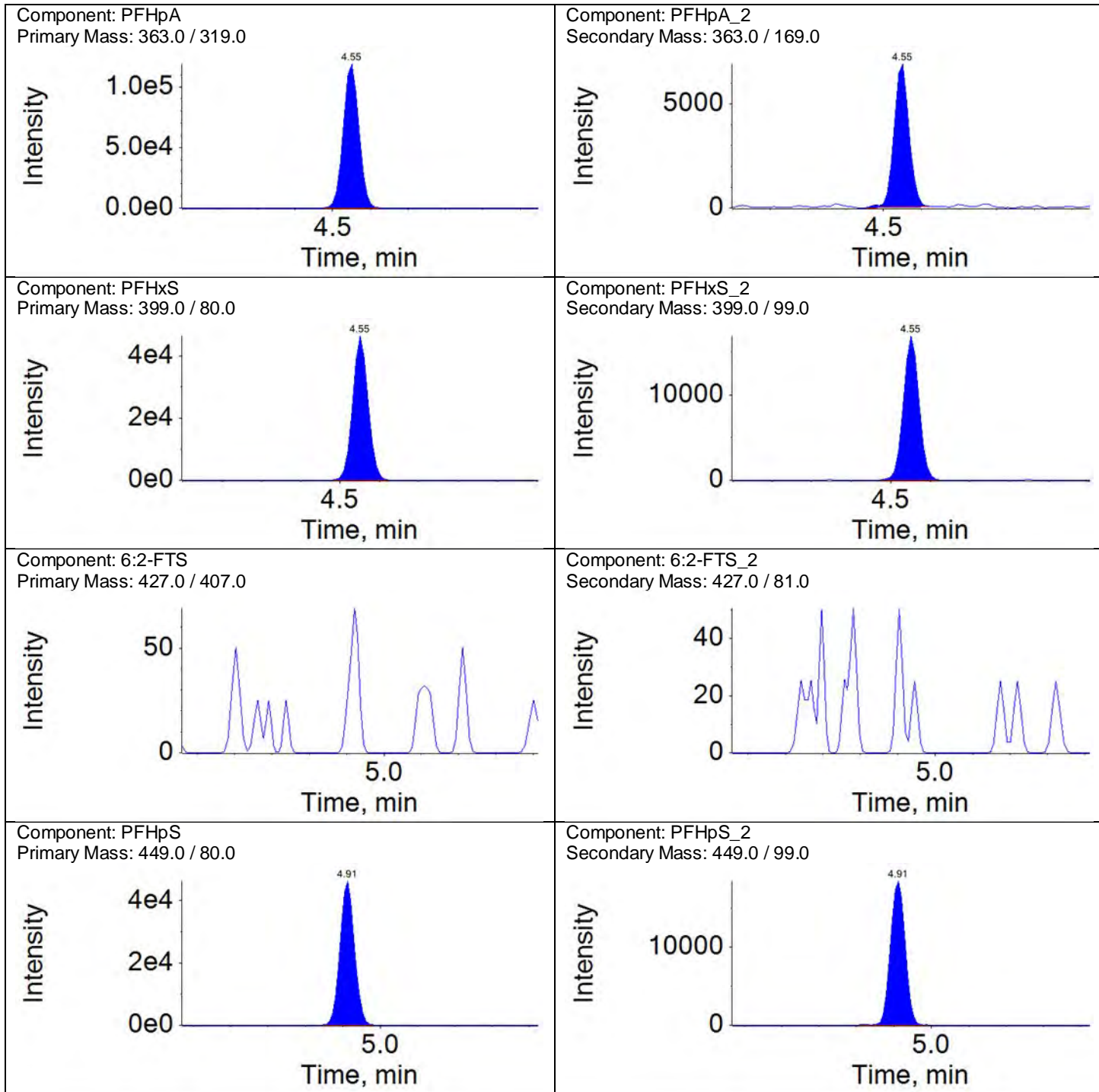
Instrument Name: LM27631

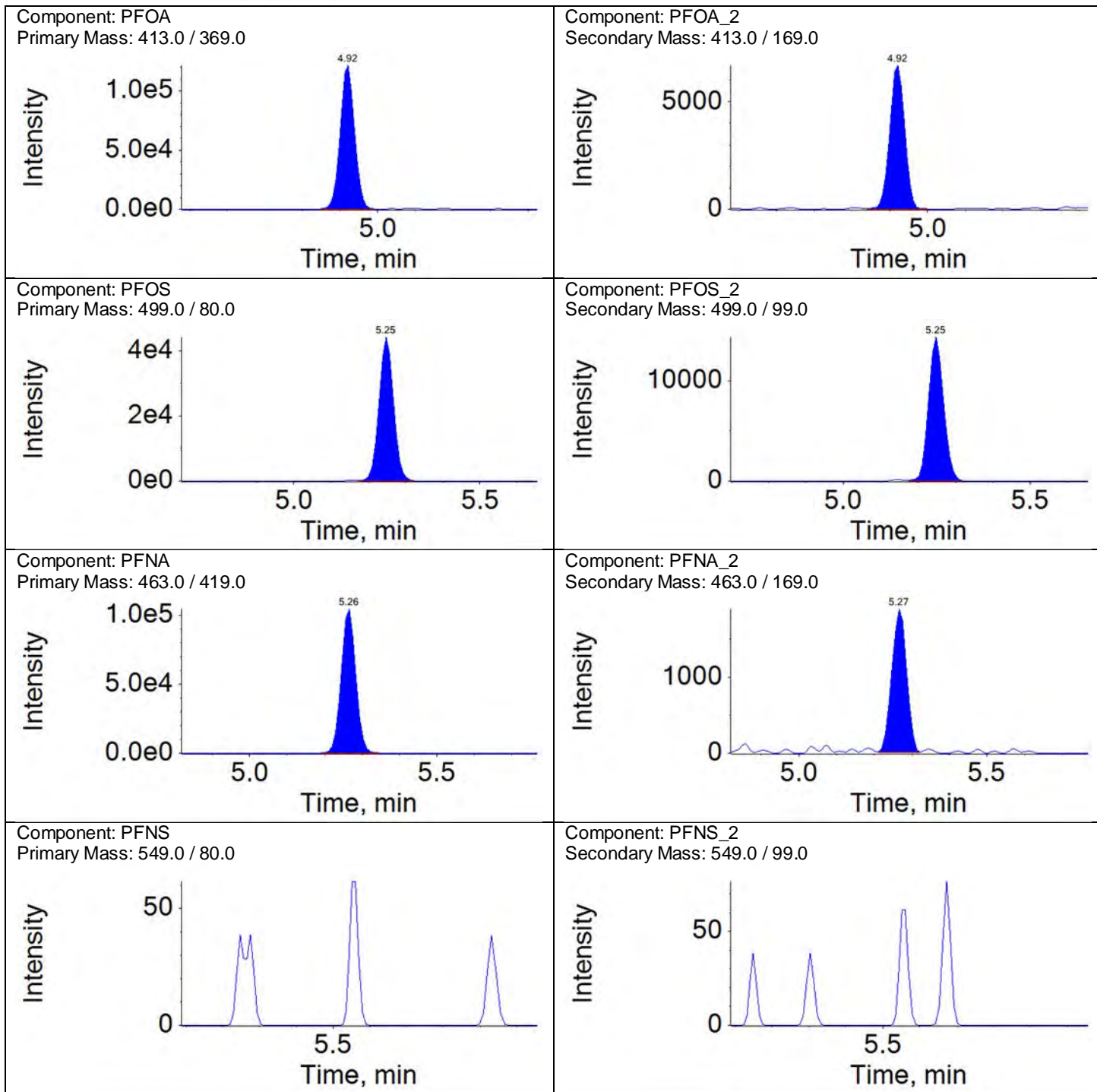
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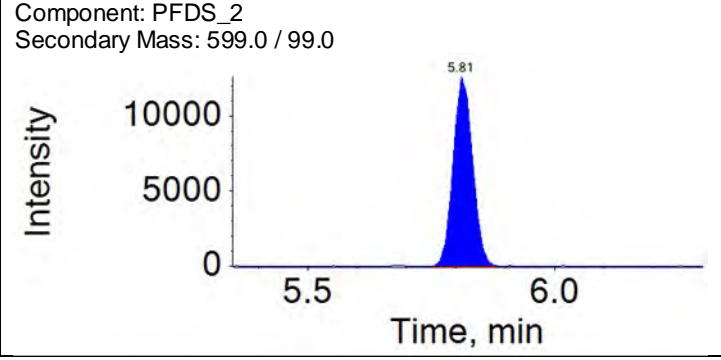
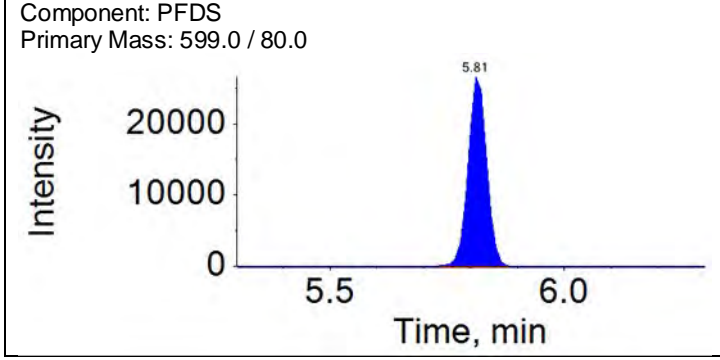
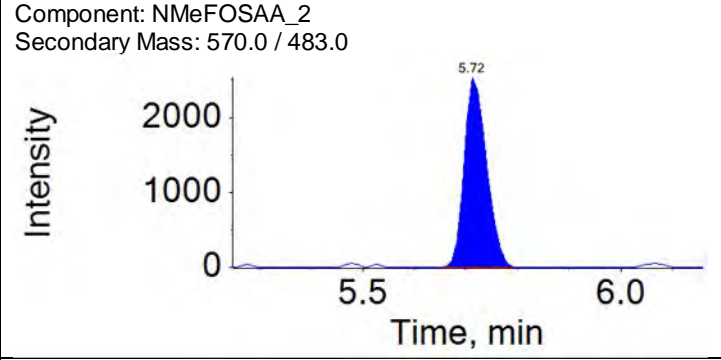
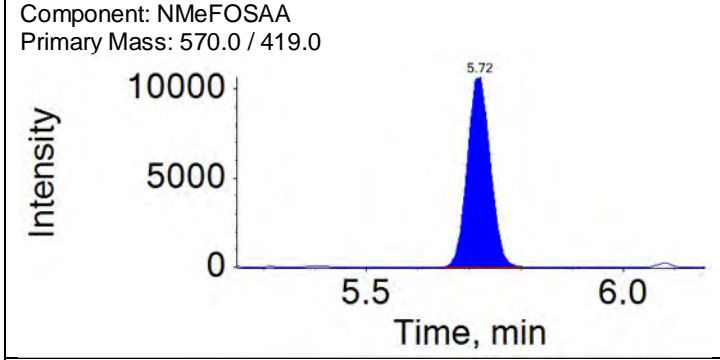
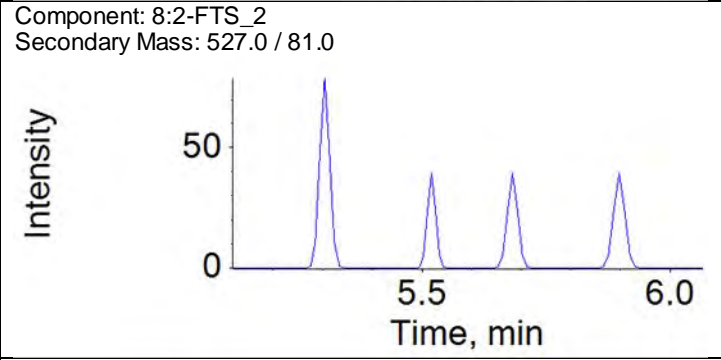
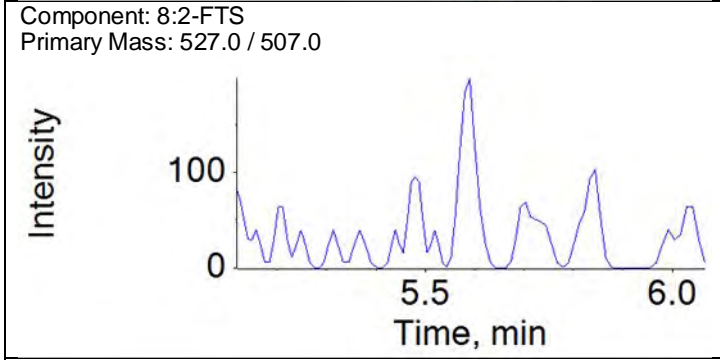
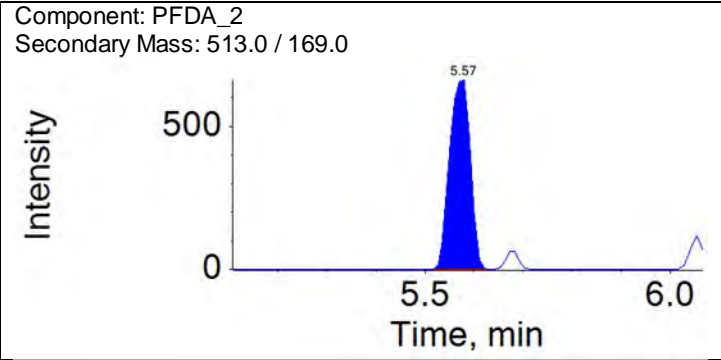
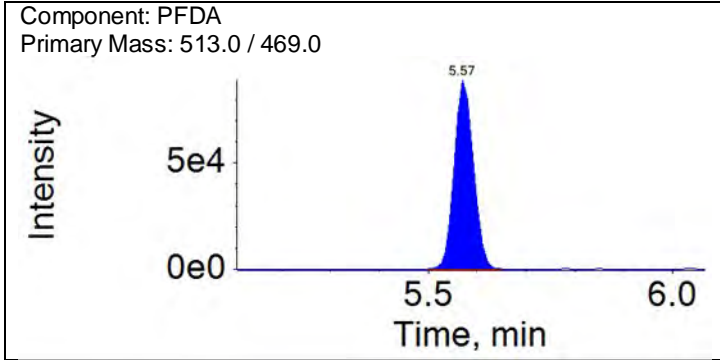
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PFBS	3.81	1.00	162265.95	A	1.0000	1.0000			
PFBS_2	3.81	1.00	57547.59	A	0.3627	0.3546	-2	50	
4:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	0.6542	N/A		50	
PFHxA	4.16	1.00	339202.11	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	3379.41	A	0.0097	0.0100	3	50	
PFPeS	N/A	N/A	N/A	A	1.0000	N/A			
PFPeS_2	N/A	N/A	N/A	A	0.5262	N/A		50	
PFHpA	4.55	1.00	342255.00	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	19041.36	A	0.0565	0.0556	-1	50	
PFHxS	4.55	1.00	125645.75	A	1.0000	1.0000			
PFHxS_2	4.55	1.00	46123.78	A	0.3645	0.3671	1	50	
6:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	0.6273	N/A		50	
PFHpS	4.91	1.08	124002.40	A	1.0000	1.0000			
PFHpS_2	4.91	1.08	50219.29	A	0.4162	0.4050	-3	50	
PFOA	4.92	1.00	320848.38	A	1.0000	1.0000			
PFOA_2	4.92	1.00	18413.87	A	0.0616	0.0574	-7	50	
PFOS	5.25	1.00	119330.15	A	1.0000	1.0000			
PFOS_2	5.25	1.00	40226.42	A	0.3021	0.3371	12	50	
PFNA	5.26	1.00	281622.36	A	1.0000	1.0000			
PFNA_2	5.27	1.00	5132.36	A	0.0192	0.0182	-5	50	
PFNS	N/A	N/A	N/A	A	1.0000	N/A			
PFNS_2	N/A	N/A	N/A	A	0.4845	N/A		50	
PFDA	5.57	1.00	241839.27	A	1.0000	1.0000			
PFDA_2	5.57	1.00	1957.34	A	0.0096	0.0081	-16	50	
8:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	0.6117	N/A		50	
NMeFOSAA	5.72	1.00	33150.53	A	1.0000	1.0000			
NMeFOSAA_2	5.72	1.00	7600.79	A	0.2673	0.2293	-14	50	
PFDS	5.81	1.11	72651.57	A	1.0000	1.0000			
PFDS_2	5.81	1.11	34376.40	A	0.4952	0.4732	-4	50	
PFOA	5.84	1.00	236810.29	A	1.0000	1.0000			
PFOA_2	5.84	1.00	649.73	M	0.0041	0.0027	-33	50	
NEtFOSAA	5.86	1.00	28610.36	A	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	17404.13	A	0.6726	0.6083	-10	50	
PFOA	6.07	1.00	282836.29	A	1.0000	1.0000			
PFOA_2	6.07	1.00	1889.03	A	0.0133	0.0067	-50	50	
10:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	0.6969	N/A		50	
PFOA	6.27	1.03	269624.15	A	1.0000	1.0000			
PFOA_2	6.27	1.03	1886.82	A	0.0075	0.0070	-7	50	
PFOA	6.44	1.00	203997.28	A	1.0000	1.0000			
PFOA_2	6.44	1.00	1315.57	A	0.0066	0.0064	-2	50	
PFHxDA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxDA_2	N/A	N/A	N/A	A	0.0616	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0272	N/A		50	



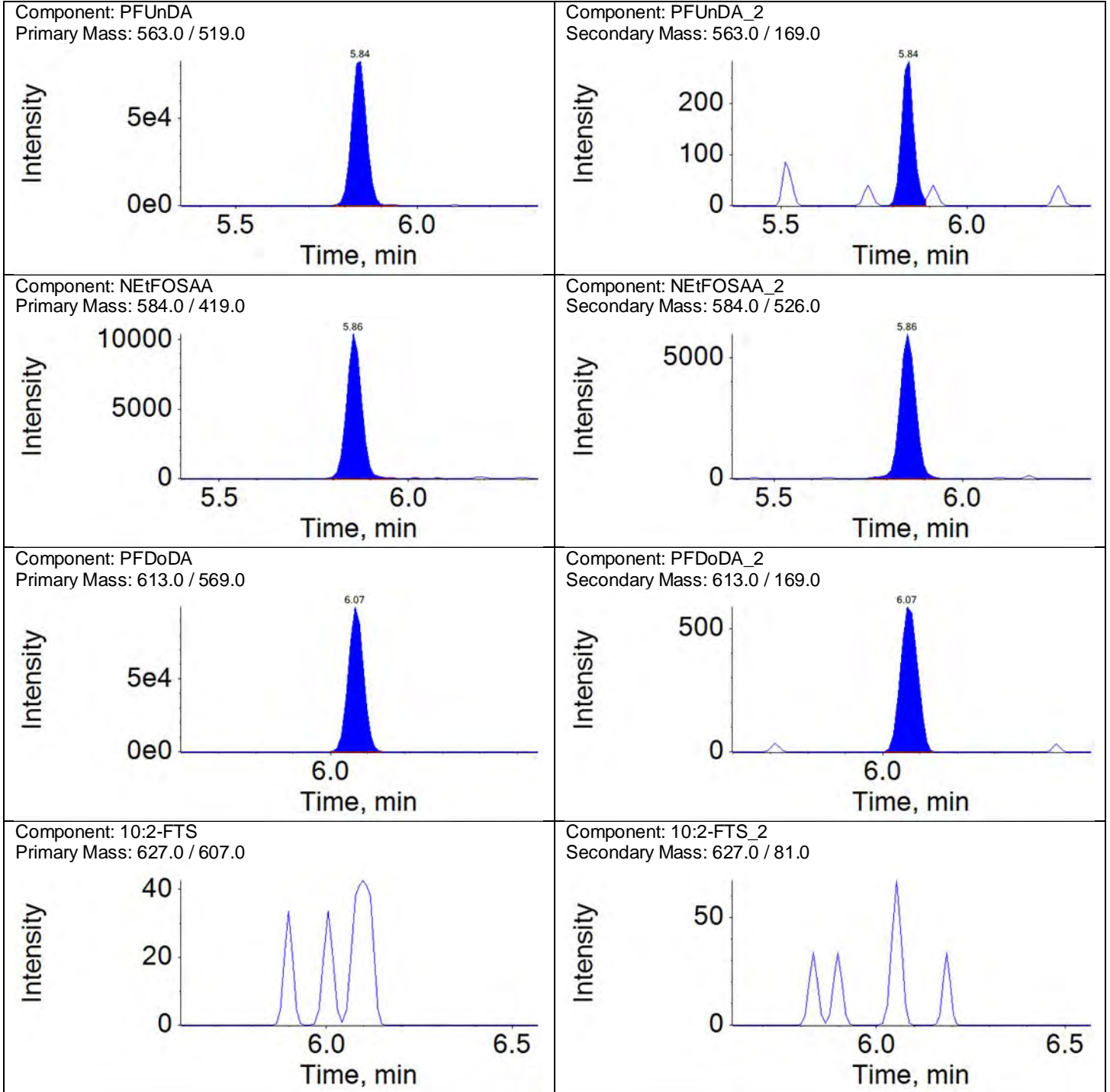




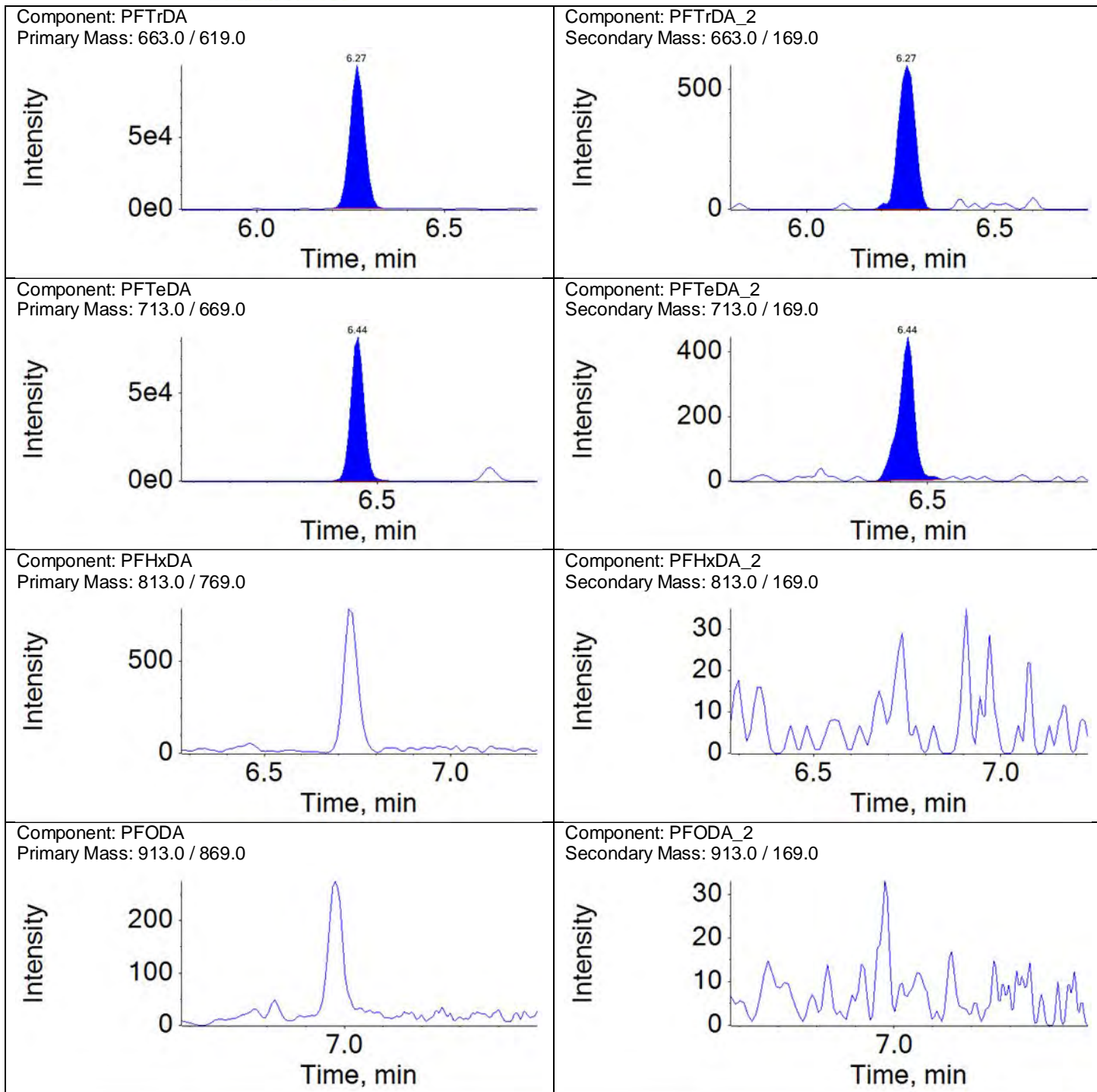












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	L+B CAL3	Data File:	18DEC06DCAL-34.wiff
Sample ID:	LBMODX1833D	Acquis Date:	2018-12-07T00:58:37
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	11	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	844235.2	825688.9	2	50	
13C2-PFOA	5.0	408558.7	449802.8	-9	50	
13C4-PFOS	4.8	280801.6	276858.3	1	50	
13C2-PFDA	5.0	312700.9	315428.3	-1	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	919022.2	13C3-PFBA	844235.2	1.089	5.000	4.818	96	70-130	
E13C5-PFPeA	829061.6	13C3-PFBA	844235.2	0.982	5.000	4.664	93	70-130	
E13C3-PFBS	418825.8	13C3-PFBA	844235.2	0.496	4.650	4.205	90	70-130	
E13C2-4:2-FTS	54344.7	13C2-PFOA	408558.7	0.133	4.670	5.212	112	70-130	
E13C5-PFHxA	646116.7	13C2-PFOA	408558.7	1.581	5.000	5.310	106	70-130	
E13C3-PFHxS	334616.7	13C2-PFOA	408558.7	0.819	4.730	5.253	111	70-130	
E13C4-PFHpA	488776.0	13C2-PFOA	408558.7	1.196	5.000	5.086	102	70-130	
E13C2-6:2-FTS	32797.0	13C2-PFOA	408558.7	0.080	4.750	4.973	105	70-130	
E13C8-PFOA	776387.7	13C2-PFOA	408558.7	1.900	5.000	5.372	107	70-130	
E13C8-PFOS	305095.5	13C4-PFOS	280801.6	1.087	4.780	4.876	102	70-130	
E13C9-PFNA	462590.0	13C4-PFOS	280801.6	1.647	5.000	4.655	93	70-130	
E13C6-PFDA	583654.2	13C2-PFDA	312700.9	1.866	5.000	4.946	99	70-130	
E13C2-8:2-FTS	26851.5	13C2-PFDA	312700.9	0.086	4.790	5.606	117	70-130	
E13C8-PFOA	661654.7	13C2-PFDA	312700.9	2.116	5.000	5.004	100	70-130	
Ed3-NMeFOSAA	88321.1	13C2-PFDA	312700.9	0.282	5.000	5.005	100	70-130	
E13C7-PFUnDA	327159.9	13C2-PFDA	312700.9	1.046	5.000	5.132	103	70-130	
Ed5-NEtFOSAA	68718.6	13C2-PFDA	312700.9	0.220	5.000	4.851	97	70-130	
E13C2-PFDoDA	735764.7	13C2-PFDA	312700.9	2.353	5.000	4.938	99	70-130	
Ed7-NMePFOSAE	262335.5	13C2-PFDA	312700.9	0.839	5.000	4.833	97	70-130	
Ed3-NMePFOSA	85478.0	13C2-PFDA	312700.9	0.273	5.000	4.981	100	70-130	
Ed9-NEtPFOSAE	218308.0	13C2-PFDA	312700.9	0.698	5.000	4.814	96	70-130	
Ed5-NEtPFOSA	69312.9	13C2-PFDA	312700.9	0.222	5.000	4.988	100	70-130	
E13C2-PFTeDA	512997.4	13C2-PFDA	312700.9	1.641	5.000	4.869	97	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

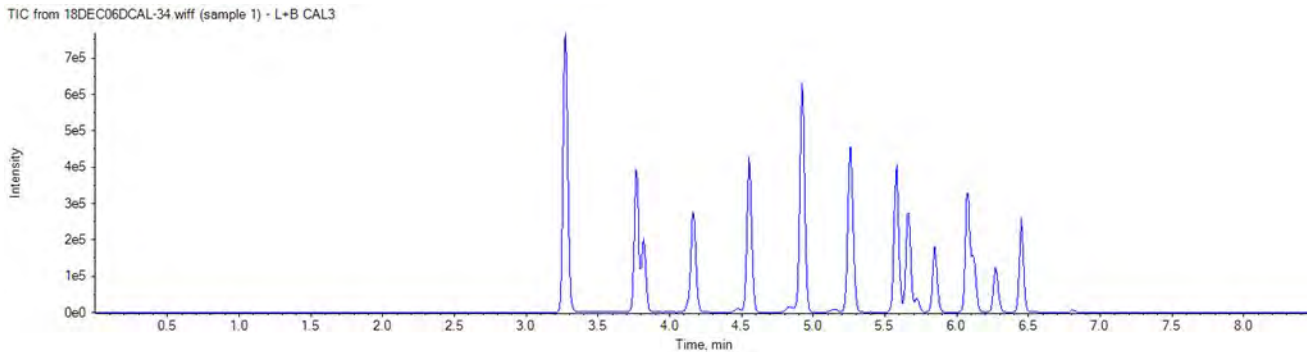
**Analyte Quantitation Peak Table**

Sample Name: L+B CAL3 Instrument Name: LM27631 File Name: 18DEC06DCAL-34.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.27	1.000	4484.4		A	13C4-PFBA	3.27	919022.2	0.005	0.027
PFPeA	3.76	1.000	1505.7		A	13C5-PFPeA	3.77	829061.6	0.002	0.010
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.82	418825.8	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.13	54344.7	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	646116.7	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.82	418825.8	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.55	488776.0	N/A	
PFHxS	4.56	1.000	129352.3		M	13C3-PFHxS	4.56	334616.7	0.387	1.832
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.91	32797.0	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.56	334616.7	N/A	
PFOA	4.92	1.000	280874.3		M	13C8-PFOA	4.92	776387.7	0.362	1.977
PFOS	5.25	1.000	116707.6		M	13C8-PFOS	5.25	305095.5	0.383	1.587
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.27	462590.0	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.25	305095.5	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.58	583654.2	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.58	26851.5	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.66	661654.7	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.72	88321.1	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.25	305095.5	N/A	
PFUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.85	327159.9	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.86	68718.6	N/A	
PFDaDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.08	735764.7	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.58	26851.5	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.12	262335.5	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.13	85478.0	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.25	305095.5	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.27	218308.0	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.29	69312.9	N/A	
PFTrDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.08	735764.7	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	512997.4	N/A	
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	512997.4	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.45	512997.4	N/A	

**Total Ion Chromatogram**

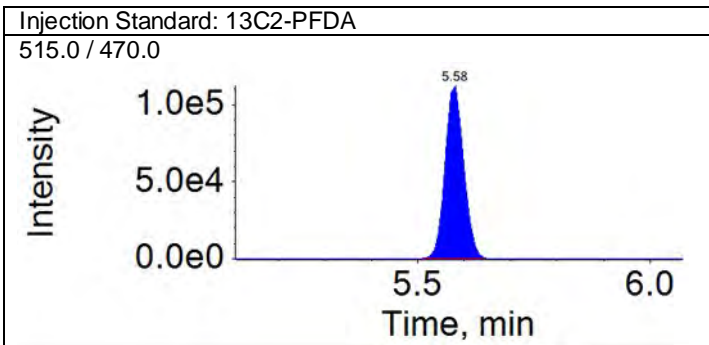
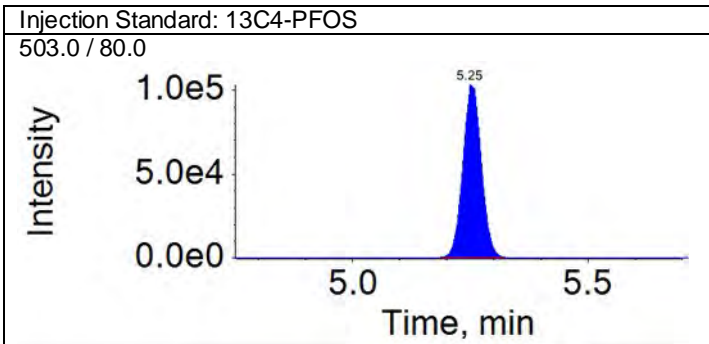
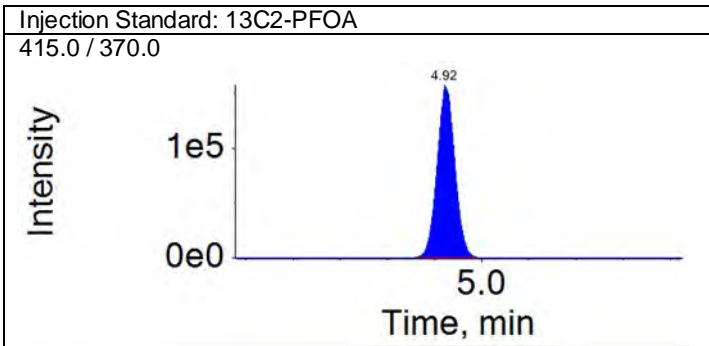
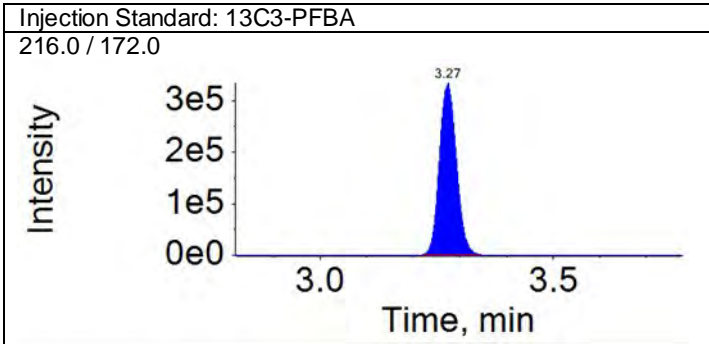


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By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

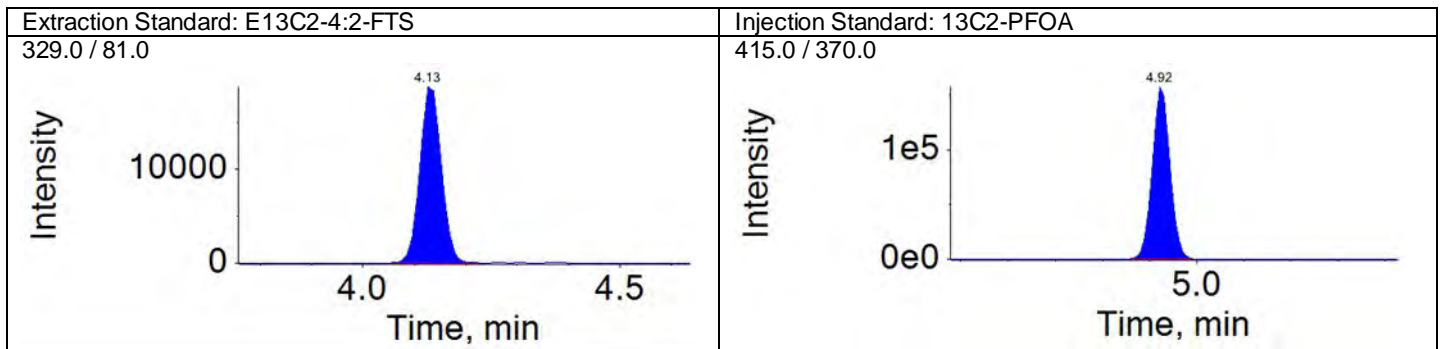
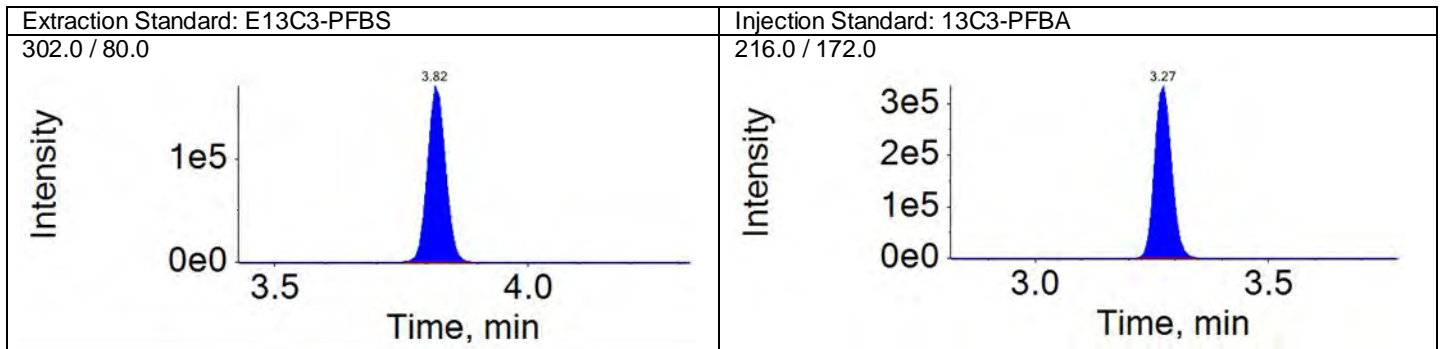
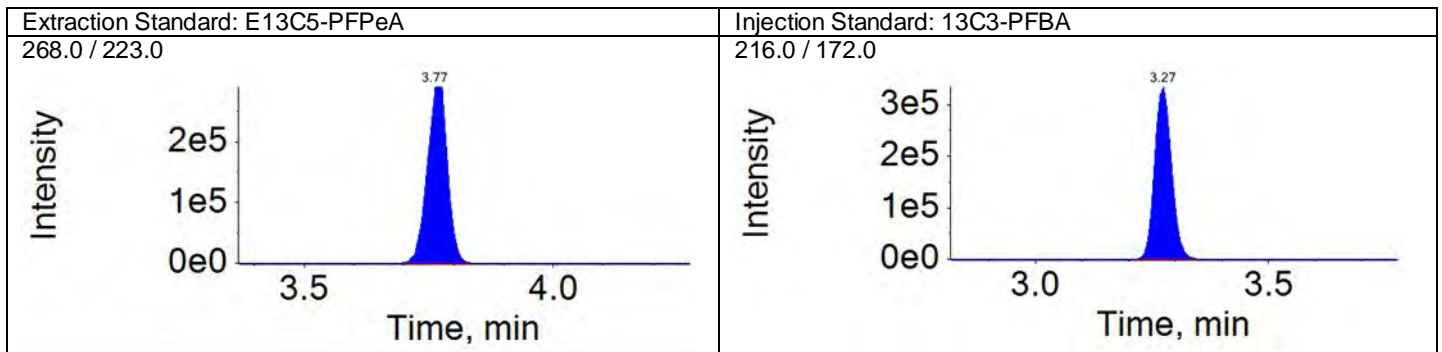
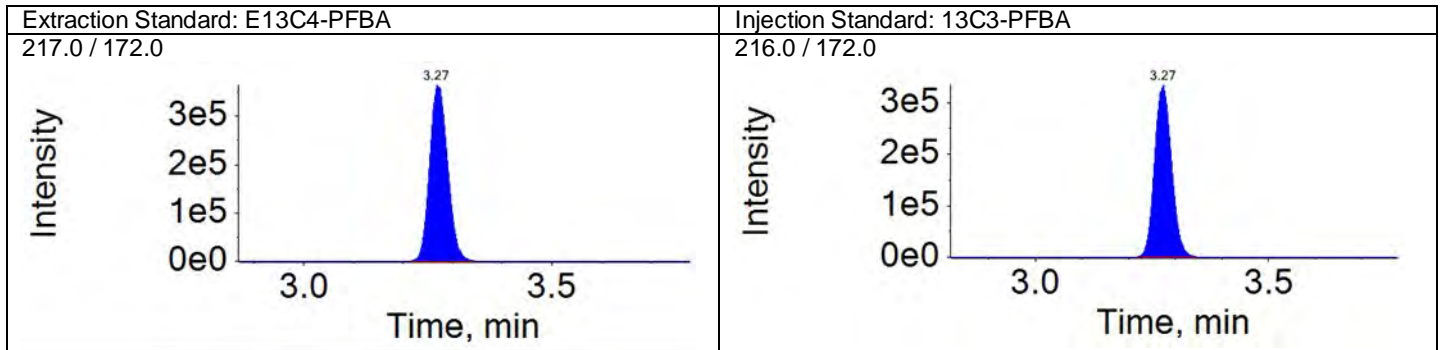
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
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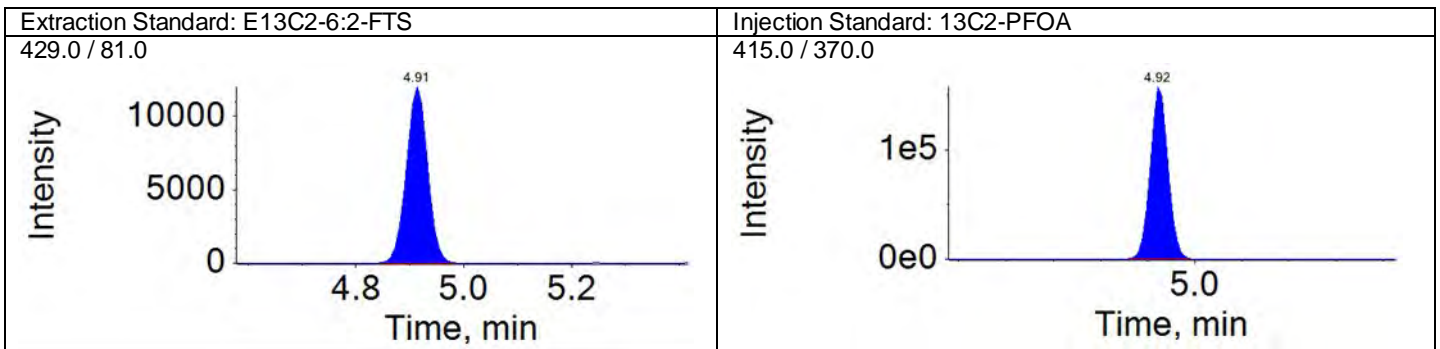
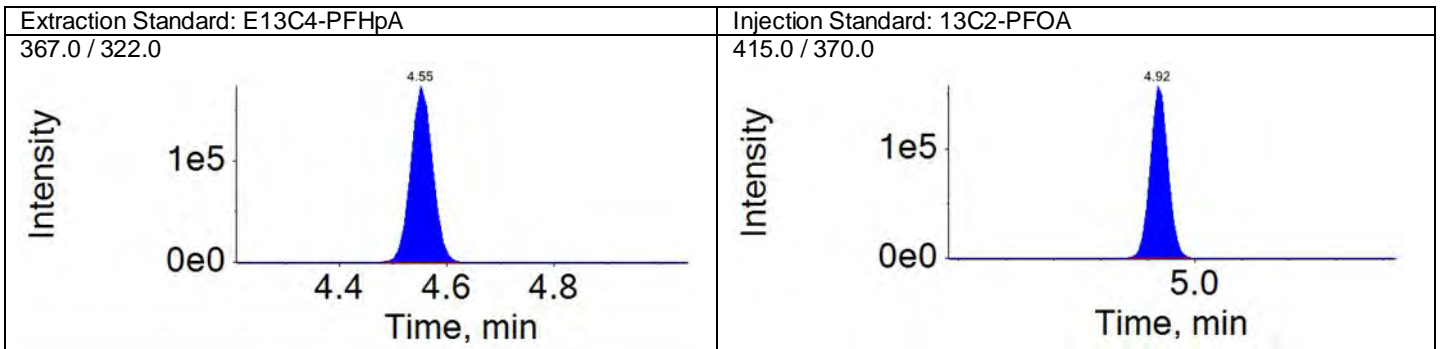
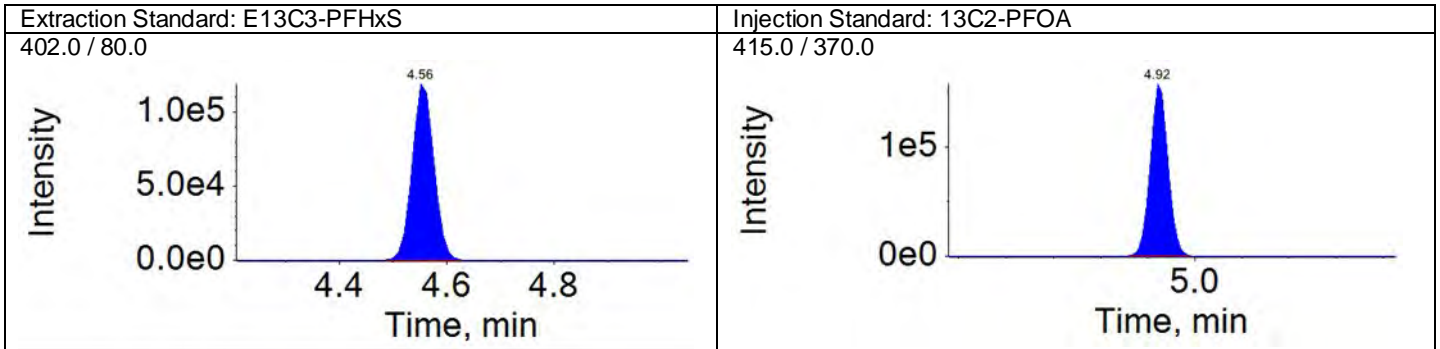
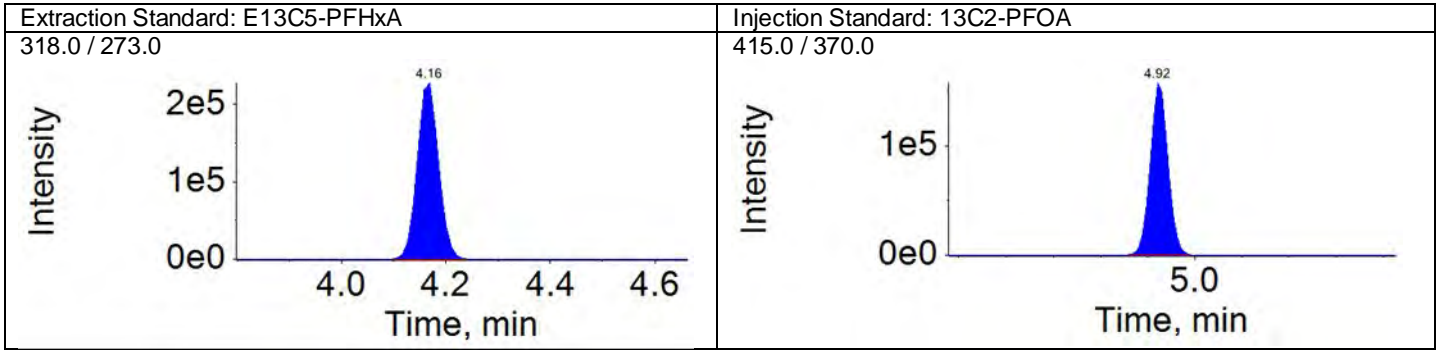
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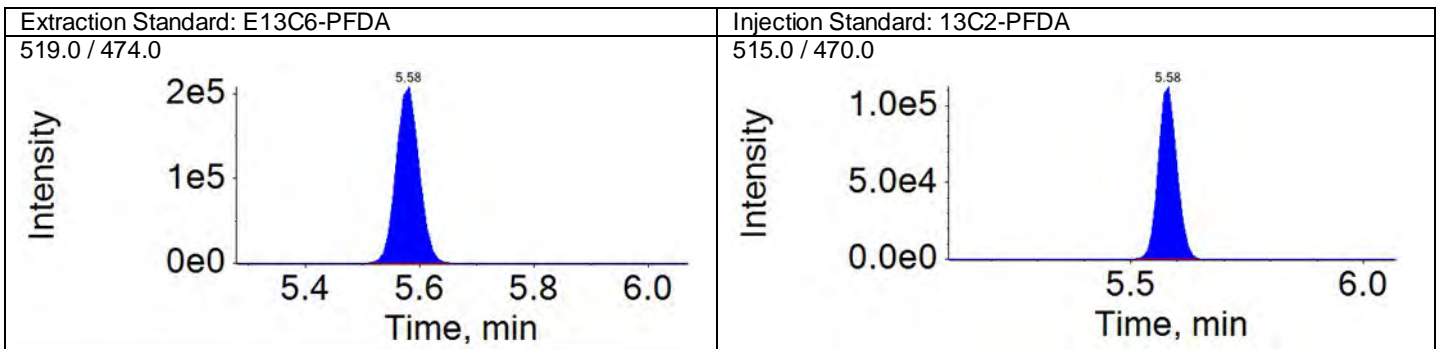
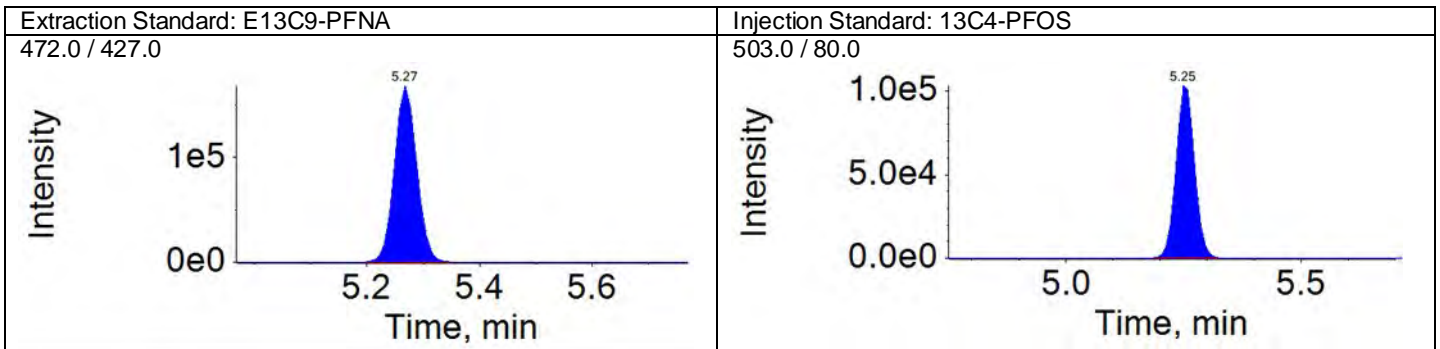
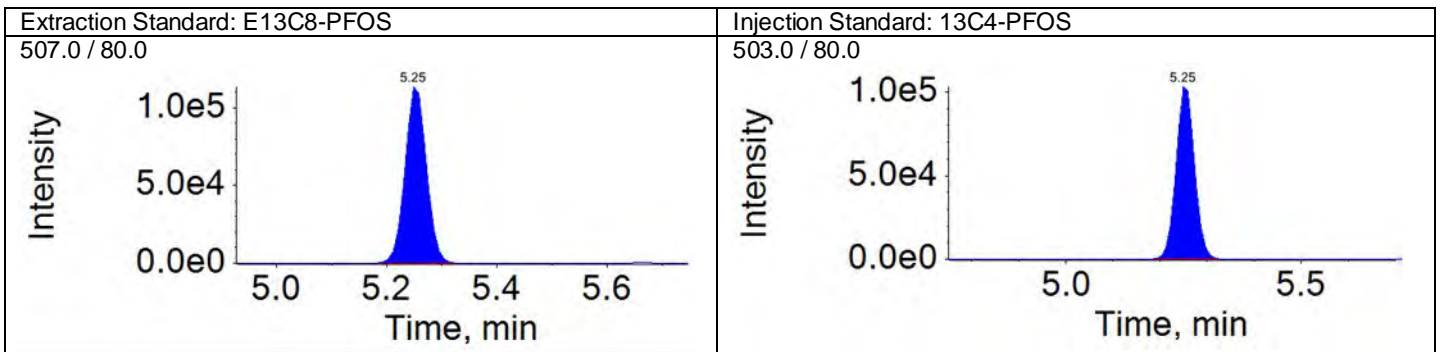
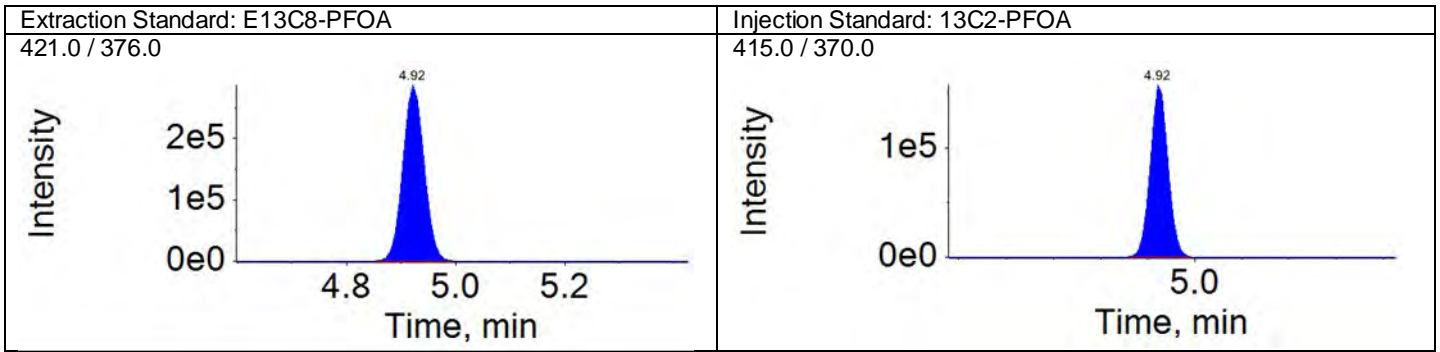
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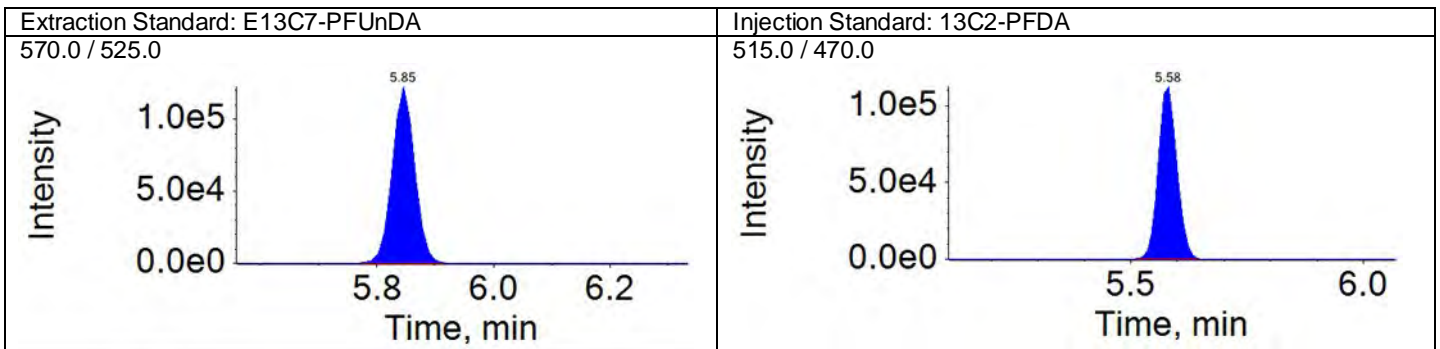
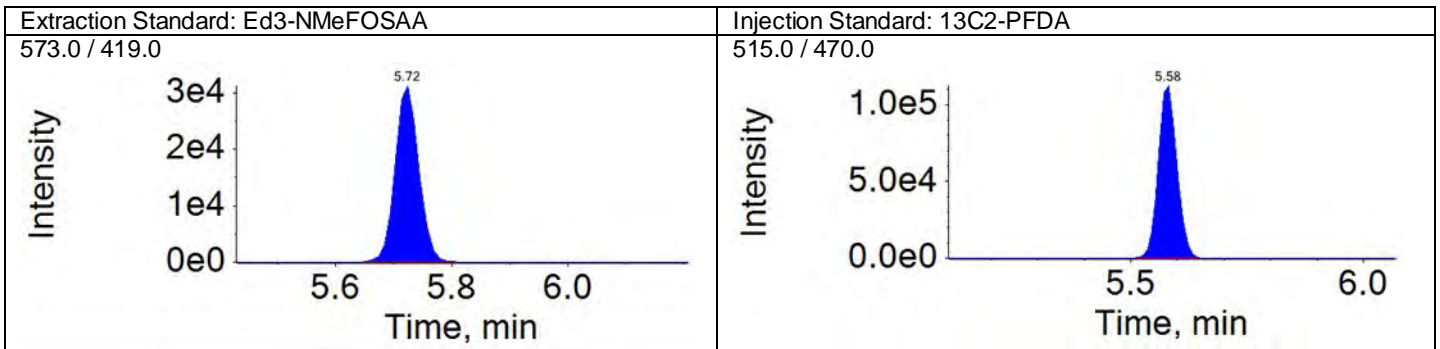
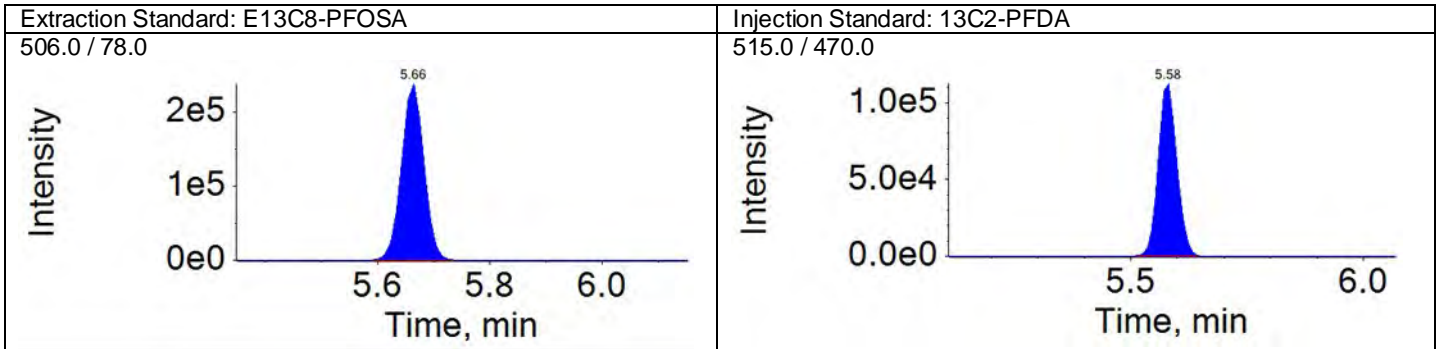
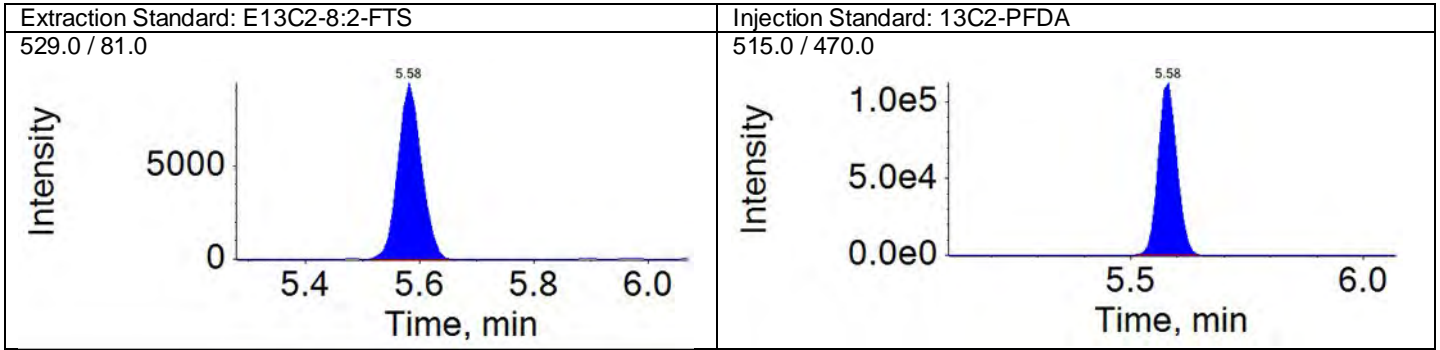
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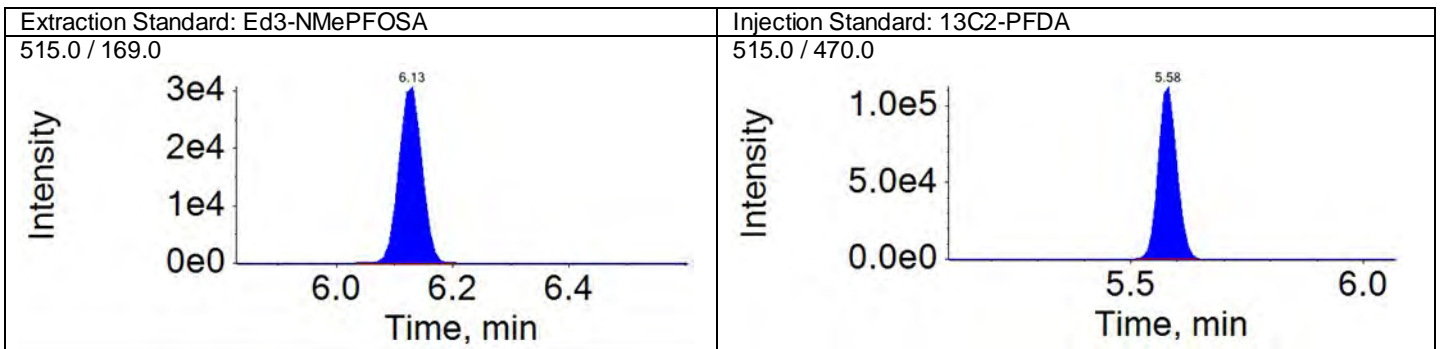
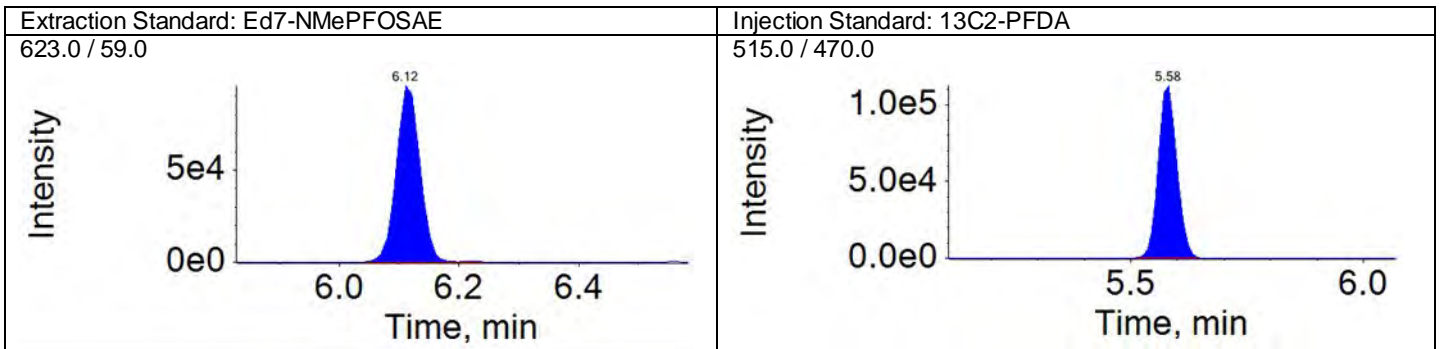
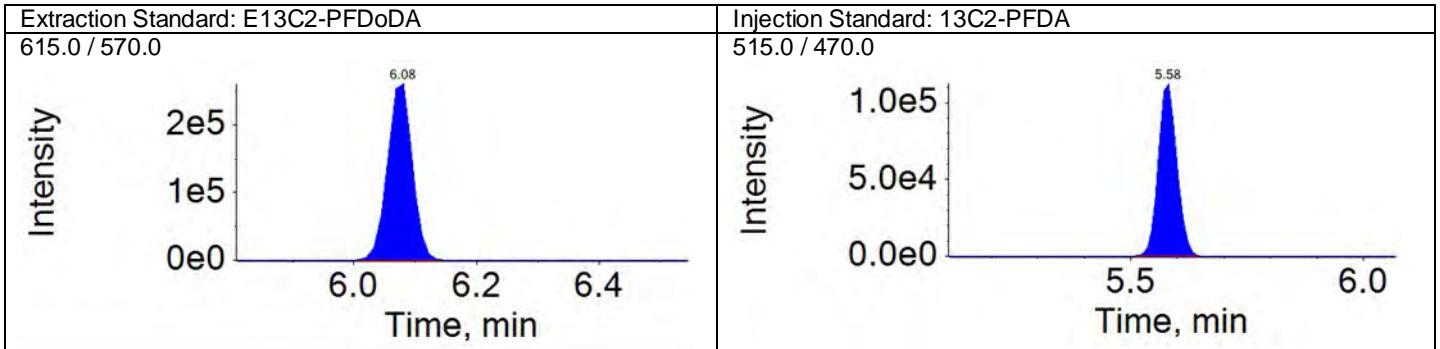
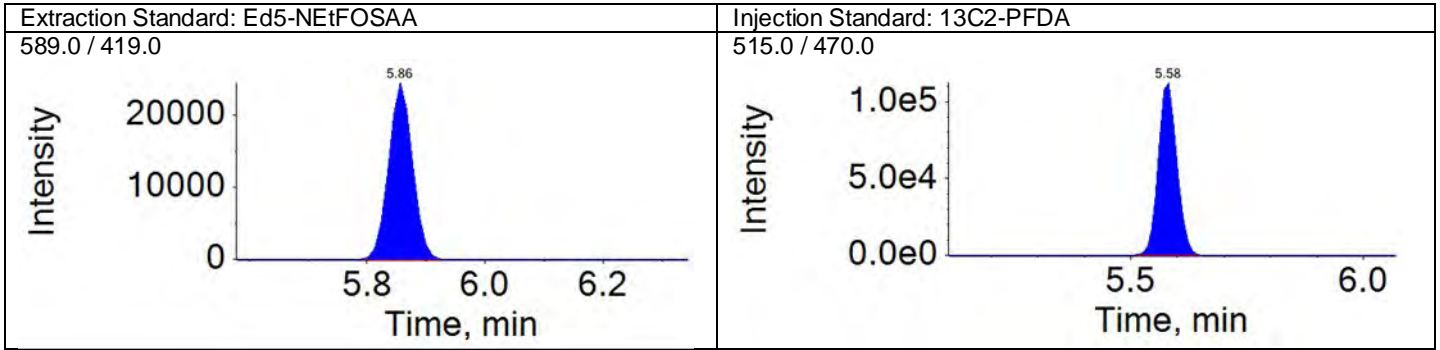
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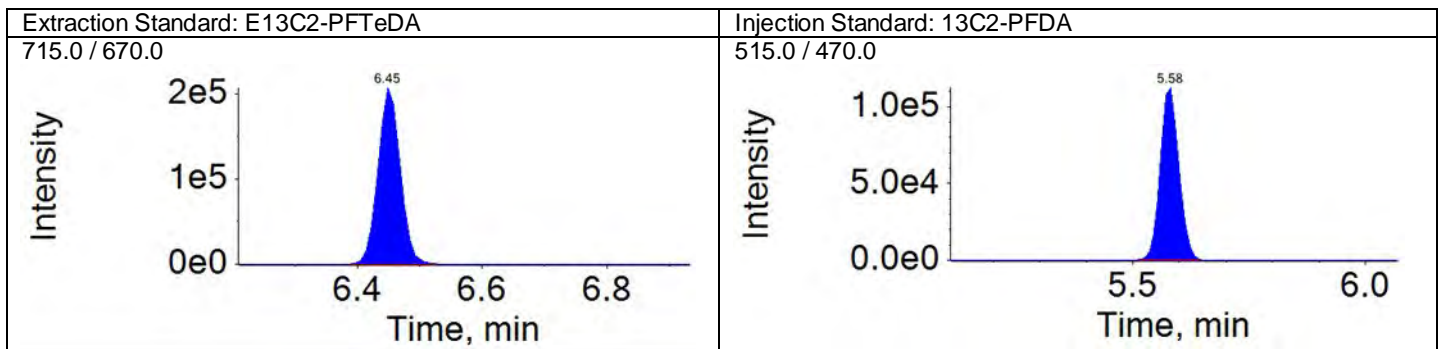
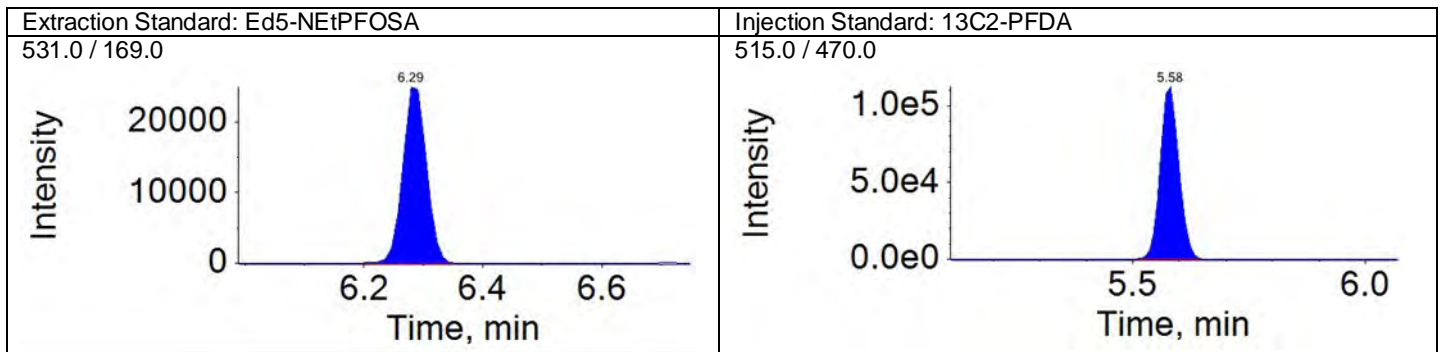
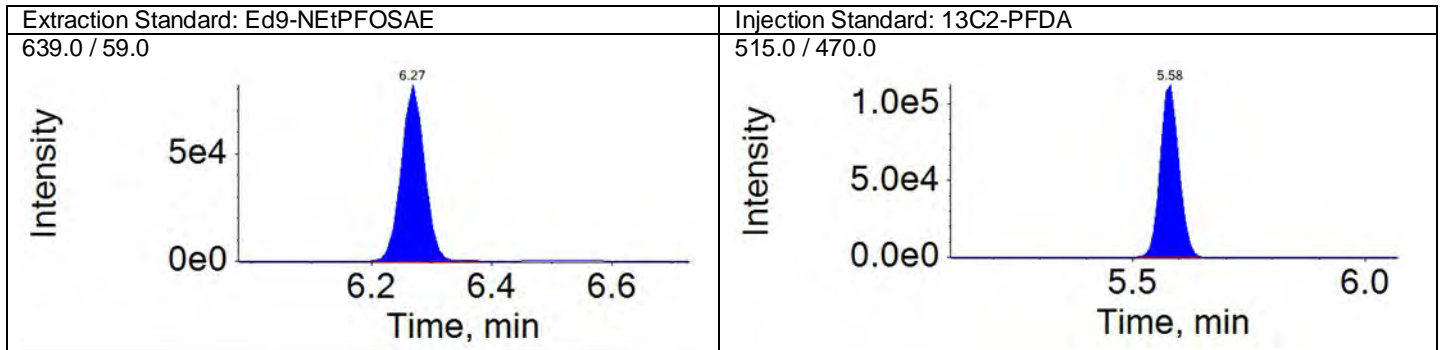
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ICAL Name: 18DEC06DCAL  
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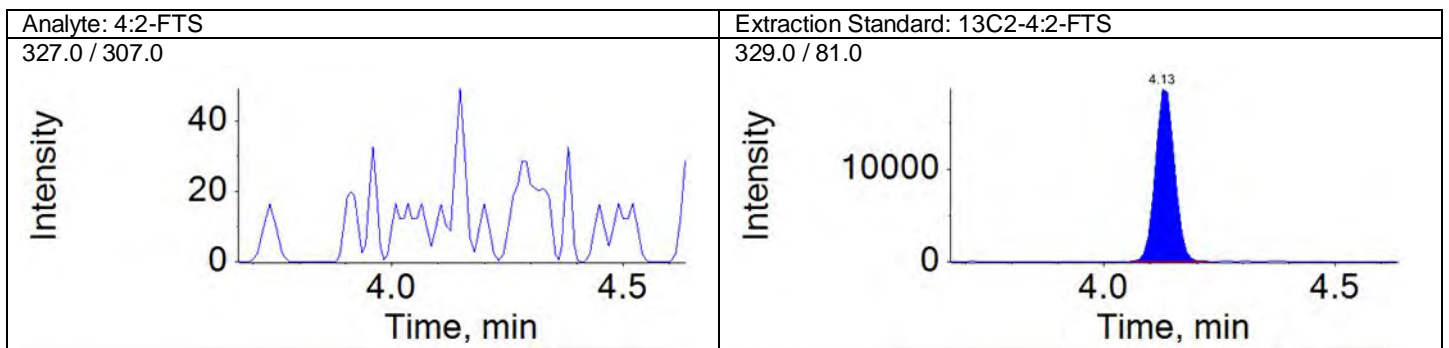
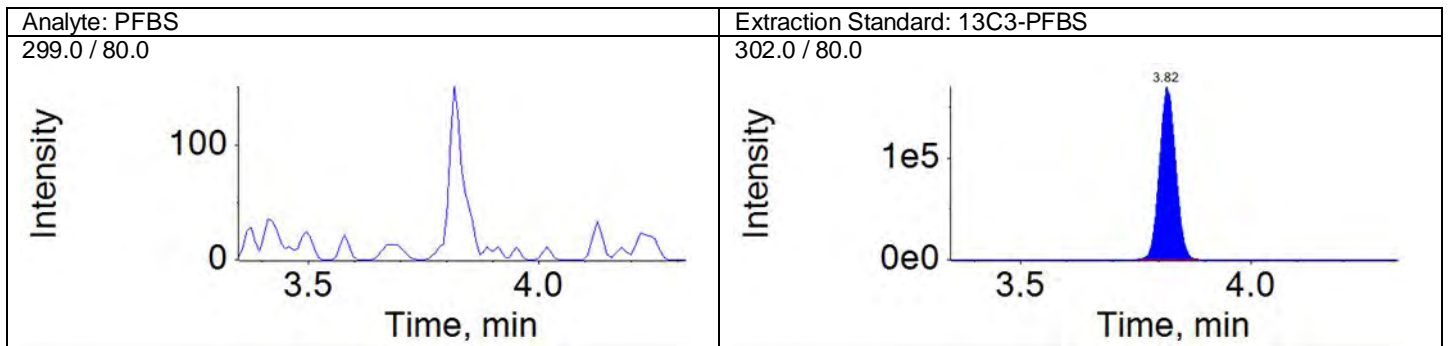
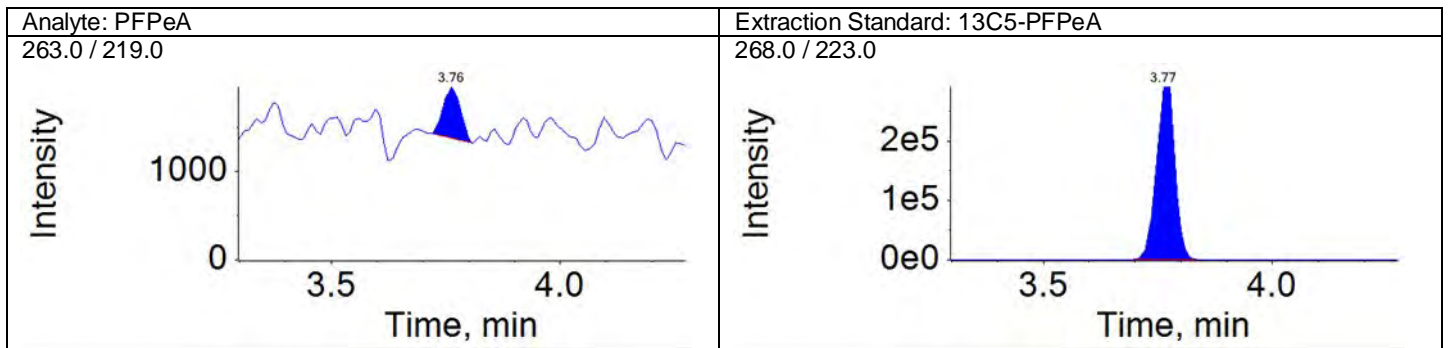
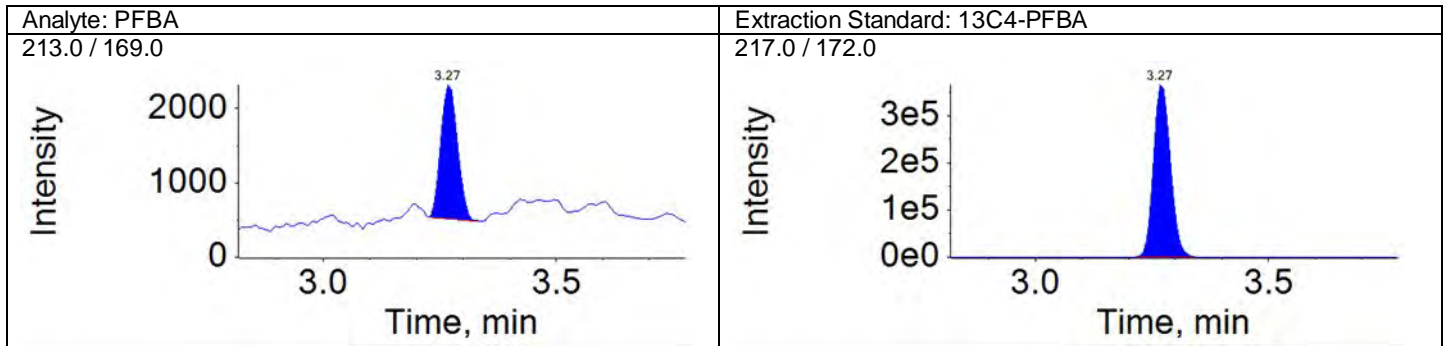
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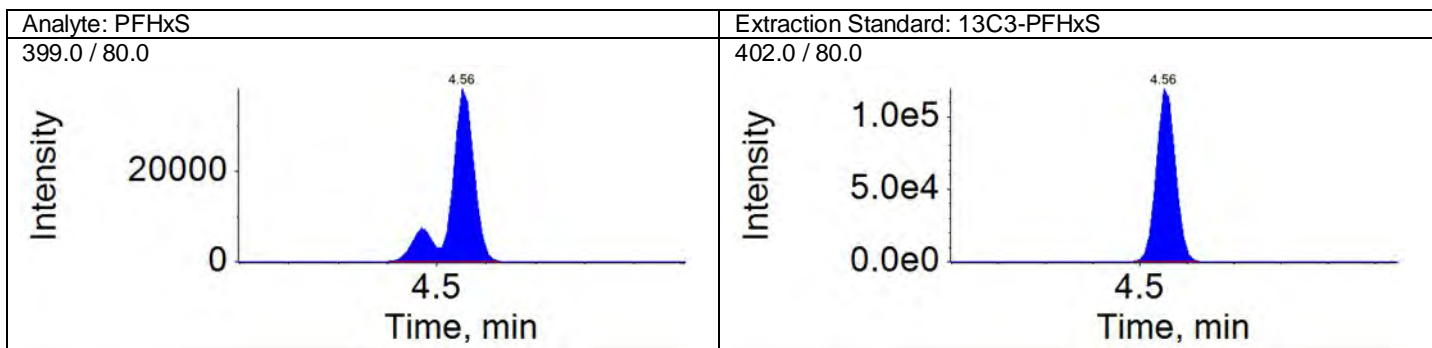
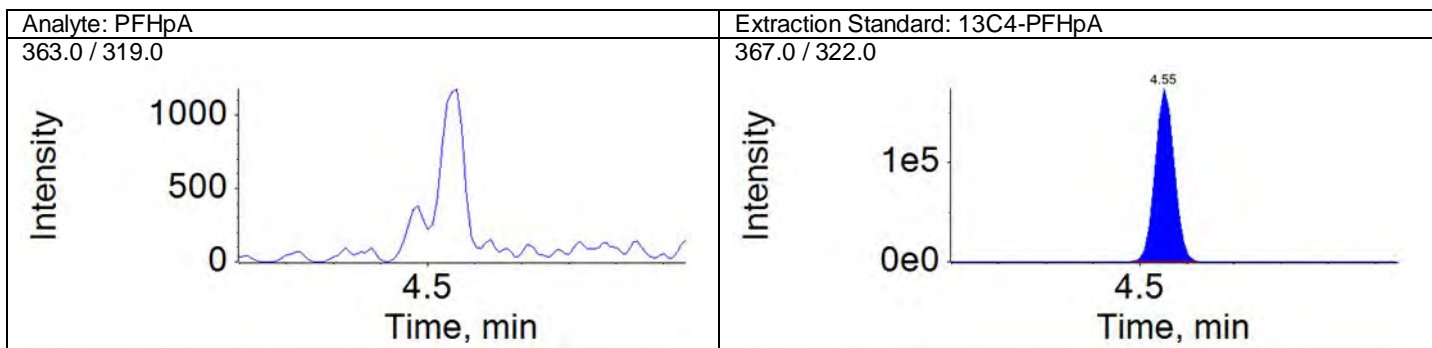
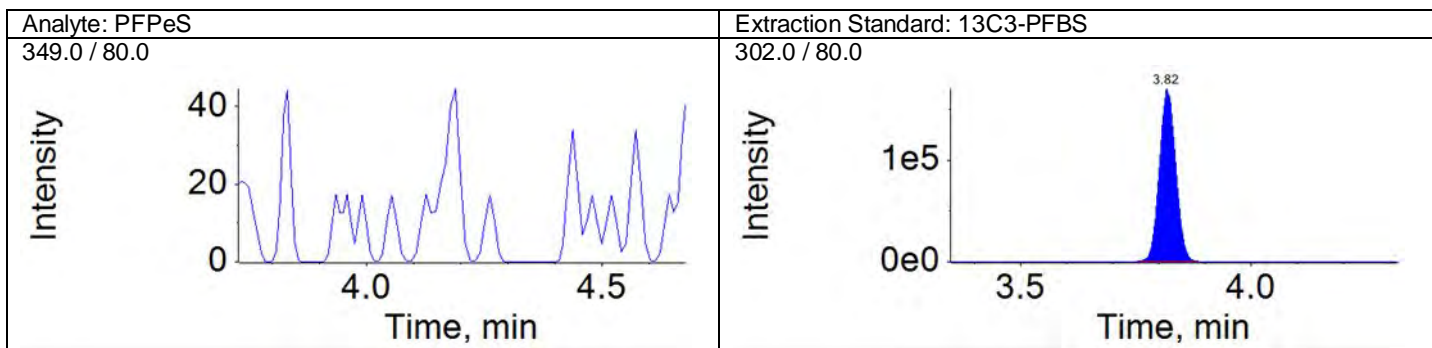
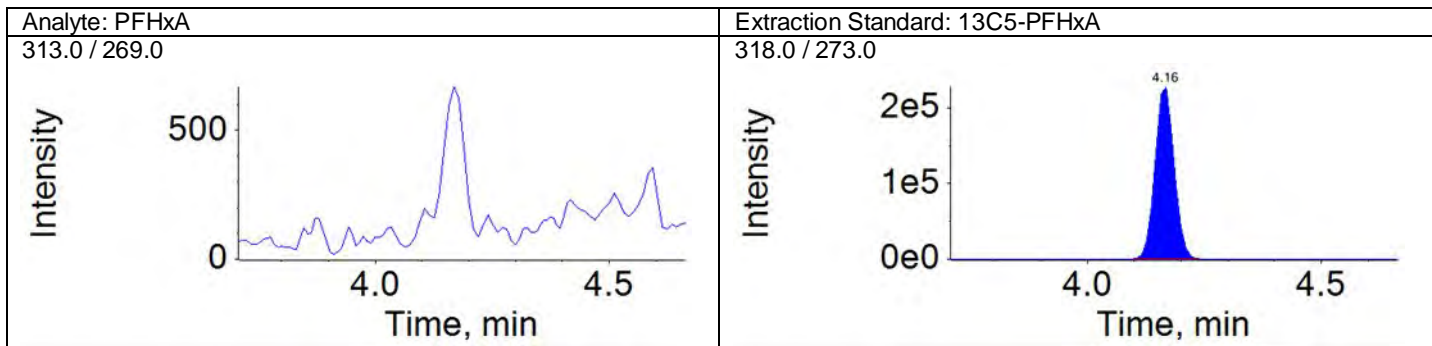
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Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
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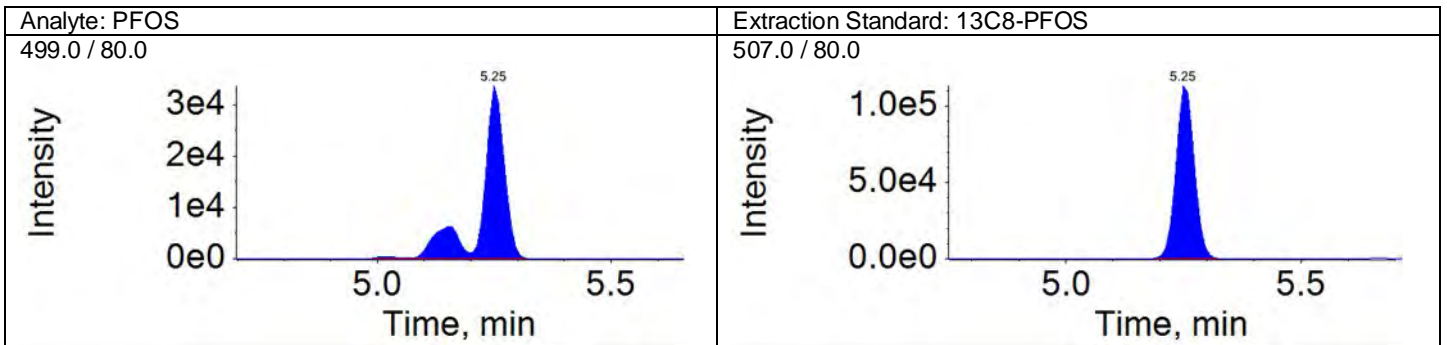
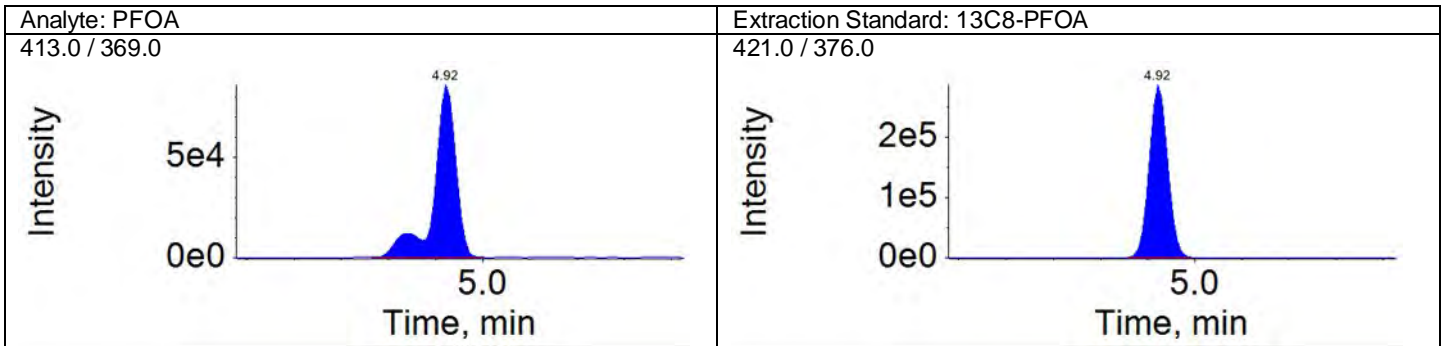
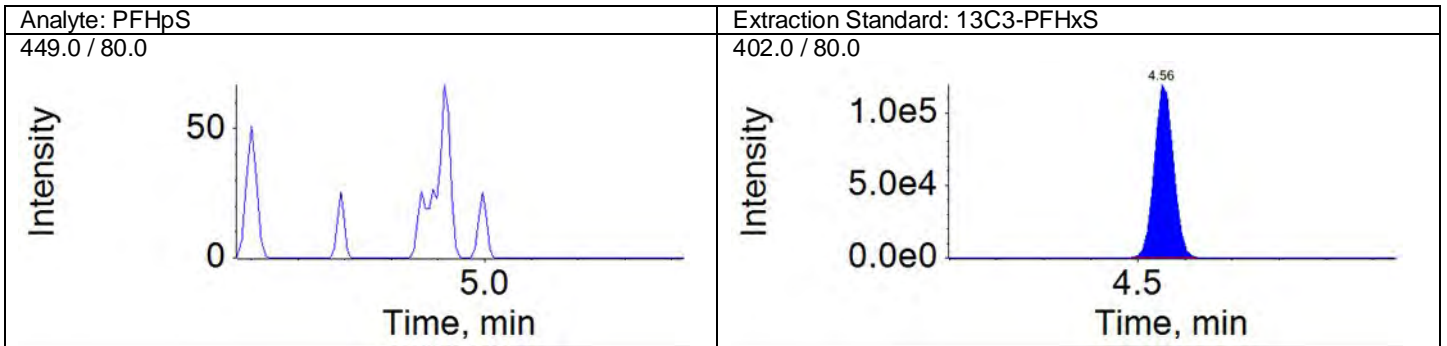
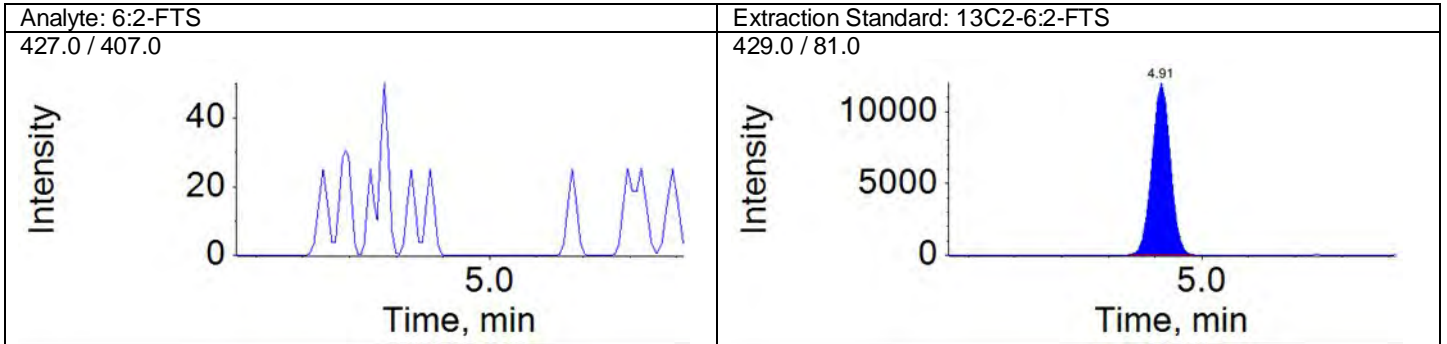
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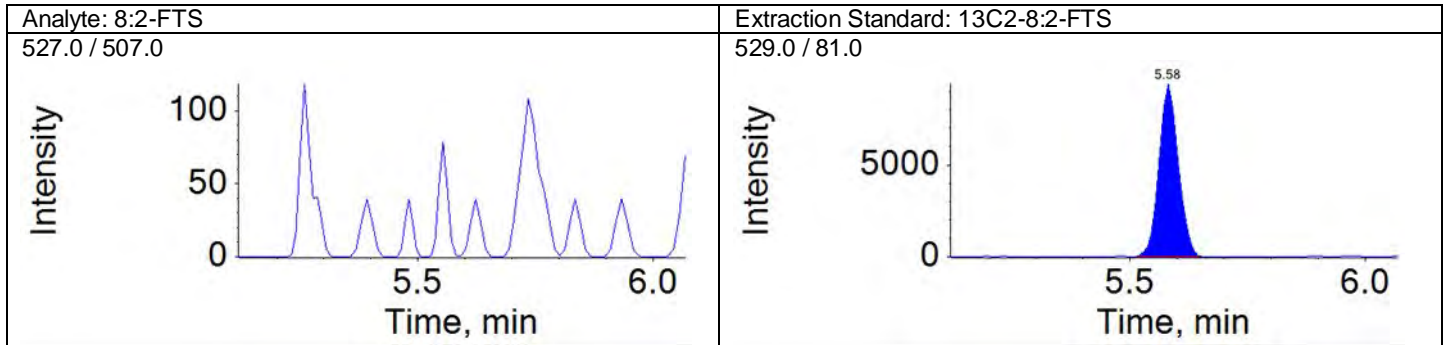
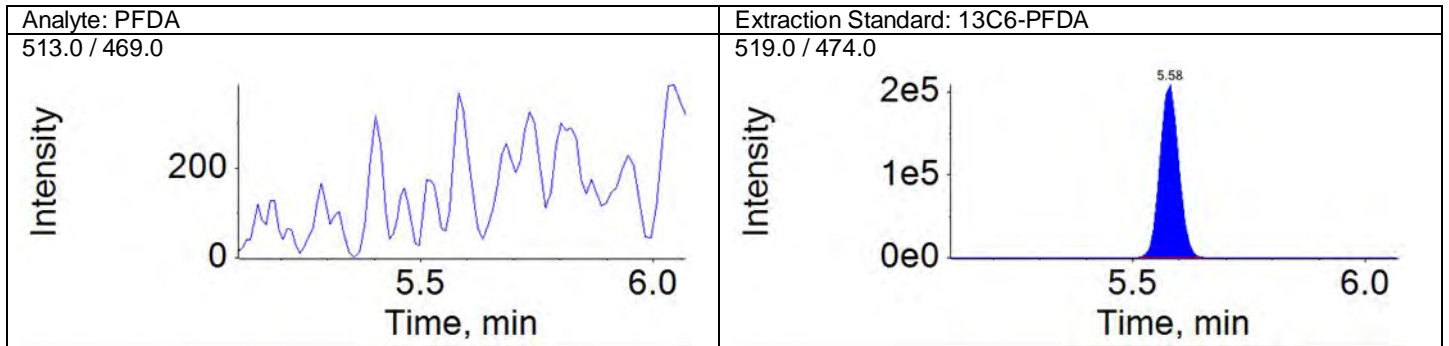
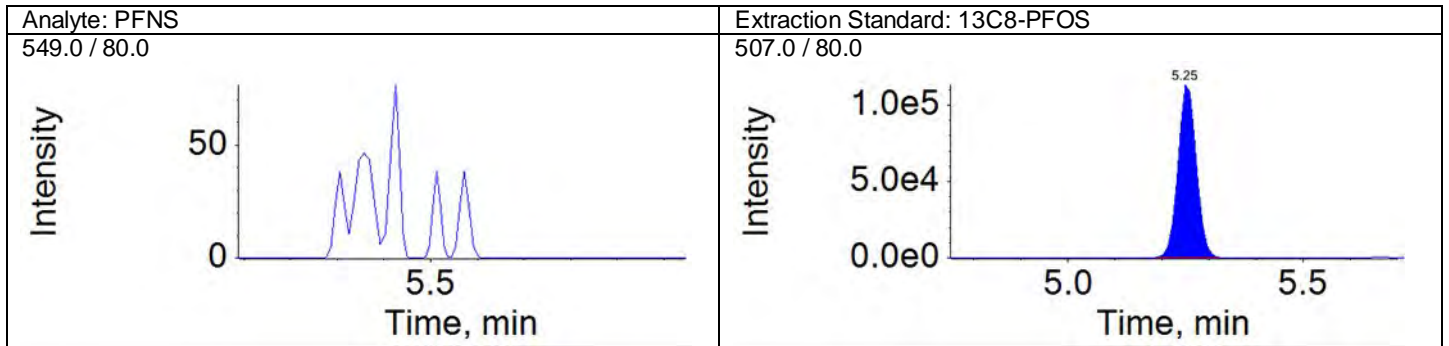
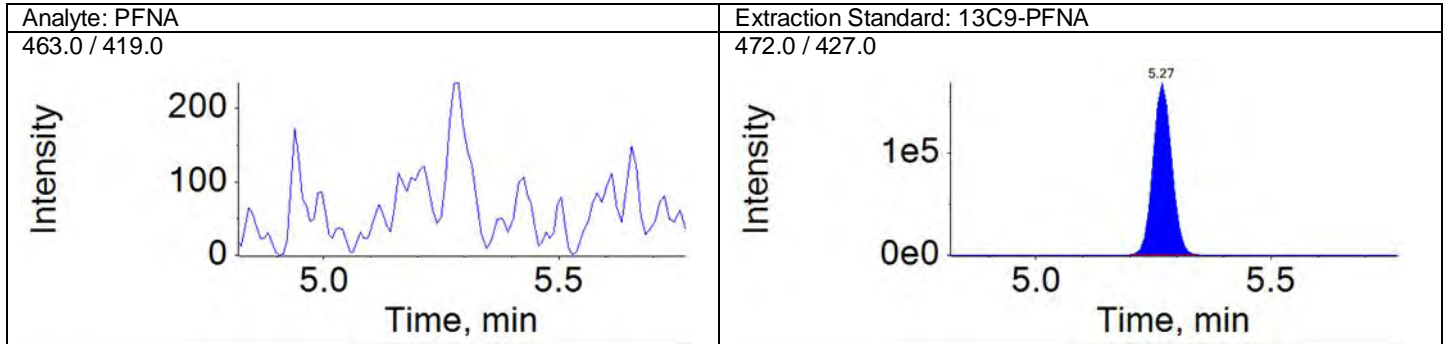
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

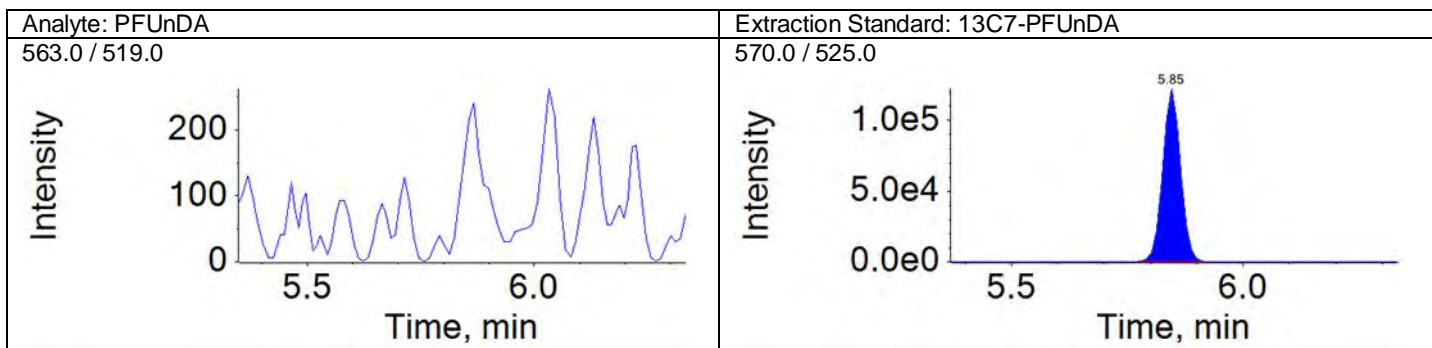
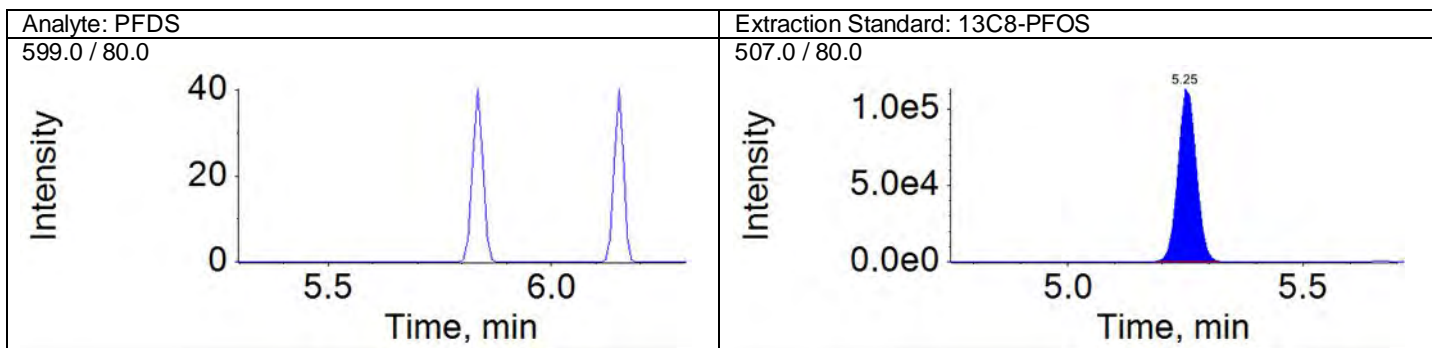
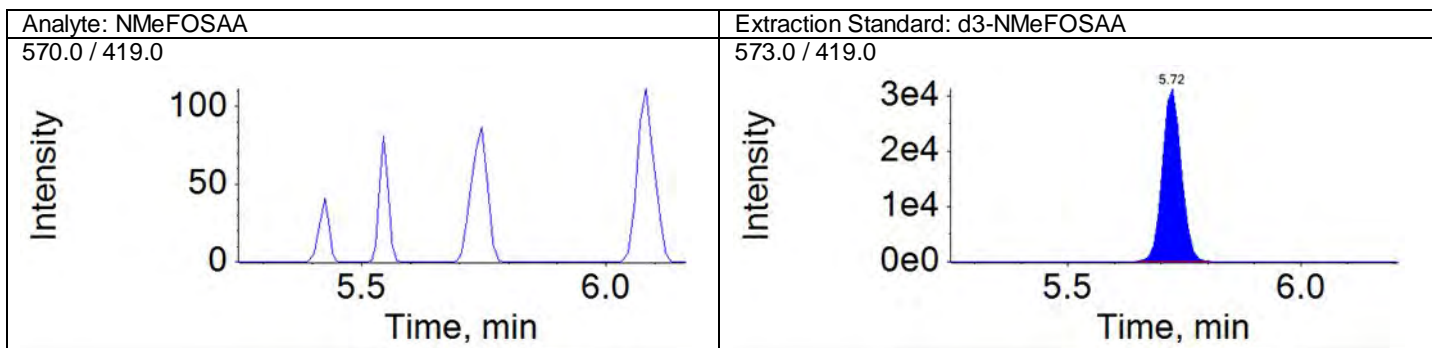
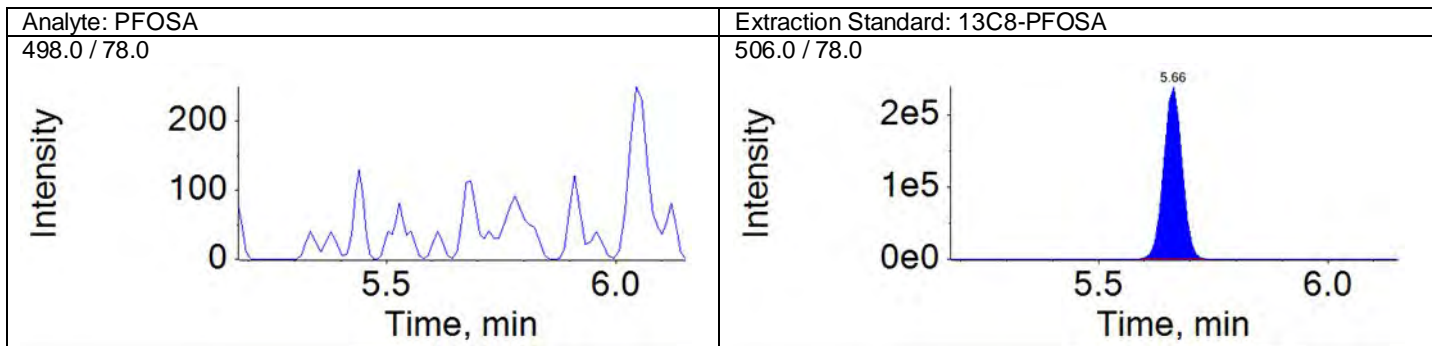
Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

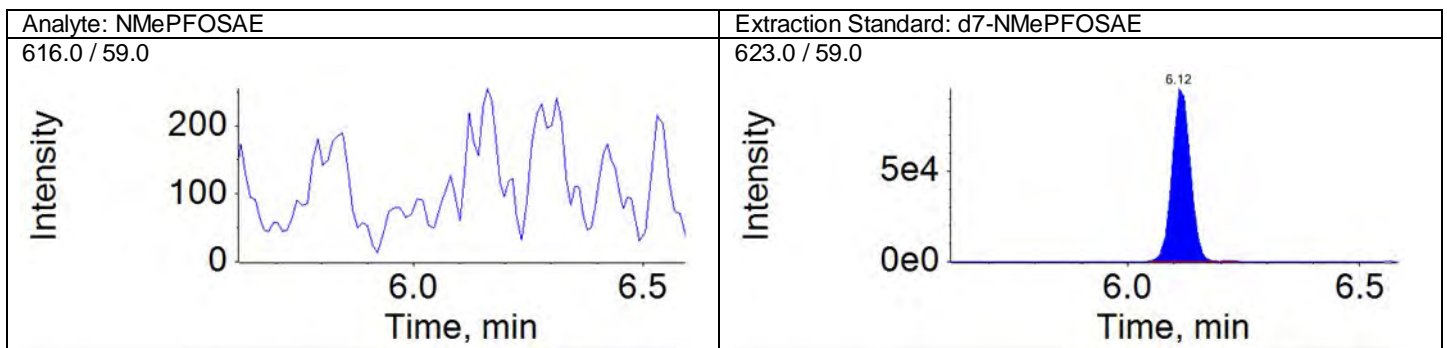
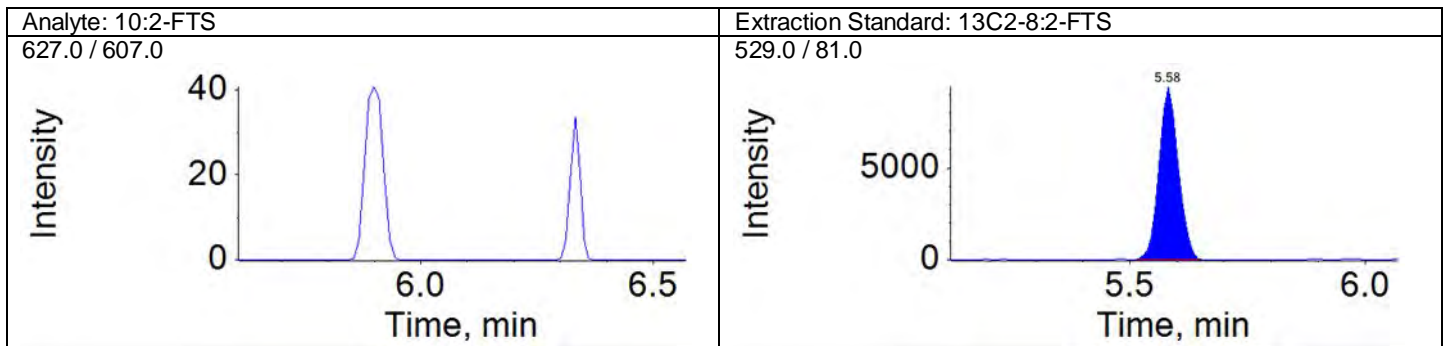
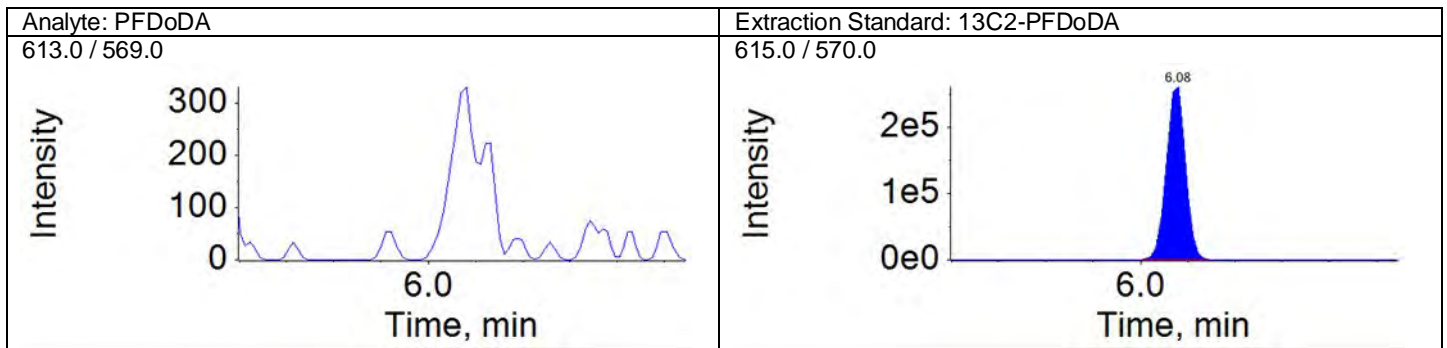
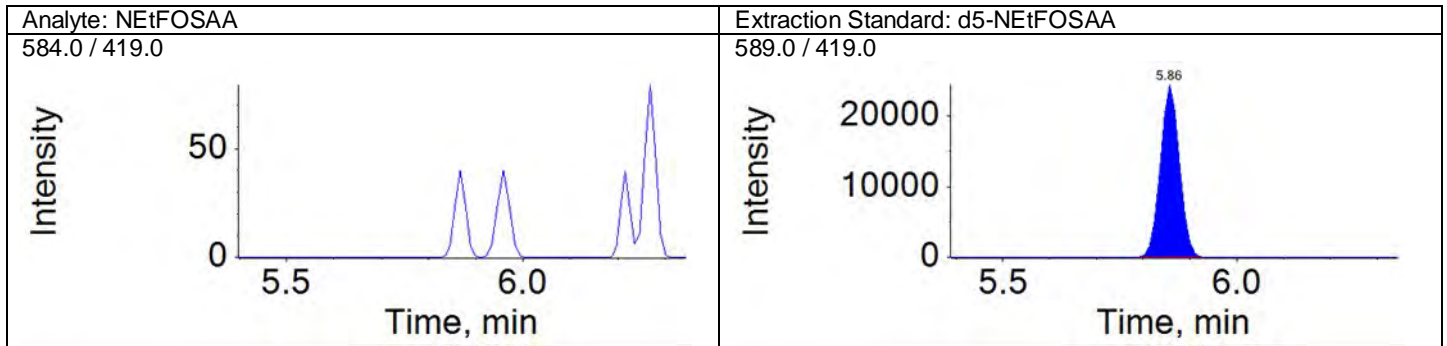
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Acquisition Method: 18AUG13\_3uL.dam





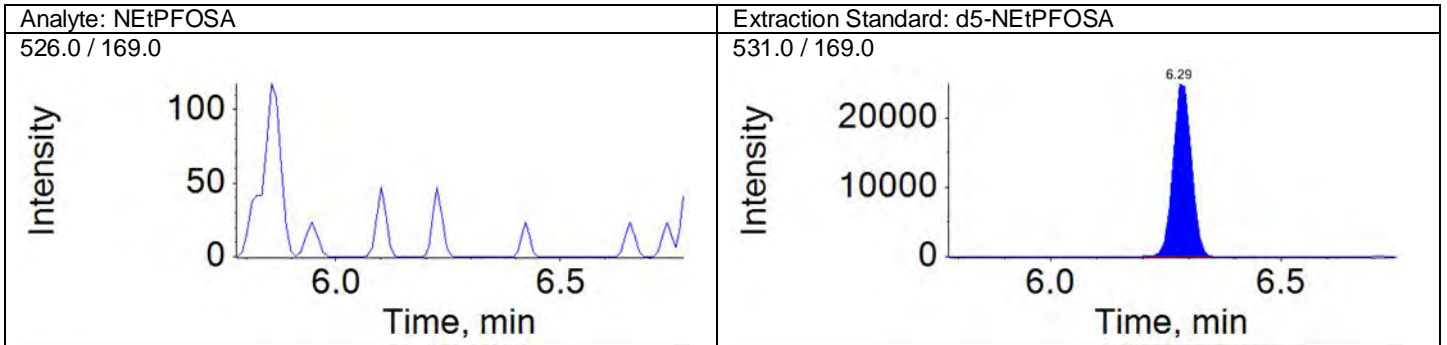
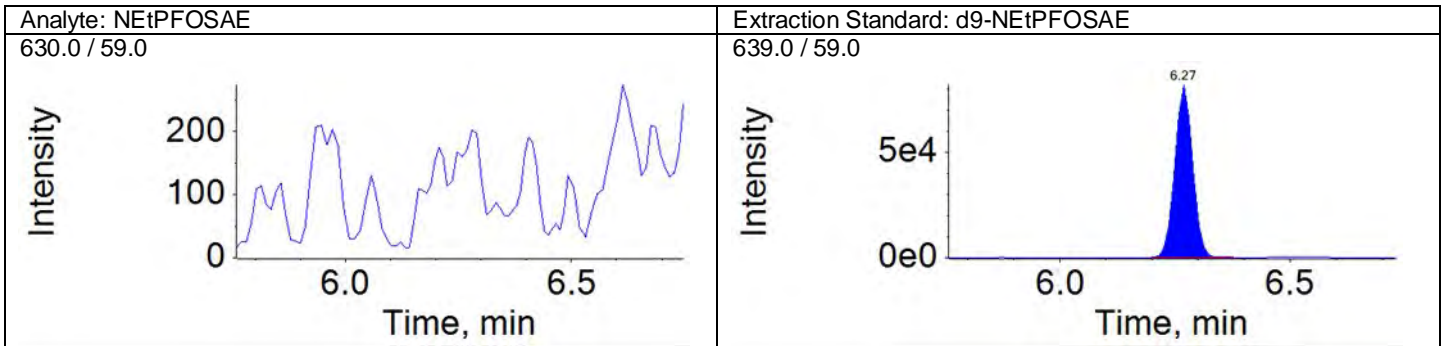
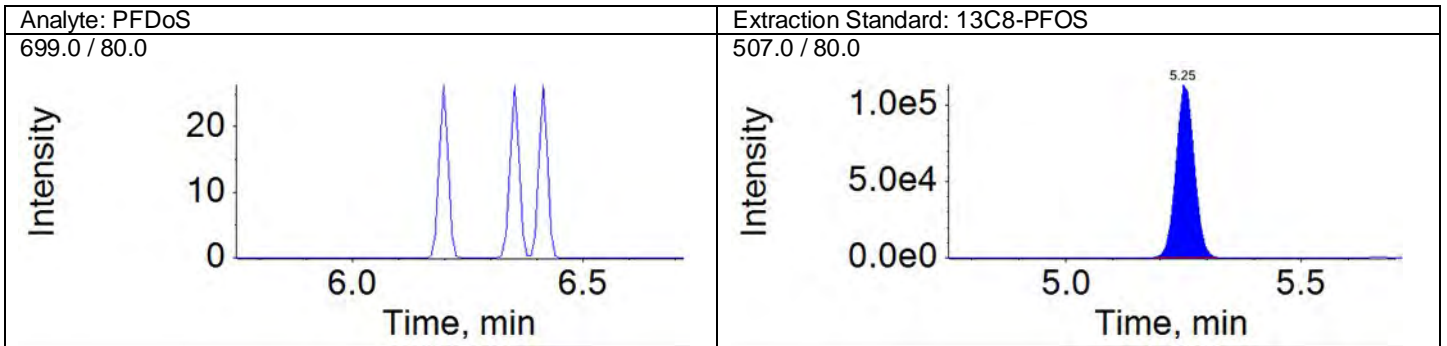
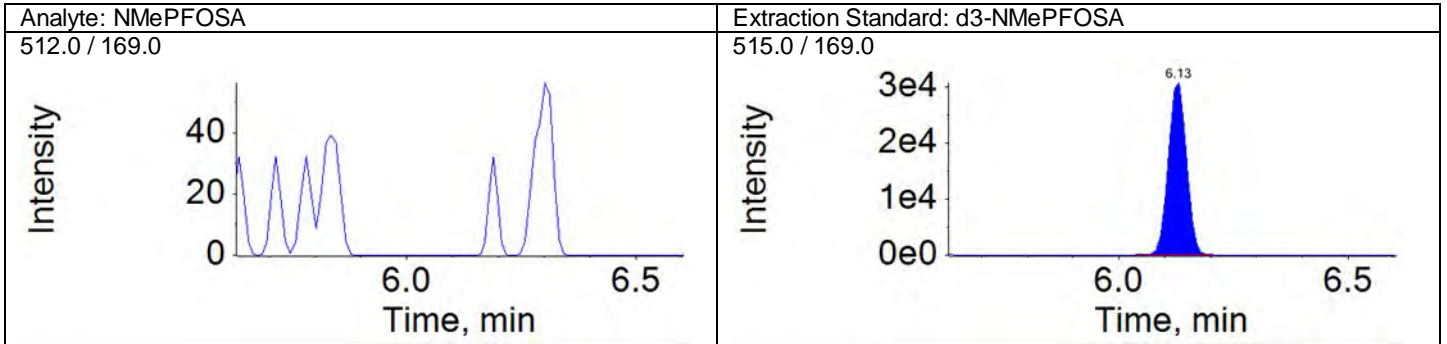
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



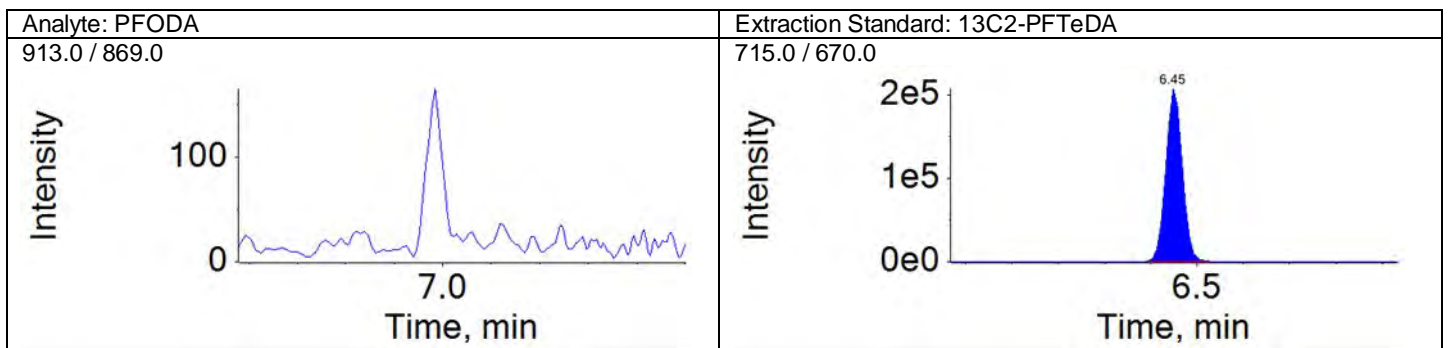
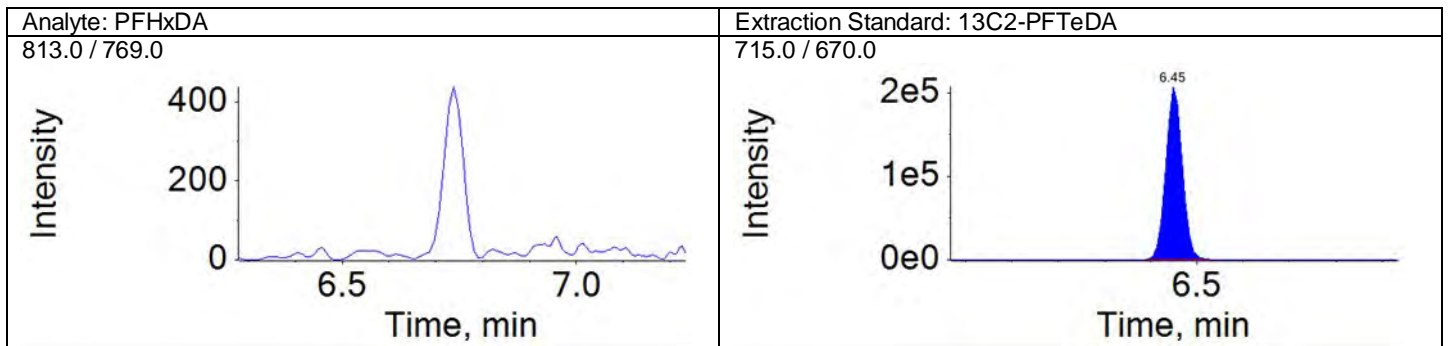
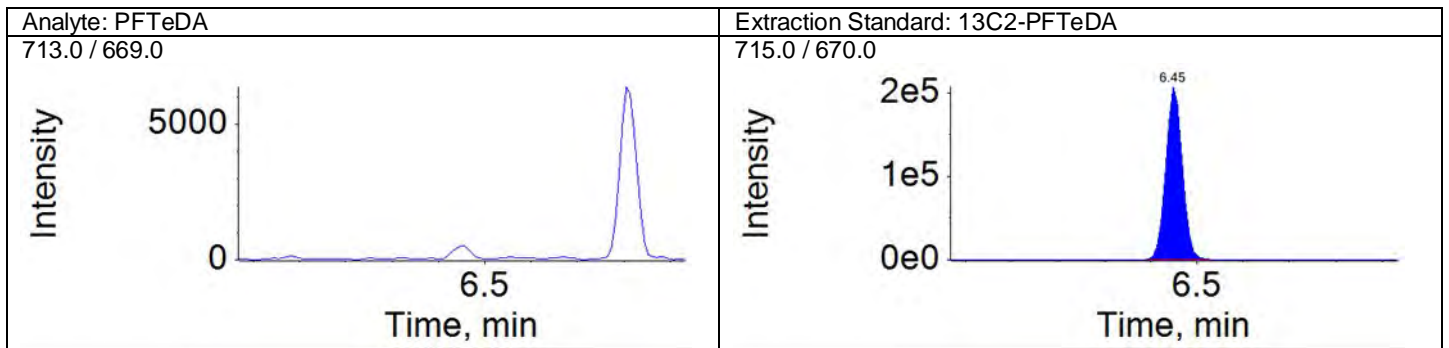
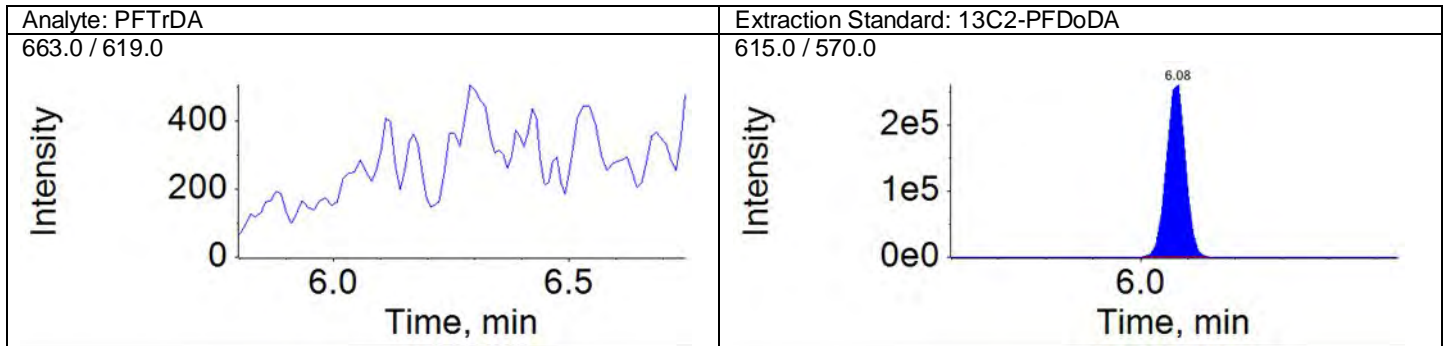
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



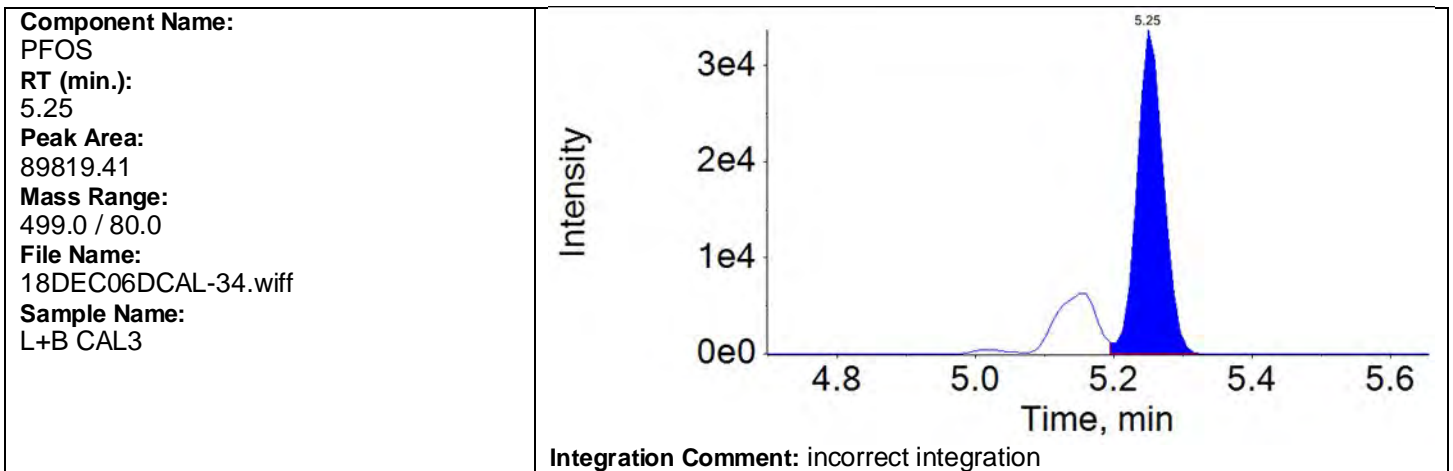
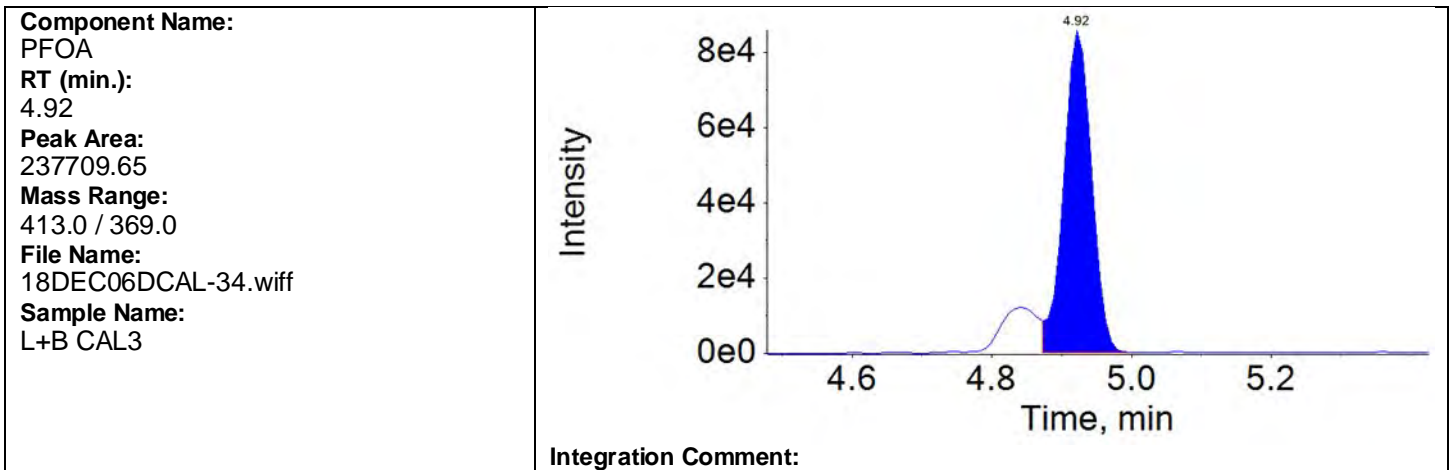
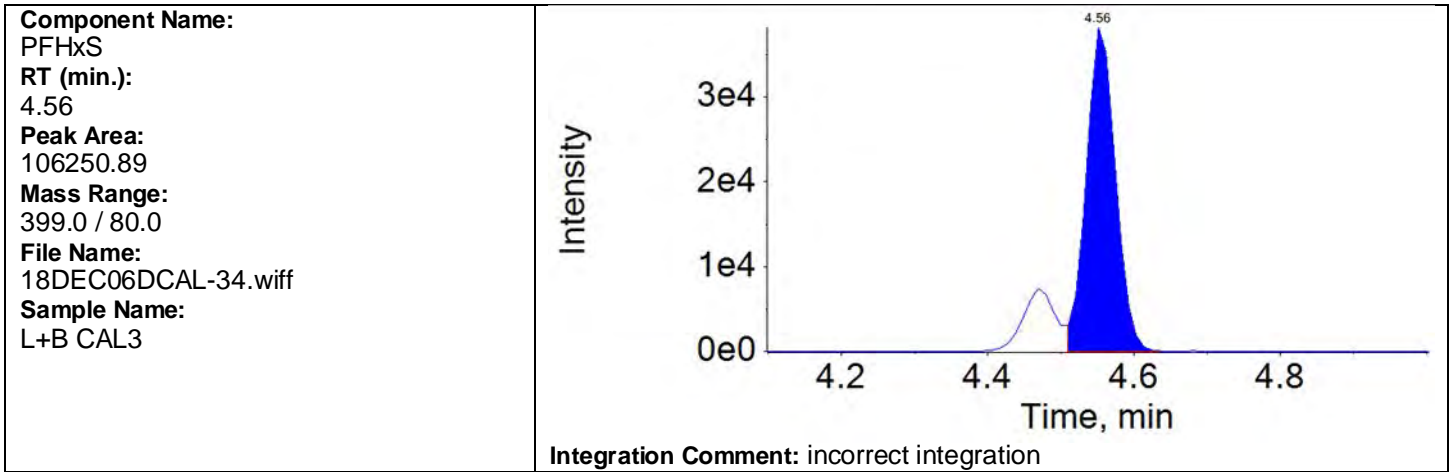
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QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

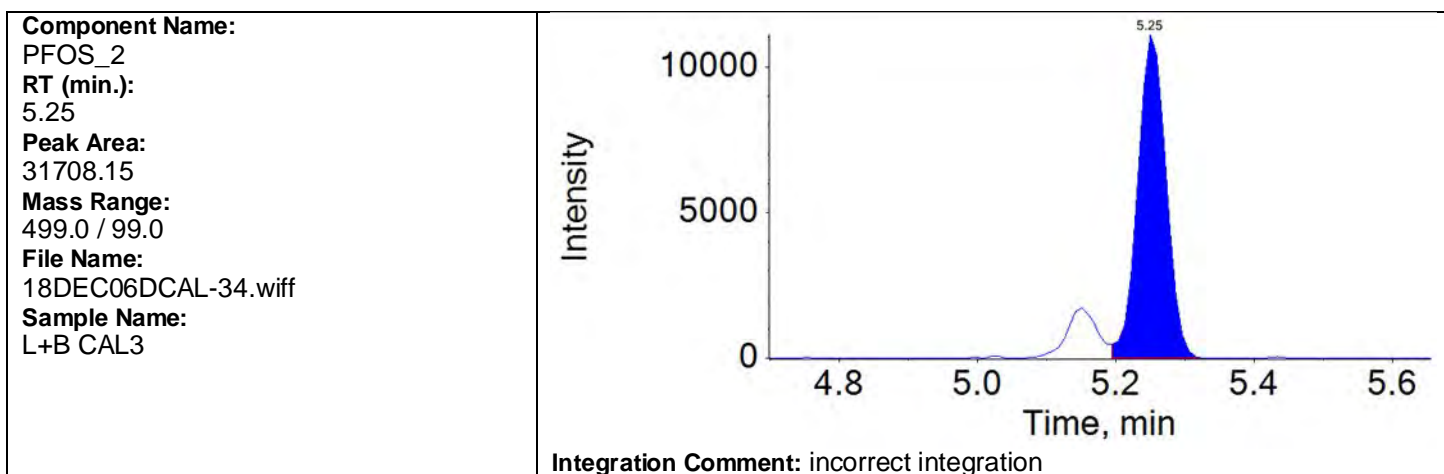
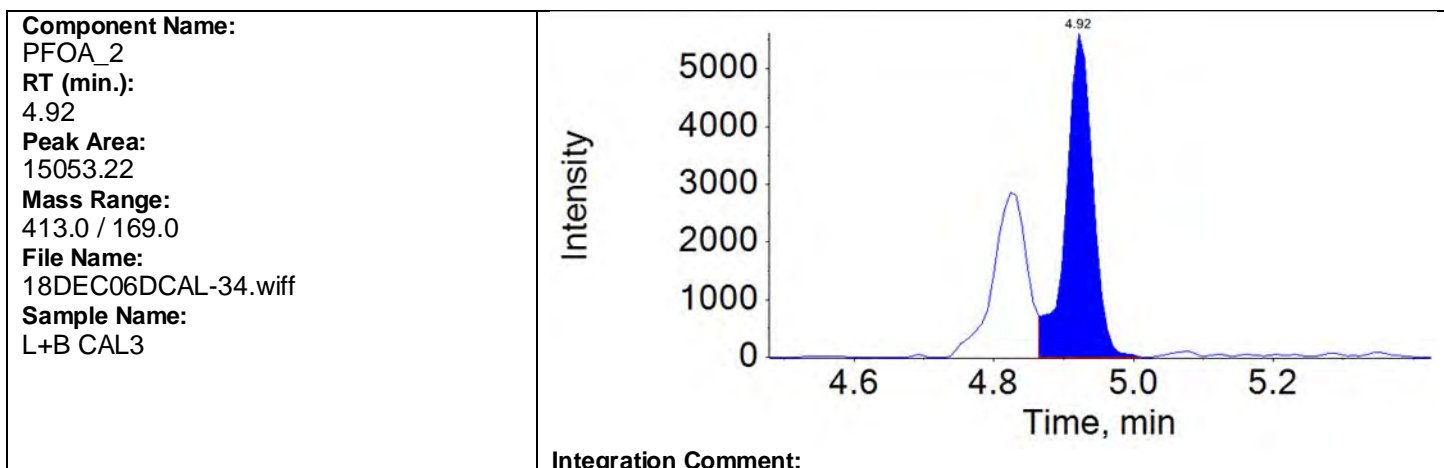
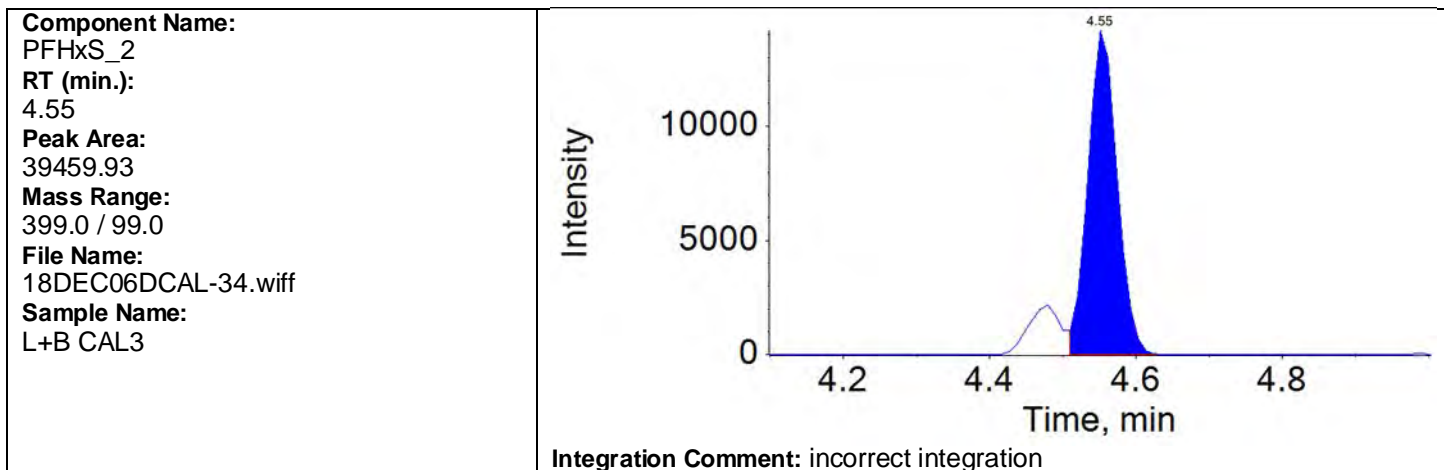
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QMethod File: 18AUG20QM





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

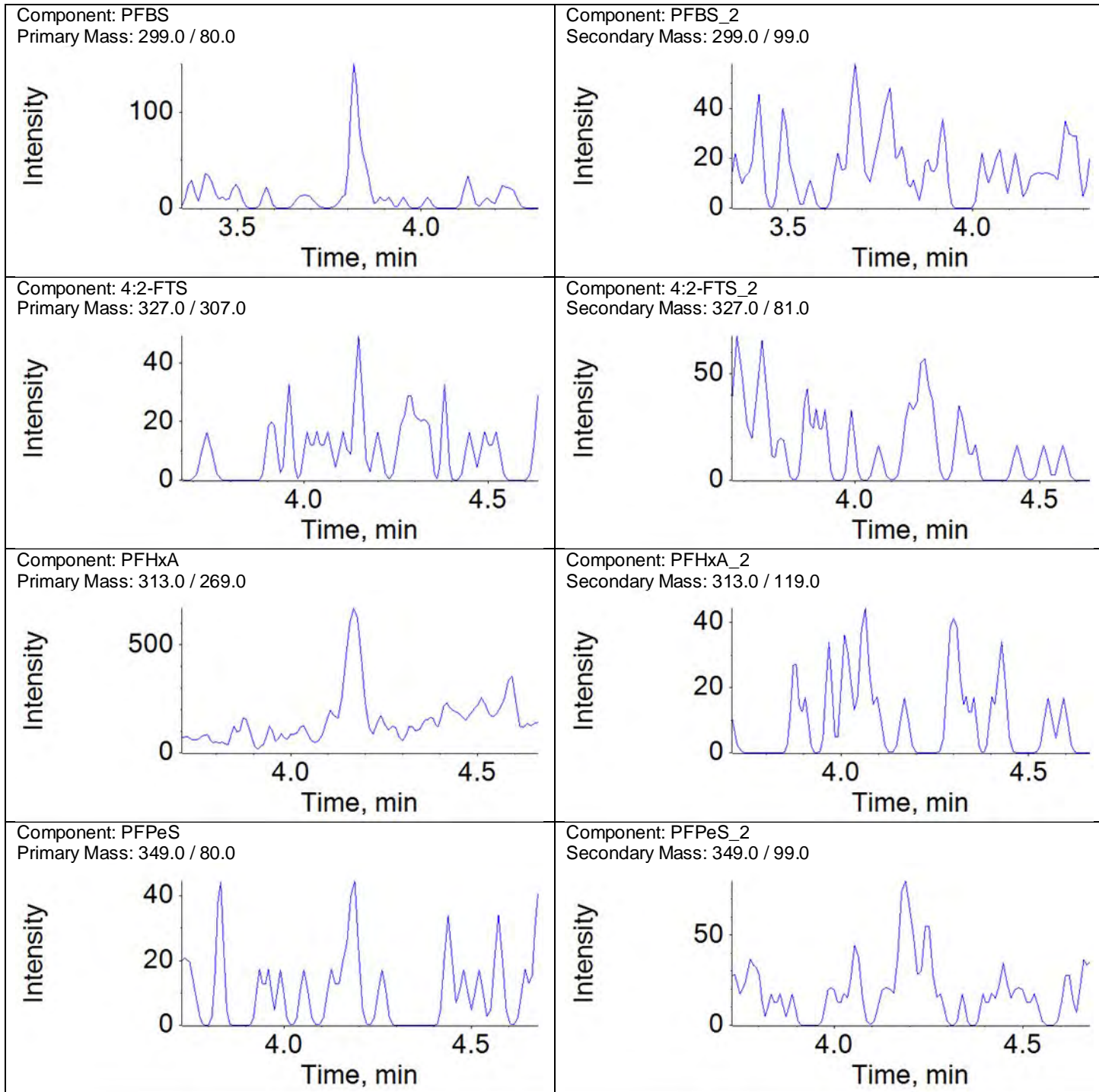
Ion Ratio Report

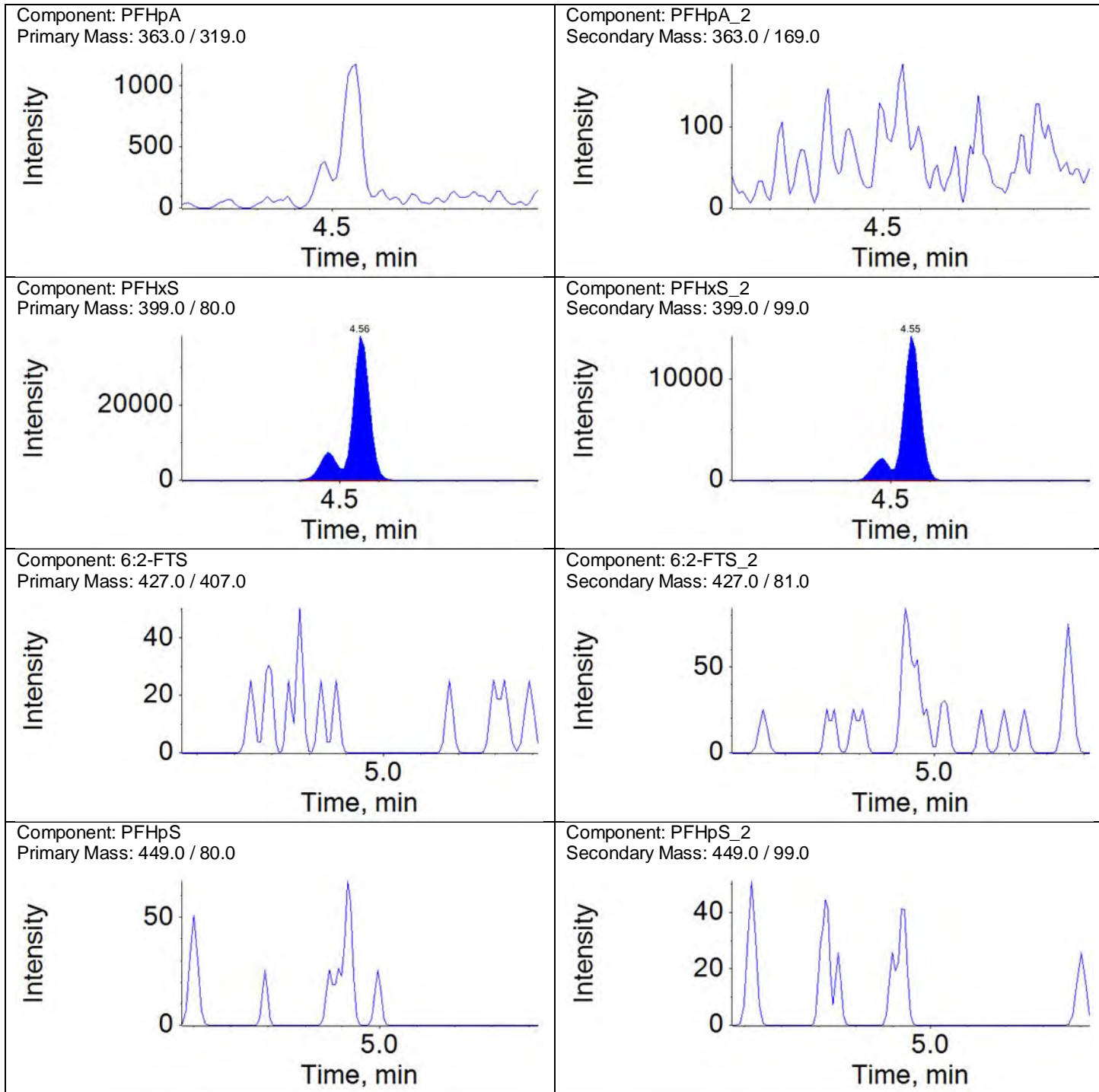
Sample Name: L+B CAL3

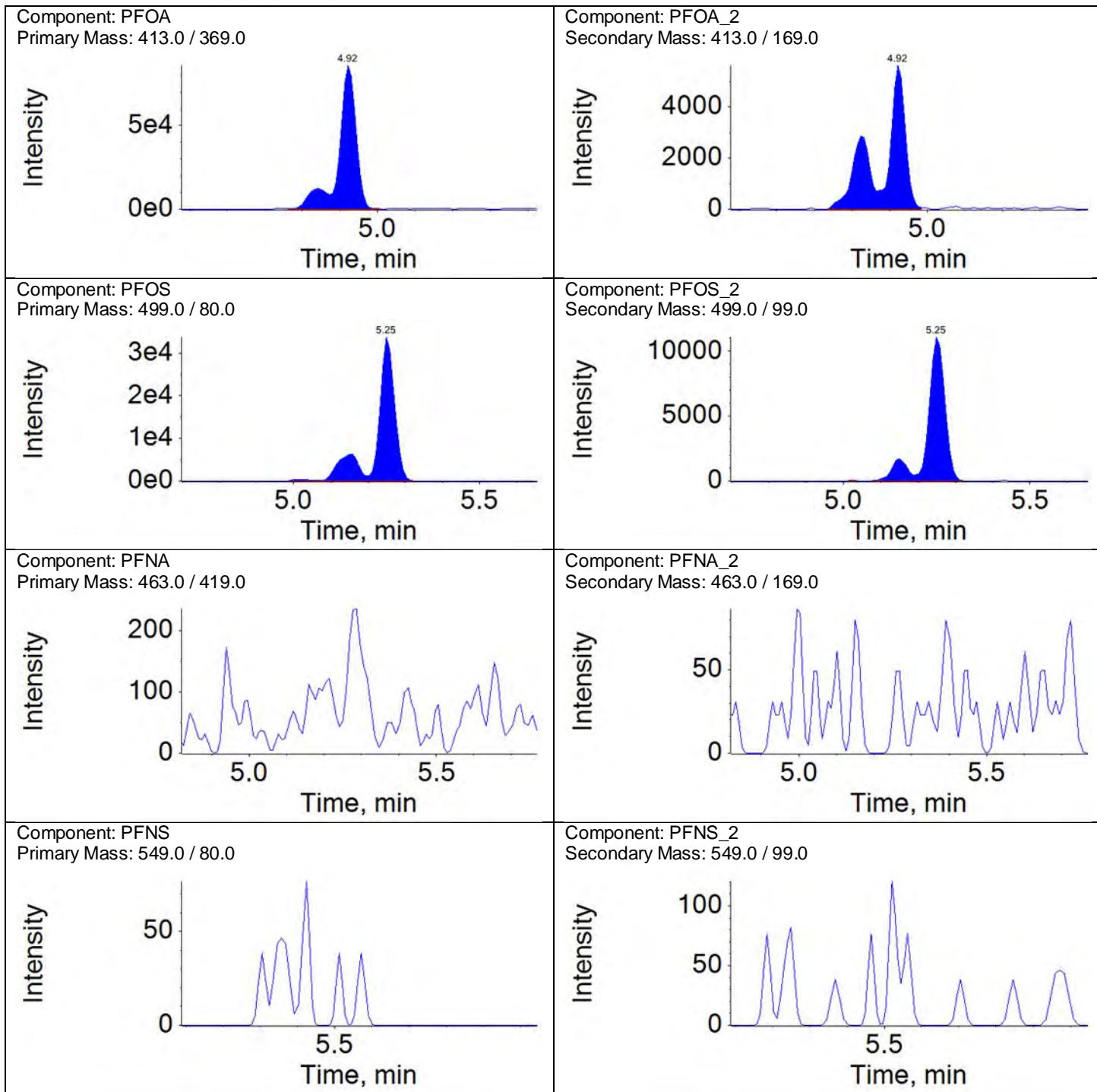
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File Name: 18DEC06DCAL-34.wiff

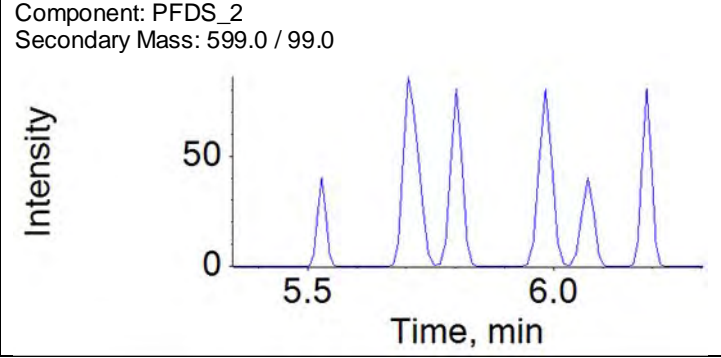
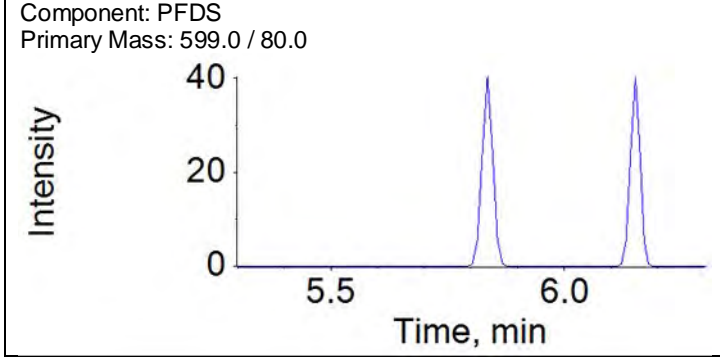
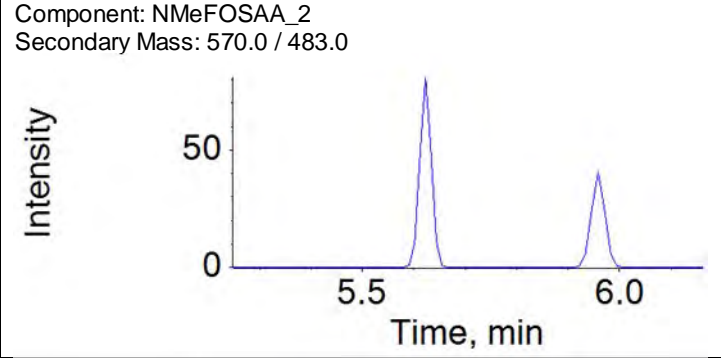
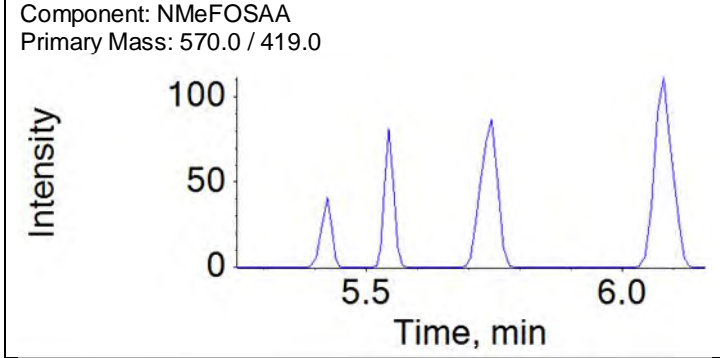
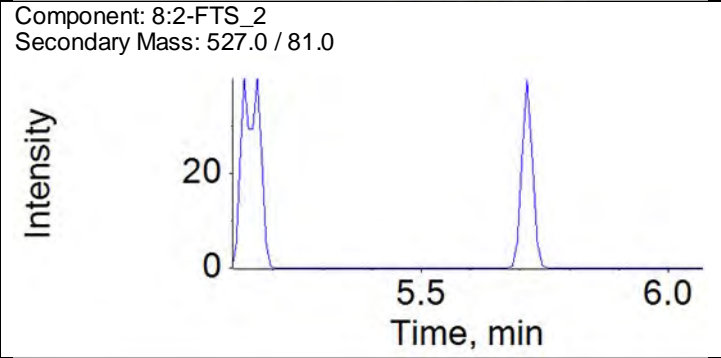
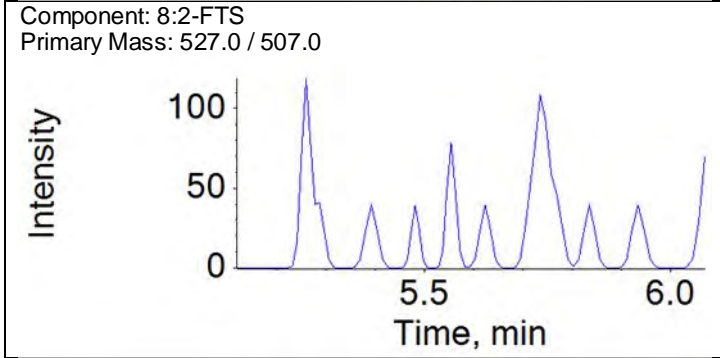
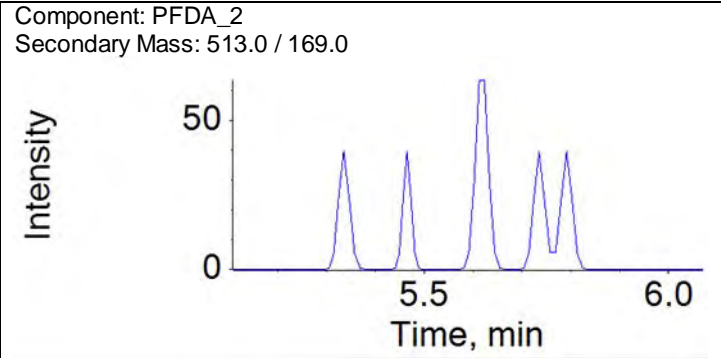
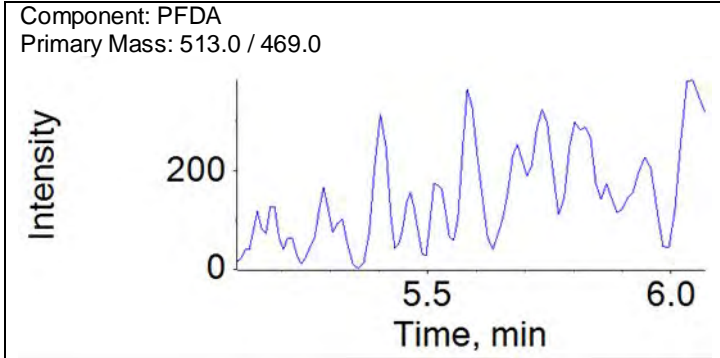
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	1.0000	N/A			
PFBS_2	N/A	N/A	N/A	A	0.3627	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	0.6542	N/A		50	
PFHxA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxA_2	N/A	N/A	N/A	A	0.0097	N/A		50	
PFPeS	N/A	N/A	N/A	A	1.0000	N/A			
PFPeS_2	N/A	N/A	N/A	A	0.5262	N/A		50	
PFHpA	N/A	N/A	N/A	A	1.0000	N/A			
PFHpA_2	N/A	N/A	N/A	A	0.0565	N/A		50	
PFHxS	4.56	1.00	129352.28	M	1.0000	1.0000			
PFHxS_2	4.55	1.00	46074.18	M	0.3645	0.3562	-2	50	
6:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	0.6273	N/A		50	
PFHpS	N/A	N/A	N/A	A	1.0000	N/A			
PFHpS_2	N/A	N/A	N/A	A	0.4162	N/A		50	
PFOA	4.92	1.00	280874.33	M	1.0000	1.0000			
PFOA_2	4.92	1.00	24631.30	M	0.0616	0.0877	42	50	
PFOS	5.25	1.00	116707.64	M	1.0000	1.0000			
PFOS_2	5.25	1.00	37180.49	M	0.3021	0.3186	5	50	
PFNA	N/A	N/A	N/A	A	1.0000	N/A			
PFNA_2	N/A	N/A	N/A	A	0.0192	N/A		50	
PFNS	N/A	N/A	N/A	A	1.0000	N/A			
PFNS_2	N/A	N/A	N/A	A	0.4845	N/A		50	
PFDA	N/A	N/A	N/A	A	1.0000	N/A			
PFDA_2	N/A	N/A	N/A	A	0.0096	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	0.6117	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	1.0000	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	0.2673	N/A		50	
PFDS	N/A	N/A	N/A	A	1.0000	N/A			
PFDS_2	N/A	N/A	N/A	A	0.4952	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	1.0000	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	0.0041	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	1.0000	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	0.6726	N/A		50	
PFADoDA	N/A	N/A	N/A	A	1.0000	N/A			
PFADoDA_2	N/A	N/A	N/A	A	0.0133	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	0.6969	N/A		50	
PFATrDA	N/A	N/A	N/A	A	1.0000	N/A			
PFATrDA_2	N/A	N/A	N/A	A	0.0075	N/A		50	
PFArTeDA	N/A	N/A	N/A	A	1.0000	N/A			
PFArTeDA_2	N/A	N/A	N/A	A	0.0066	N/A		50	
PFHxDA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxDA_2	N/A	N/A	N/A	A	0.0616	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0272	N/A		50	

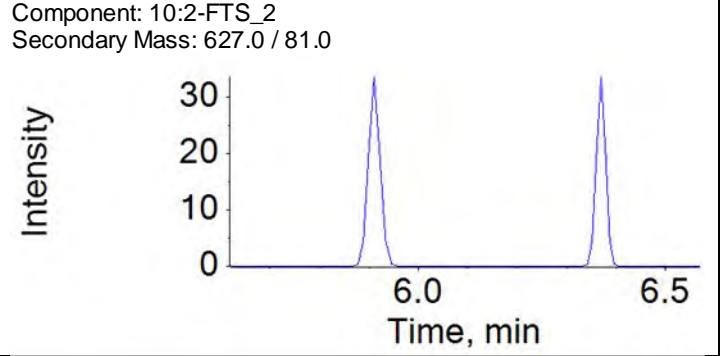
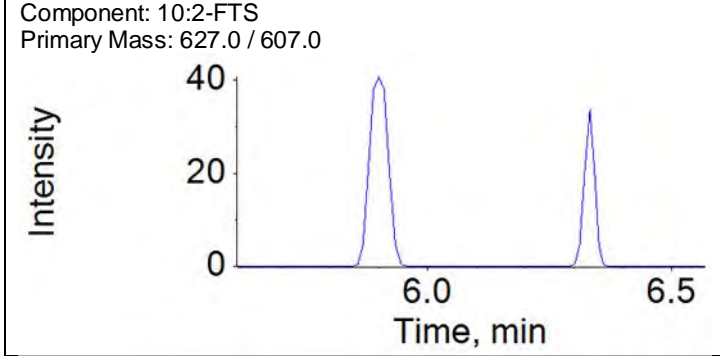
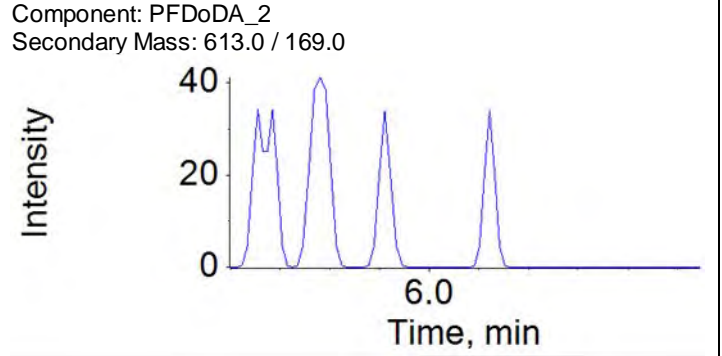
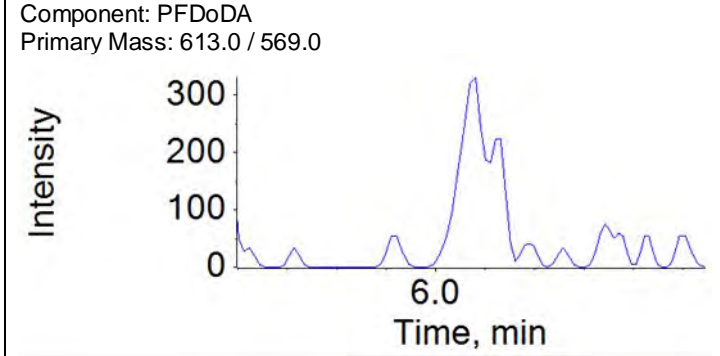
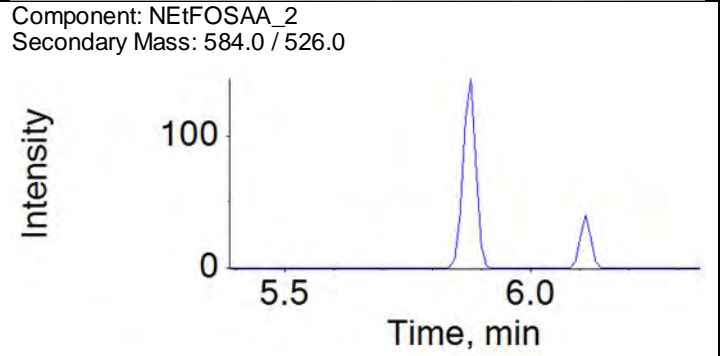
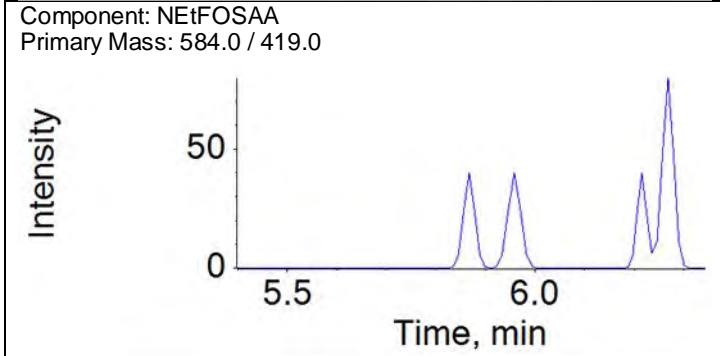
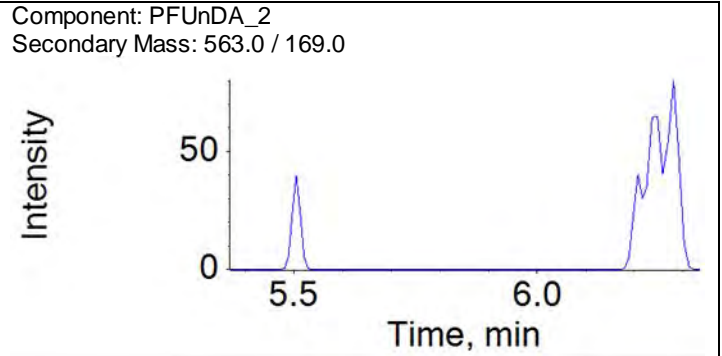
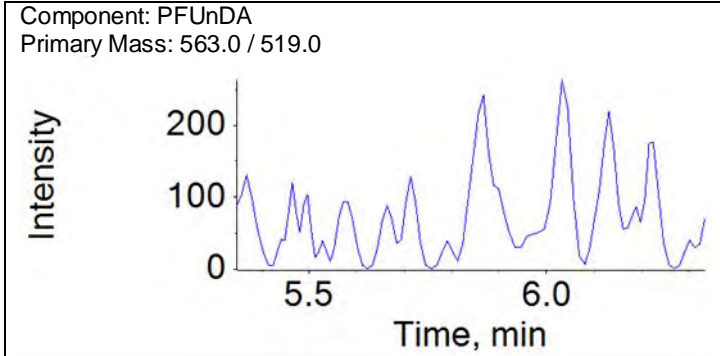


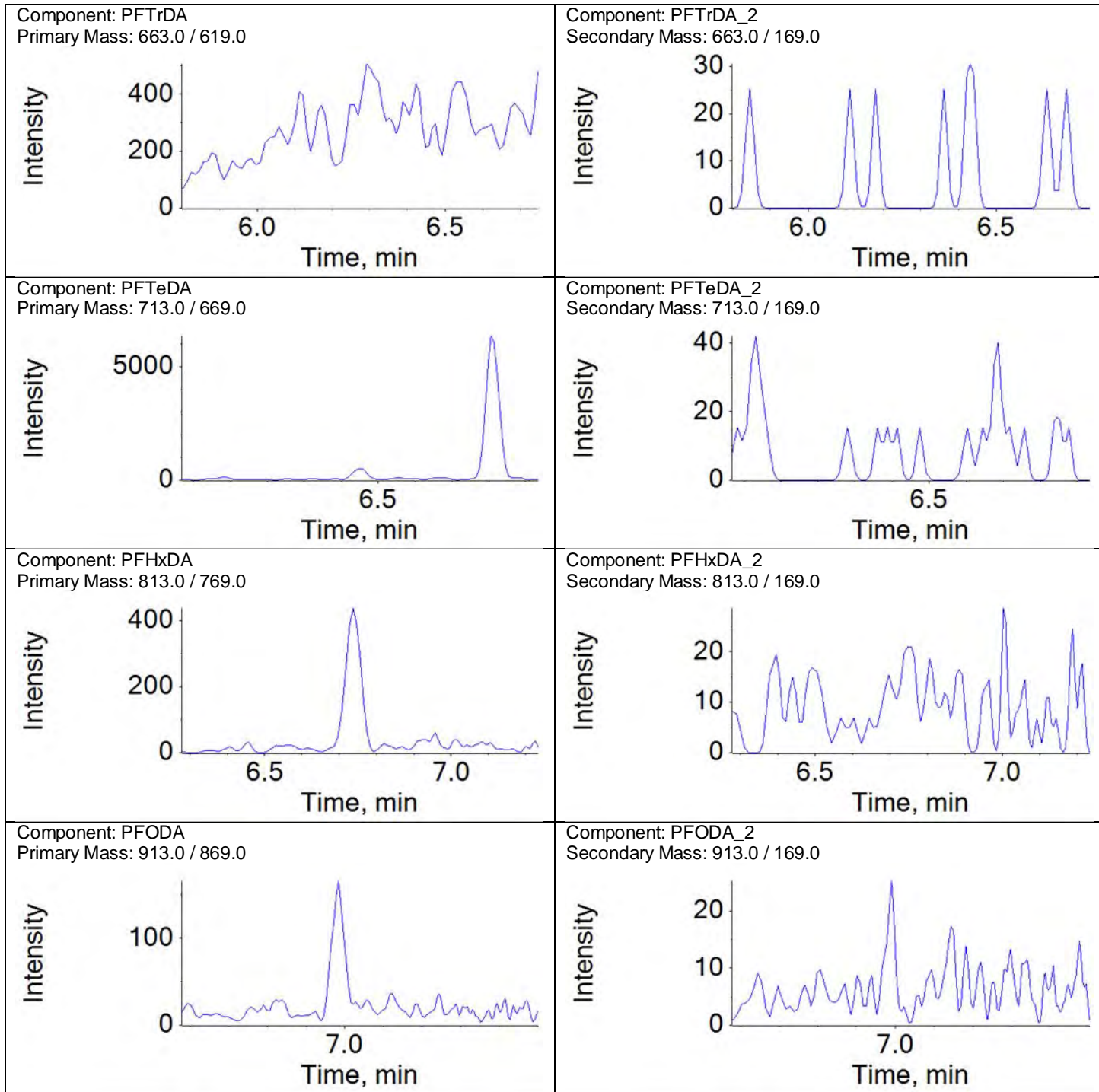










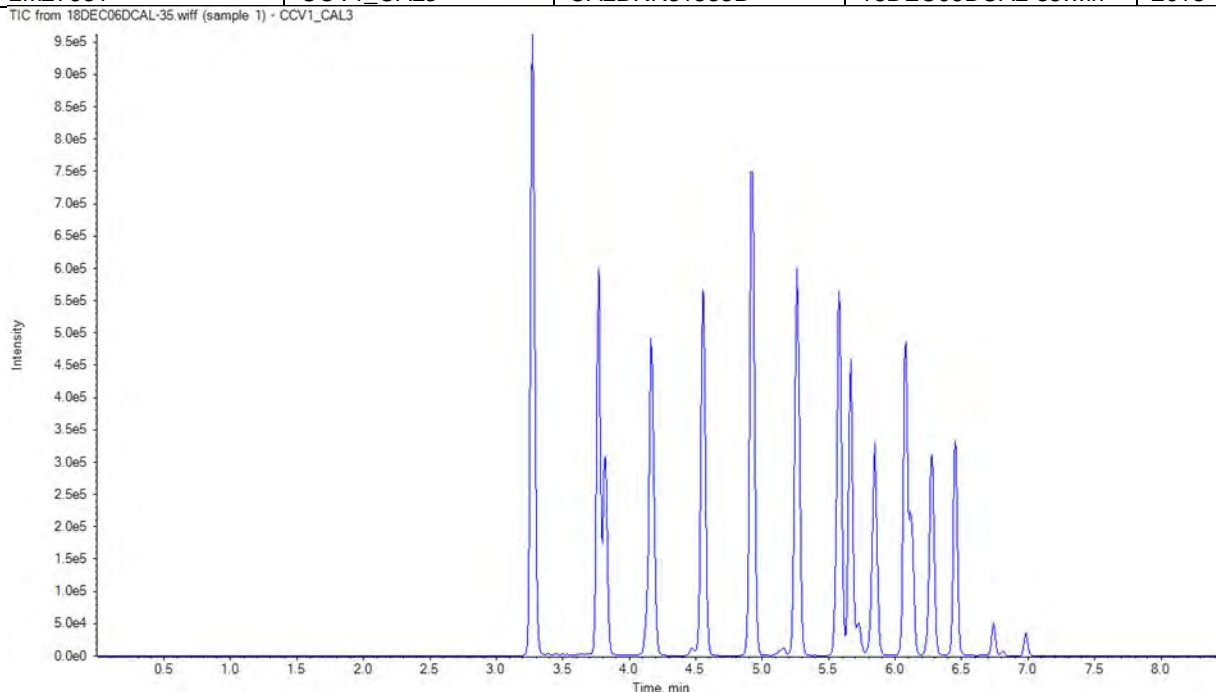


Continuing Calibration Verification

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 8:56:27 AM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_CAL3	CALBRN31833B	18DEC06DCAL-35.wiff	2018-12-07T01:07:40



Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	847486.0	825688.9	3	50	
13C2-PFOA	5.0	443685.5	449802.8	-1	50	
13C4-PFOS	4.8	282653.1	276858.3	2	50	
13C2-PFDA	5.0	327322.0	315428.3	4	50	



**Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL      Result Table: 18DEC06DCAL 12/7/2018 8:56:27 AM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_CAL3	CALBRN31833B	18DEC06DCAL-35.wiff	2018-12-07T01:07:40

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	391054.0	10	13C4-PFBA	954567.4	5.0	0.410	3.27	1.000	2.000	2.260	13	30	
PFPeA	378225.7	11	13C5-PFPeA	848993.9	5.0	0.445	3.77	1.000	2.000	2.344	17	30	
PFBS	173695.9	10	13C3-PFBS	425102.1	4.7	0.409	3.82	1.000	1.770	2.025	14	30	
4:2-FTS	42557.4	11	13C2-4:2-FTS	55048.7	4.7	0.773	4.13	1.000	1.870	2.072	11	30	
PFHxA	374525.9	11	13C5-PFHxA	674805.4	5.0	0.555	4.17	1.000	2.000	2.418	21	30	
PFPeS	91544.9	11	13C3-PFPeS	425102.1	4.7	0.215	4.19	1.100	1.880	2.132	13	30	
PFHpA	347211.5	12	13C4-PFHxA	507221.8	5.0	0.685	4.55	1.000	2.000	2.254	13	30	
PFHxS	135162.8	18	13C3-PFHxS	341737.8	4.7	0.396	4.56	1.000	1.820	1.874	3	30	
6:2-FTS	26737.4	11	13C2-6:2-FTS	34462.5	4.8	0.776	4.91	1.000	1.900	1.926	1	30	
PFHpS	127495.7	11	13C3-PFHxS	341737.8	4.7	0.373	4.92	1.080	1.900	2.048	8	30	
PFOA	357974.4	11	13C8-PFOA	803005.1	5.0	0.446	4.92	1.000	2.000	2.436	22	30	
PFOS	137724.2	22	13C8-PFOS	300833.5	4.8	0.458	5.25	1.000	1.850	1.899	3	30	
PFNA	312861.8	11	13C9-PFNA	495092.4	5.0	0.632	5.27	1.000	2.000	2.329	16	30	
PFNS	98923.8	11	13C8-PFOS	300833.5	4.8	0.329	5.56	1.060	1.920	2.116	10	30	
PFDA	258354.8	11	13C6-PFDA	622132.6	5.0	0.415	5.58	1.000	2.000	2.337	17	30	
8:2-FTS	22216.1	11	13C2-8:2-FTS	22372.6	4.8	0.993	5.58	1.000	1.920	2.152	12	30	
PFOSA	288939.4	11	13C8-PFOSA	713853.0	5.0	0.405	5.66	1.000	2.000	2.100	5	30	
NMeFOSAA	32010.4	20	d3-NMeFOSAA	87837.9	5.0	0.364	5.72	1.000	2.000	2.410	21	30	
PFDS	74927.4	11	13C8-PFOS	300833.5	4.8	0.249	5.82	1.110	1.930	2.014	4	30	
PFUnDA	257851.3	11	13C7-PFUnDA	332918.2	5.0	0.775	5.85	1.000	2.000	2.371	19	30	
NEtFOSAA	31269.0	21	d5-NEtFOSAA	69333.4	5.0	0.451	5.86	1.000	2.000	2.279	14	30	
PFDODA	325910.1	11	13C2-PFDODA	749102.5	5.0	0.435	6.08	1.000	2.000	2.290	15	30	
10:2-FTS	19161.0	11	13C2-8:2-FTS	22372.6	4.8	0.856	6.09	1.090	1.930	2.269	18	30	
NMePFOSAE	135167.9	11	d7-NMePFOSAE	258227.3	5.0	0.523	6.13	1.000	2.000	2.275	14	30	
NMePFOSA	34829.3	11	d3-NMePFOSA	81343.7	5.0	0.428	6.13	1.000	2.000	2.160	8	30	
PFDoS	41296.2	11	13C8-PFOS	300833.5	4.8	0.137	6.25	1.190	1.940	2.093	8	30	
NEtPFOSAE	154304.5	11	d9-NEtPFOSAE	225582.4	5.0	0.684	6.28	1.000	2.000	2.292	15	30	
NEtPFOSA	32802.5	11	d5-NEtPFOSA	73020.7	5.0	0.449	6.29	1.000	2.000	2.150	8	30	
PFTTrDA	281452.0	11	13C2-PFDODA	749102.5	5.0	0.376	6.27	1.030	2.000	2.461	23	30	
PFTeDA	216594.6	11	13C2-PFTeDA	518061.6	5.0	0.418	6.45	1.000	2.000	2.391	20	30	
PFHxDA	96416.0	10	13C2-PFTeDA	518061.6	5.0	0.186	6.74	1.040	2.000	2.331	17	30	
PFOA	70777.1	10	13C2-PFTeDA	518061.6	5.0	0.137	6.98	1.080	2.000	2.193	10	30	



**Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 8:56:27 AM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV1_CAL3	Data File:	18DEC06DCAL-35.wiff
Sample ID:	CALBRN31833B	Acquis Date:	2018-12-07T01:07:40
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	5	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC06DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC06DCAL-27

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	847486.0	825688.9	3	50	
13C2-PFOA	5.0	443685.5	449802.8	-1	50	
13C4-PFOS	4.8	282653.1	276858.3	2	50	
13C2-PFDA	5.0	327322.0	315428.3	4	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	954567.4	13C3-PFBA	847486.0	1.126	5.000	4.985	100	70-130	
E13C5-PFPeA	848993.9	13C3-PFBA	847486.0	1.002	5.000	4.758	95	70-130	
E13C3-PFBS	425102.1	13C3-PFBA	847486.0	0.502	4.650	4.252	91	70-130	
E13C2-4:2-FTS	55048.7	13C2-PFOA	443685.5	0.124	4.670	4.862	104	70-130	
E13C5-PFHxA	674805.4	13C2-PFOA	443685.5	1.521	5.000	5.106	102	70-130	
E13C3-PFHxS	341737.8	13C2-PFOA	443685.5	0.770	4.730	4.940	104	70-130	
E13C4-PFHpA	507221.8	13C2-PFOA	443685.5	1.143	5.000	4.860	97	70-130	
E13C2-6:2-FTS	34462.5	13C2-PFOA	443685.5	0.078	4.750	4.812	101	70-130	
E13C8-PFOA	803005.1	13C2-PFOA	443685.5	1.810	5.000	5.116	102	70-130	
E13C8-PFOS	300833.5	13C4-PFOS	282653.1	1.064	4.780	4.776	100	70-130	
E13C9-PFNA	495092.4	13C4-PFOS	282653.1	1.752	5.000	4.950	99	70-130	
E13C6-PFDA	622132.6	13C2-PFDA	327322.0	1.901	5.000	5.037	101	70-130	
E13C2-8:2-FTS	22372.6	13C2-PFDA	327322.0	0.068	4.790	4.462	93	70-130	
E13C8-PFOSA	713853.0	13C2-PFDA	327322.0	2.181	5.000	5.158	103	70-130	
Ed3-NMeFOSAA	87837.9	13C2-PFDA	327322.0	0.268	5.000	4.756	95	70-130	
E13C7-PFUnDA	332918.2	13C2-PFDA	327322.0	1.017	5.000	4.989	100	70-130	
Ed5-NEtFOSAA	69333.4	13C2-PFDA	327322.0	0.212	5.000	4.676	94	70-130	
E13C2-PFDoDA	749102.5	13C2-PFDA	327322.0	2.289	5.000	4.803	96	70-130	
Ed7-NMePFOSAE	258227.3	13C2-PFDA	327322.0	0.789	5.000	4.545	91	70-130	
Ed3-NMePFOSA	81343.7	13C2-PFDA	327322.0	0.249	5.000	4.528	91	70-130	
Ed9-NEtPFOSAE	225582.4	13C2-PFDA	327322.0	0.689	5.000	4.752	95	70-130	
Ed5-NEtPFOSA	73020.7	13C2-PFDA	327322.0	0.223	5.000	5.020	100	70-130	
E13C2-PFTeDA	518061.6	13C2-PFDA	327322.0	1.583	5.000	4.698	94	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

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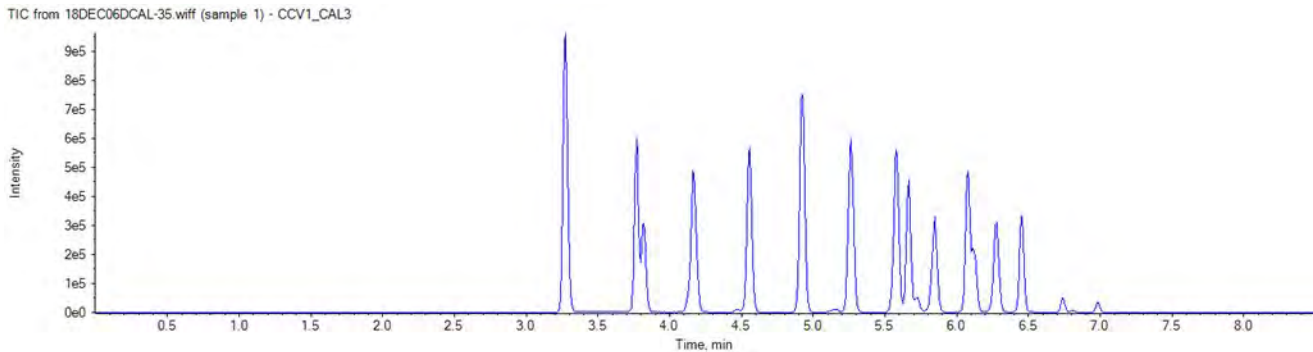
**Analyte Quantitation Peak Table**

Sample Name: CCV1\_CAL3 Instrument Name: LM27631 File Name: 18DEC06DCAL-35.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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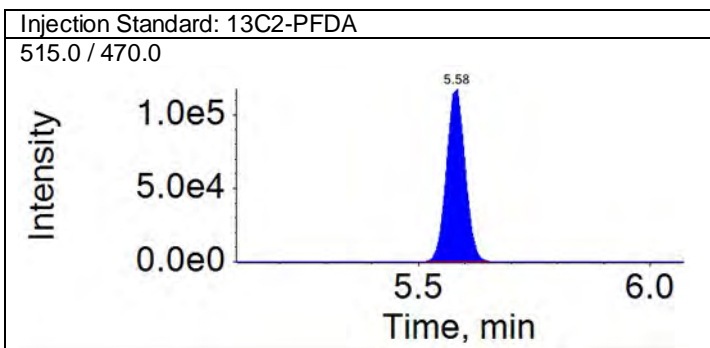
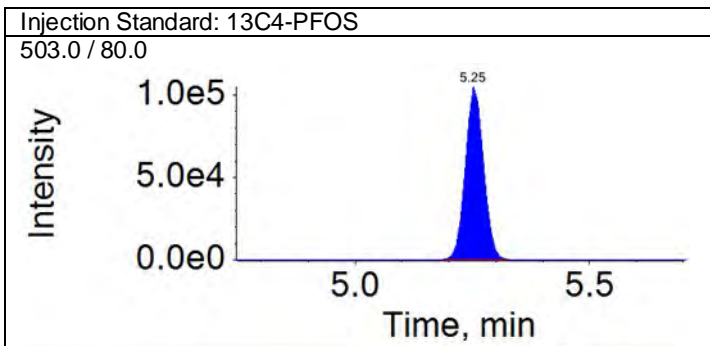
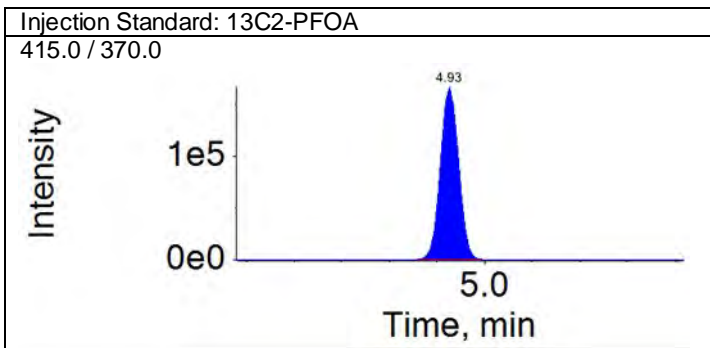
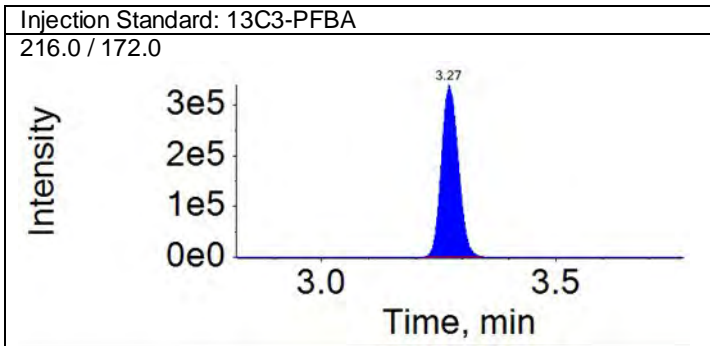
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PFBA	3.27	1.000	391054.0		A	13C4-PFBA	3.27	954567.4	0.410	2.260
PFPeA	3.77	1.000	378225.7		A	13C5-PFPeA	3.77	848993.9	0.445	2.344
PFBS	3.82	1.000	173695.9		A	13C3-PFBS	3.82	425102.1	0.409	2.025
4:2-FTS	4.13	1.000	42557.4		A	13C2-4:2-FTS	4.13	55048.7	0.773	2.072
PFHxA	4.17	1.000	374525.9		A	13C5-PFHxA	4.17	674805.4	0.555	2.418
PFPeS	4.19	1.100	91544.9		A	13C3-PFBS	3.82	425102.1	0.215	2.132
PFHpA	4.55	1.000	347211.5		A	13C4-PFHpA	4.55	507221.8	0.685	2.254
PFHxS	4.56	1.000	135162.8		M	13C3-PFHxS	4.56	341737.8	0.396	1.874
6:2-FTS	4.91	1.000	26737.4		A	13C2-6:2-FTS	4.91	34462.5	0.776	1.926
PFHpS	4.92	1.080	127495.7		A	13C3-PFHxS	4.56	341737.8	0.373	2.048
PFOA	4.92	1.000	357974.4		A	13C8-PFOA	4.92	803005.1	0.446	2.436
PFOS	5.25	1.000	137724.2		M	13C8-PFOS	5.25	300833.5	0.458	1.899
PFNA	5.27	1.000	312861.8		A	13C9-PFNA	5.27	495092.4	0.632	2.329
PFNS	5.56	1.060	98923.8		A	13C8-PFOS	5.25	300833.5	0.329	2.116
PFDA	5.58	1.000	258354.8		A	13C6-PFDA	5.58	622132.6	0.415	2.337
8:2-FTS	5.58	1.000	22216.1		A	13C2-8:2-FTS	5.58	22372.6	0.993	2.152
PFOSA	5.66	1.000	288939.4		A	13C8-PFOSA	5.66	713853.0	0.405	2.100
NMeFOSAA	5.72	1.000	32010.4		M	d3-NMeFOSAA	5.72	87837.9	0.364	2.410
PFDS	5.82	1.110	74927.4		A	13C8-PFOS	5.25	300833.5	0.249	2.014
PUnDA	5.85	1.000	257851.3		A	13C7-PUnDA	5.85	332918.2	0.775	2.371
NEtFOSAA	5.86	1.000	31269.0		M	d5-NEtFOSAA	5.86	69333.4	0.451	2.279
PFDaDA	6.08	1.000	325910.1		A	13C2-PFDaDA	6.08	749102.5	0.435	2.290
10:2-FTS	6.09	1.090	19161.0		A	13C2-8:2-FTS	5.58	22372.6	0.856	2.269
NMePFOSAE	6.13	1.000	135167.9		A	d7-NMePFOSAE	6.12	258227.3	0.523	2.275
NMePFOSA	6.13	1.000	34829.3		A	d3-NMePFOSA	6.13	81343.7	0.428	2.160
PFDoS	6.25	1.190	41296.2		A	13C8-PFOS	5.25	300833.5	0.137	2.093
NEtPFOSAE	6.28	1.000	154304.5		A	d9-NEtPFOSAE	6.27	225582.4	0.684	2.292
NEtPFOSA	6.29	1.000	32802.5		A	d5-NEtPFOSA	6.29	73020.7	0.449	2.150
PFTrDA	6.27	1.030	281452.0		A	13C2-PFDaDA	6.08	749102.5	0.376	2.461
PFTeDA	6.45	1.000	216594.6		A	13C2-PFTeDA	6.45	518061.6	0.418	2.391
PFHxDA	6.74	1.040	96416.0		A	13C2-PFTeDA	6.45	518061.6	0.186	2.331
PFOA	6.98	1.080	70777.1		A	13C2-PFTeDA	6.45	518061.6	0.137	2.193

**Total Ion Chromatogram**



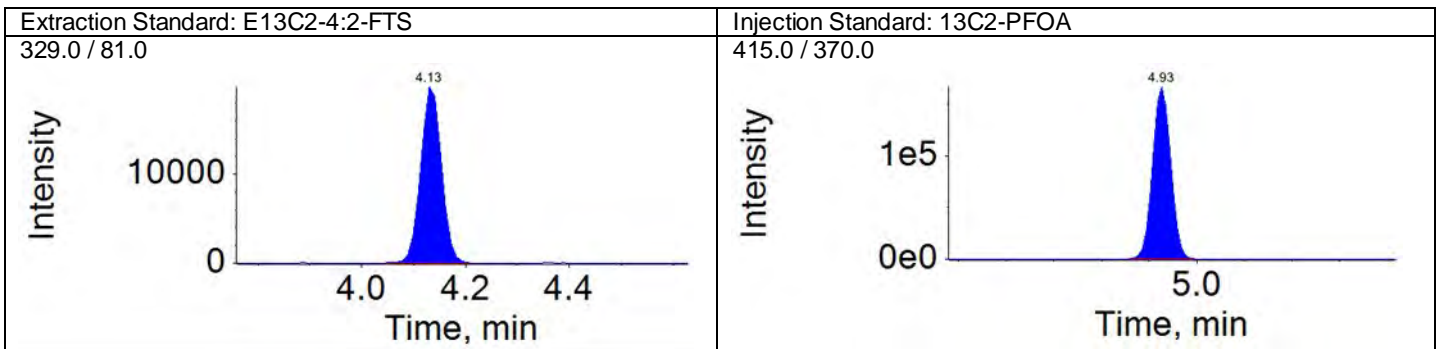
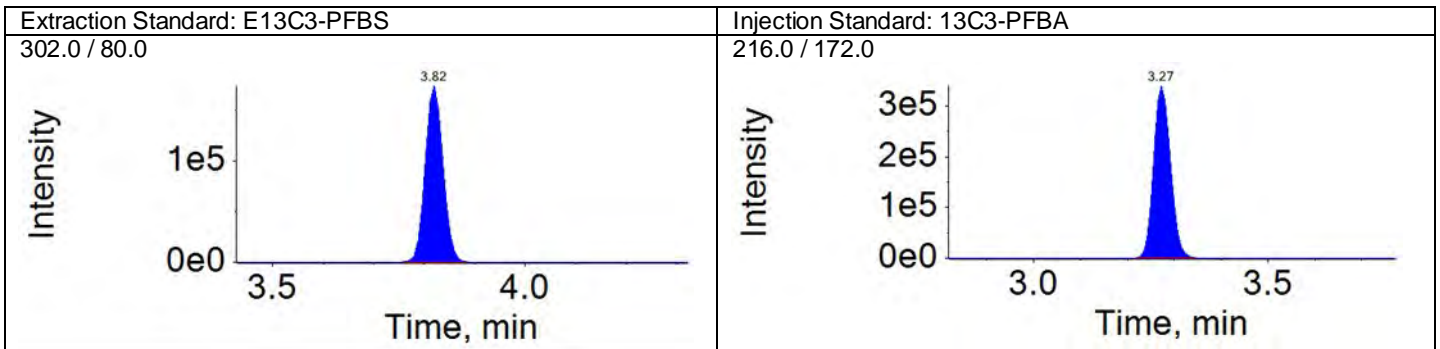
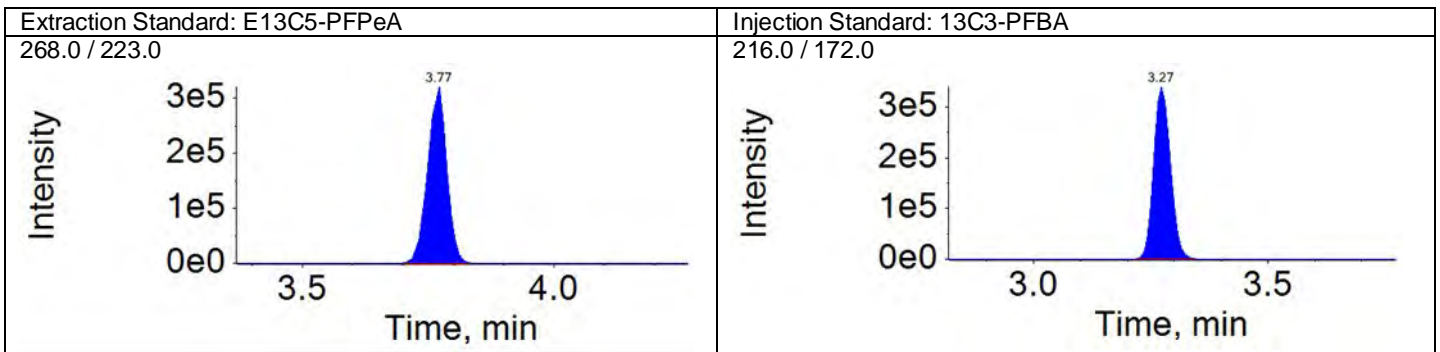
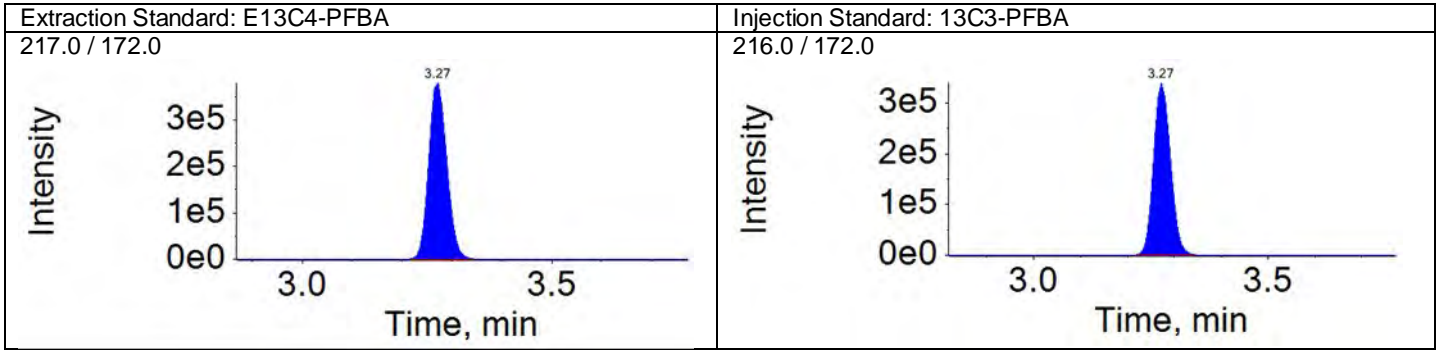
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QMethod Name: 18AUG20QM

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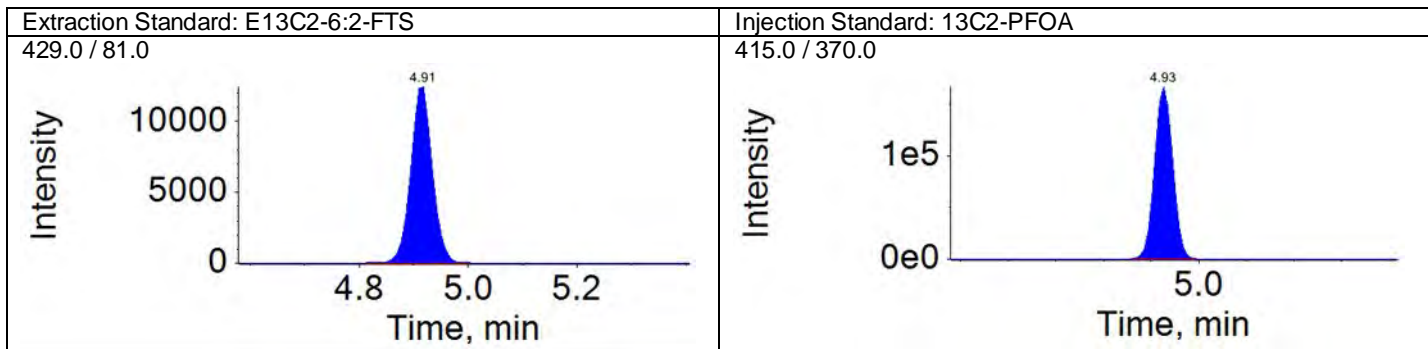
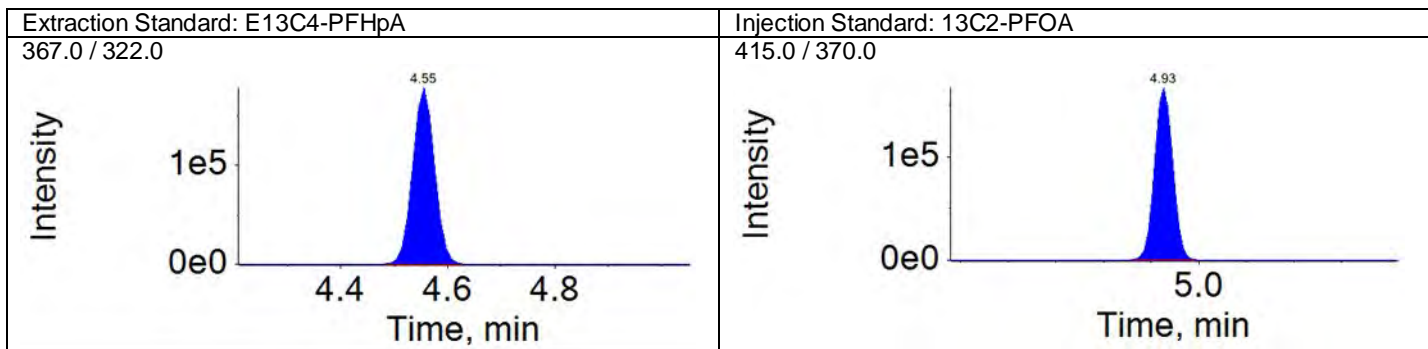
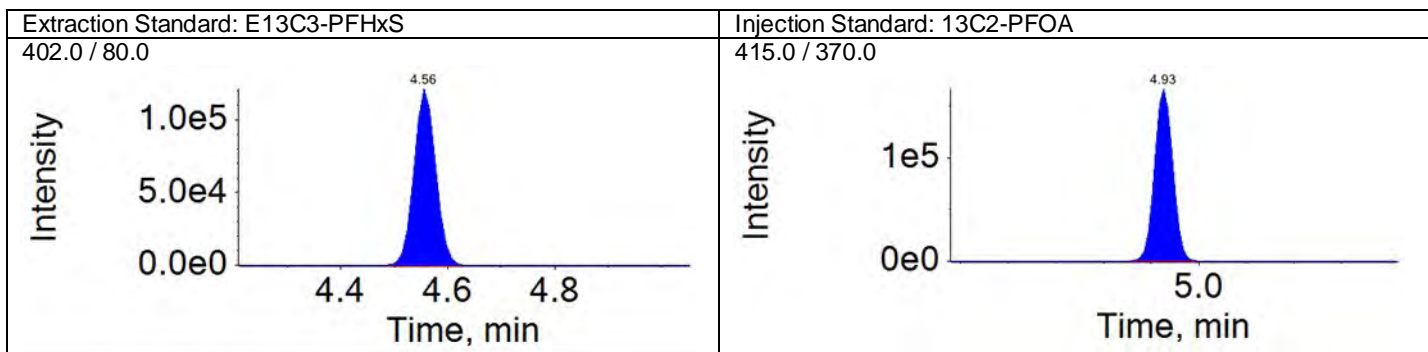
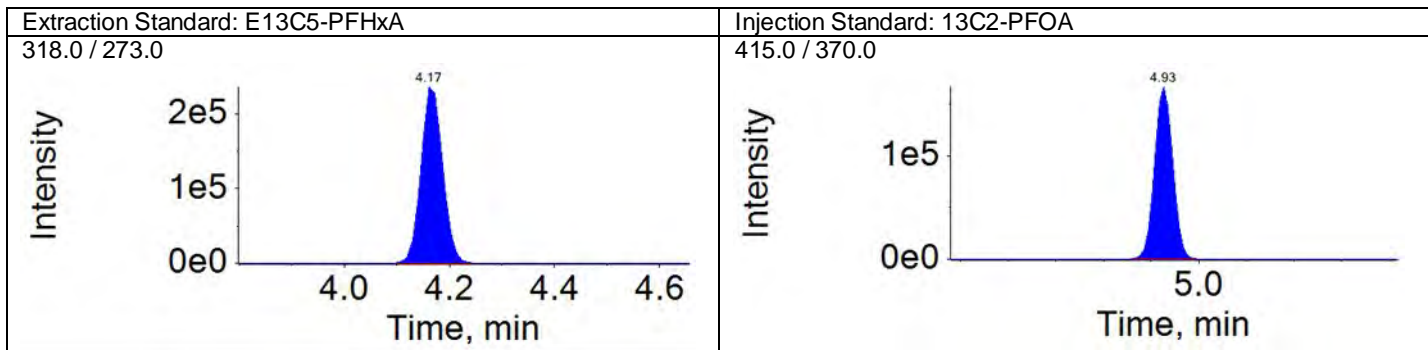
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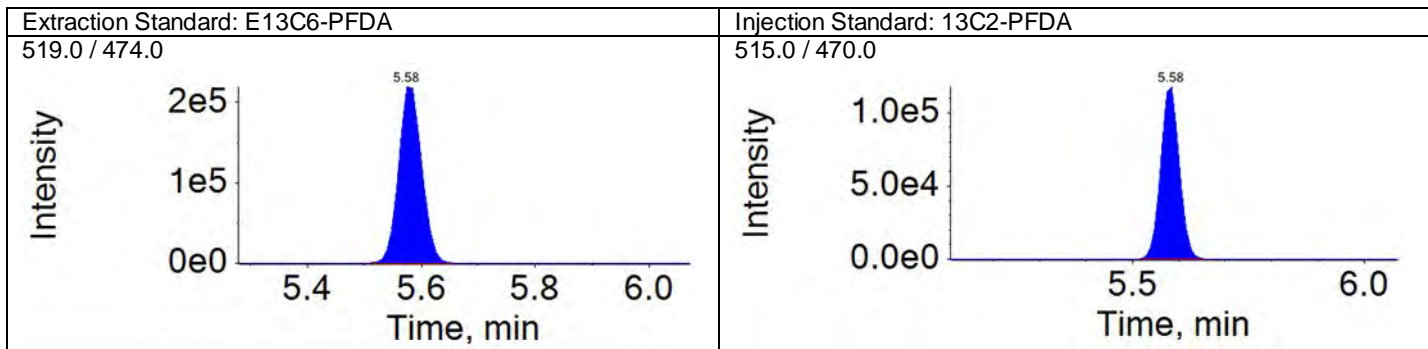
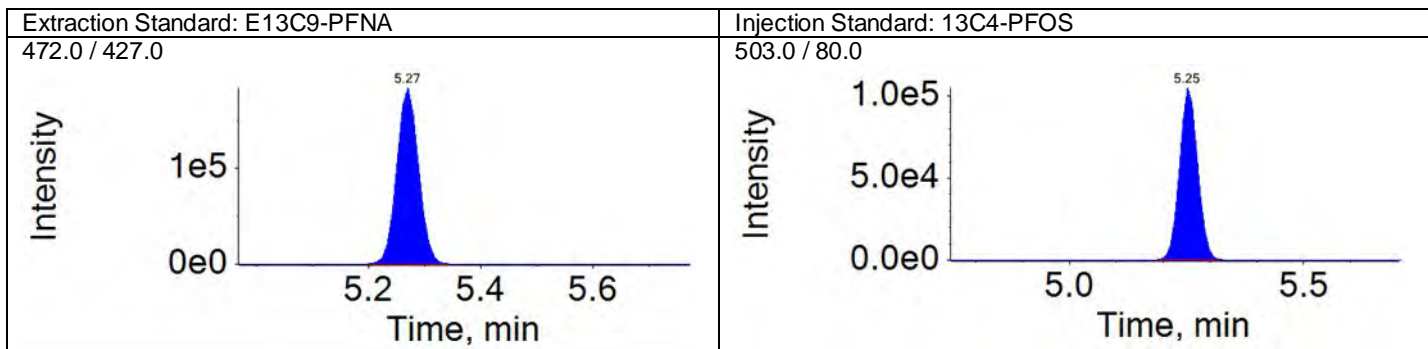
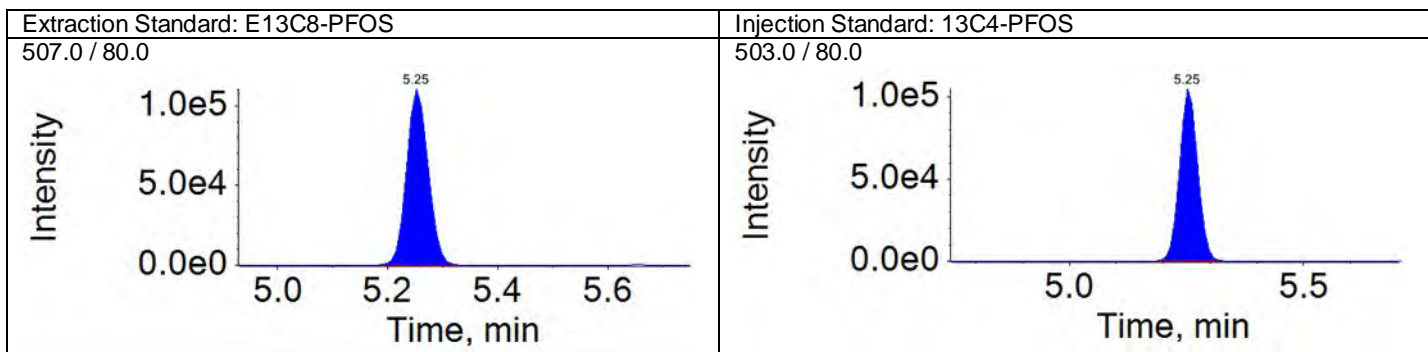
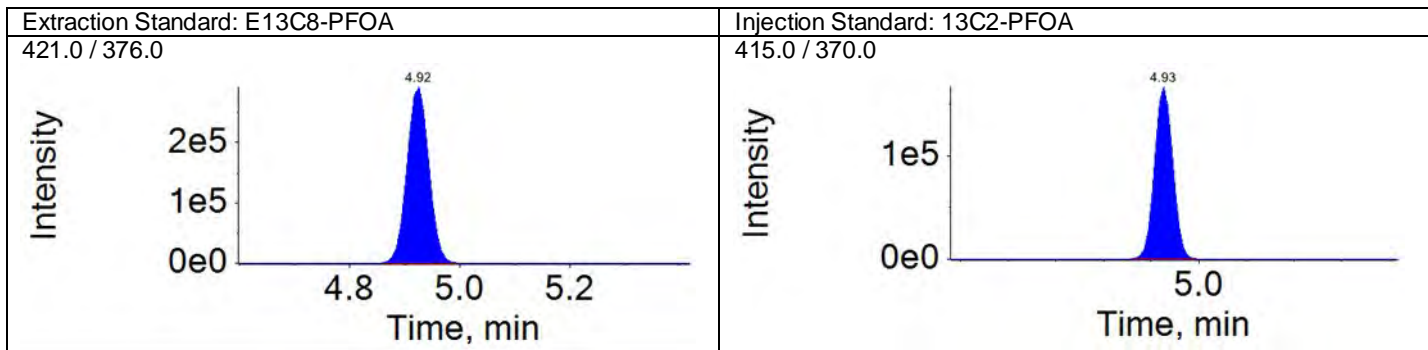
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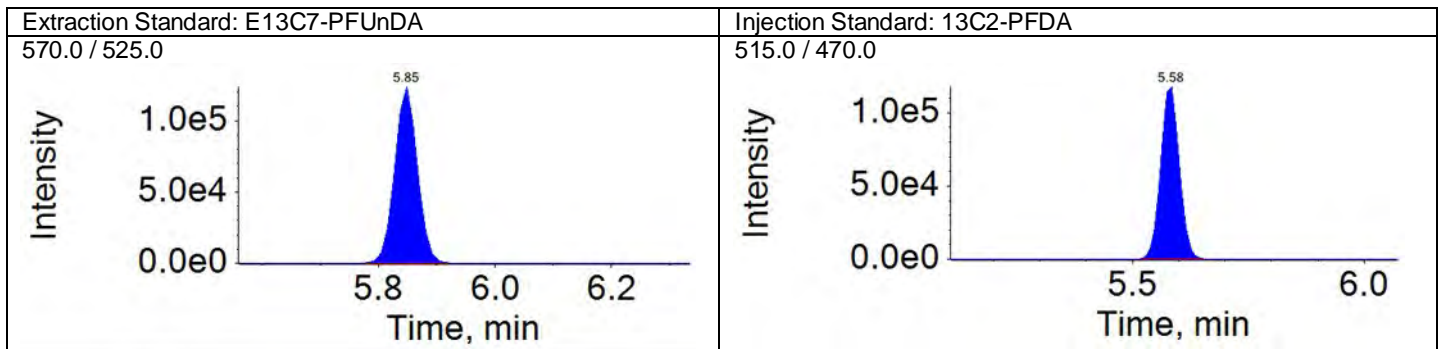
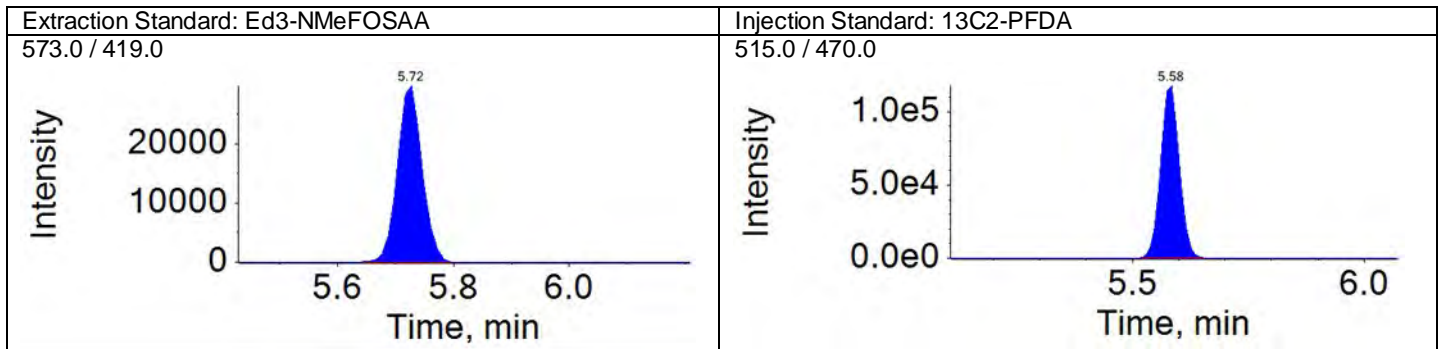
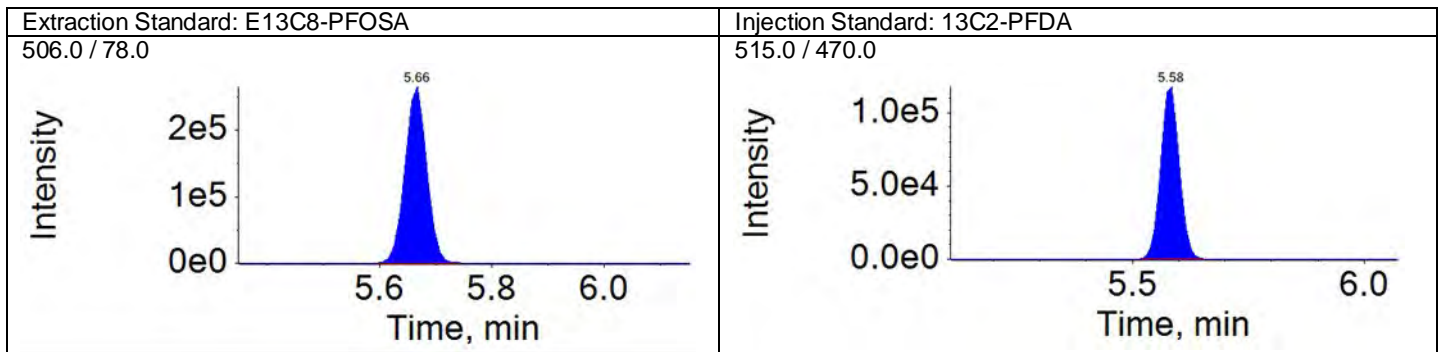
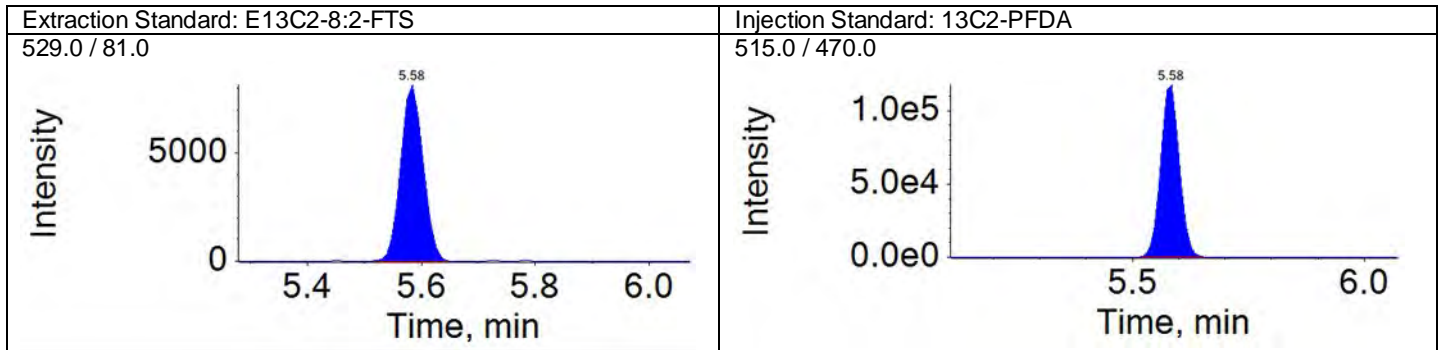
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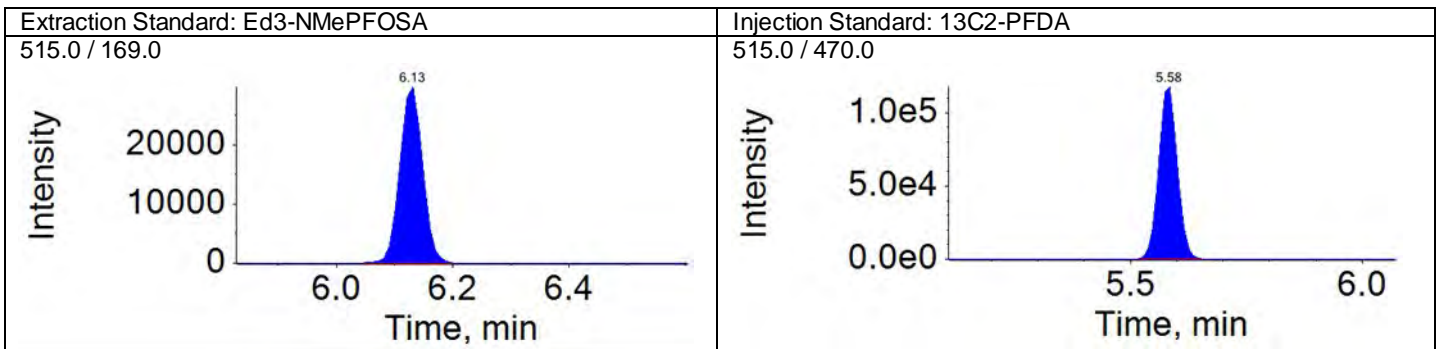
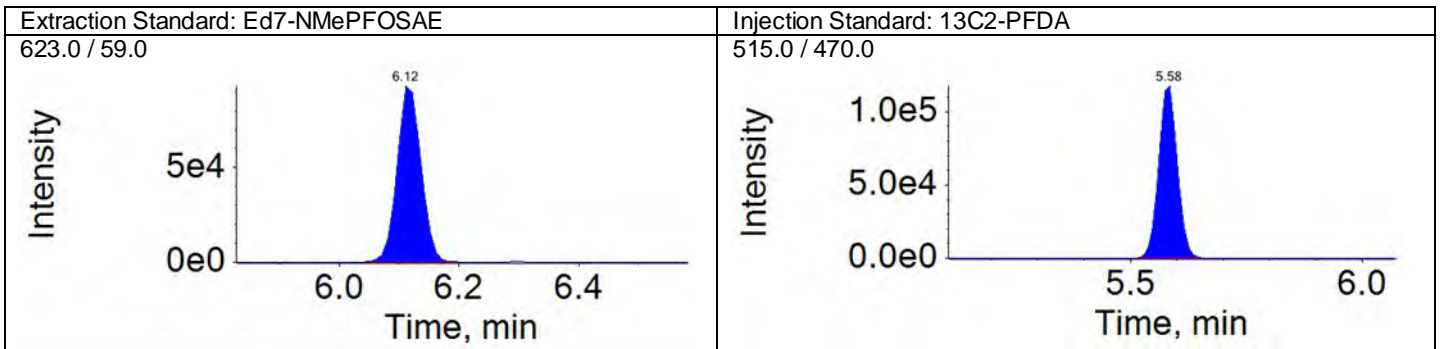
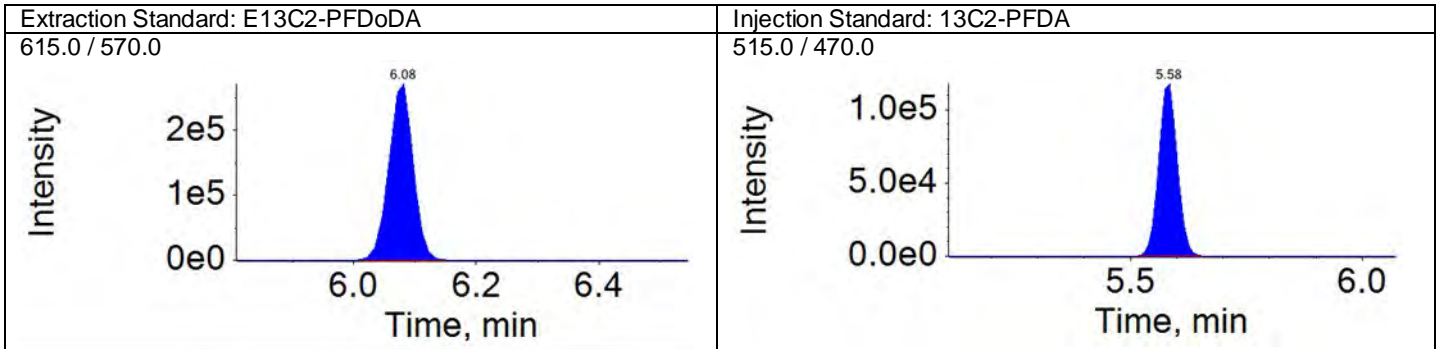
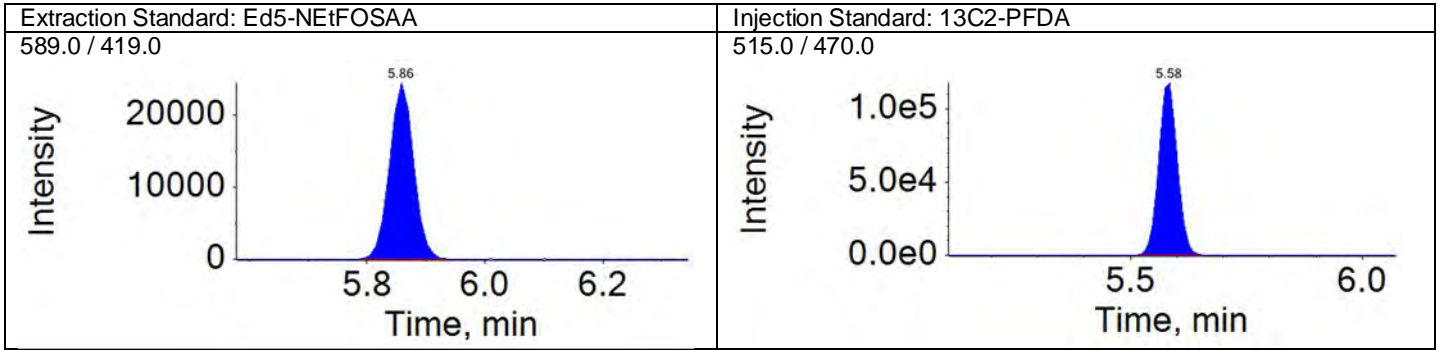
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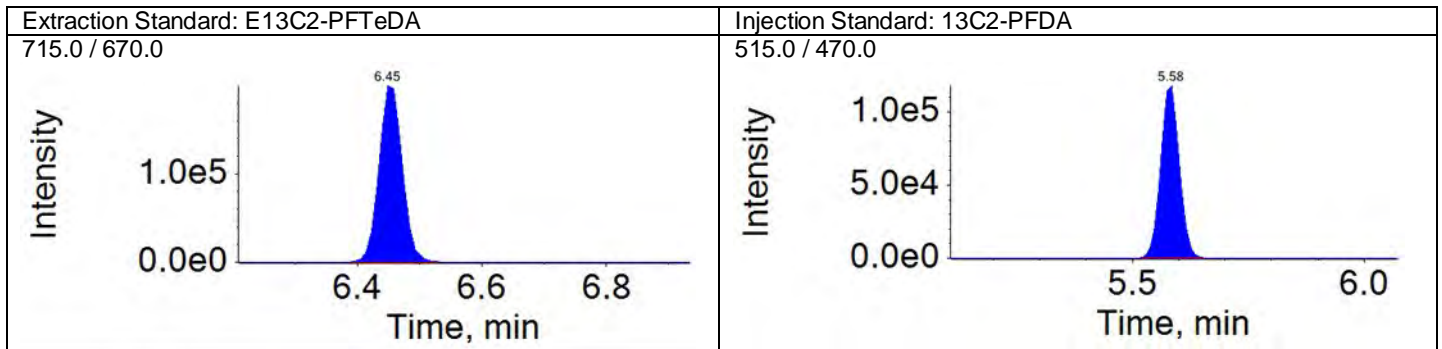
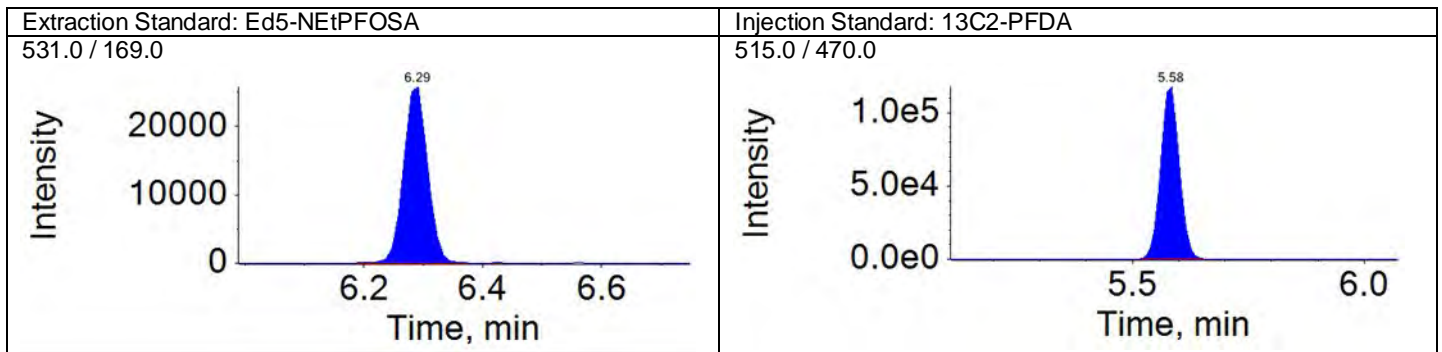
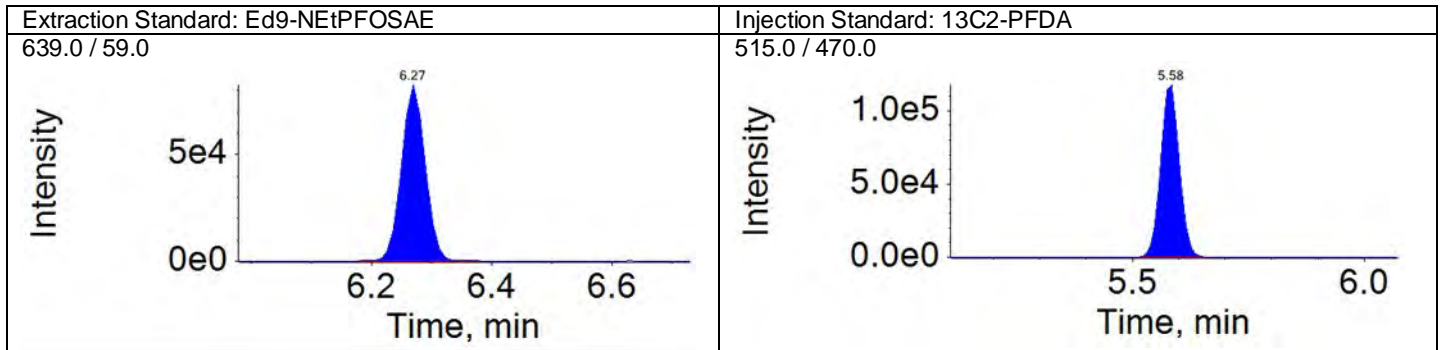
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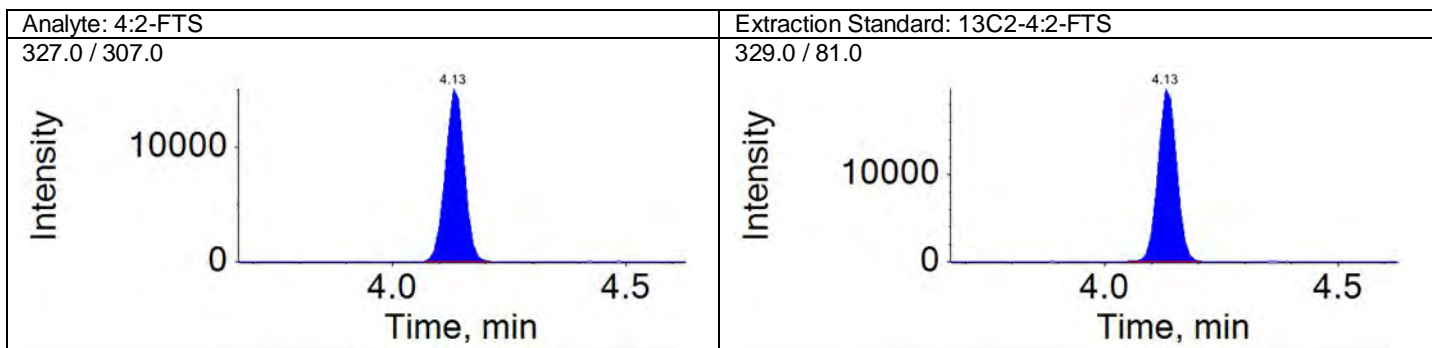
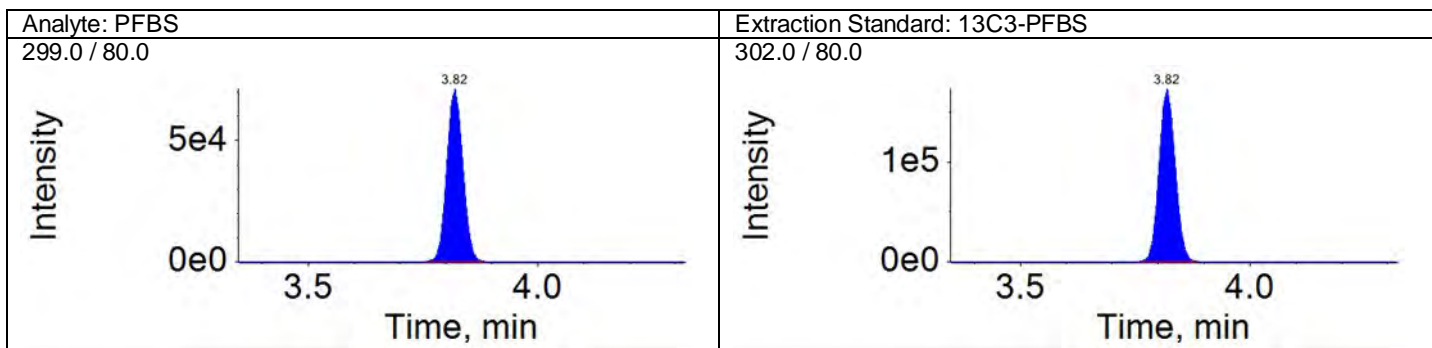
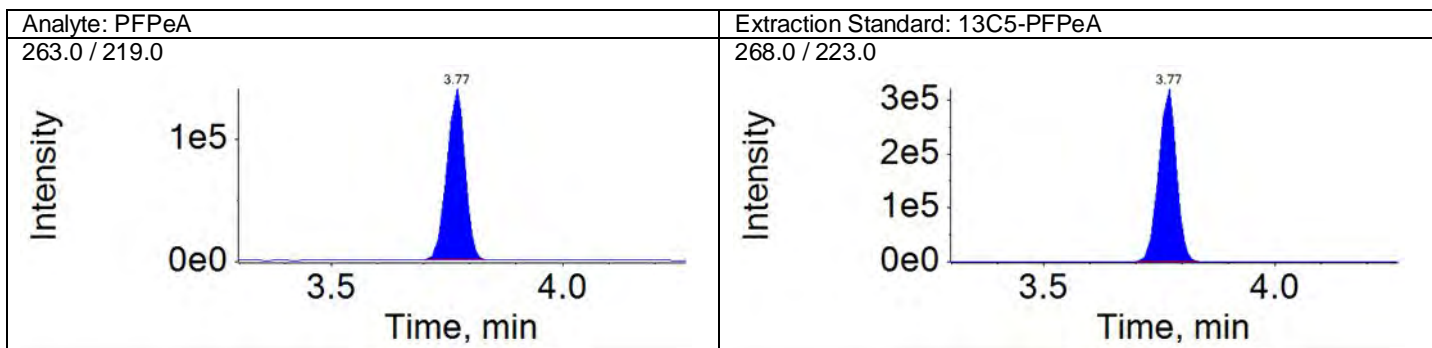
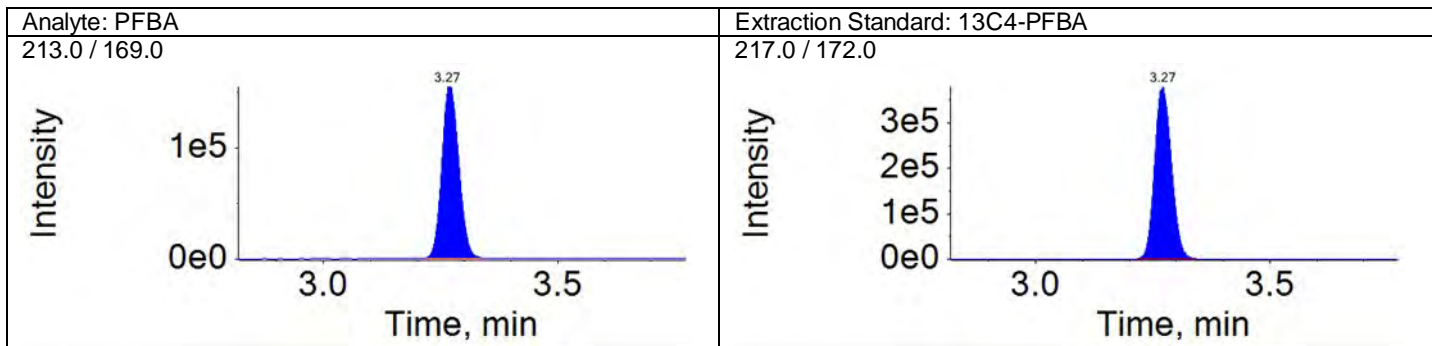
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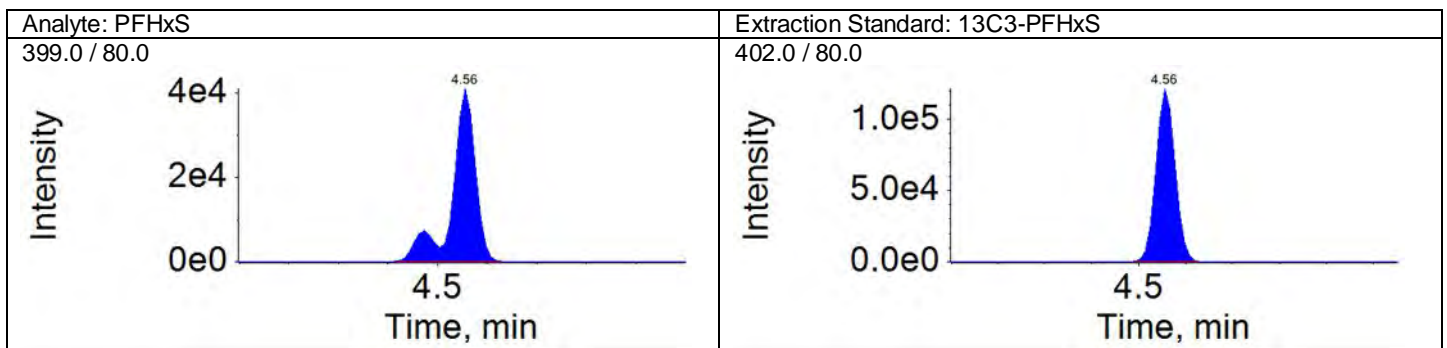
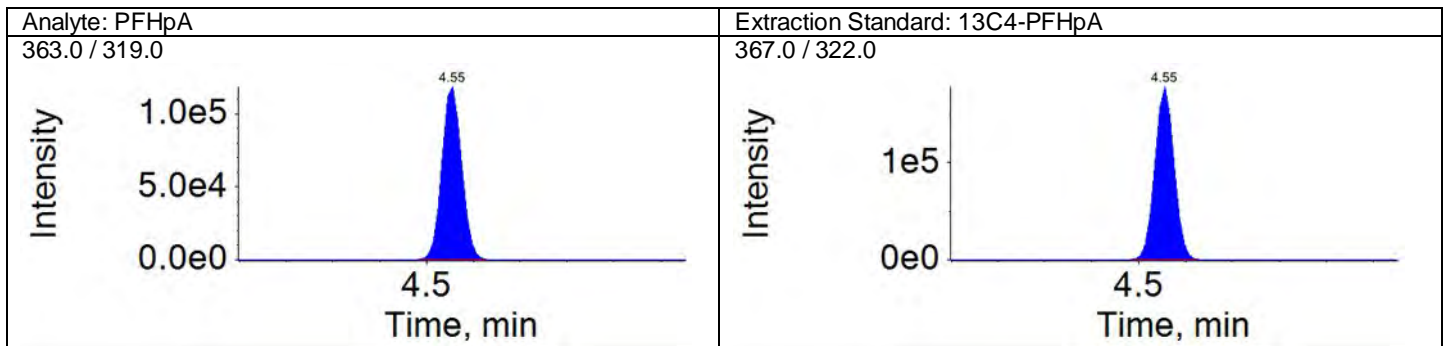
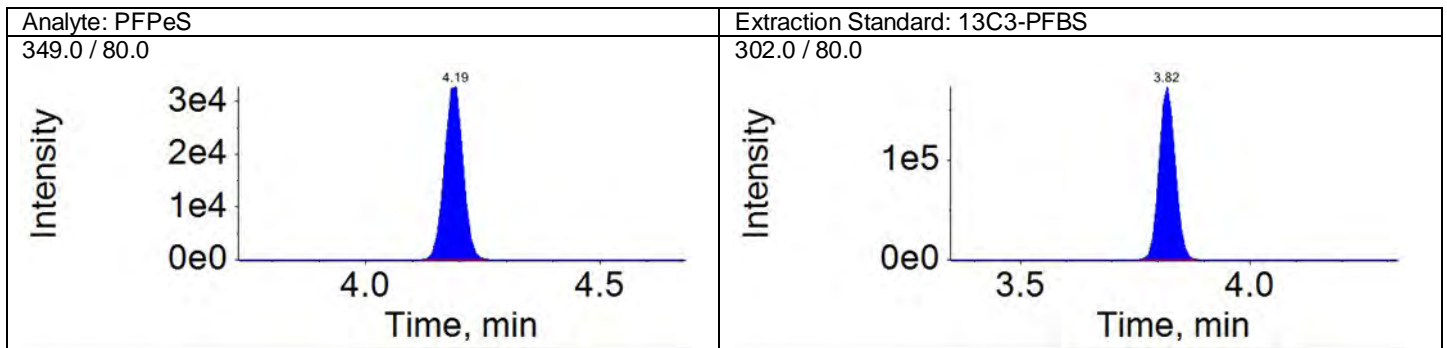
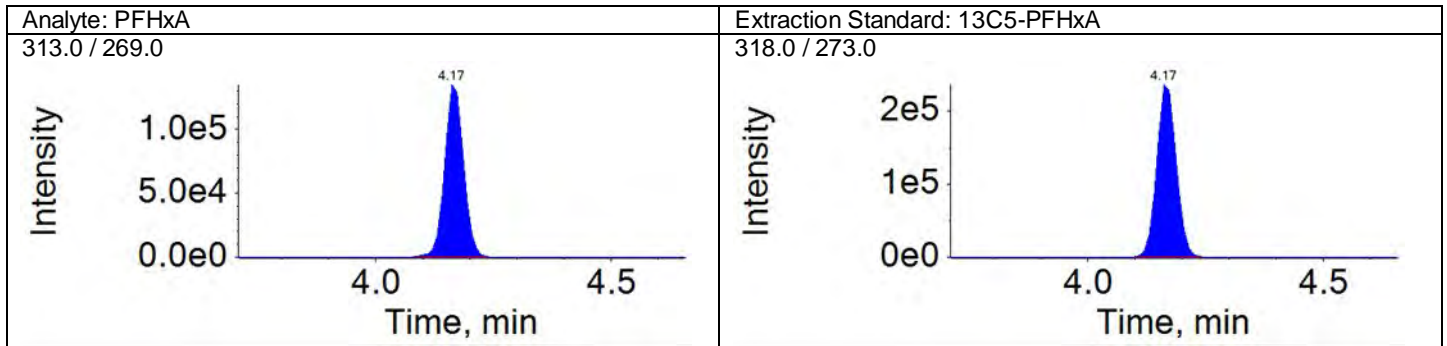
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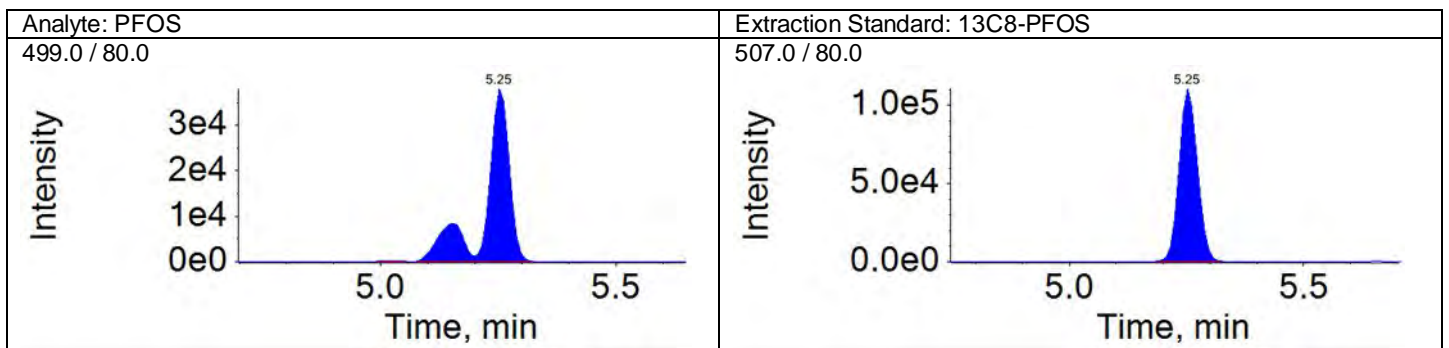
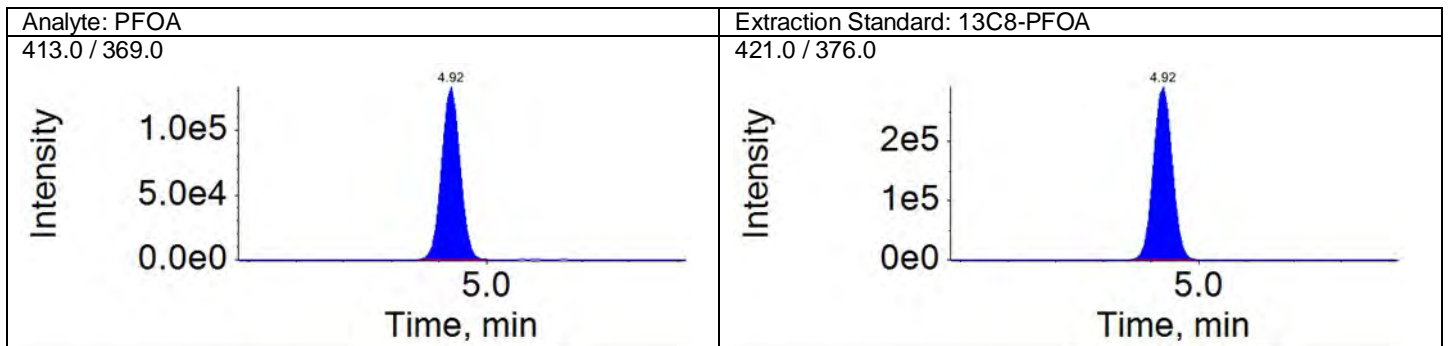
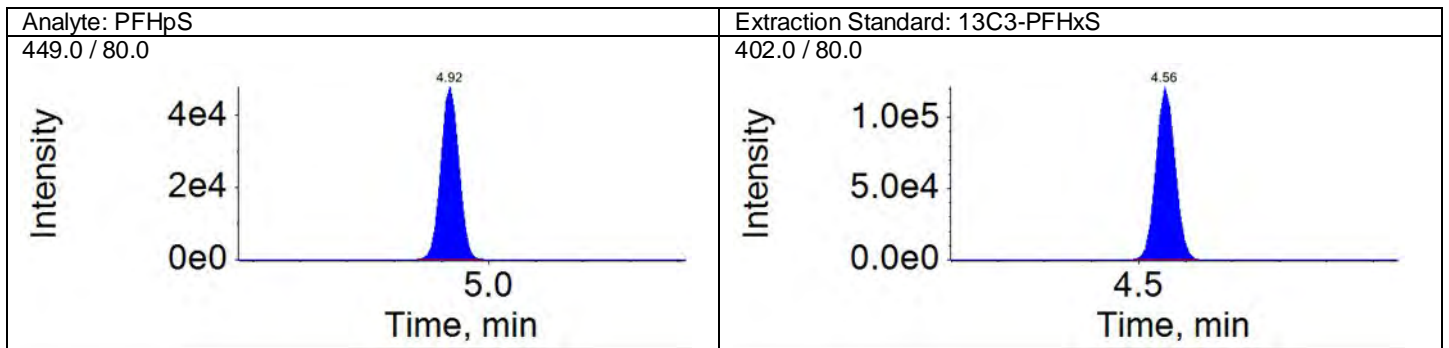
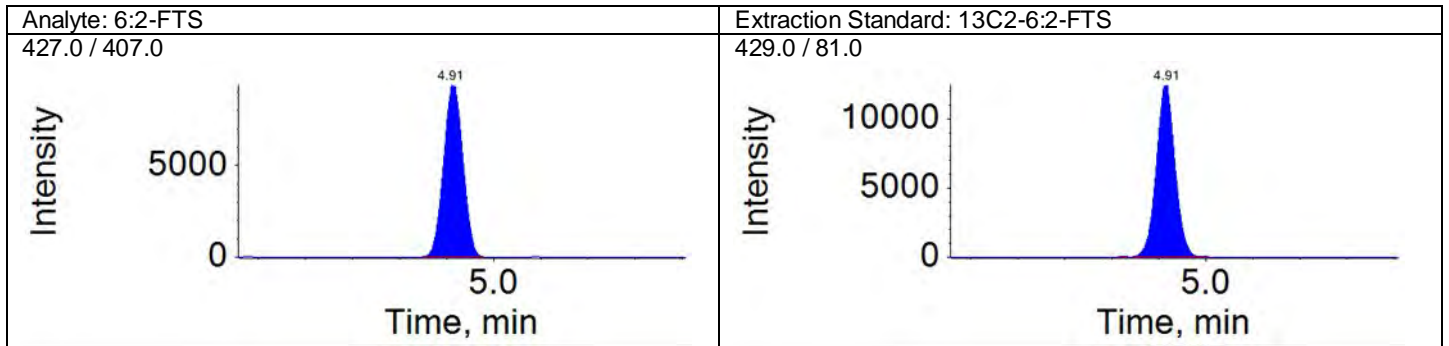
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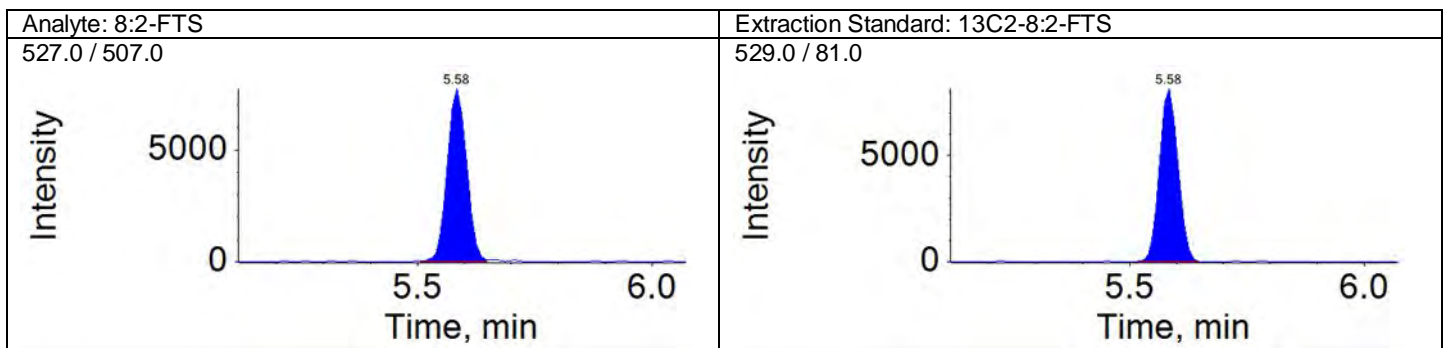
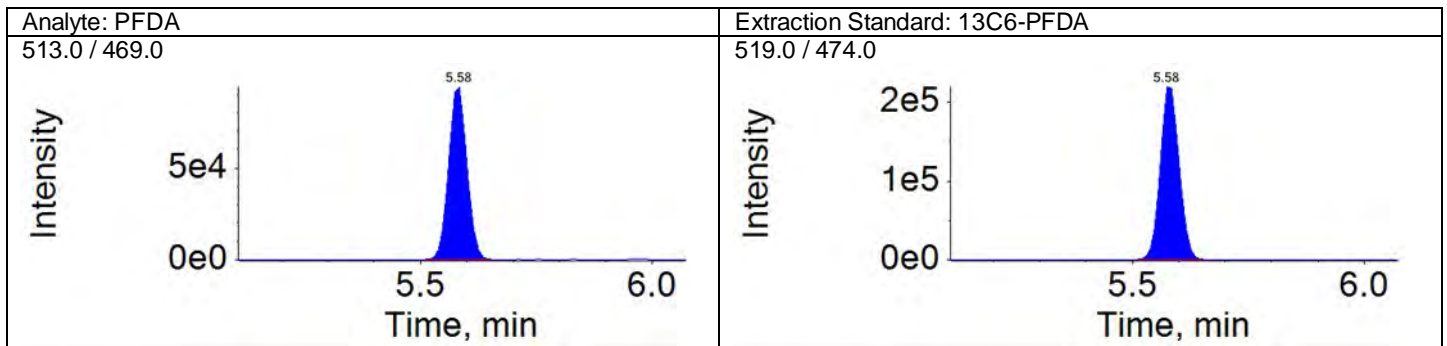
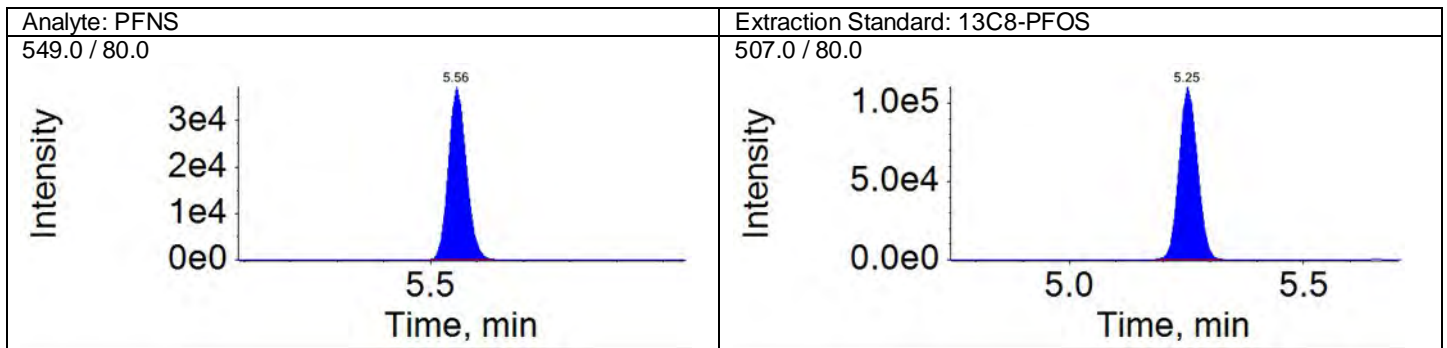
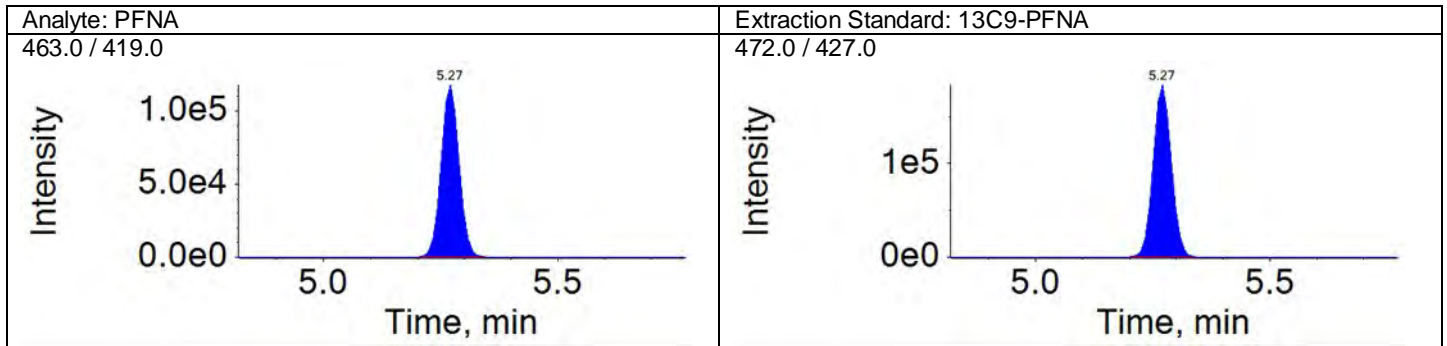
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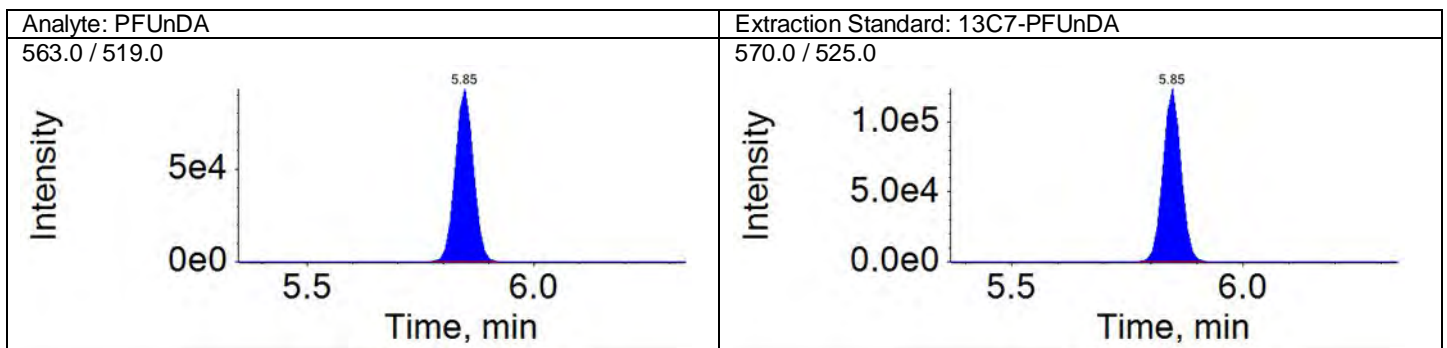
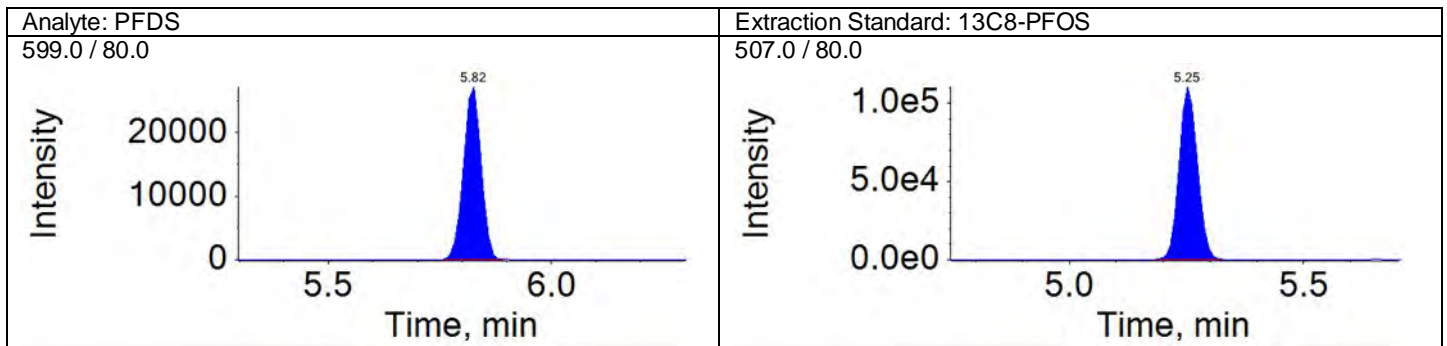
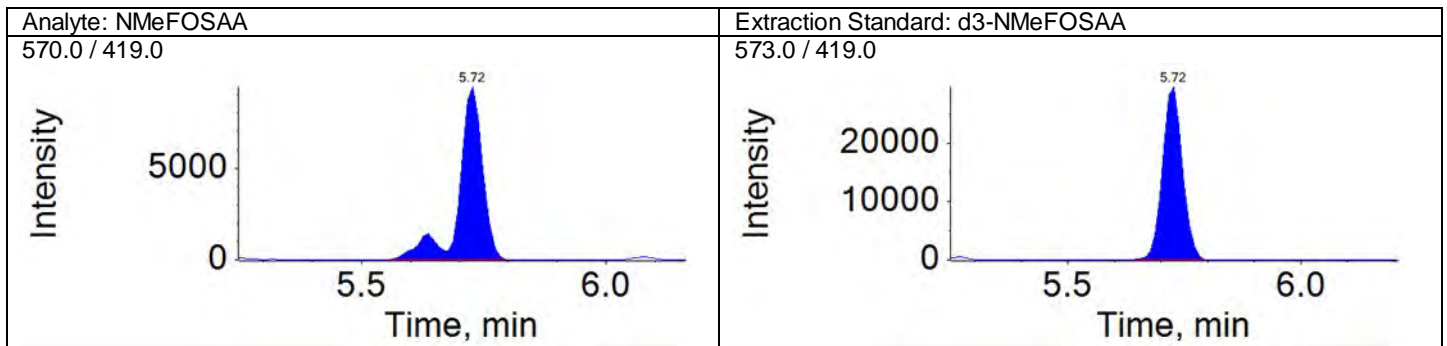
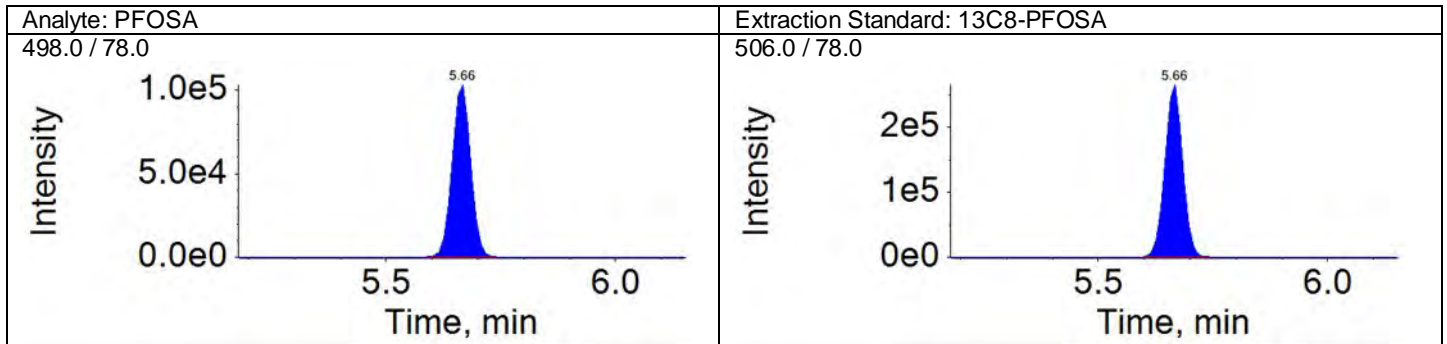
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

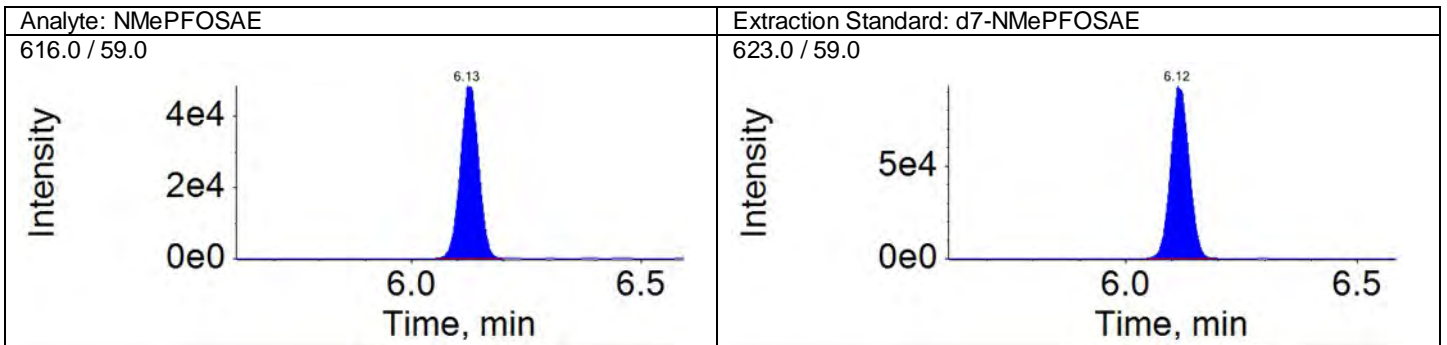
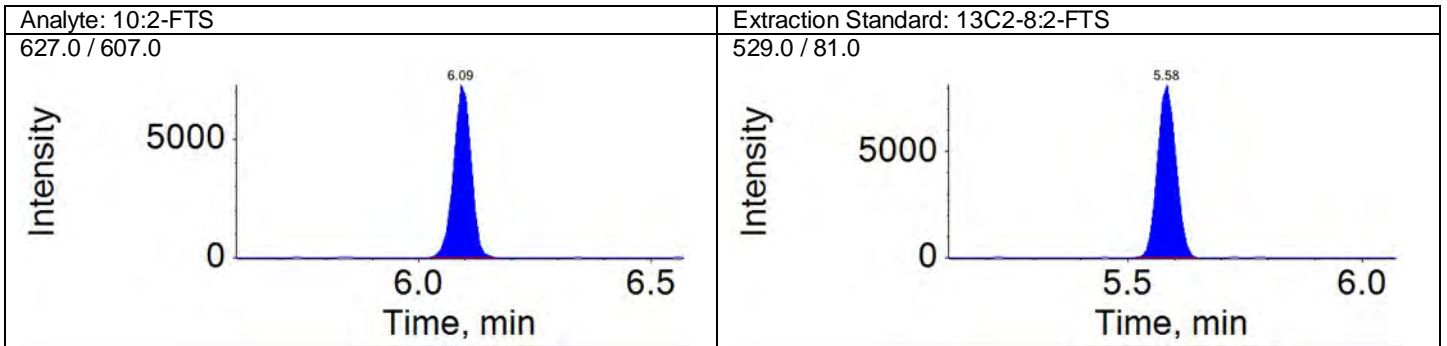
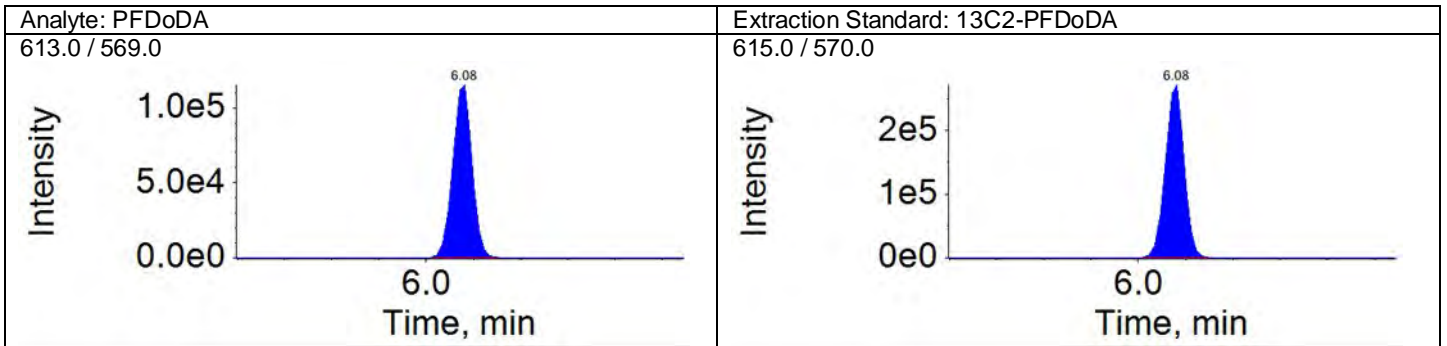
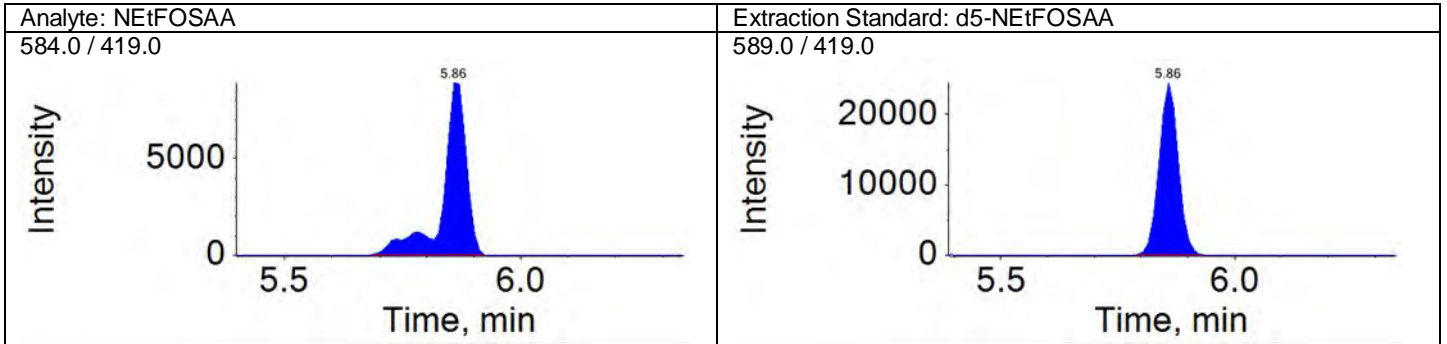
Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam





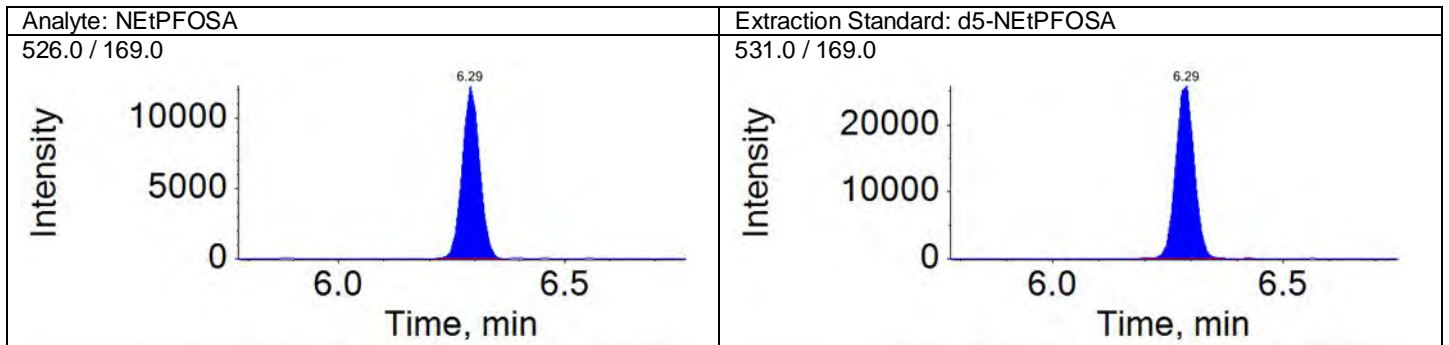
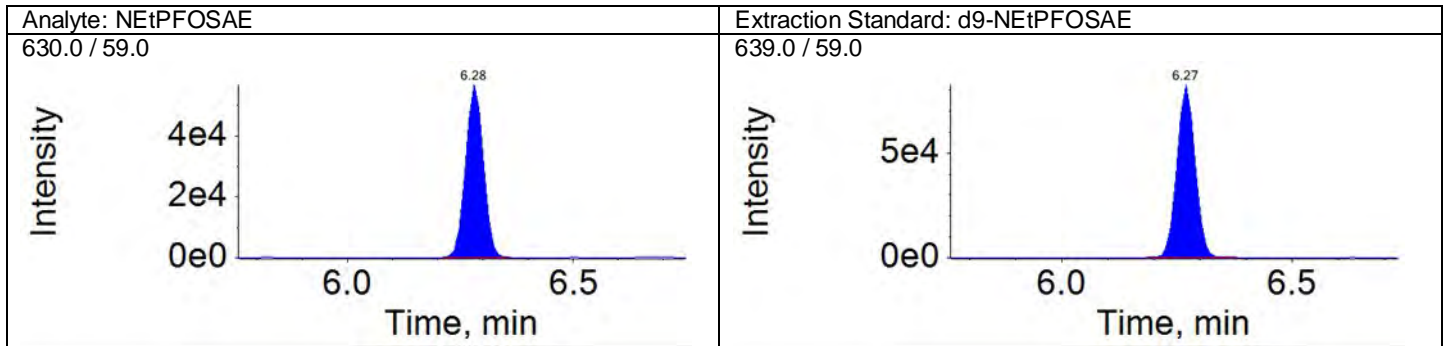
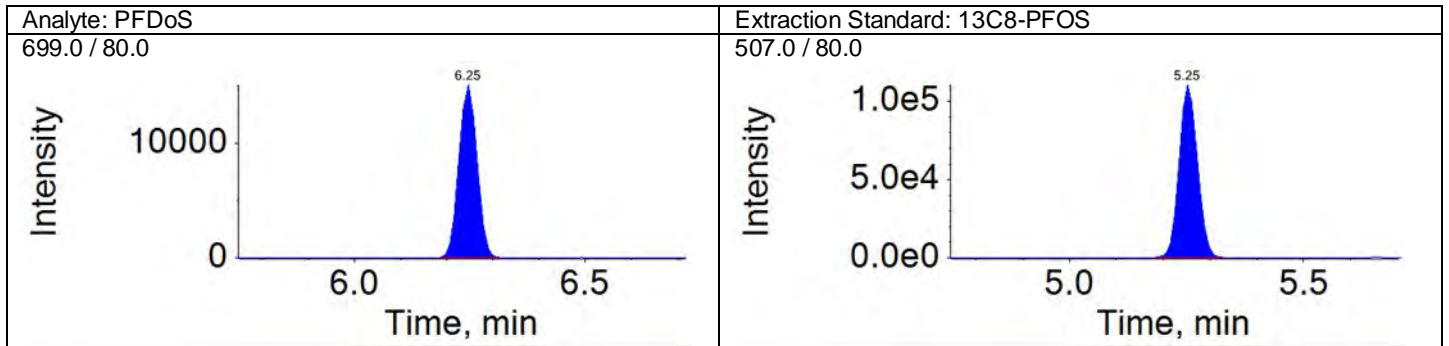
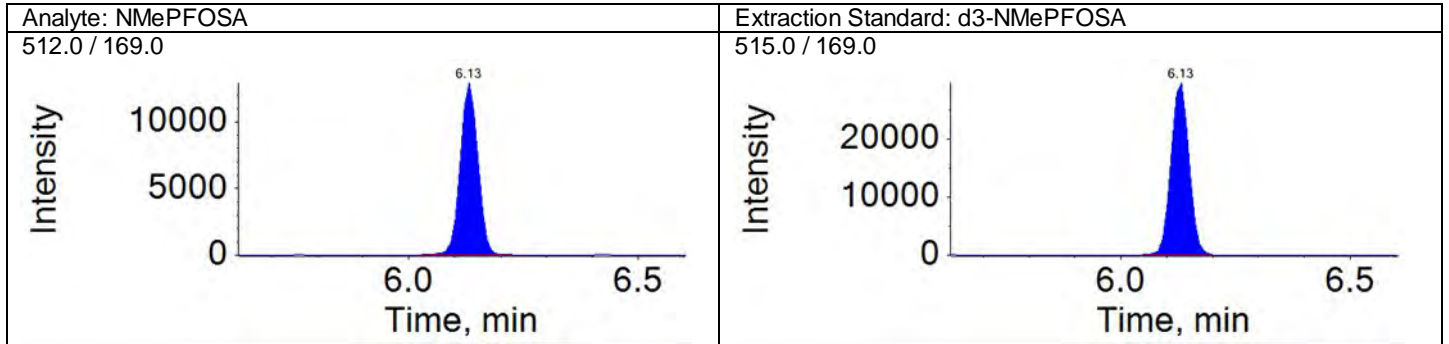
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



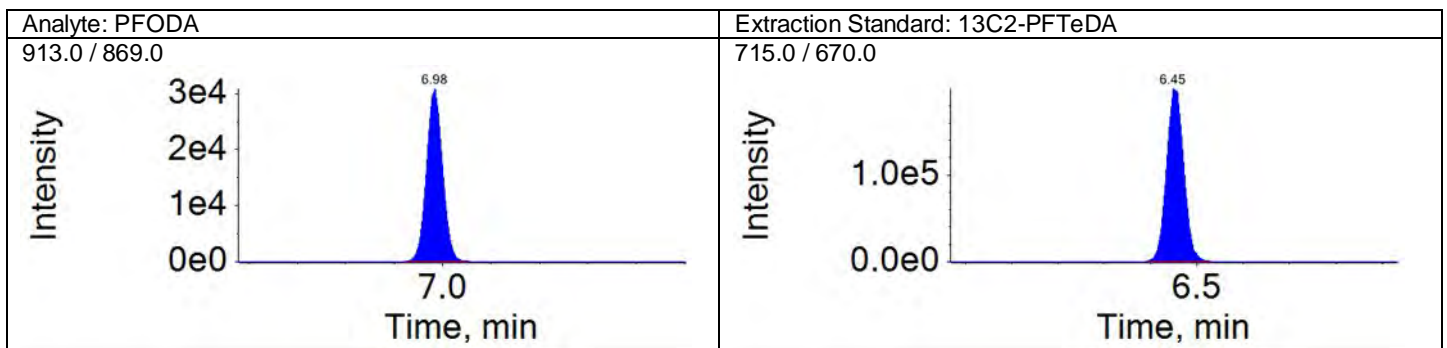
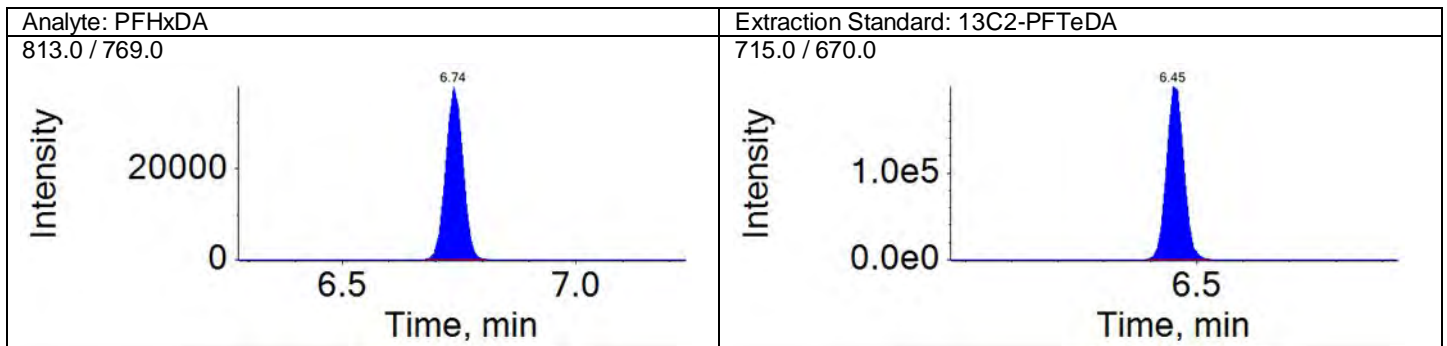
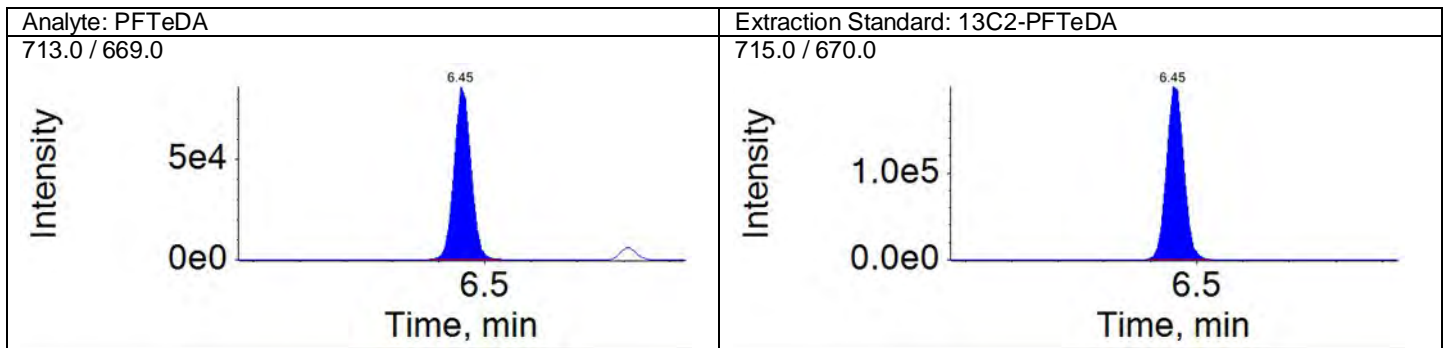
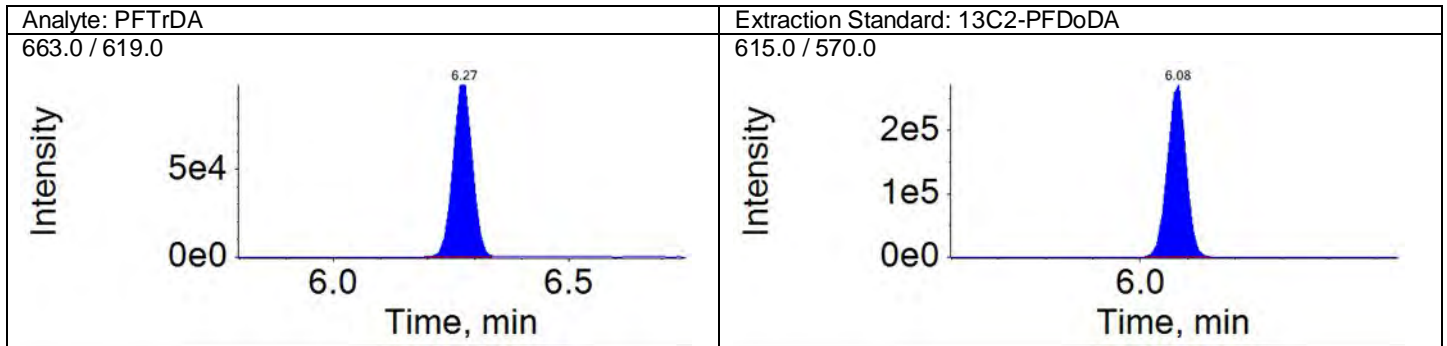
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



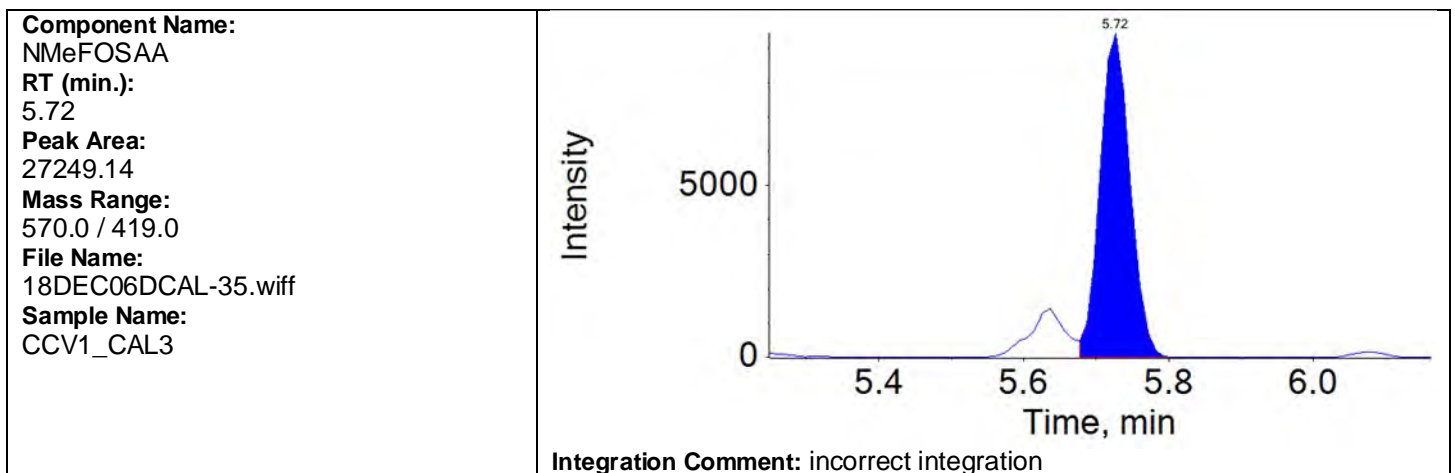
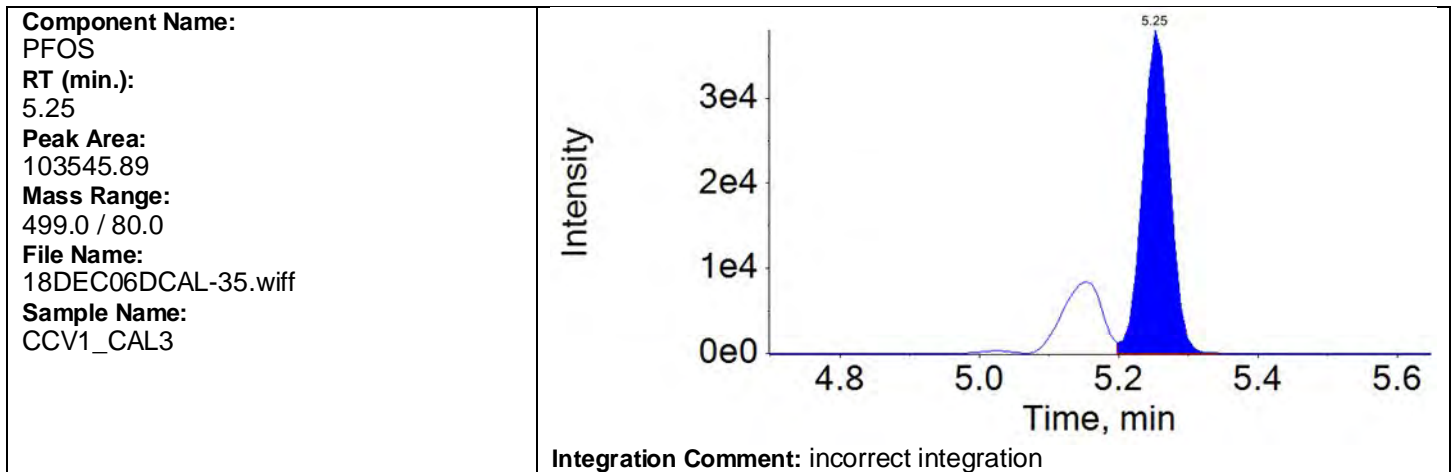
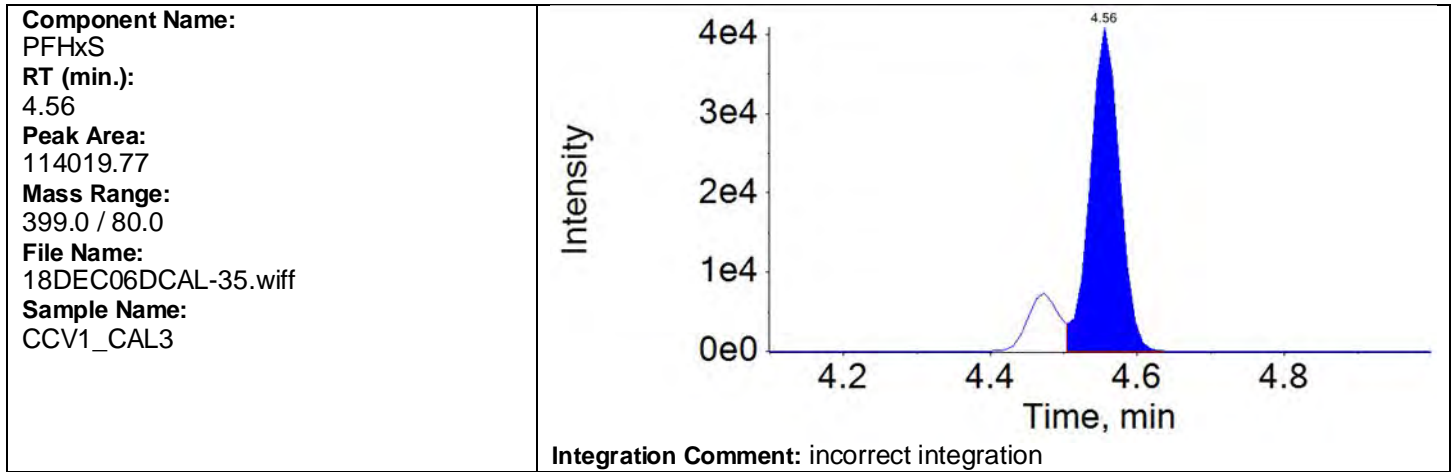
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC06DCAL 12/7/2018 1:13:23 PM  
Acquisition Method: 18AUG13\_3uL.dam



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

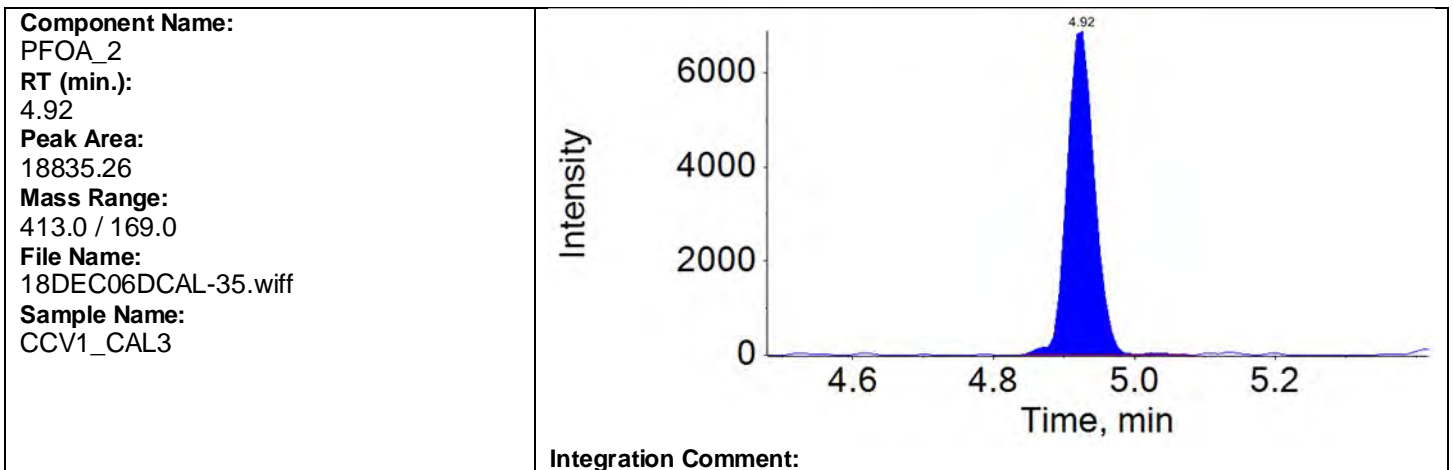
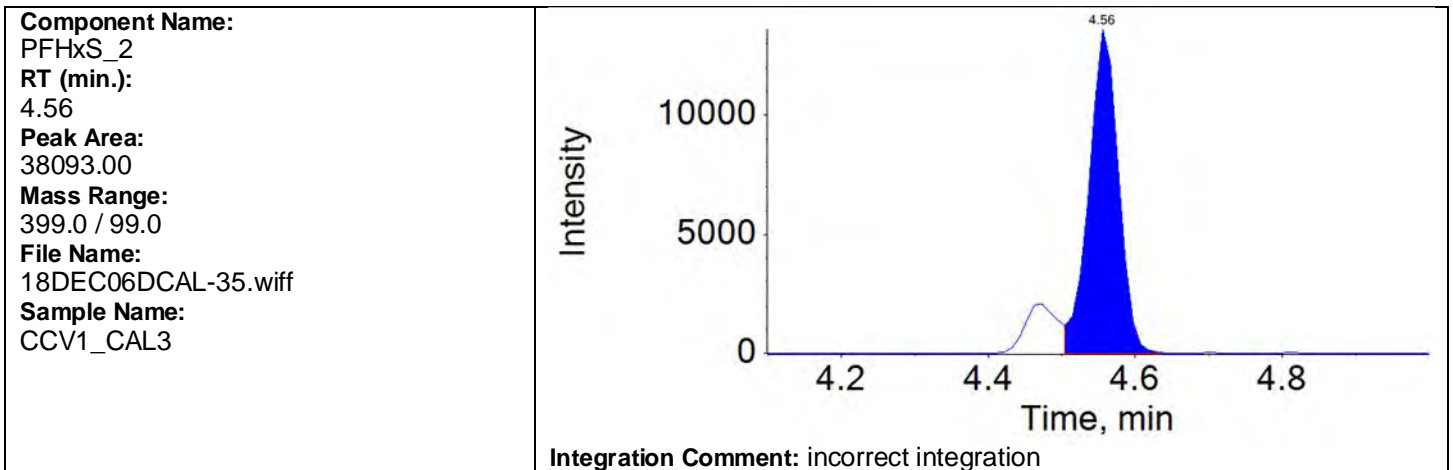
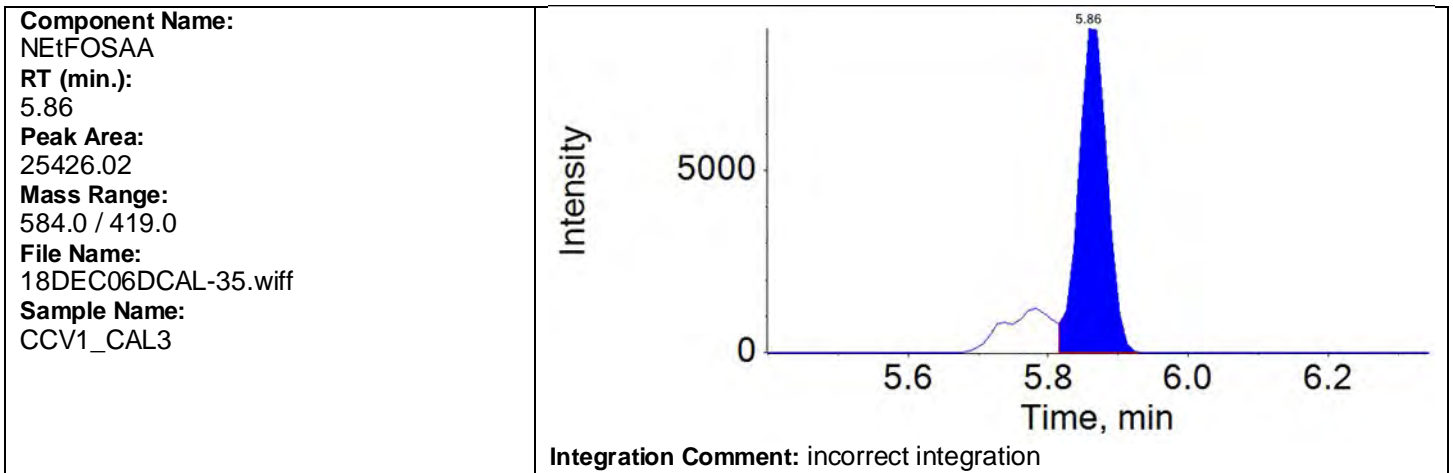
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

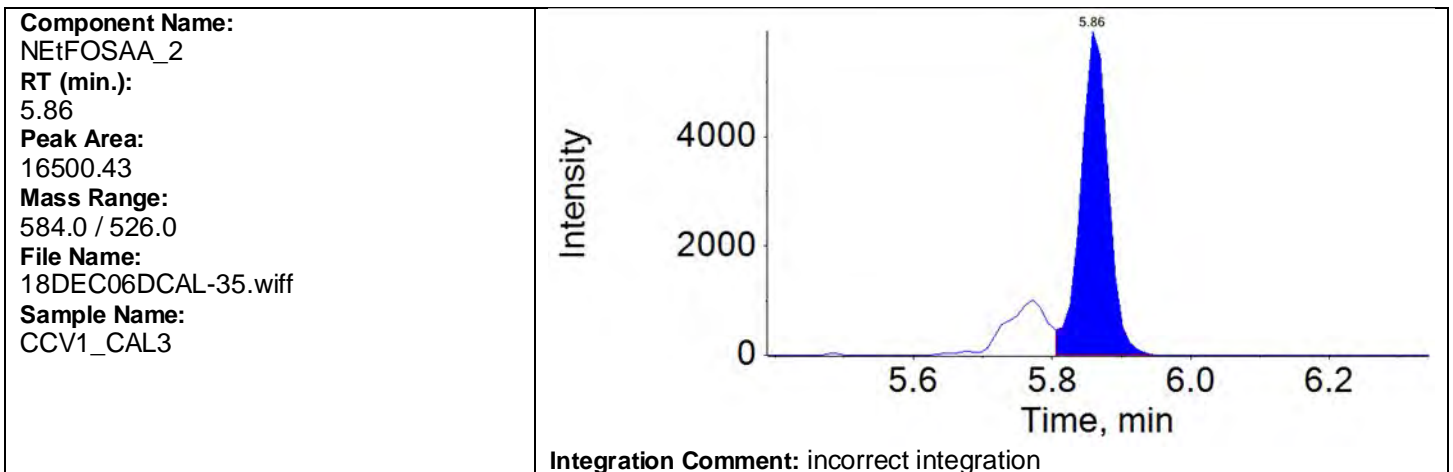
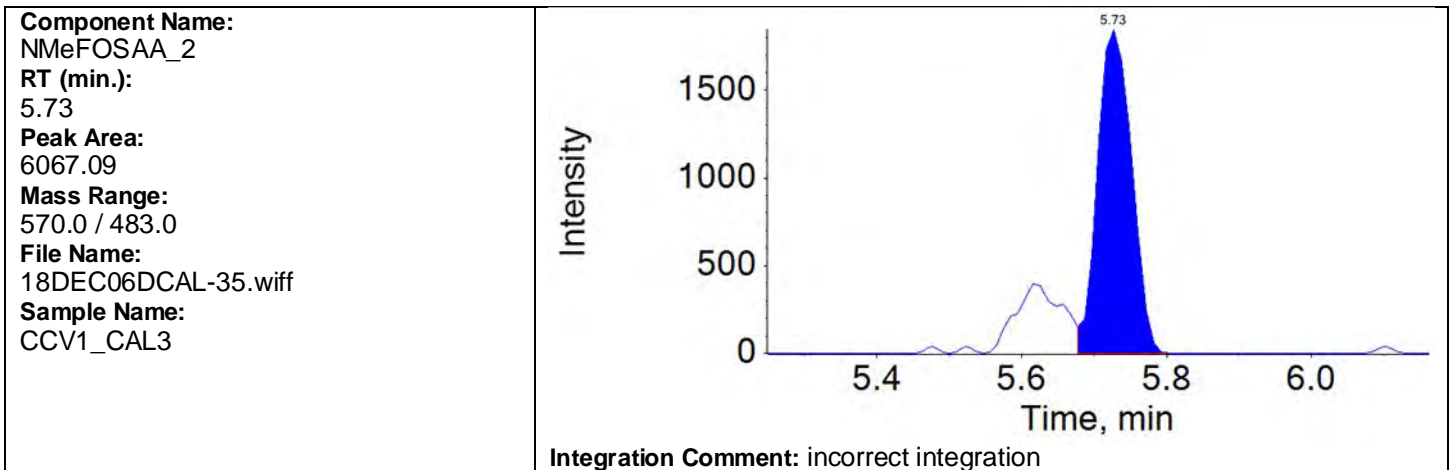
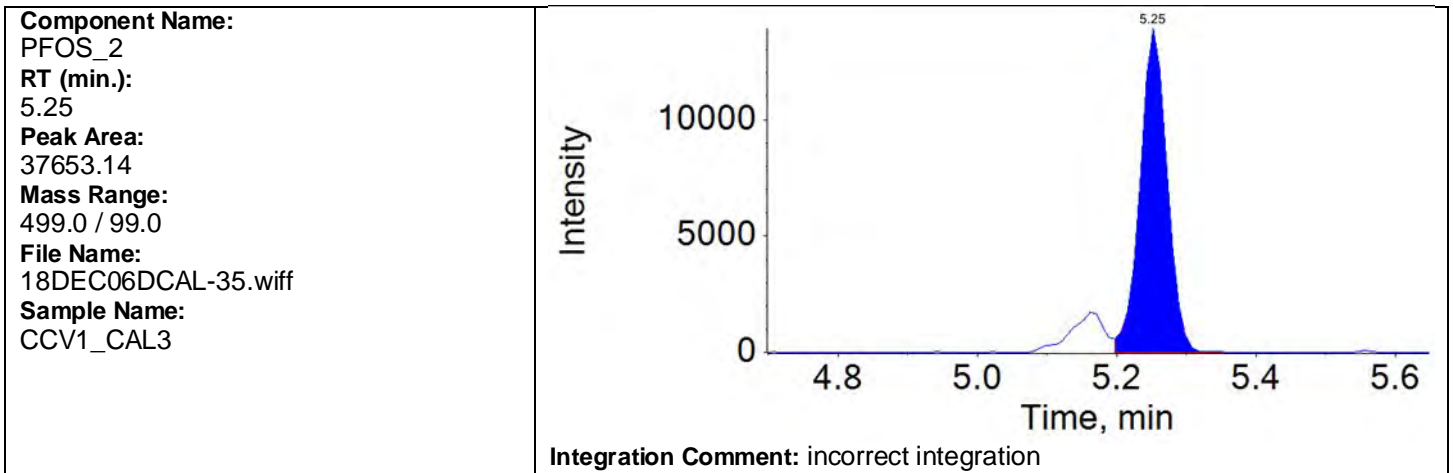
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM





Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

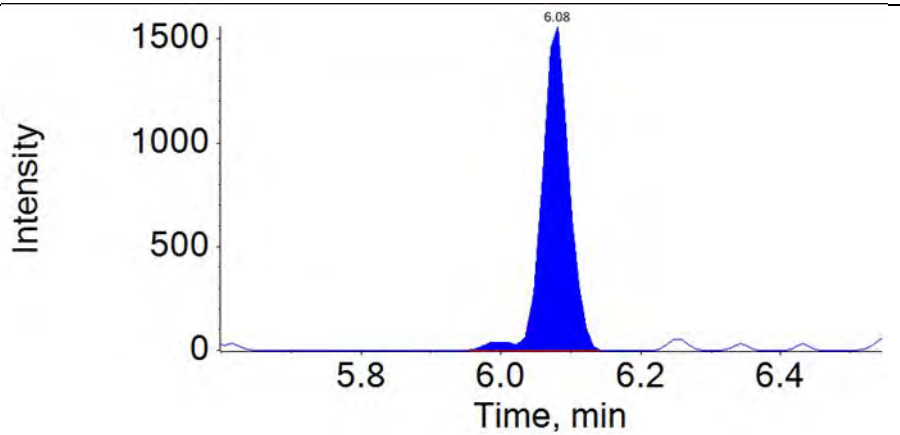
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
PFDoDA\_2  
RT (min.):  
6.08  
Peak Area:  
4212.53  
Mass Range:  
613.0 / 169.0  
File Name:  
18DEC06DCAL-35.wiff  
Sample Name:  
CCV1\_CAL3



Integration Comment: incorrect integration

Results Table Name: 18DEC06DCAL  
Results Table Date: 12/7/2018 1:17:11 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 1:53 pm, 12/7/18

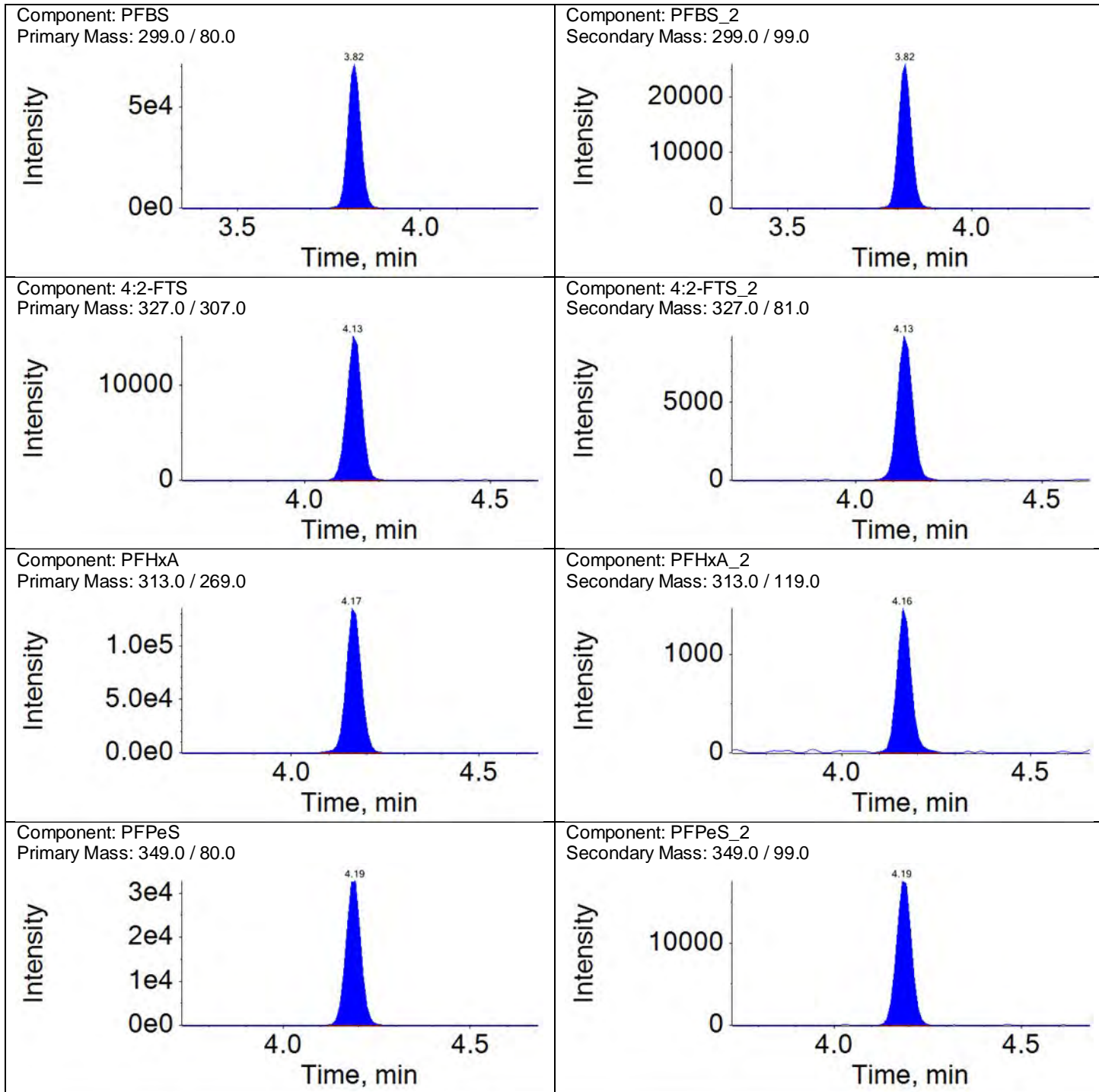
**REVIEWED**  
By HMK at 1:55 pm, 12/9/18

Ion Ratio Report

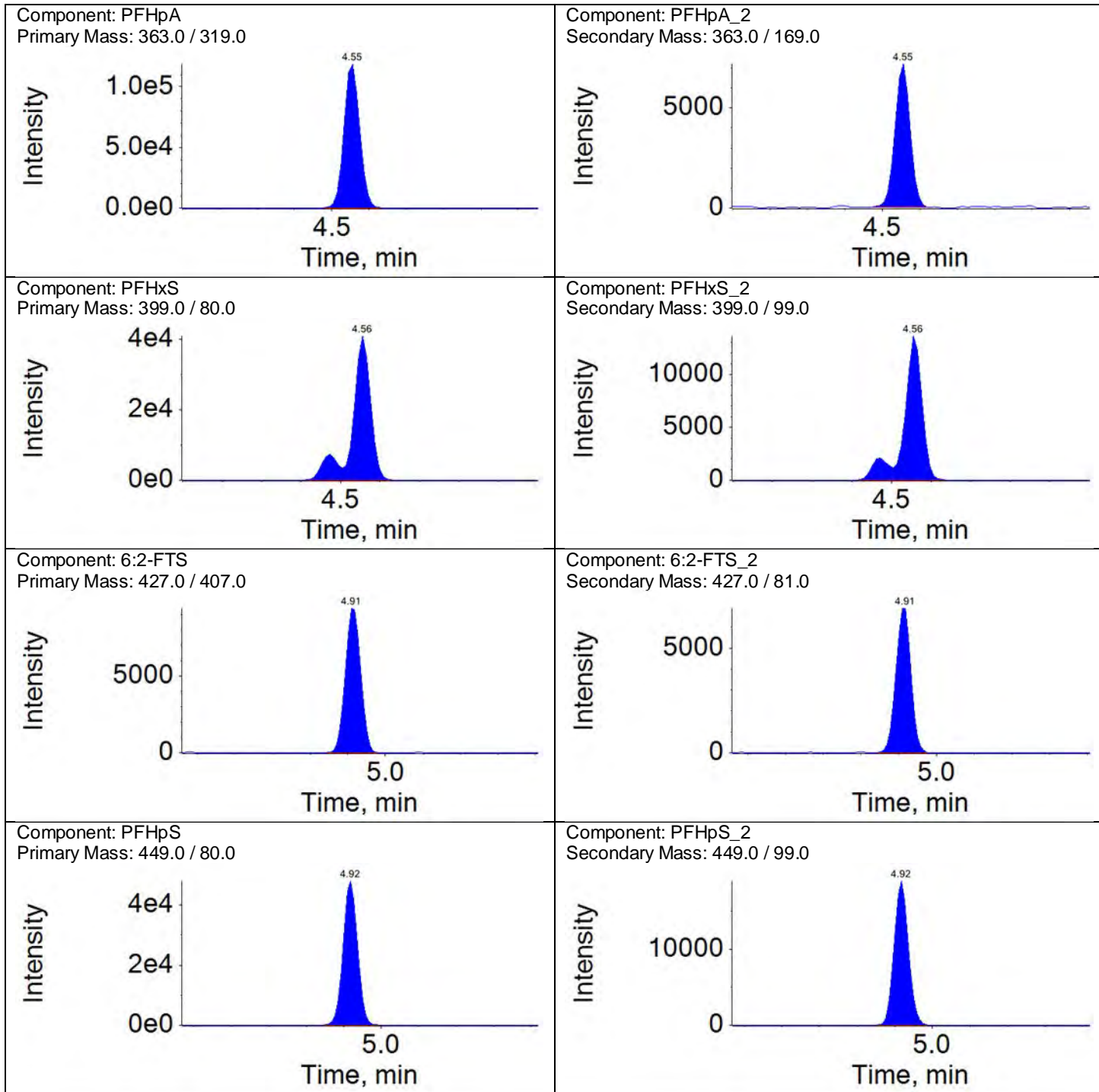
Sample Name: CCV1\_CAL3 Instrument Name: LM27631 File Name: 18DEC06DCAL-35.wiff

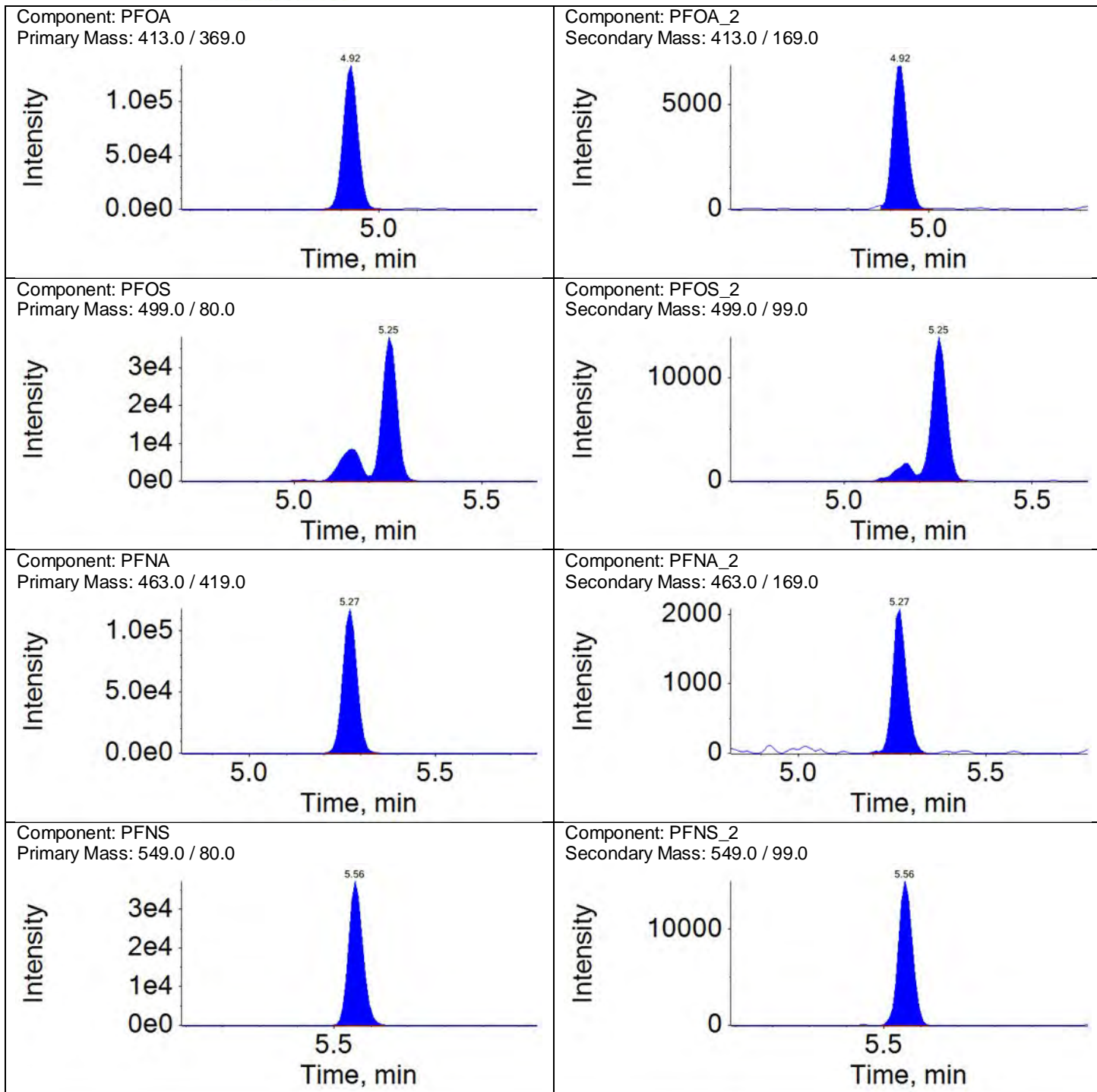
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	173695.93	A	1.0000	1.0000			
PFBS_2	3.82	1.00	62572.82	A	0.3627	0.3602	-1	50	
4:2-FTS	4.13	1.00	42557.42	A	1.0000	1.0000			
4:2-FTS_2	4.13	1.00	26508.37	A	0.6542	0.6229	-5	50	
PFHxA	4.17	1.00	374525.94	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	3867.43	A	0.0097	0.0103	6	50	
PFPeS	4.19	1.10	91544.93	A	1.0000	1.0000			
PFPeS_2	4.19	1.10	49023.54	A	0.5262	0.5355	2	50	
PFHpA	4.55	1.00	347211.47	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	20171.01	A	0.0565	0.0581	3	50	
PFHxS	4.56	1.00	135162.77	M	1.0000	1.0000			
PFHxS_2	4.56	1.00	44425.88	M	0.3645	0.3287	-10	50	
6:2-FTS	4.91	1.00	26737.44	A	1.0000	1.0000			
6:2-FTS_2	4.91	1.00	19128.13	A	0.6273	0.7154	14	50	
PFHpS	4.92	1.08	127495.71	A	1.0000	1.0000			
PFHpS_2	4.92	1.08	49652.35	A	0.4162	0.3894	-6	50	
PFOA	4.92	1.00	357974.42	A	1.0000	1.0000			
PFOA_2	4.92	1.00	18509.86	M	0.0616	0.0517	-16	50	
PFOS	5.25	1.00	137724.22	M	1.0000	1.0000			
PFOS_2	5.25	1.00	43422.03	M	0.3021	0.3153	4	50	
PFNA	5.27	1.00	312861.77	A	1.0000	1.0000			
PFNA_2	5.27	1.00	5395.38	A	0.0192	0.0172	-10	50	
PFNS	5.56	1.06	98923.75	A	1.0000	1.0000			
PFNS_2	5.56	1.06	39194.37	A	0.4845	0.3962	-18	50	
PFDA	5.58	1.00	258354.81	A	1.0000	1.0000			
PFDA_2	5.58	1.00	1937.21	A	0.0096	0.0075	-22	50	
8:2-FTS	5.58	1.00	22216.05	A	1.0000	1.0000			
8:2-FTS_2	5.58	1.00	13387.28	A	0.6117	0.6026	-1	50	
NMeFOSAA	5.72	1.00	32010.42	M	1.0000	1.0000			
NMeFOSAA_2	5.73	1.00	7837.03	M	0.2673	0.2448	-8	50	
PFDS	5.82	1.11	74927.38	A	1.0000	1.0000			
PFDS_2	5.82	1.11	40517.44	A	0.4952	0.5408	9	50	
PFOA_2	5.85	1.00	257851.31	A	1.0000	1.0000			
PFOA_2	5.85	1.00	1364.56	A	0.0041	0.0053	29	50	
NEtFOSAA	5.86	1.00	31269.03	M	1.0000	1.0000			
NEtFOSAA_2	5.86	1.00	20469.75	M	0.6726	0.6546	-3	50	
PFOA_2	6.08	1.00	325910.13	A	1.0000	1.0000			
PFOA_2	6.08	1.00	4093.56	M	0.0133	0.0126	-6	50	
10:2-FTS	6.09	1.09	19161.01	A	1.0000	1.0000			
10:2-FTS_2	6.09	1.09	13834.66	A	0.6969	0.7220	4	50	
PFOA_2	6.27	1.03	281452.00	A	1.0000	1.0000			
PFOA_2	6.28	1.03	2435.67	A	0.0075	0.0087	15	50	
PFOA_2	6.45	1.00	216594.56	A	1.0000	1.0000			
PFOA_2	6.45	1.00	1478.81	A	0.0066	0.0068	3	50	
PFOA_2	6.74	1.04	96416.02	A	1.0000	1.0000			
PFOA_2	6.74	1.04	5839.29	A	0.0616	0.0606	-2	50	
PFOA_2	6.98	1.08	70777.09	A	1.0000	1.0000			
PFOA_2	6.98	1.08	2034.23	A	0.0272	0.0287	6	50	

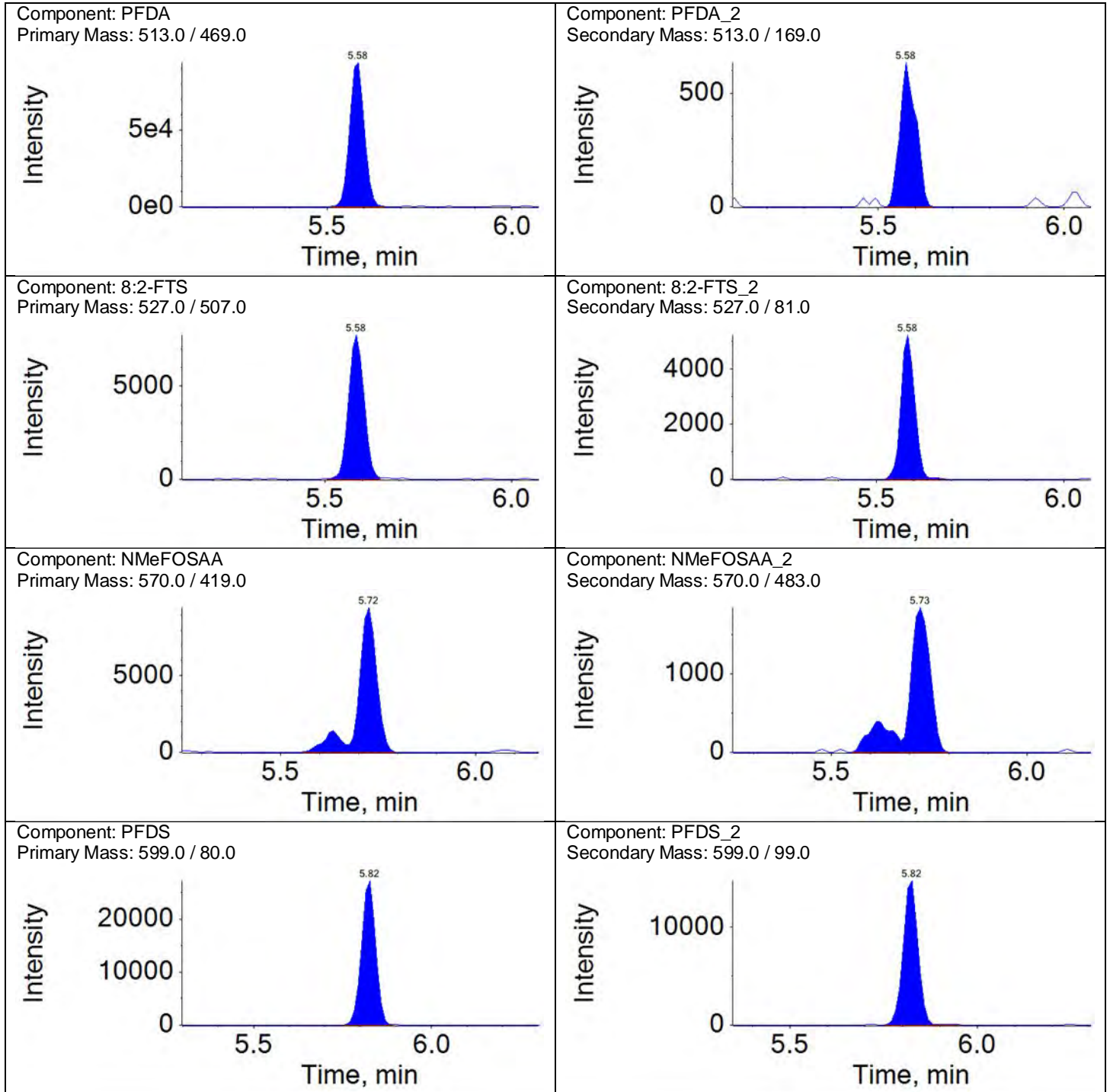


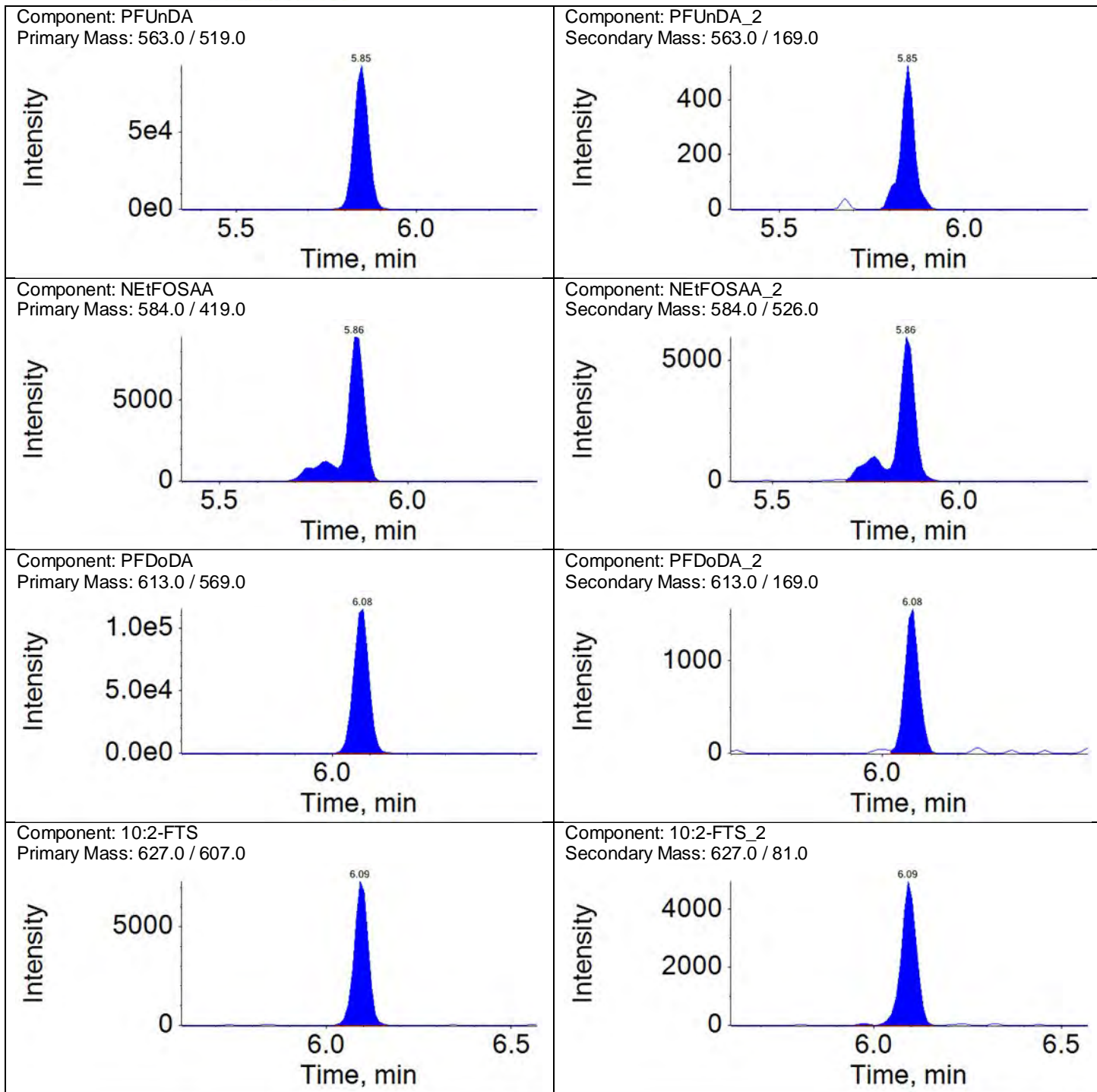




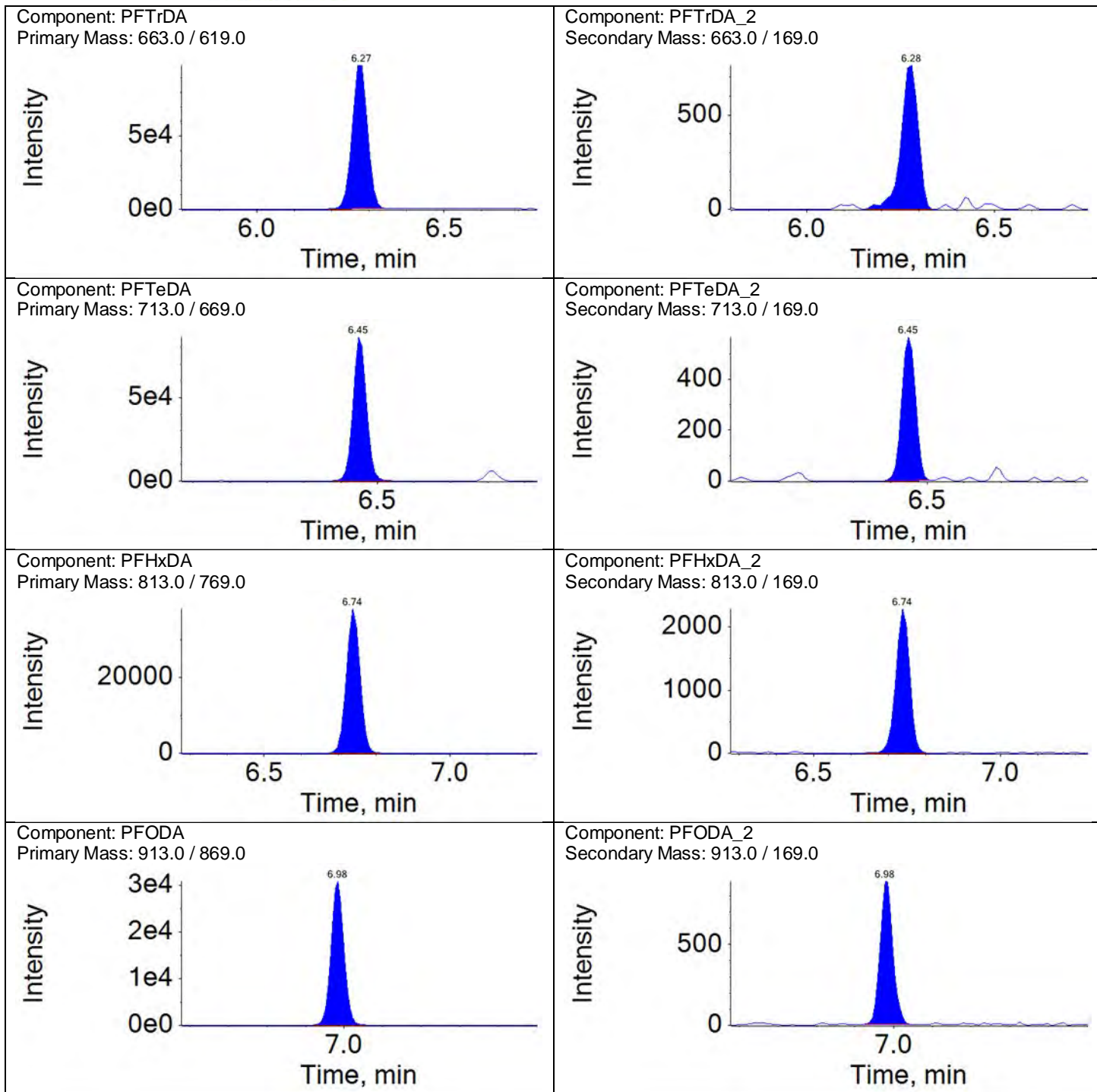














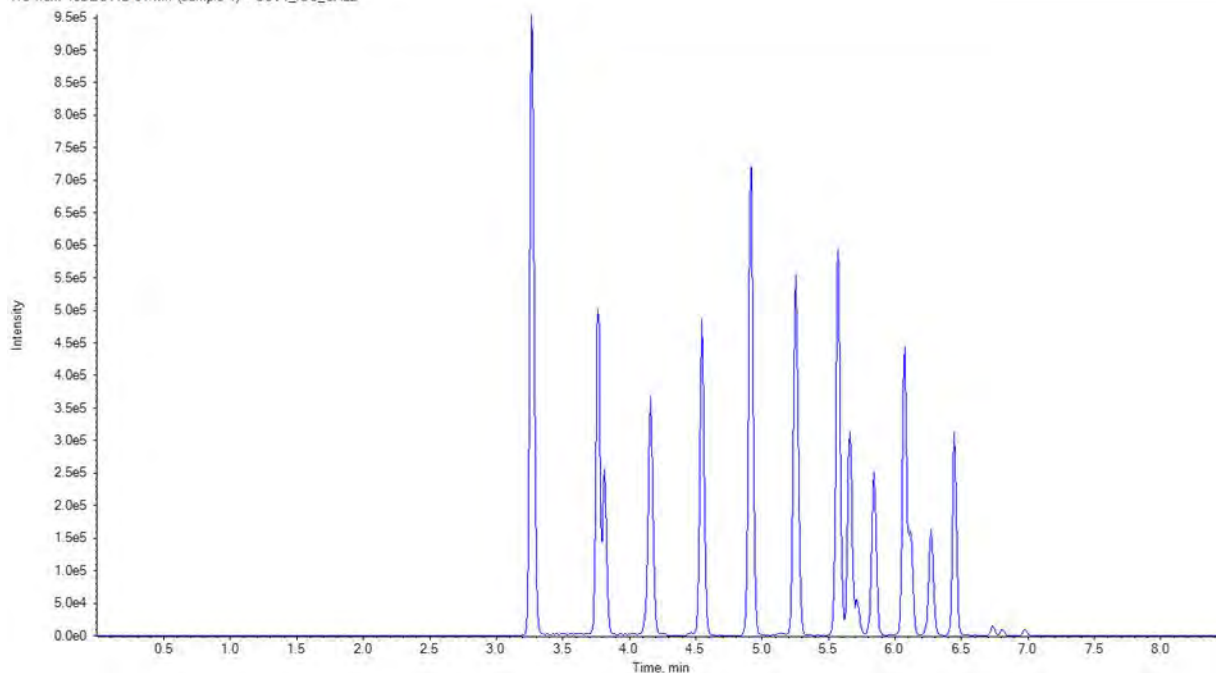
**Instrument Sensitivity Check/  
Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_ISC_CAL2	CALBRN21833C	18DEC11D-01.wiff	2018-12-11T04:59:04

TIC from 18DEC11D-01.wiff (sample 1) - CCV1\_ISC\_CAL2



Injection Standard Area Reference File: 18DEC10D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	953492.0	968978.6	-2	50	
13C2-PFOA	5.0	500971.3	507254.2	-1	50	
13C4-PFOS	4.8	310746.2	302410.5	3	50	
13C2-PFDA	5.0	419040.9	392614.4	7	50	

**Instrument Sensitivity Check/  
Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_ISC_CAL2	CALBRN21833C	18DEC11D-01.wiff	2018-12-11T04:59:04

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	115147.2	10	13C4-PFBA	1096253.9	5.0	0.105	3.26	1.000	0.600	0.580	-3	30	
PFPeA	110466.5	11	13C5-PFPeA	989696.4	5.0	0.112	3.77	1.000	0.600	0.587	-2	30	
PFBS	47723.5	10	13C3-PFBS	453658.6	4.7	0.105	3.81	1.000	0.531	0.521	-2	30	
4:2-FTS	9764.9	11	13C2-4:2-FTS	48904.2	4.7	0.200	4.13	1.000	0.560	0.535	-4	30	
PFHxA	98680.8	12	13C5-PFHxA	712507.3	5.0	0.138	4.16	1.000	0.600	0.604	1	30	
PFPeS	23736.0	11	13C3-PFBS	453658.6	4.7	0.052	4.18	1.100	0.563	0.518	-8	30	
PFHpA	98309.3	12	13C4-PFHpA	585376.0	5.0	0.168	4.55	1.000	0.600	0.553	-8	30	
PFHxS	37800.6	19	13C3-PFHxS	361495.9	4.7	0.105	4.55	1.000	0.547	0.495	-9	30	
6:2-FTS	6892.8	11	13C2-6:2-FTS	42071.6	4.8	0.164	4.90	1.000	0.569	0.407	-29	30	
PFHpS	32610.2	10	13C3-PFHxS	361495.9	4.7	0.090	4.91	1.080	0.571	0.495	-13	30	
PFOA	110566.7	11	13C8-PFOA	965054.5	5.0	0.115	4.91	1.000	0.600	0.626	4	30	
PFOS	37385.1	21	13C8-PFOS	333592.3	4.8	0.112	5.25	1.000	0.555	0.465	-16	30	
PFNA	93474.6	11	13C9-PFNA	634848.5	5.0	0.147	5.26	1.000	0.600	0.543	-10	30	
PFNS	26132.0	11	13C8-PFOS	333592.3	4.8	0.078	5.55	1.060	0.576	0.504	-12	30	
PFDA	81150.0	11	13C6-PFDA	774187.5	5.0	0.105	5.57	1.000	0.600	0.590	-2	30	
8:2-FTS	8735.5	12	13C2-8:2-FTS	36067.6	4.8	0.242	5.57	1.000	0.575	0.525	-9	30	
PFOSA	70088.8	12	13C8-PFOSA	685662.2	5.0	0.102	5.66	1.000	0.600	0.530	-12	30	
NMeFOSAA	8803.9	18	d3-NMeFOSAA	116166.0	5.0	0.076	5.72	1.000	0.600	0.501	-16	30	
PFDS	20285.2	11	13C8-PFOS	333592.3	4.8	0.061	5.82	1.110	0.578	0.492	-15	30	
PFUnDA	72466.8	12	13C7-PFUnDA	416783.8	5.0	0.174	5.84	1.000	0.600	0.532	-11	30	
NEtFOSAA	10250.1	19	d5-NEtFOSAA	88076.3	5.0	0.116	5.86	1.000	0.600	0.588	-2	30	
PFDODA	97724.8	11	13C2-PFDODA	876423.4	5.0	0.112	6.07	1.000	0.600	0.587	-2	30	
10:2-FTS	5426.3	11	13C2-8:2-FTS	36067.6	4.8	0.150	6.08	1.090	0.578	0.399	-31	30	OOS
NMePFOSAE	32249.2	11	d7-NMePFOSAE	243620.7	5.0	0.132	6.12	1.000	0.600	0.575	-4	30	
NMePFOSA	8381.7	12	d3-NMePFOSA	83415.9	5.0	0.100	6.13	1.000	0.600	0.507	-16	30	
PFDoS	11594.8	11	13C8-PFOS	333592.3	4.8	0.035	6.24	1.190	0.581	0.530	-9	30	
NEtPFOSAE	35268.1	11	d9-NEtPFOSAE	207129.1	5.0	0.170	6.28	1.000	0.600	0.570	-5	30	
NEtPFOSA	7189.7	11	d5-NEtPFOSA	65790.9	5.0	0.109	6.29	1.000	0.600	0.523	-13	30	
PFTTrDA	81951.5	11	13C2-PFDODA	876423.4	5.0	0.094	6.27	1.030	0.600	0.612	2	30	
PFTeDA	58070.5	10	13C2-PFTeDA	593109.9	5.0	0.098	6.45	1.000	0.600	0.560	-7	30	
PFHxDA	28707.8	11	13C2-PFTeDA	593109.9	5.0	0.048	6.74	1.040	0.600	0.606	1	30	
PFOA	20345.1	10	13C2-PFTeDA	593109.9	5.0	0.034	6.98	1.080	0.600	0.551	-8	30	

**Instrument Sensitivity Check/  
Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By JPT at 3:22 pm, 12/11/18

**REVIEWED**  
By HMK at 10:36 am, 12/12/18

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV1_ISC_CAL2	Data File:	18DEC11D-01.wiff
Sample ID:	CALBRN21833C	Acquis Date:	2018-12-11T04:59:04
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	4	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC11DCCV1-7
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	JPT12262
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC10D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	953492.0	968978.6	-2	50	
13C2-PFOA	5.0	500971.3	507254.2	-1	50	
13C4-PFOS	4.8	310746.2	302410.5	3	50	
13C2-PFDA	5.0	419040.9	392614.4	7	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1096253.9	13C3-PFBA	953492.0	1.150	5.000	5.088	102	70-130	
E13C5-PFPeA	989696.4	13C3-PFBA	953492.0	1.038	5.000	4.930	99	70-130	
E13C3-PFBS	453658.6	13C3-PFBA	953492.0	0.476	4.650	4.033	87	70-130	
E13C2-4:2-FTS	48904.2	13C2-PFOA	500971.3	0.098	4.670	3.825	82	70-130	
E13C5-PFHxA	712507.3	13C2-PFOA	500971.3	1.422	5.000	4.775	96	70-130	
E13C3-PFHxS	361495.9	13C2-PFOA	500971.3	0.722	4.730	4.628	98	70-130	
E13C4-PFHpA	585376.0	13C2-PFOA	500971.3	1.168	5.000	4.968	99	70-130	
E13C2-6:2-FTS	42071.6	13C2-PFOA	500971.3	0.084	4.750	5.203	110	70-130	
E13C8-PFOA	965054.5	13C2-PFOA	500971.3	1.926	5.000	5.445	109	70-130	
E13C8-PFOS	333592.3	13C4-PFOS	310746.2	1.074	4.780	4.818	101	70-130	
E13C9-PFNA	634848.5	13C4-PFOS	310746.2	2.043	5.000	5.773	115	70-130	
E13C6-PFDA	774187.5	13C2-PFDA	419040.9	1.848	5.000	4.896	98	70-130	
E13C2-8:2-FTS	36067.6	13C2-PFDA	419040.9	0.086	4.790	5.619	117	70-130	
E13C8-PFOA	685662.2	13C2-PFDA	419040.9	1.636	5.000	3.870	77	70-130	
Ed3-NMeFOSAA	116166.0	13C2-PFDA	419040.9	0.277	5.000	4.913	98	70-130	
E13C7-PFUnDA	416783.8	13C2-PFDA	419040.9	0.995	5.000	4.879	98	70-130	
Ed5-NEtFOSAA	88076.3	13C2-PFDA	419040.9	0.210	5.000	4.640	93	70-130	
E13C2-PFDoDA	876423.4	13C2-PFDA	419040.9	2.091	5.000	4.389	88	70-130	
Ed7-NMePFOSAE	243620.7	13C2-PFDA	419040.9	0.581	5.000	3.349	67	70-130	OOS
Ed3-NMePFOSA	83415.9	13C2-PFDA	419040.9	0.199	5.000	3.627	73	70-130	
Ed9-NEtPFOSAE	207129.1	13C2-PFDA	419040.9	0.494	5.000	3.409	68	70-130	OOS
Ed5-NEtPFOSA	65790.9	13C2-PFDA	419040.9	0.157	5.000	3.533	71	70-130	
E13C2-PFTeDA	593109.9	13C2-PFDA	419040.9	1.415	5.000	4.201	84	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

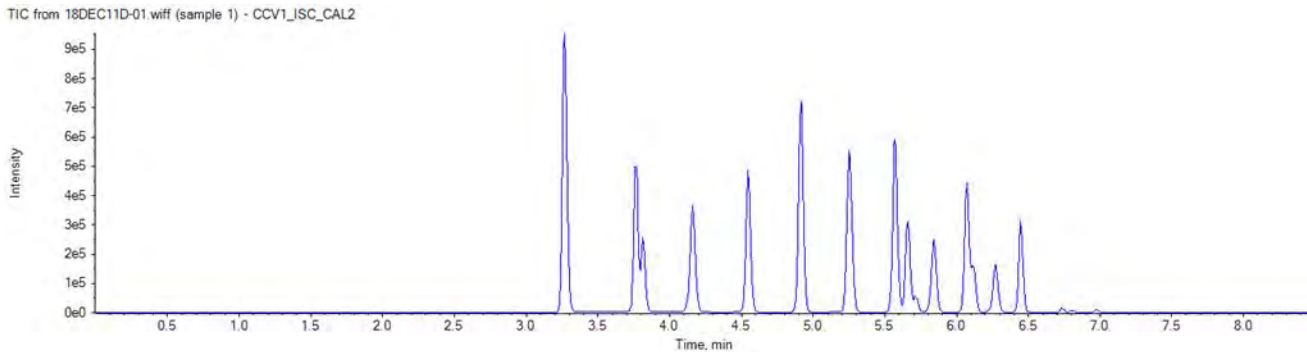
Analyte Quantitation Peak Table

Sample Name: CCV1\_ISC\_CAL2 Instrument Name: LM27631 File Name: 18DEC11D-01.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	115147.2		A	13C4-PFBA	3.27	1096253.9	0.105	0.580
PFPeA	3.77	1.000	110466.5		A	13C5-PFPeA	3.77	989696.4	0.112	0.587
PFBS	3.81	1.000	47723.5		A	13C3-PFBS	3.82	453658.6	0.105	0.521
4:2-FTS	4.13	1.000	9764.9		A	13C2-4:2-FTS	4.13	48904.2	0.200	0.535
PFHxA	4.16	1.000	98680.8		A	13C5-PFHxA	4.16	712507.3	0.138	0.604
PFPeS	4.18	1.100	23736.0		A	13C3-PFBS	3.82	453658.6	0.052	0.518
PFHpA	4.55	1.000	98309.3		A	13C4-PFHpA	4.55	585376.0	0.168	0.553
PFHxS	4.55	1.000	37800.6		M	13C3-PFHxS	4.55	361495.9	0.105	0.495
6:2-FTS	4.90	1.000	6892.8		A	13C2-6:2-FTS	4.90	42071.6	0.164	0.407
PFHpS	4.91	1.080	32610.2		A	13C3-PFHxS	4.55	361495.9	0.090	0.495
PFOA	4.91	1.000	110566.7		A	13C8-PFOA	4.91	965054.5	0.115	0.626
PFOS	5.25	1.000	37385.1		M	13C8-PFOS	5.25	333592.3	0.112	0.465
PFNA	5.26	1.000	93474.6		A	13C9-PFNA	5.26	634848.5	0.147	0.543
PFNS	5.55	1.060	26132.0		A	13C8-PFOS	5.25	333592.3	0.078	0.504
PFDA	5.57	1.000	81150.0		A	13C6-PFDA	5.57	774187.5	0.105	0.590
8:2-FTS	5.57	1.000	8735.5		A	13C2-8:2-FTS	5.58	36067.6	0.242	0.525
PFOSA	5.66	1.000	70088.8		A	13C8-PFOSA	5.66	685662.2	0.102	0.530
NMeFOSAA	5.72	1.000	8803.9		A	d3-NMeFOSAA	5.72	116166.0	0.076	0.501
PFDS	5.82	1.110	20285.2		A	13C8-PFOS	5.25	333592.3	0.061	0.492
PfUnDA	5.84	1.000	72466.8		A	13C7-PfUnDA	5.84	416783.8	0.174	0.532
NEtFOSAA	5.86	1.000	10250.1		M	d5-NEtFOSAA	5.85	88076.3	0.116	0.588
PFDaDA	6.07	1.000	97724.8		A	13C2-PFDaDA	6.07	876423.4	0.112	0.587
10:2-FTS	6.08	1.090	5426.3		A	13C2-8:2-FTS	5.58	36067.6	0.150	0.399
NMePFOSAE	6.12	1.000	32249.2		A	d7-NMePFOSAE	6.11	243620.7	0.132	0.575
NMePFOSA	6.13	1.000	8381.7		A	d3-NMePFOSA	6.13	83415.9	0.100	0.507
PFDoS	6.24	1.190	11594.8		A	13C8-PFOS	5.25	333592.3	0.035	0.530
NEtPFOSAE	6.28	1.000	35268.1		A	d9-NEtPFOSAE	6.27	207129.1	0.170	0.570
NEtPFOSA	6.29	1.000	7189.7		A	d5-NEtPFOSA	6.28	65790.9	0.109	0.523
PFTrDA	6.27	1.030	81951.5		A	13C2-PFDaDA	6.07	876423.4	0.094	0.612
PFTeDA	6.45	1.000	58070.5		A	13C2-PFTeDA	6.45	593109.9	0.098	0.560
PFHxDA	6.74	1.040	28707.8		A	13C2-PFTeDA	6.45	593109.9	0.048	0.606
PFOA	6.98	1.080	20345.1		A	13C2-PFTeDA	6.45	593109.9	0.034	0.551

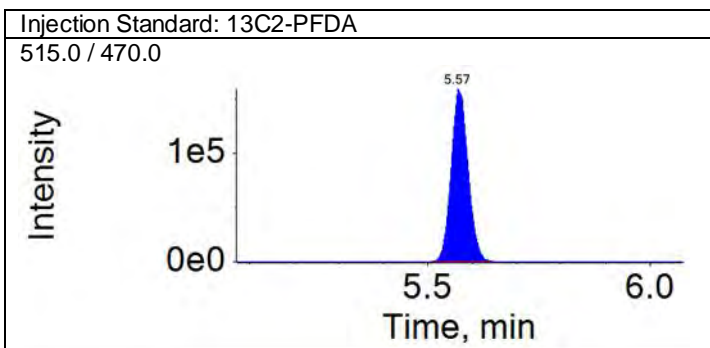
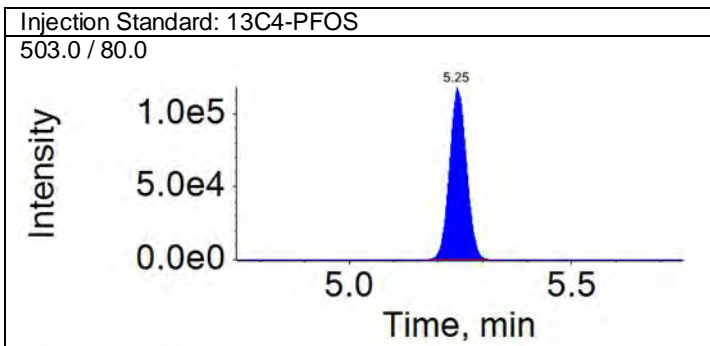
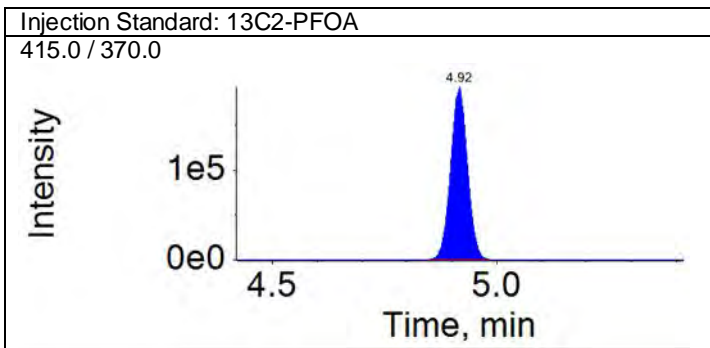
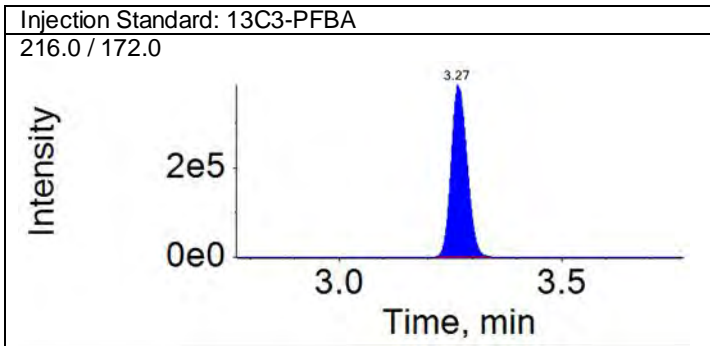
Total Ion Chromatogram





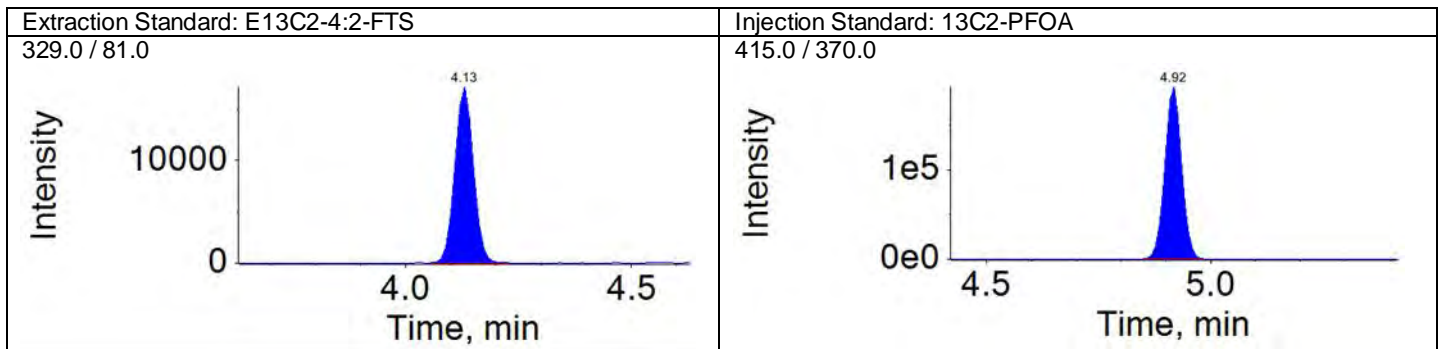
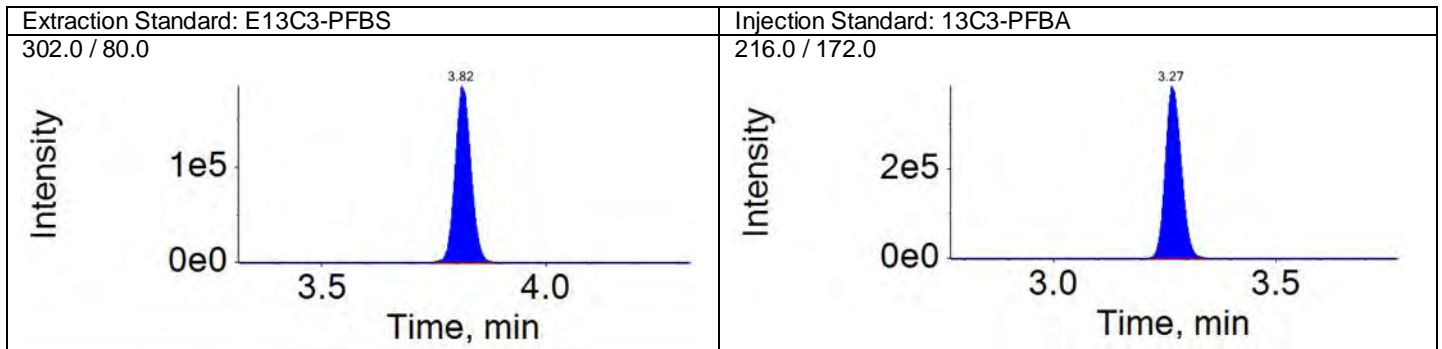
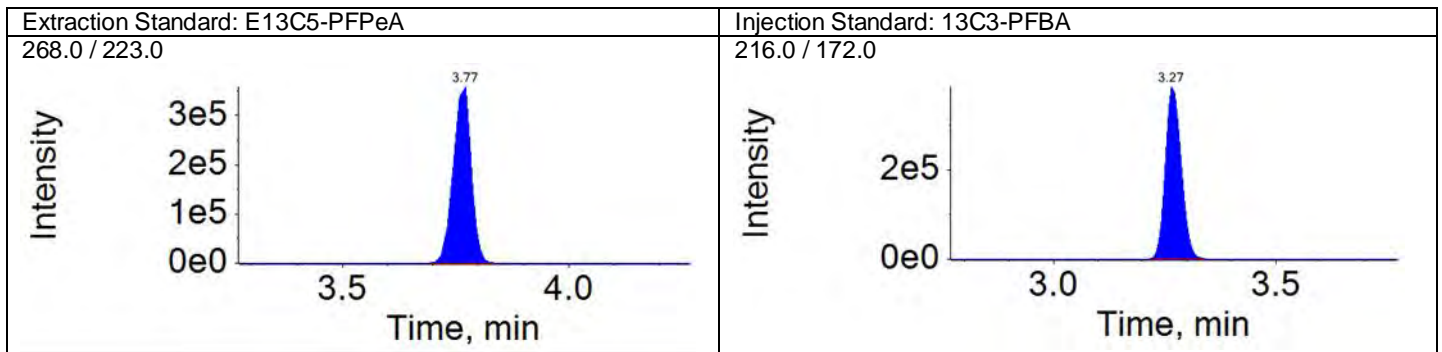
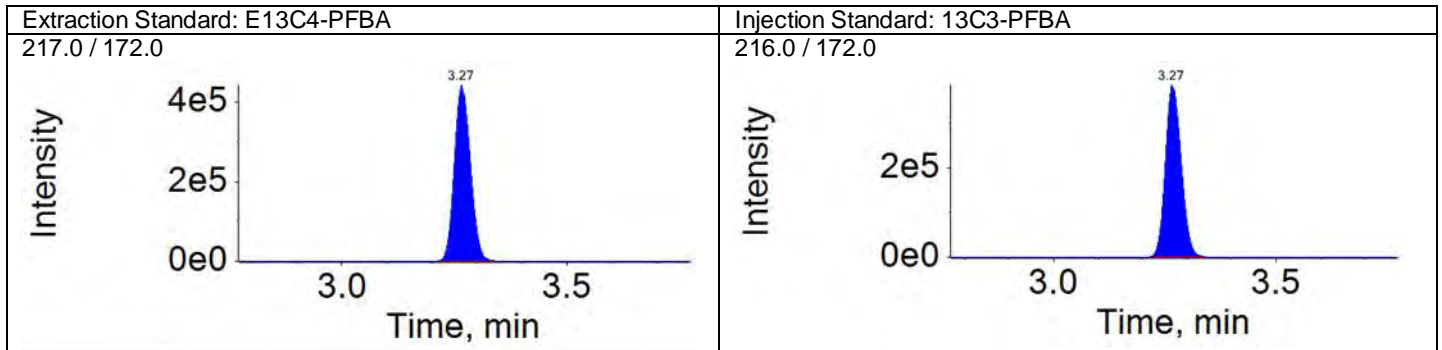
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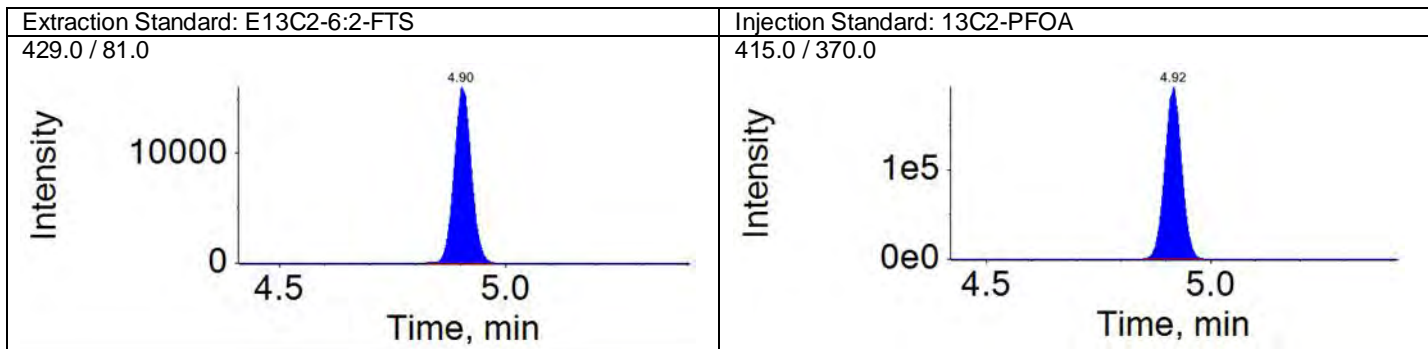
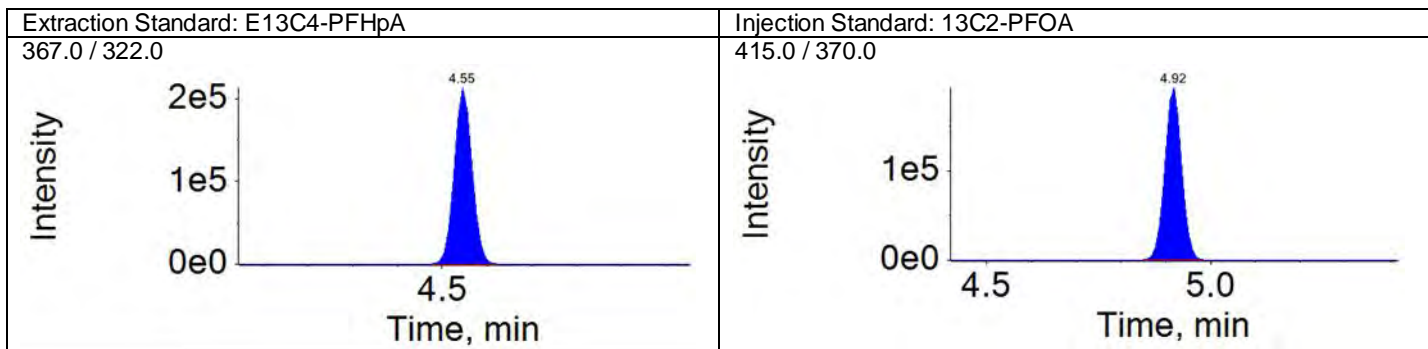
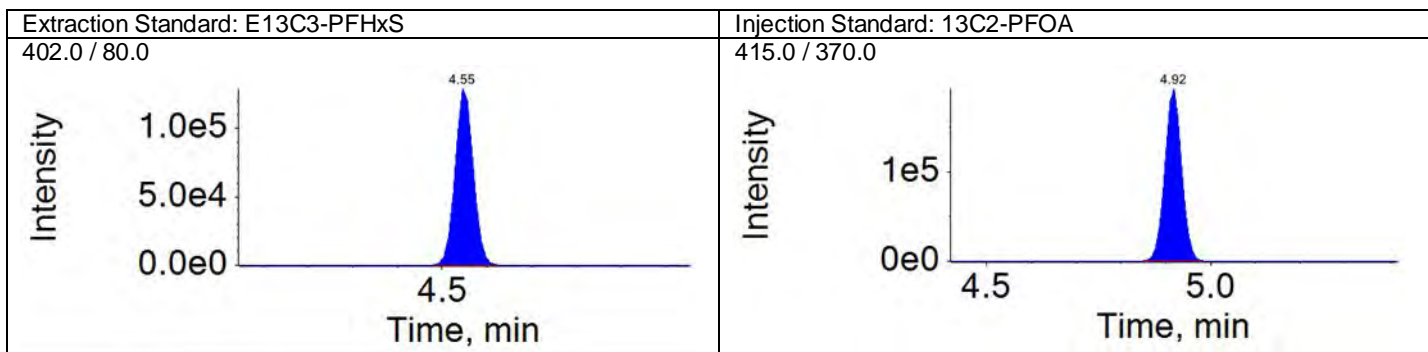
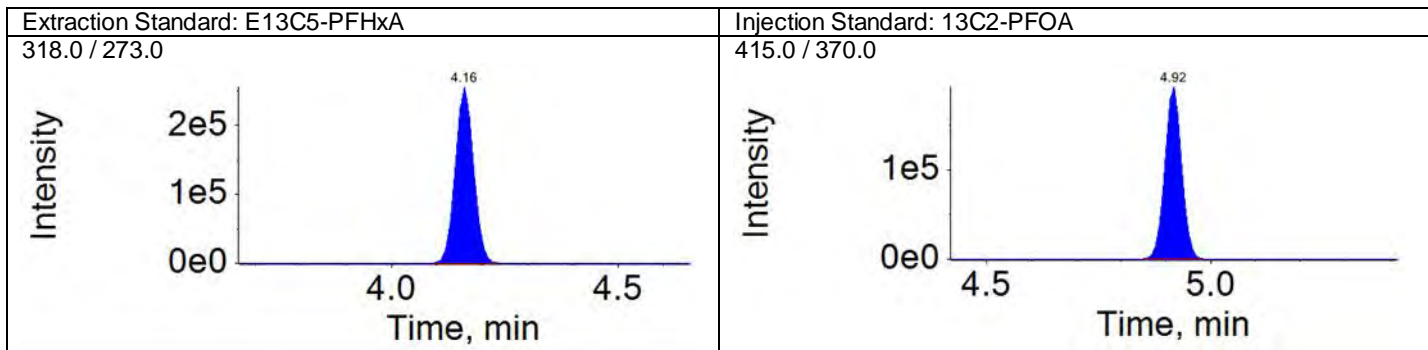
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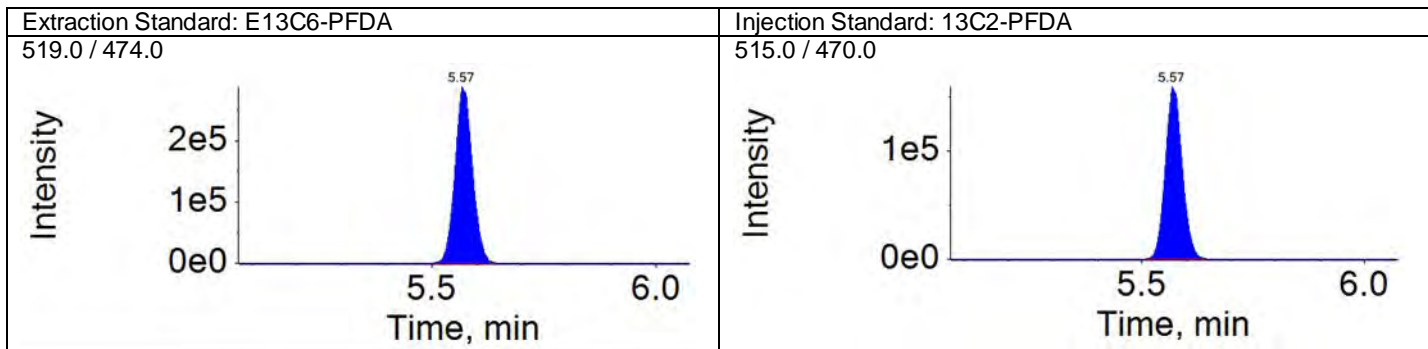
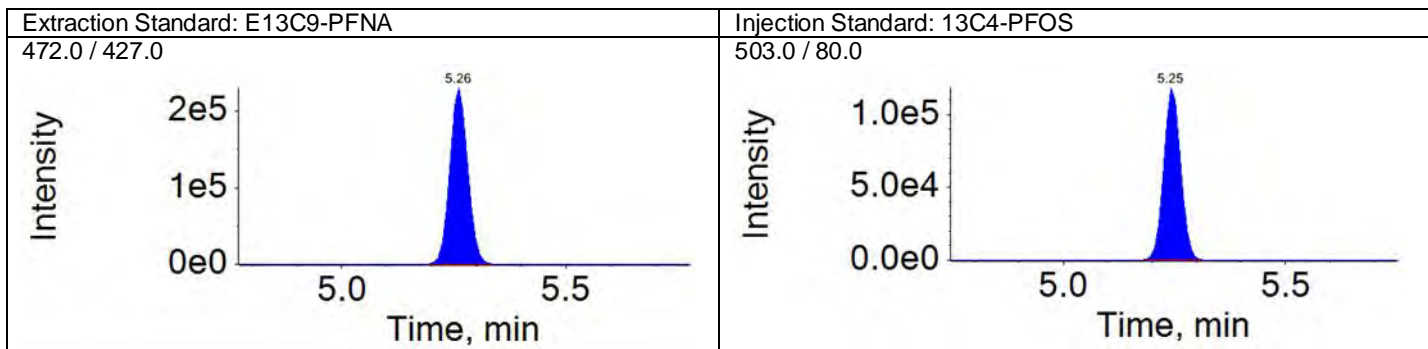
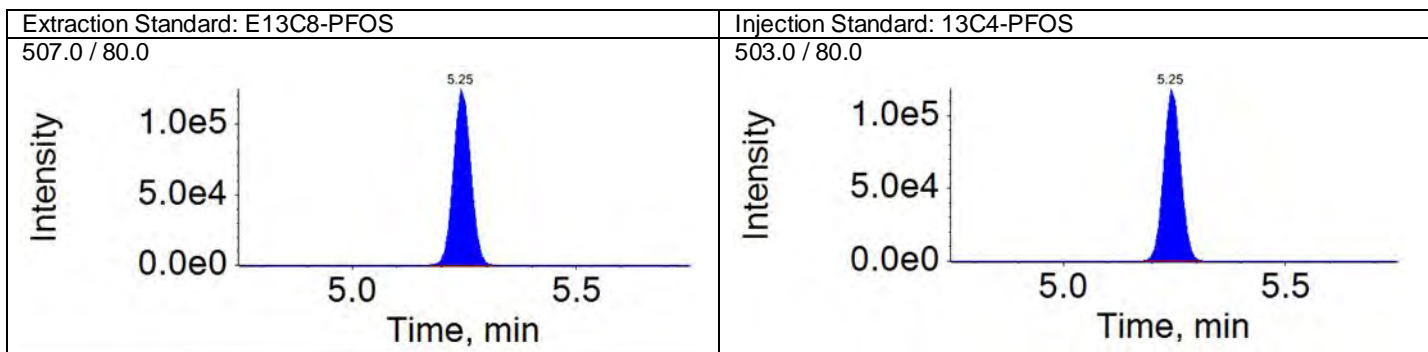
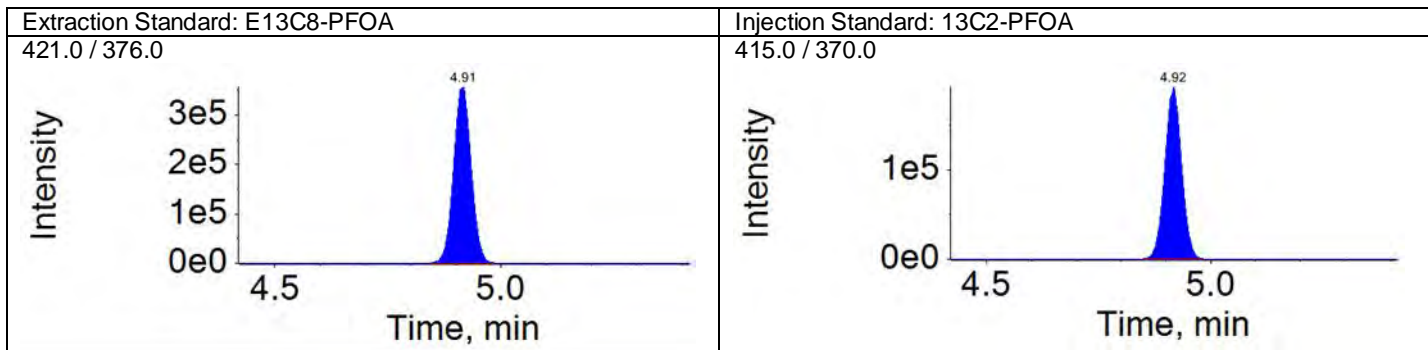
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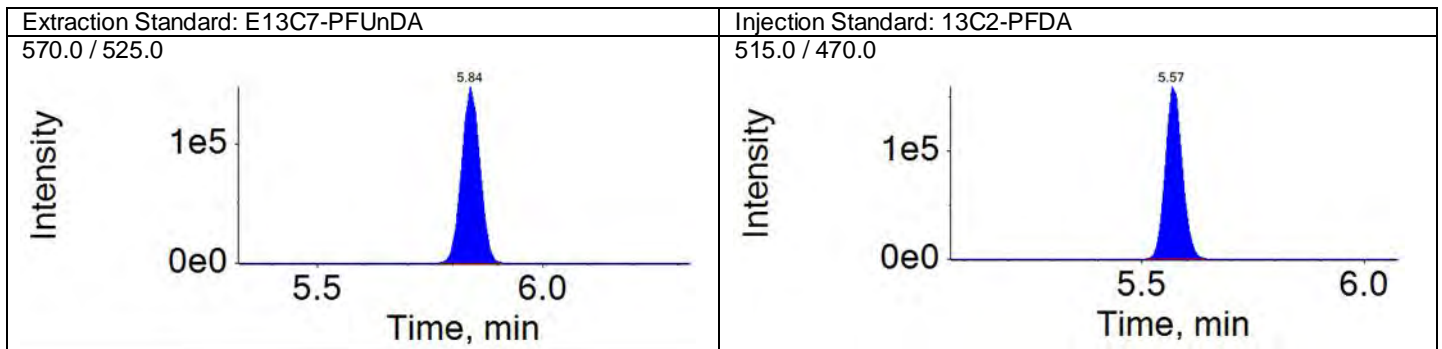
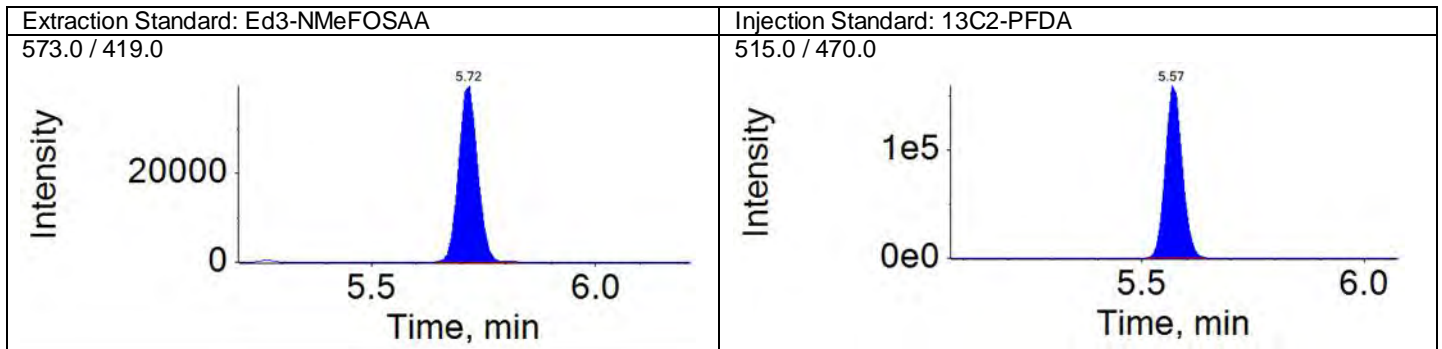
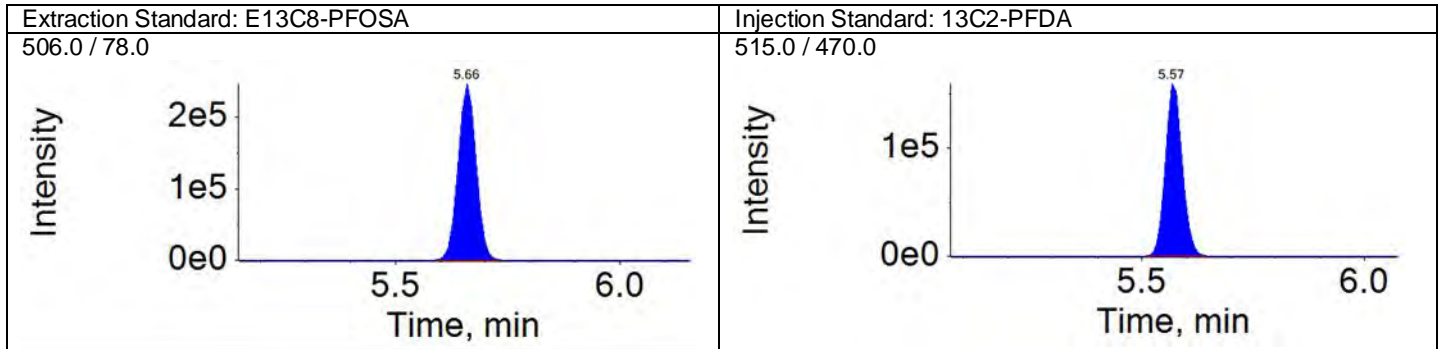
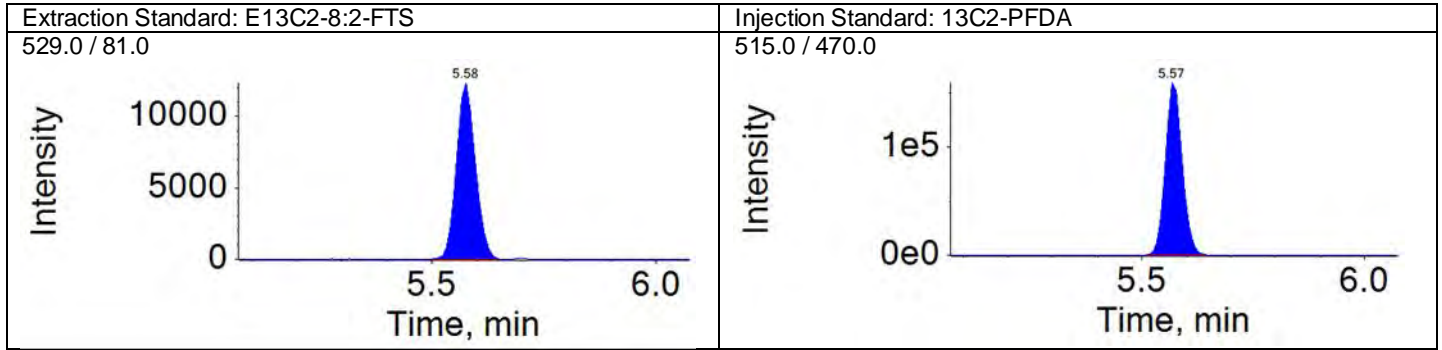
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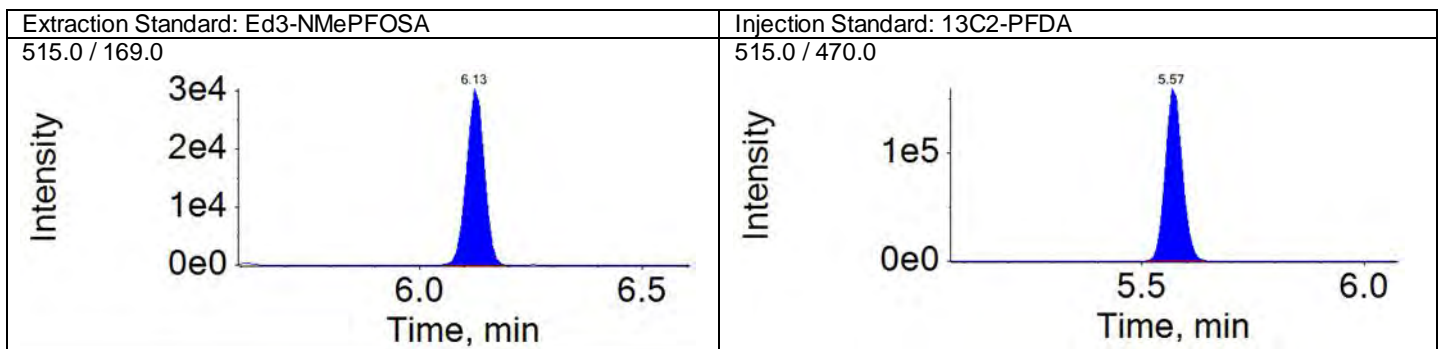
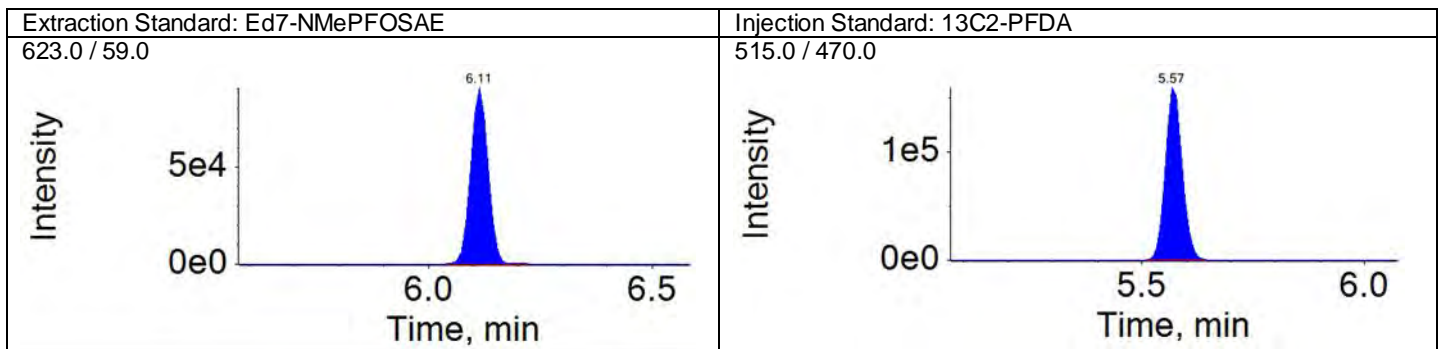
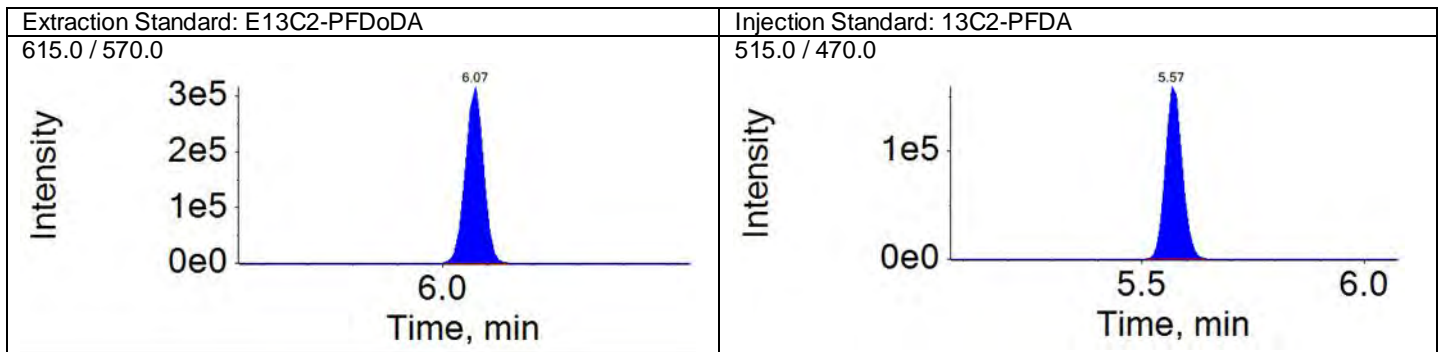
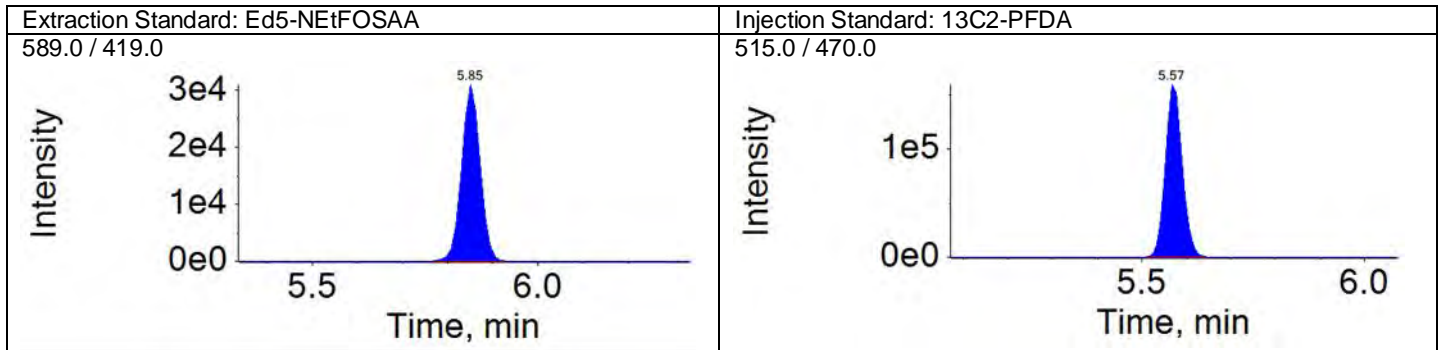
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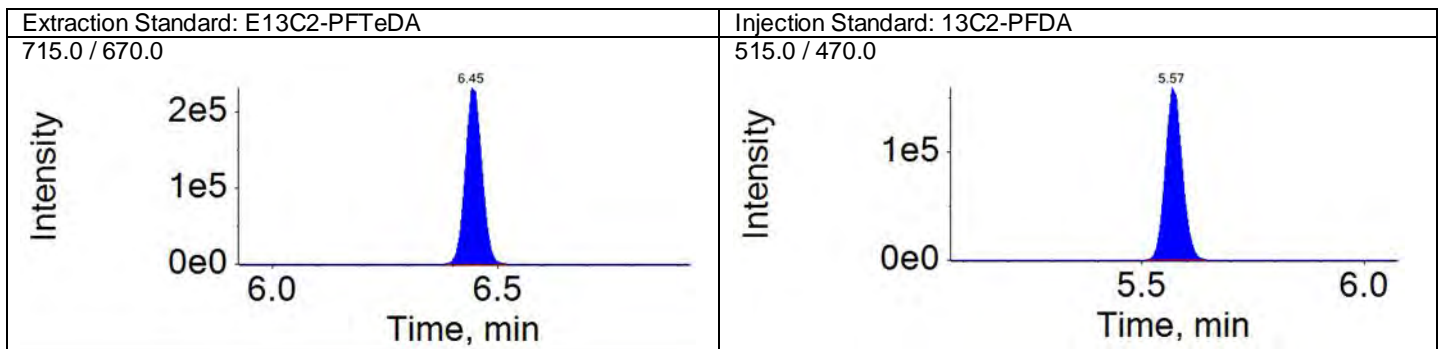
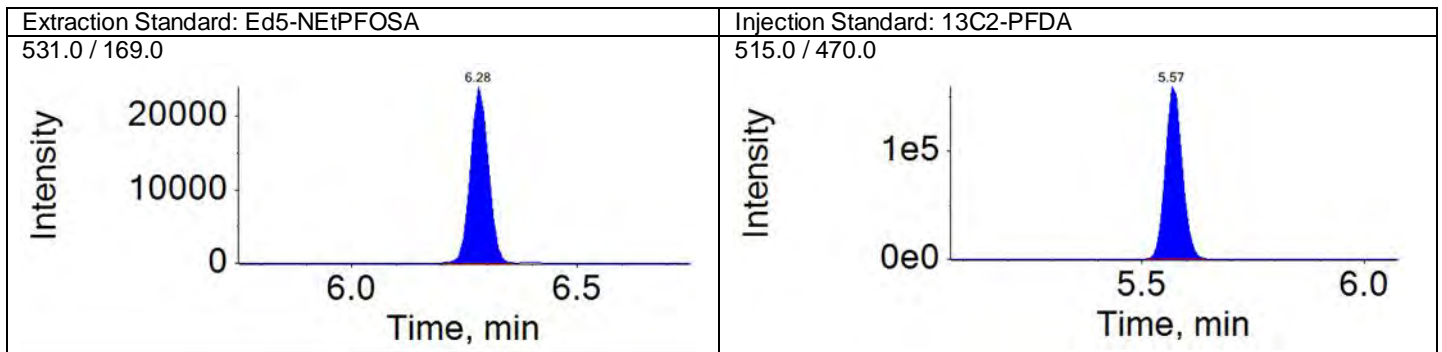
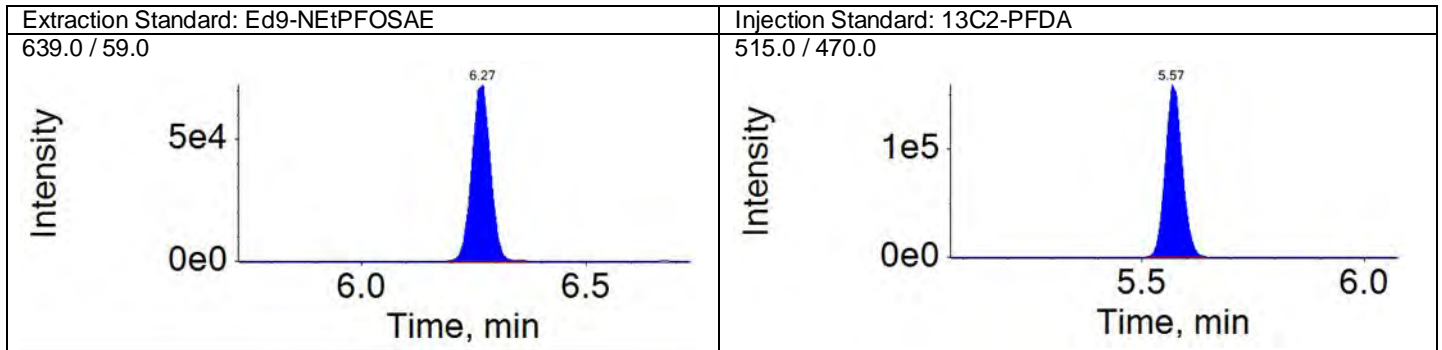
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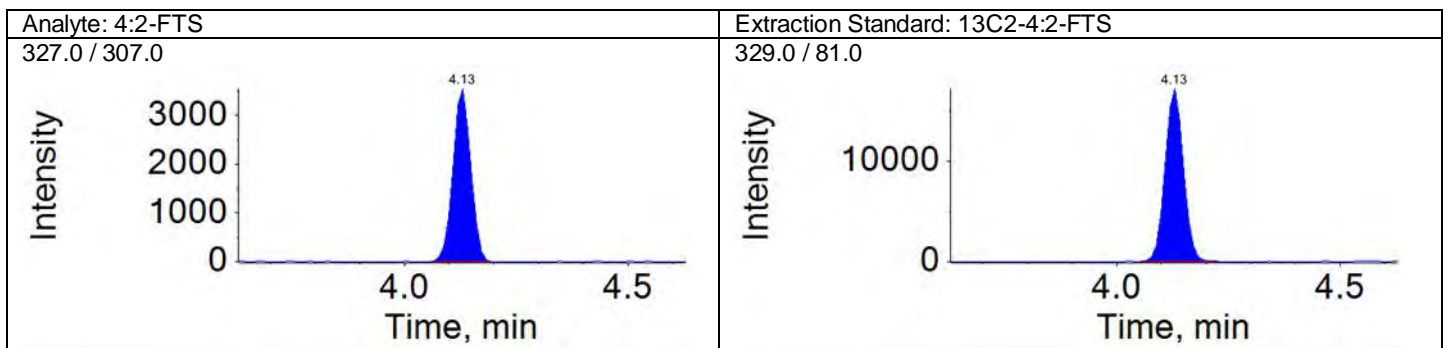
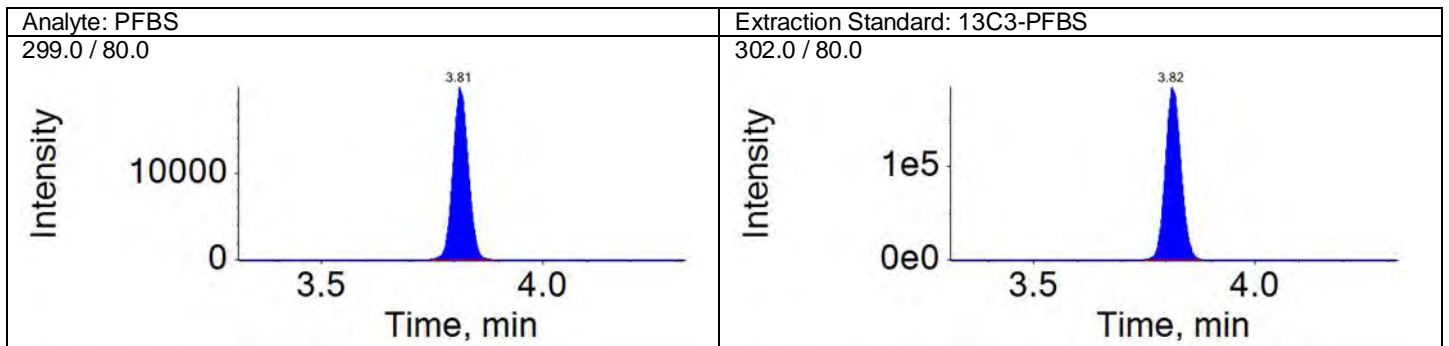
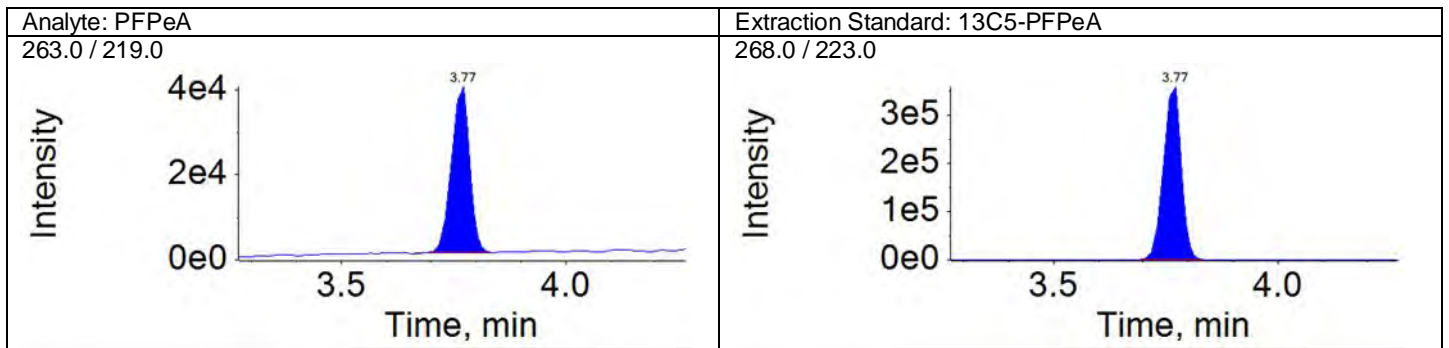
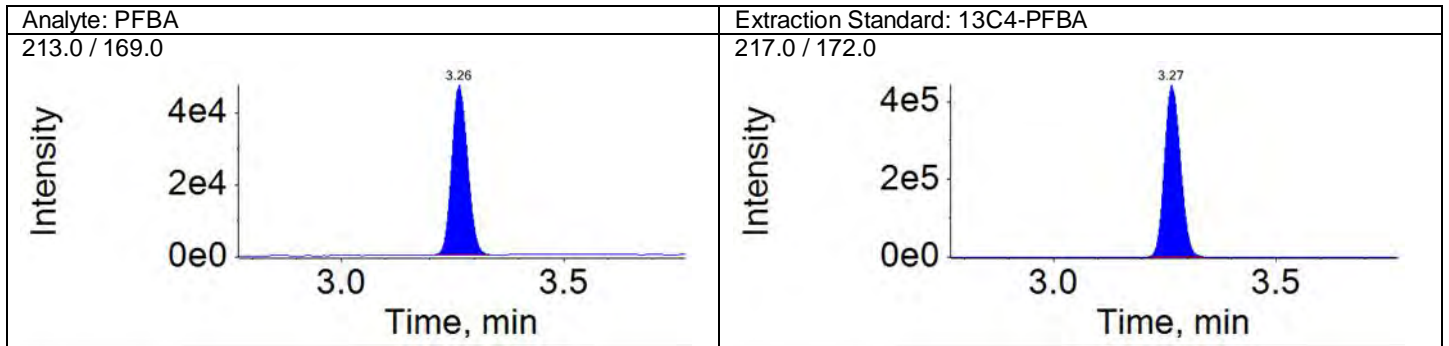
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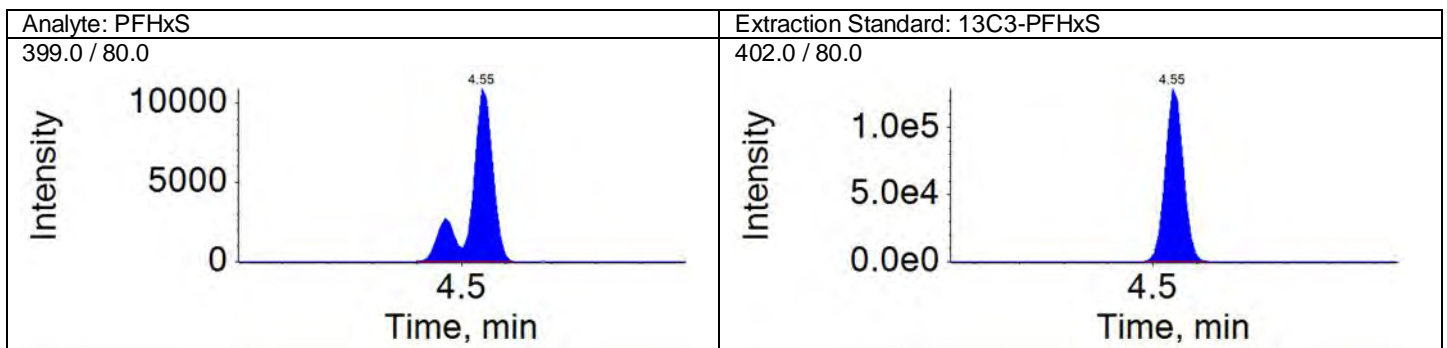
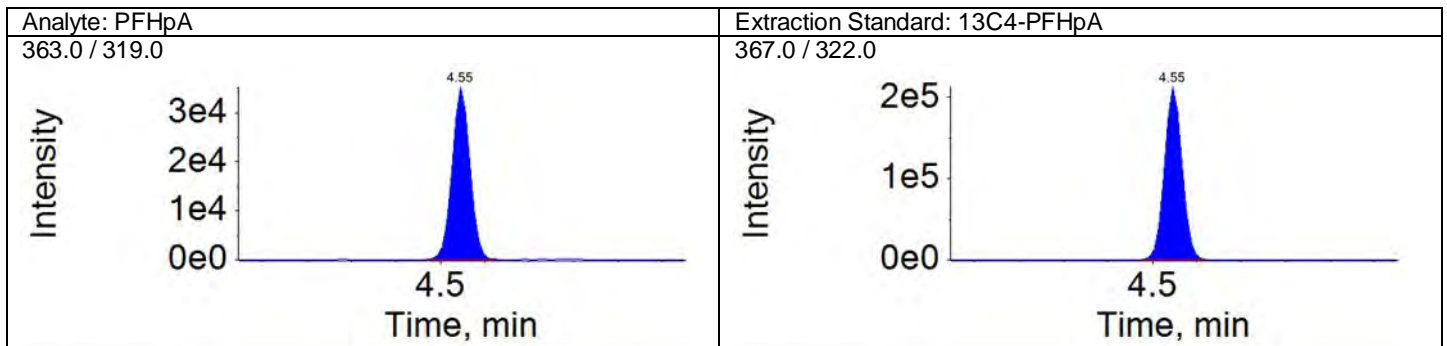
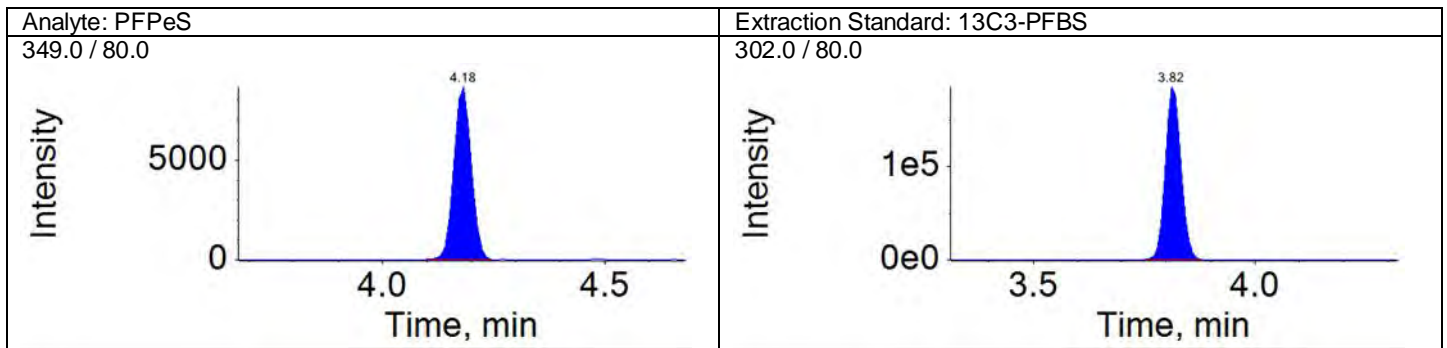
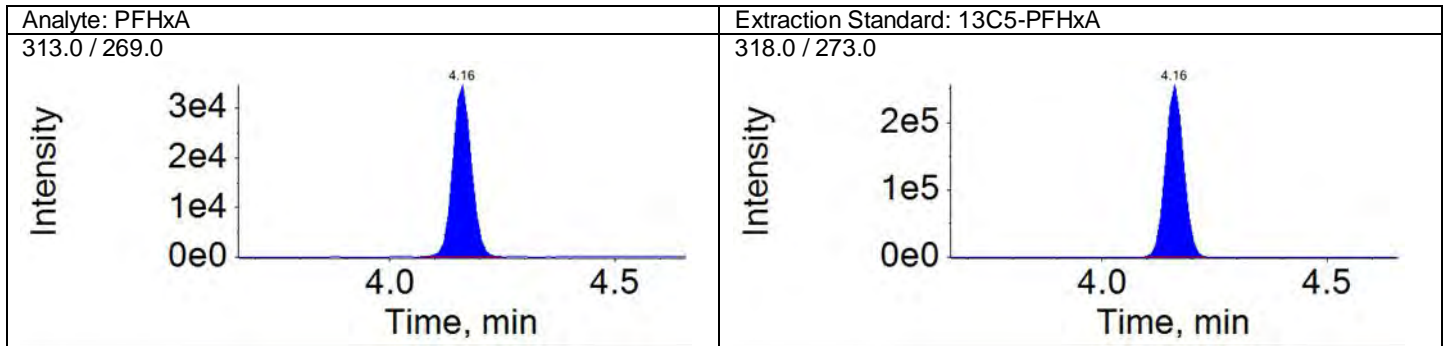
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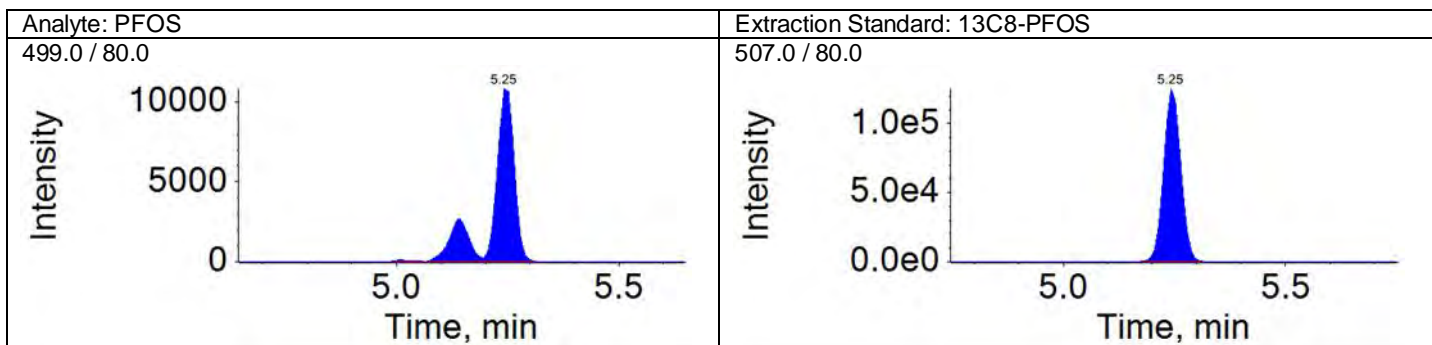
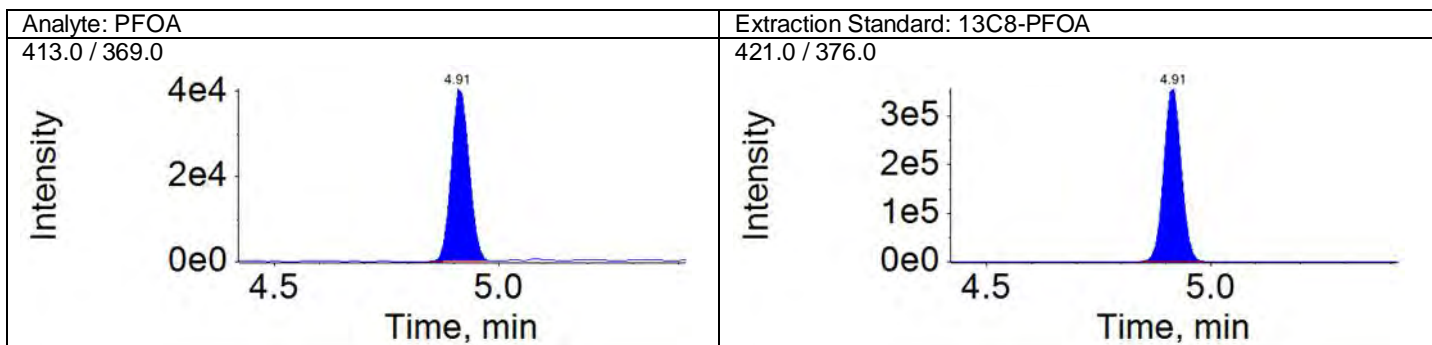
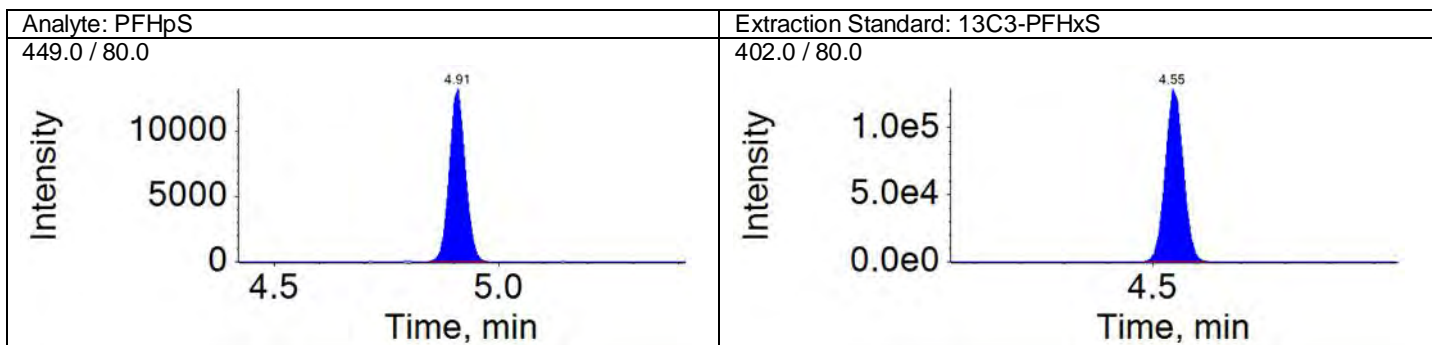
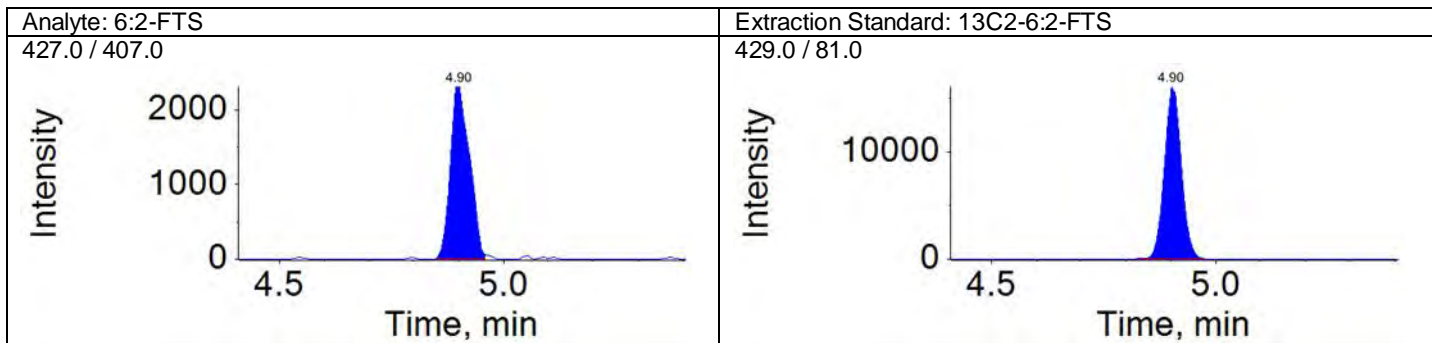
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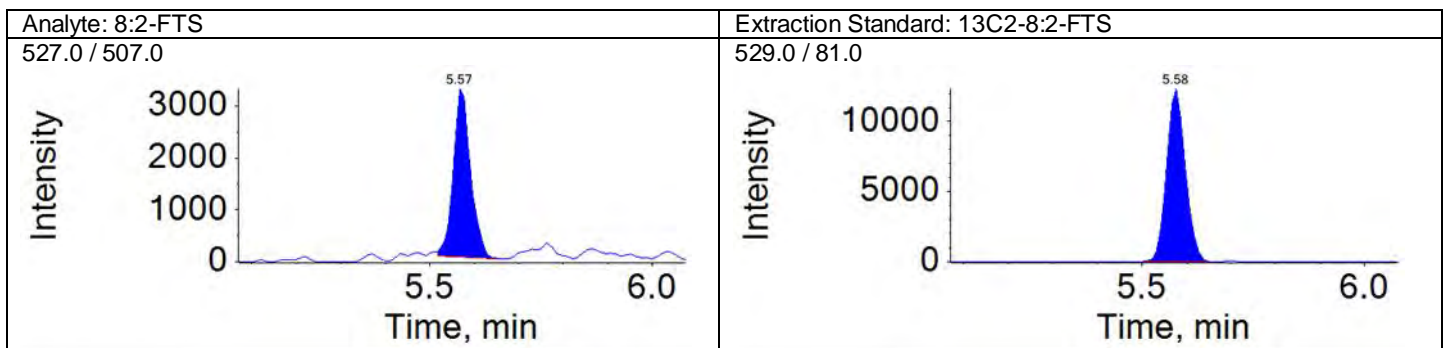
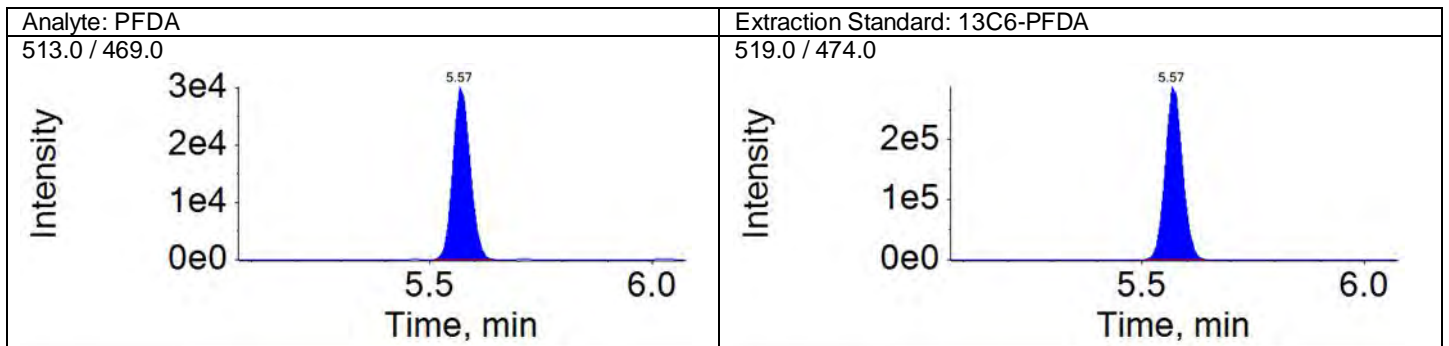
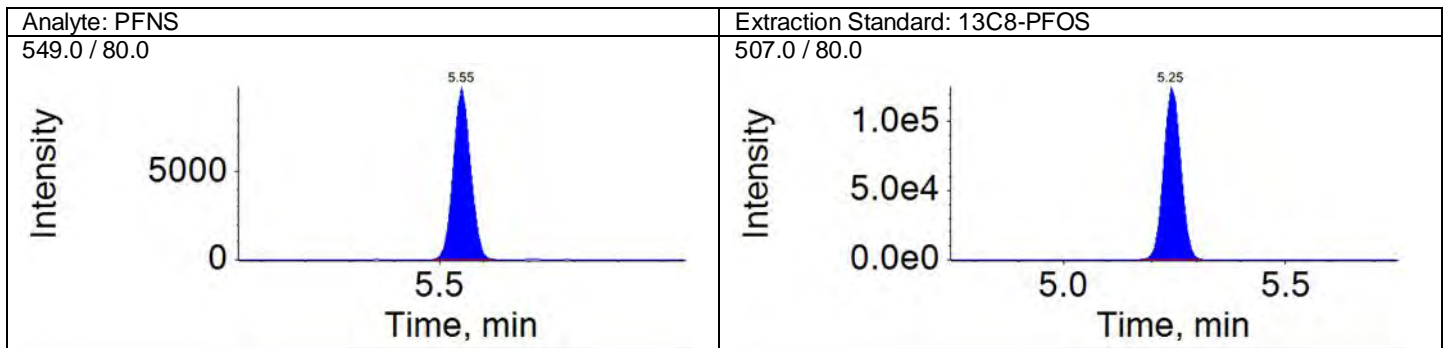
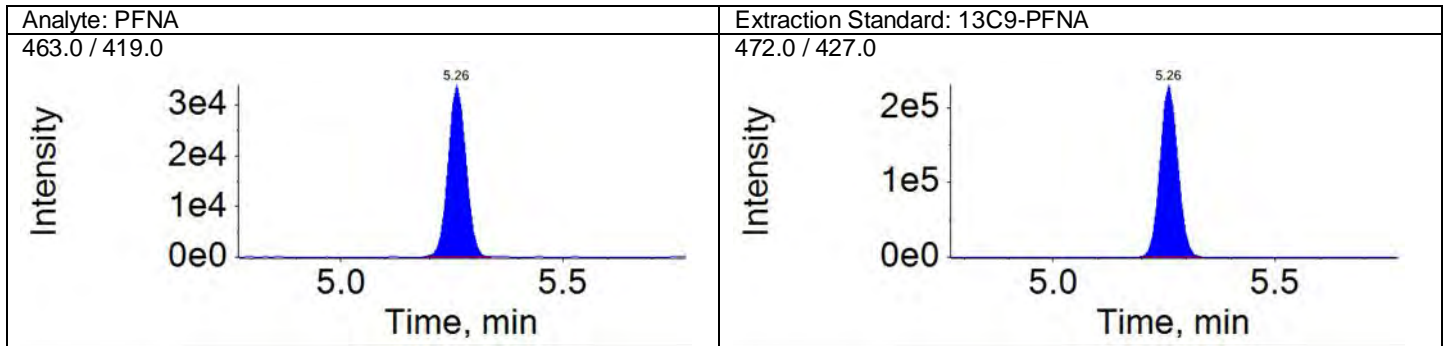
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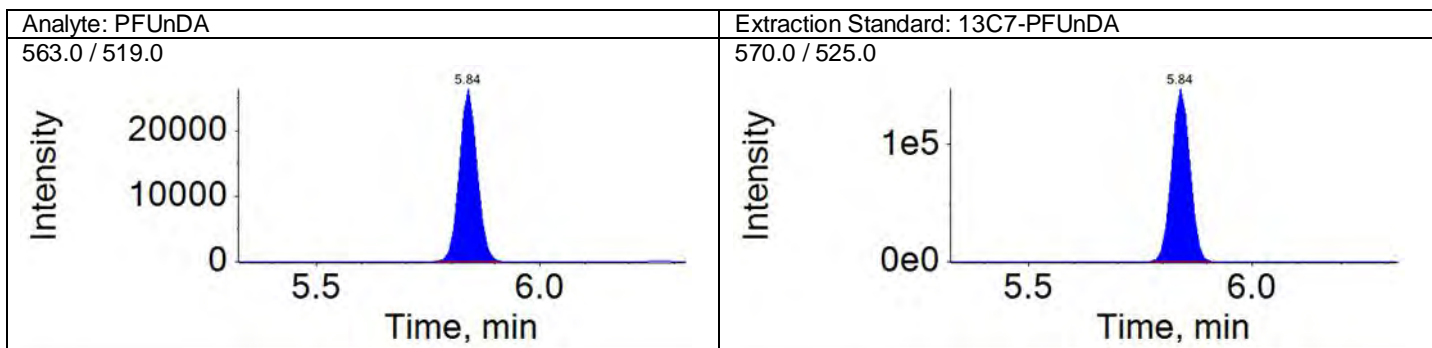
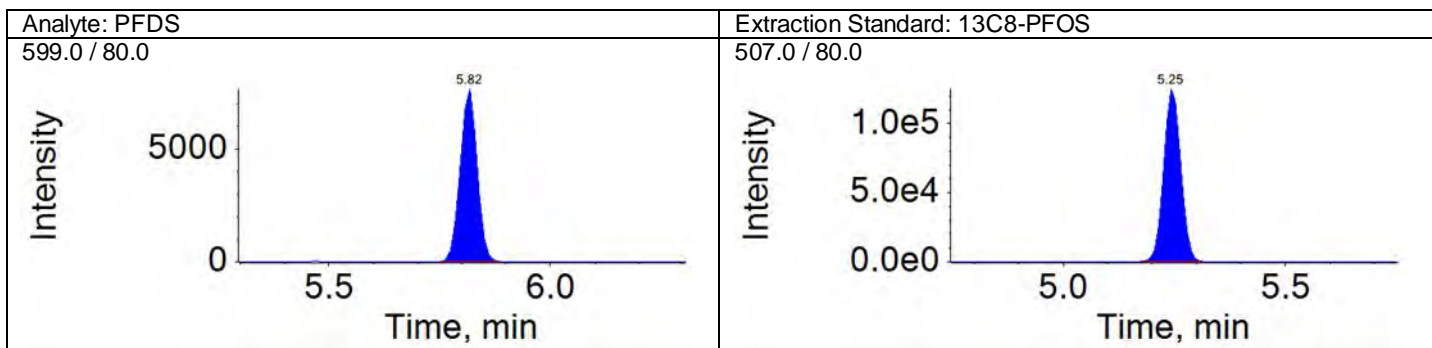
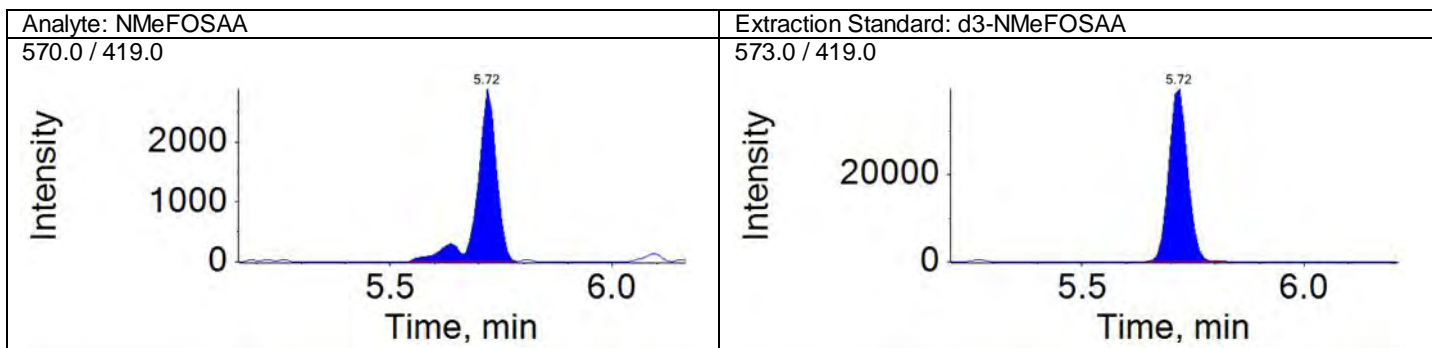
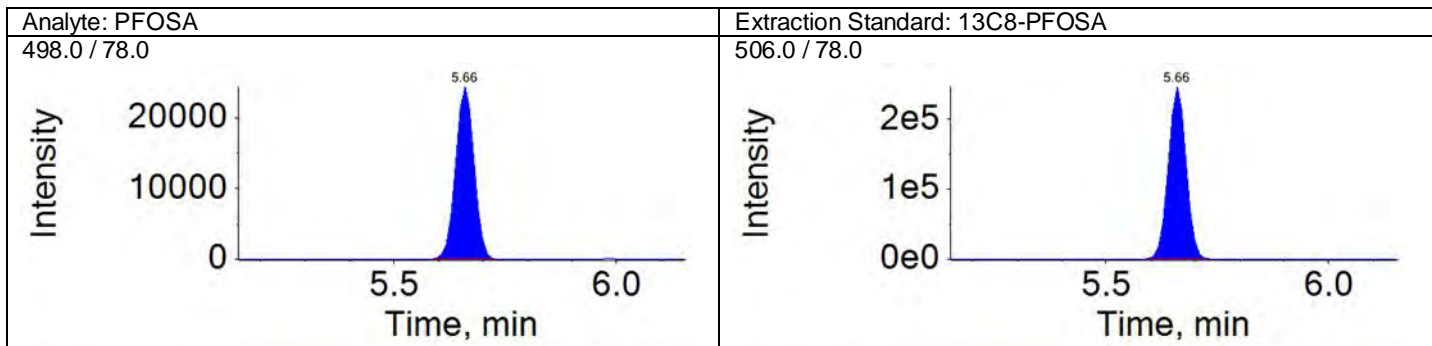
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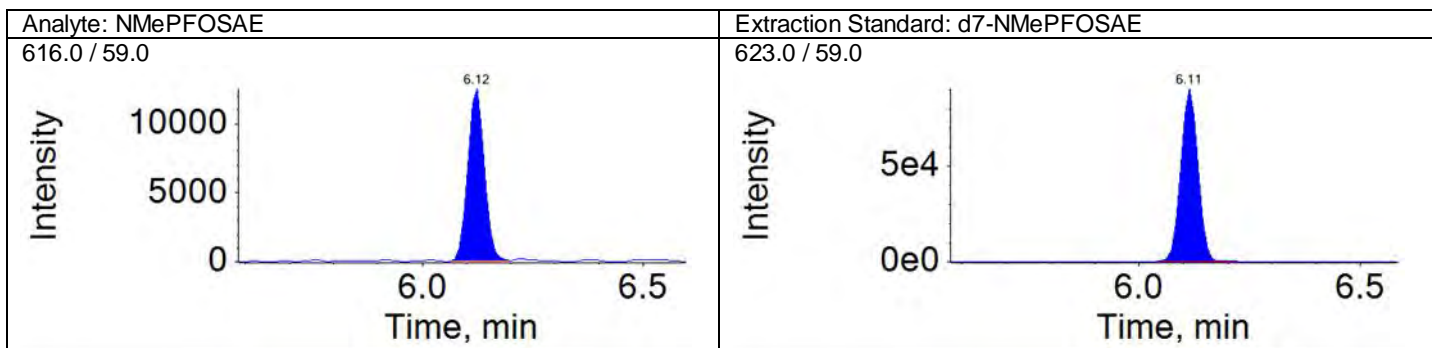
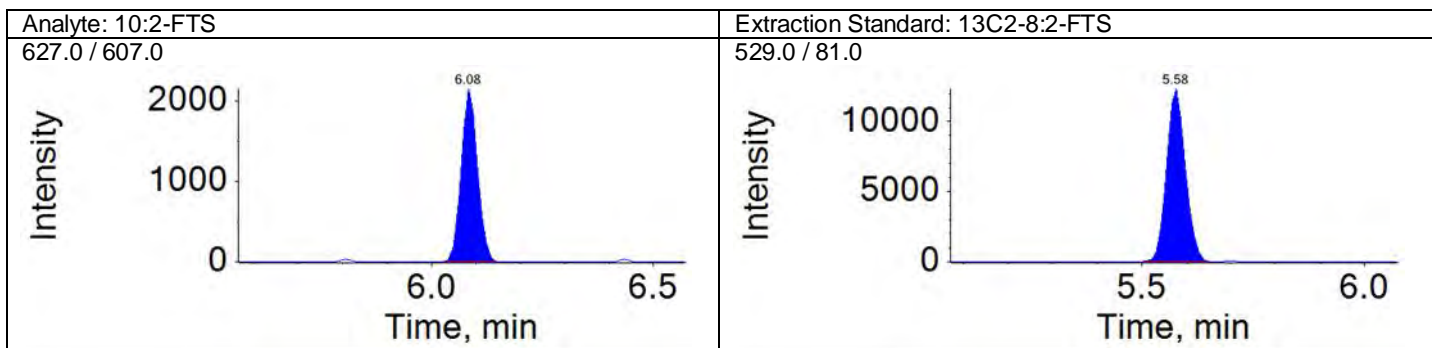
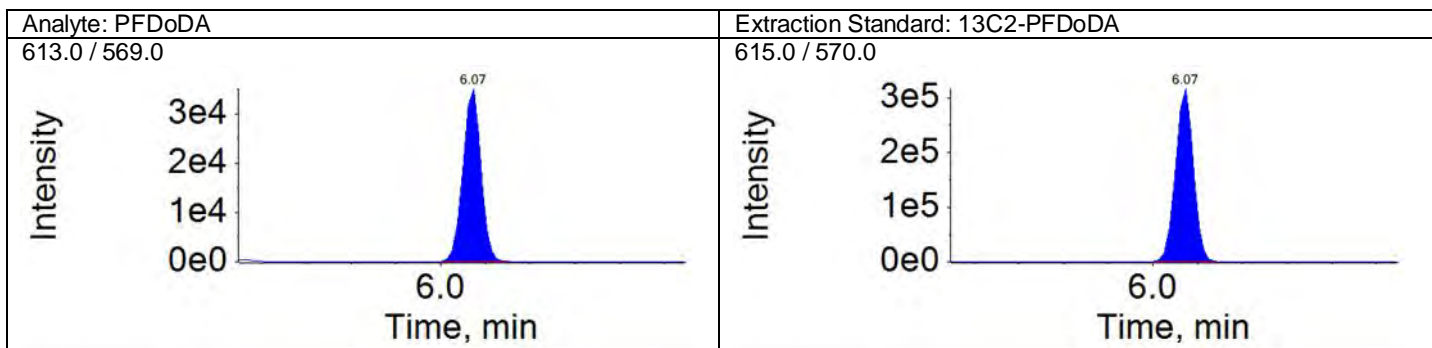
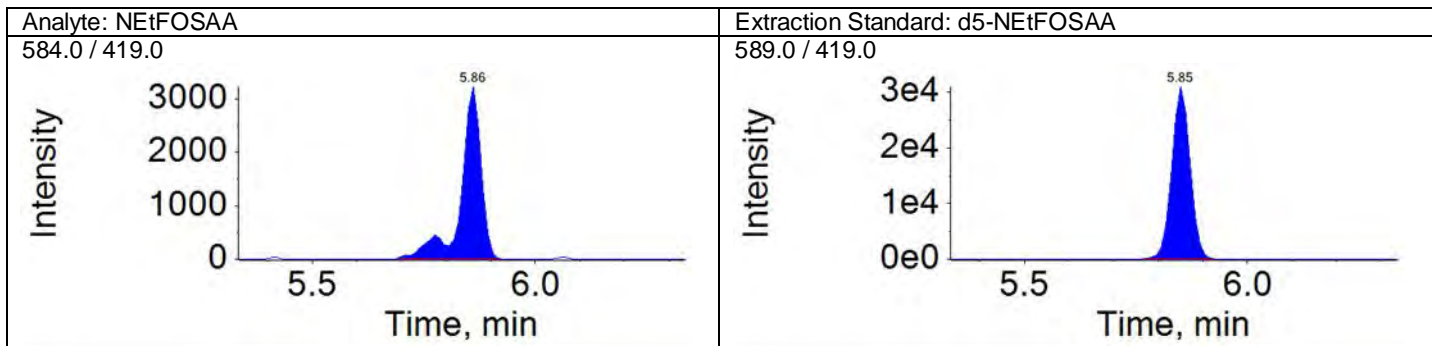
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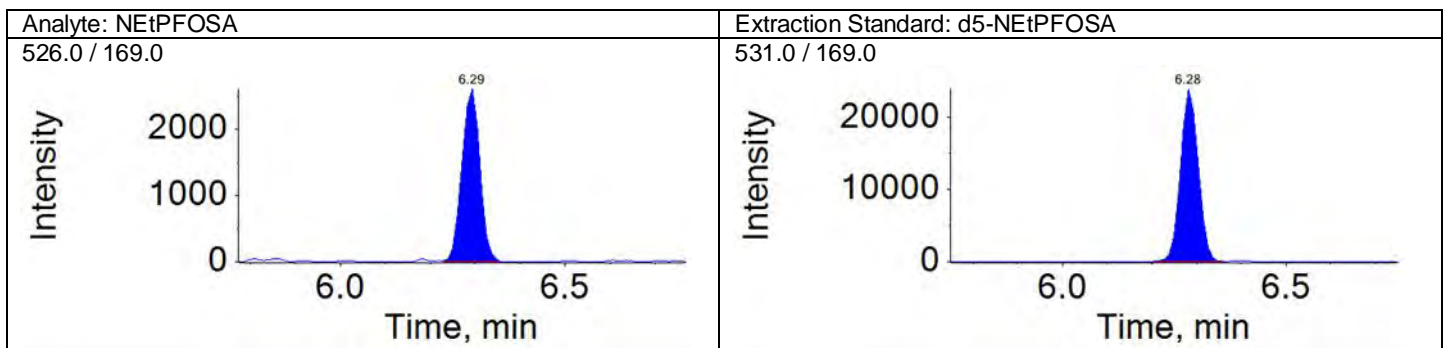
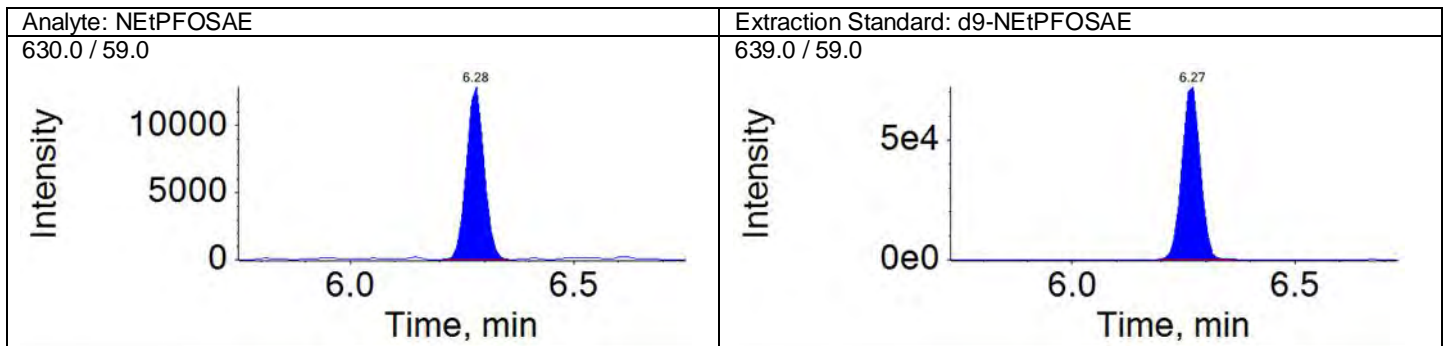
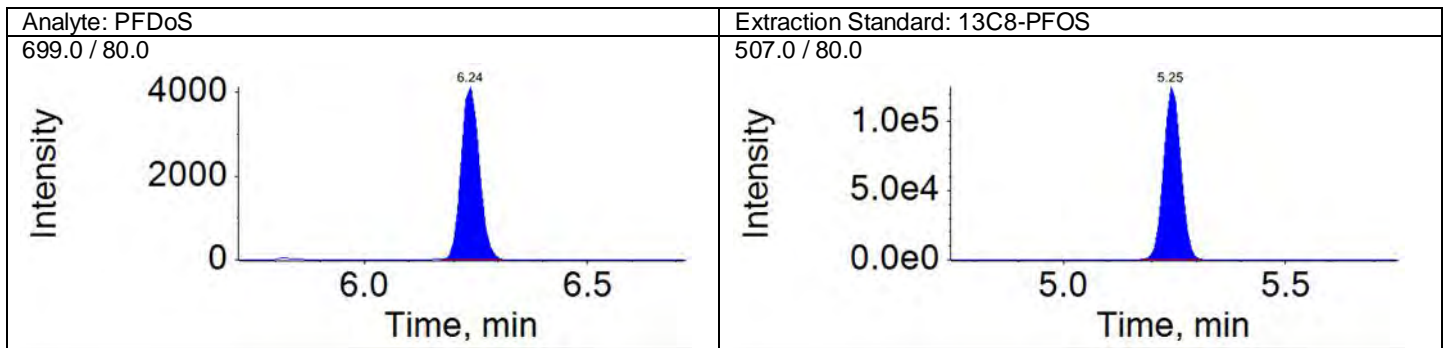
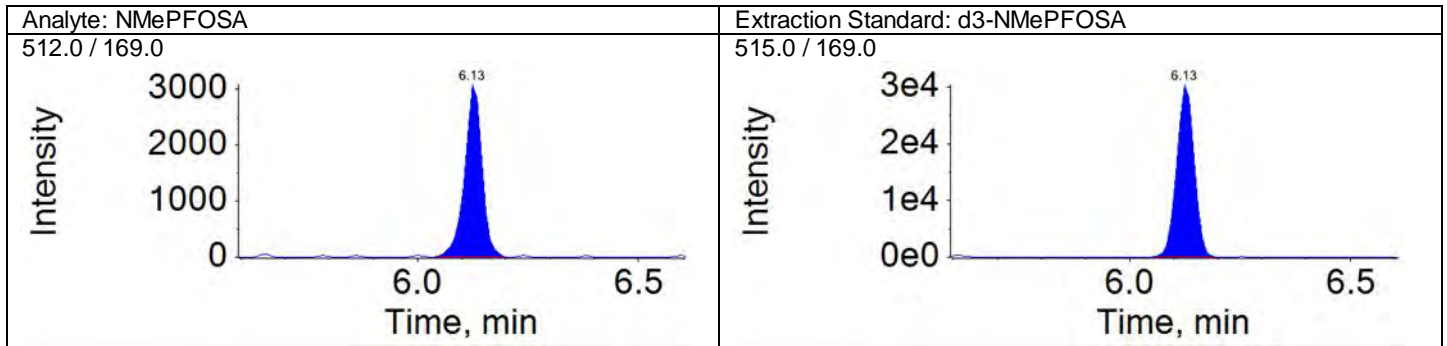
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

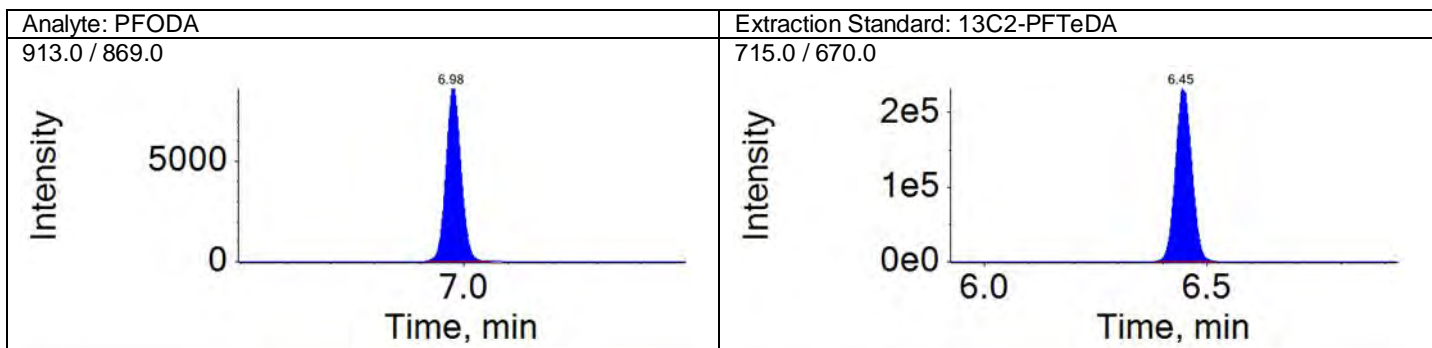
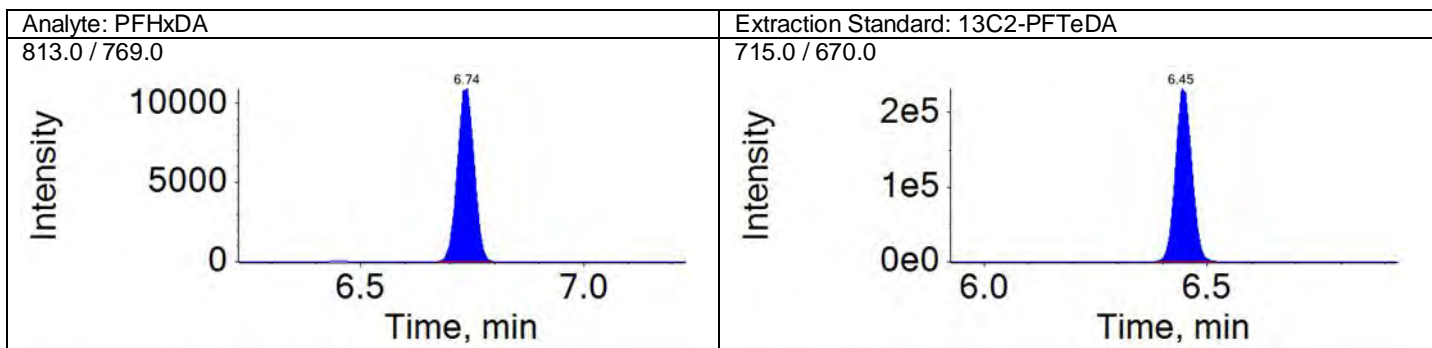
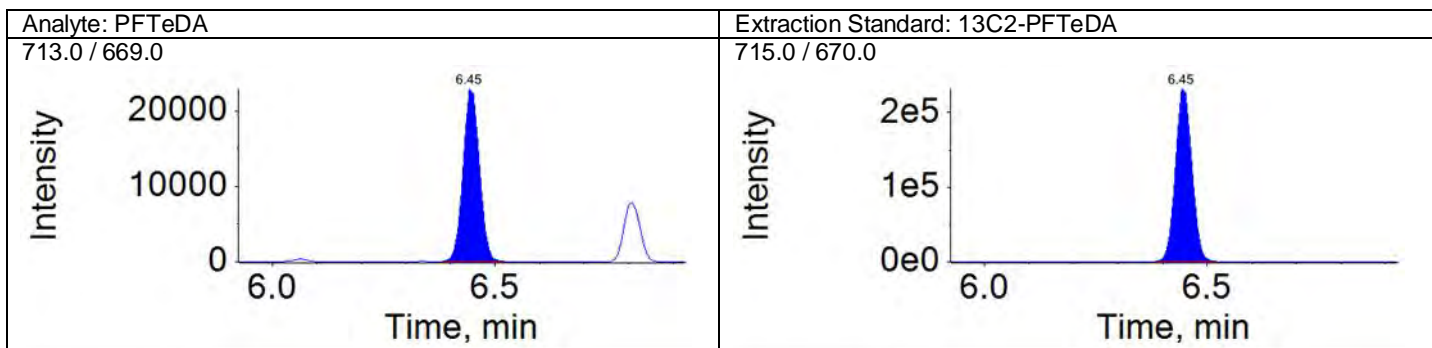
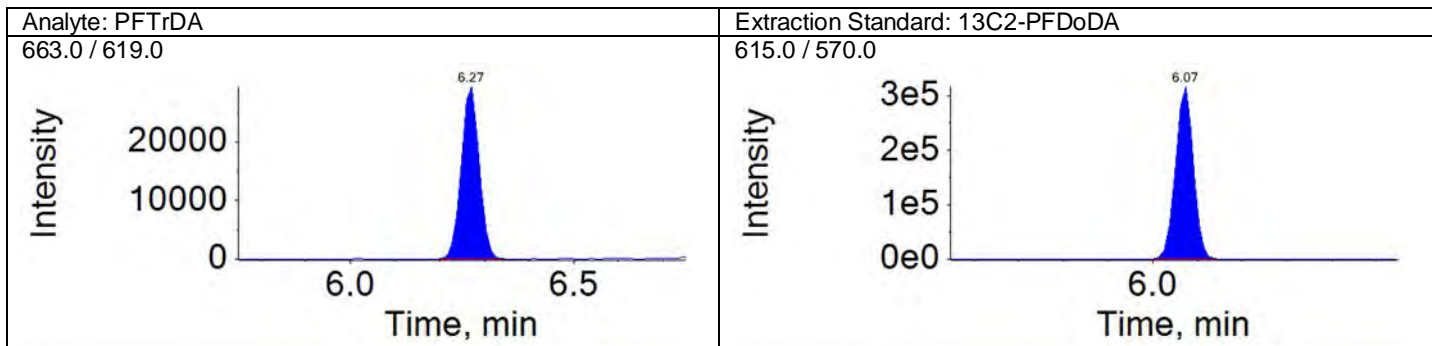
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

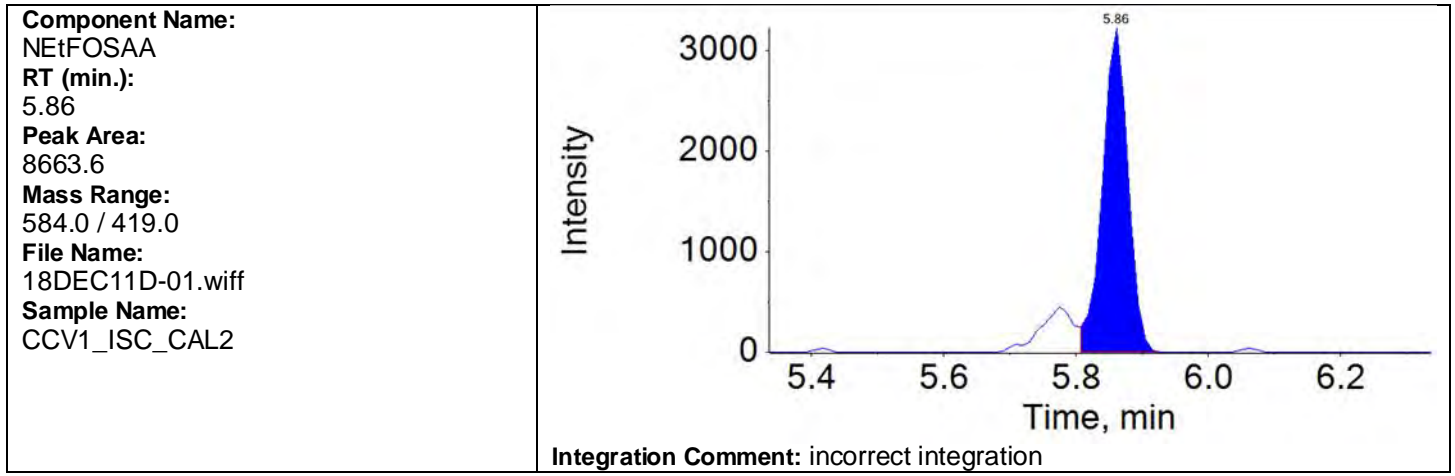
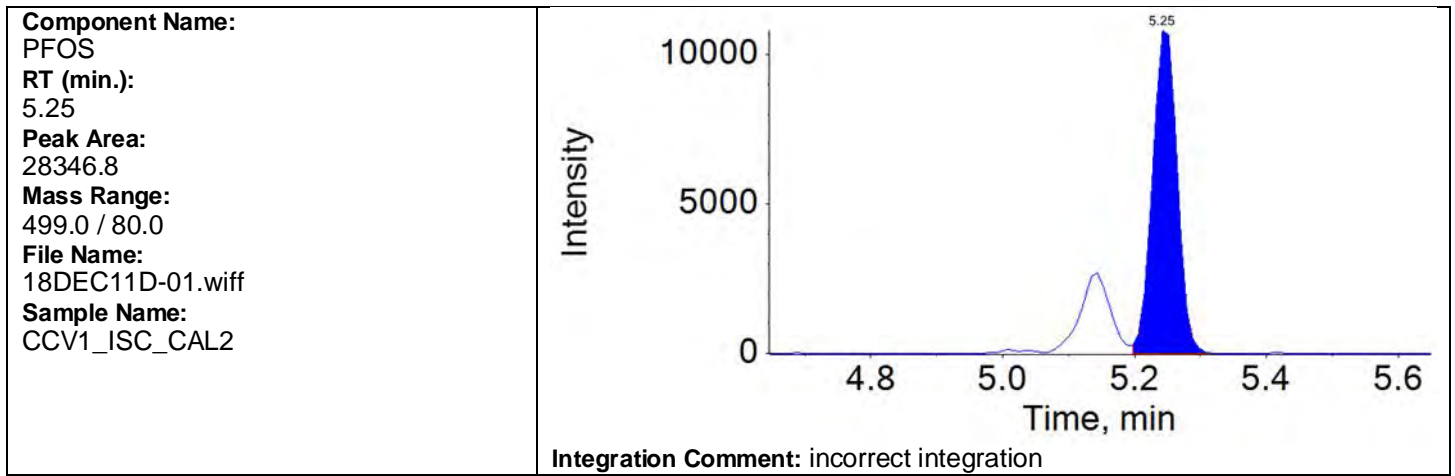
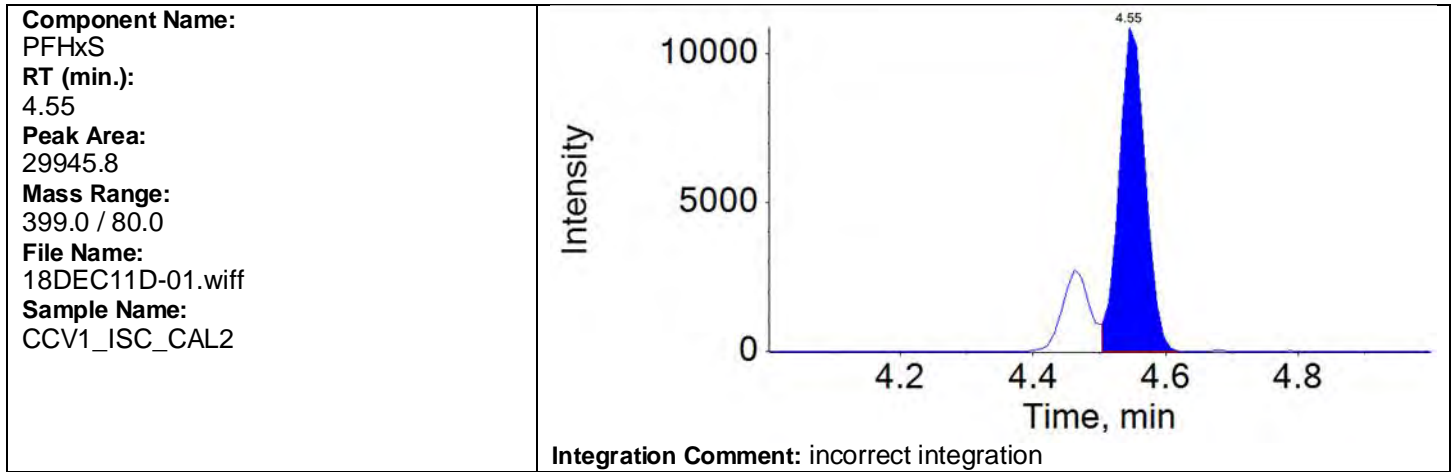
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Results Table Name: 18DEC11DCCV1-7  
Results Table Date: 12/11/2018 3:10:04 PM

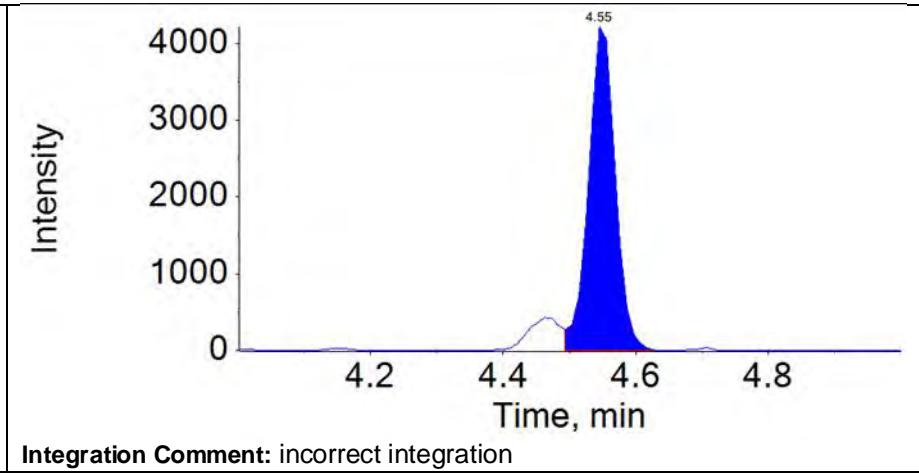
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QMethod File: 18AUG20QM



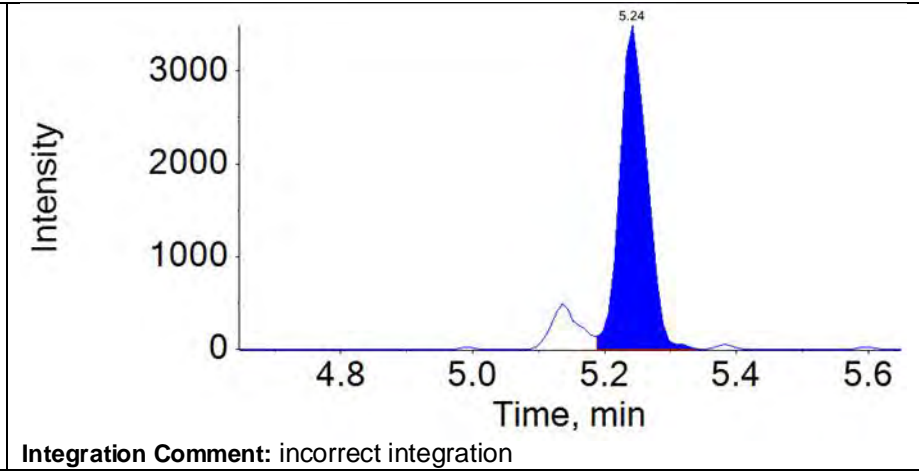
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Results Table Date: 12/11/2018 3:10:04 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

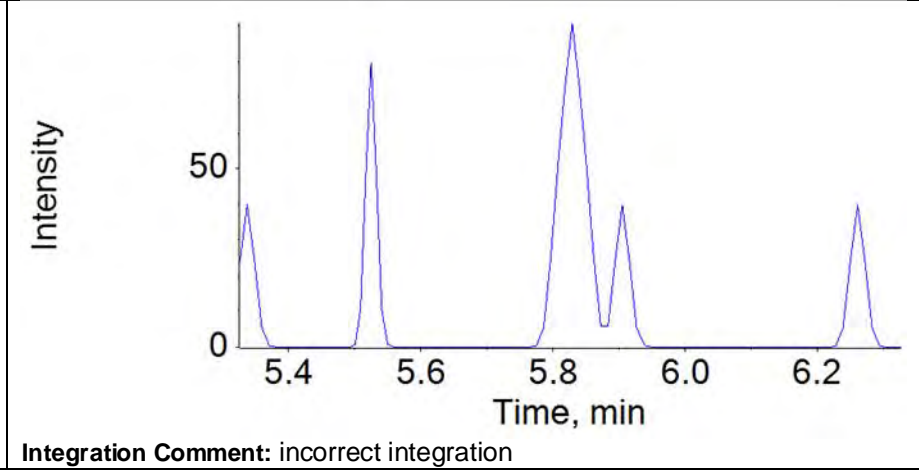
**Component Name:**  
PFHxS\_2  
**RT (min.):**  
4.55  
**Peak Area:**  
11895.0  
**Mass Range:**  
399.0 / 99.0  
**File Name:**  
18DEC11D-01.wiff  
**Sample Name:**  
CCV1\_ISC\_CAL2



**Component Name:**  
PFOS\_2  
**RT (min.):**  
5.24  
**Peak Area:**  
10082.2  
**Mass Range:**  
499.0 / 99.0  
**File Name:**  
18DEC11D-01.wiff  
**Sample Name:**  
CCV1\_ISC\_CAL2



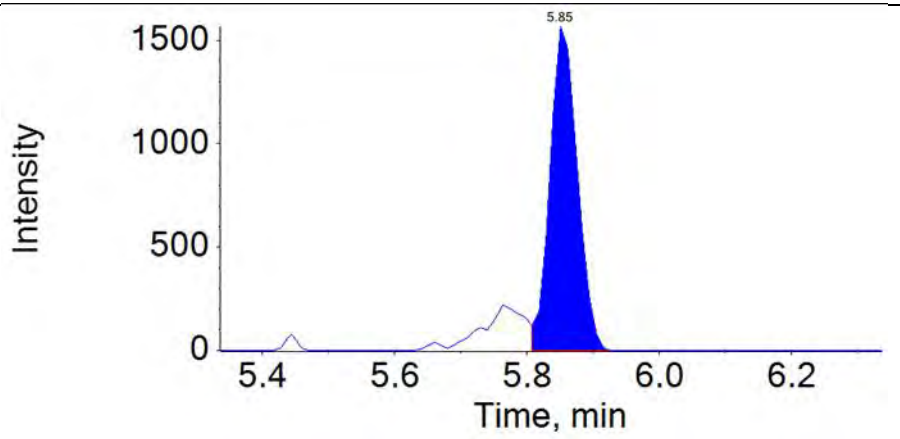
**Component Name:**  
PUnDA\_2  
**RT (min.):**  
N/A  
**Peak Area:**  
N/A  
**Mass Range:**  
563.0 / 169.0  
**File Name:**  
18DEC11D-01.wiff  
**Sample Name:**  
CCV1\_ISC\_CAL2



Results Table Name: 18DEC11DCCV1-7  
Results Table Date: 12/11/2018 3:10:04 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
NEtFOSAA\_2  
RT (min.):  
5.85  
Peak Area:  
4513.4  
Mass Range:  
584.0 / 526.0  
File Name:  
18DEC11D-01.wiff  
Sample Name:  
CCV1\_ISC\_CAL2



**Results Table Name:** 18DEC11DCCV1-7  
**Results Table Date:** 12/11/2018 3:10:04 PM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
By JPT at 3:22 pm, 12/11/18

**REVIEWED**  
By HMK at 10:36 am, 12/12/18

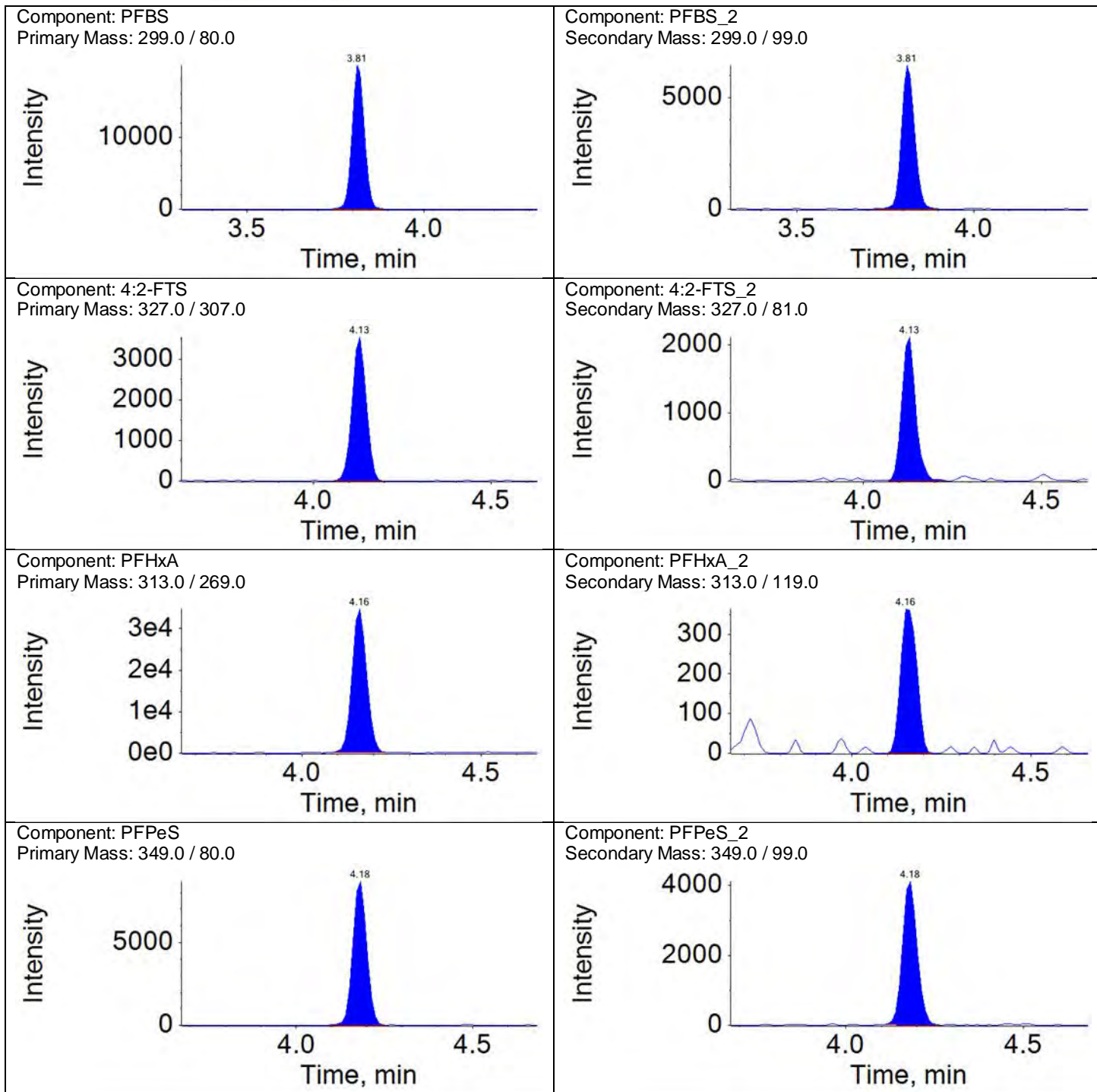
Ion Ratio Report

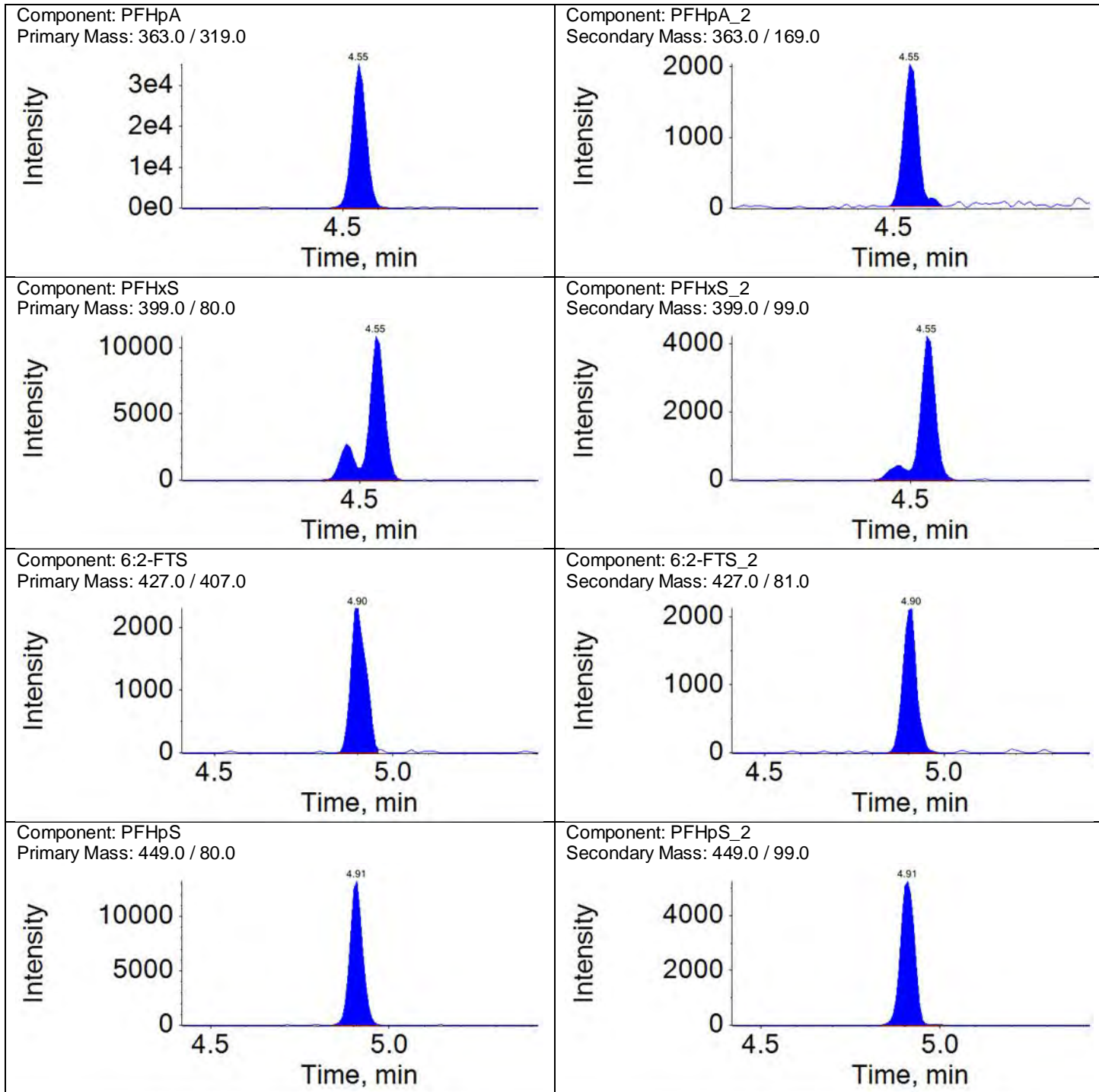
Sample Name: CCV1\_ISC\_CAL2 Instrument Name: LM27631 File Name: 18DEC11D-01.wiff

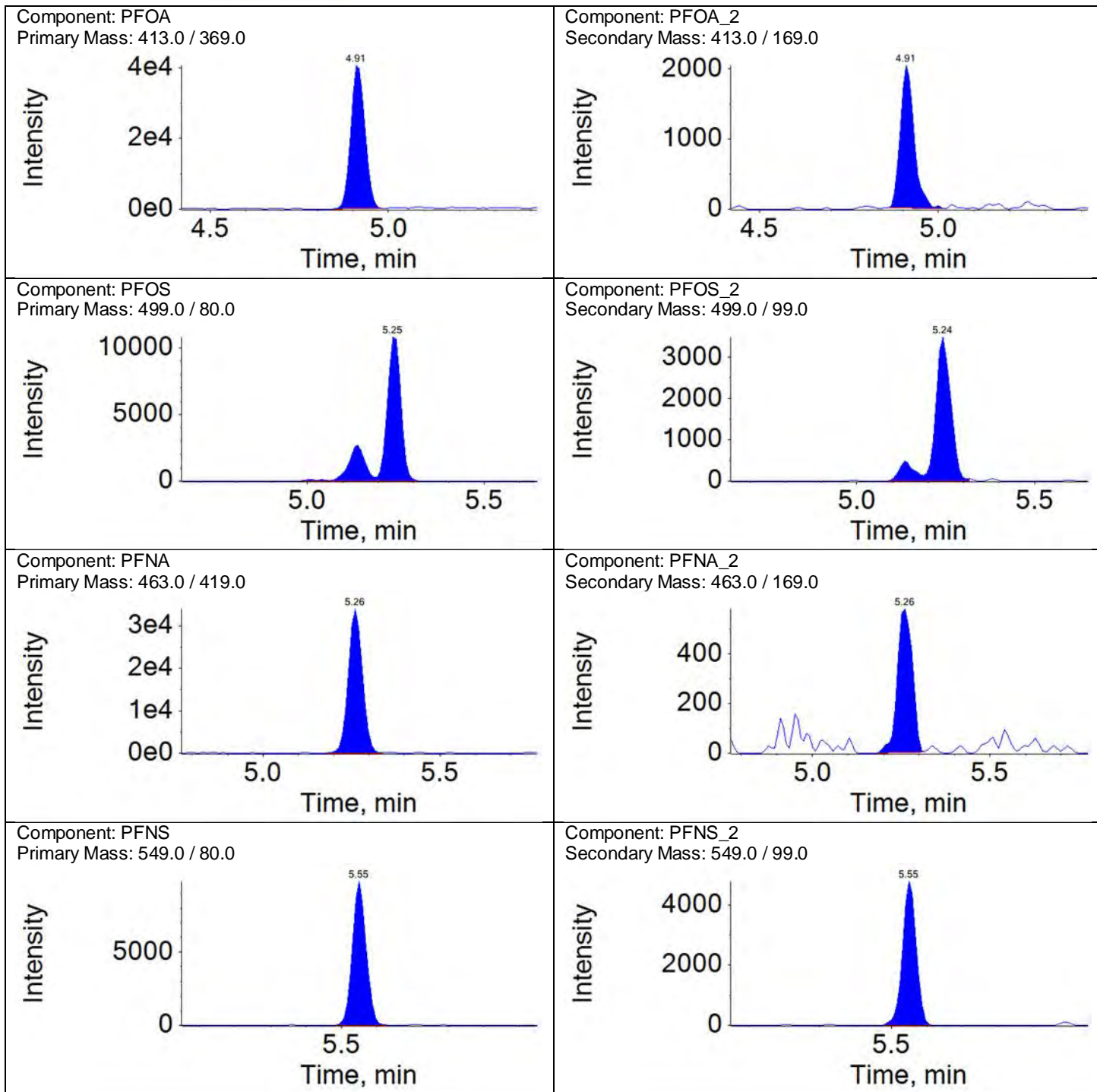
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	47723.5	A	N/A	1.0000			
PFBS_2	3.81	1.00	16495.9	A	N/A	0.3457	-5	50	
4:2-FTS	4.13	1.00	9764.9	A	N/A	1.0000			
4:2-FTS_2	4.13	1.00	5689.3	A	N/A	0.5826	-11	50	
PFHxA	4.16	1.00	98680.8	A	N/A	1.0000			
PFHxA_2	4.16	1.00	1136.3	A	N/A	0.0115	19	50	
PFPeS	4.18	1.10	23736.0	A	N/A	1.0000			
PFPeS_2	4.18	1.10	11804.1	A	N/A	0.4973	-5	50	
PFHpA	4.55	1.00	98309.3	A	N/A	1.0000			
PFHpA_2	4.55	1.00	5881.8	A	N/A	0.0598	6	50	
PFHxS	4.55	1.00	37800.6	M	N/A	1.0000			
PFHxS_2	4.55	1.00	13327.2	M	N/A	0.3526	-3	50	
6:2-FTS	4.90	1.00	6892.8	A	N/A	1.0000			
6:2-FTS_2	4.90	1.00	5680.2	A	N/A	0.8241	31	50	
PFHpS	4.91	1.08	32610.2	A	N/A	1.0000			
PFHpS_2	4.91	1.08	14338.8	A	N/A	0.4397	6	50	
PFOA	4.91	1.00	110566.7	A	N/A	1.0000			
PFOA_2	4.91	1.00	5489.4	A	N/A	0.0496	-19	50	
PFOS	5.25	1.00	37385.1	M	N/A	1.0000			
PFOS_2	5.24	1.00	11479.0	M	N/A	0.3070	2	50	
PFNA	5.26	1.00	93474.6	A	N/A	1.0000			
PFNA_2	5.26	1.00	1715.7	A	N/A	0.0184	-5	50	
PFNS	5.55	1.06	26132.0	A	N/A	1.0000			
PFNS_2	5.55	1.06	12640.6	A	N/A	0.4837	0	50	
PFDA	5.57	1.00	81150.0	A	N/A	1.0000			
PFDA_2	5.58	1.00	801.6	A	N/A	0.0099	3	50	
8:2-FTS	5.57	1.00	8735.5	A	N/A	1.0000			
8:2-FTS_2	5.57	1.00	4608.9	A	N/A	0.5276	-14	50	
NMeFOSAA	5.72	1.00	8803.9	A	N/A	1.0000			
NMeFOSAA_2	5.72	1.00	2345.8	A	N/A	0.2664	0	50	
PFDS	5.82	1.11	20285.2	A	N/A	1.0000			
PFDS_2	5.81	1.11	9766.7	A	N/A	0.4815	-3	50	
PUnDA	5.84	1.00	72466.8	A	N/A	1.0000			
PUnDA_2	5.83	1.00	261.9	M	N/A	0.0036	-12	50	
NEtFOSAA	5.86	1.00	10250.1	M	N/A	1.0000			
NEtFOSAA_2	5.85	1.00	5446.3	M	N/A	0.5313	-21	50	
PfDoDA	6.07	1.00	97724.8	A	N/A	1.0000			
PfDoDA_2	6.08	1.00	954.2	A	N/A	0.0098	-27	50	
10:2-FTS	6.08	1.09	5426.3	A	N/A	1.0000			
10:2-FTS_2	6.09	1.09	4457.7	A	N/A	0.8215	18	50	
PFTrDA	6.27	1.03	81951.5	A	N/A	1.0000			
PFTrDA_2	6.26	1.03	671.6	A	N/A	0.0082	9	50	
PFTeDA	6.45	1.00	58070.5	A	N/A	1.0000			
PFTeDA_2	6.46	1.00	482.5	A	N/A	0.0083	26	50	
PFHxDA	6.74	1.04	28707.8	A	N/A	1.0000			
PFHxDA_2	6.74	1.04	1759.8	A	N/A	0.0613	0	50	
PFOA	6.98	1.08	20345.1	A	N/A	1.0000			
PFOA_2	6.98	1.08	699.5	A	N/A	0.0344	26	50	

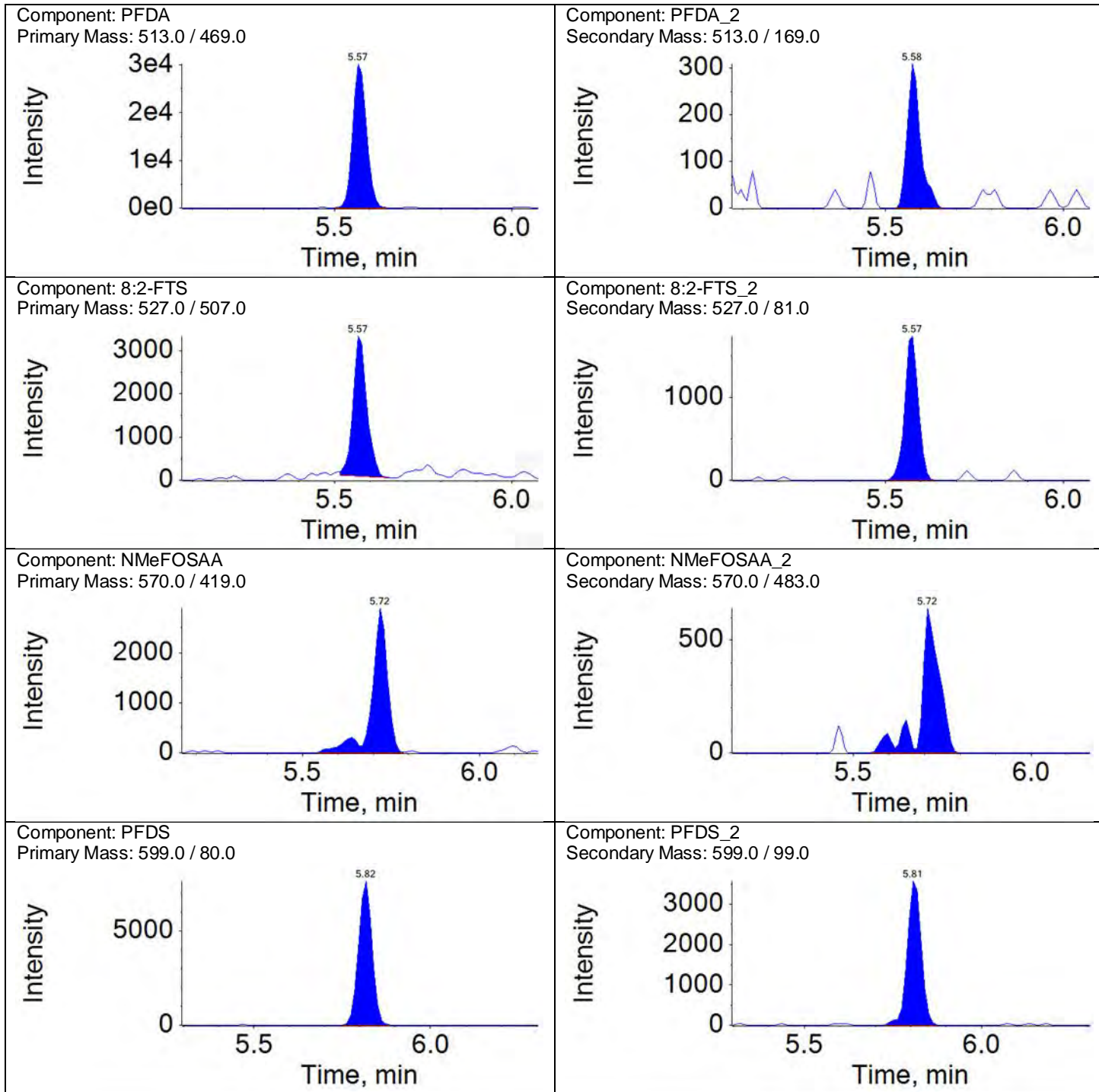




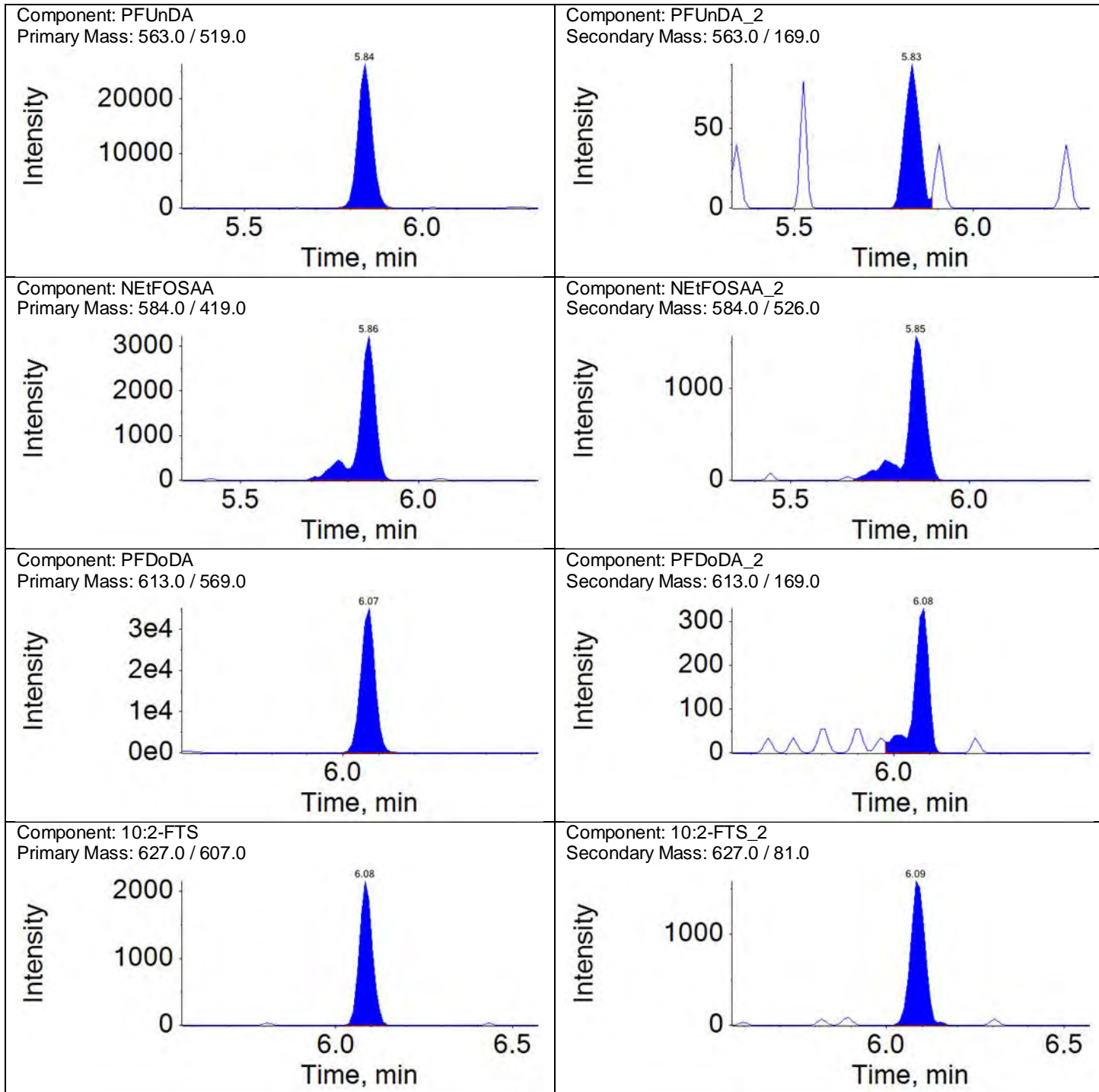




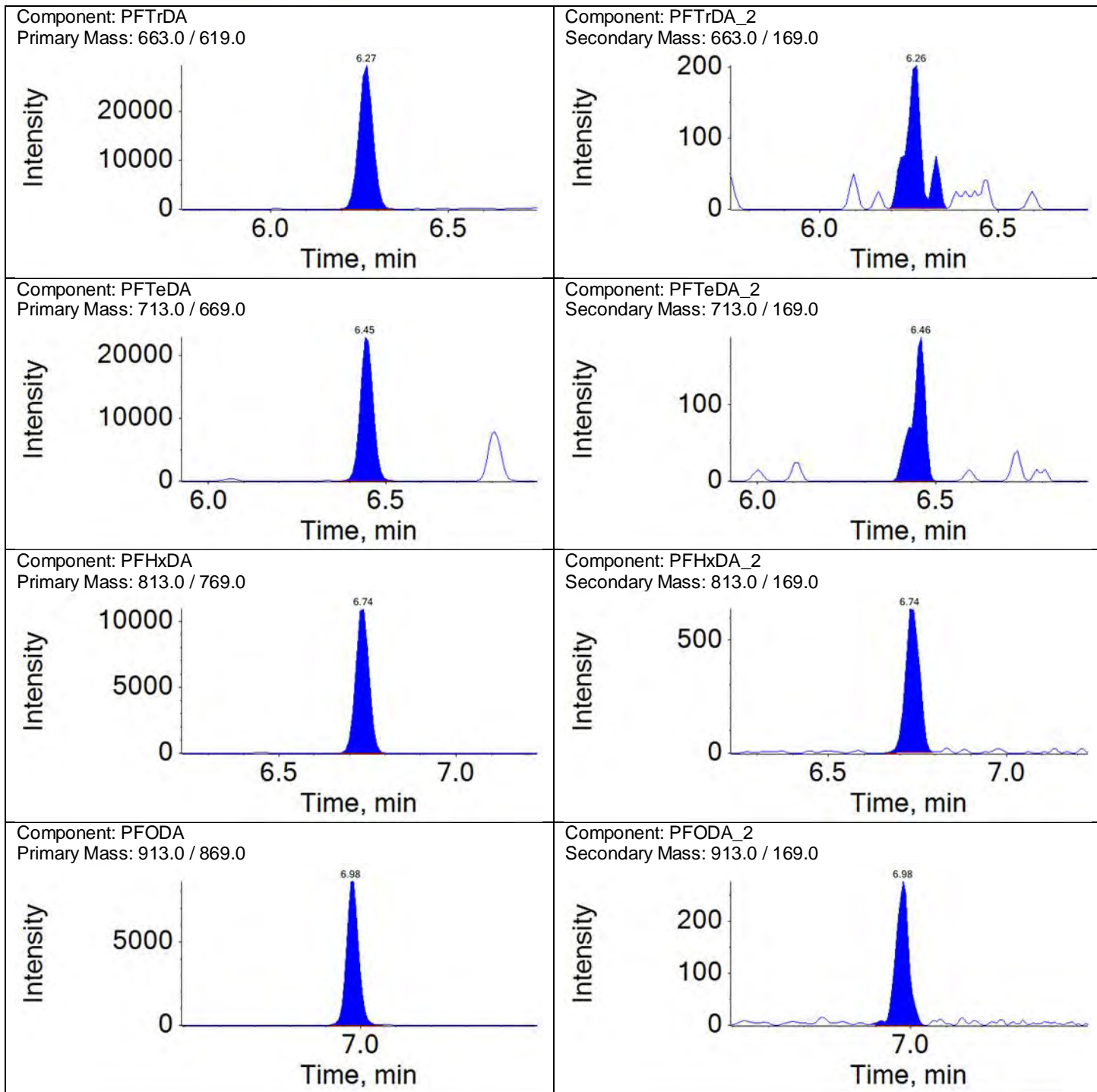












ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	Instrument Blank	Data File:	18DEC11D-02.wiff
Sample ID:	methanol+labels	Acquis Date:	2018-12-11T05:08:07
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	1	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC11DCCV1-7
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	JPT12262
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	1077512.6	953492.0	13	50	
13C2-PFOA	5.0	582923.0	500971.3	16	50	
13C4-PFOS	4.8	335106.8	310746.2	8	50	
13C2-PFDA	5.0	454056.3	419040.9	8	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1152451.4	13C3-PFBA	1077512.6	1.070	5.000	4.734	95	70-130	
E13C5-PFPeA	1090940.4	13C3-PFBA	1077512.6	1.012	5.000	4.809	96	70-130	
E13C3-PFBS	472175.2	13C3-PFBA	1077512.6	0.438	4.650	3.714	80	70-130	
E13C2-4:2-FTS	55982.7	13C2-PFOA	582923.0	0.096	4.670	3.763	81	70-130	
E13C5-PFHxA	776149.8	13C2-PFOA	582923.0	1.331	5.000	4.470	89	70-130	
E13C3-PFHxS	380428.8	13C2-PFOA	582923.0	0.653	4.730	4.186	88	70-130	
E13C4-PFHpA	606027.7	13C2-PFOA	582923.0	1.040	5.000	4.420	88	70-130	
E13C2-6:2-FTS	53085.0	13C2-PFOA	582923.0	0.091	4.750	5.642	119	70-130	
E13C8-PFOA	1017982.8	13C2-PFOA	582923.0	1.746	5.000	4.936	99	70-130	
E13C8-PFOS	348322.5	13C4-PFOS	335106.8	1.039	4.780	4.665	98	70-130	
E13C9-PFNA	654151.3	13C4-PFOS	335106.8	1.952	5.000	5.516	110	70-130	
E13C6-PFDA	772538.7	13C2-PFDA	454056.3	1.701	5.000	4.509	90	70-130	
E13C2-8:2-FTS	37896.0	13C2-PFDA	454056.3	0.083	4.790	5.449	114	70-130	
E13C8-PFOA	727466.8	13C2-PFDA	454056.3	1.602	5.000	3.789	76	70-130	
Ed3-NMeFOSAA	152281.2	13C2-PFDA	454056.3	0.335	5.000	5.943	119	70-130	
E13C7-PFUnDA	477432.8	13C2-PFDA	454056.3	1.051	5.000	5.158	103	70-130	
Ed5-NEtFOSAA	86211.7	13C2-PFDA	454056.3	0.190	5.000	4.191	84	70-130	
E13C2-PFDoDA	929265.1	13C2-PFDA	454056.3	2.047	5.000	4.295	86	70-130	
Ed7-NMePFOSAE	283634.2	13C2-PFDA	454056.3	0.625	5.000	3.598	72	70-130	
Ed3-NMePFOSA	92603.1	13C2-PFDA	454056.3	0.204	5.000	3.716	74	70-130	
Ed9-NEtPFOSAE	231753.5	13C2-PFDA	454056.3	0.510	5.000	3.520	70	70-130	
Ed5-NEtPFOSA	77690.1	13C2-PFDA	454056.3	0.171	5.000	3.851	77	70-130	
E13C2-PFTeDA	614314.6	13C2-PFDA	454056.3	1.353	5.000	4.016	80	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

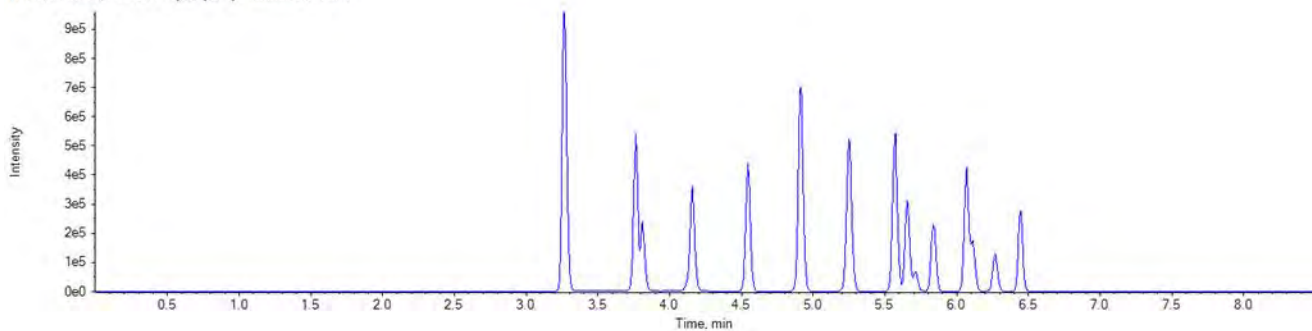
Sample Name: Instrument Blank      Instrument Name: LM27631      File Name: 18DEC11D-02.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	N/A	N/A	N/A		A	13C4-PFBA	3.26	1152451.4	N/A	
PFPeA	N/A	N/A	N/A		A	13C5-PFPeA	3.76	1090940.4	N/A	
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.81	472175.2	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.12	55982.7	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	776149.8	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.81	472175.2	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.54	606027.7	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	380428.8	N/A	
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.90	53085.0	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	380428.8	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	1017982.8	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	348322.5	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	654151.3	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.24	348322.5	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	772538.7	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	37896.0	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.66	727466.8	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	152281.2	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.24	348322.5	N/A	
PfUnDA	N/A	N/A	N/A		A	13C7-PFUnDA	5.84	477432.8	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.85	86211.7	N/A	
PFDaDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.07	929265.1	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	37896.0	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.11	283634.2	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.12	92603.1	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.24	348322.5	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.26	231753.5	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.28	77690.1	N/A	
PFTrDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.07	929265.1	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	614314.6	N/A	
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	614314.6	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	614314.6	N/A	

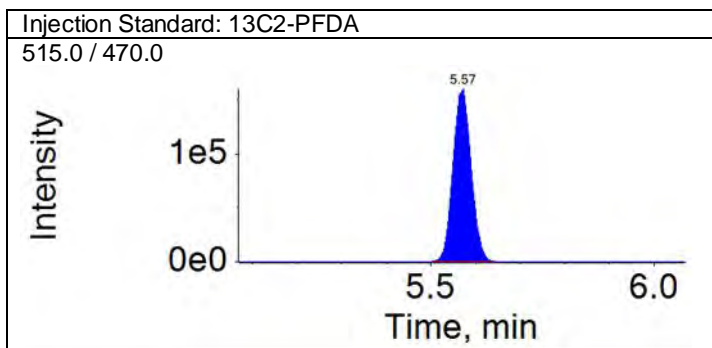
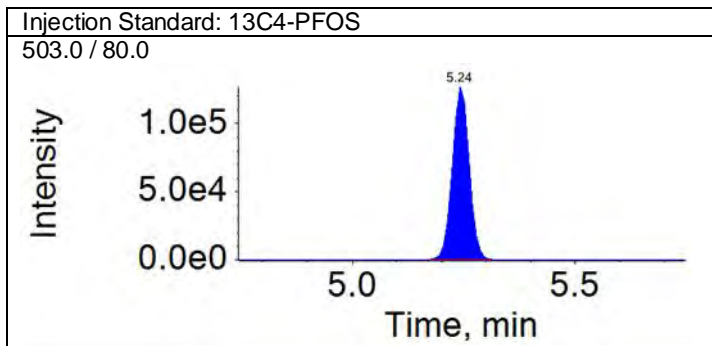
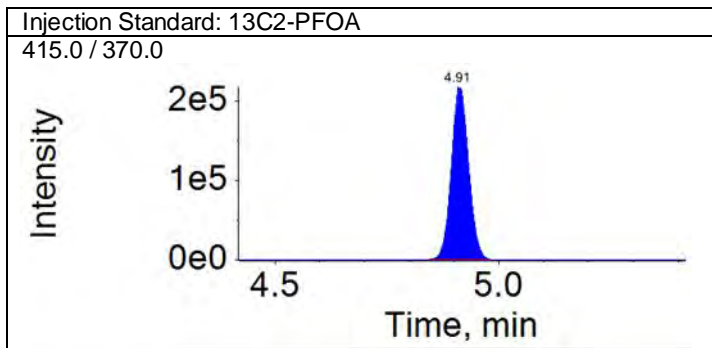
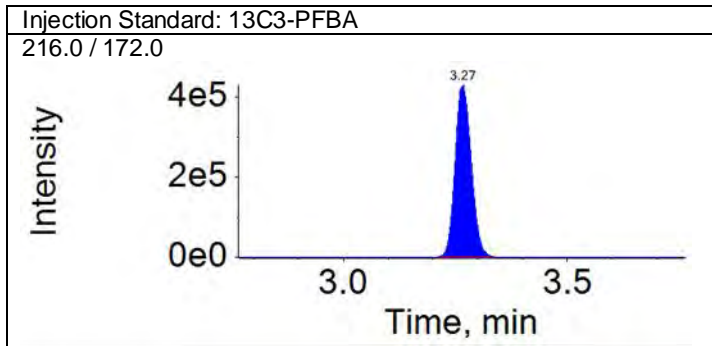
**Total Ion Chromatogram**

TIC from 18DEC11D-02.wiff (sample 1) - Instrument Blank



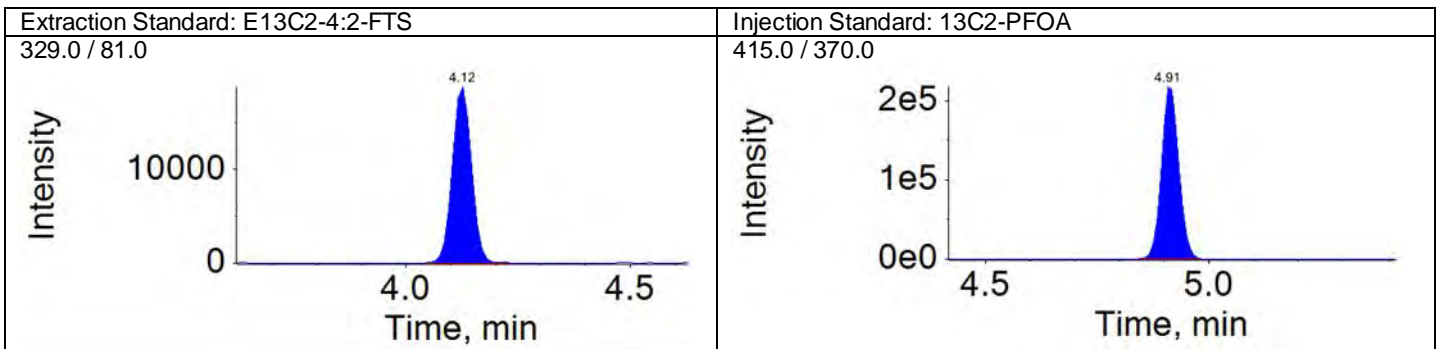
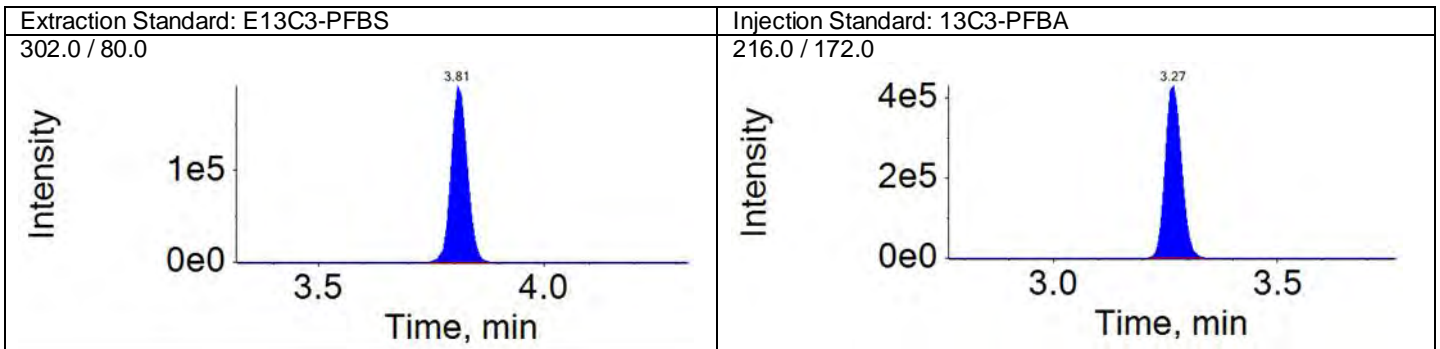
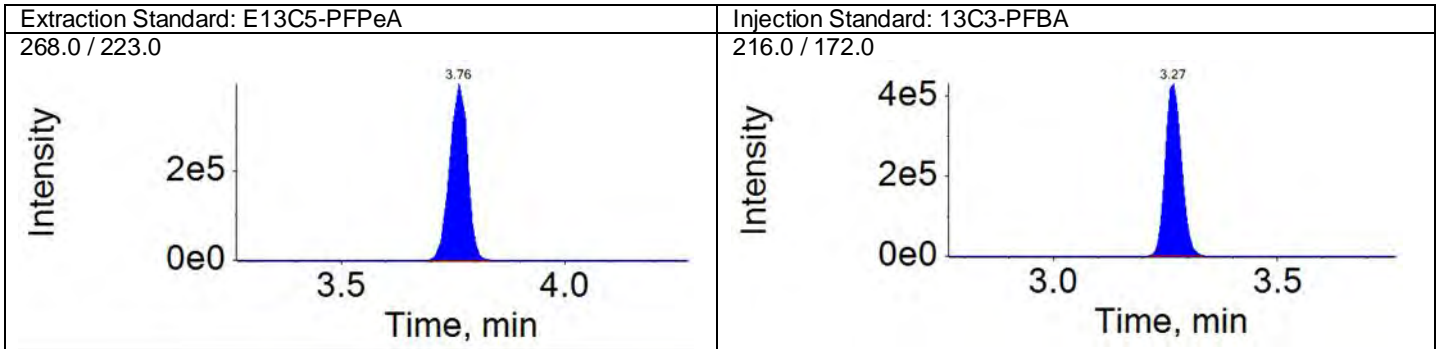
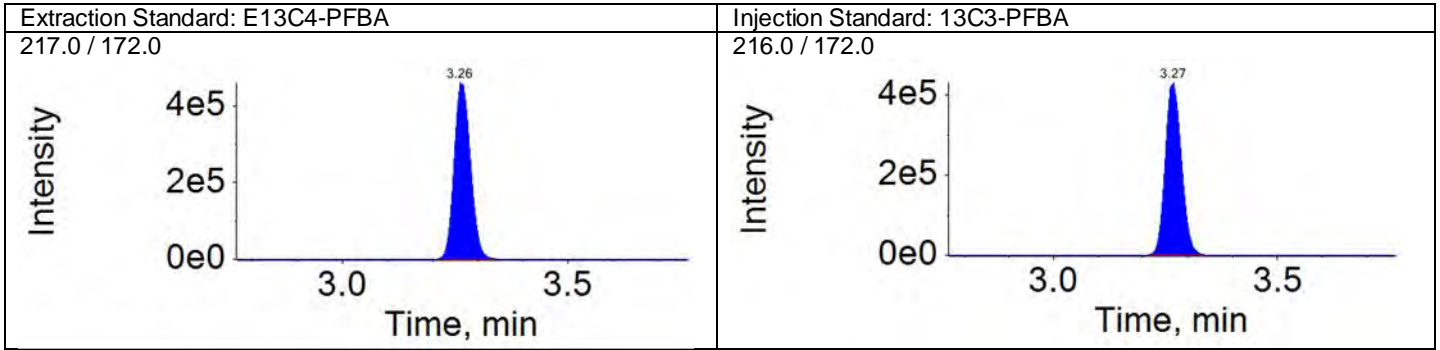
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QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

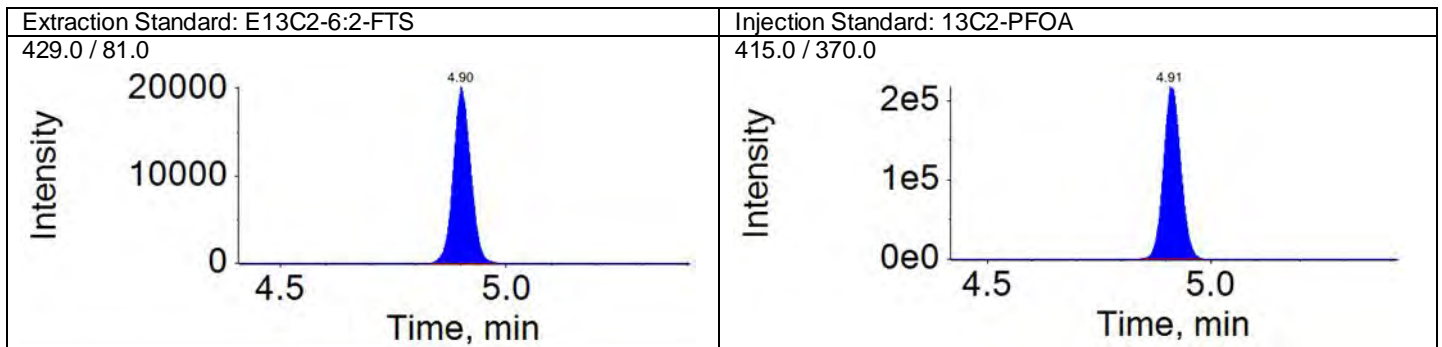
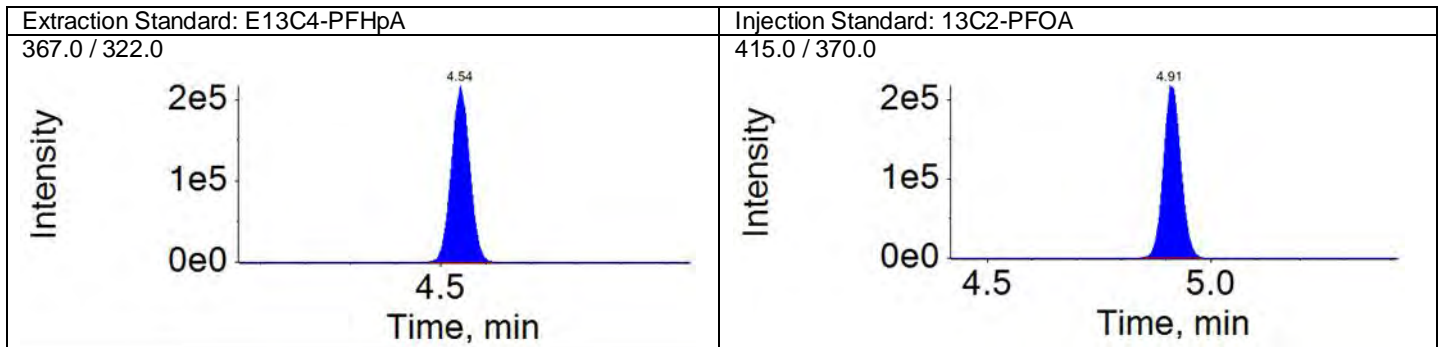
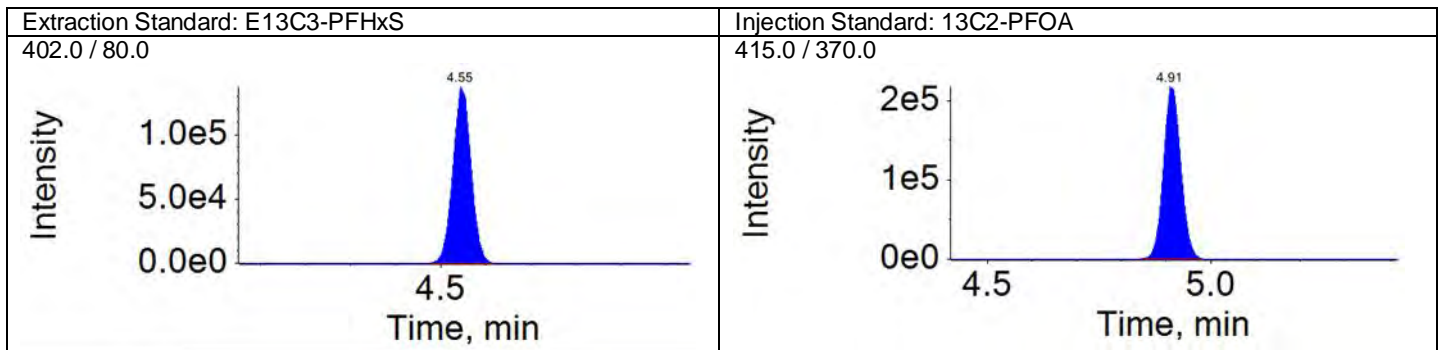
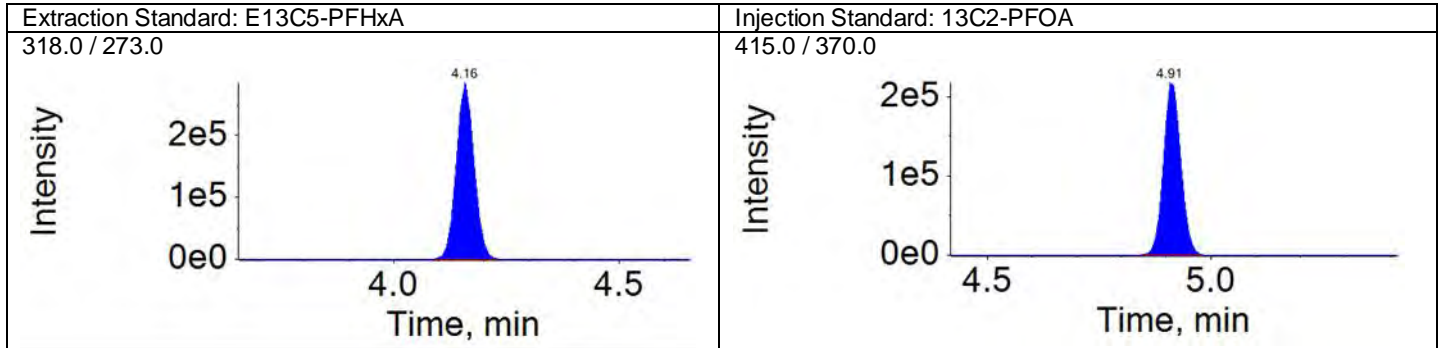
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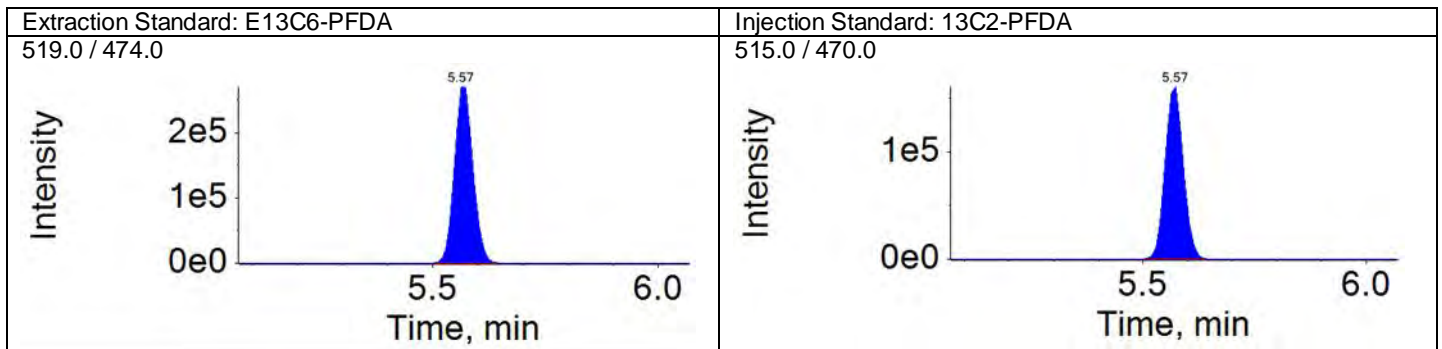
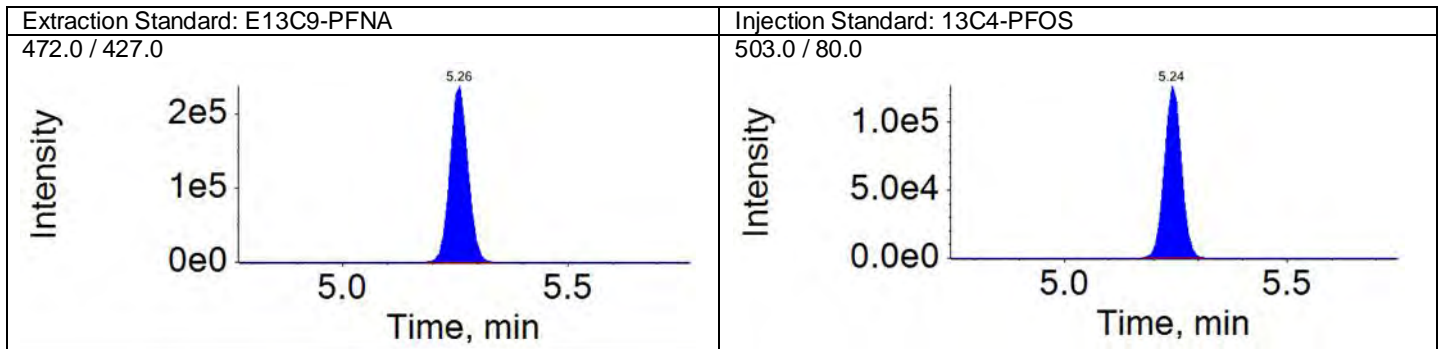
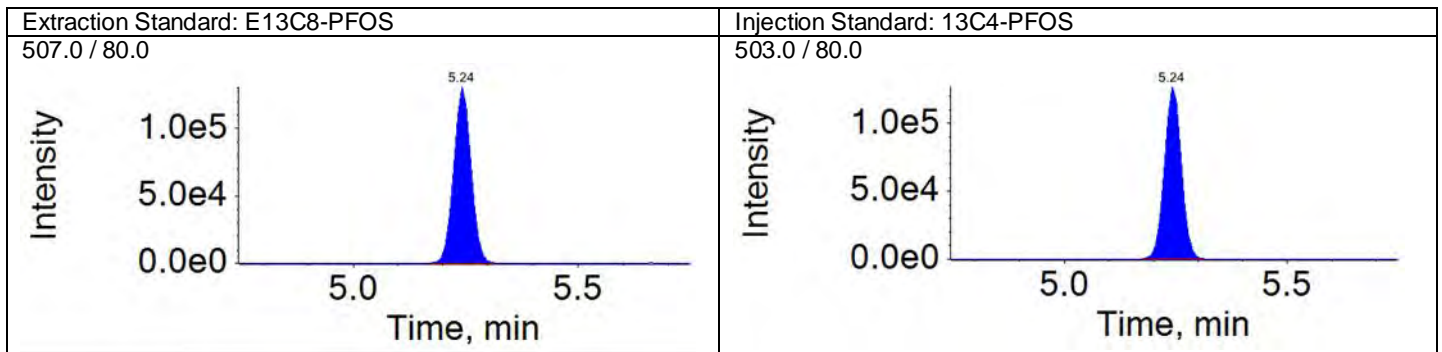
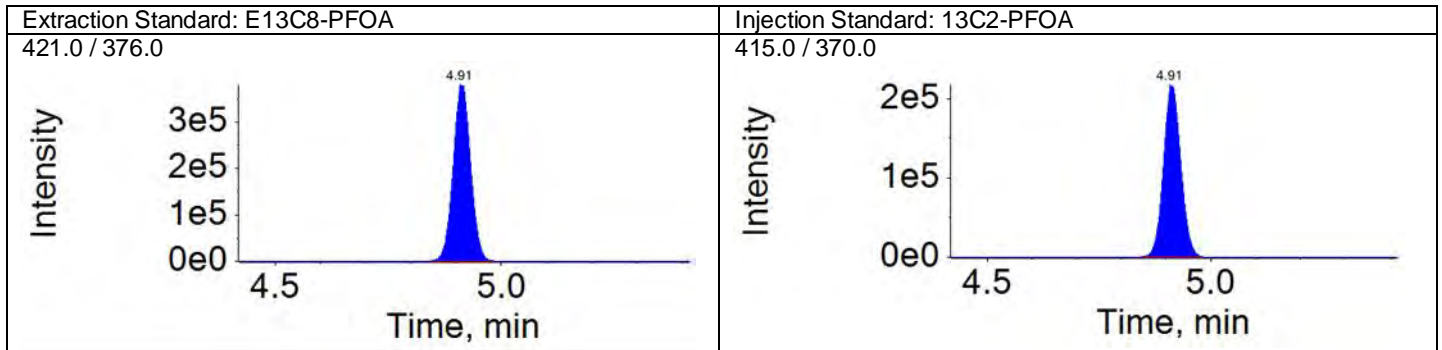
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Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
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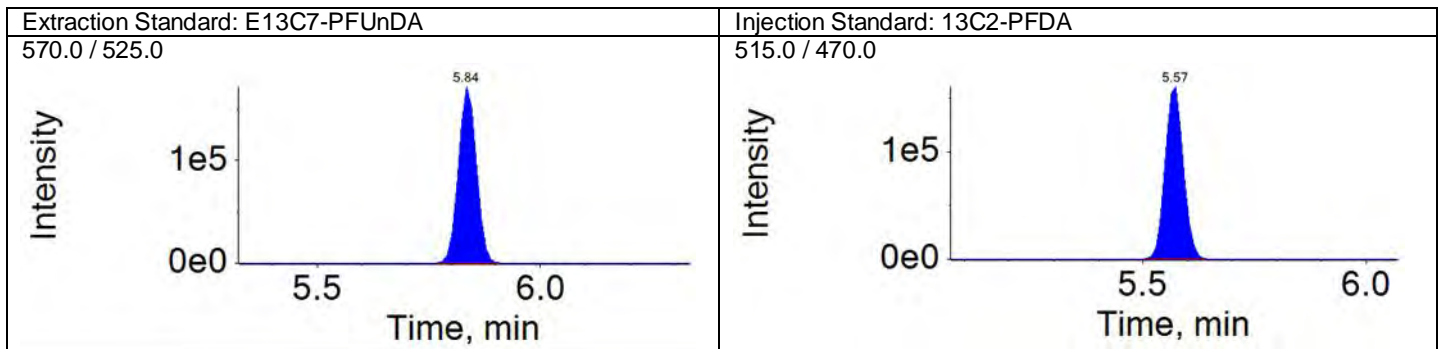
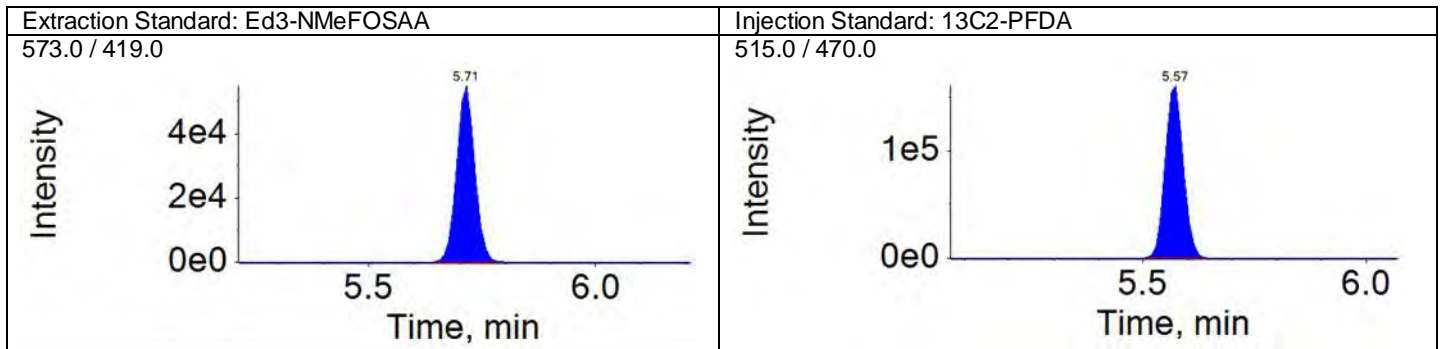
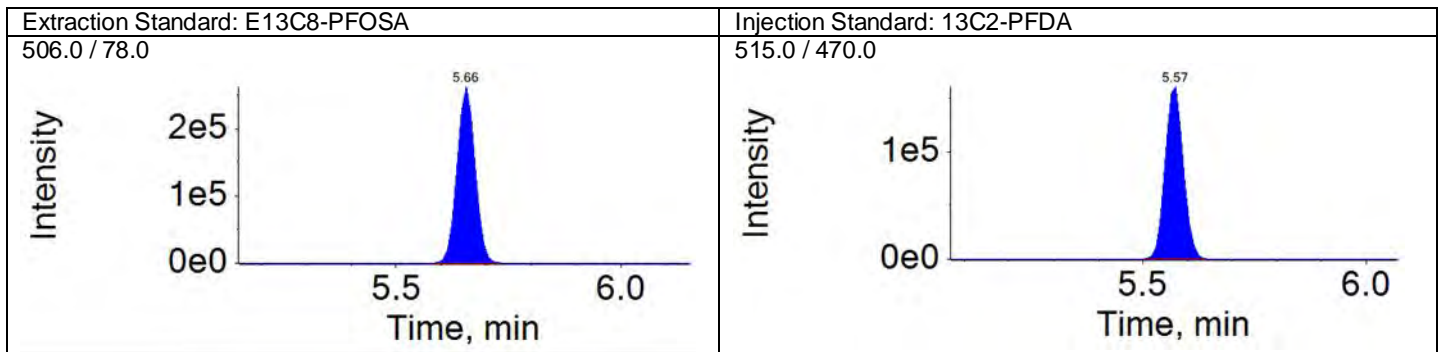
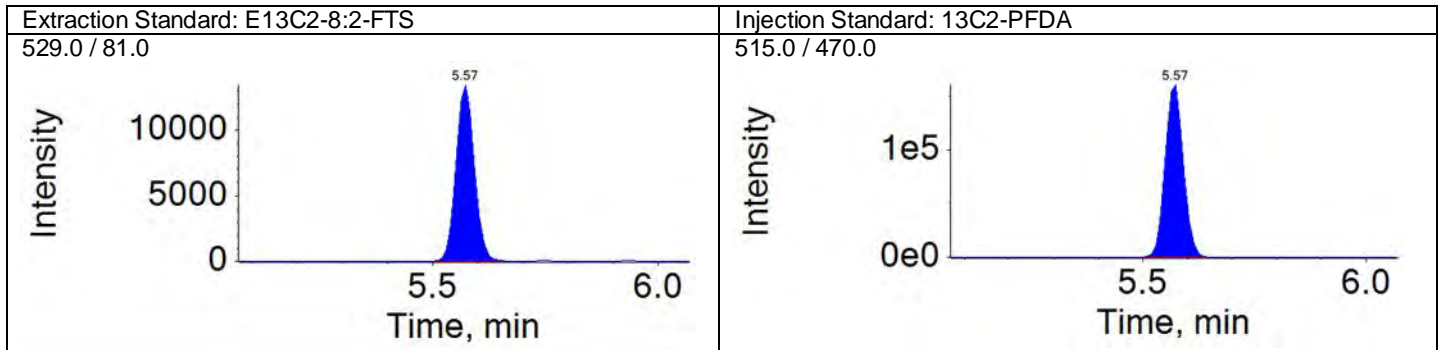
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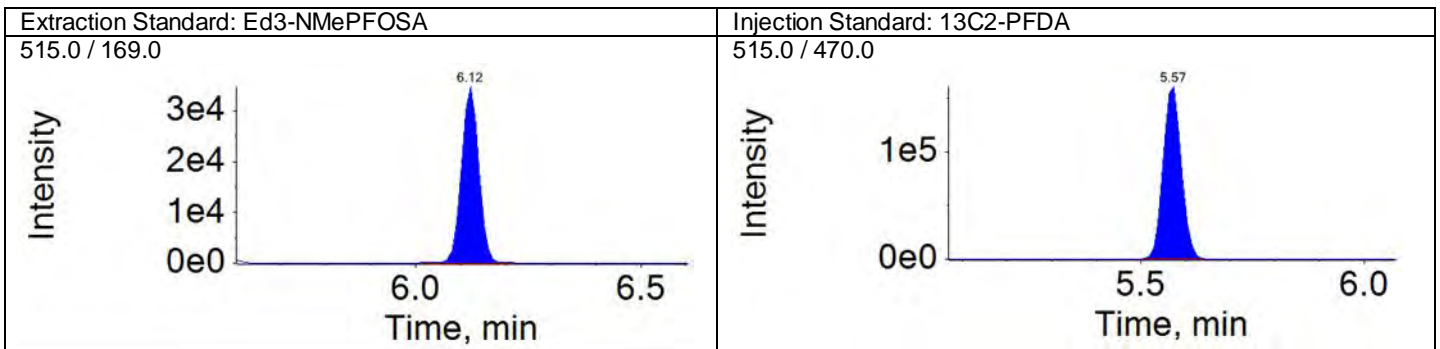
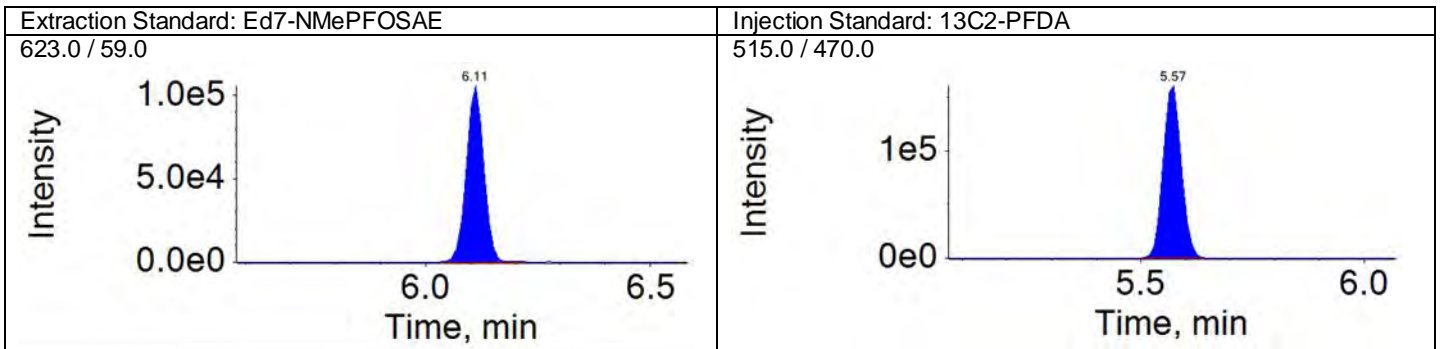
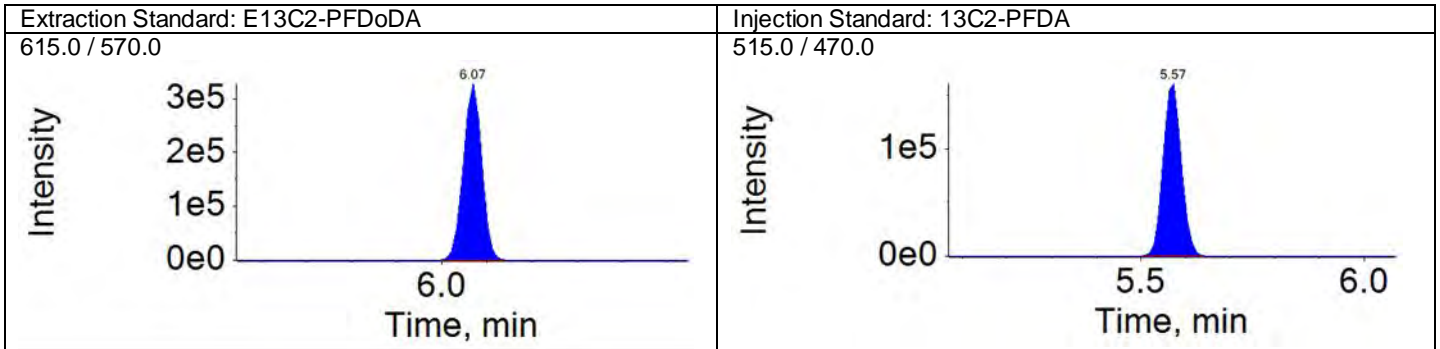
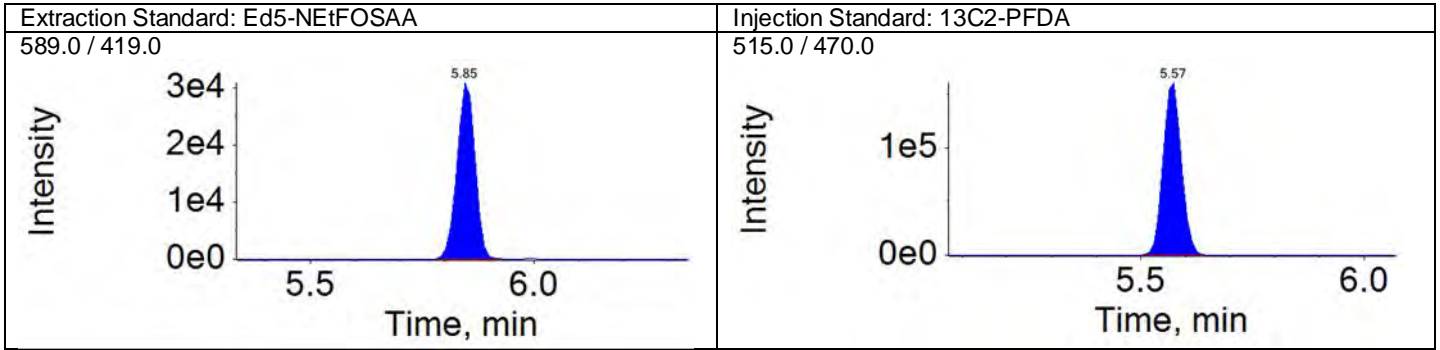
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Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
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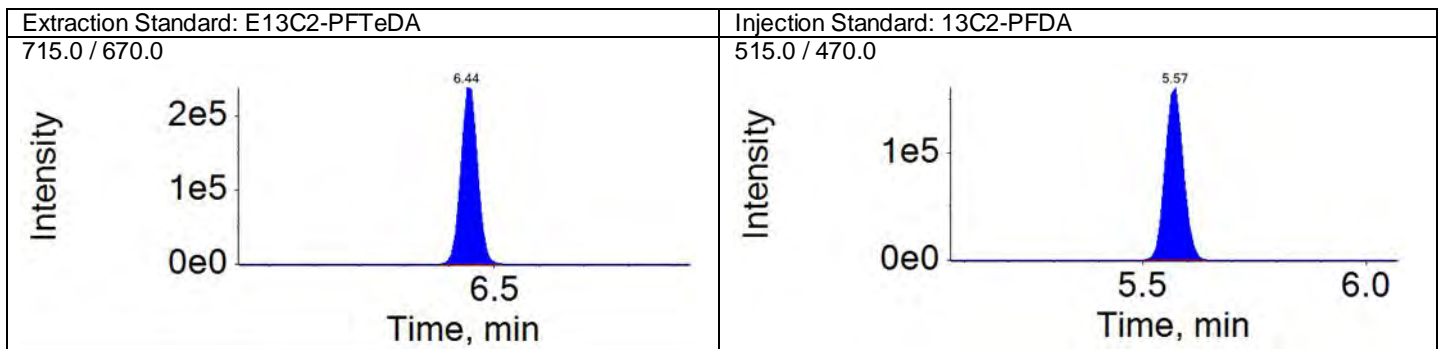
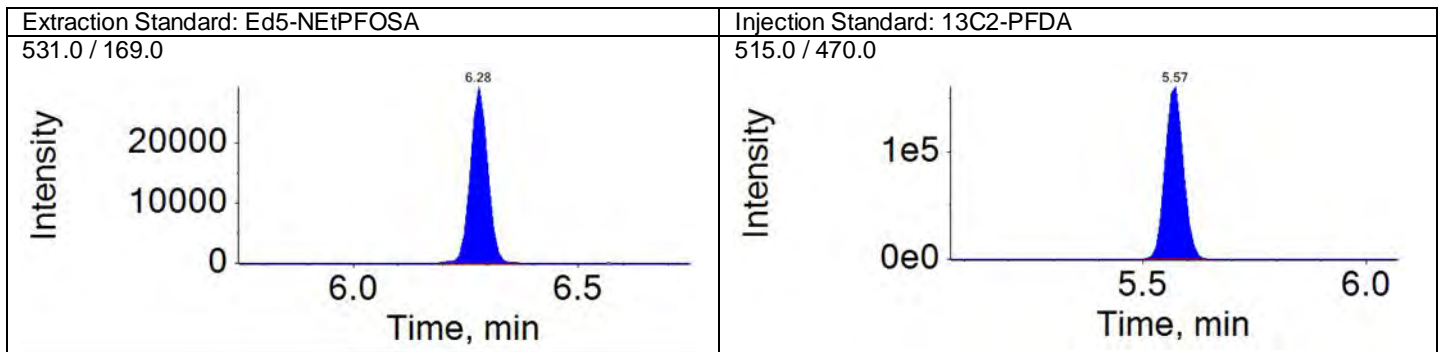
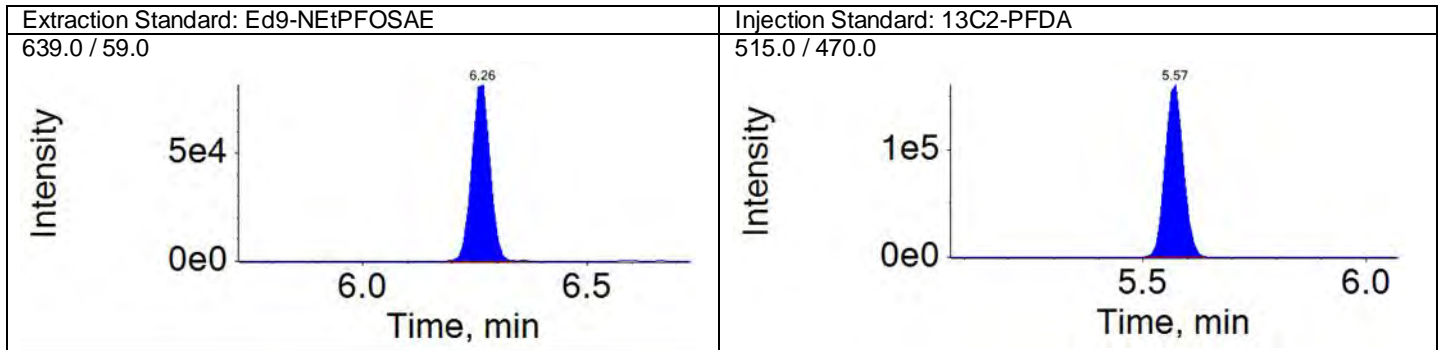
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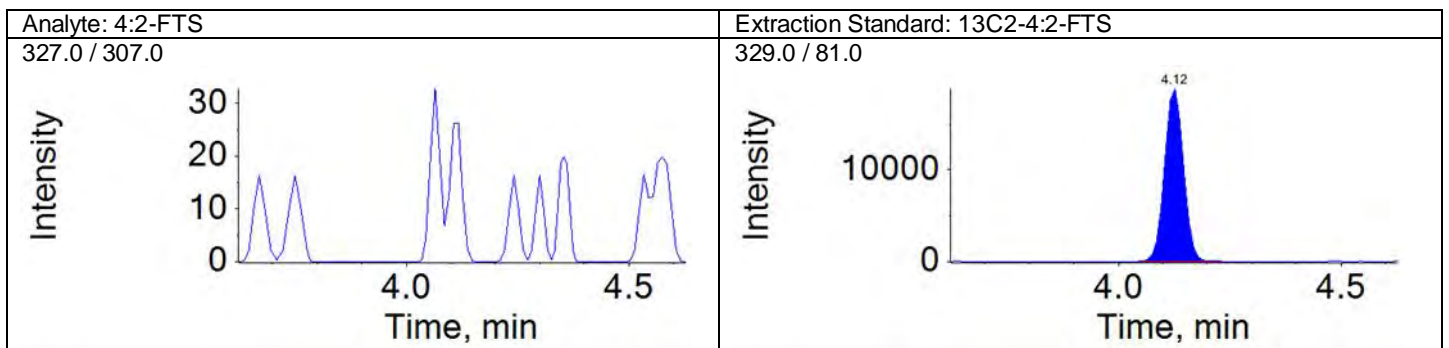
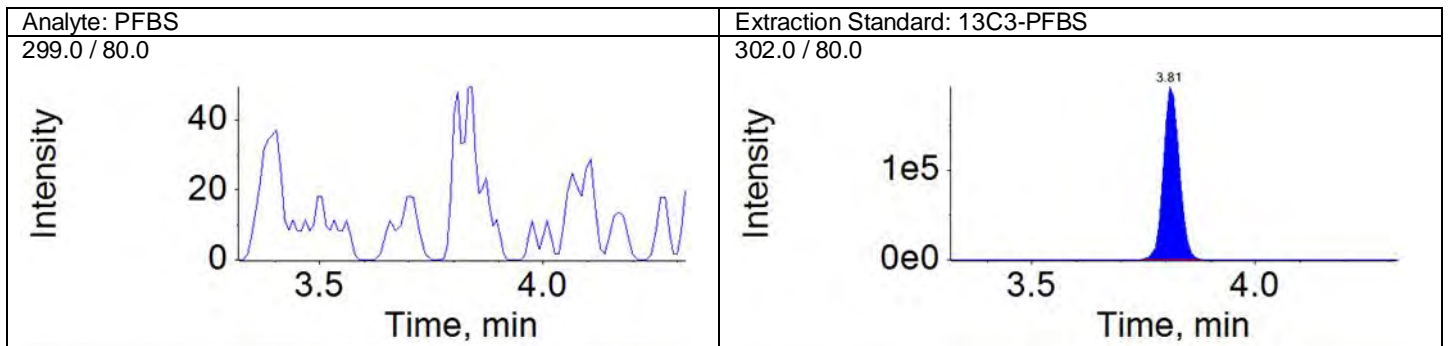
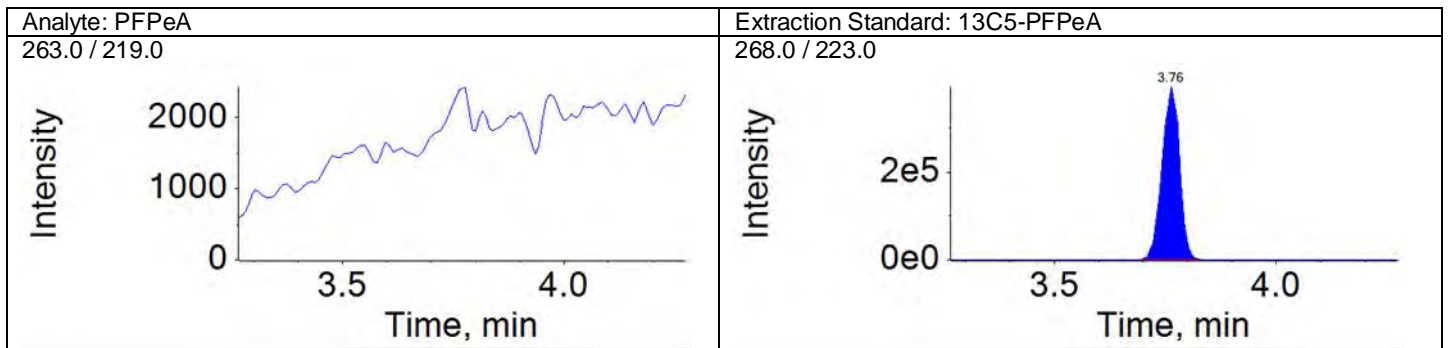
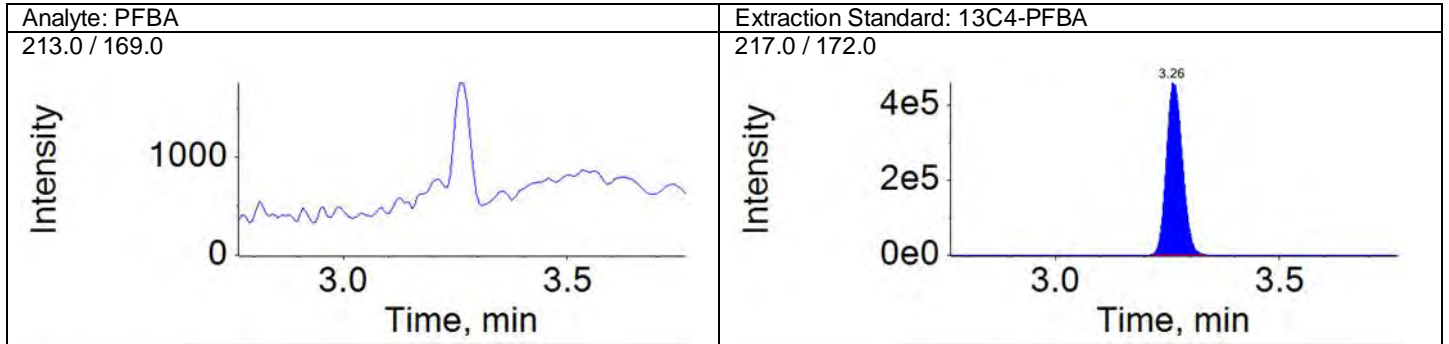
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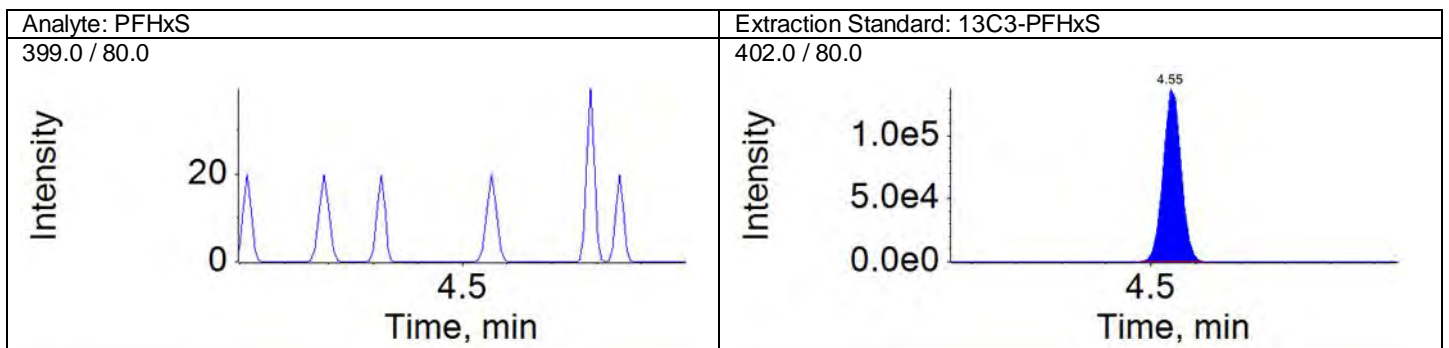
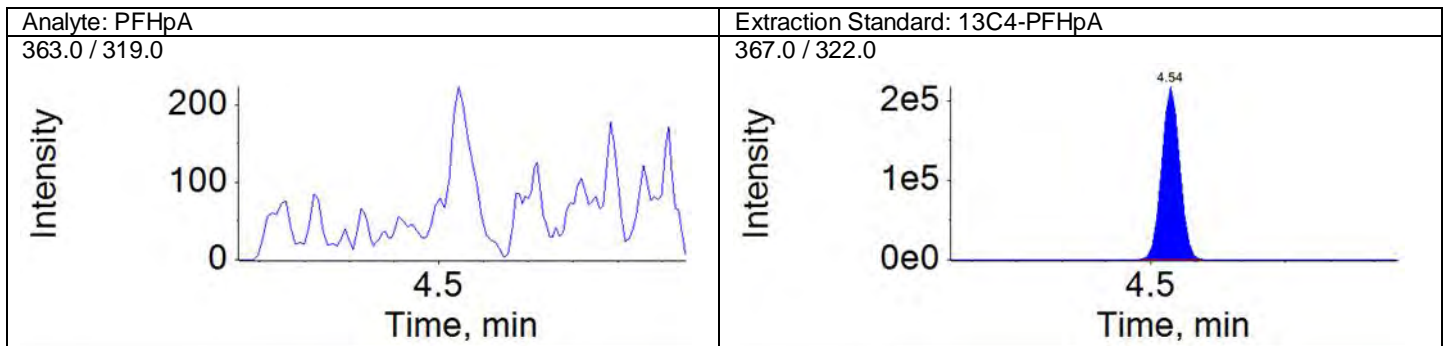
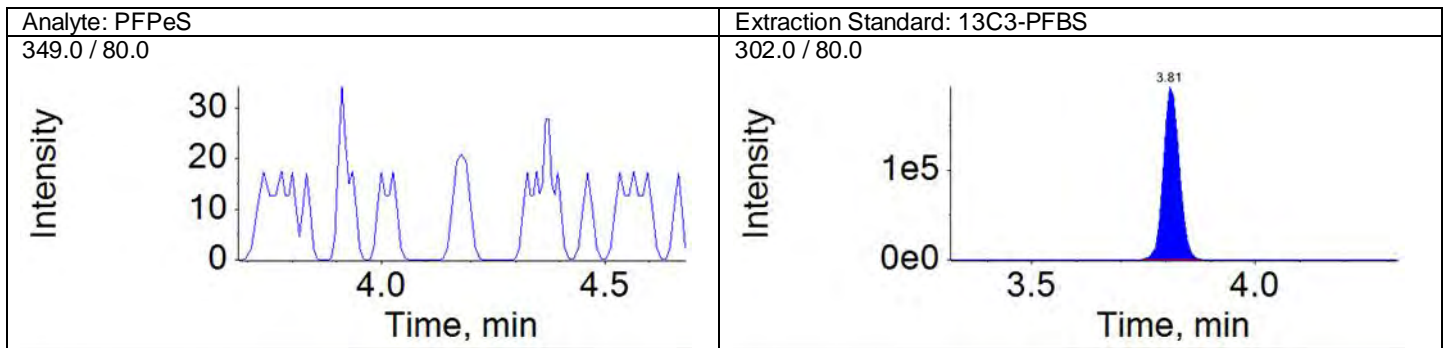
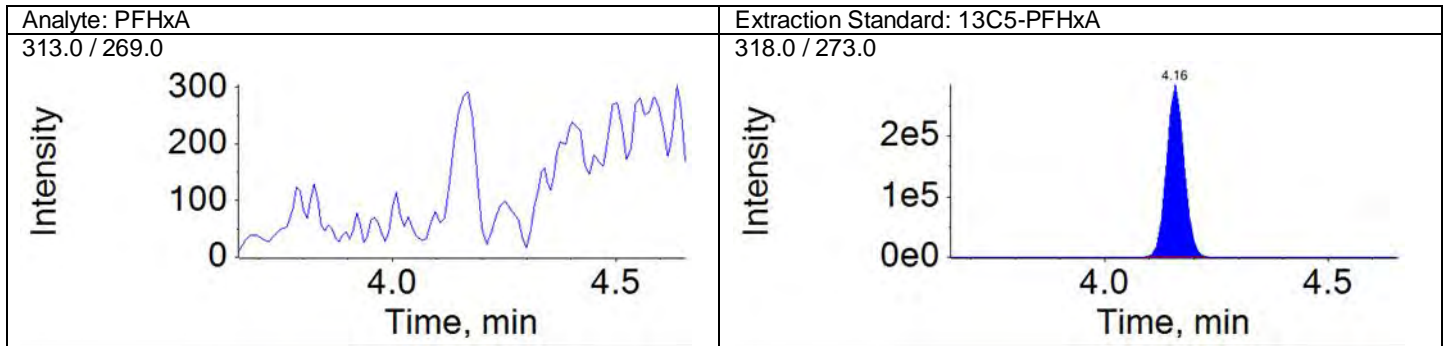
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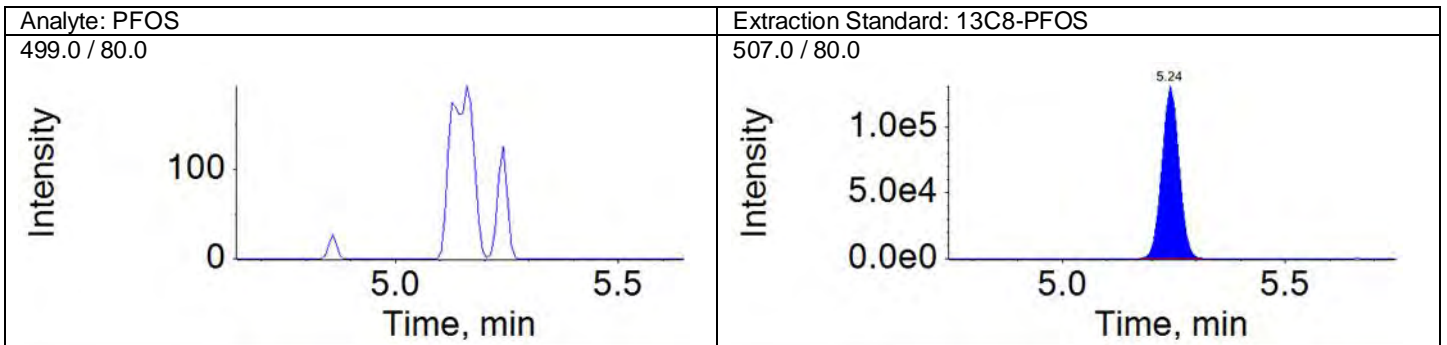
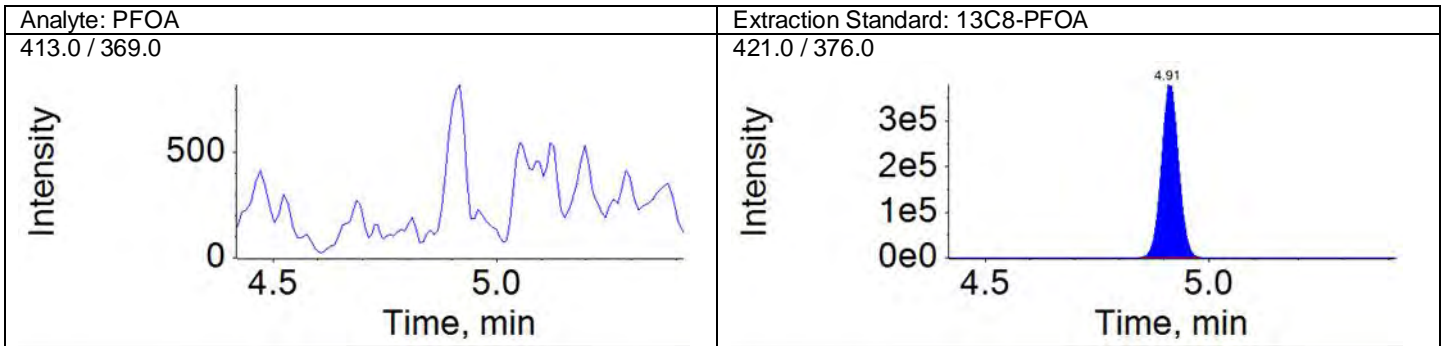
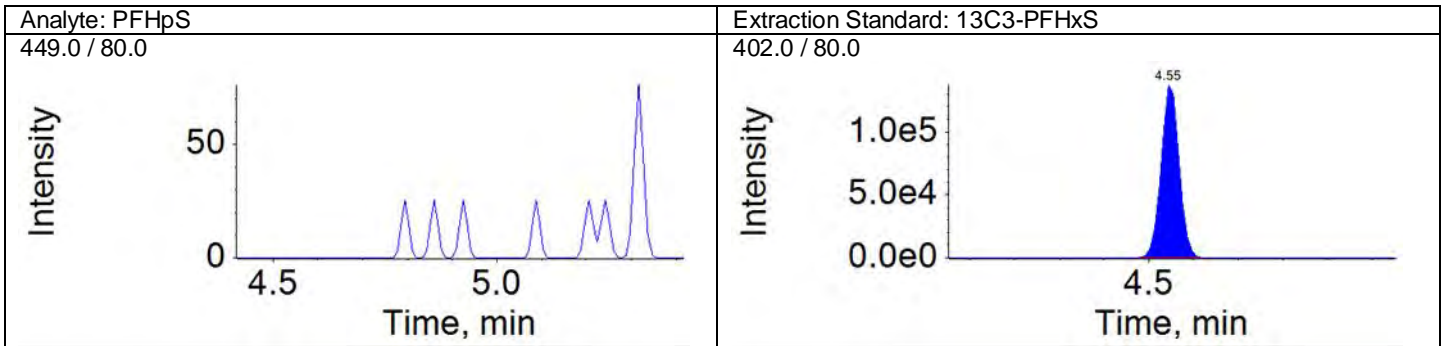
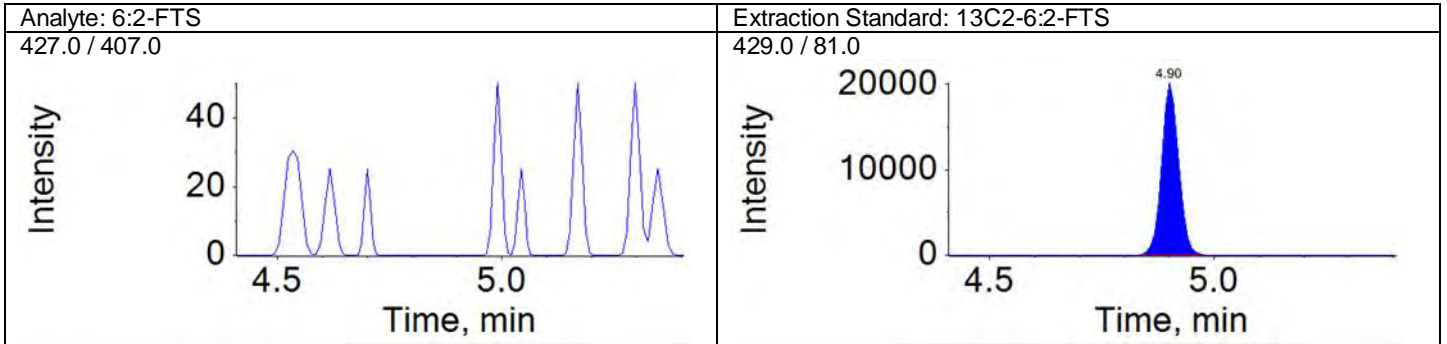
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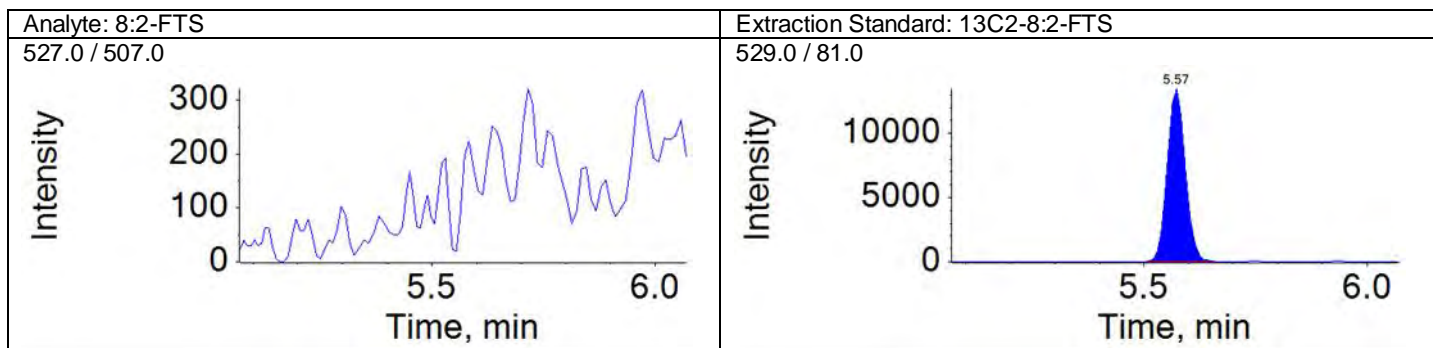
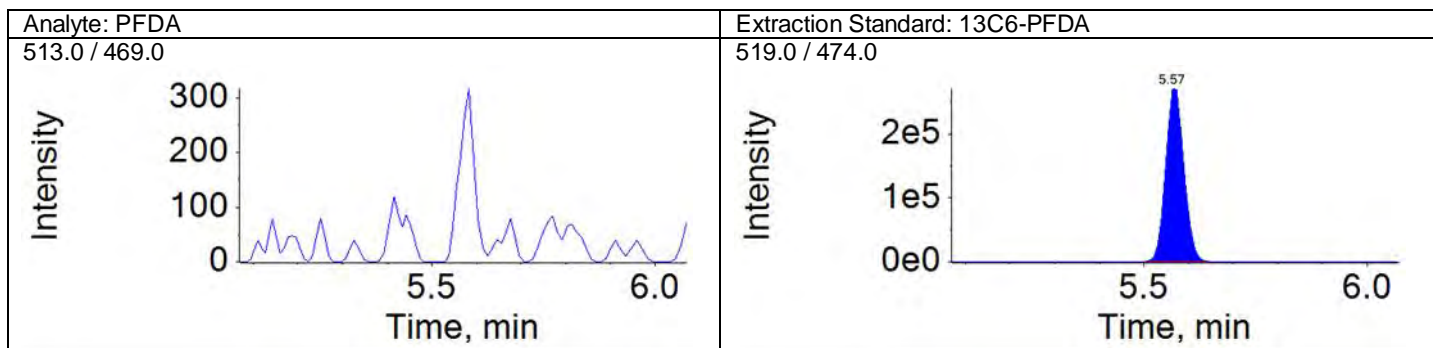
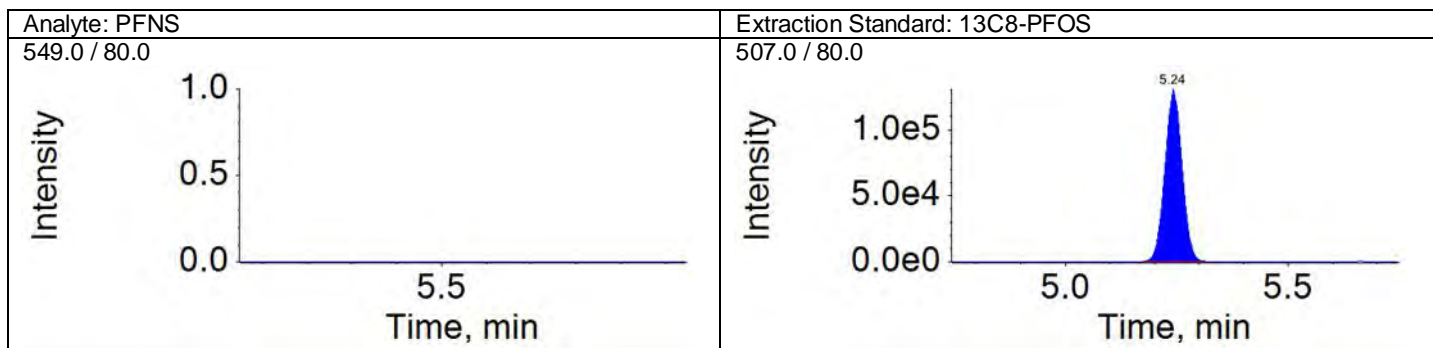
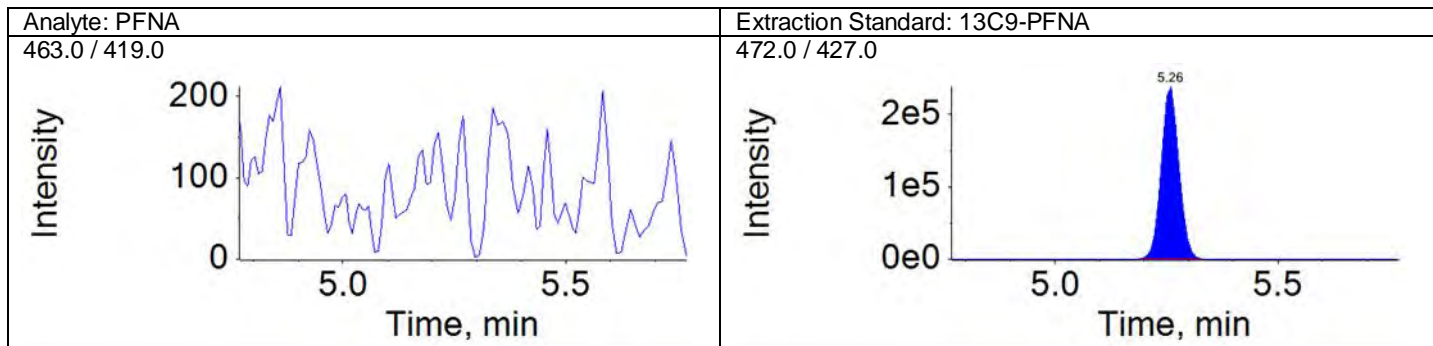
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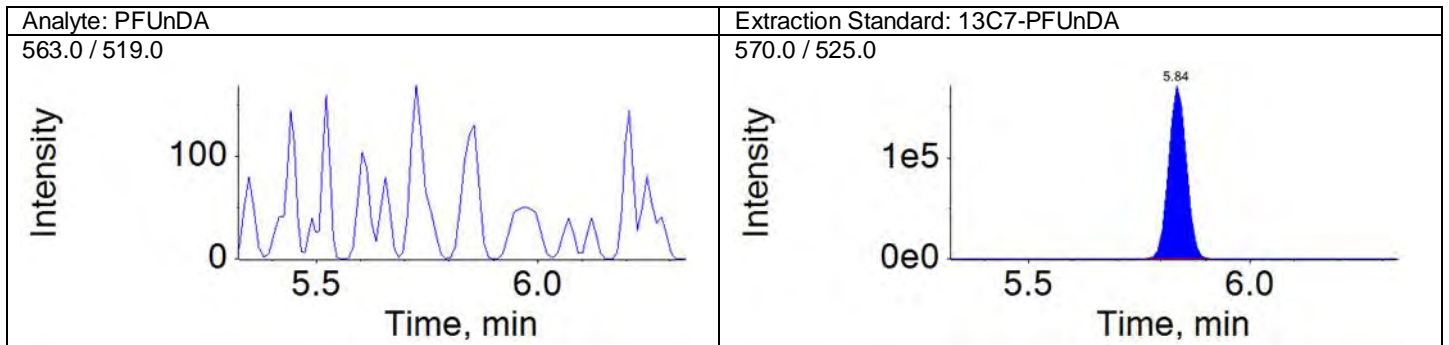
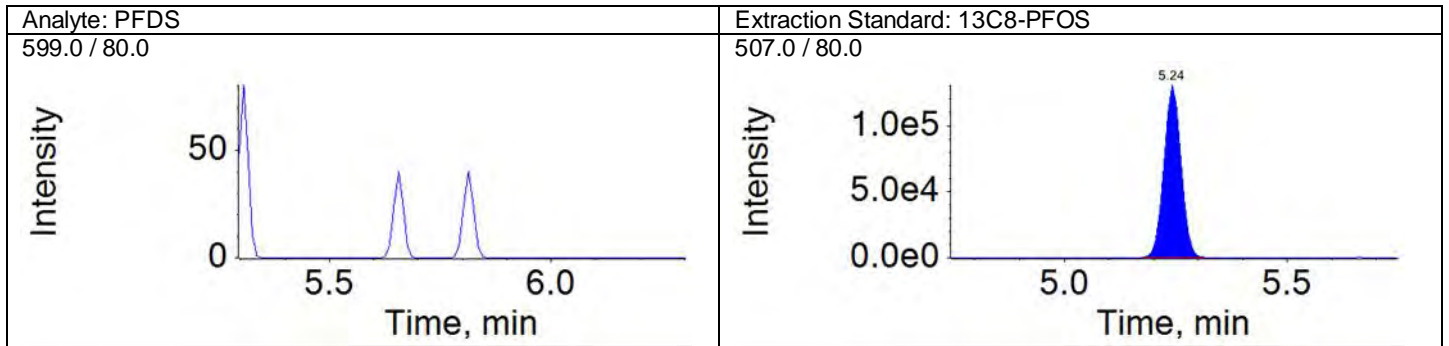
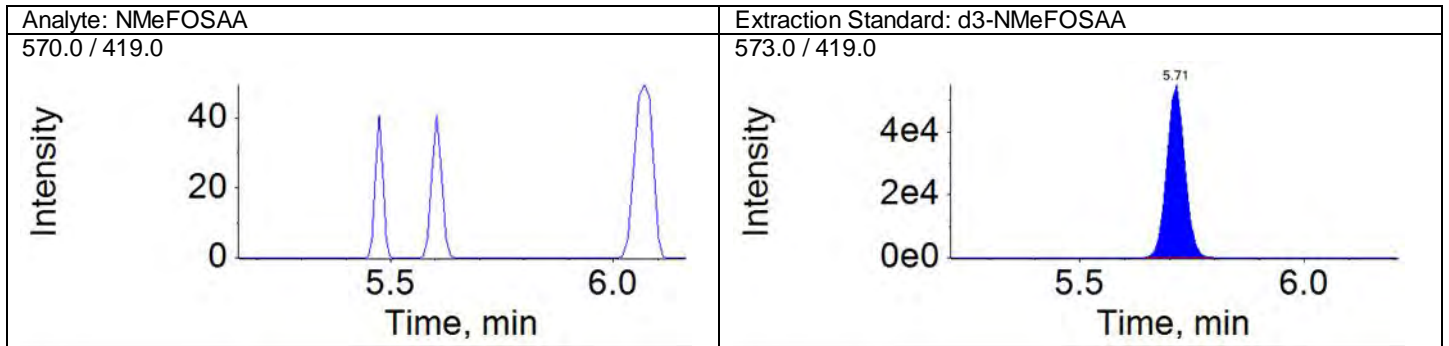
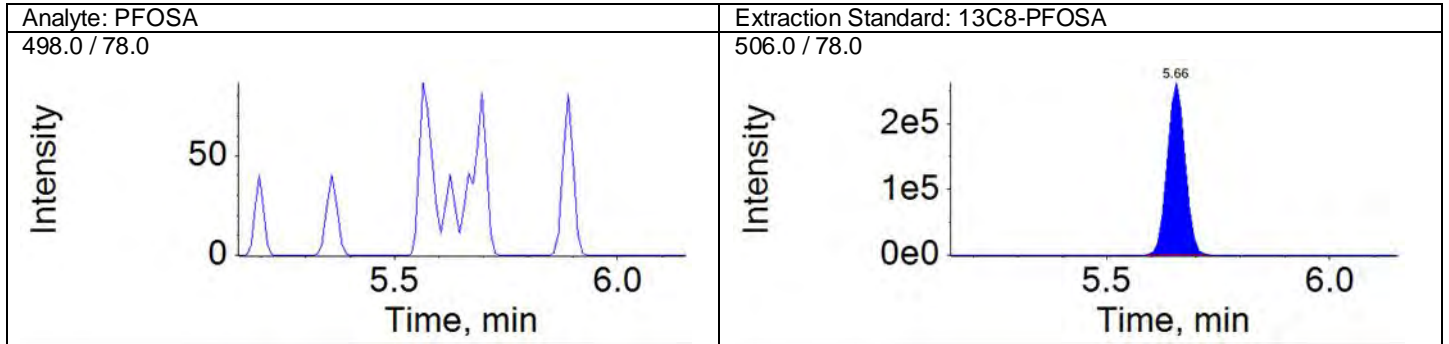
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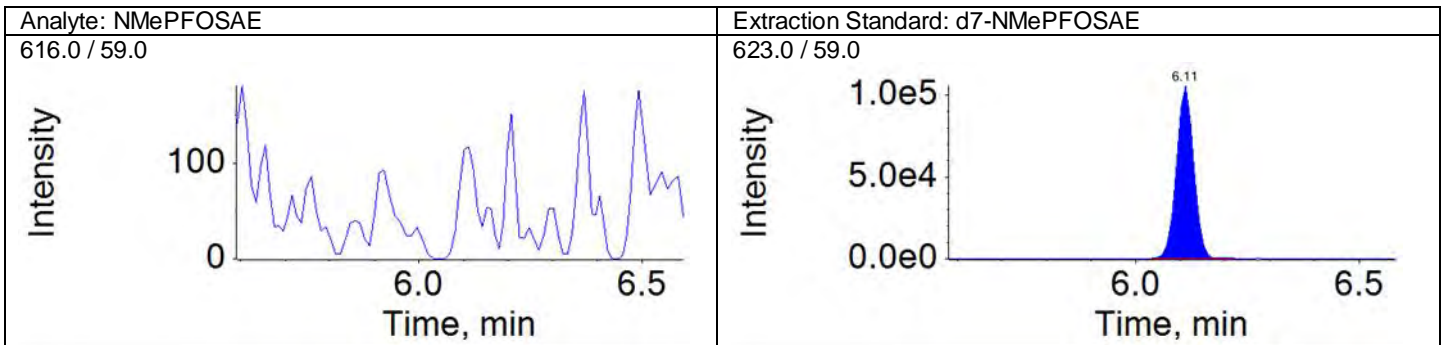
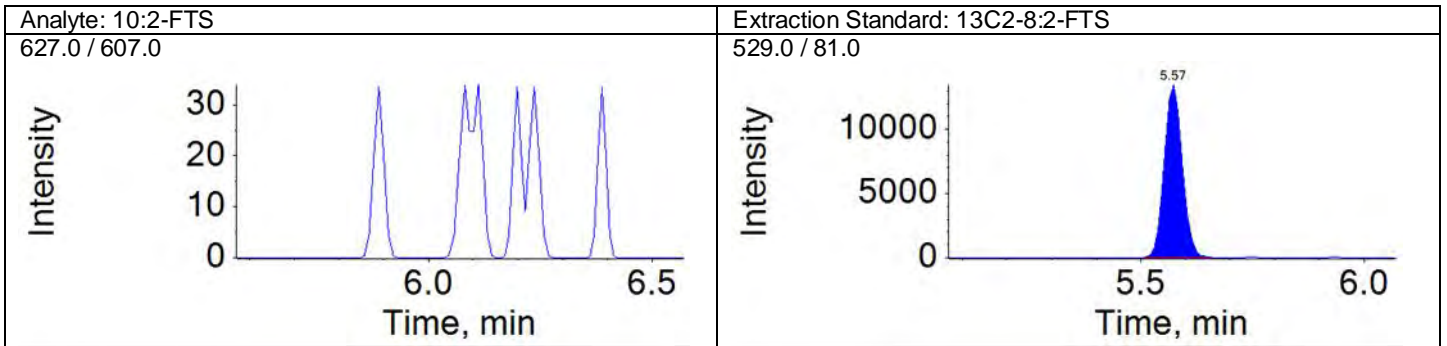
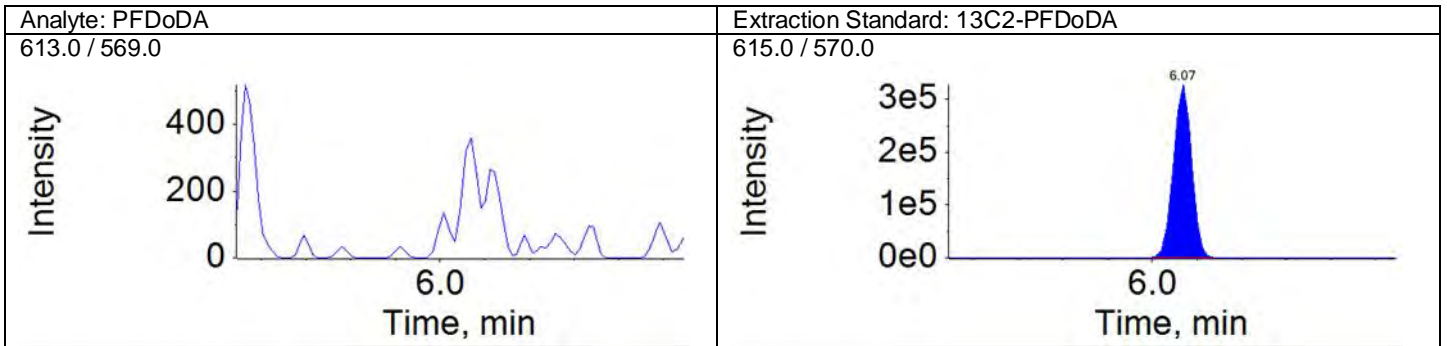
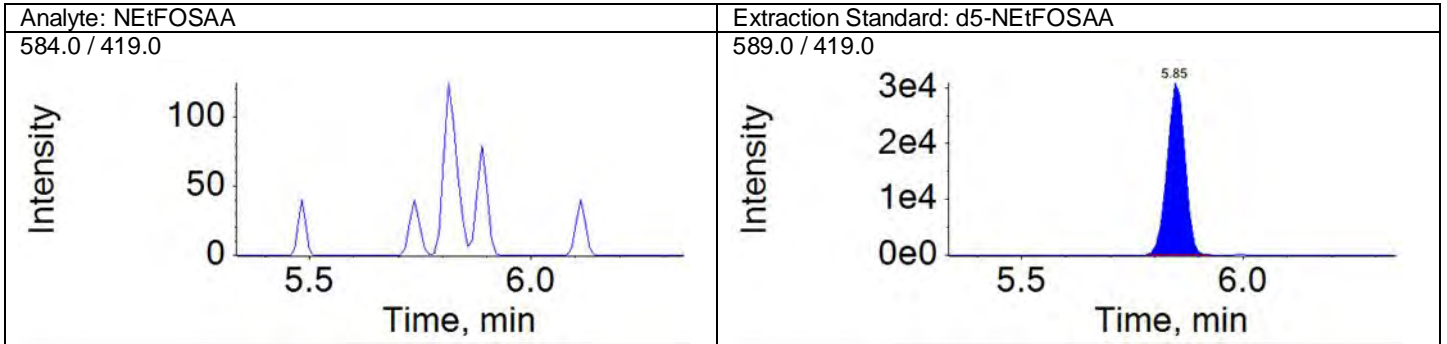
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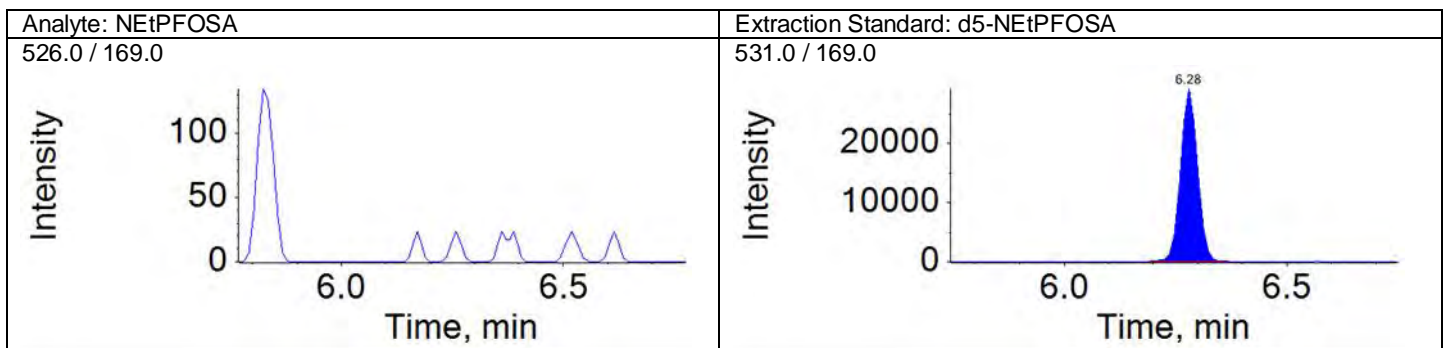
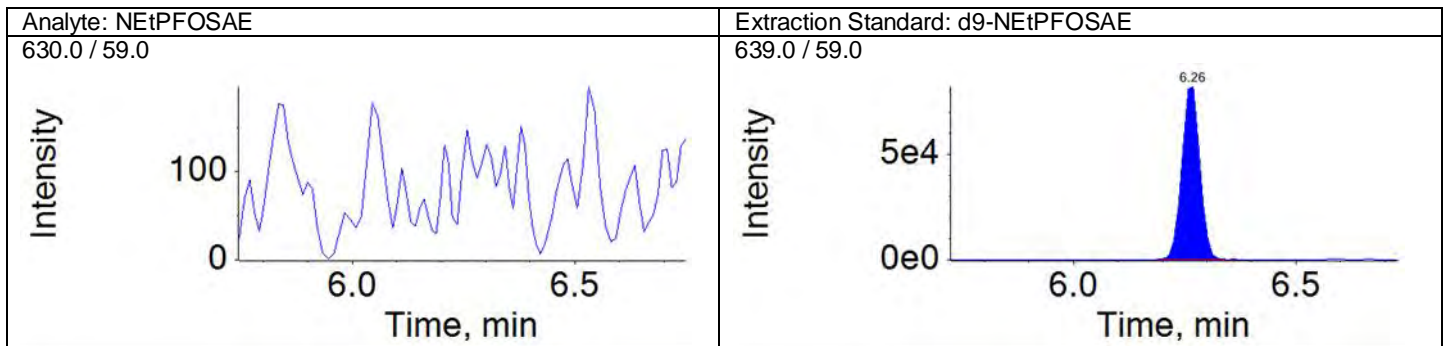
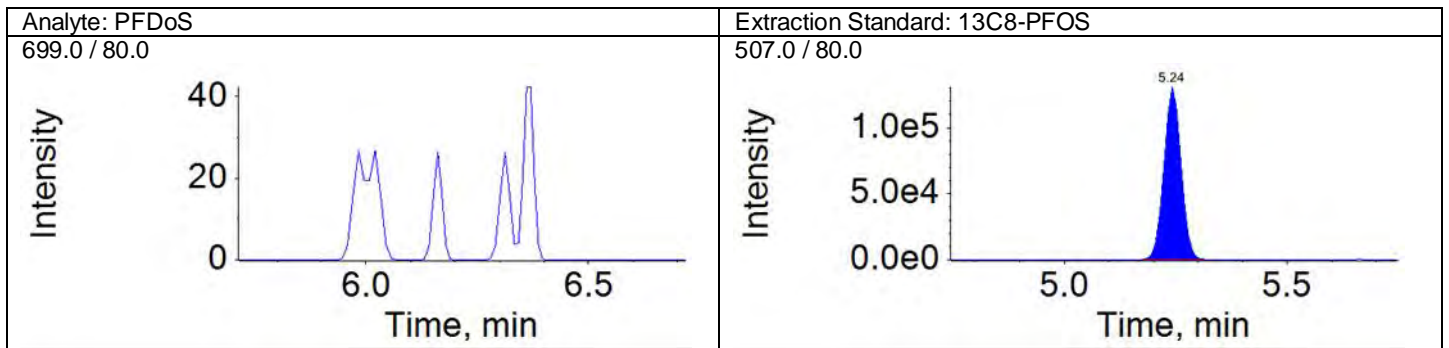
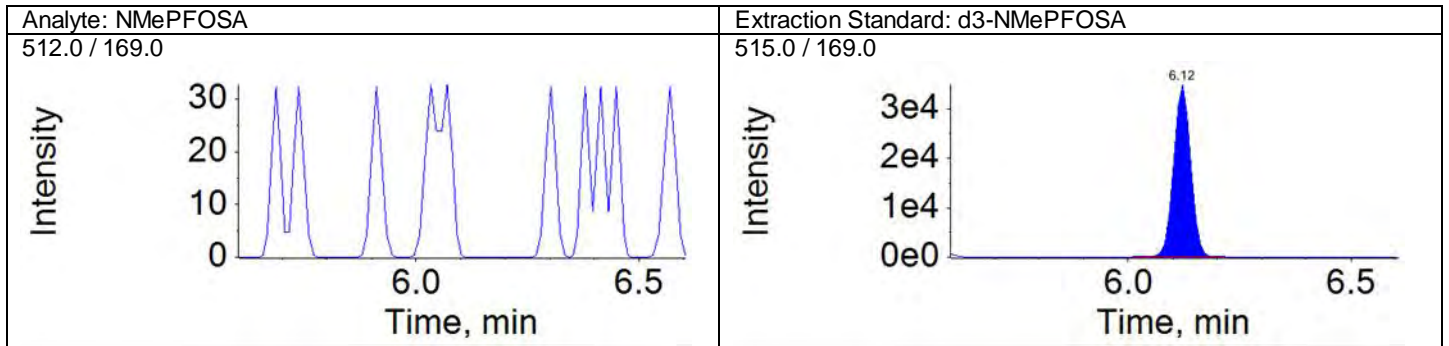
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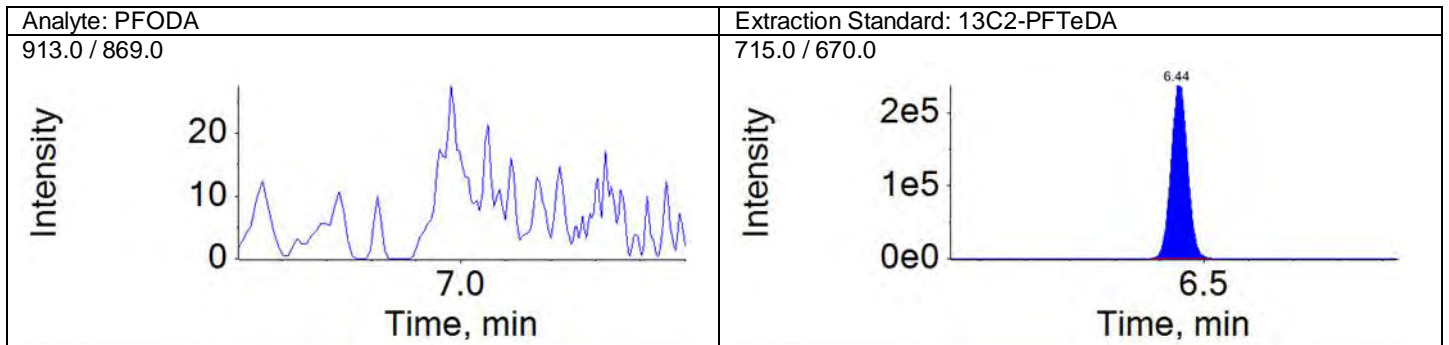
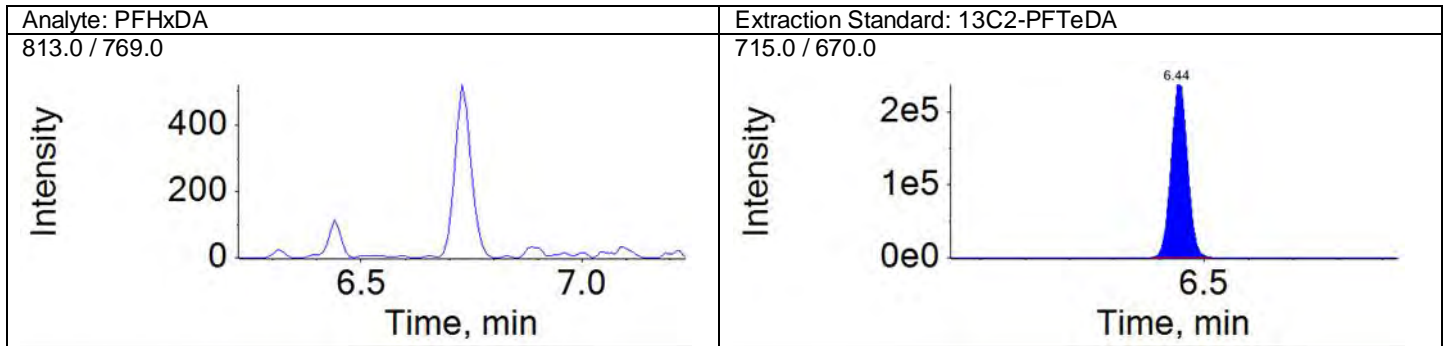
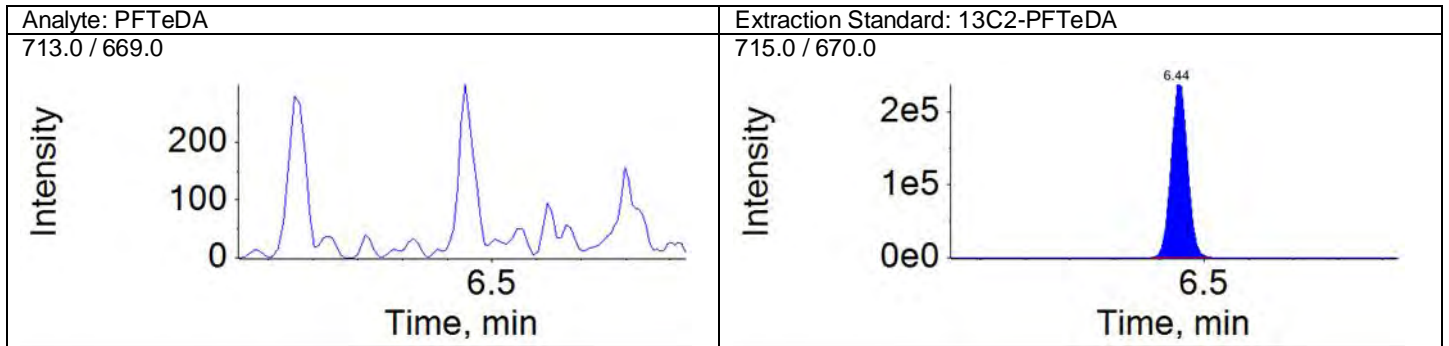
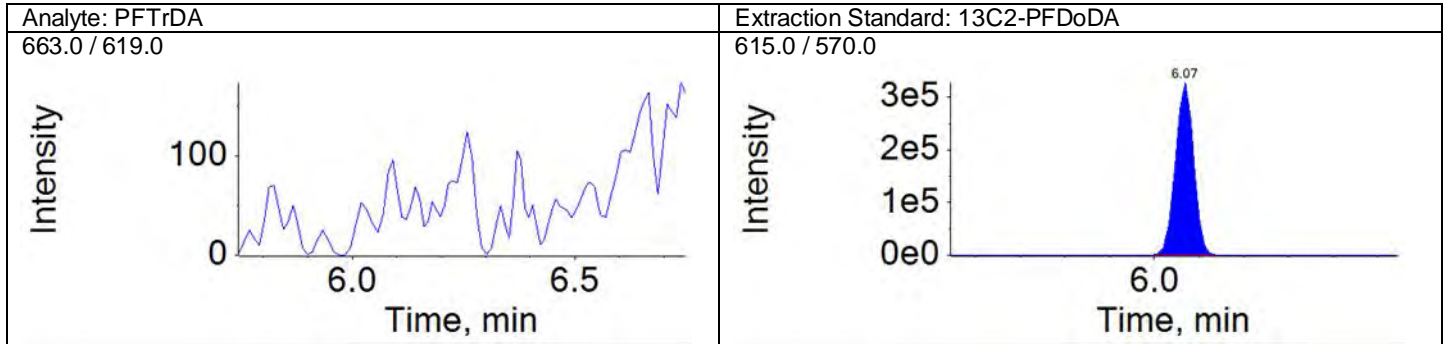
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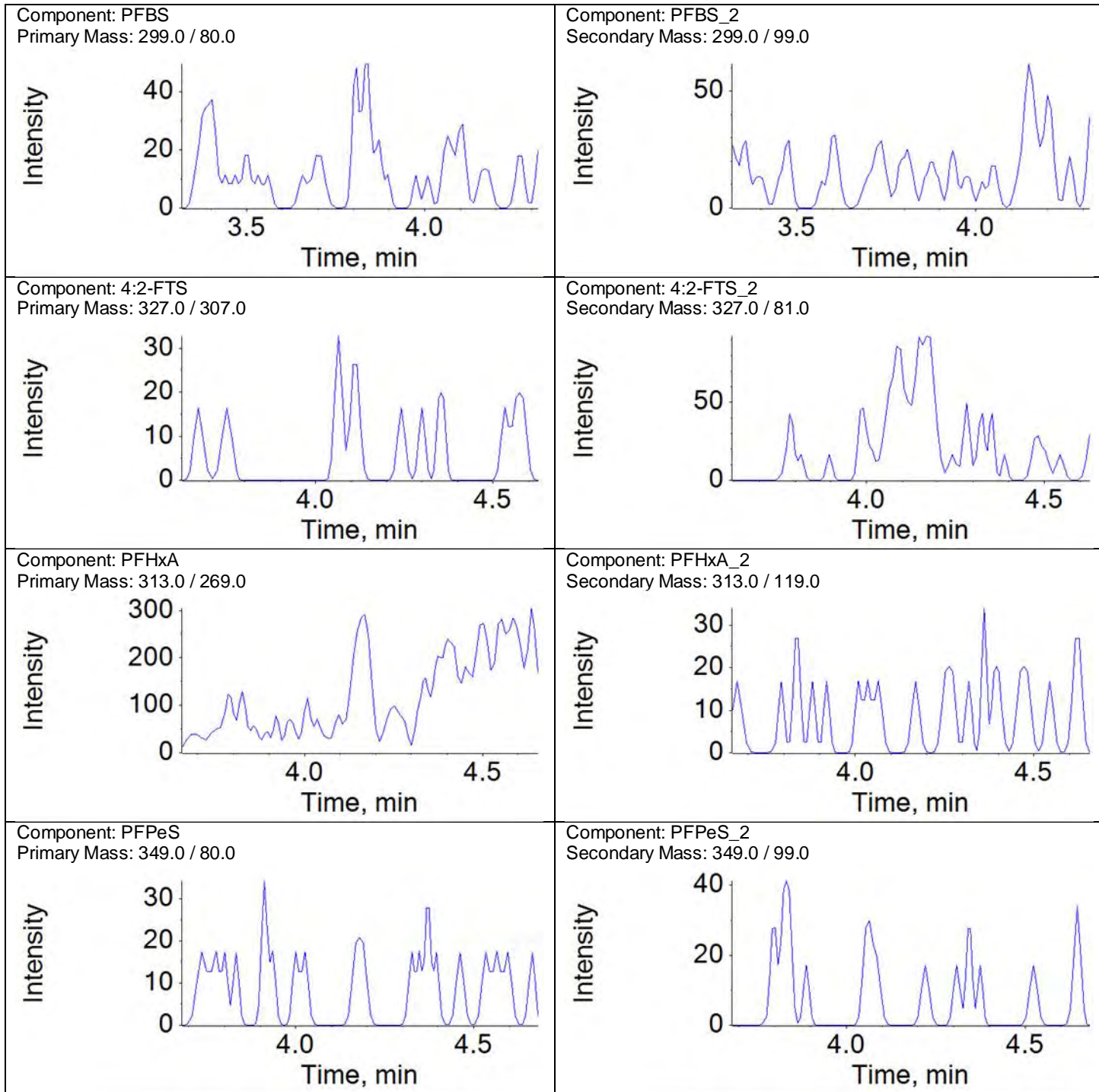


Ion Ratio Report

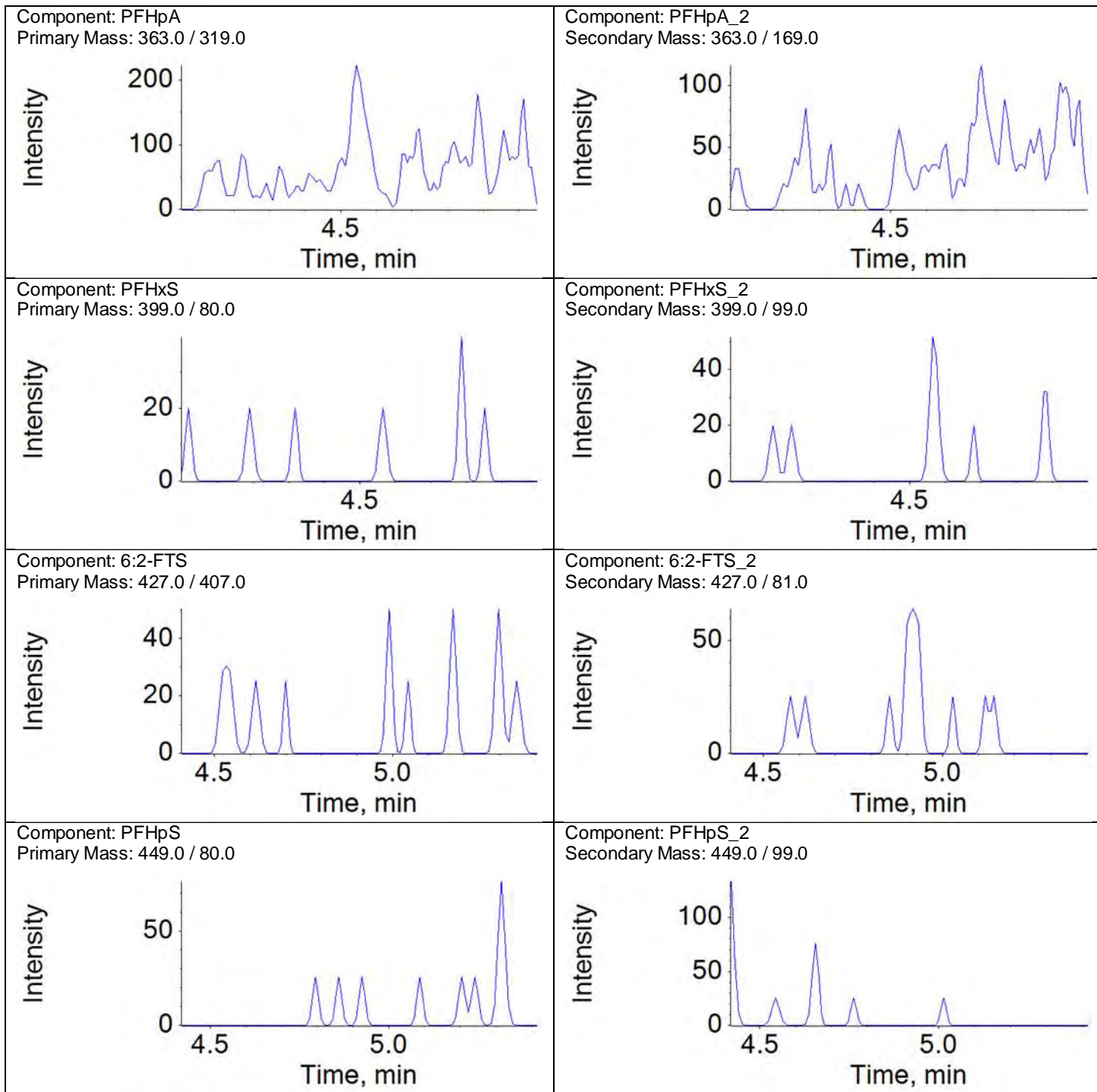
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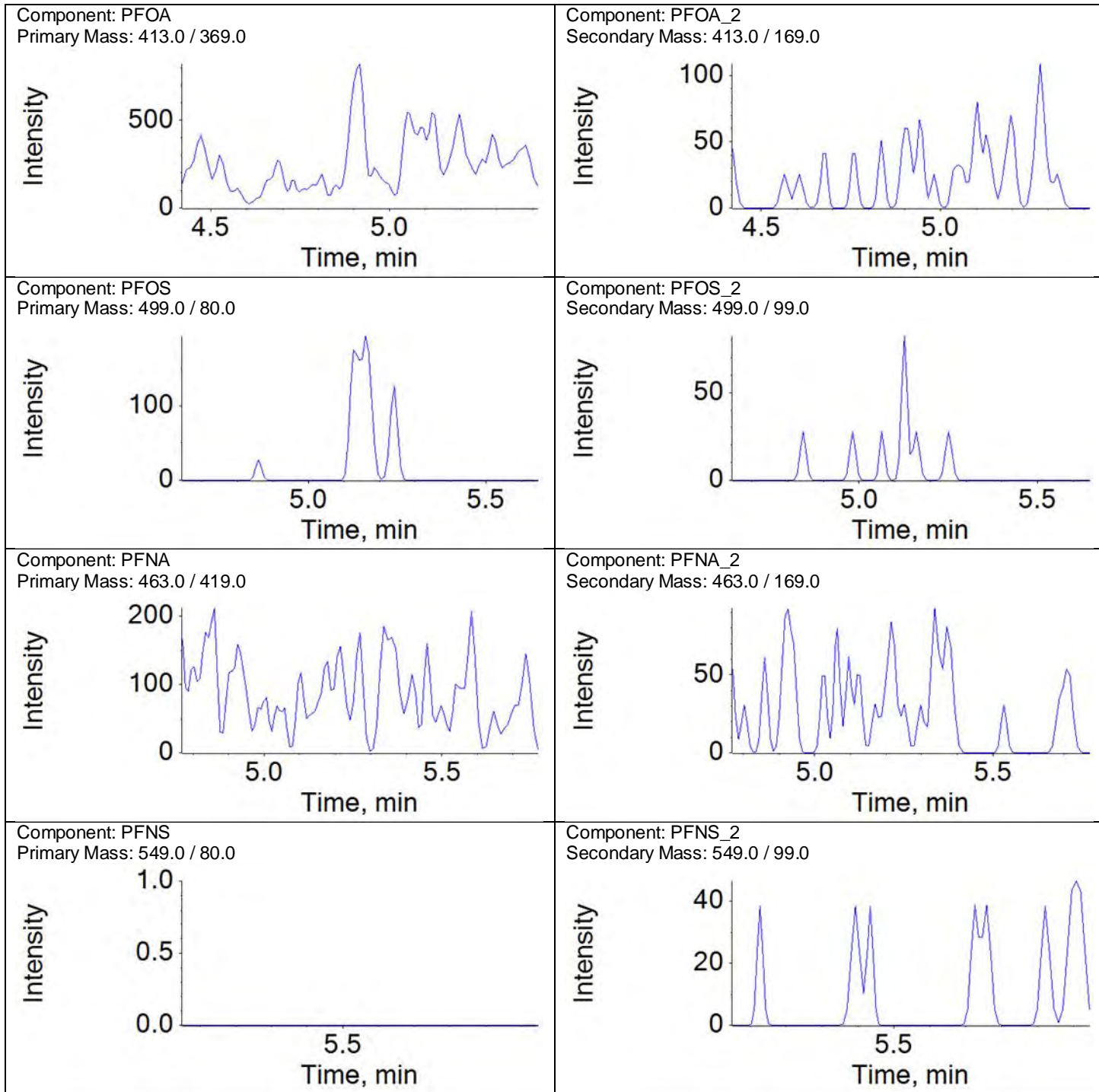
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PFBS	N/A	N/A	N/A	A	N/A	N/A			
PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFPeS	N/A	N/A	N/A	A	N/A	N/A			
PFPeS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
6:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpS	N/A	N/A	N/A	A	N/A	N/A			
PFHpS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNS	N/A	N/A	N/A	A	N/A	N/A			
PFNS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDS	N/A	N/A	N/A	A	N/A	N/A			
PFDS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAoDA	N/A	N/A	N/A	A	N/A	N/A			
PFAoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFArDA	N/A	N/A	N/A	A	N/A	N/A			
PFArDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAeDA	N/A	N/A	N/A	A	N/A	N/A			
PFAeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxDA	N/A	N/A	N/A	A	N/A	N/A			
PFHxDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
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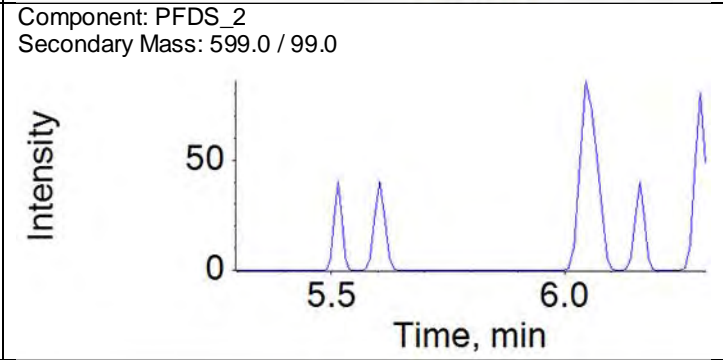
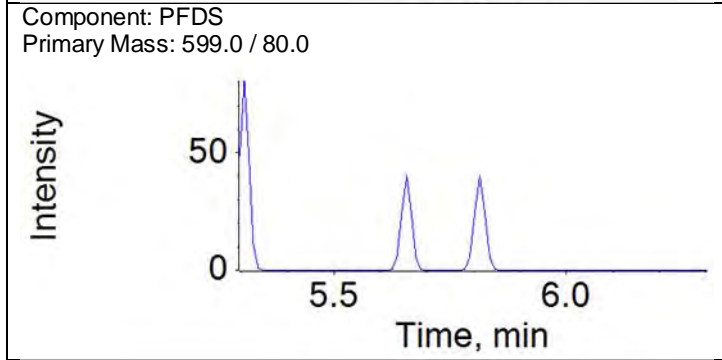
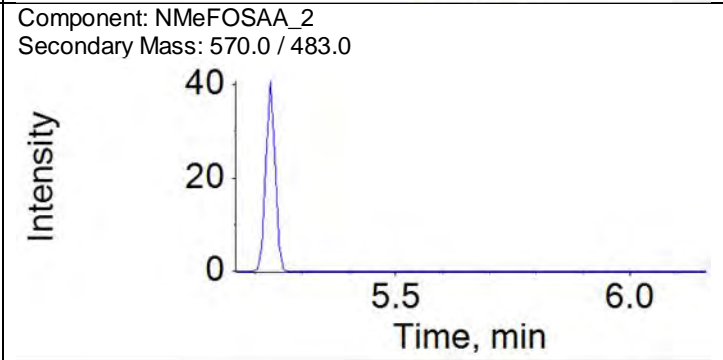
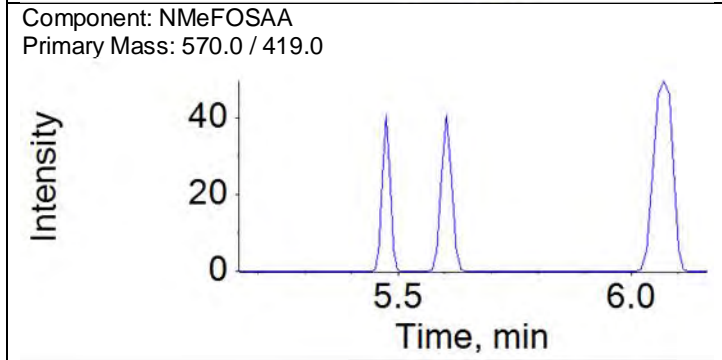
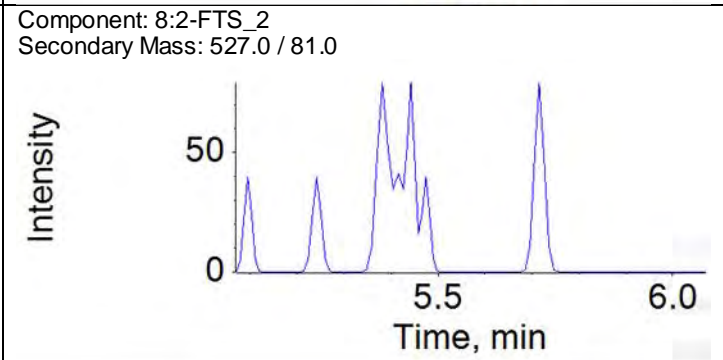
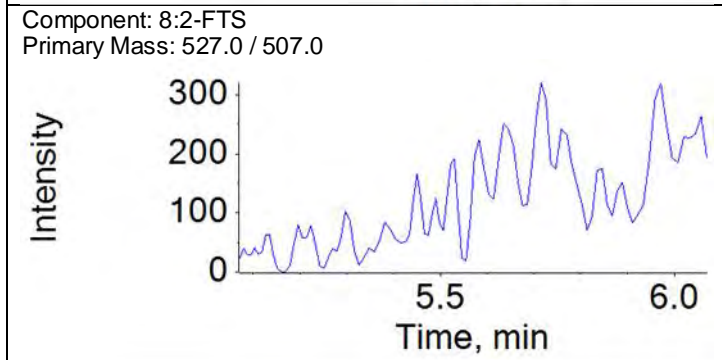
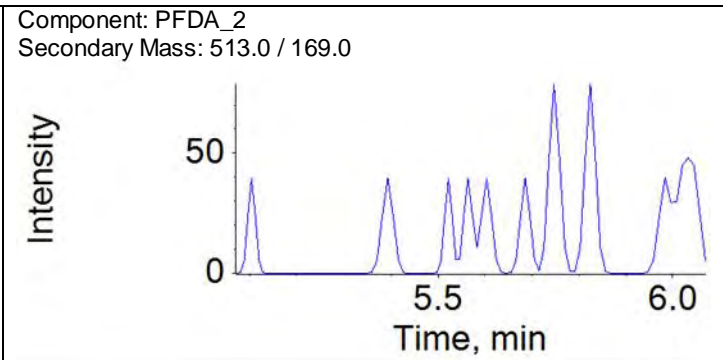
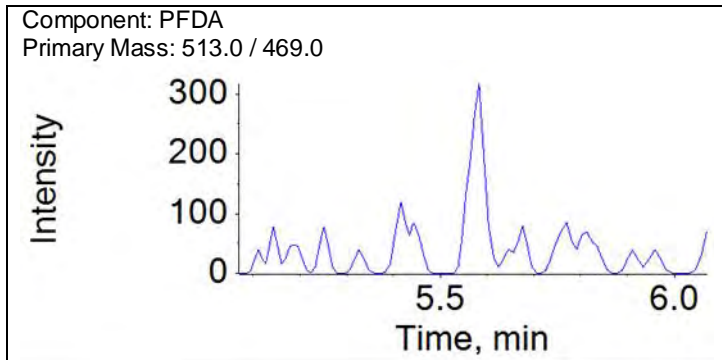


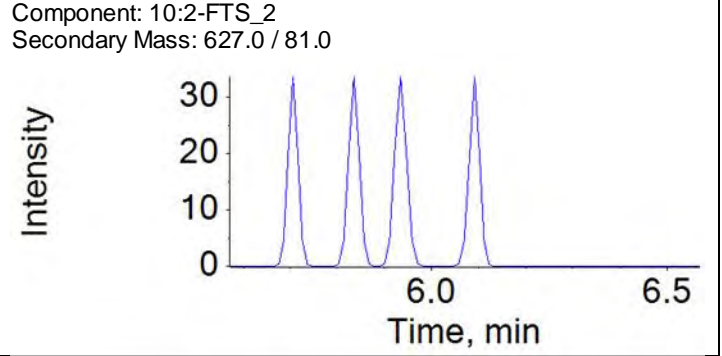
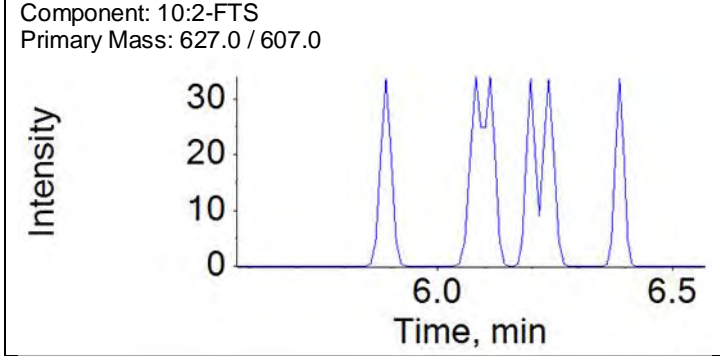
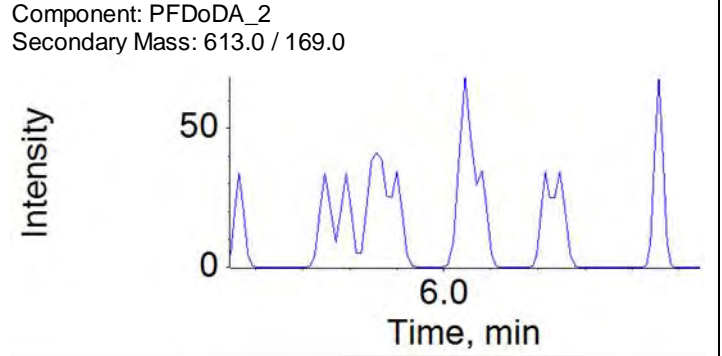
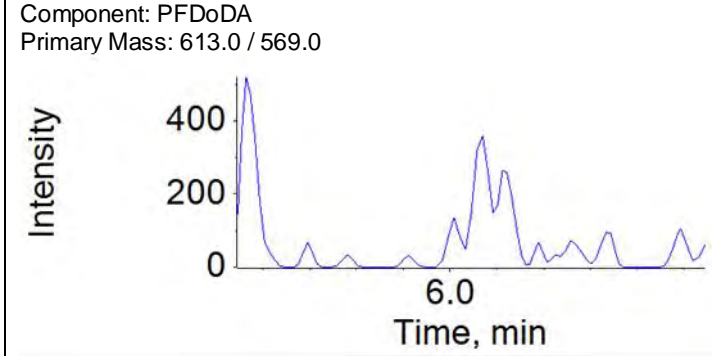
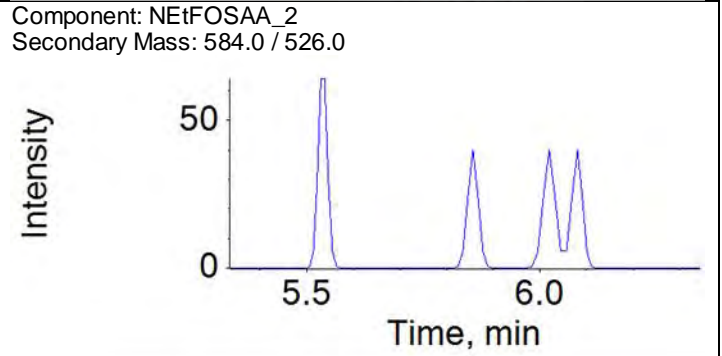
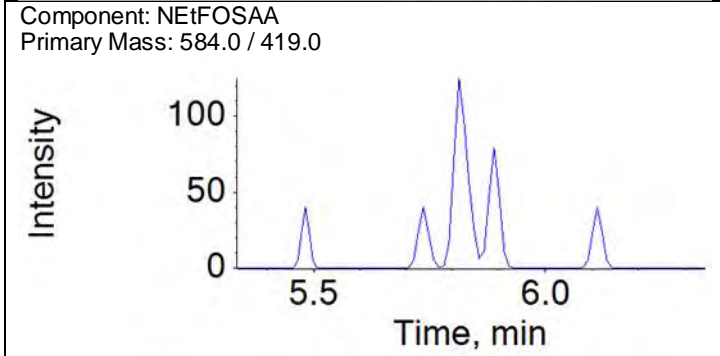
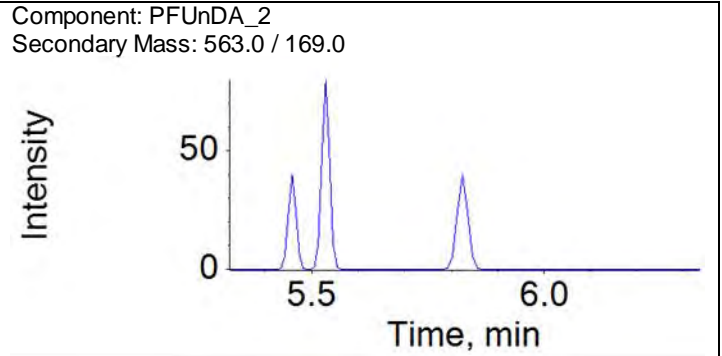
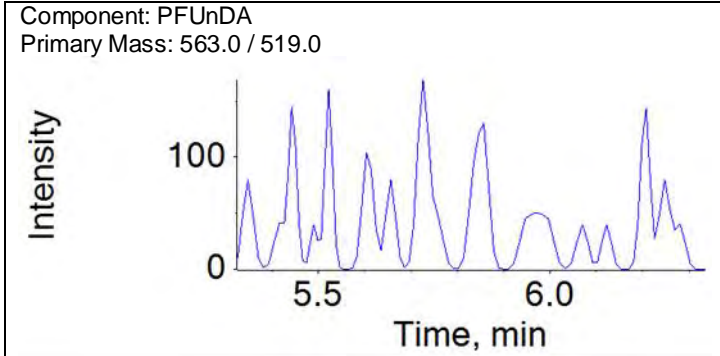




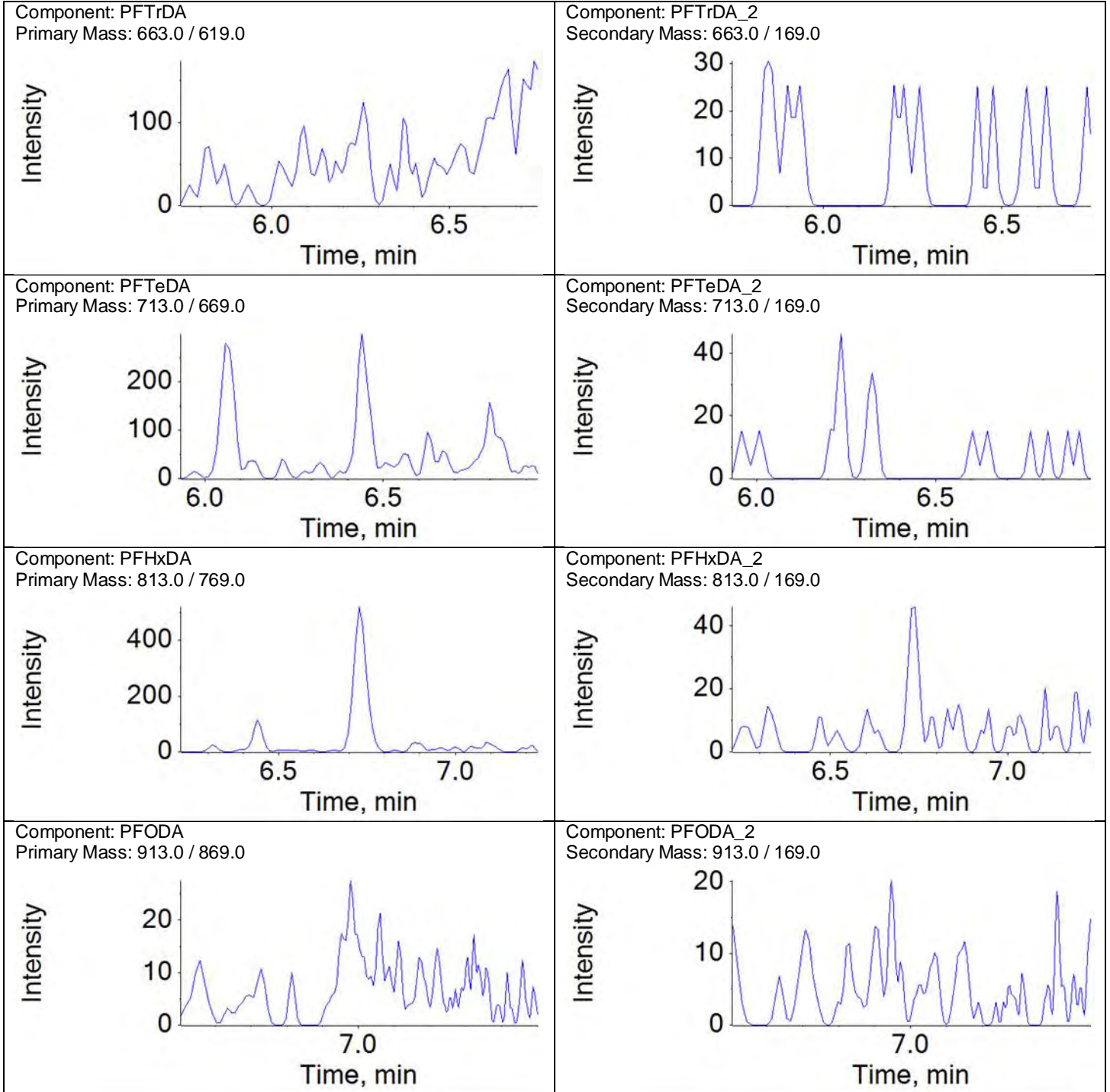












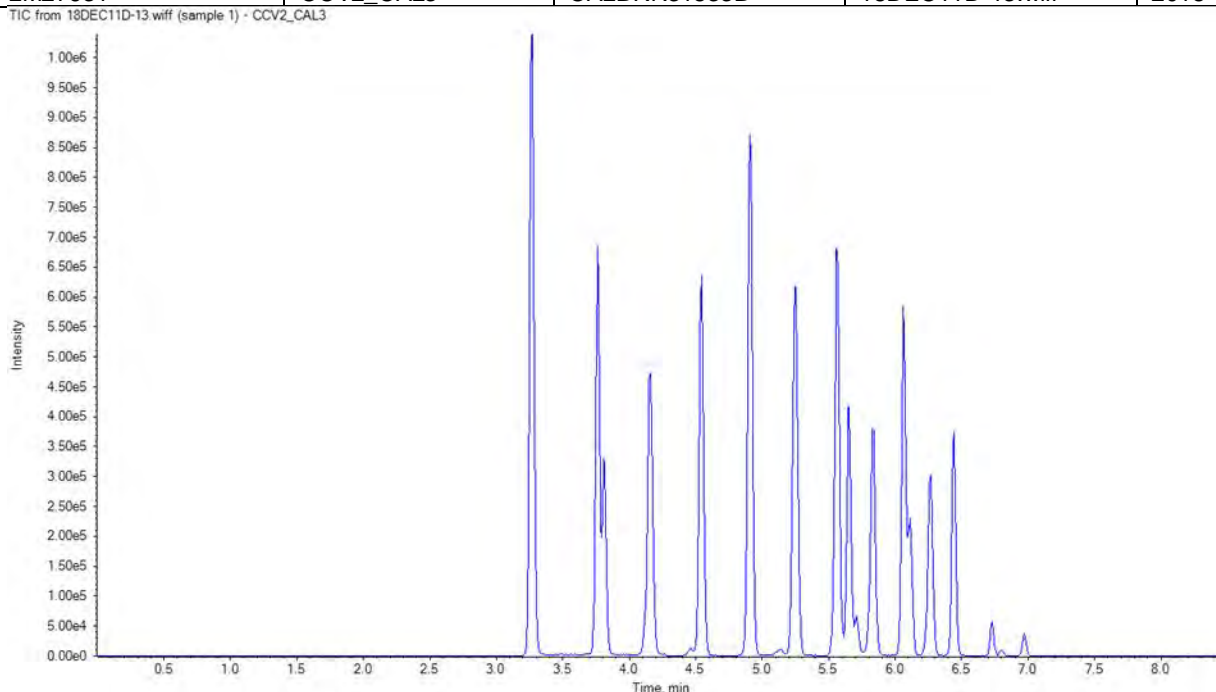


Continuing Calibration Verification

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV2_CAL3	CALBRN31833B	18DEC11D-13.wiff	2018-12-11T06:47:28



Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	927662.6	953492.0	-3	50	
13C2-PFOA	5.0	495356.5	500971.3	-1	50	
13C4-PFOS	4.8	290372.7	310746.2	-7	50	
13C2-PFDA	5.0	398345.0	419040.9	-5	50	

**Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL      Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV2_CAL3	CALBRN31833B	18DEC11D-13.wiff	2018-12-11T06:47:28

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	435220.4	10	13C4-PFBA	1044168.7	5.0	0.417	3.26	1.000	2.000	2.300	15	30	
PFPeA	405777.6	11	13C5-PFPeA	967199.5	5.0	0.420	3.76	1.000	2.000	2.207	10	30	
PFBS	169716.1	10	13C3-PFBS	438300.7	4.7	0.387	3.81	1.000	1.770	1.919	8	30	
4:2-FTS	37777.2	12	13C2-4:2-FTS	49857.4	4.7	0.758	4.12	1.000	1.870	2.031	9	30	
PFHxA	365767.3	12	13C5-PFHxA	696137.4	5.0	0.525	4.16	1.000	2.000	2.290	14	30	
PFPeS	93868.0	11	13C3-PFBS	438300.7	4.7	0.214	4.18	1.100	1.880	2.121	13	30	
PFHpA	391672.3	12	13C4-PFHpA	564336.8	5.0	0.694	4.54	1.000	2.000	2.285	14	30	
PFHxS	137470.9	18	13C3-PFHxS	351261.8	4.7	0.391	4.54	1.000	1.820	1.854	2	30	
6:2-FTS	34247.2	11	13C2-6:2-FTS	41750.8	4.8	0.820	4.90	1.000	1.900	2.037	7	30	
PFHpS	132334.3	11	13C3-PFHxS	351261.8	4.7	0.377	4.90	1.080	1.900	2.068	9	30	
PFOA	385149.4	11	13C8-PFOA	937322.3	5.0	0.411	4.91	1.000	2.000	2.246	12	30	
PFOS	135487.0	22	13C8-PFOS	326421.6	4.8	0.415	5.24	1.000	1.850	1.722	-7	30	
PFNA	336617.8	11	13C9-PFNA	580470.8	5.0	0.580	5.26	1.000	2.000	2.137	7	30	
PFNS	102837.2	11	13C8-PFOS	326421.6	4.8	0.315	5.54	1.060	1.920	2.027	6	30	
PFDA	302087.7	11	13C6-PFDA	732962.1	5.0	0.412	5.56	1.000	2.000	2.320	16	30	
8:2-FTS	31034.9	11	13C2-8:2-FTS	29114.4	4.8	1.066	5.57	1.000	1.920	2.310	20	30	
PFOSA	267035.4	11	13C8-PFOSA	657063.9	5.0	0.406	5.65	1.000	2.000	2.108	5	30	
NMeFOSAA	32437.1	18	d3-NMeFOSAA	100708.1	5.0	0.322	5.71	1.000	2.000	2.130	7	30	
PFDS	75461.6	11	13C8-PFOS	326421.6	4.8	0.231	5.81	1.110	1.930	1.869	-3	30	
PFUnDA	300776.5	11	13C7-PFUnDA	436832.8	5.0	0.689	5.83	1.000	2.000	2.108	5	30	
NEtFOSAA	35066.8	21	d5-NEtFOSAA	85461.8	5.0	0.410	5.85	1.000	2.000	2.074	4	30	
PFDoDA	364264.2	12	13C2-PFDoDA	841038.3	5.0	0.433	6.06	1.000	2.000	2.280	14	30	
10:2-FTS	20787.6	11	13C2-8:2-FTS	29114.4	4.8	0.714	6.08	1.090	1.930	1.891	-2	30	
NMePFOSAE	131841.2	11	d7-NMePFOSAE	253823.6	5.0	0.519	6.12	1.000	2.000	2.257	13	30	
NMePFOSA	36250.7	10	d3-NMePFOSA	83480.3	5.0	0.434	6.12	1.000	2.000	2.191	10	30	
PFDoS	42336.5	11	13C8-PFOS	326421.6	4.8	0.130	6.23	1.190	1.940	1.977	2	30	
NEtPFOSAE	145240.6	11	d9-NEtPFOSAE	206626.0	5.0	0.703	6.27	1.000	2.000	2.355	18	30	
NEtPFOSA	29551.5	11	d5-NEtPFOSA	64370.6	5.0	0.459	6.28	1.000	2.000	2.198	10	30	
PFTTrDA	302779.6	11	13C2-PFDoDA	841038.3	5.0	0.360	6.26	1.030	2.000	2.358	18	30	
PFTeDA	223789.9	10	13C2-PFTeDA	568783.2	5.0	0.393	6.44	1.000	2.000	2.250	12	30	
PFHxDA	105629.2	10	13C2-PFTeDA	568783.2	5.0	0.186	6.73	1.040	2.000	2.326	16	30	
PFOA	74981.7	10	13C2-PFTeDA	568783.2	5.0	0.132	6.97	1.080	2.000	2.116	6	30	

**Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By JPT at 3:22 pm, 12/11/18

**REVIEWED**  
By umar at 11:13 am, 12/16/18

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV2_CAL3	Data File:	18DEC11D-13.wiff
Sample ID:	CALBRN31833B	Acquis Date:	2018-12-11T06:47:28
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	5	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC11DCCV1-7
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	JPT12262
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	927662.6	953492.0	-3	50	
13C2-PFOA	5.0	495356.5	500971.3	-1	50	
13C4-PFOS	4.8	290372.7	310746.2	-7	50	
13C2-PFDA	5.0	398345.0	419040.9	-5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1044168.7	13C3-PFBA	927662.6	1.126	5.000	4.982	100	70-130	
E13C5-PFPeA	967199.5	13C3-PFBA	927662.6	1.043	5.000	4.952	99	70-130	
E13C3-PFBFS	438300.7	13C3-PFBA	927662.6	0.472	4.650	4.005	86	70-130	
E13C2-4:2-FTS	49857.4	13C2-PFOA	495356.5	0.101	4.670	3.944	84	70-130	
E13C5-PFHxA	696137.4	13C2-PFOA	495356.5	1.405	5.000	4.718	94	70-130	
E13C3-PFHxS	351261.8	13C2-PFOA	495356.5	0.709	4.730	4.548	96	70-130	
E13C4-PFHpA	564336.8	13C2-PFOA	495356.5	1.139	5.000	4.843	97	70-130	
E13C2-6:2-FTS	41750.8	13C2-PFOA	495356.5	0.084	4.750	5.221	110	70-130	
E13C8-PFOA	937322.3	13C2-PFOA	495356.5	1.892	5.000	5.349	107	70-130	
E13C8-PFOS	326421.6	13C4-PFOS	290372.7	1.124	4.780	5.045	106	70-130	
E13C9-PFNA	580470.8	13C4-PFOS	290372.7	1.999	5.000	5.649	113	70-130	
E13C6-PFDA	732962.1	13C2-PFDA	398345.0	1.840	5.000	4.876	98	70-130	
E13C2-8:2-FTS	29114.4	13C2-PFDA	398345.0	0.073	4.790	4.772	100	70-130	
E13C8-PFOA	657063.9	13C2-PFDA	398345.0	1.649	5.000	3.901	78	70-130	
Ed3-NMeFOSAA	100708.1	13C2-PFDA	398345.0	0.253	5.000	4.480	90	70-130	
E13C7-PFUnDA	436832.8	13C2-PFDA	398345.0	1.097	5.000	5.379	108	70-130	
Ed5-NEtFOSAA	85461.8	13C2-PFDA	398345.0	0.215	5.000	4.736	95	70-130	
E13C2-PFDoDA	841038.3	13C2-PFDA	398345.0	2.111	5.000	4.431	89	70-130	
Ed7-NMePFOSAE	253823.6	13C2-PFDA	398345.0	0.637	5.000	3.671	73	70-130	
Ed3-NMePFOSA	83480.3	13C2-PFDA	398345.0	0.210	5.000	3.818	76	70-130	
Ed9-NEtPFOSAE	206626.0	13C2-PFDA	398345.0	0.519	5.000	3.577	72	70-130	
Ed5-NEtPFOSA	64370.6	13C2-PFDA	398345.0	0.162	5.000	3.637	73	70-130	
E13C2-PFTeDA	568783.2	13C2-PFDA	398345.0	1.428	5.000	4.238	85	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

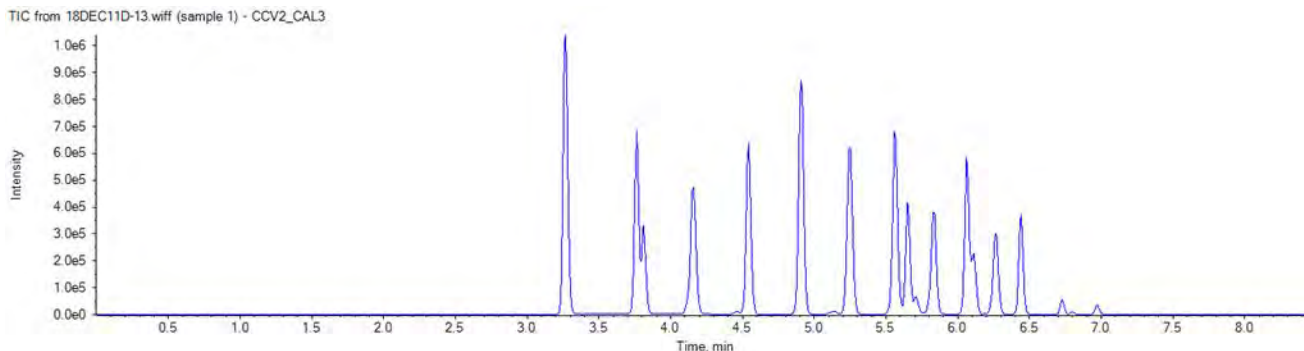
**Analyte Quantitation Peak Table**

Sample Name: CCV2\_CAL3 Instrument Name: LM27631 File Name: 18DEC11D-13.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	435220.4		A	13C4-PFBA	3.26	1044168.7	0.417	2.300
PFPeA	3.76	1.000	405777.6		A	13C5-PFPeA	3.76	967199.5	0.420	2.207
PFBS	3.81	1.000	169716.1		A	13C3-PFBS	3.81	438300.7	0.387	1.919
4:2-FTS	4.12	1.000	37777.2		A	13C2-4:2-FTS	4.12	49857.4	0.758	2.031
PFHxA	4.16	1.000	365767.3		A	13C5-PFHxA	4.16	696137.4	0.525	2.290
PFPeS	4.18	1.100	93868.0		A	13C3-PFBS	3.81	438300.7	0.214	2.121
PFHpA	4.54	1.000	391672.3		A	13C4-PFHpA	4.54	564336.8	0.694	2.285
PFHxS	4.54	1.000	137470.9		M	13C3-PFHxS	4.54	351261.8	0.391	1.854
6:2-FTS	4.90	1.000	34247.2		A	13C2-6:2-FTS	4.90	41750.8	0.820	2.037
PFHpS	4.90	1.080	132334.3		A	13C3-PFHxS	4.54	351261.8	0.377	2.068
PFOA	4.91	1.000	385149.4		A	13C8-PFOA	4.91	937322.3	0.411	2.246
PFOS	5.24	1.000	135487.0		M	13C8-PFOS	5.24	326421.6	0.415	1.722
PFNA	5.26	1.000	336617.8		A	13C9-PFNA	5.26	580470.8	0.580	2.137
PFNS	5.54	1.060	102837.2		A	13C8-PFOS	5.24	326421.6	0.315	2.027
PFDA	5.56	1.000	302087.7		A	13C6-PFDA	5.56	732962.1	0.412	2.320
8:2-FTS	5.57	1.000	31034.9		A	13C2-8:2-FTS	5.57	29114.4	1.066	2.310
PFOSA	5.65	1.000	267035.4		A	13C8-PFOSA	5.65	657063.9	0.406	2.108
NMeFOSAA	5.71	1.000	32437.1		M	d3-NMeFOSAA	5.71	100708.1	0.322	2.130
PFDS	5.81	1.110	75461.6		A	13C8-PFOS	5.24	326421.6	0.231	1.869
PfUnDA	5.83	1.000	300776.5		A	13C7-PfUnDA	5.83	436832.8	0.689	2.108
NEtFOSAA	5.85	1.000	35066.8		A	d5-NEtFOSAA	5.84	85461.8	0.410	2.074
PFDaDA	6.06	1.000	364264.2		A	13C2-PFDaDA	6.06	841038.3	0.433	2.280
10:2-FTS	6.08	1.090	20787.6		A	13C2-8:2-FTS	5.57	29114.4	0.714	1.891
NMePFOSAE	6.12	1.000	131841.2		A	d7-NMePFOSAE	6.11	253823.6	0.519	2.257
NMePFOSA	6.12	1.000	36250.7		A	d3-NMePFOSA	6.12	83480.3	0.434	2.191
PFDoS	6.23	1.190	42336.5		A	13C8-PFOS	5.24	326421.6	0.130	1.977
NEtPFOSAE	6.27	1.000	145240.6		A	d9-NEtPFOSAE	6.26	206626.0	0.703	2.355
NEtPFOSA	6.28	1.000	29551.5		A	d5-NEtPFOSA	6.28	64370.6	0.459	2.198
PFTrDA	6.26	1.030	302779.6		A	13C2-PFDaDA	6.06	841038.3	0.360	2.358
PFTeDA	6.44	1.000	223789.9		A	13C2-PFTeDA	6.44	568783.2	0.393	2.250
PFHxDA	6.73	1.040	105629.2		A	13C2-PFTeDA	6.44	568783.2	0.186	2.326
PFODA	6.97	1.080	74981.7		A	13C2-PFTeDA	6.44	568783.2	0.132	2.116

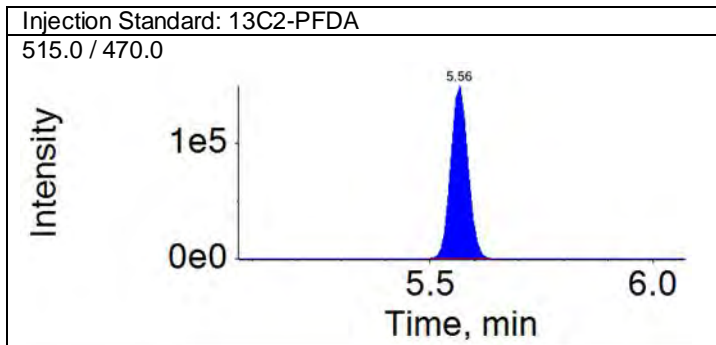
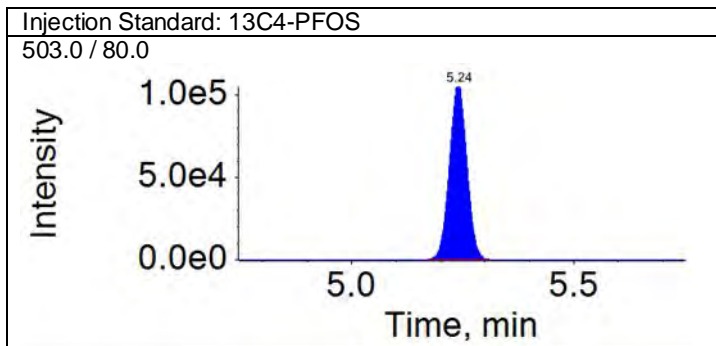
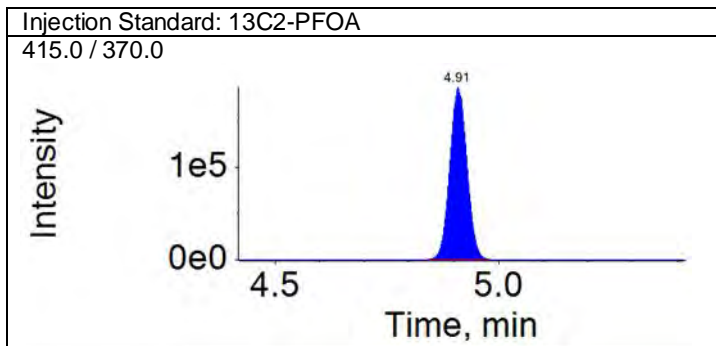
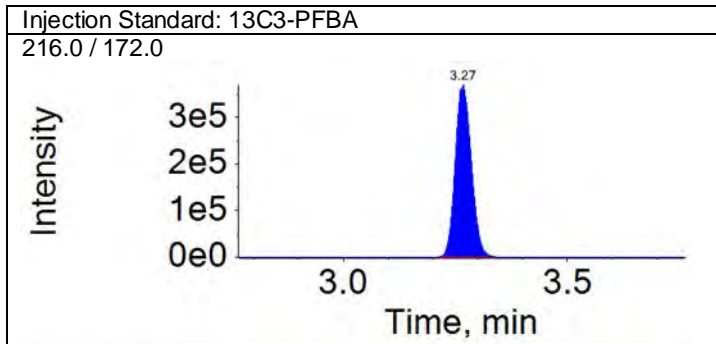
**Total Ion Chromatogram**





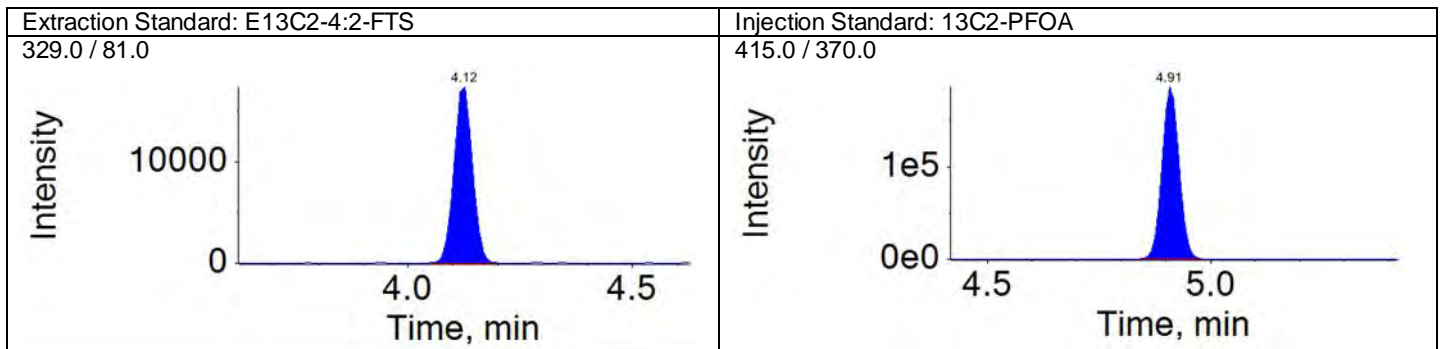
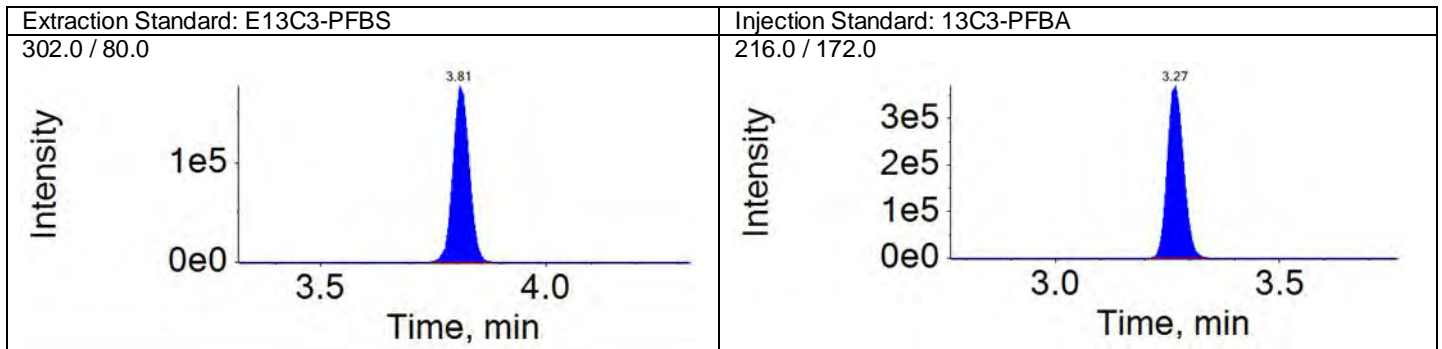
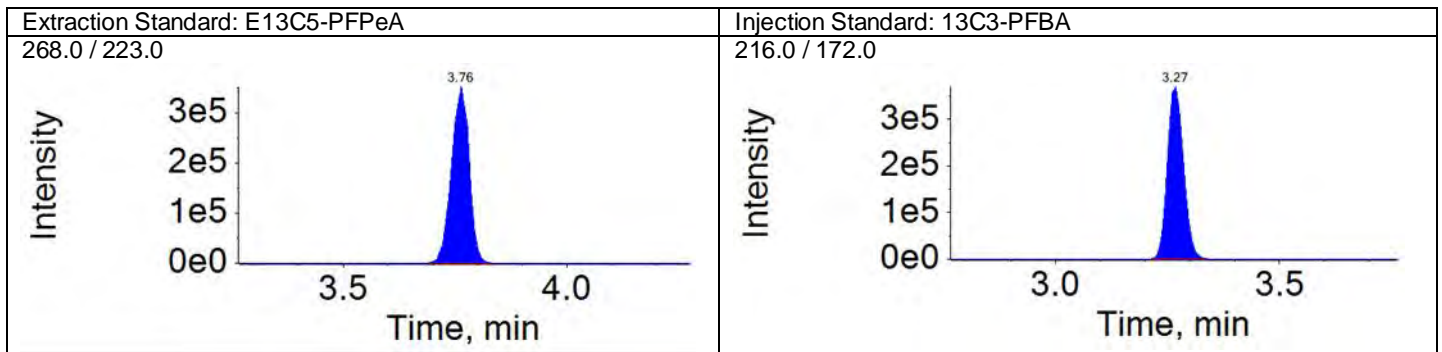
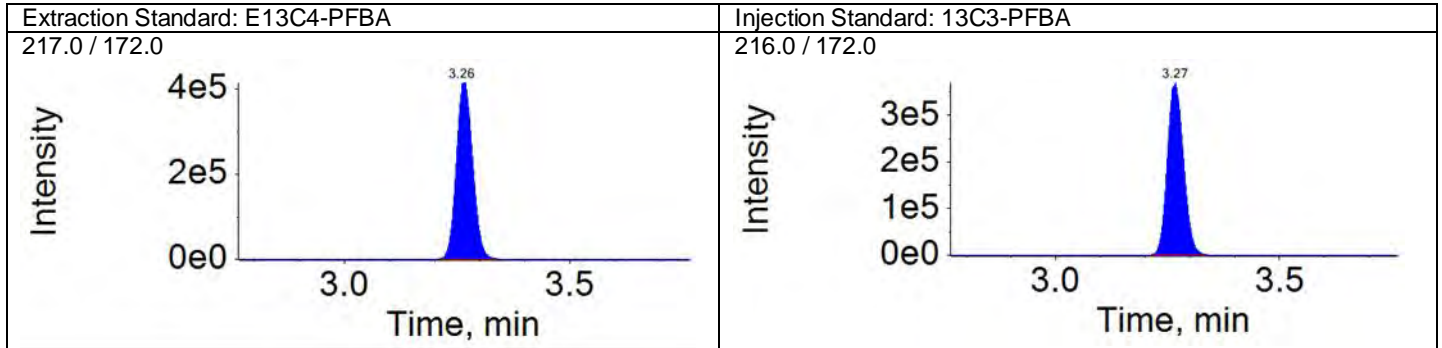
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



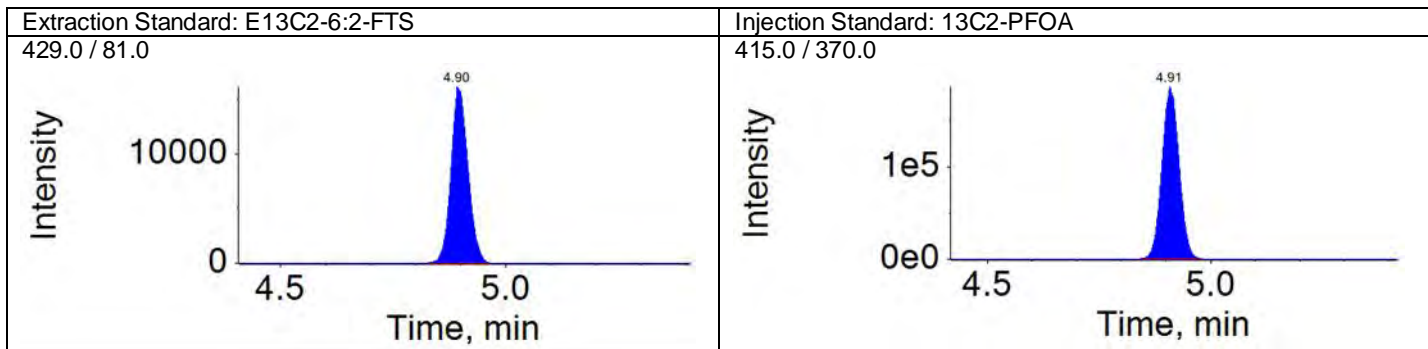
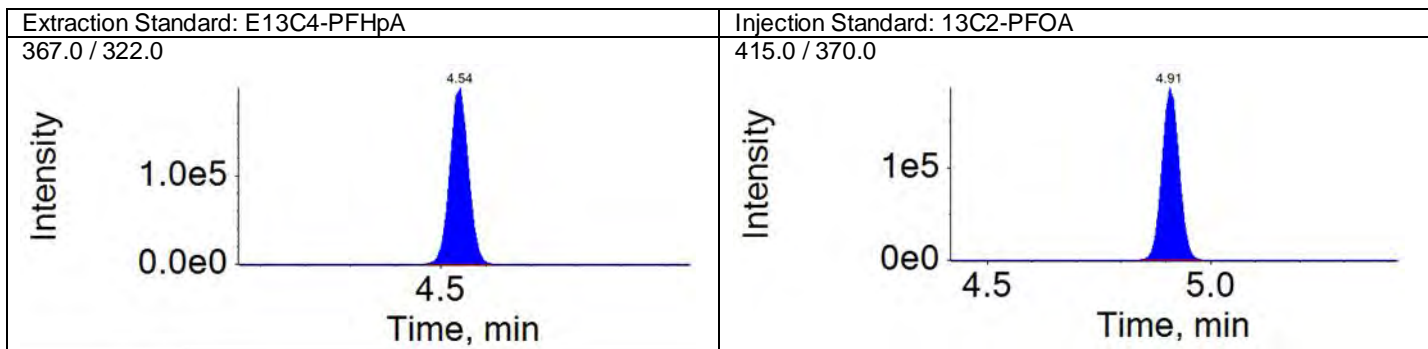
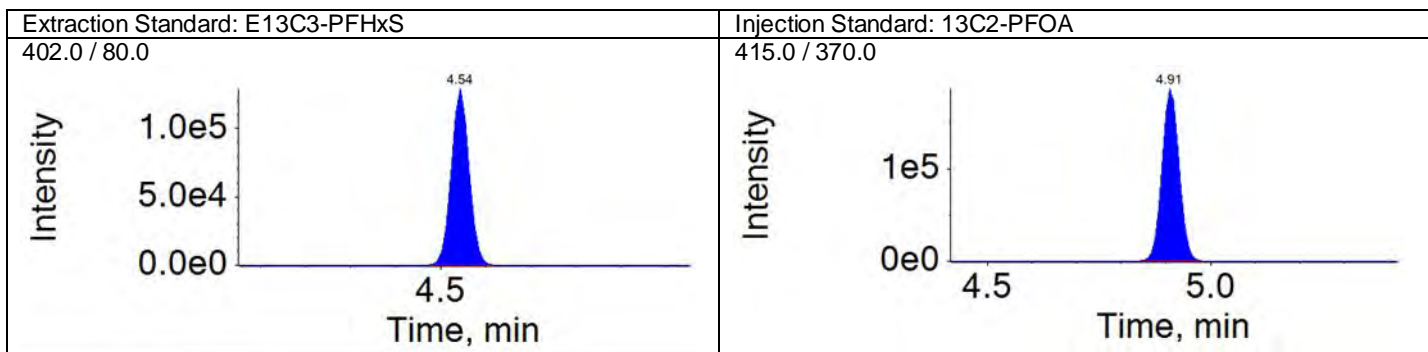
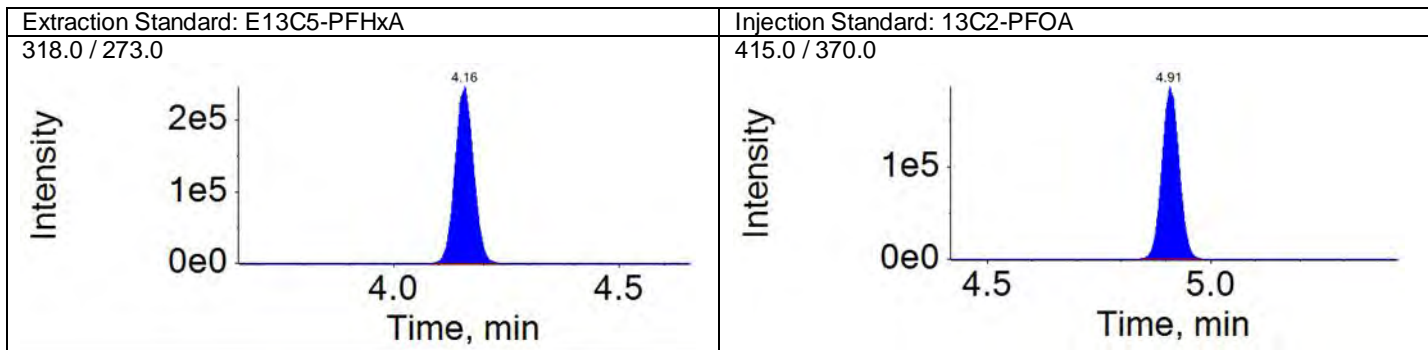
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



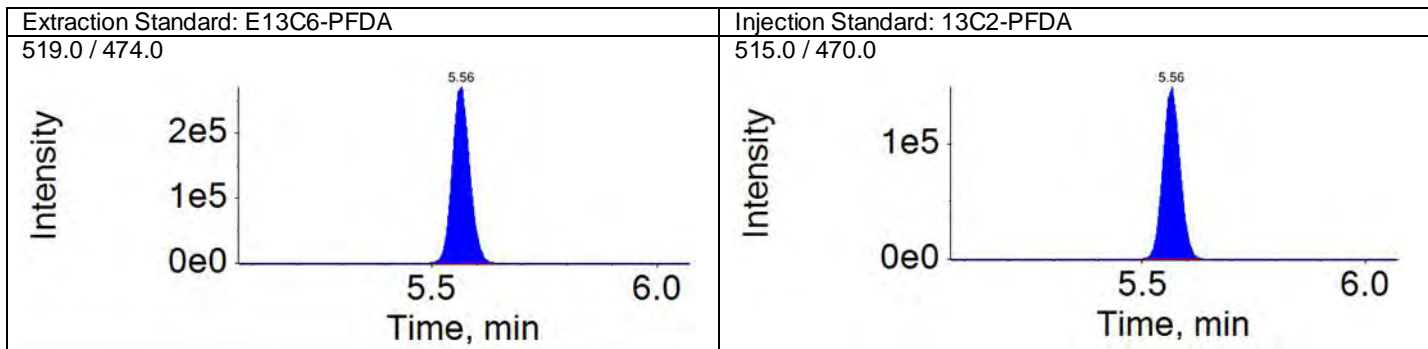
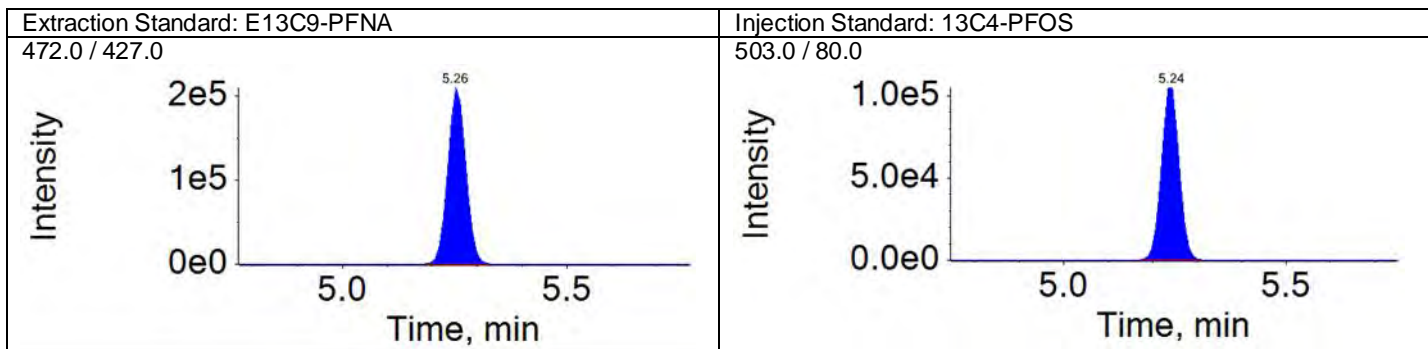
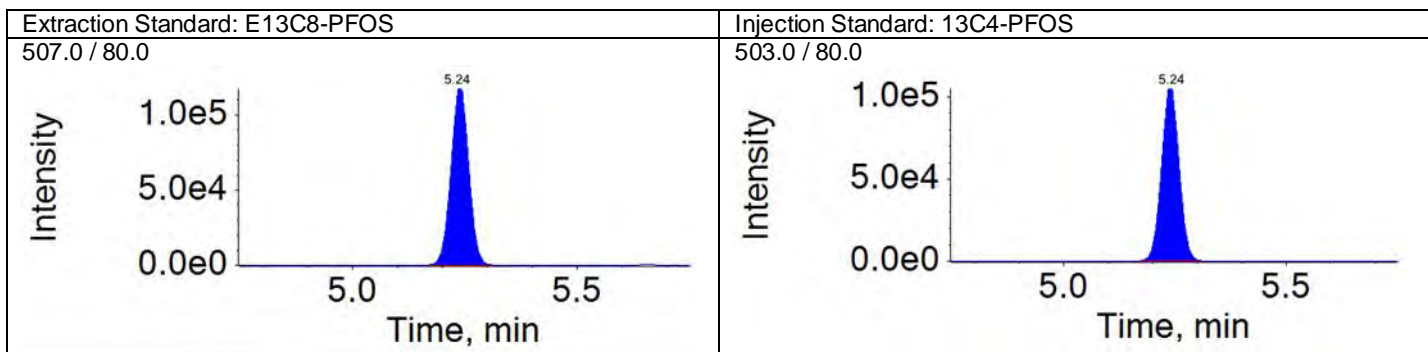
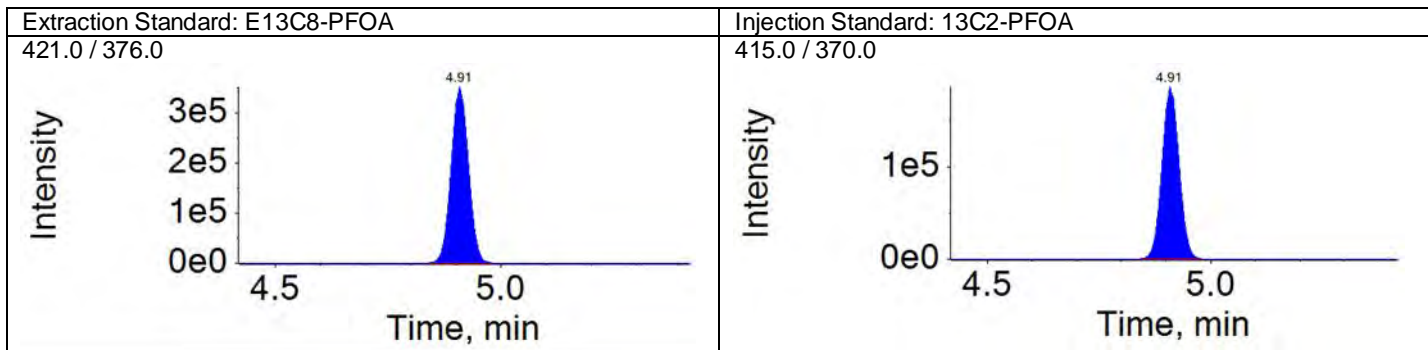
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

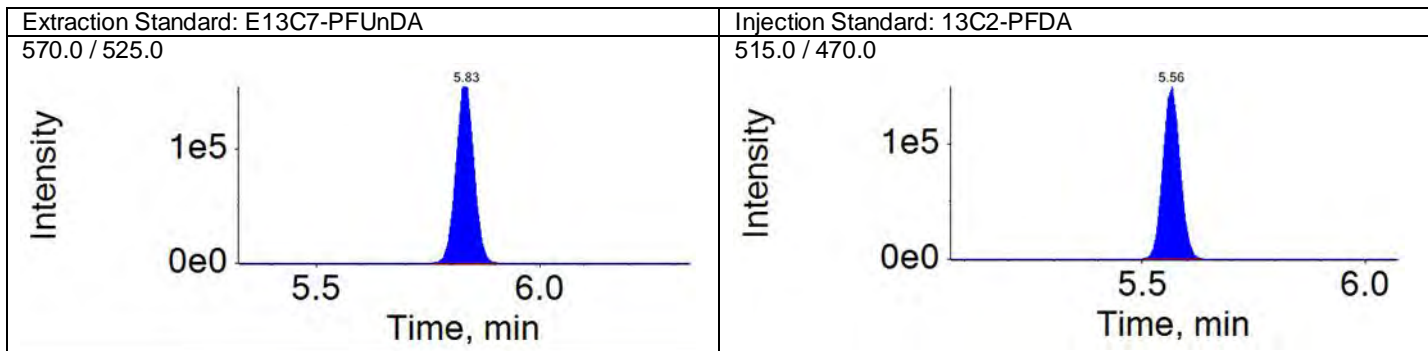
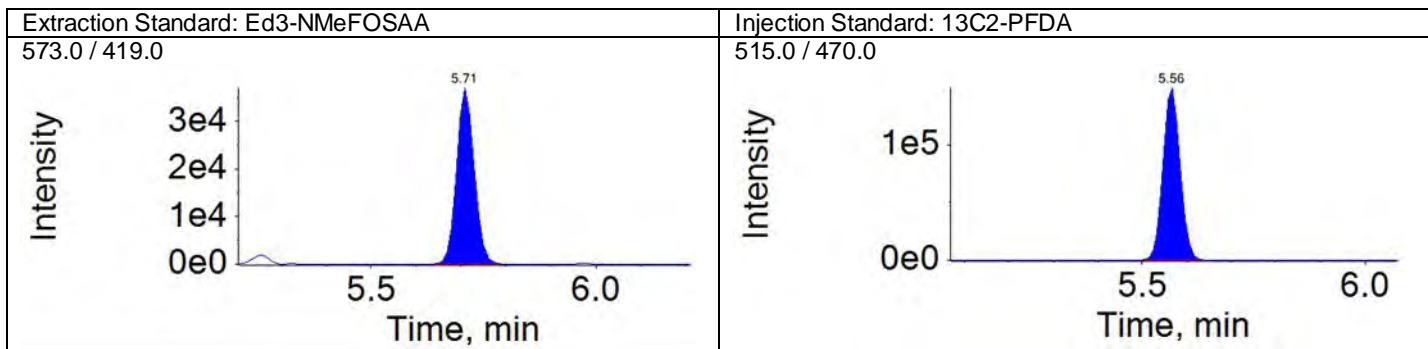
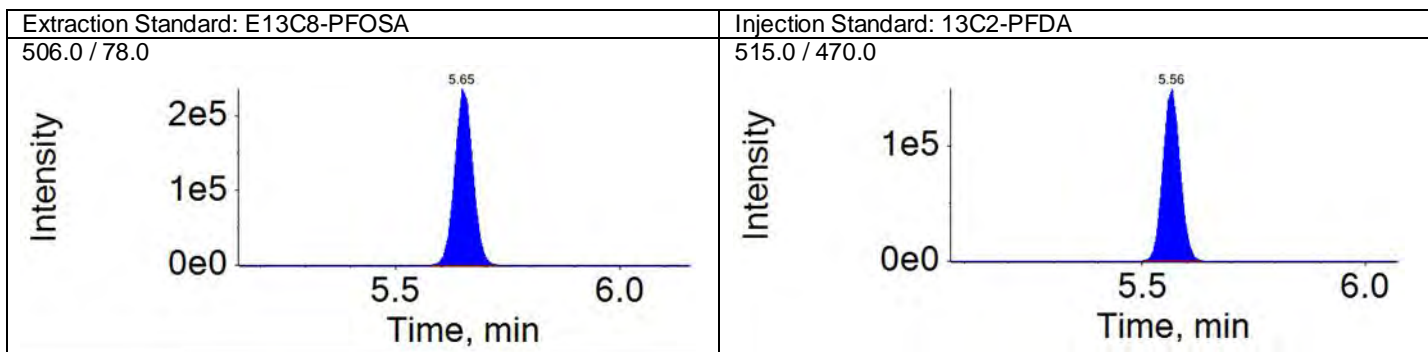
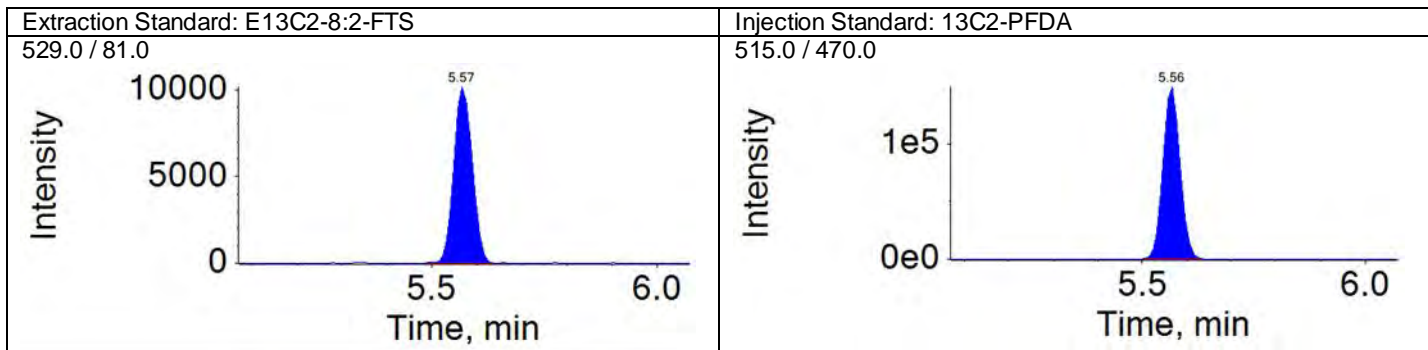
Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

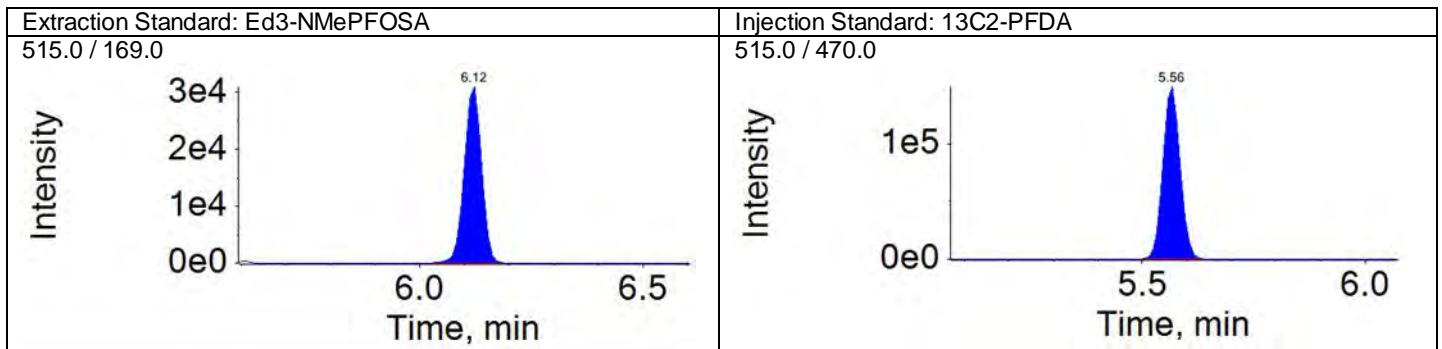
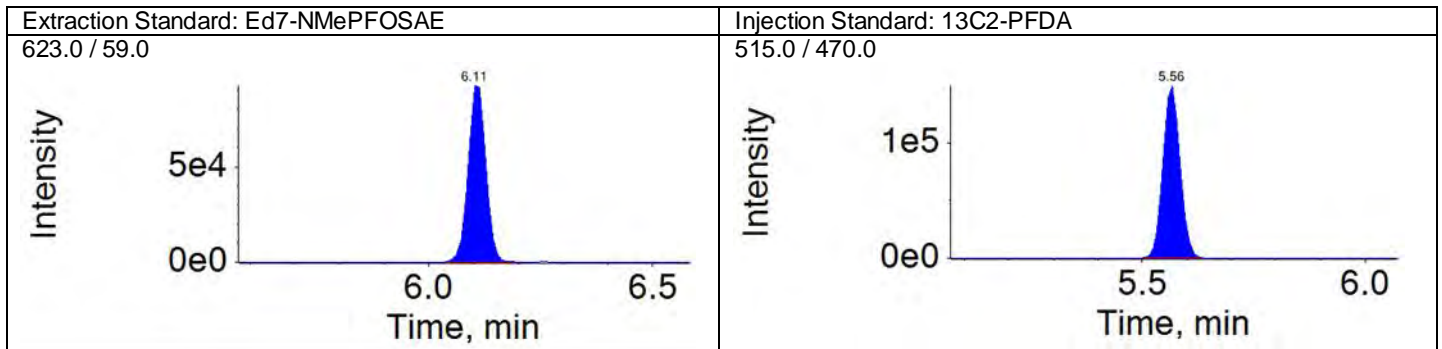
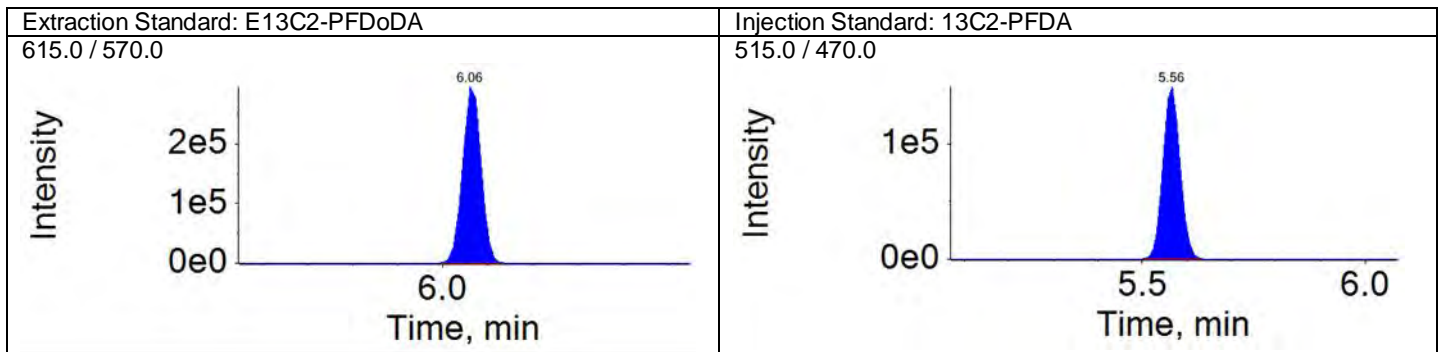
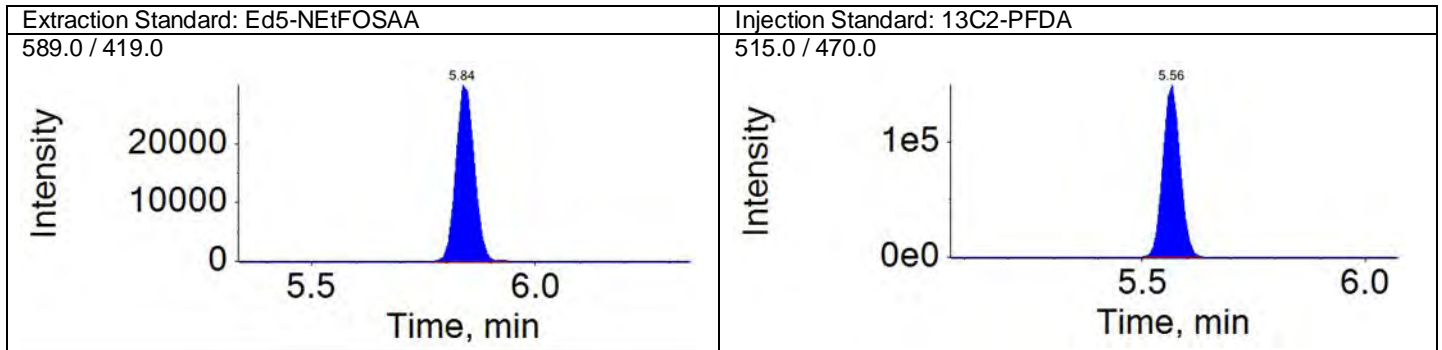
Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam





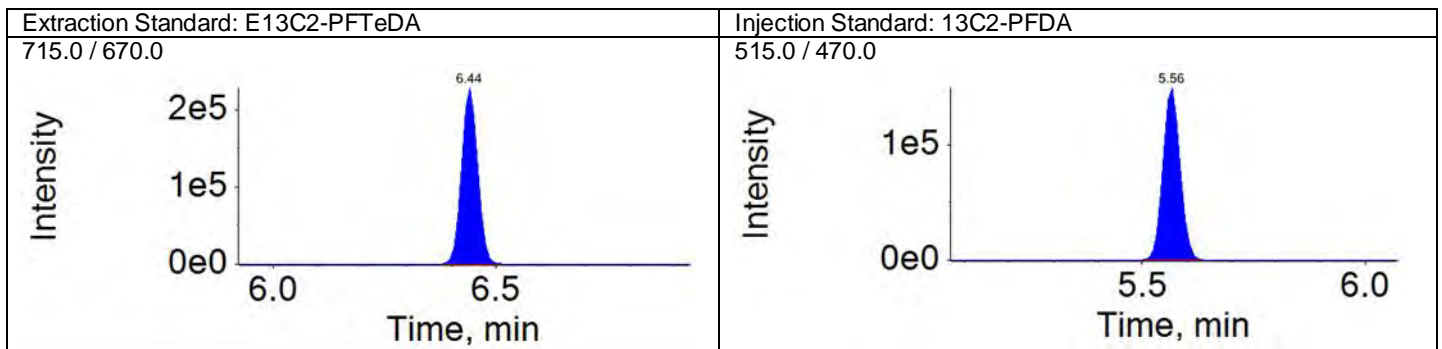
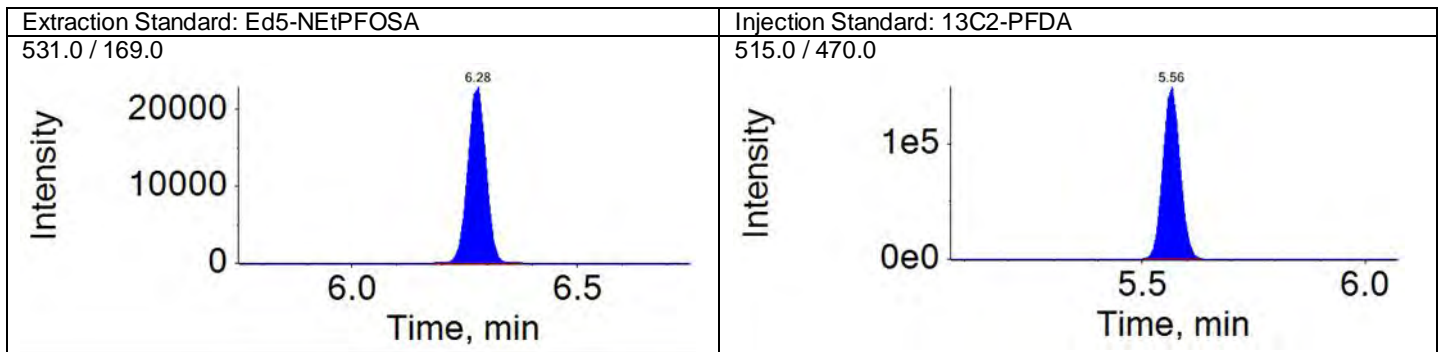
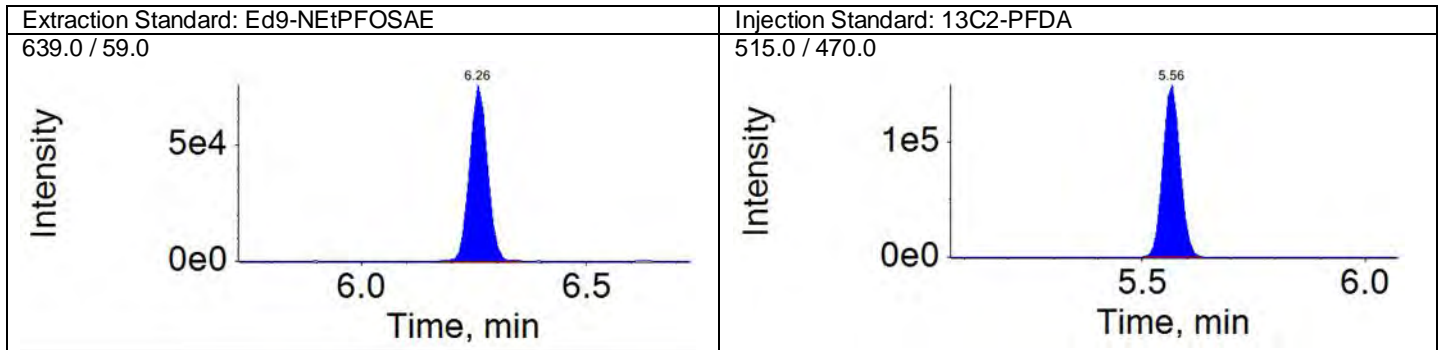
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



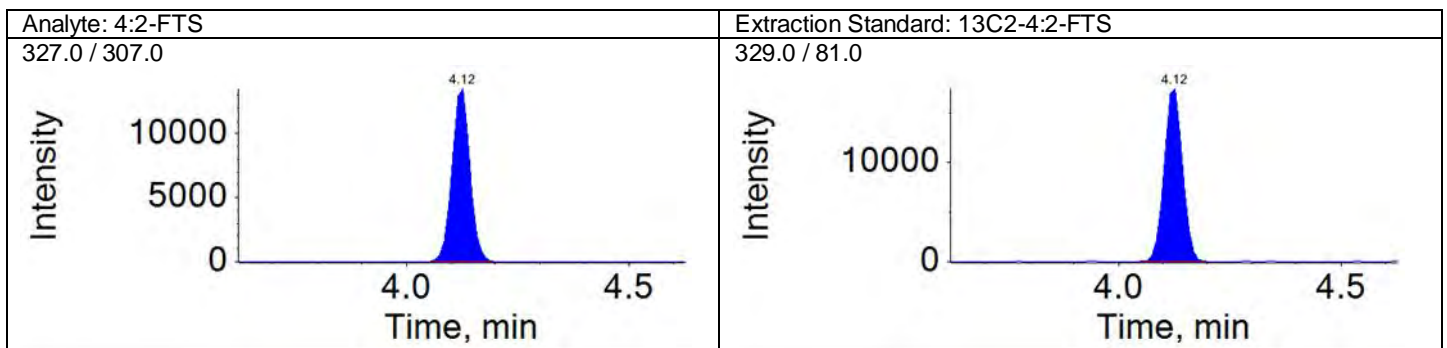
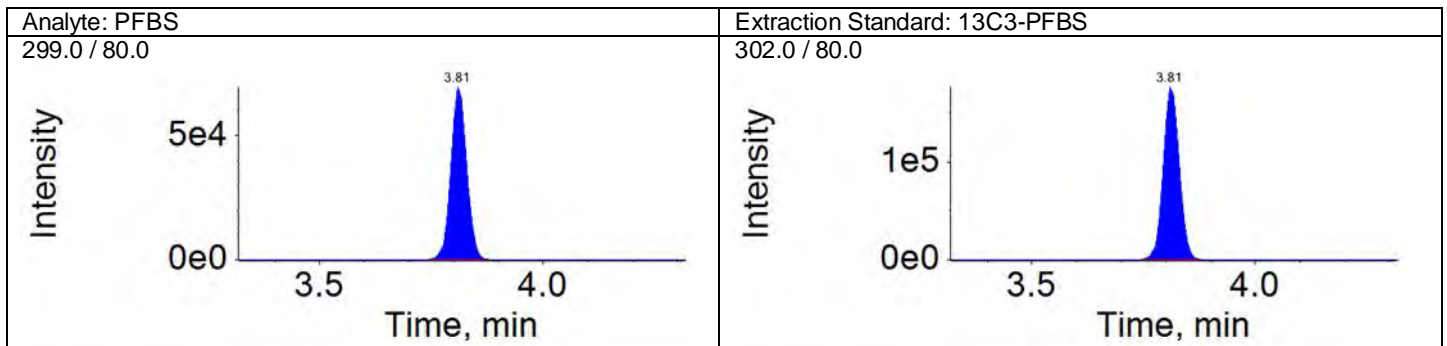
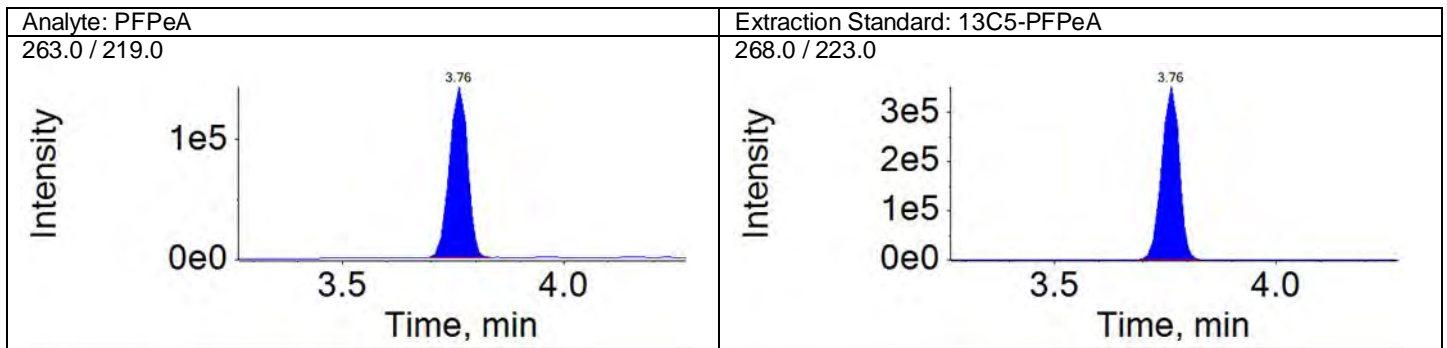
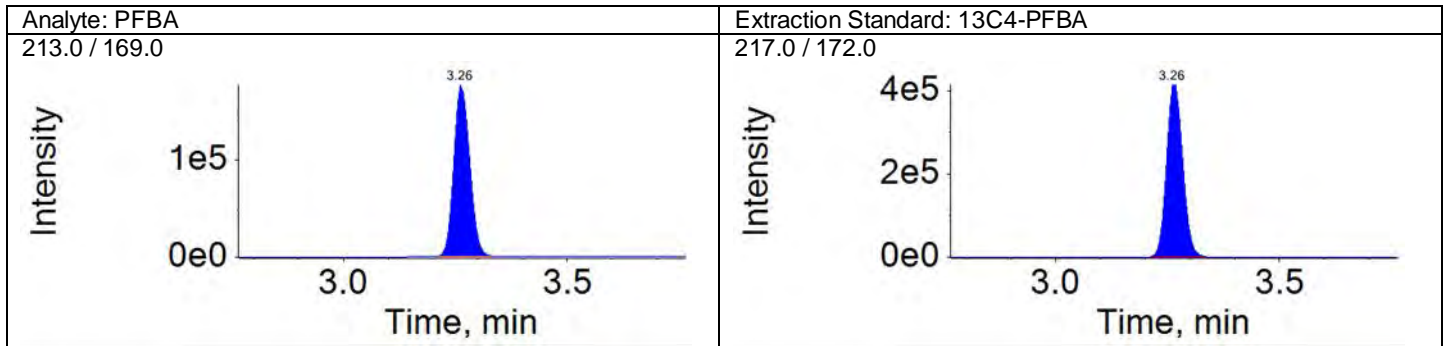
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



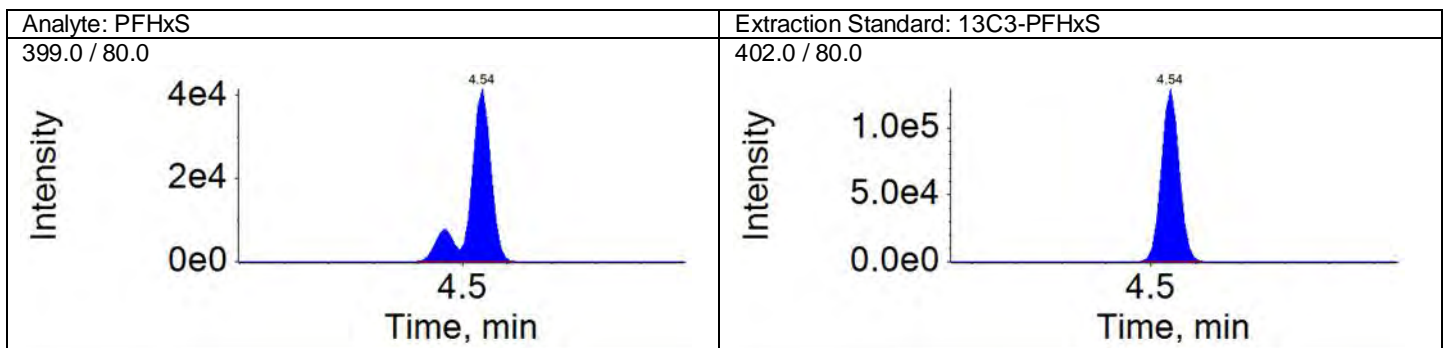
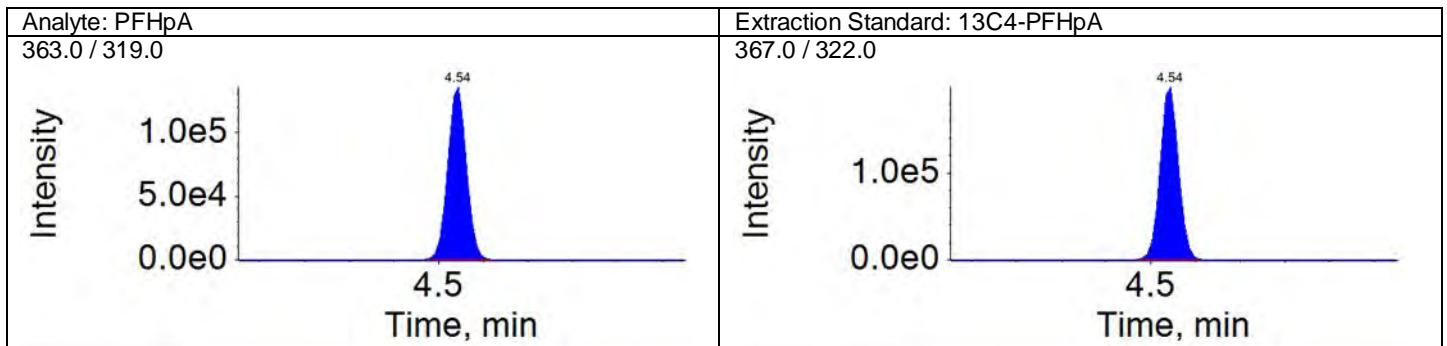
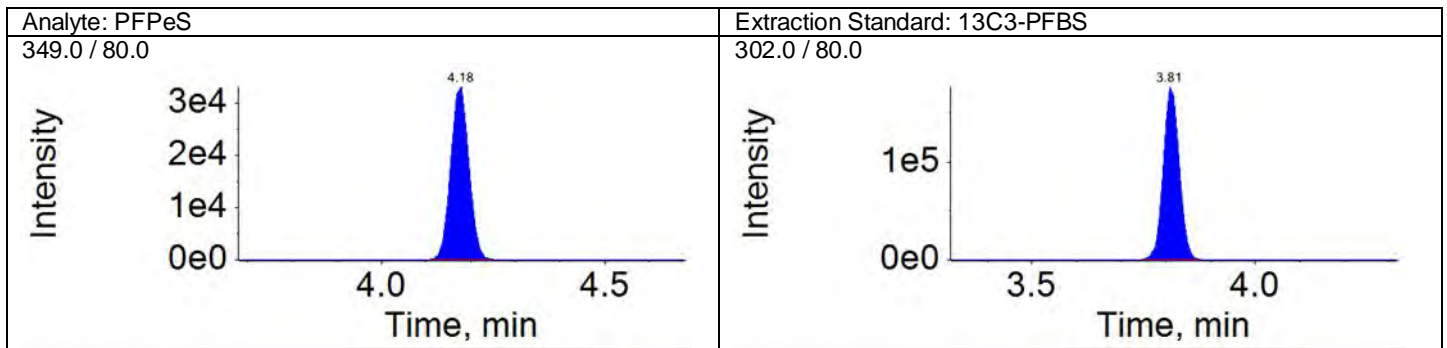
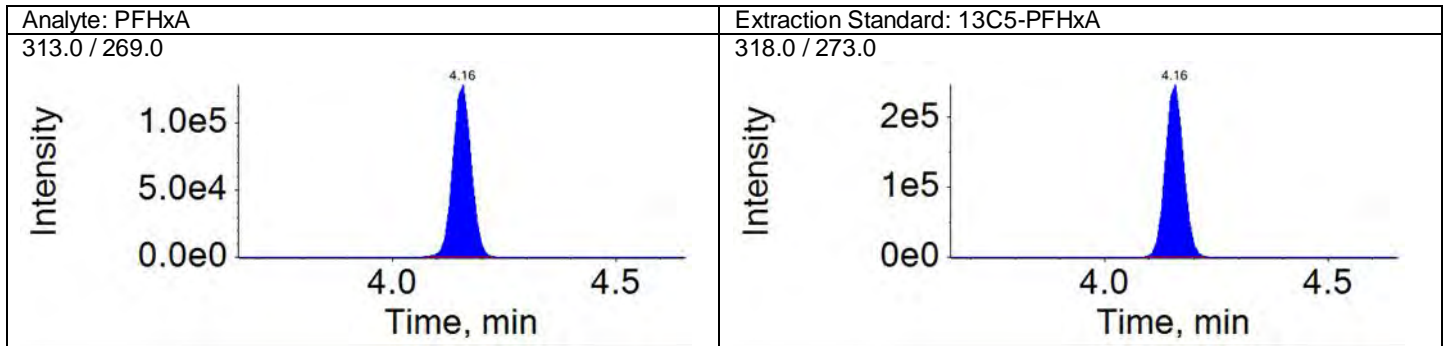
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QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

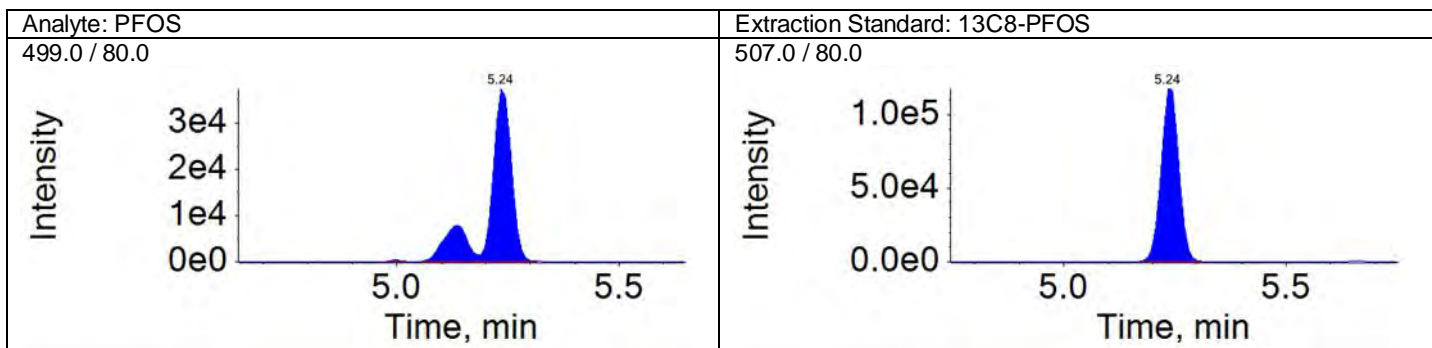
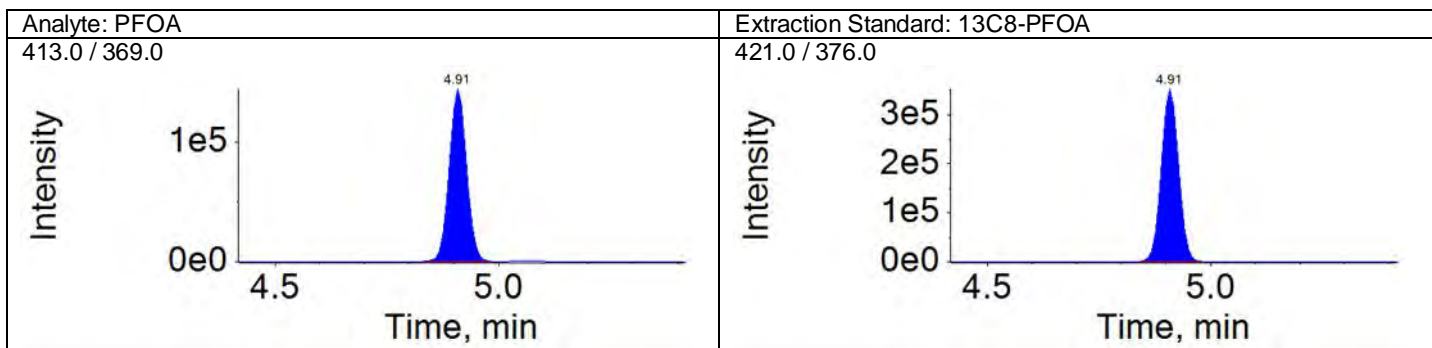
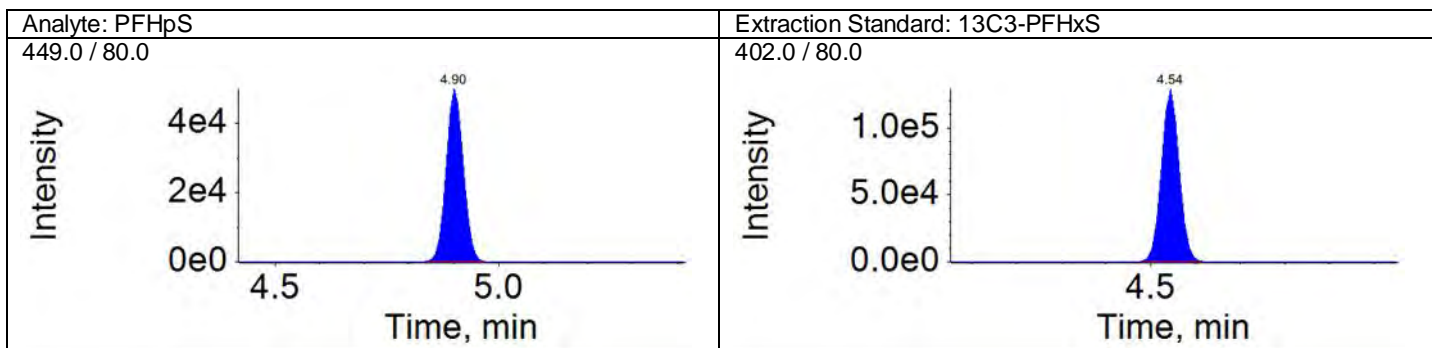
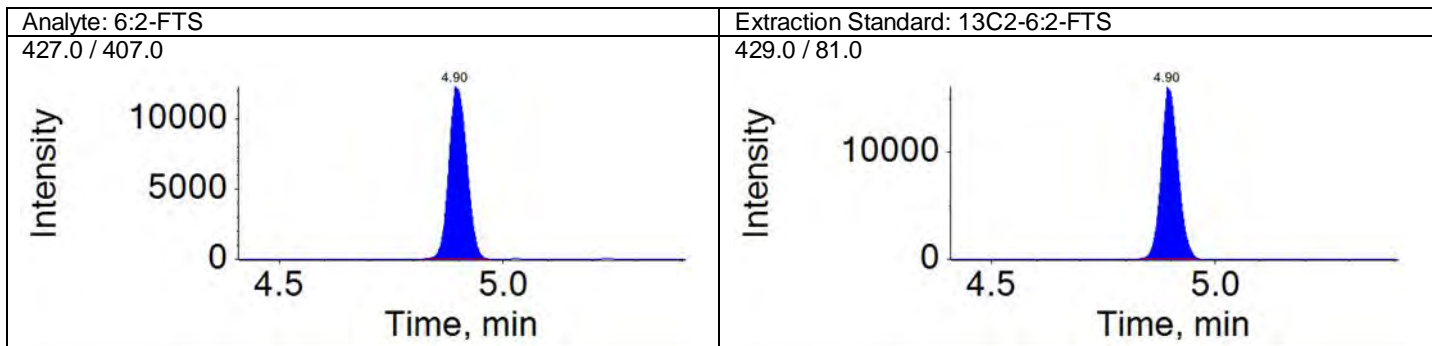
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

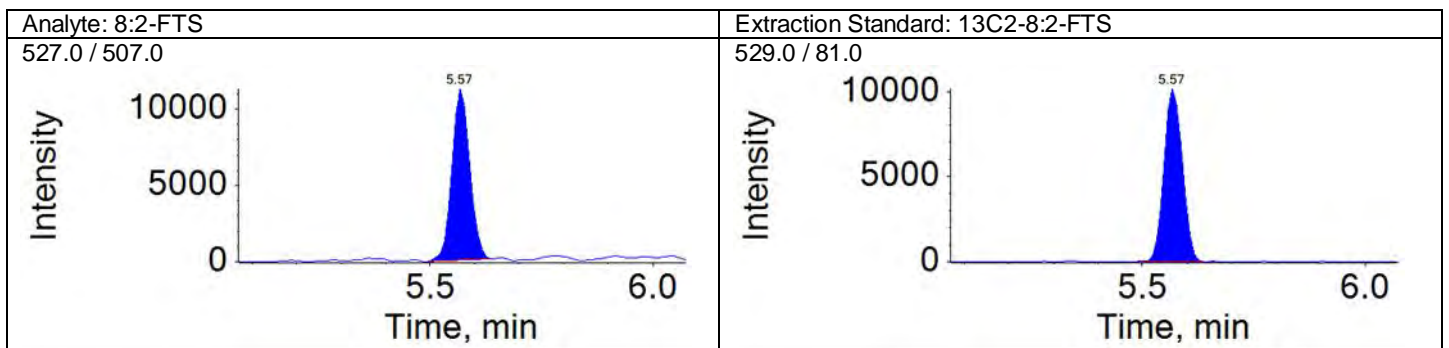
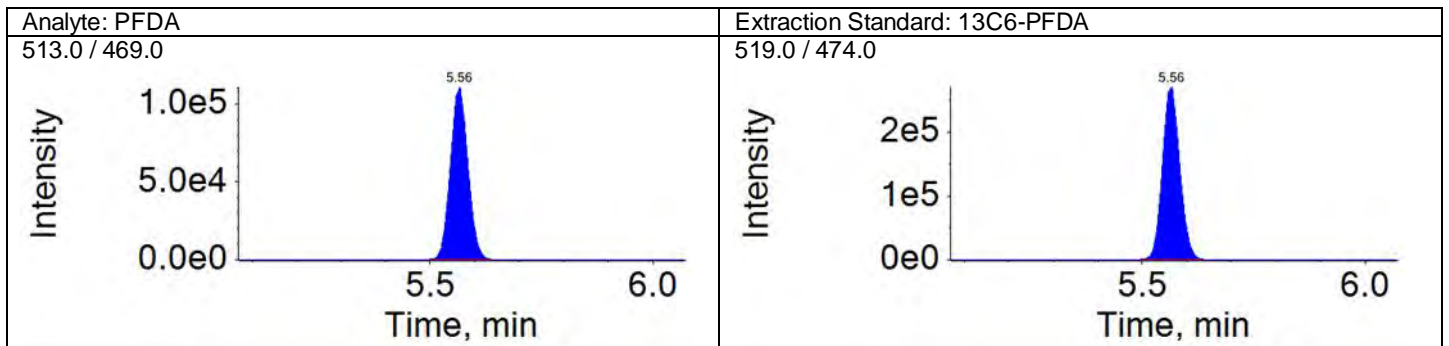
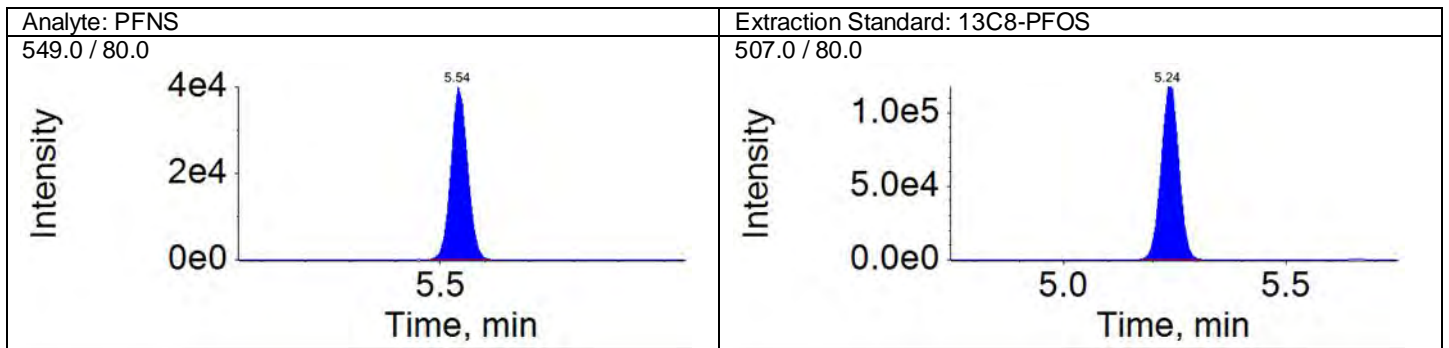
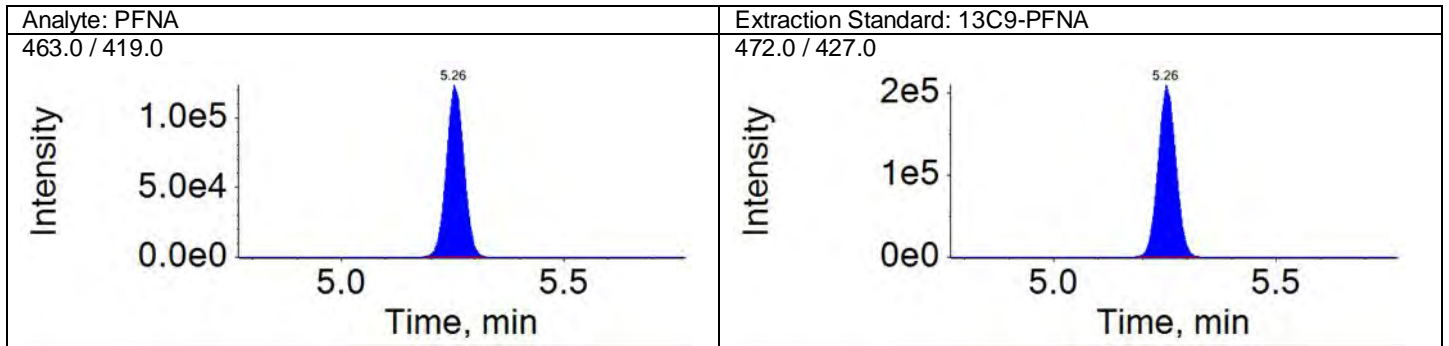
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Acquisition Method: 18AUG13\_3uL.dam





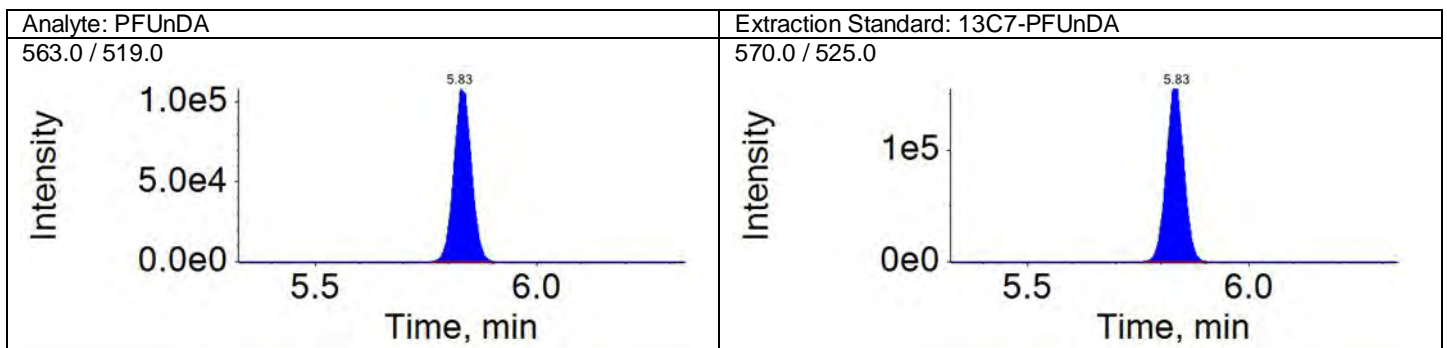
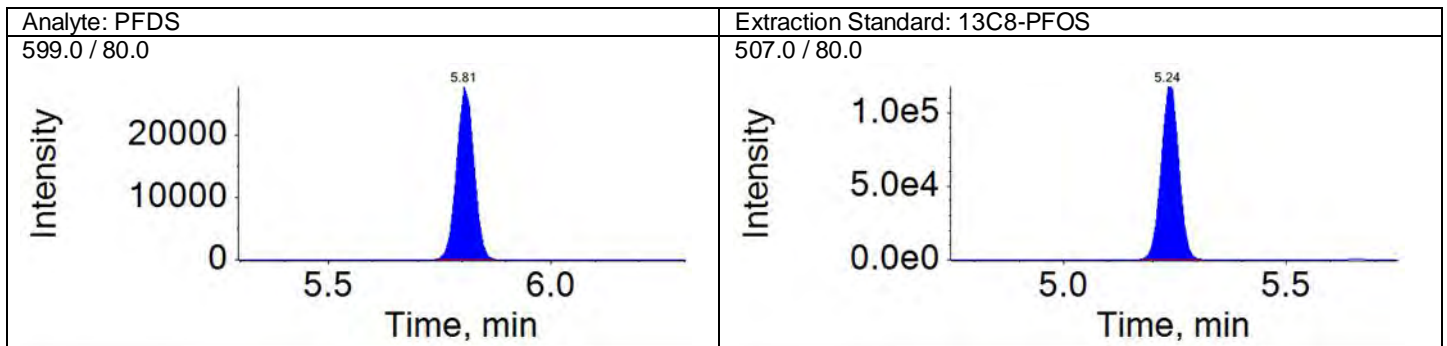
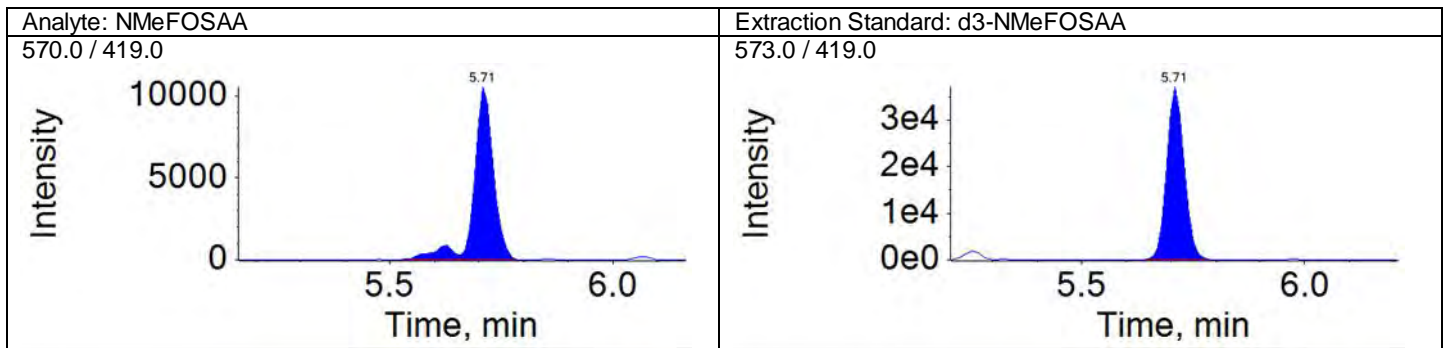
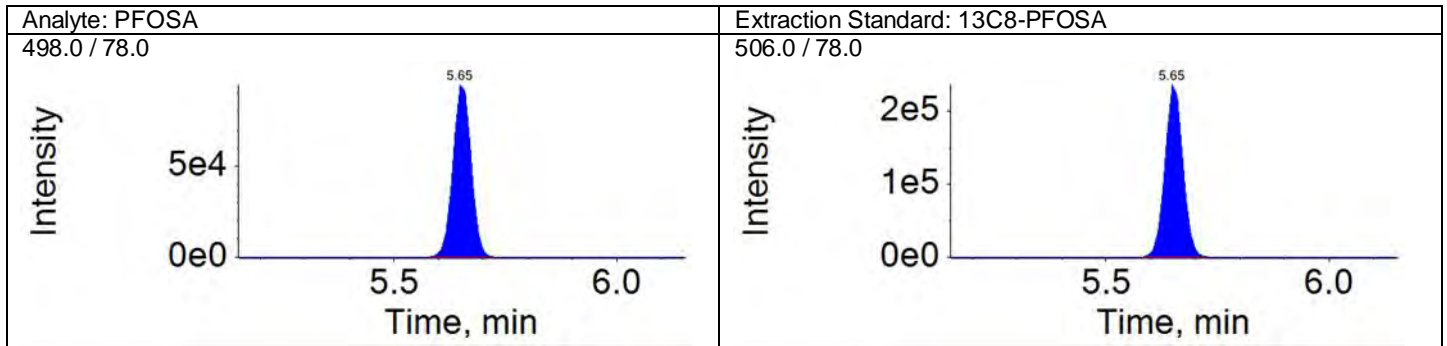
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



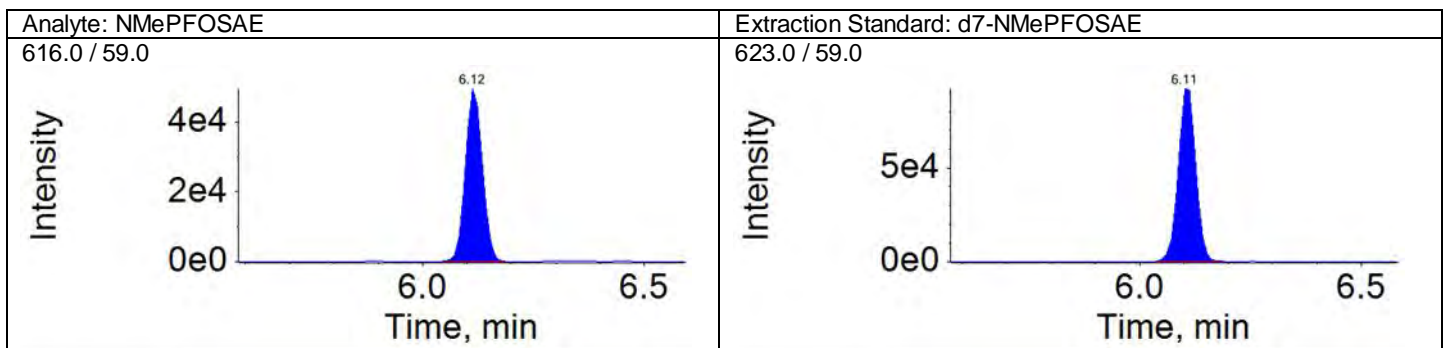
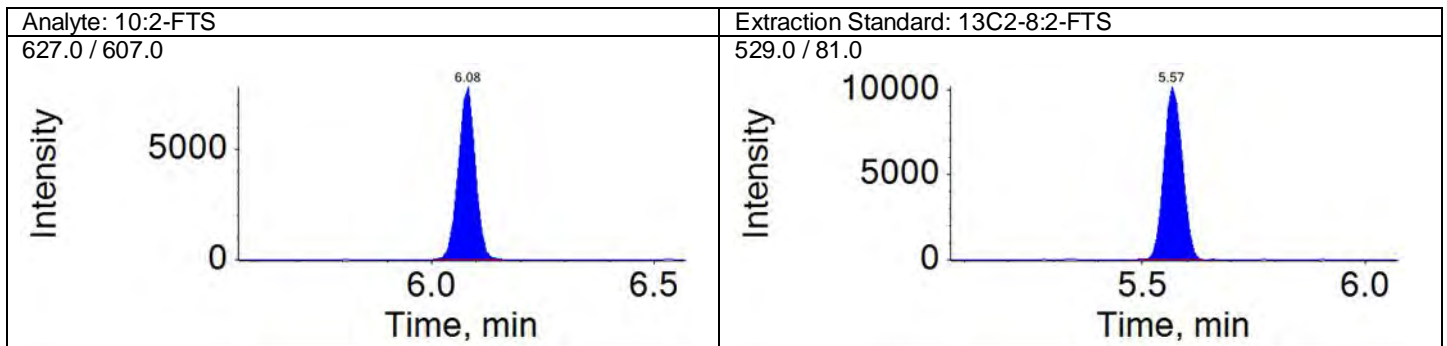
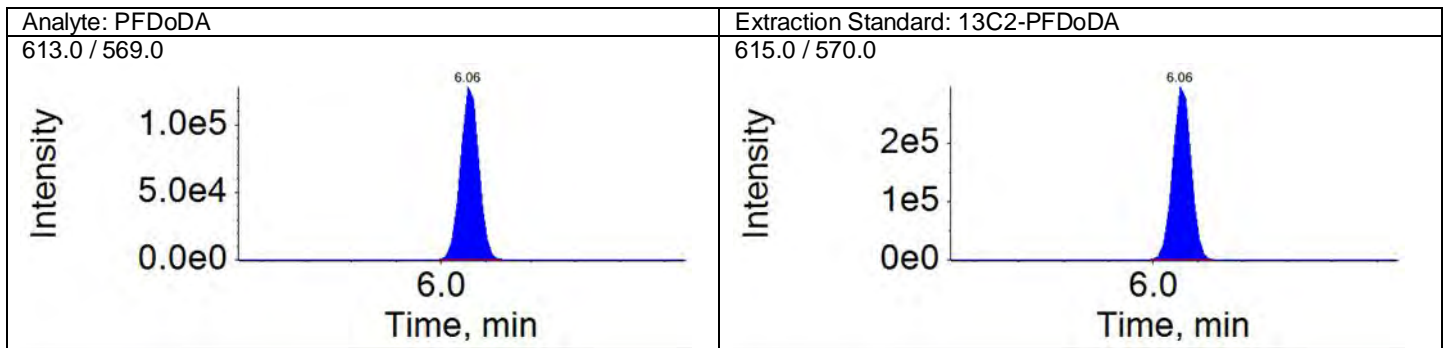
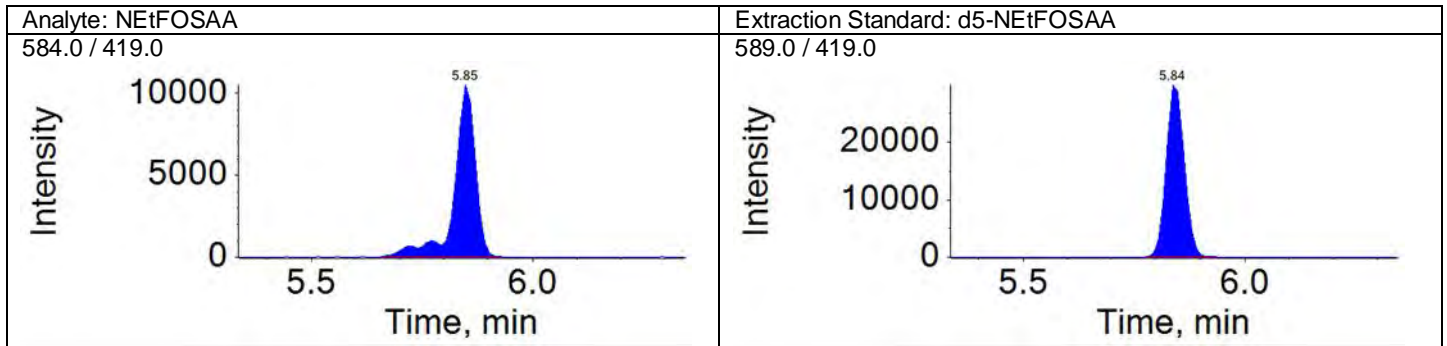
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Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



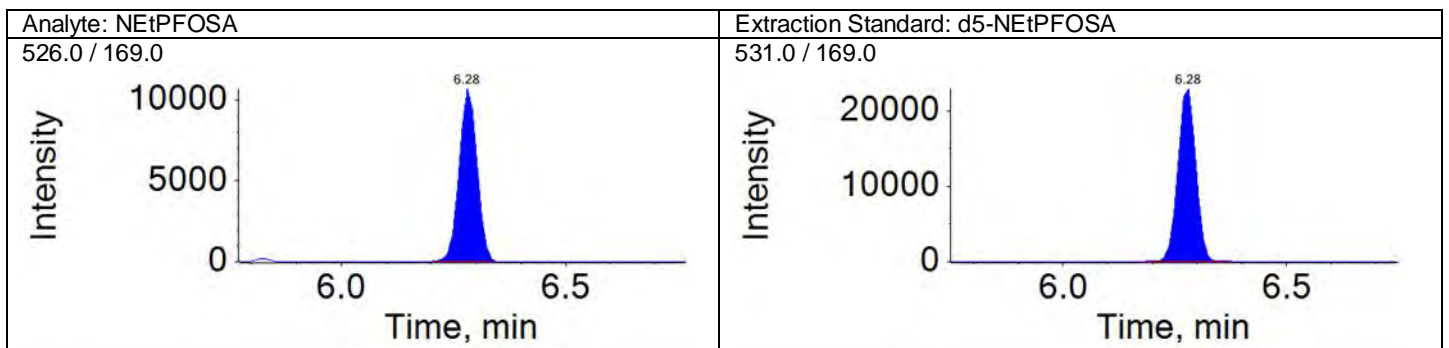
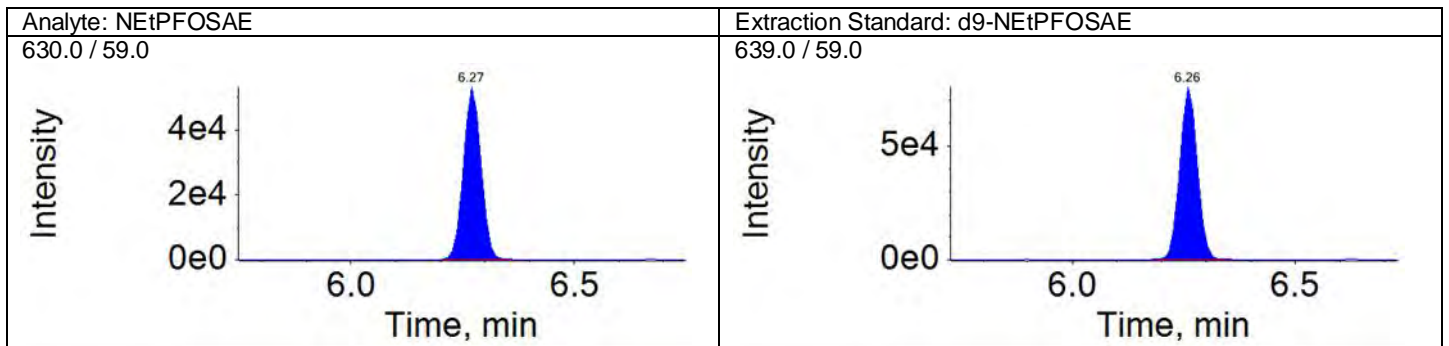
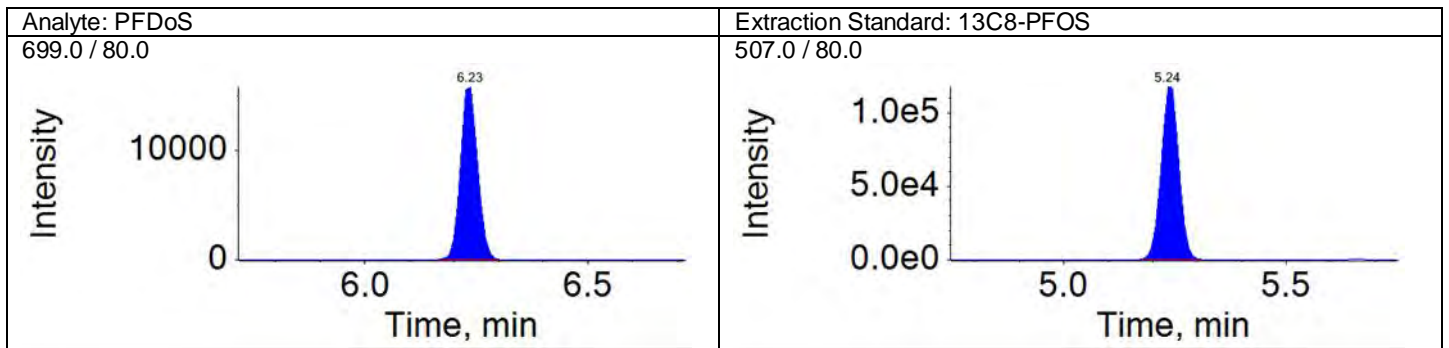
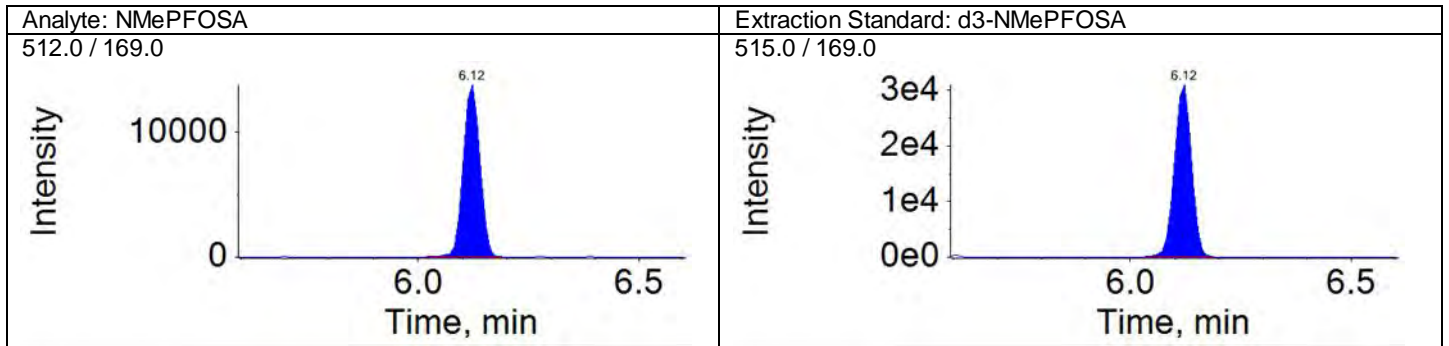
ICAL Name: 18DEC06DCAL  
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Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

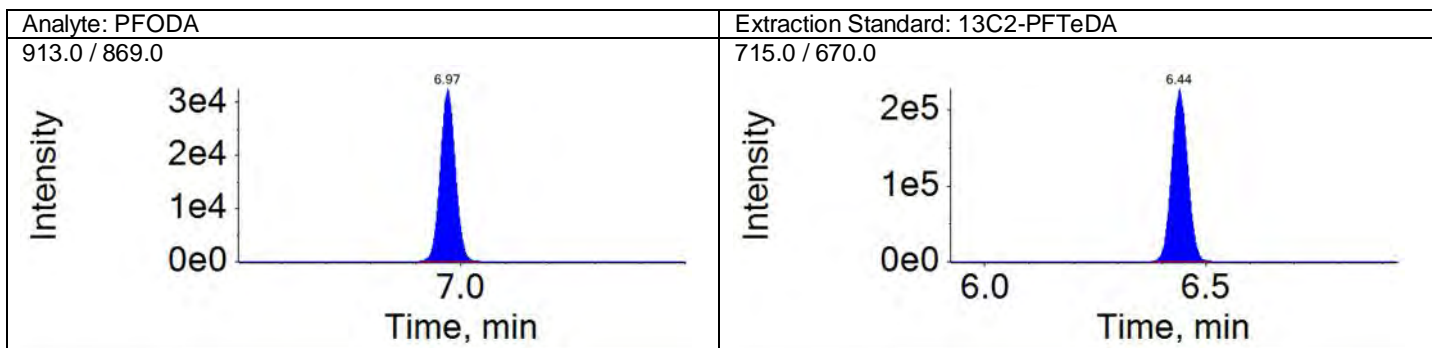
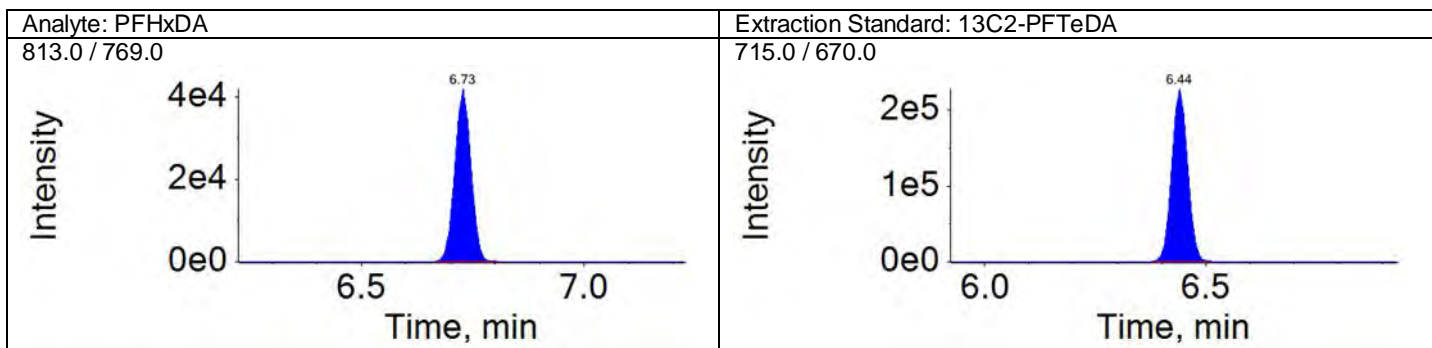
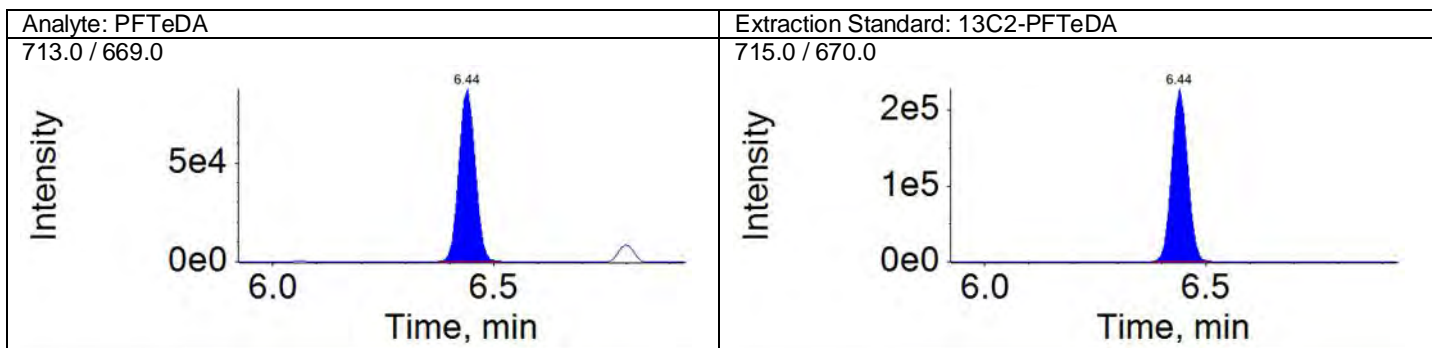
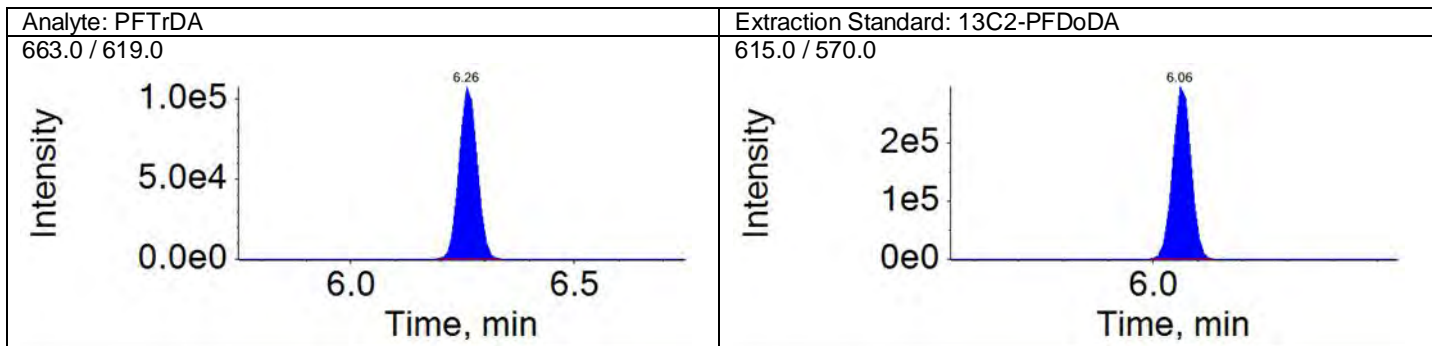
Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

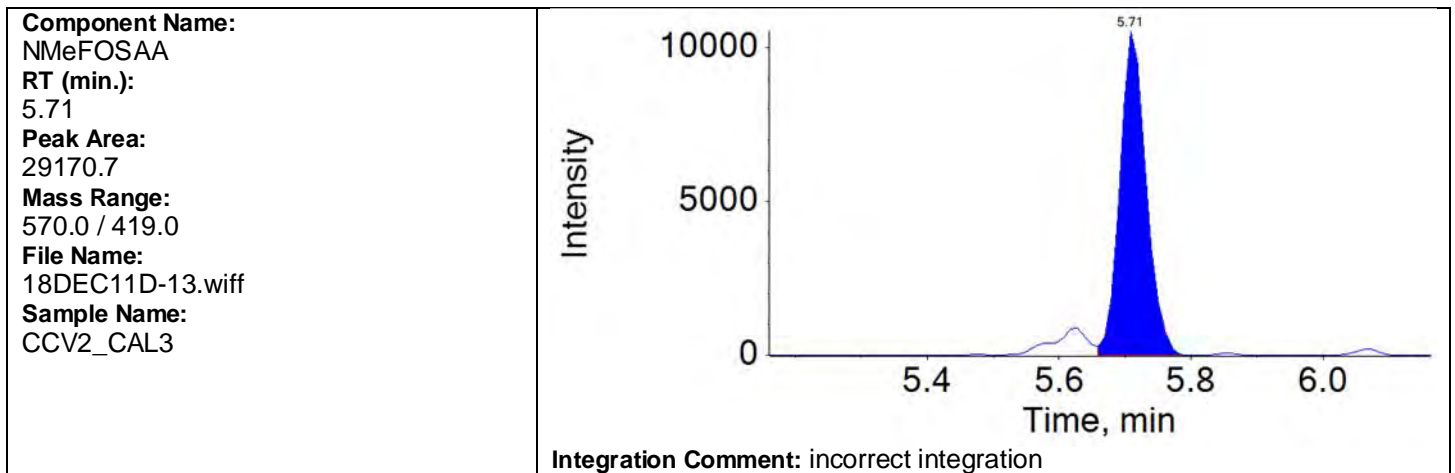
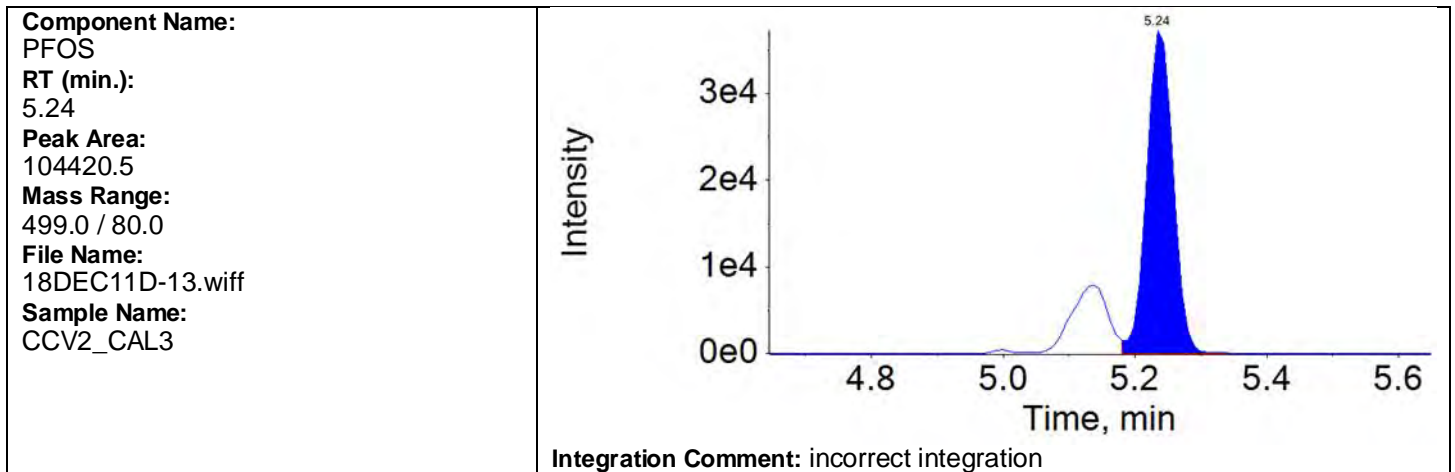
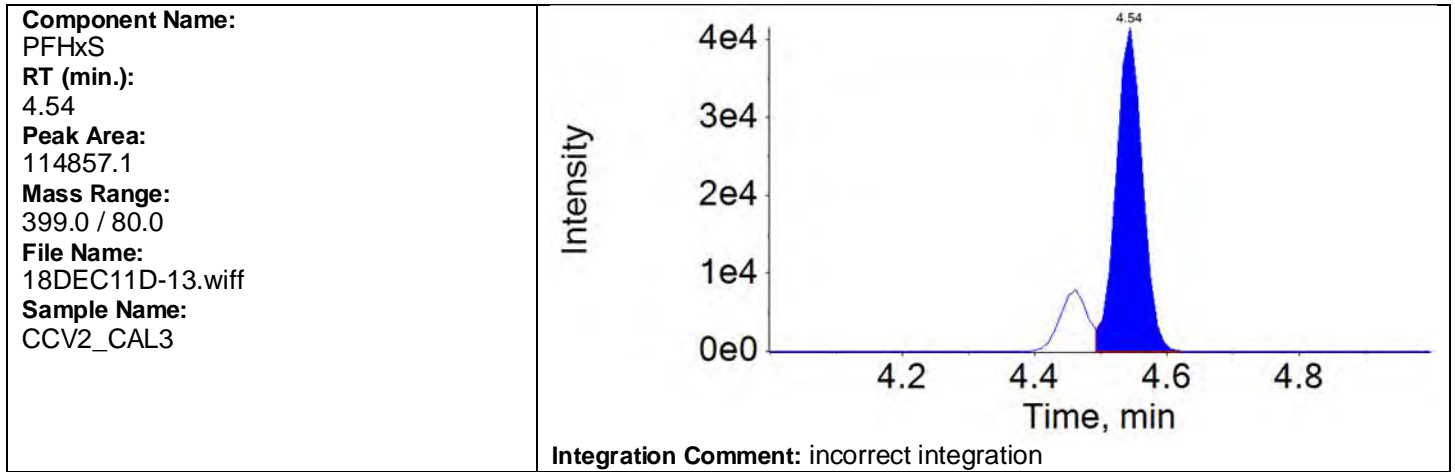
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Acquisition Method: 18AUG13\_3uL.dam





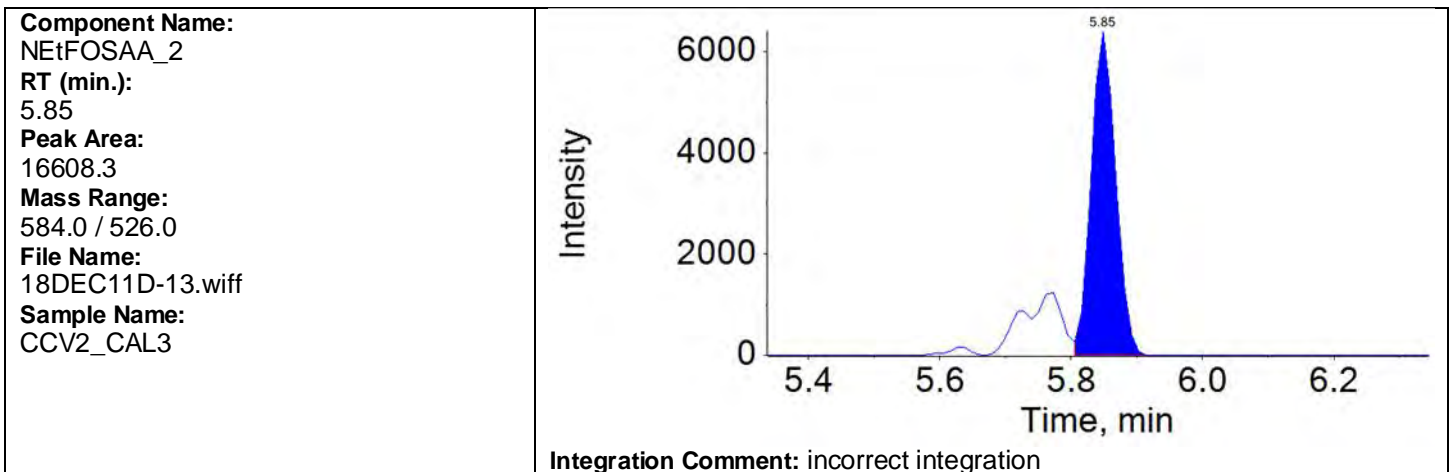
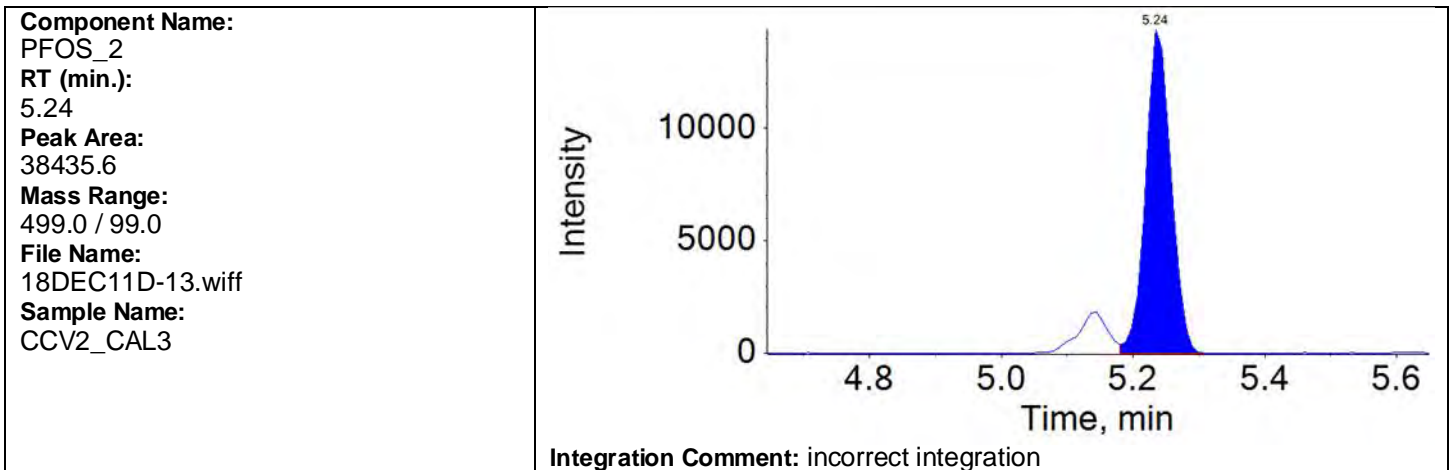
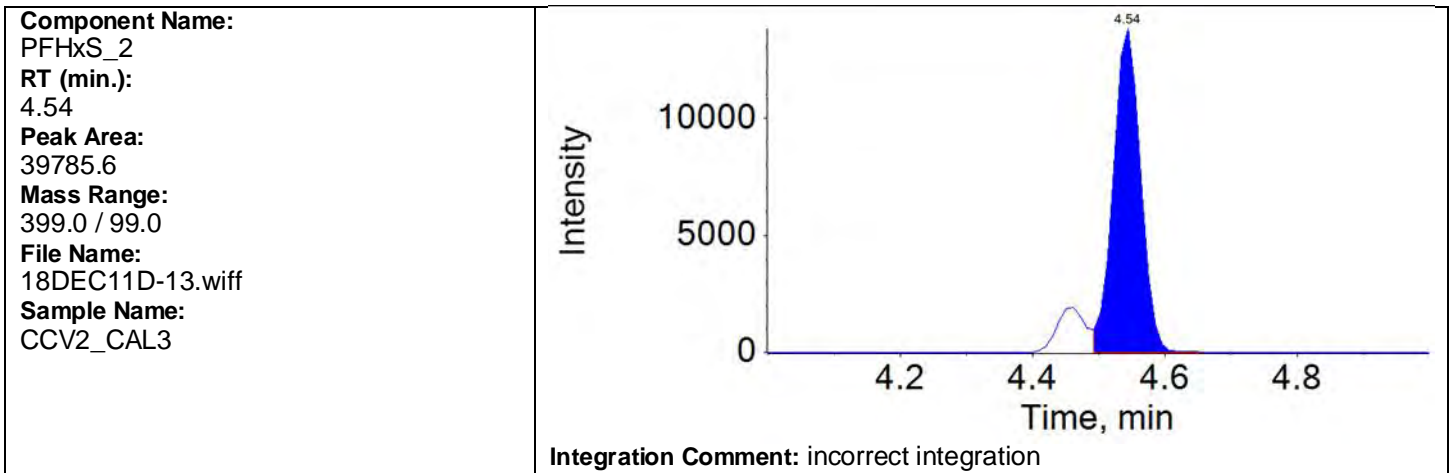
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Results Table Date: 12/11/2018 3:10:04 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC11DCCV1-7  
Results Table Date: 12/11/2018 3:10:04 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



**Results Table Name:** 18DEC11DCCV1-7  
**Results Table Date:** 12/11/2018 3:10:04 PM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
By JPT at 3:22 pm, 12/11/18

**REVIEWED**  
By umar at 11:13 am, 12/16/18

Ion Ratio Report

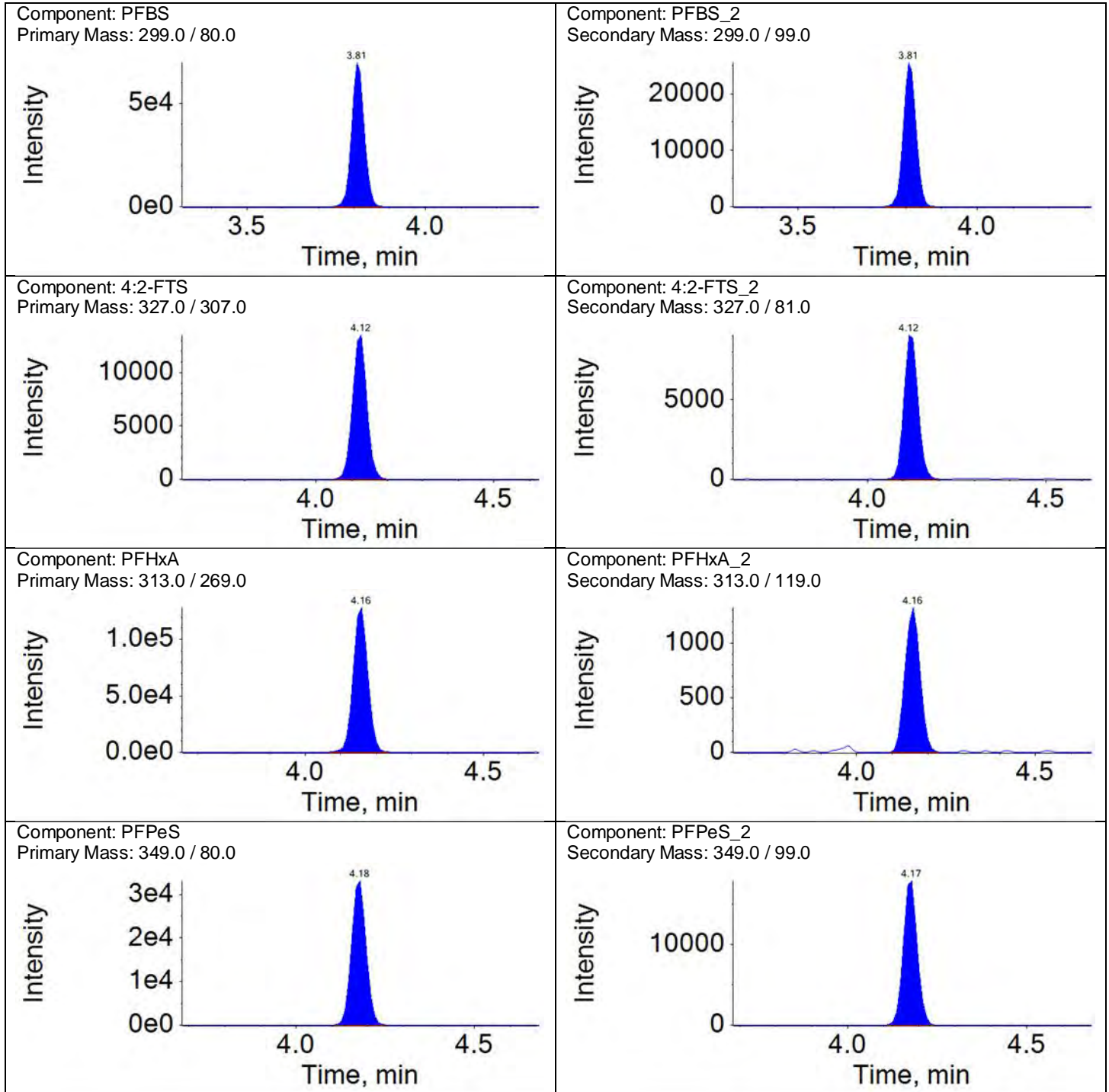
Sample Name: CCV2\_CAL3

Instrument Name: LM27631

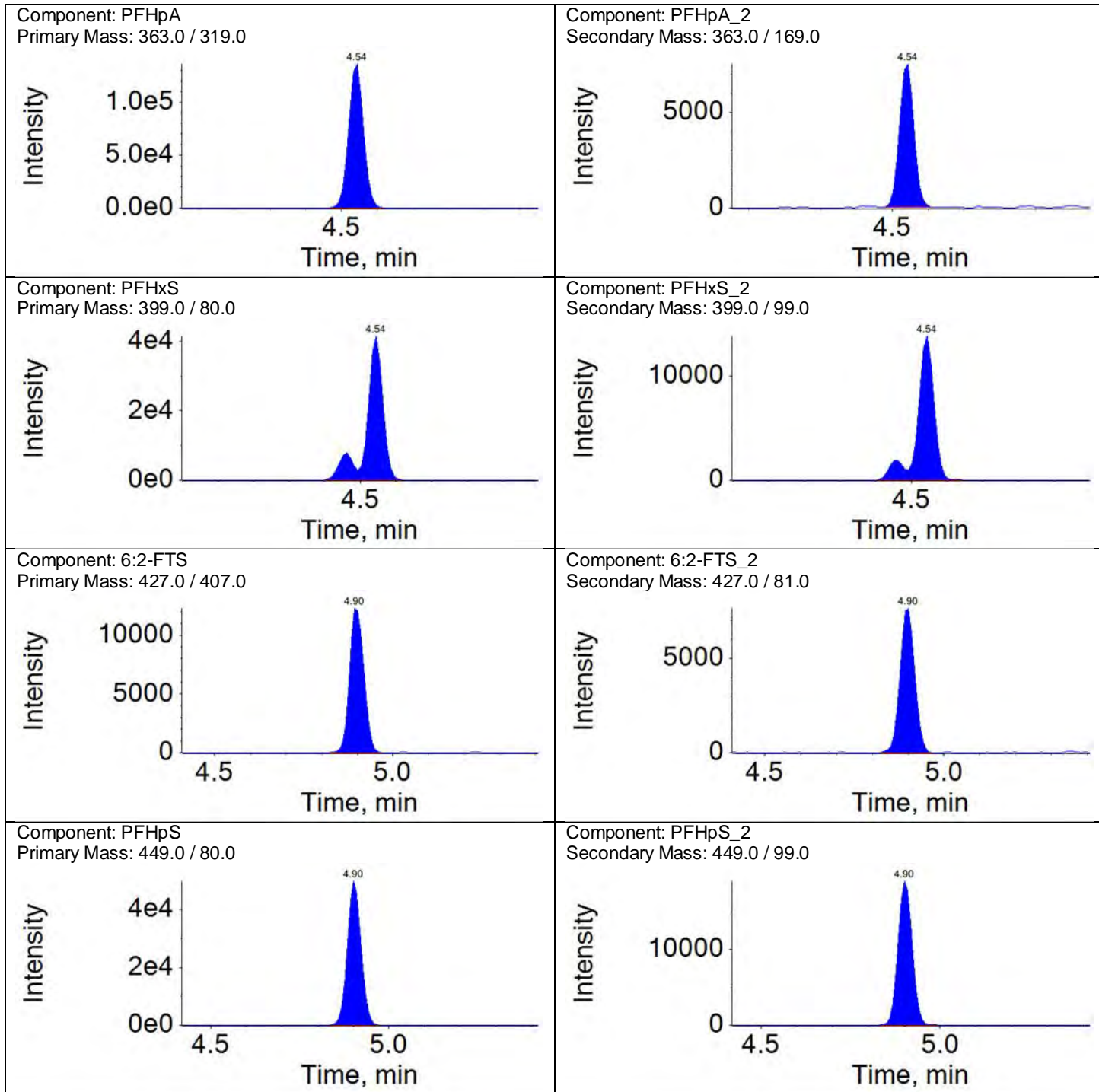
File Name: 18DEC11D-13.wiff

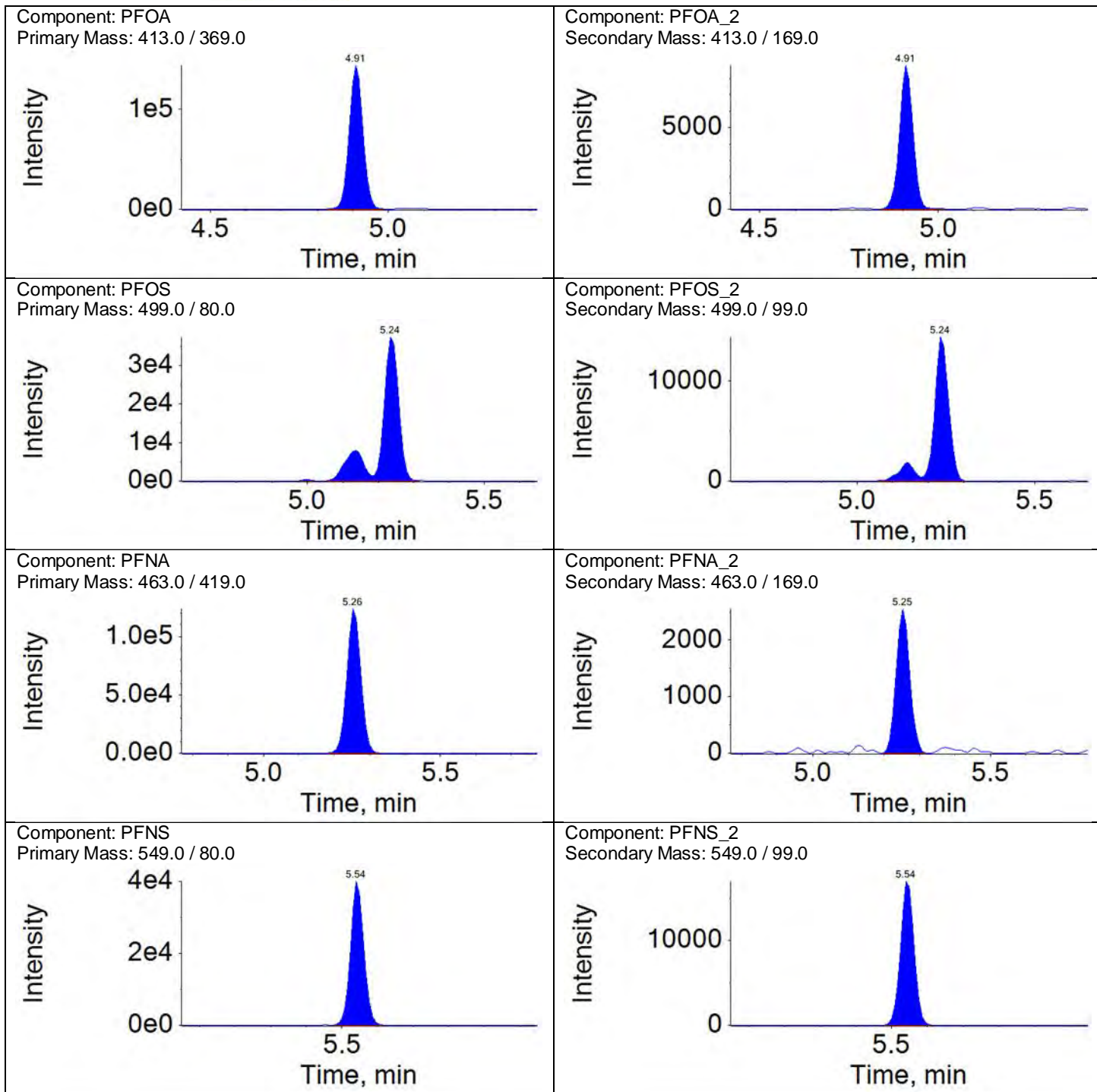
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	169716.1	A	N/A	1.0000			
PFBS_2	3.81	1.00	63014.8	A	N/A	0.3713	2	50	
4:2-FTS	4.12	1.00	37777.2	A	N/A	1.0000			
4:2-FTS_2	4.12	1.00	24988.7	A	N/A	0.6615	1	50	
PFHxA	4.16	1.00	365767.3	A	N/A	1.0000			
PFHxA_2	4.16	1.00	3908.1	A	N/A	0.0107	10	50	
PFPeS	4.18	1.10	93868.0	A	N/A	1.0000			
PFPeS_2	4.17	1.10	48339.0	A	N/A	0.5150	-2	50	
PFHpA	4.54	1.00	391672.3	A	N/A	1.0000			
PFHpA_2	4.54	1.00	21055.3	A	N/A	0.0538	-5	50	
PFHxS	4.54	1.00	137470.9	M	N/A	1.0000			
PFHxS_2	4.54	1.00	45608.6	M	N/A	0.3318	-9	50	
6:2-FTS	4.90	1.00	34247.2	A	N/A	1.0000			
6:2-FTS_2	4.90	1.00	21906.6	A	N/A	0.6397	2	50	
PFHpS	4.90	1.08	132334.3	A	N/A	1.0000			
PFHpS_2	4.90	1.08	52480.5	A	N/A	0.3966	-5	50	
PFOA	4.91	1.00	385149.4	A	N/A	1.0000			
PFOA_2	4.91	1.00	23138.0	A	N/A	0.0601	-2	50	
PFOS	5.24	1.00	135487.0	M	N/A	1.0000			
PFOS_2	5.24	1.00	44189.7	M	N/A	0.3262	8	50	
PFNA	5.26	1.00	336617.8	A	N/A	1.0000			
PFNA_2	5.25	1.00	6795.1	A	N/A	0.0202	5	50	
PFNS	5.54	1.06	102837.2	A	N/A	1.0000			
PFNS_2	5.54	1.06	44506.8	A	N/A	0.4328	-11	50	
PFDA	5.56	1.00	302087.7	A	N/A	1.0000			
PFDA_2	5.56	1.00	2296.2	A	N/A	0.0076	-21	50	
8:2-FTS	5.57	1.00	31034.9	A	N/A	1.0000			
8:2-FTS_2	5.57	1.00	18850.5	A	N/A	0.6074	-1	50	
NMeFOSAA	5.71	1.00	32437.1	M	N/A	1.0000			
NMeFOSAA_2	5.71	1.00	8983.7	A	N/A	0.2770	4	50	
PFDS	5.81	1.11	75461.6	A	N/A	1.0000			
PFDS_2	5.81	1.11	38135.6	A	N/A	0.5054	2	50	
PFAUnDA	5.83	1.00	300776.5	A	N/A	1.0000			
PFAUnDA_2	5.84	1.00	1429.7	A	N/A	0.0048	16	50	
NEtFOSAA	5.85	1.00	35066.8	A	N/A	1.0000			
NEtFOSAA_2	5.85	1.00	21870.0	M	N/A	0.6237	-7	50	
PFAoDA	6.06	1.00	364264.2	A	N/A	1.0000			
PFAoDA_2	6.07	1.00	4392.3	A	N/A	0.0121	-10	50	
10:2-FTS	6.08	1.09	20787.6	A	N/A	1.0000			
10:2-FTS_2	6.08	1.09	15574.0	A	N/A	0.7492	8	50	
PFATrDA	6.26	1.03	302779.6	A	N/A	1.0000			
PFATrDA_2	6.26	1.03	2686.1	A	N/A	0.0089	18	50	
PFATeDA	6.44	1.00	223789.9	A	N/A	1.0000			
PFATeDA_2	6.44	1.00	1426.1	A	N/A	0.0064	-4	50	
PFHxDA	6.73	1.04	105629.2	A	N/A	1.0000			
PFHxDA_2	6.73	1.04	6886.7	A	N/A	0.0652	6	50	
PFOA	6.97	1.08	74981.7	A	N/A	1.0000			
PFOA_2	6.97	1.08	2102.1	A	N/A	0.0280	3	50	

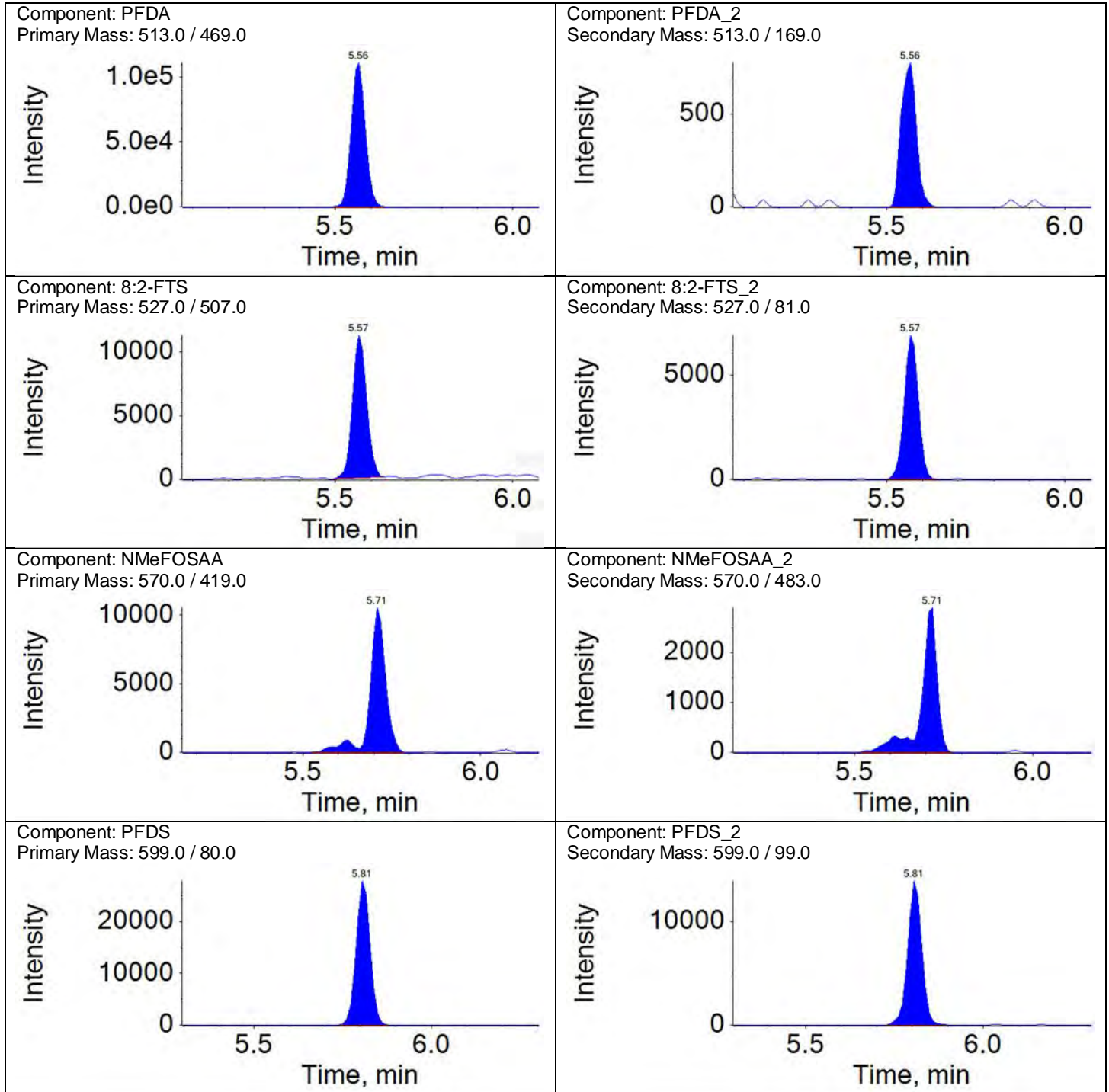


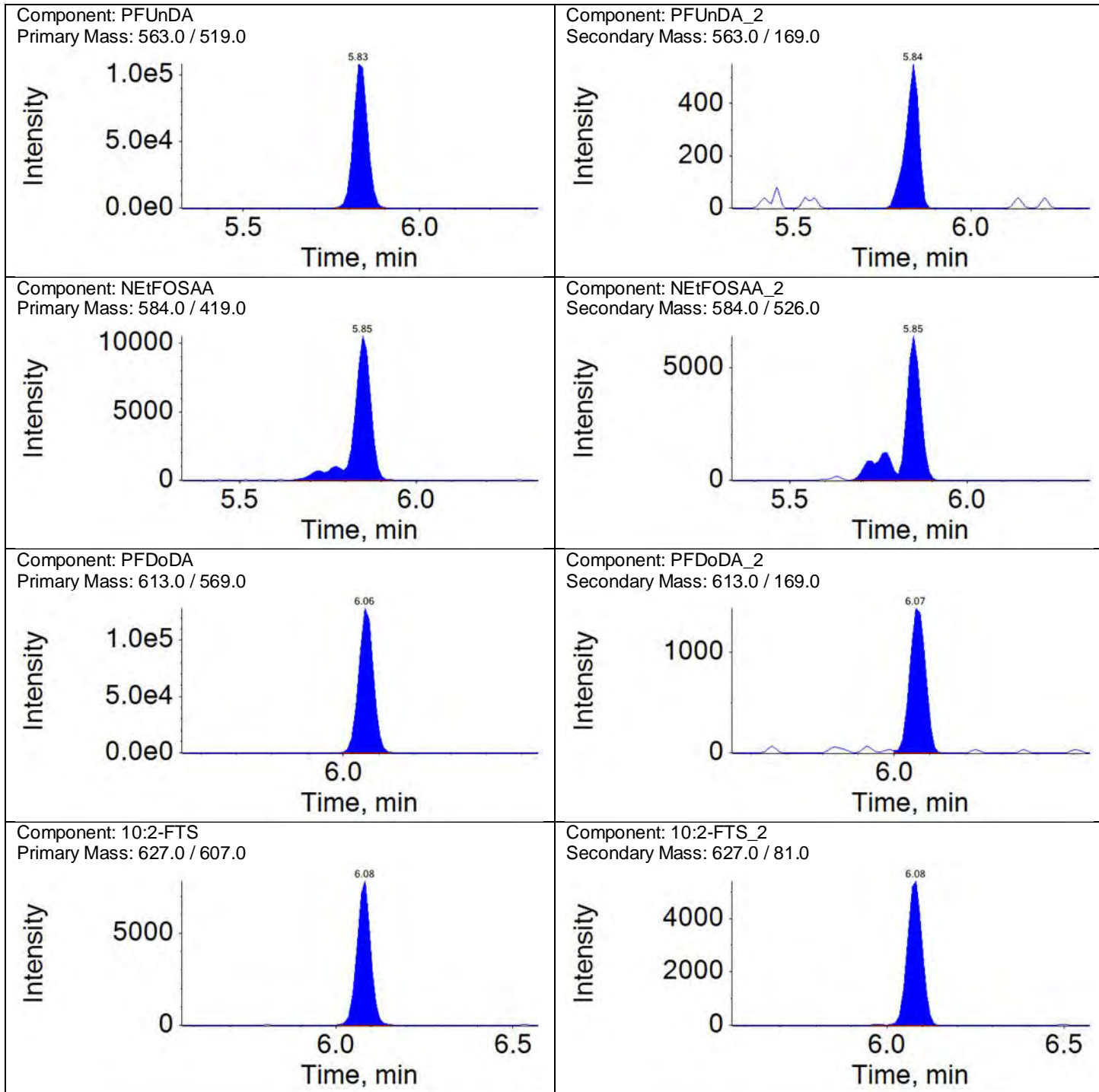




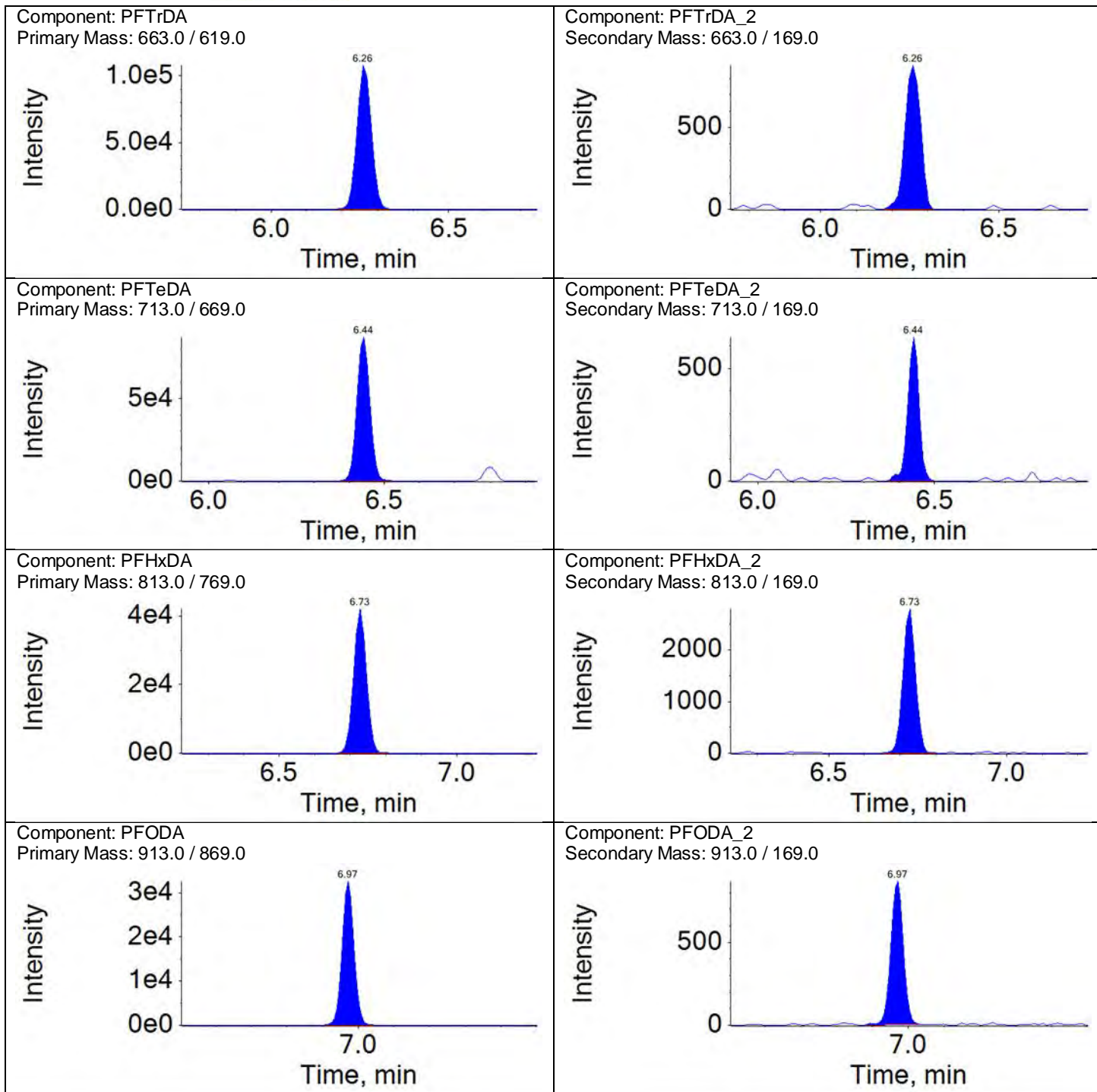














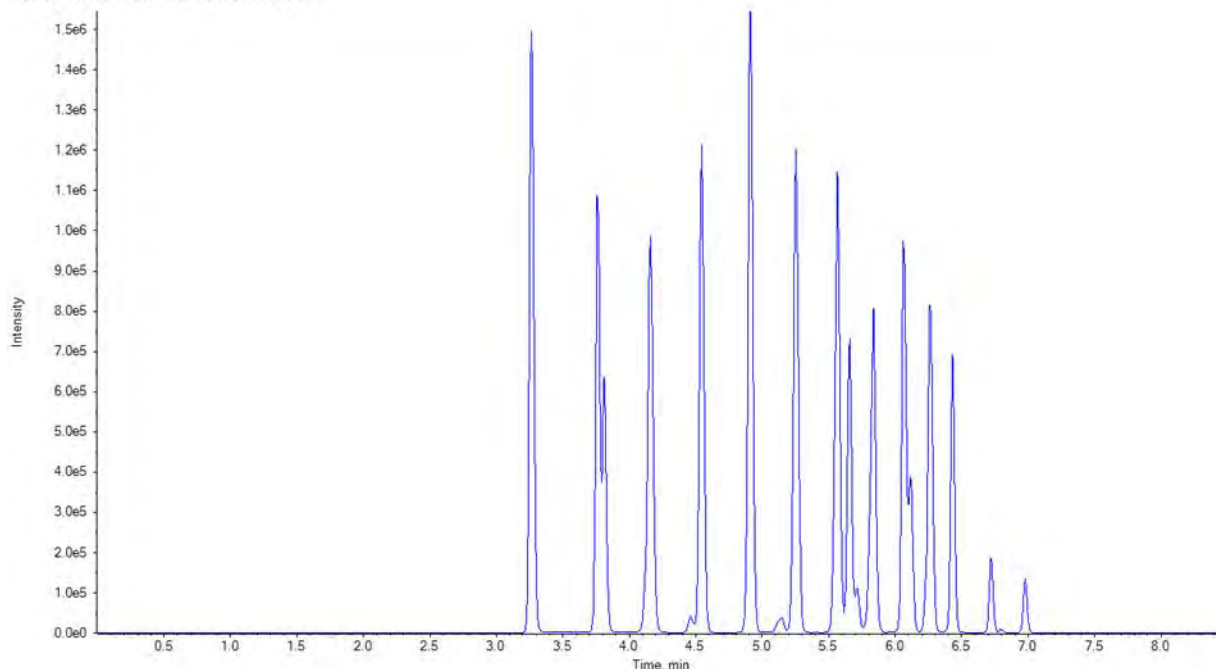
Continuing Calibration Verification

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV3_CAL4	CALBRN41833B	18DEC11D-25.wiff	2018-12-11T08:35:53

TIC from 18DEC11D-25.wiff (sample 1) - CCV3\_CAL4



Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	945399.8	953492.0	-1	50	
13C2-PFOA	5.0	503690.2	500971.3	1	50	
13C4-PFOS	4.8	307682.9	310746.2	-1	50	
13C2-PFDA	5.0	389430.5	419040.9	-7	50	

**Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL      Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV3_CAL4	CALBRN41833B	18DEC11D-25.wiff	2018-12-11T08:35:53

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	1515292.5	10	13C4-PFBA	1026871.4	5.0	1.476	3.26	1.000	8.000	8.141	2	30	
PFPeA	1433323.5	11	13C5-PFPeA	953221.1	5.0	1.504	3.77	1.000	8.000	7.910	-1	30	
PFBS	629022.6	10	13C3-PFBS	436883.8	4.7	1.440	3.81	1.000	7.080	7.137	1	30	
4:2-FTS	130552.3	11	13C2-4:2-FTS	44927.4	4.7	2.906	4.12	1.000	7.470	7.789	4	30	
PFHxA	1345039.9	12	13C5-PFHxA	696894.2	5.0	1.930	4.16	1.000	8.000	8.410	5	30	
PFPeS	334419.0	11	13C3-PFBS	436883.8	4.7	0.765	4.18	1.100	7.500	7.580	1	30	
PFHpA	1397589.1	12	13C4-PFHxA	554516.3	5.0	2.520	4.54	1.000	8.000	8.298	4	30	
PFHxS	484275.0	19	13C3-PFHxS	333006.1	4.7	1.454	4.55	1.000	7.300	6.890	-6	30	
6:2-FTS	115614.1	11	13C2-6:2-FTS	36591.4	4.8	3.160	4.90	1.000	7.580	7.846	4	30	
PFHpS	488519.7	11	13C3-PFHxS	333006.1	4.7	1.467	4.91	1.080	7.610	8.053	6	30	
PFOA	1384896.6	11	13C8-PFOA	894245.4	5.0	1.549	4.91	1.000	8.000	8.463	6	30	
PFOS	511689.6	22	13C8-PFOS	326575.9	4.8	1.567	5.24	1.000	7.400	6.499	-12	30	
PFNA	1257850.6	11	13C9-PFNA	628905.4	5.0	2.000	5.26	1.000	8.000	7.371	-8	30	
PFNS	367606.3	11	13C8-PFOS	326575.9	4.8	1.126	5.55	1.060	7.680	7.243	-6	30	
PFDA	1031473.7	11	13C6-PFDA	711020.2	5.0	1.451	5.57	1.000	8.000	8.166	2	30	
8:2-FTS	107148.1	11	13C2-8:2-FTS	29504.3	4.8	3.632	5.57	1.000	7.660	7.869	3	30	
PFOSA	1013055.9	11	13C8-PFOSA	655823.4	5.0	1.545	5.66	1.000	8.000	8.014	0	30	
NMeFOSAA	132045.9	18	d3-NMeFOSAA	105700.2	5.0	1.249	5.71	1.000	8.000	8.263	3	30	
PFDS	293879.0	11	13C8-PFOS	326575.9	4.8	0.900	5.81	1.110	7.700	7.276	-6	30	
PFUnDA	1065765.6	11	13C7-PFUnDA	395908.9	5.0	2.692	5.84	1.000	8.000	8.242	3	30	
NEtFOSAA	130399.9	22	d5-NEtFOSAA	78259.0	5.0	1.666	5.85	1.000	8.000	8.421	5	30	
PFDODA	1279144.3	11	13C2-PFDODA	837730.5	5.0	1.527	6.07	1.000	8.000	8.038	0	30	
10:2-FTS	89232.9	11	13C2-8:2-FTS	29504.3	4.8	3.024	6.08	1.090	7.710	8.011	4	30	
NMePFOSAE	450583.9	11	d7-NMePFOSAE	245387.4	5.0	1.836	6.12	1.000	8.000	7.979	0	30	
NMePFOSA	122642.8	11	d3-NMePFOSA	78653.3	5.0	1.559	6.12	1.000	8.000	7.867	-2	30	
PFDoS	149684.8	11	13C8-PFOS	326575.9	4.8	0.458	6.23	1.190	7.740	6.988	-10	30	
NEtPFOSAE	504530.1	11	d9-NEtPFOSAE	200218.9	5.0	2.520	6.27	1.000	8.000	8.443	6	30	
NEtPFOSA	107428.2	11	d5-NEtPFOSA	67113.7	5.0	1.601	6.28	1.000	8.000	7.663	-4	30	
PFTDA	1107869.4	11	13C2-PFDODA	837730.5	5.0	1.322	6.26	1.030	8.000	8.662	8	30	
PFTeDA	828663.5	10	13C2-PFTeDA	579046.3	5.0	1.431	6.43	1.000	8.000	8.184	2	30	
PFHxDA	370221.0	11	13C2-PFTeDA	579046.3	5.0	0.639	6.72	1.050	8.000	8.007	0	30	
PFOA	270517.6	10	13C2-PFTeDA	579046.3	5.0	0.467	6.98	1.080	8.000	7.499	-6	30	

**Continuing Calibration Verification**

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By JPT at 3:22 pm, 12/11/18

**REVIEWED**  
By umar at 11:13 am, 12/16/18

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV3_CAL4	Data File:	18DEC11D-25.wiff
Sample ID:	CALBRN41833B	Acquis Date:	2018-12-11T08:35:53
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	6	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC11DCCV1-7
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	N/A	Operator:	JPT12262
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	945399.8	953492.0	-1	50	
13C2-PFOA	5.0	503690.2	500971.3	1	50	
13C4-PFOS	4.8	307682.9	310746.2	-1	50	
13C2-PFDA	5.0	389430.5	419040.9	-7	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1026871.4	13C3-PFBA	945399.8	1.086	5.000	4.807	96	70-130	
E13C5-PFPeA	953221.1	13C3-PFBA	945399.8	1.008	5.000	4.789	96	70-130	
E13C3-PFBS	436883.8	13C3-PFBA	945399.8	0.462	4.650	3.917	84	70-130	
E13C2-4:2-FTS	44927.4	13C2-PFOA	503690.2	0.089	4.670	3.495	75	70-130	
E13C5-PFHxA	696894.2	13C2-PFOA	503690.2	1.384	5.000	4.645	93	70-130	
E13C3-PFHxS	333006.1	13C2-PFOA	503690.2	0.661	4.730	4.241	90	70-130	
E13C4-PFHpA	554516.3	13C2-PFOA	503690.2	1.101	5.000	4.680	94	70-130	
E13C2-6:2-FTS	36591.4	13C2-PFOA	503690.2	0.073	4.750	4.500	95	70-130	
E13C8-PFOA	894245.4	13C2-PFOA	503690.2	1.775	5.000	5.019	100	70-130	
E13C8-PFOS	326575.9	13C4-PFOS	307682.9	1.061	4.780	4.763	100	70-130	
E13C9-PFNA	628905.4	13C4-PFOS	307682.9	2.044	5.000	5.776	116	70-130	
E13C6-PFDA	711020.2	13C2-PFDA	389430.5	1.826	5.000	4.838	97	70-130	
E13C2-8:2-FTS	29504.3	13C2-PFDA	389430.5	0.076	4.790	4.946	103	70-130	
E13C8-PFOA	655823.4	13C2-PFDA	389430.5	1.684	5.000	3.983	80	70-130	
Ed3-NMeFOSAA	105700.2	13C2-PFDA	389430.5	0.271	5.000	4.810	96	70-130	
E13C7-PFUnDA	395908.9	13C2-PFDA	389430.5	1.017	5.000	4.987	100	70-130	
Ed5-NEtFOSAA	78259.0	13C2-PFDA	389430.5	0.201	5.000	4.436	89	70-130	
E13C2-PFDoDA	837730.5	13C2-PFDA	389430.5	2.151	5.000	4.514	90	70-130	
Ed7-NMePFOSAE	245387.4	13C2-PFDA	389430.5	0.630	5.000	3.630	73	70-130	
Ed3-NMePFOSA	78653.3	13C2-PFDA	389430.5	0.202	5.000	3.680	74	70-130	
Ed9-NEtPFOSAE	200218.9	13C2-PFDA	389430.5	0.514	5.000	3.545	71	70-130	
Ed5-NEtPFOSA	67113.7	13C2-PFDA	389430.5	0.172	5.000	3.878	78	70-130	
E13C2-PFTeDA	579046.3	13C2-PFDA	389430.5	1.487	5.000	4.413	88	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam

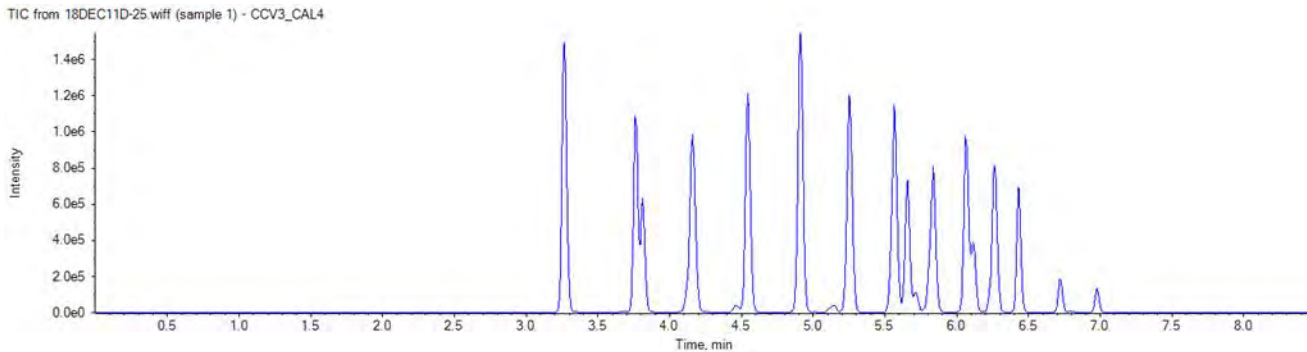
**Analyte Quantitation Peak Table**

Sample Name: CCV3\_CAL4 Instrument Name: LM27631 File Name: 18DEC11D-25.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	1515292.5		A	13C4-PFBA	3.26	1026871.4	1.476	8.141
PFPeA	3.77	1.000	1433323.5		A	13C5-PFPeA	3.77	953221.1	1.504	7.910
PFBS	3.81	1.000	629022.6		A	13C3-PFBS	3.81	436883.8	1.440	7.137
4:2-FTS	4.12	1.000	130552.3		A	13C2-4:2-FTS	4.12	44927.4	2.906	7.789
PFHxA	4.16	1.000	1345039.9		A	13C5-PFHxA	4.16	696894.2	1.930	8.410
PFPeS	4.18	1.100	334419.0		A	13C3-PFBS	3.81	436883.8	0.765	7.580
PFHpA	4.54	1.000	1397589.1		A	13C4-PFHpA	4.54	554516.3	2.520	8.298
PFHxS	4.55	1.000	484275.0		M	13C3-PFHxS	4.55	333006.1	1.454	6.890
6:2-FTS	4.90	1.000	115614.1		A	13C2-6:2-FTS	4.90	36591.4	3.160	7.846
PFHpS	4.91	1.080	488519.7		A	13C3-PFHxS	4.55	333006.1	1.467	8.053
PFOA	4.91	1.000	1384896.6		A	13C8-PFOA	4.91	894245.4	1.549	8.463
PFOS	5.24	1.000	511689.6		M	13C8-PFOS	5.24	326575.9	1.567	6.499
PFNA	5.26	1.000	1257850.6		A	13C9-PFNA	5.26	628905.4	2.000	7.371
PFNS	5.55	1.060	367606.3		A	13C8-PFOS	5.24	326575.9	1.126	7.243
PFDA	5.57	1.000	1031473.7		A	13C6-PFDA	5.57	711020.2	1.451	8.166
8:2-FTS	5.57	1.000	107148.1		A	13C2-8:2-FTS	5.57	29504.3	3.632	7.869
PFOSA	5.66	1.000	1013055.9		A	13C8-PFOSA	5.66	655823.4	1.545	8.014
NMeFOSAA	5.71	1.000	132045.9		M	d3-NMeFOSAA	5.71	105700.2	1.249	8.263
PFDS	5.81	1.110	293879.0		A	13C8-PFOS	5.24	326575.9	0.900	7.276
PfUnDA	5.84	1.000	1065765.6		A	13C7-PfUnDA	5.84	395908.9	2.692	8.242
NEtFOSAA	5.85	1.000	130399.9		A	d5-NEtFOSAA	5.85	78259.0	1.666	8.421
PFDoDA	6.07	1.000	1279144.3		A	13C2-PFDoDA	6.07	837730.5	1.527	8.038
10:2-FTS	6.08	1.090	89232.9		A	13C2-8:2-FTS	5.57	29504.3	3.024	8.011
NMePFOSAE	6.12	1.000	450583.9		A	d7-NMePFOSAE	6.11	245387.4	1.836	7.979
NMePFOSA	6.12	1.000	122642.8		A	d3-NMePFOSA	6.12	78653.3	1.559	7.867
PFDoS	6.23	1.190	149684.8		A	13C8-PFOS	5.24	326575.9	0.458	6.988
NEtPFOSAE	6.27	1.000	504530.1		A	d9-NEtPFOSAE	6.26	200218.9	2.520	8.443
NEtPFOSA	6.28	1.000	107428.2		A	d5-NEtPFOSA	6.28	67113.7	1.601	7.663
PFTeDA	6.26	1.030	1107869.4		A	13C2-PFDoDA	6.07	837730.5	1.322	8.662
PFTeDA	6.43	1.000	828663.5		A	13C2-PFTeDA	6.43	579046.3	1.431	8.184
PFHxDA	6.72	1.050	370221.0		A	13C2-PFTeDA	6.43	579046.3	0.639	8.007
PFODA	6.98	1.080	270517.6		A	13C2-PFTeDA	6.43	579046.3	0.467	7.499

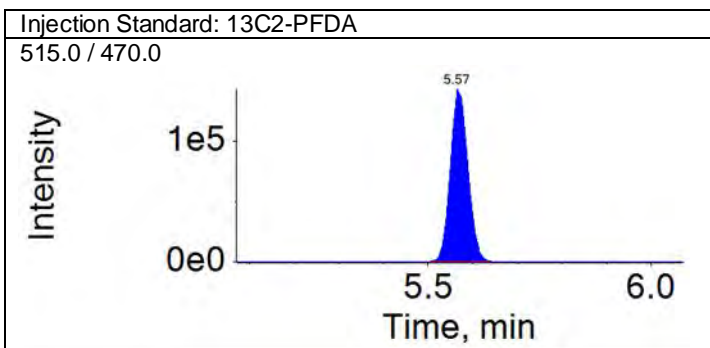
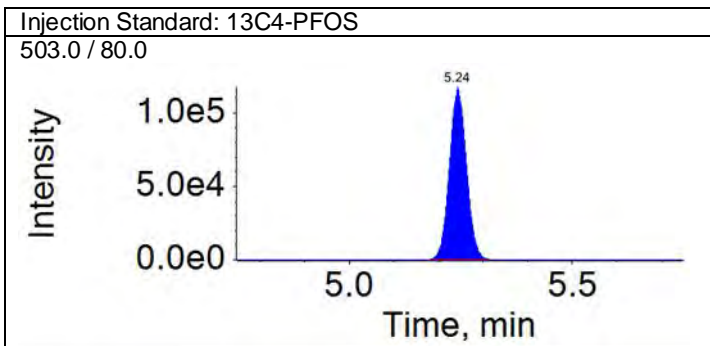
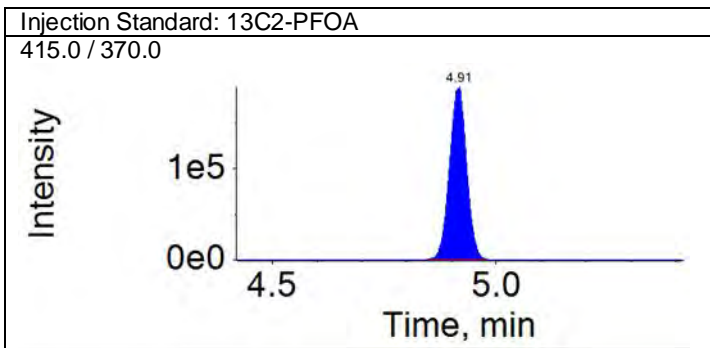
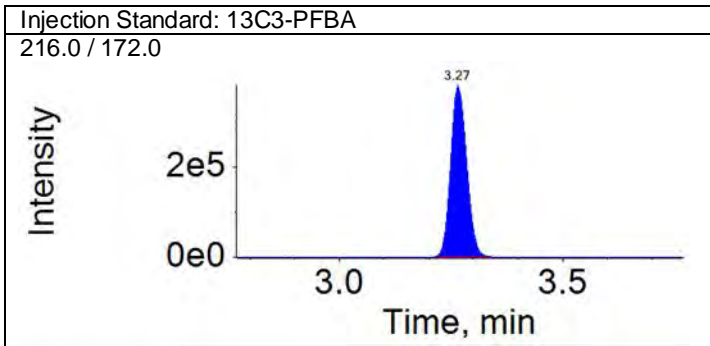
**Total Ion Chromatogram**





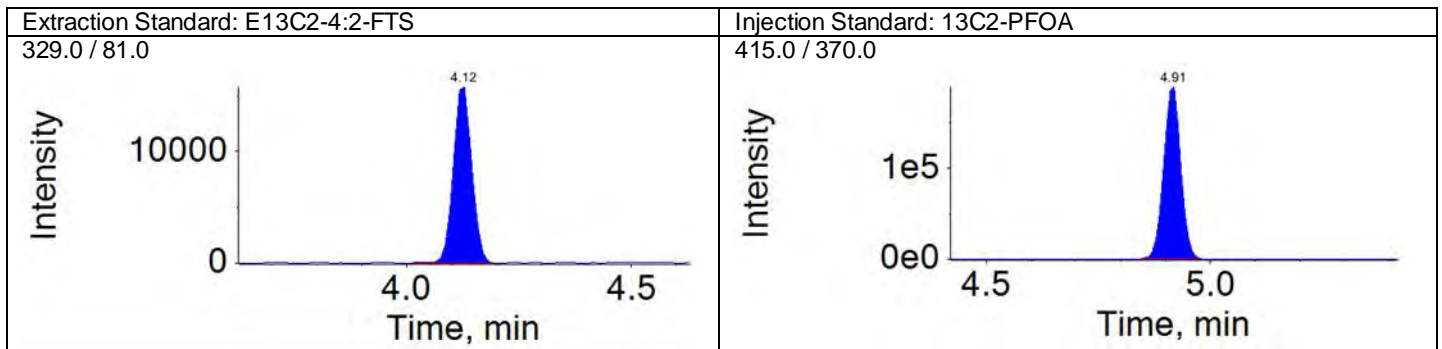
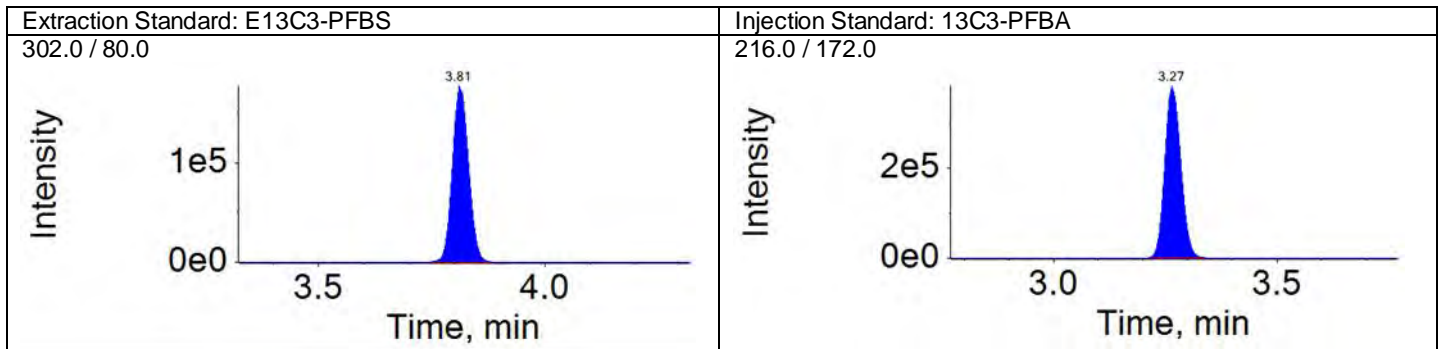
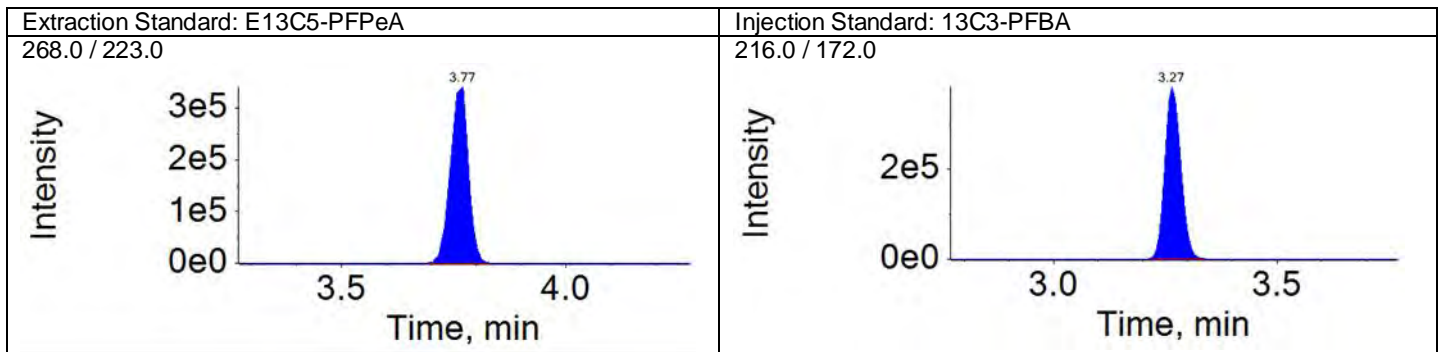
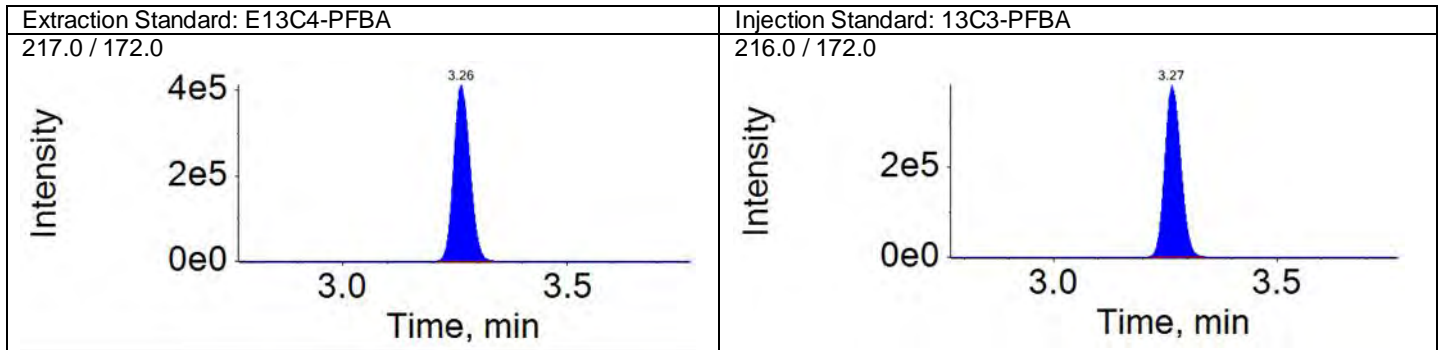
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QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



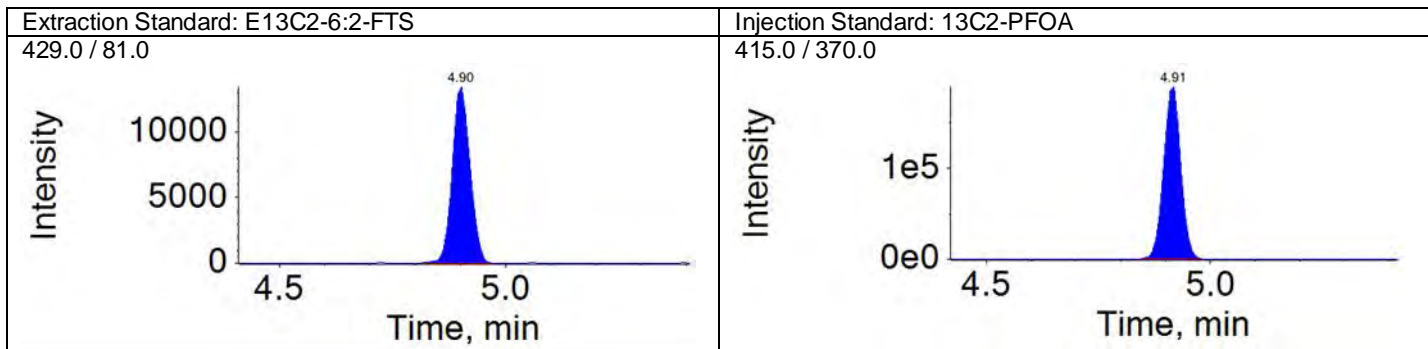
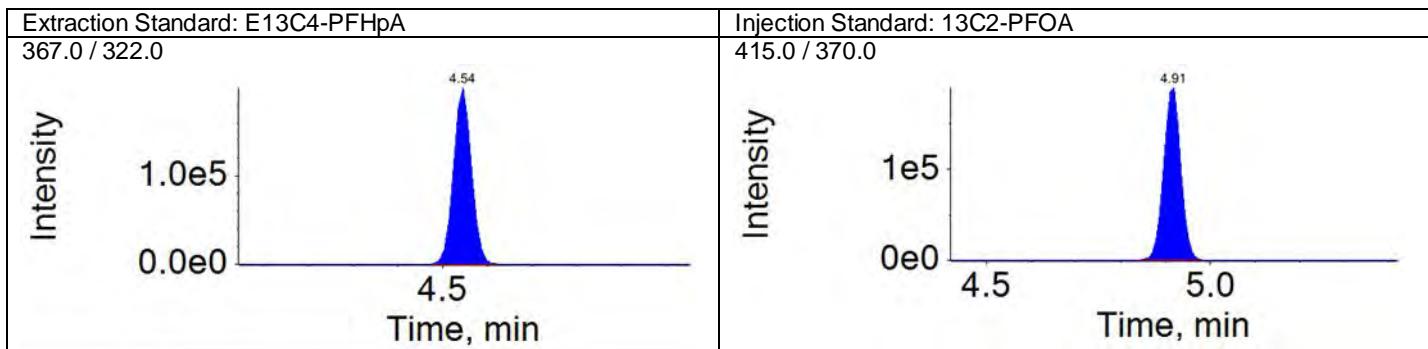
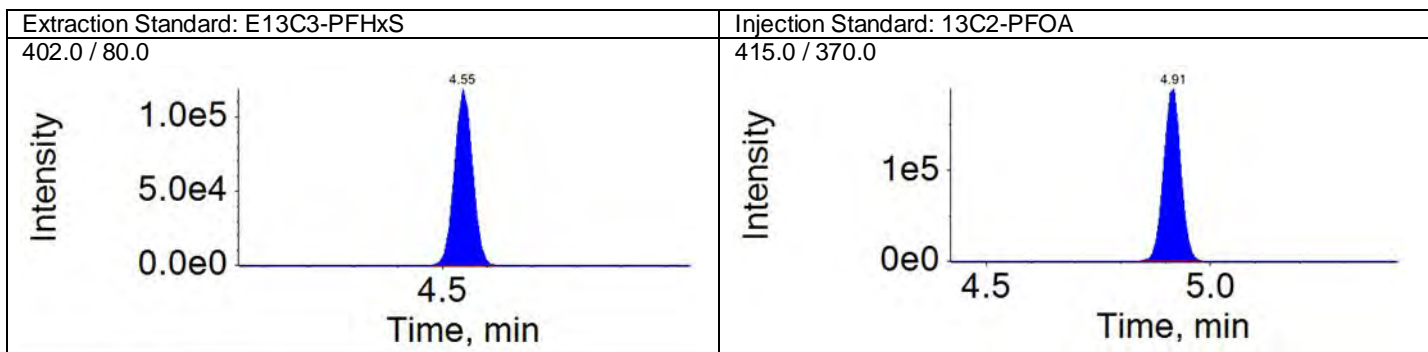
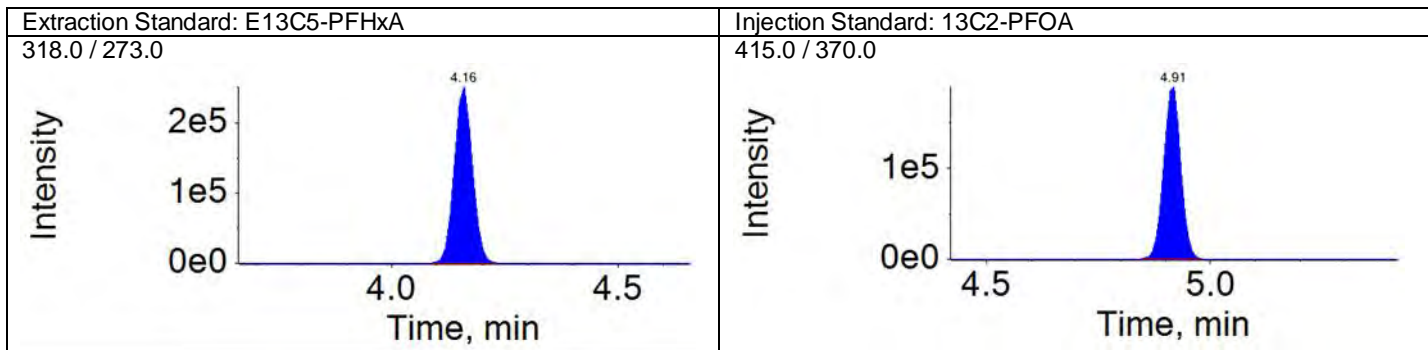
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



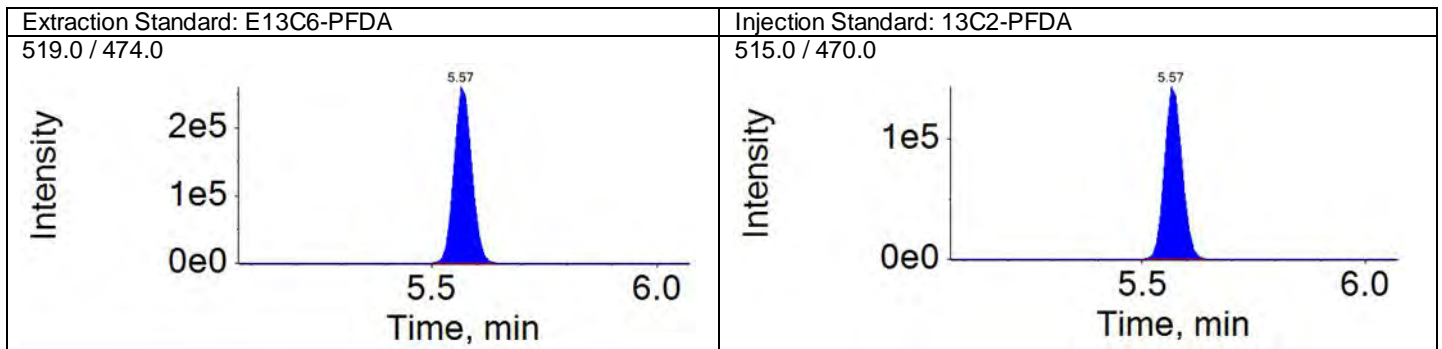
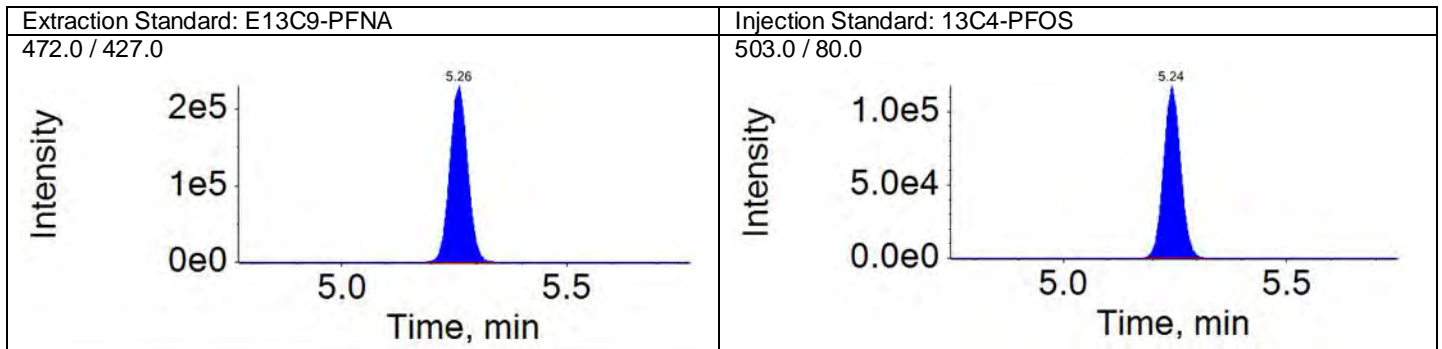
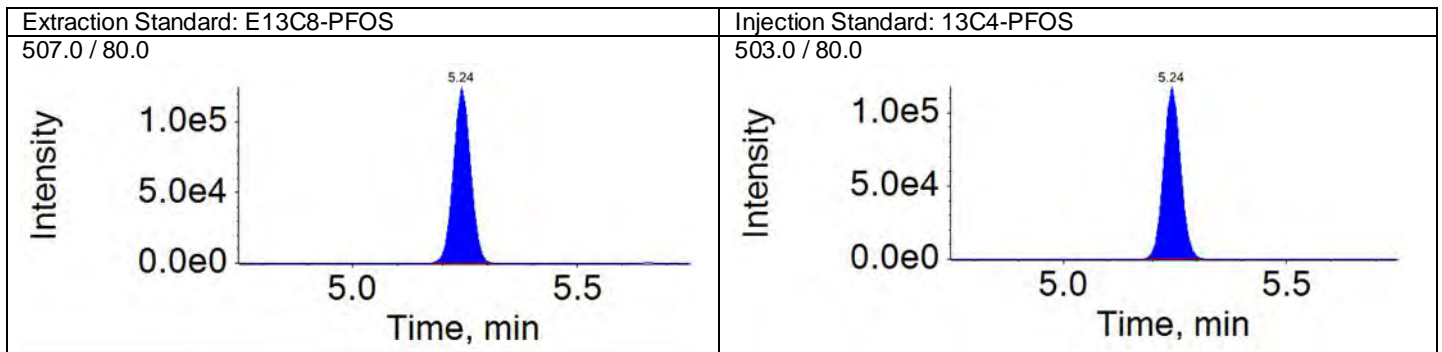
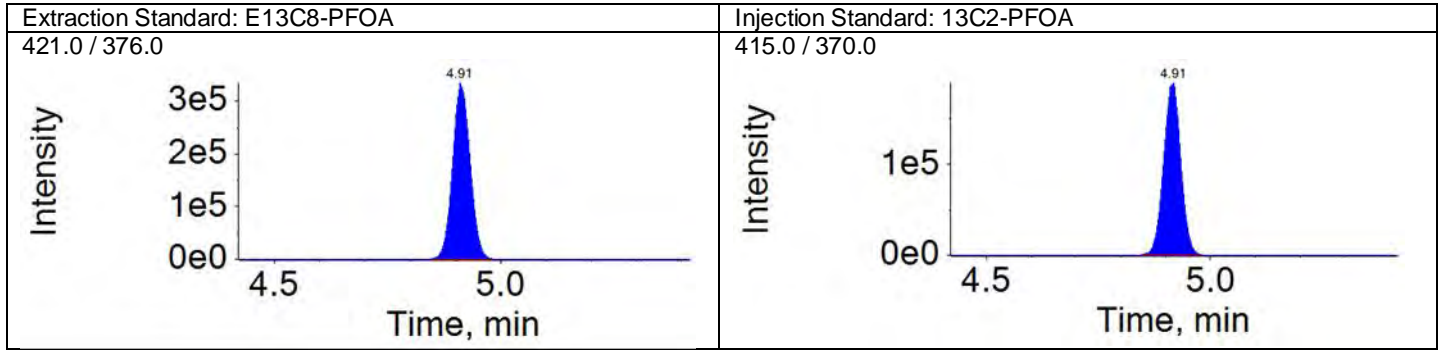
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

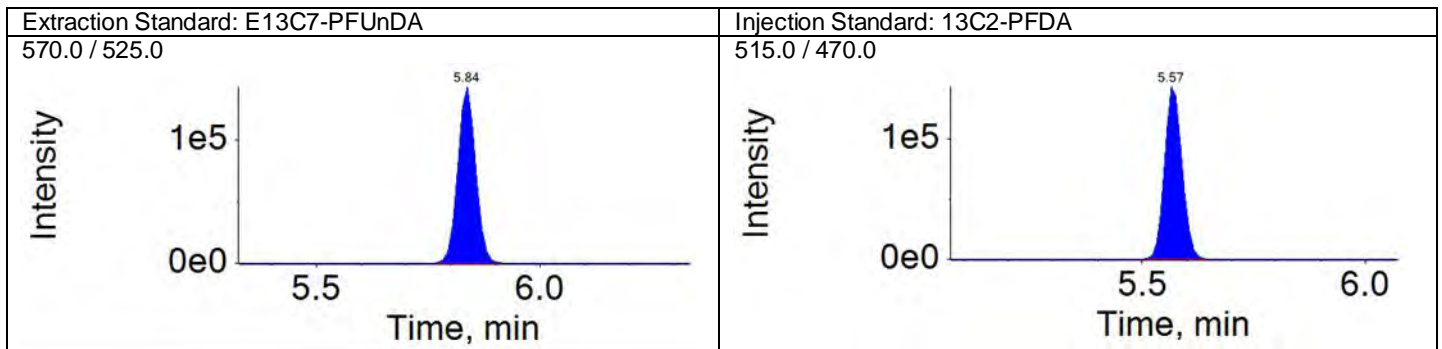
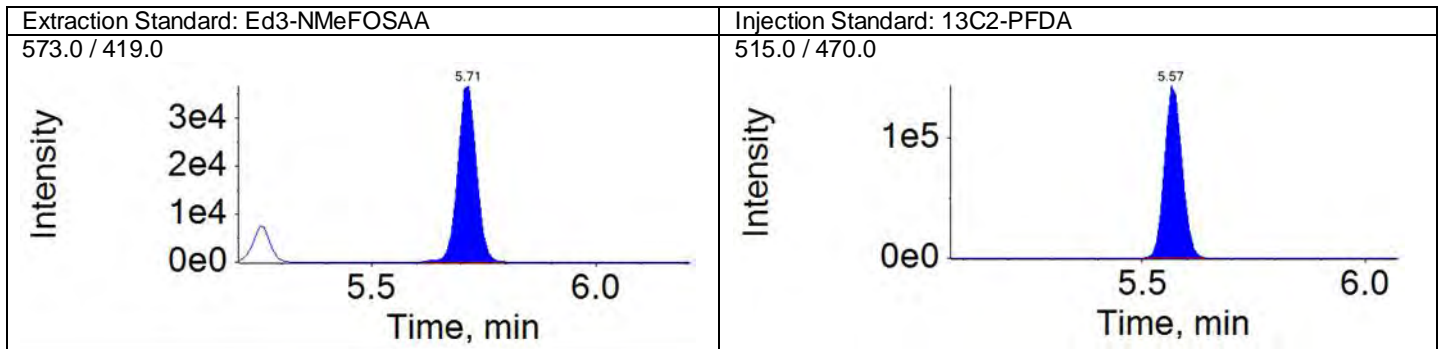
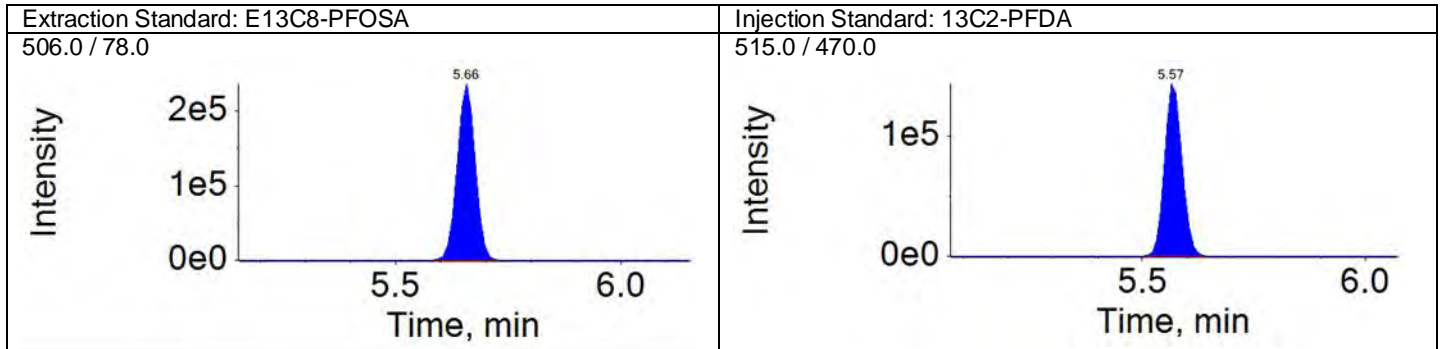
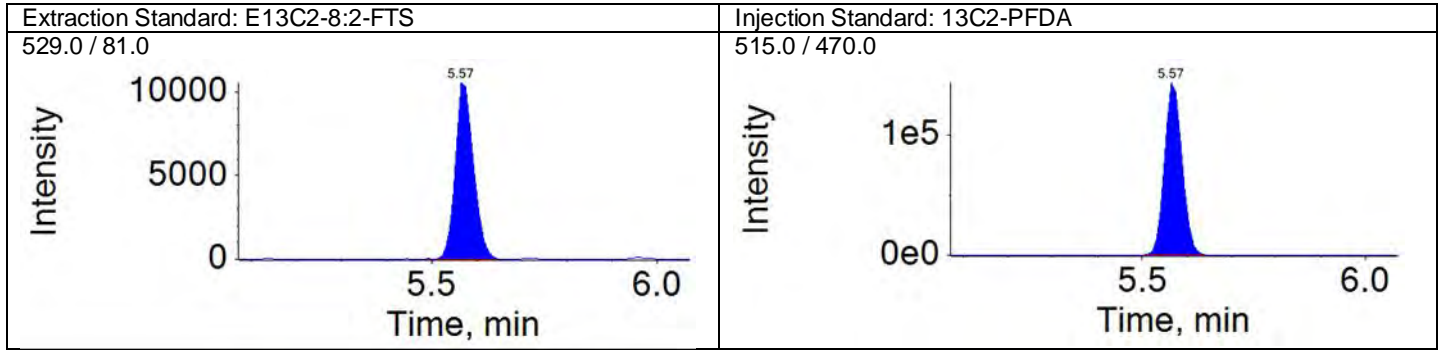
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ICAL Name: 18DEC06DCAL  
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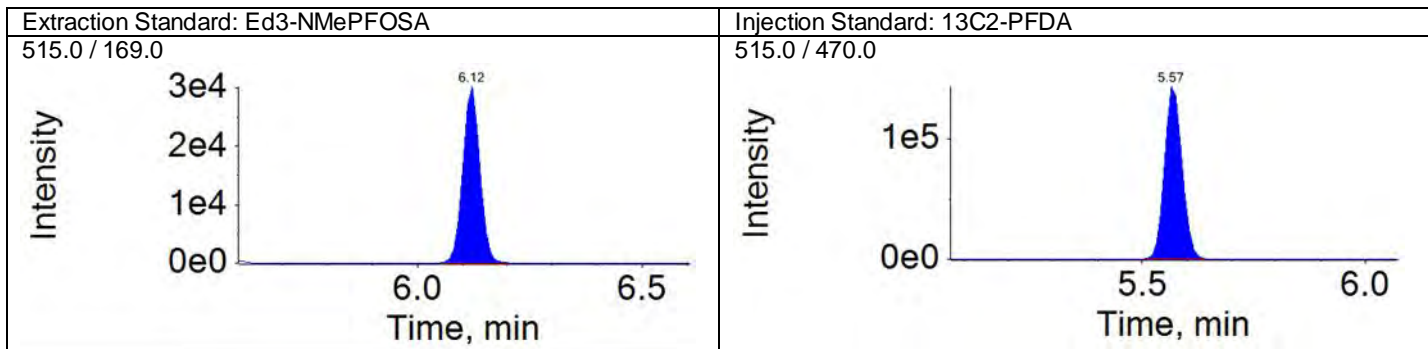
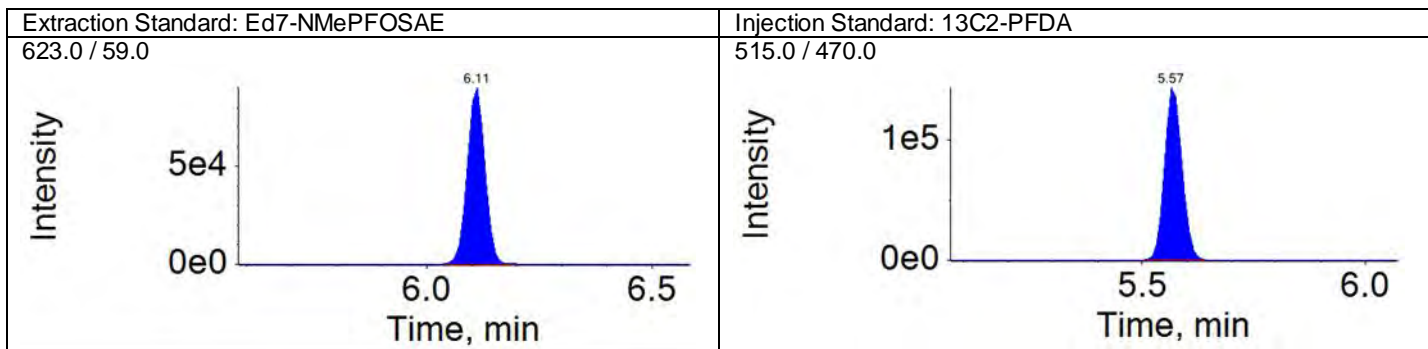
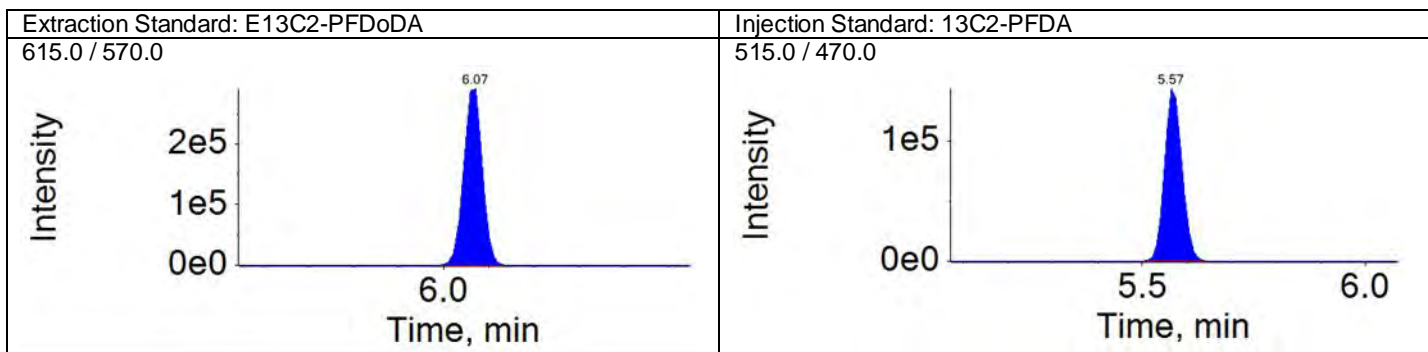
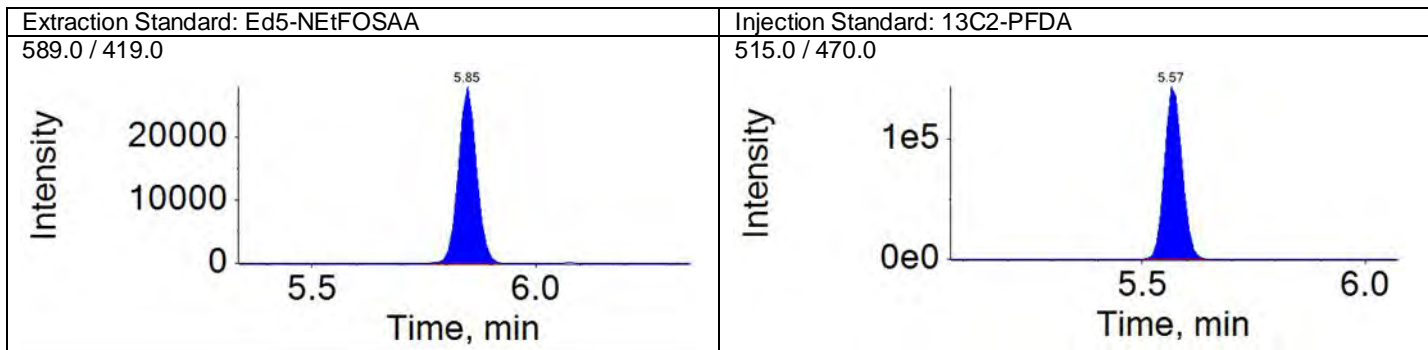
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Acquisition Method: 18AUG13\_3uL.dam





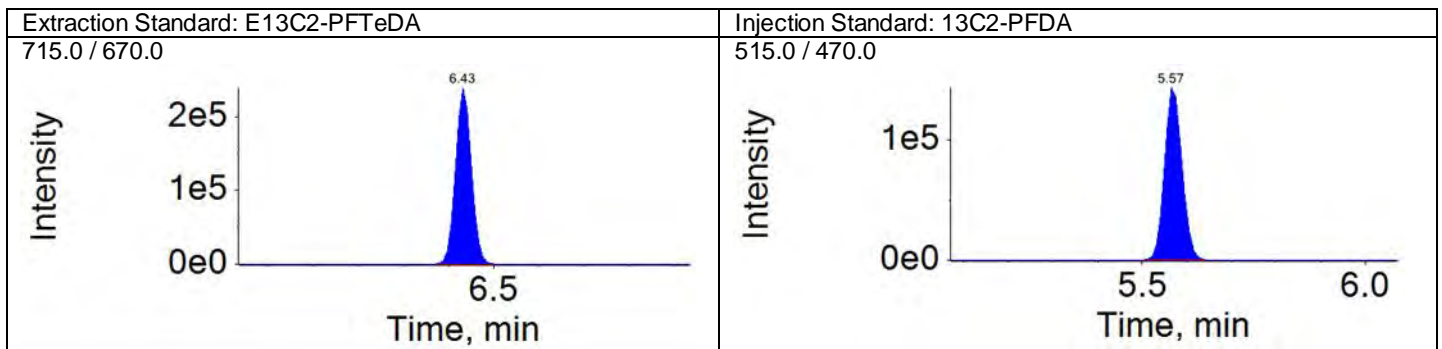
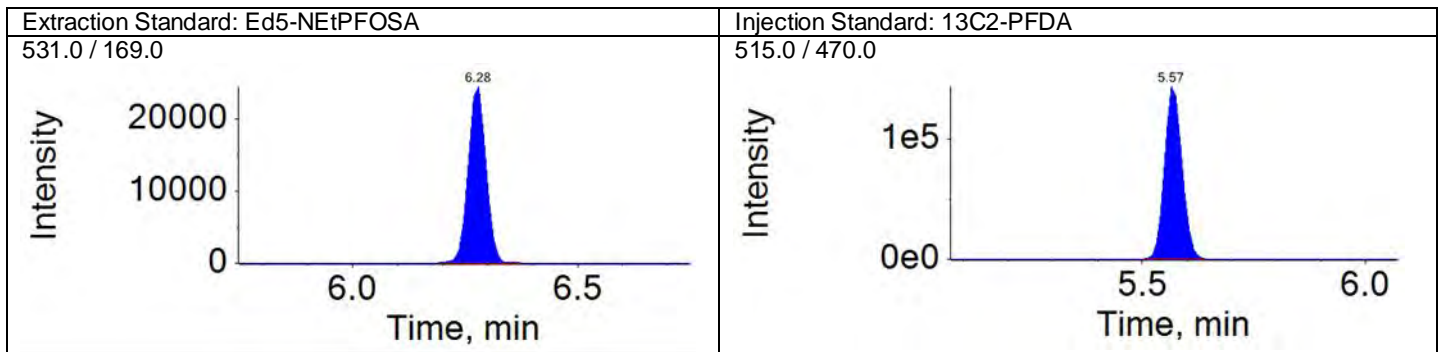
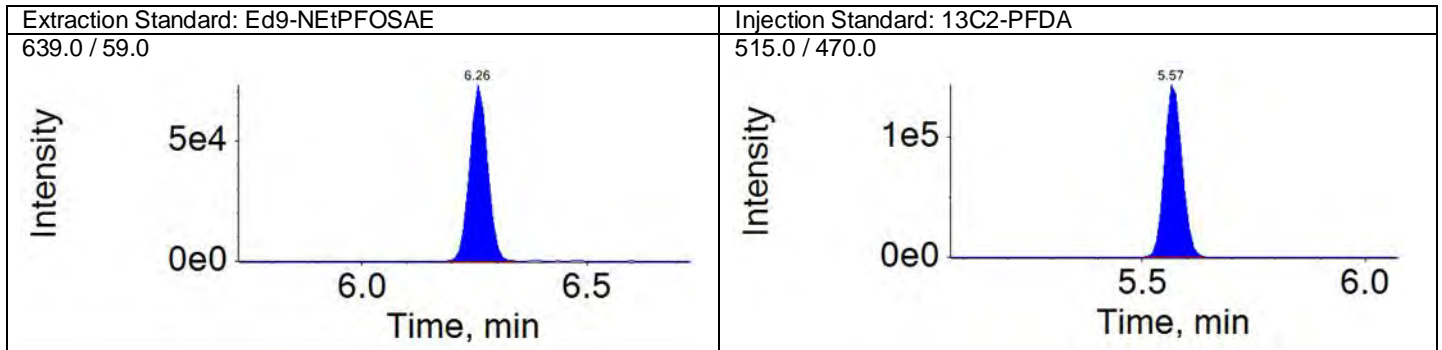
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



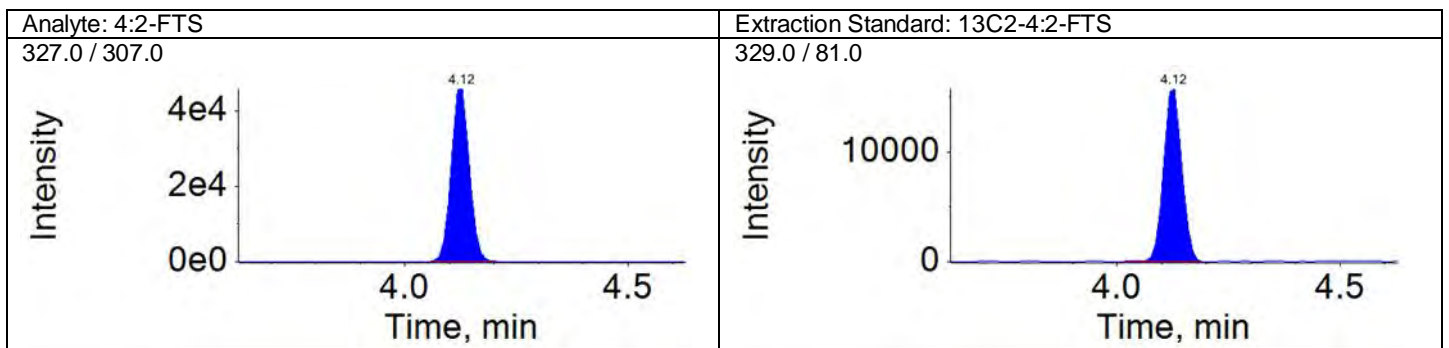
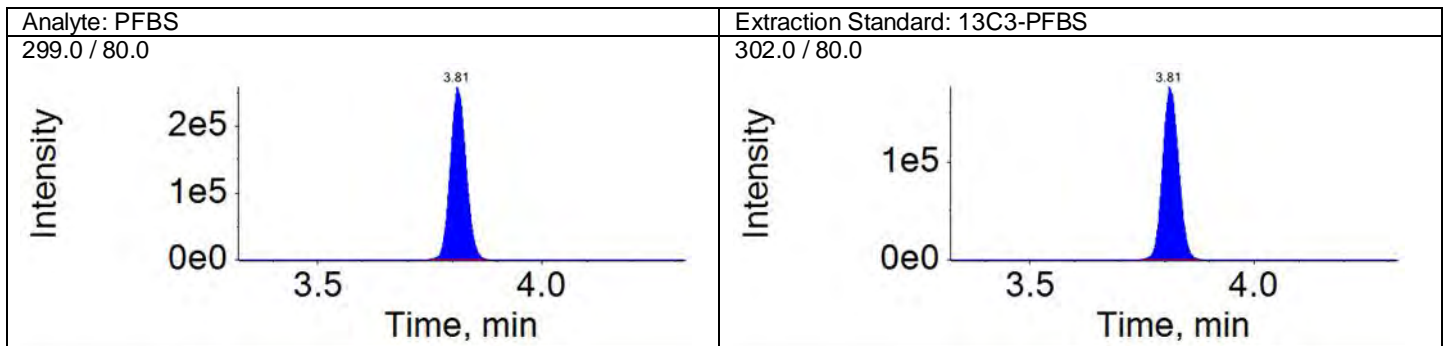
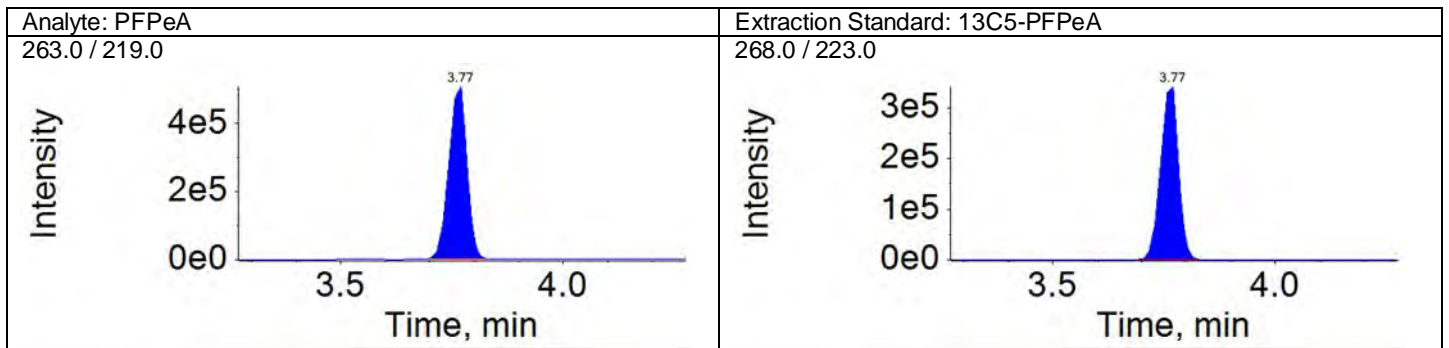
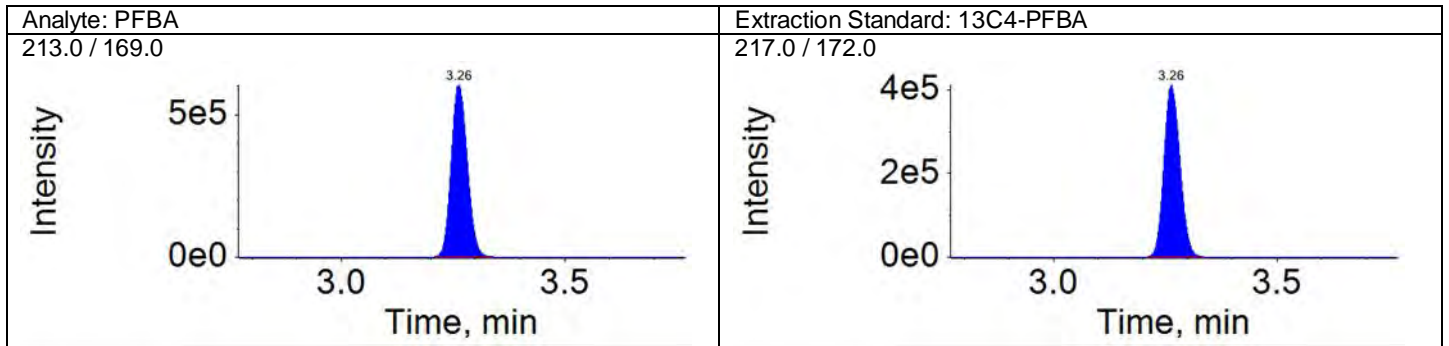
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Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



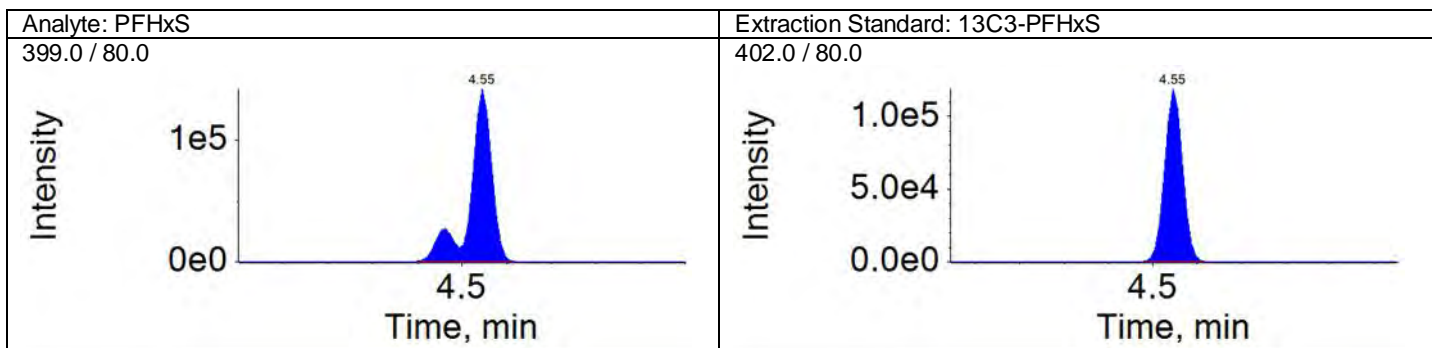
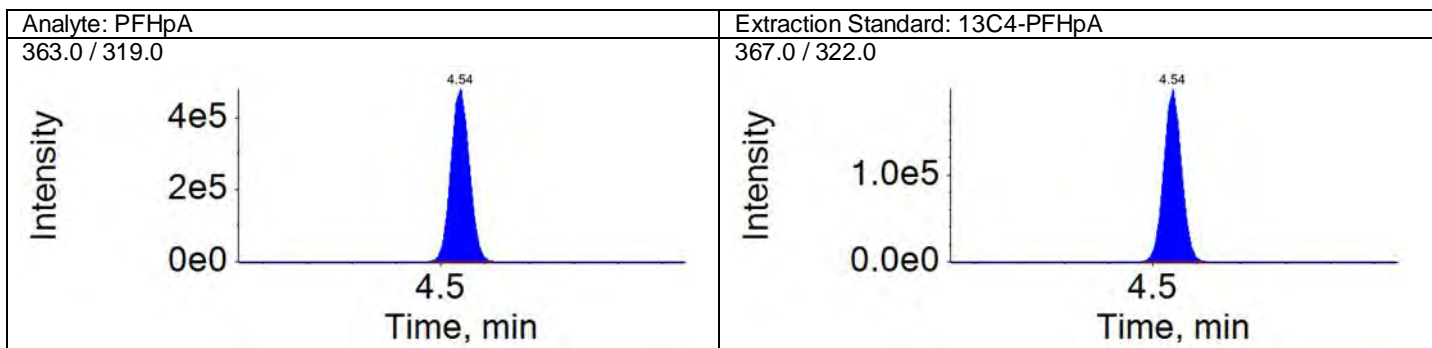
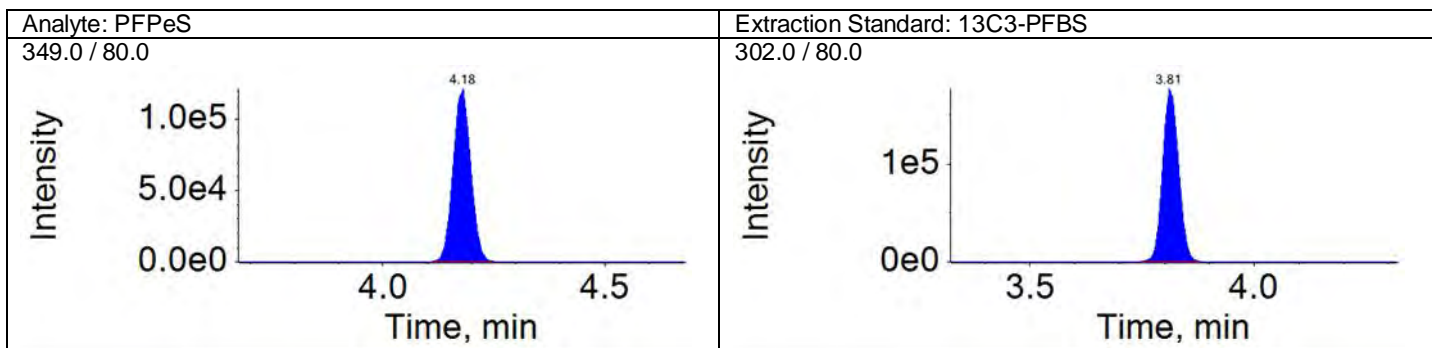
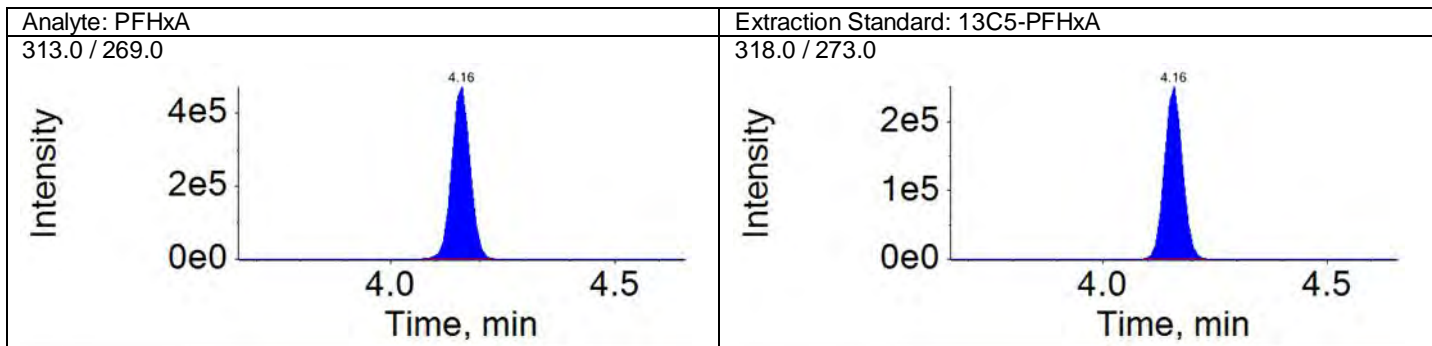
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QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

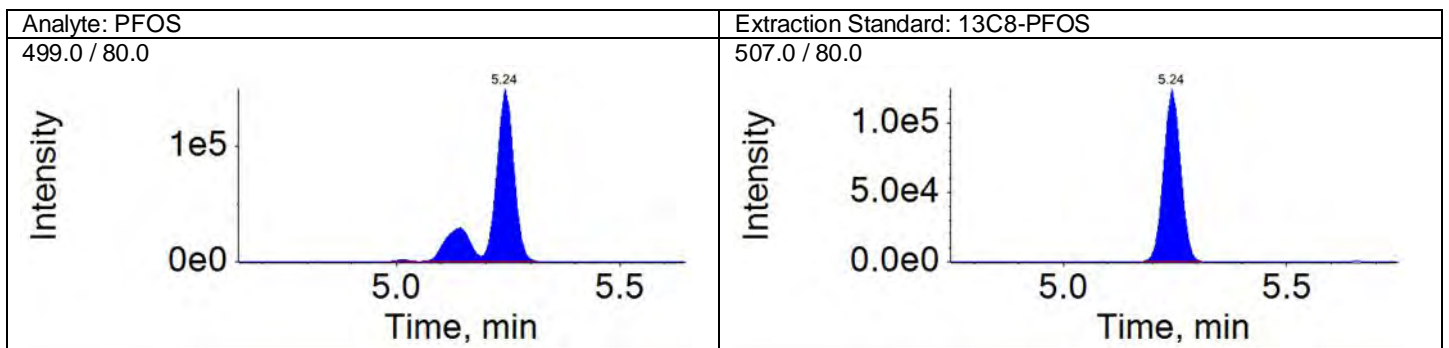
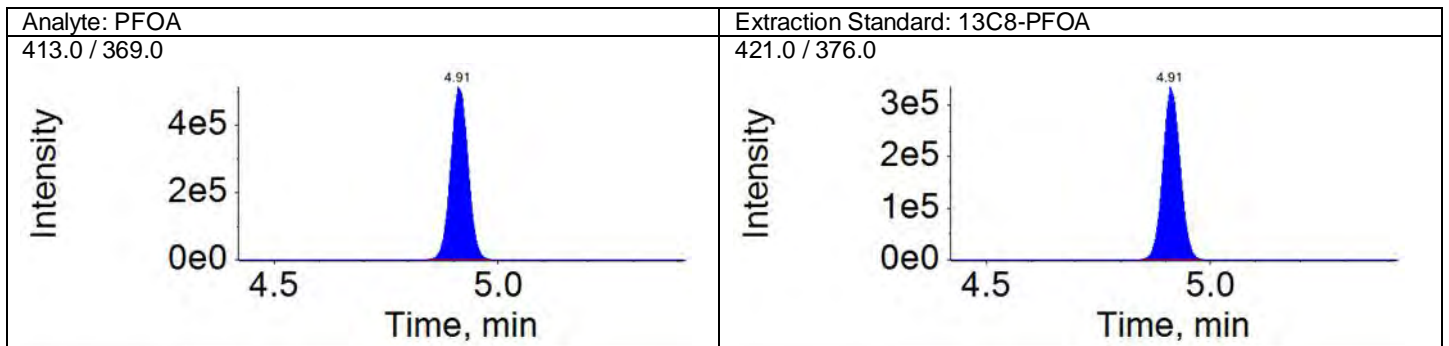
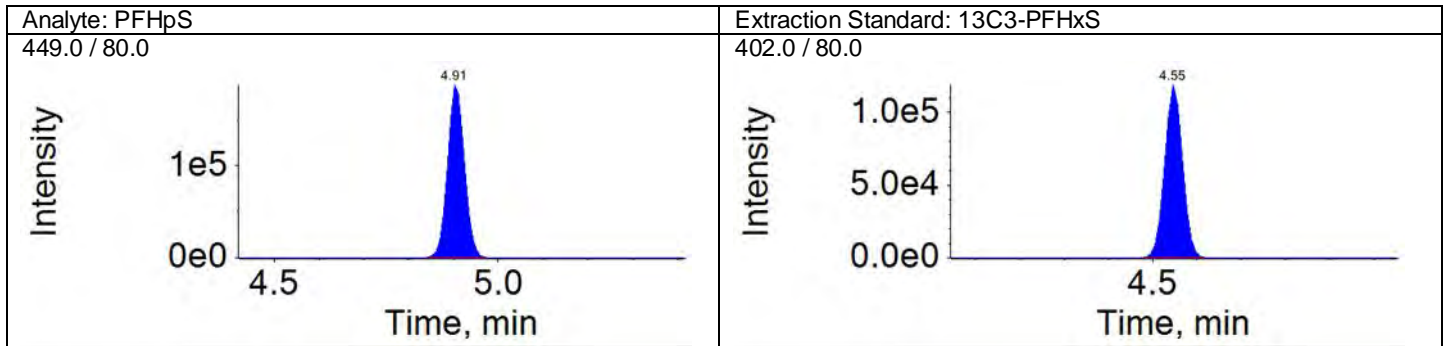
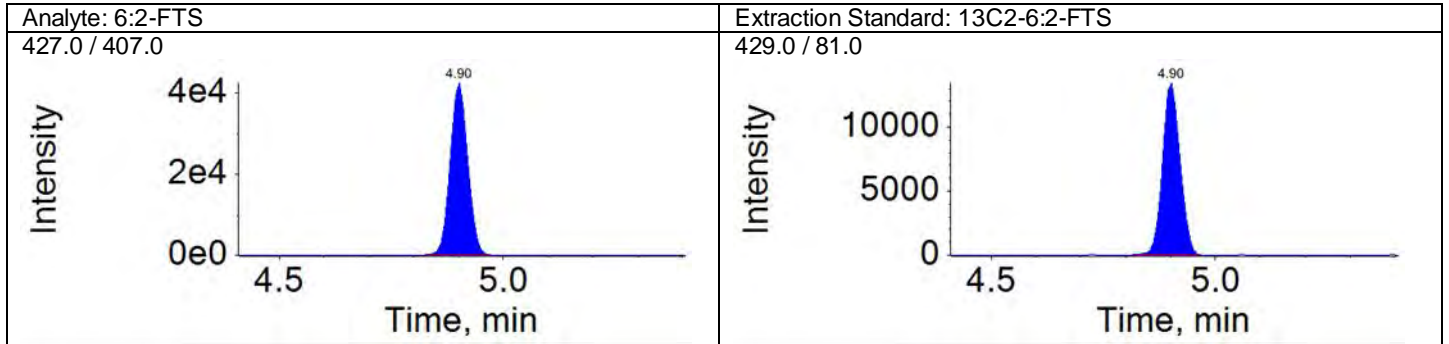
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

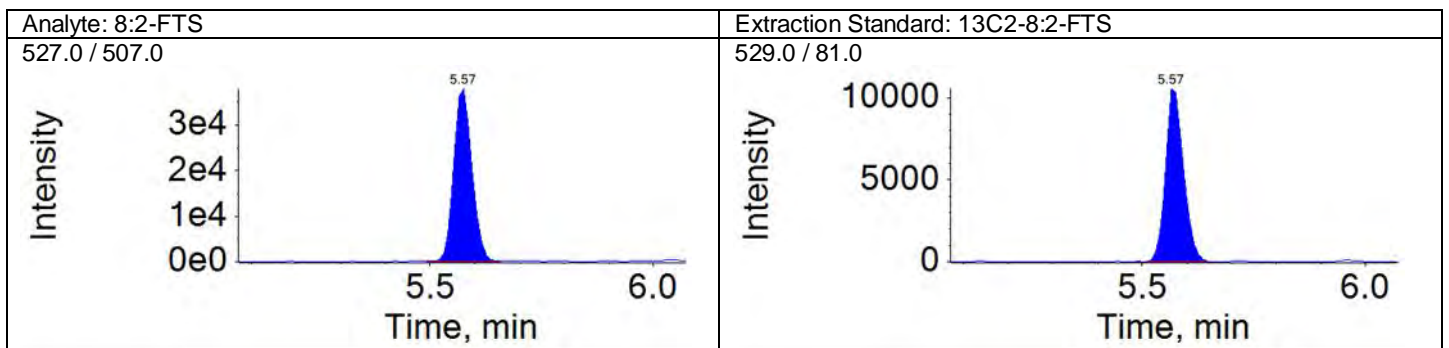
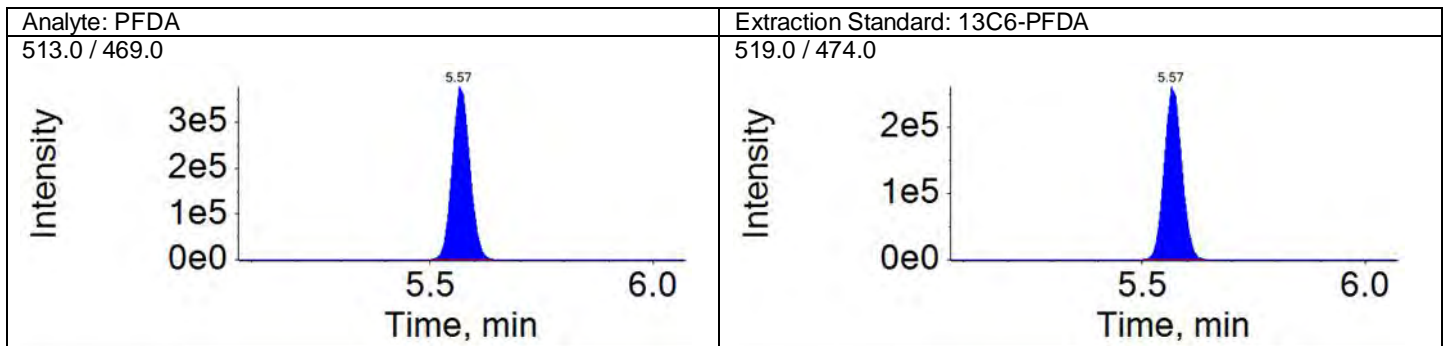
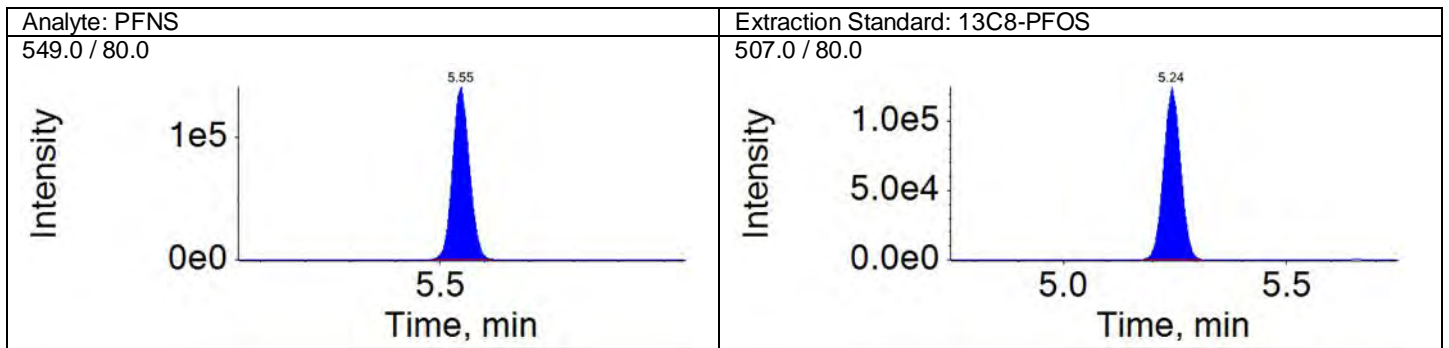
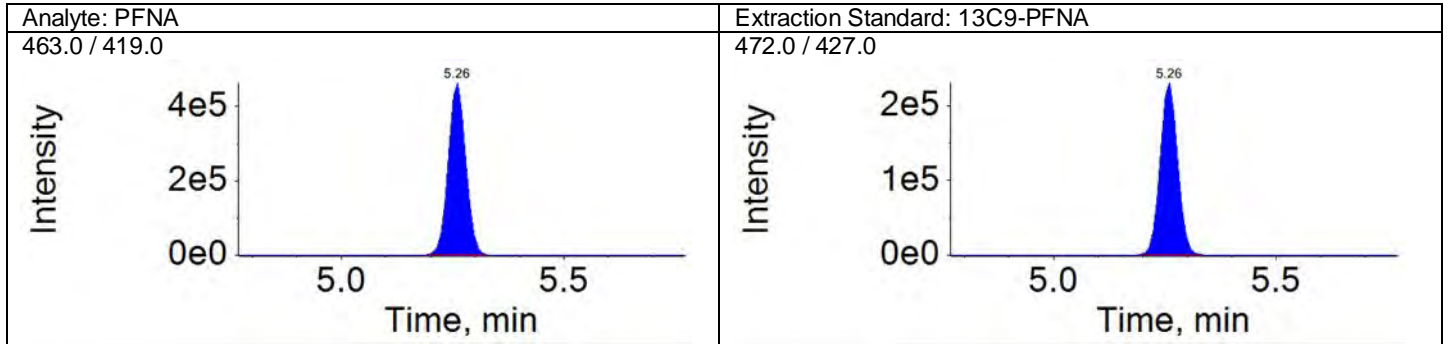
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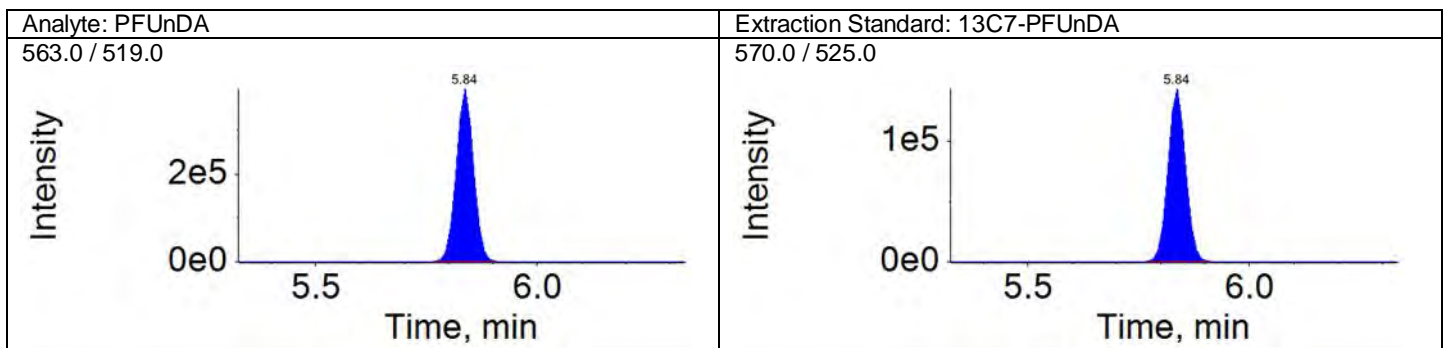
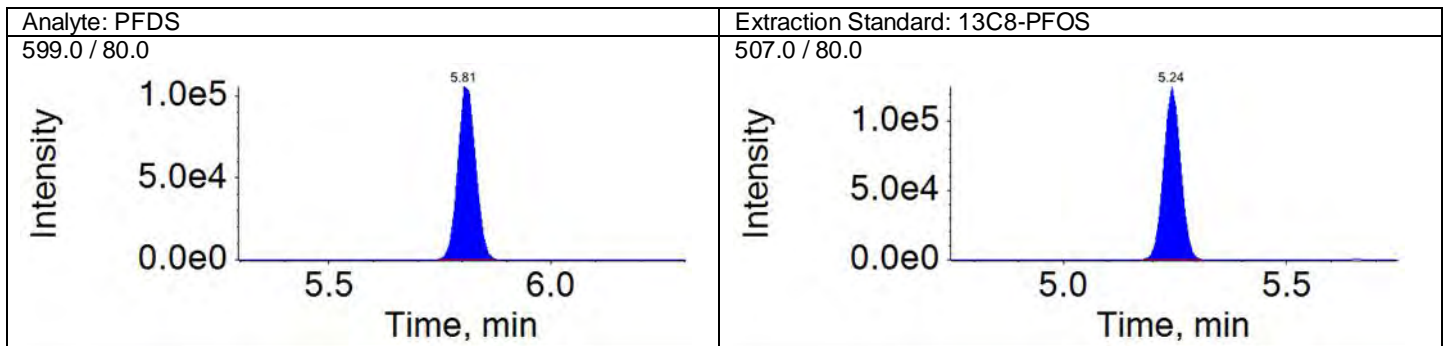
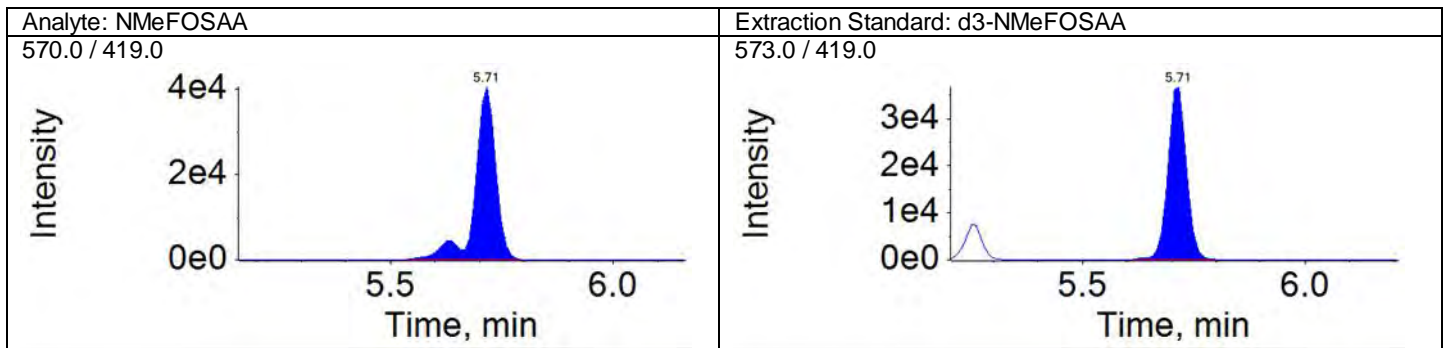
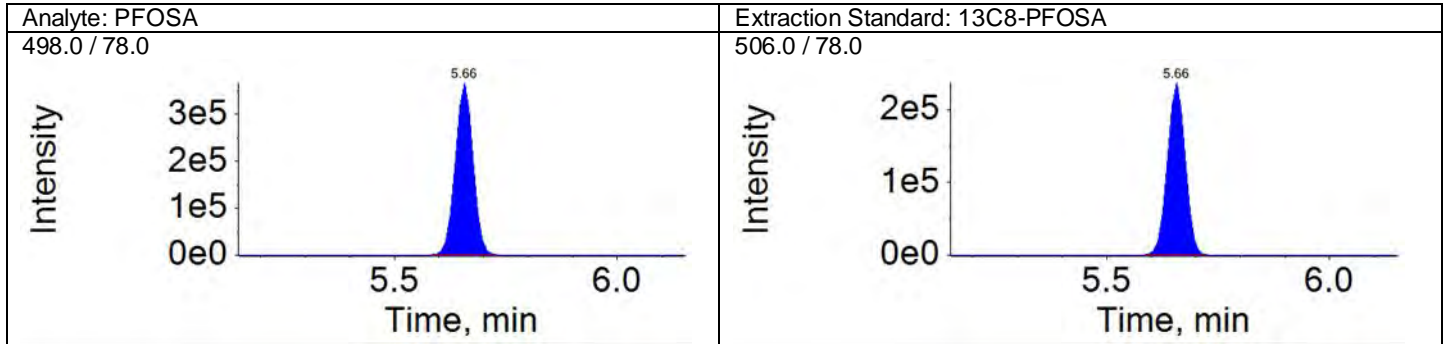
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QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



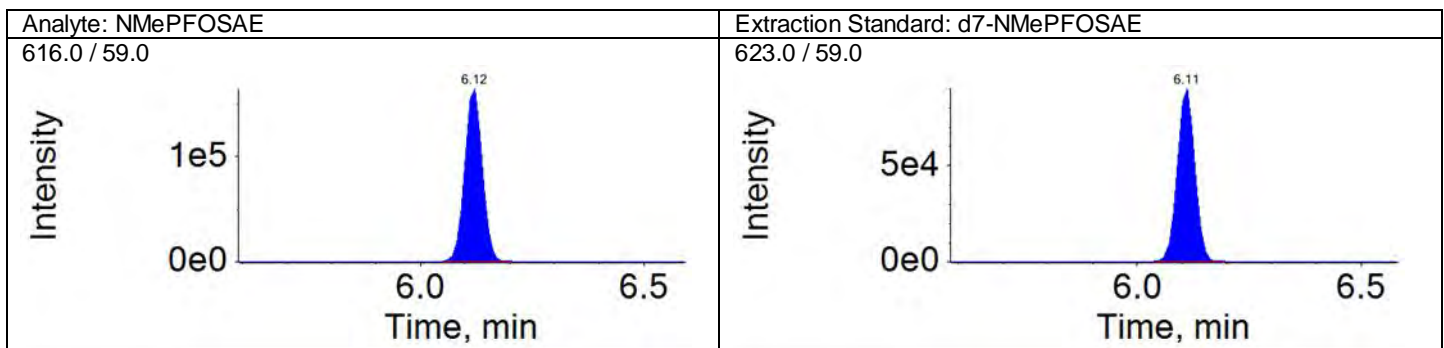
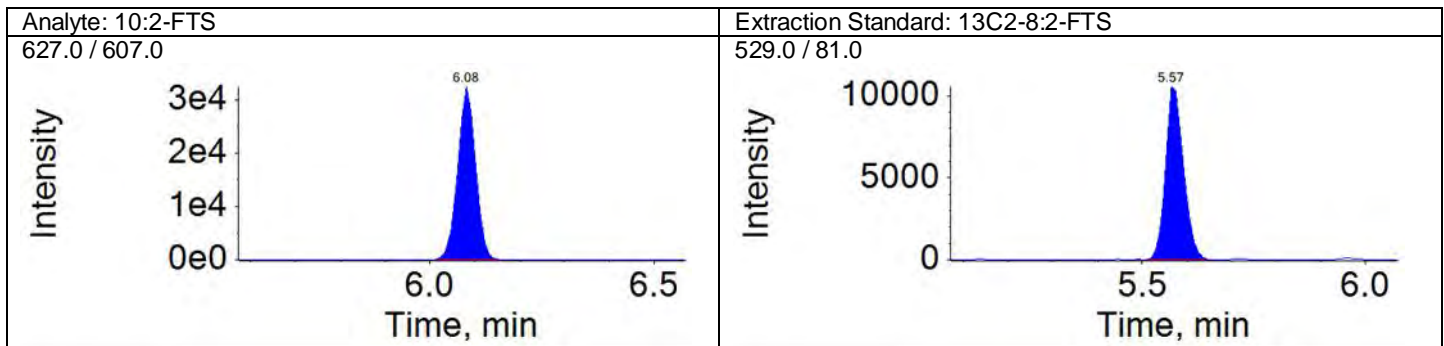
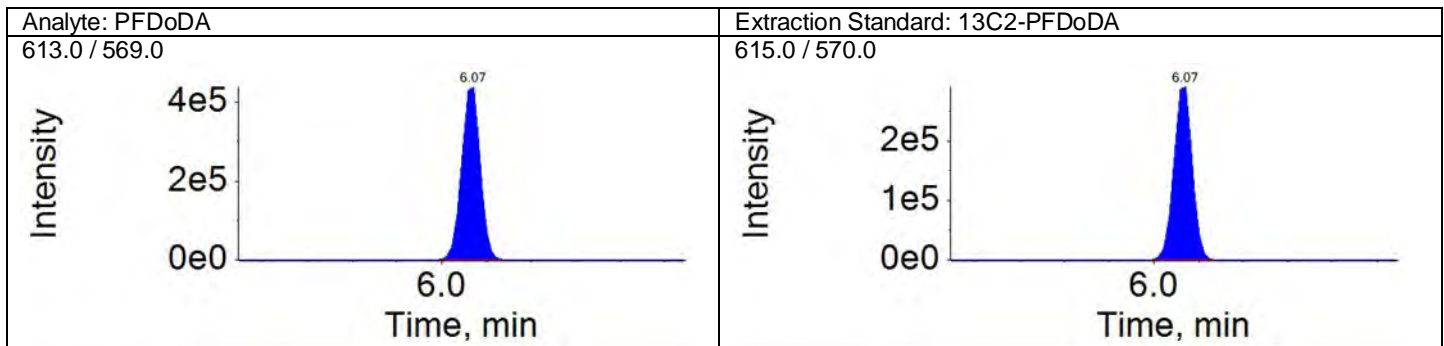
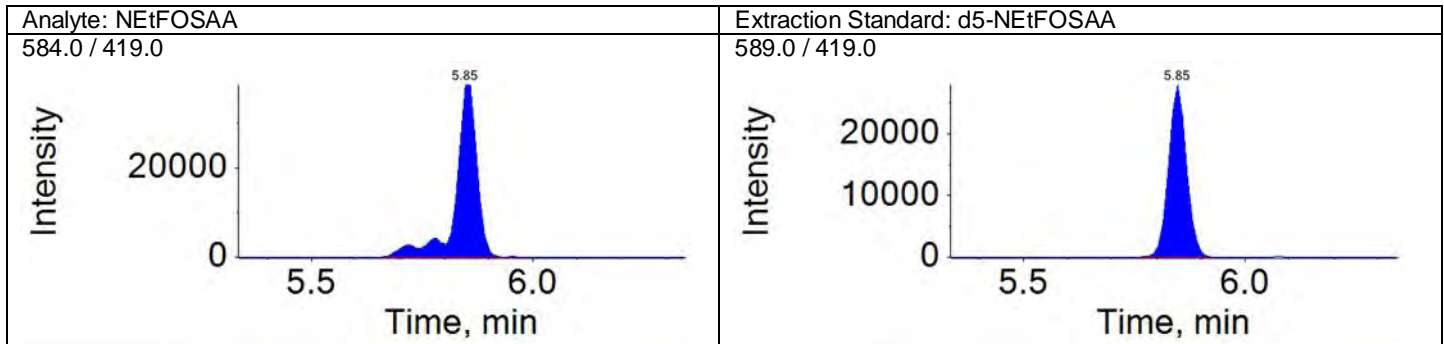
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QMethod Name: 18AUG20QM

Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



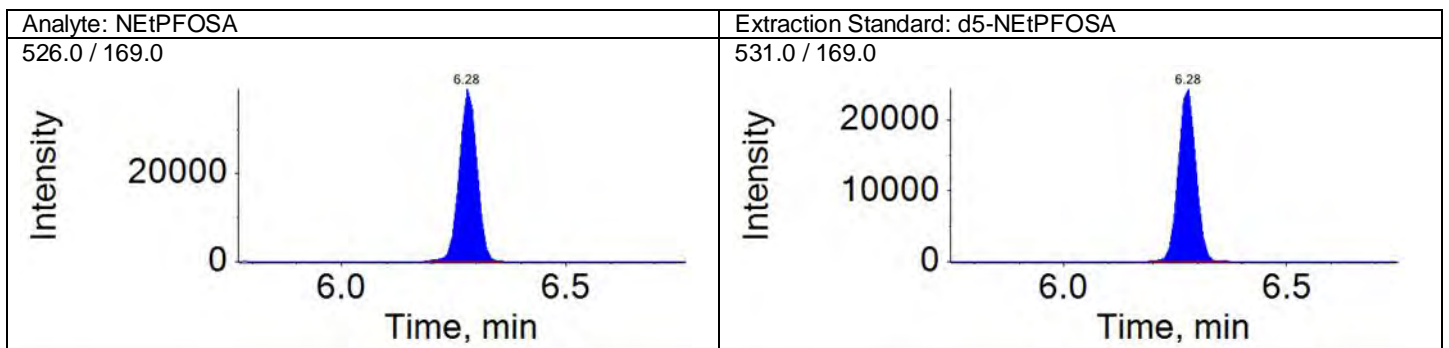
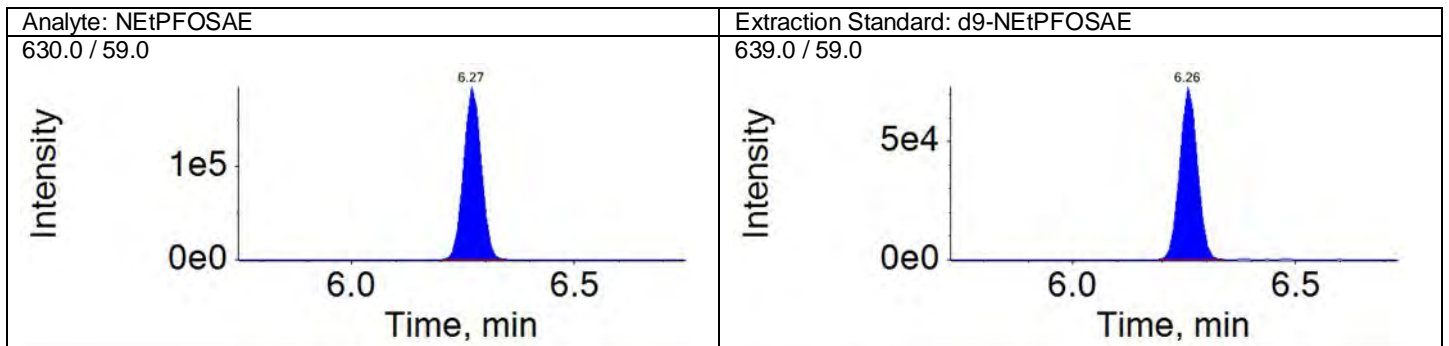
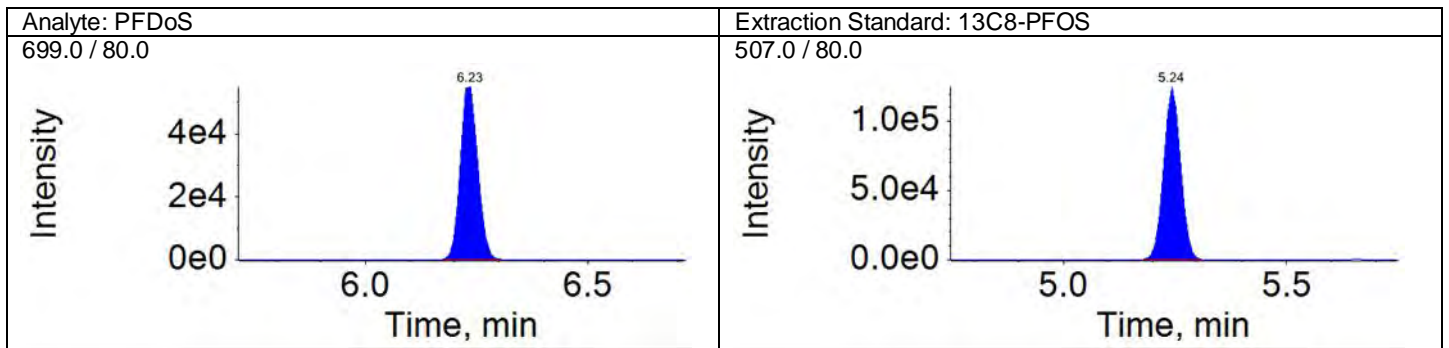
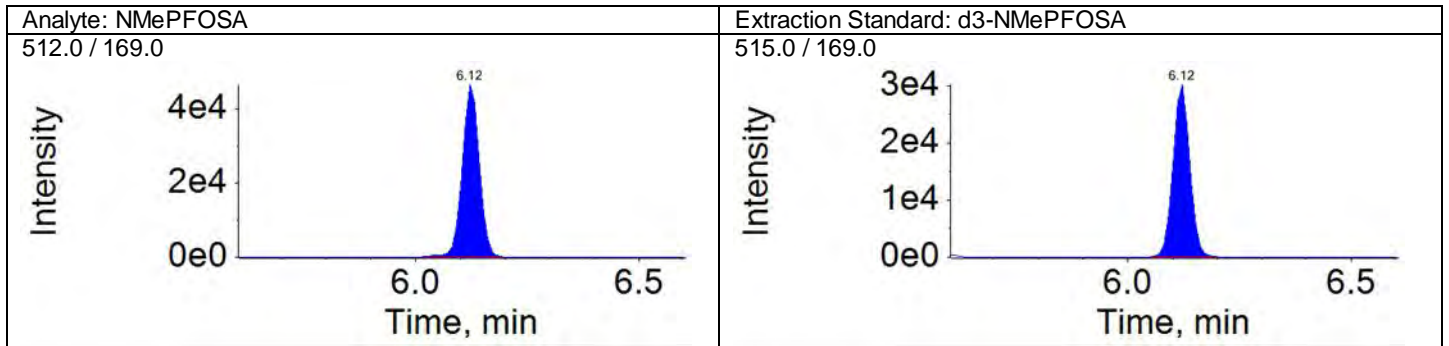
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Result Table: 18DEC11DCCV1-7 12/11/2018 3:10:04 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

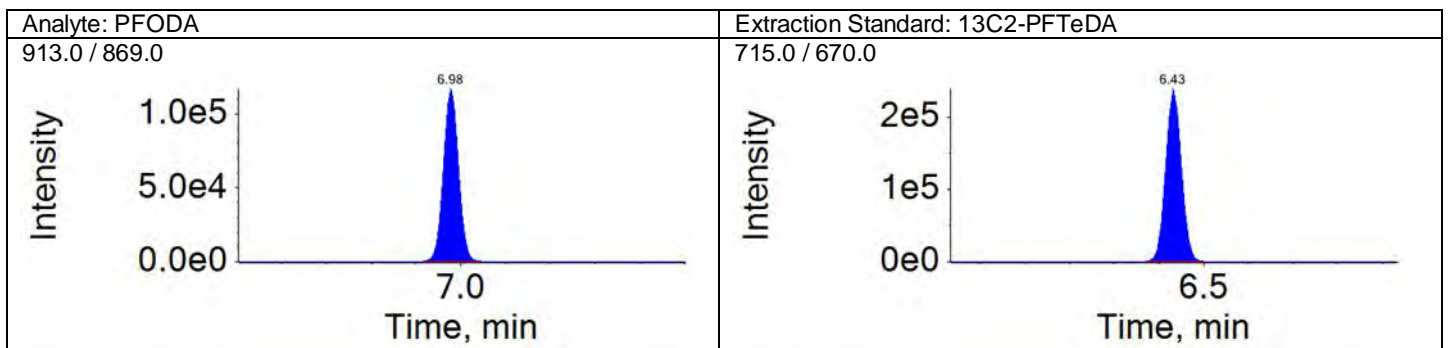
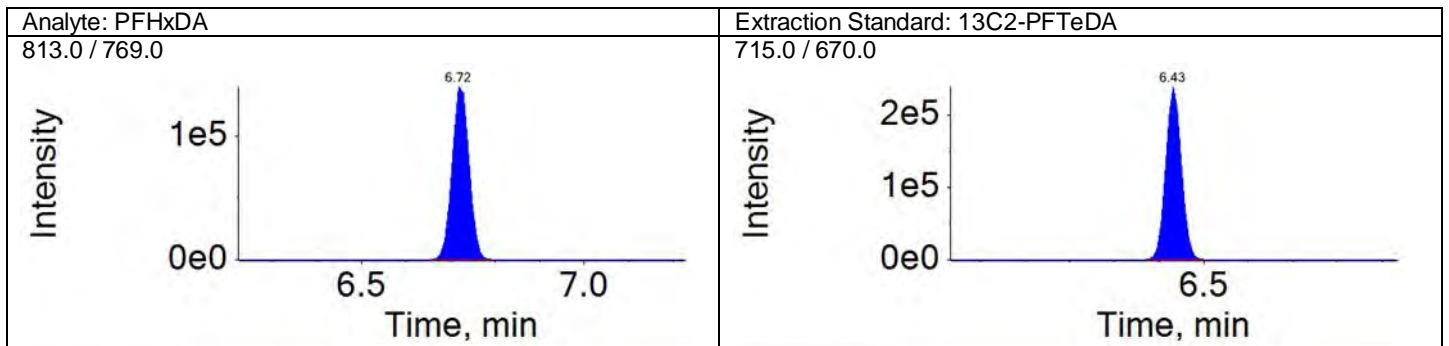
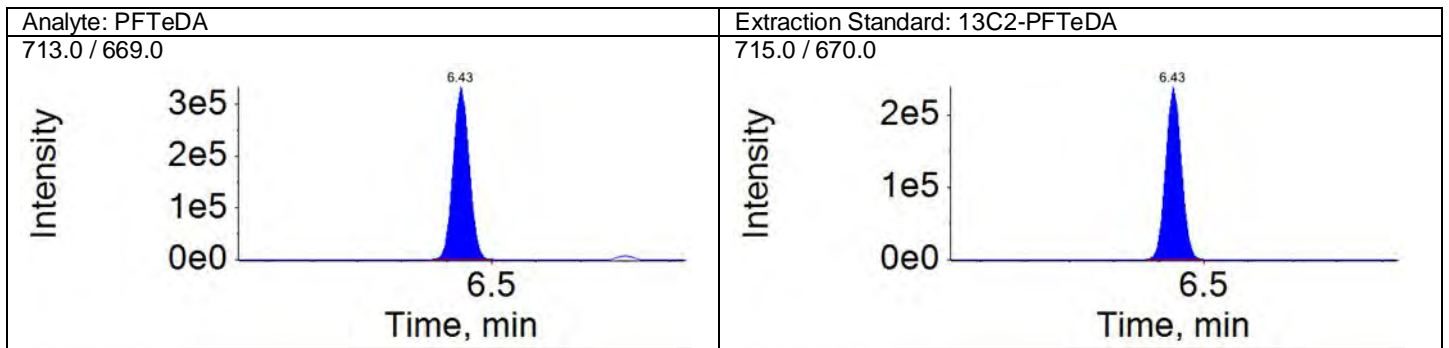
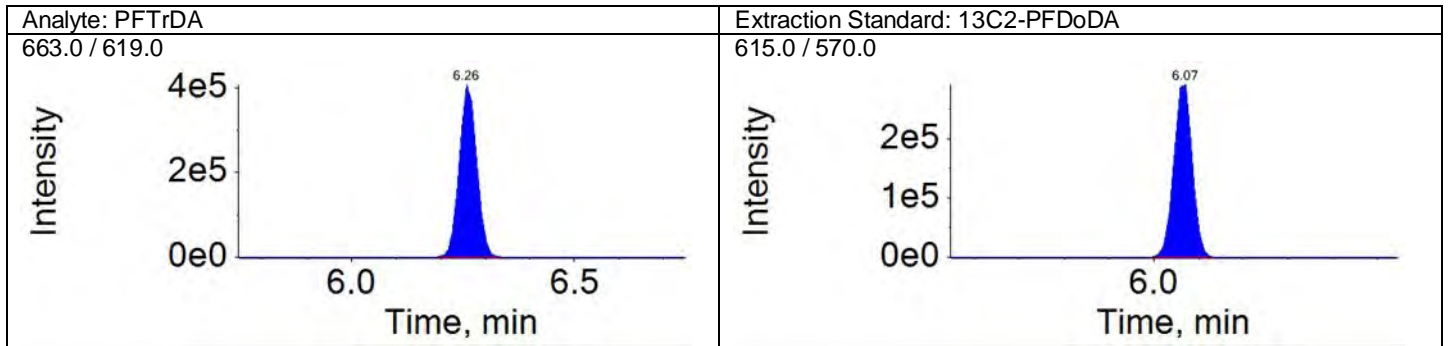
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ICAL Name: 18DEC06DCAL  
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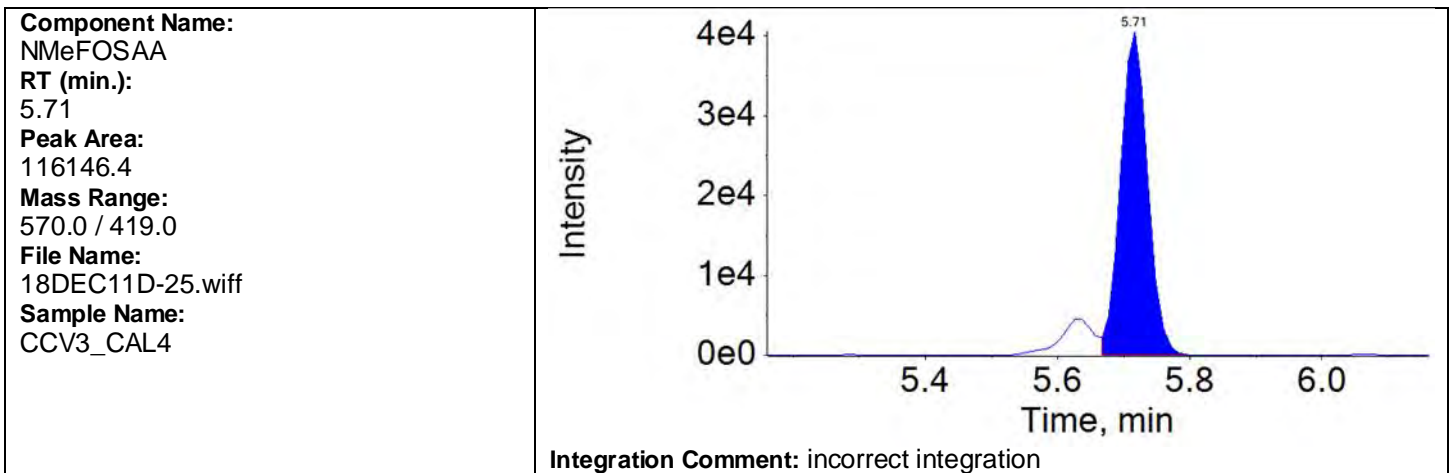
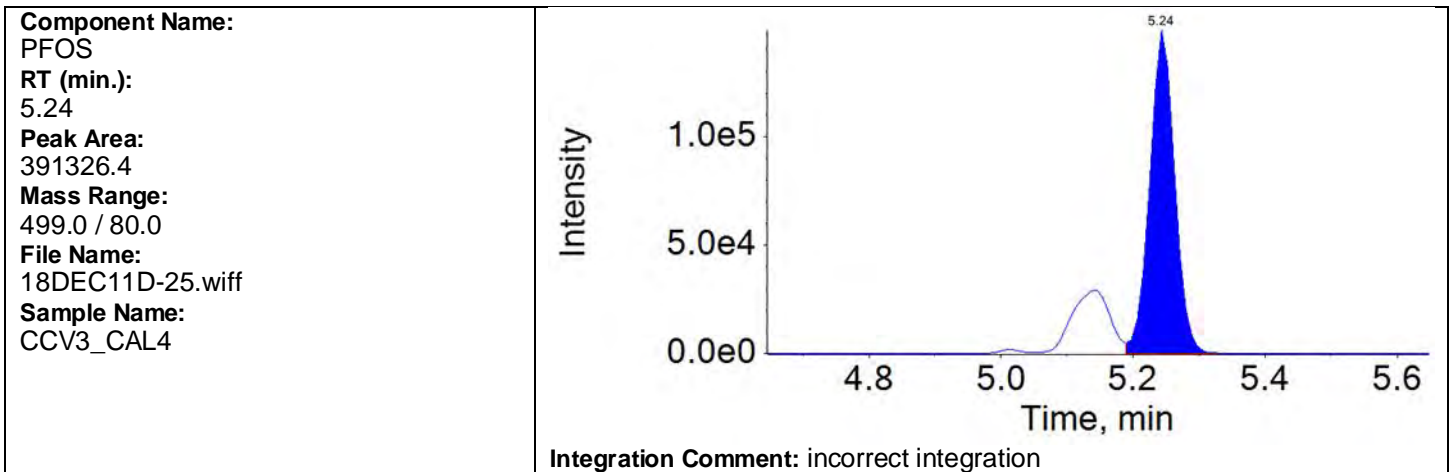
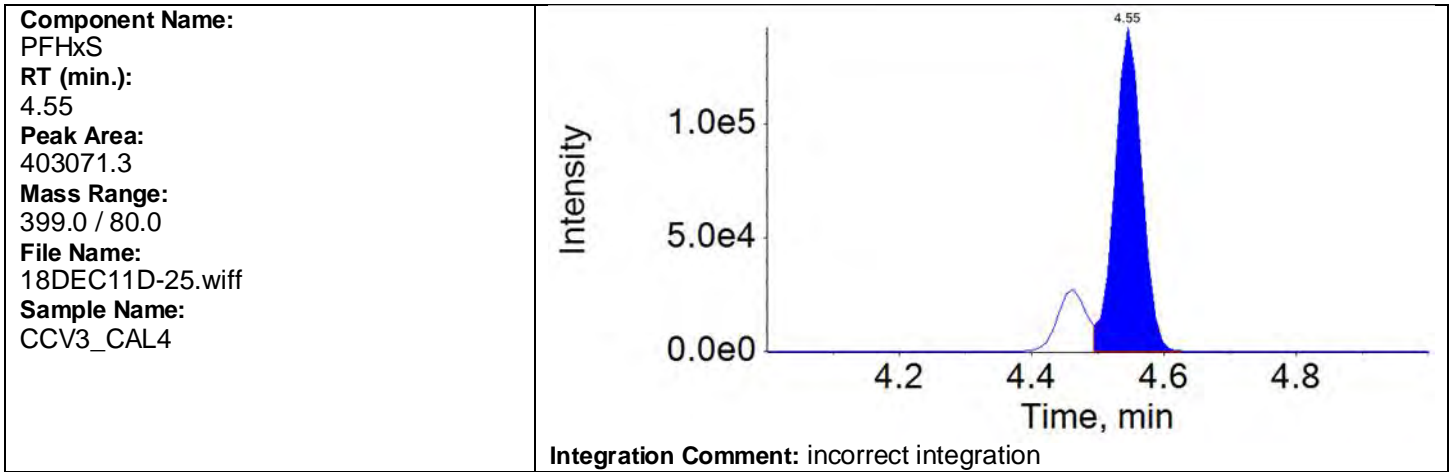
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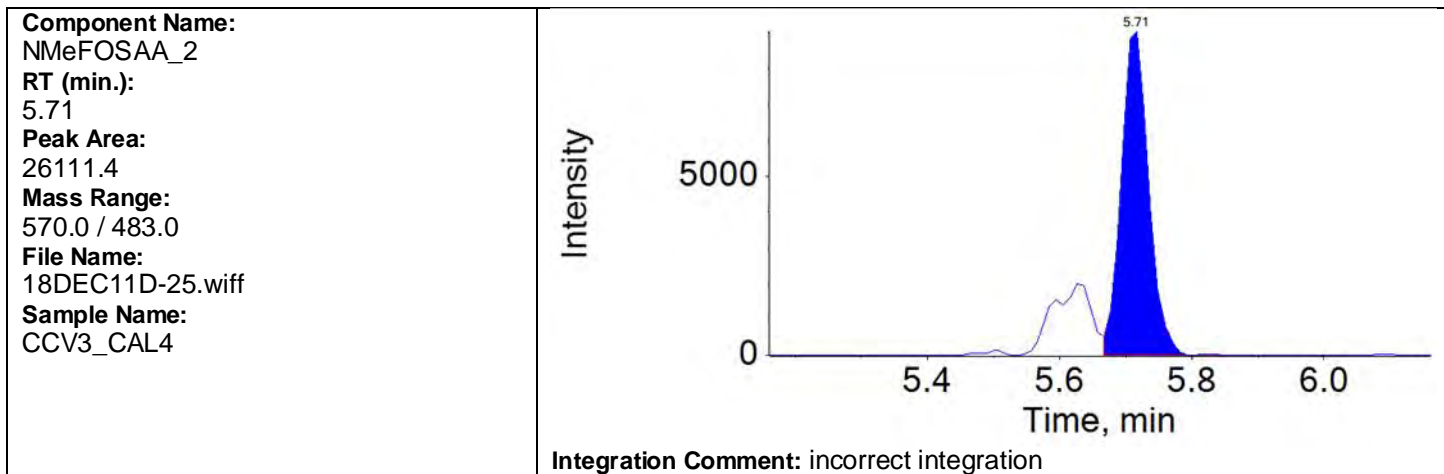
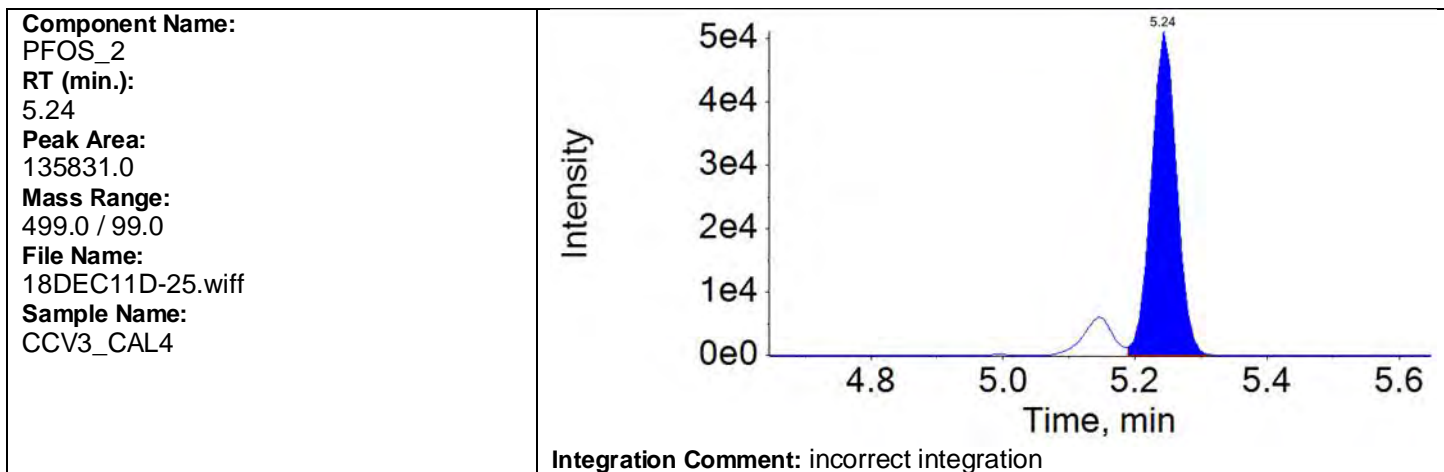
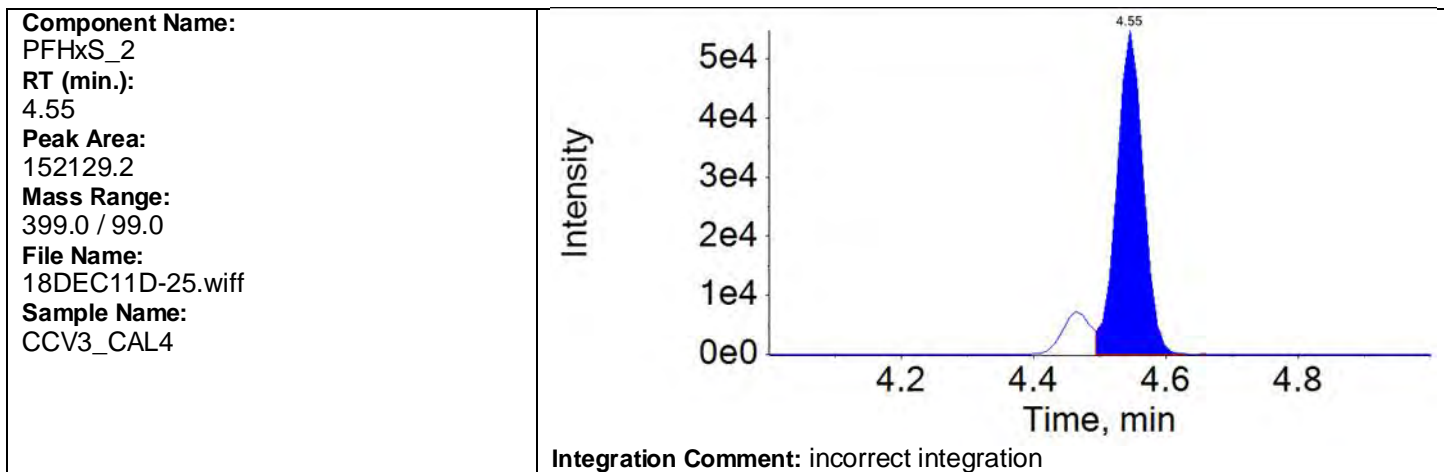
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Results Table Date: 12/11/2018 3:10:04 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC11DCCV1-7  
Results Table Date: 12/11/2018 3:10:04 PM

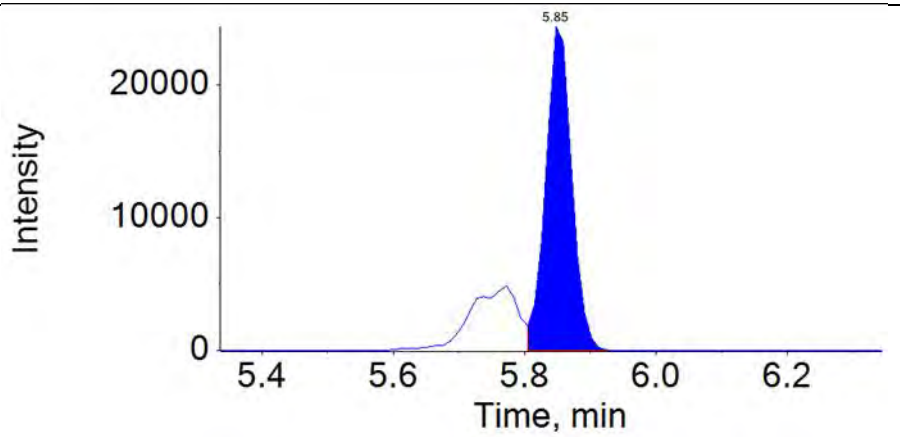
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC11DCCV1-7  
Results Table Date: 12/11/2018 3:10:04 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
NEtFOSAA\_2  
RT (min.):  
5.85  
Peak Area:  
67216.1  
Mass Range:  
584.0 / 526.0  
File Name:  
18DEC11D-25.wiff  
Sample Name:  
CCV3\_CAL4



Integration Comment: incorrect integration

Results Table Name: 18DEC11DCCV1-7  
Results Table Date: 12/11/2018 3:10:04 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By JPT at 3:22 pm, 12/11/18

**REVIEWED**  
By umar at 11:13 am, 12/16/18

Ion Ratio Report

Sample Name: CCV3\_CAL4

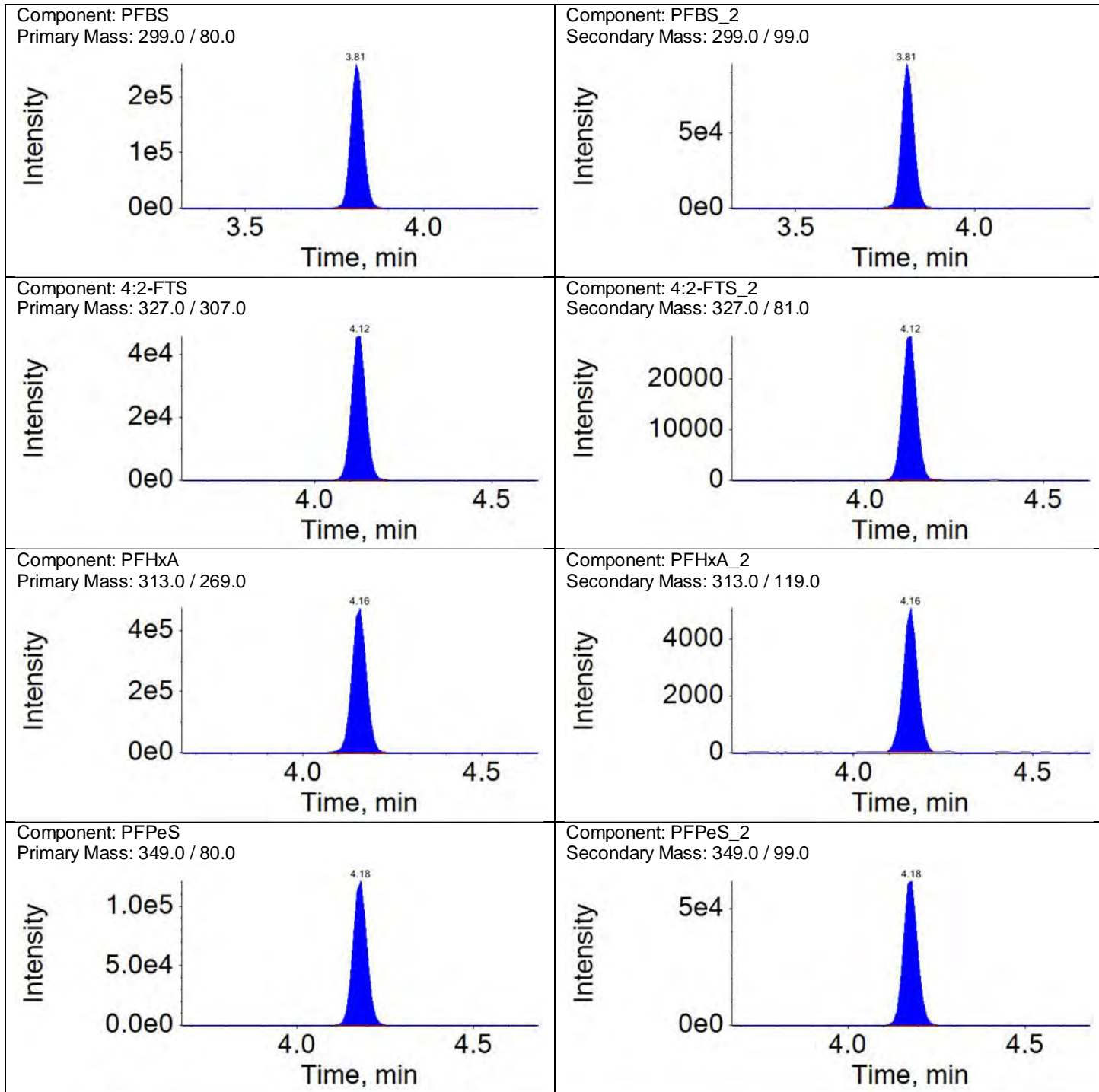
Instrument Name: LM27631

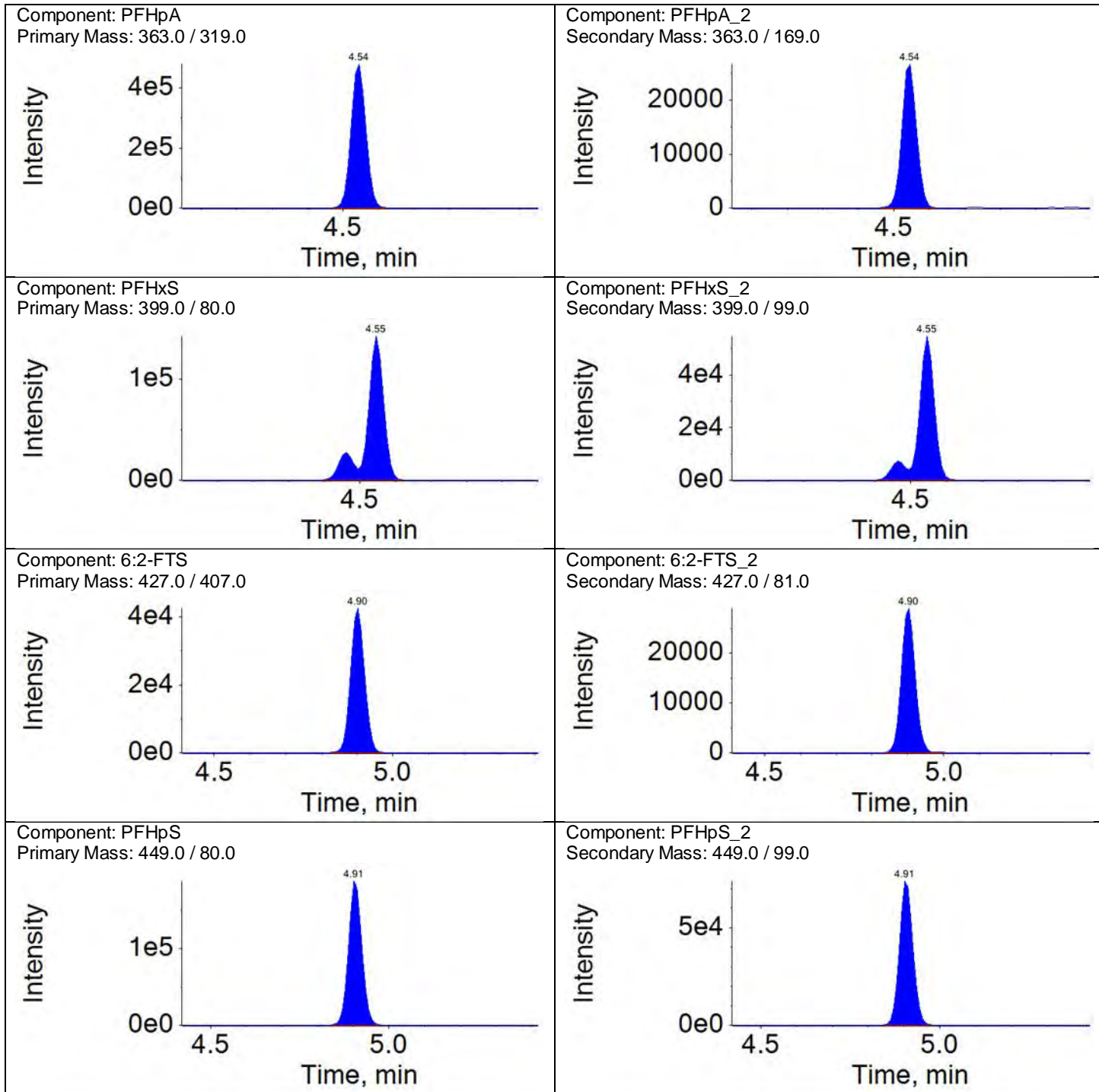
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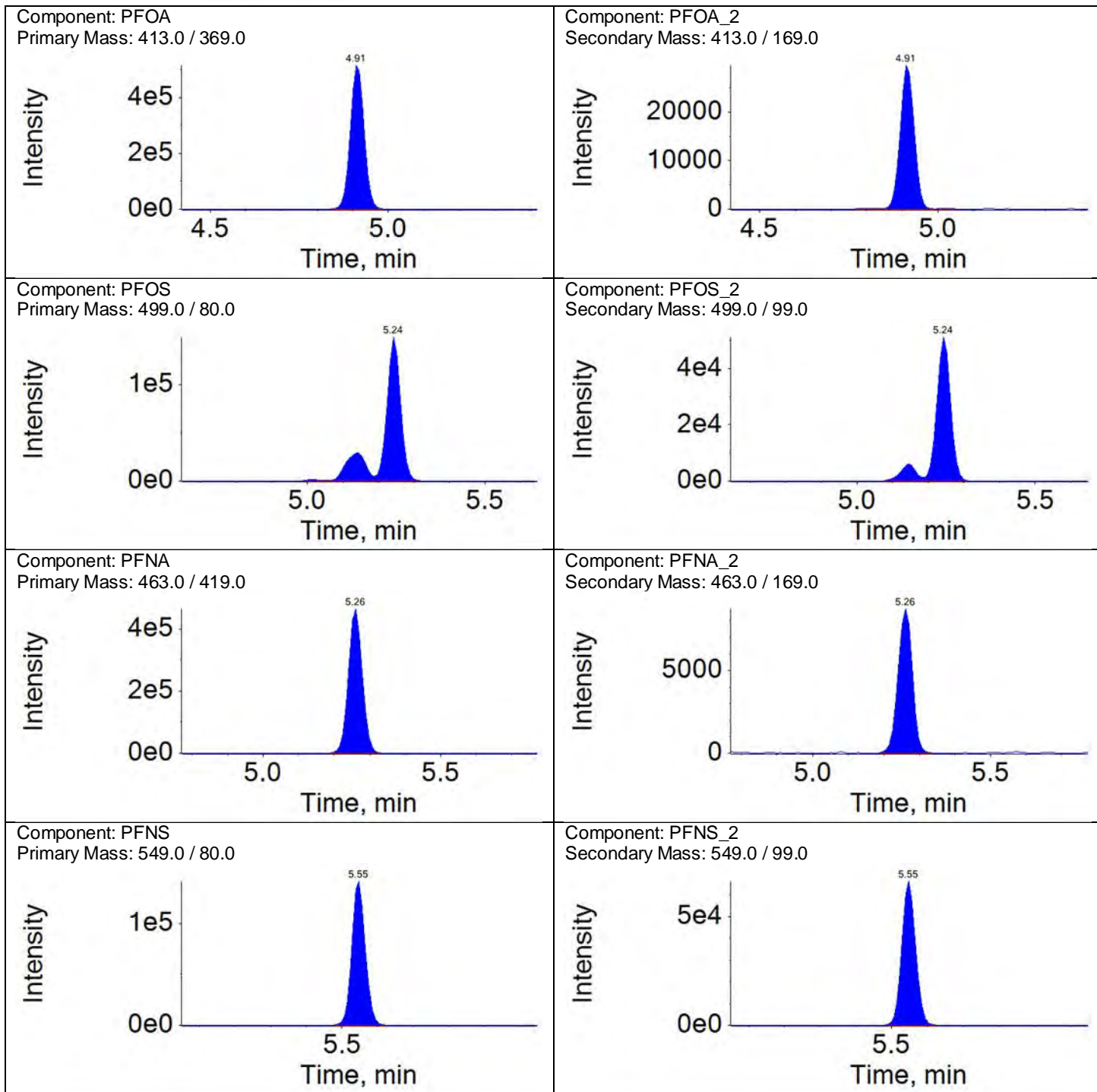
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	629022.6	A	N/A	1.0000			
PFBS_2	3.81	1.00	230251.1	A	N/A	0.3660	1	50	
4:2-FTS	4.12	1.00	130552.3	A	N/A	1.0000			
4:2-FTS_2	4.12	1.00	80499.6	A	N/A	0.6166	-6	50	
PFHxA	4.16	1.00	1345039.9	A	N/A	1.0000			
PFHxA_2	4.16	1.00	14402.4	A	N/A	0.0107	10	50	
PFPeS	4.18	1.10	334419.0	A	N/A	1.0000			
PFPeS_2	4.18	1.10	173639.0	A	N/A	0.5192	-1	50	
PFHpA	4.54	1.00	1397589.1	A	N/A	1.0000			
PFHpA_2	4.54	1.00	76884.0	A	N/A	0.0550	-3	50	
PFHxS	4.55	1.00	484275.0	M	N/A	1.0000			
PFHxS_2	4.55	1.00	172777.7	M	N/A	0.3568	-2	50	
6:2-FTS	4.90	1.00	115614.1	A	N/A	1.0000			
6:2-FTS_2	4.90	1.00	78022.6	A	N/A	0.6749	8	50	
PFHpS	4.91	1.08	488519.7	A	N/A	1.0000			
PFHpS_2	4.91	1.08	192984.5	A	N/A	0.3950	-5	50	
PFOA	4.91	1.00	1384896.6	A	N/A	1.0000			
PFOA_2	4.91	1.00	81200.0	A	N/A	0.0586	-5	50	
PFOS	5.24	1.00	511689.6	M	N/A	1.0000			
PFOS_2	5.24	1.00	154923.9	M	N/A	0.3028	0	50	
PFNA	5.26	1.00	1257850.6	A	N/A	1.0000			
PFNA_2	5.26	1.00	24527.3	A	N/A	0.0195	1	50	
PFNS	5.55	1.06	367606.3	A	N/A	1.0000			
PFNS_2	5.55	1.06	176879.3	A	N/A	0.4812	-1	50	
PFDA	5.57	1.00	1031473.7	A	N/A	1.0000			
PFDA_2	5.57	1.00	6564.0	A	N/A	0.0064	-34	50	
8:2-FTS	5.57	1.00	107148.1	A	N/A	1.0000			
8:2-FTS_2	5.57	1.00	69806.9	A	N/A	0.6515	7	50	
NMeFOSAA	5.71	1.00	132045.9	M	N/A	1.0000			
NMeFOSAA_2	5.71	1.00	34305.6	M	N/A	0.2598	-3	50	
PFDS	5.81	1.11	293879.0	A	N/A	1.0000			
PFDS_2	5.81	1.11	141415.3	A	N/A	0.4812	-3	50	
PFAUnDA	5.84	1.00	1065765.6	A	N/A	1.0000			
PFAUnDA_2	5.84	1.00	4809.5	A	N/A	0.0045	10	50	
NEtFOSAA	5.85	1.00	130399.9	A	N/A	1.0000			
NEtFOSAA_2	5.85	1.00	91296.0	M	N/A	0.7001	4	50	
PFAoDA	6.07	1.00	1279144.3	A	N/A	1.0000			
PFAoDA_2	6.07	1.00	15801.0	A	N/A	0.0124	-7	50	
10:2-FTS	6.08	1.09	89232.9	A	N/A	1.0000			
10:2-FTS_2	6.08	1.09	53412.1	A	N/A	0.5986	-14	50	
PFArDA	6.26	1.03	1107869.4	A	N/A	1.0000			
PFArDA_2	6.26	1.03	9238.6	A	N/A	0.0083	11	50	
PFAeDA	6.43	1.00	828663.5	A	N/A	1.0000			
PFAeDA_2	6.43	1.00	5239.5	A	N/A	0.0063	-4	50	
PFHxDA	6.72	1.05	370221.0	A	N/A	1.0000			
PFHxDA_2	6.72	1.04	23249.7	A	N/A	0.0628	2	50	
PFOA	6.98	1.08	270517.6	A	N/A	1.0000			
PFOA_2	6.98	1.08	6887.6	A	N/A	0.0255	-6	50	

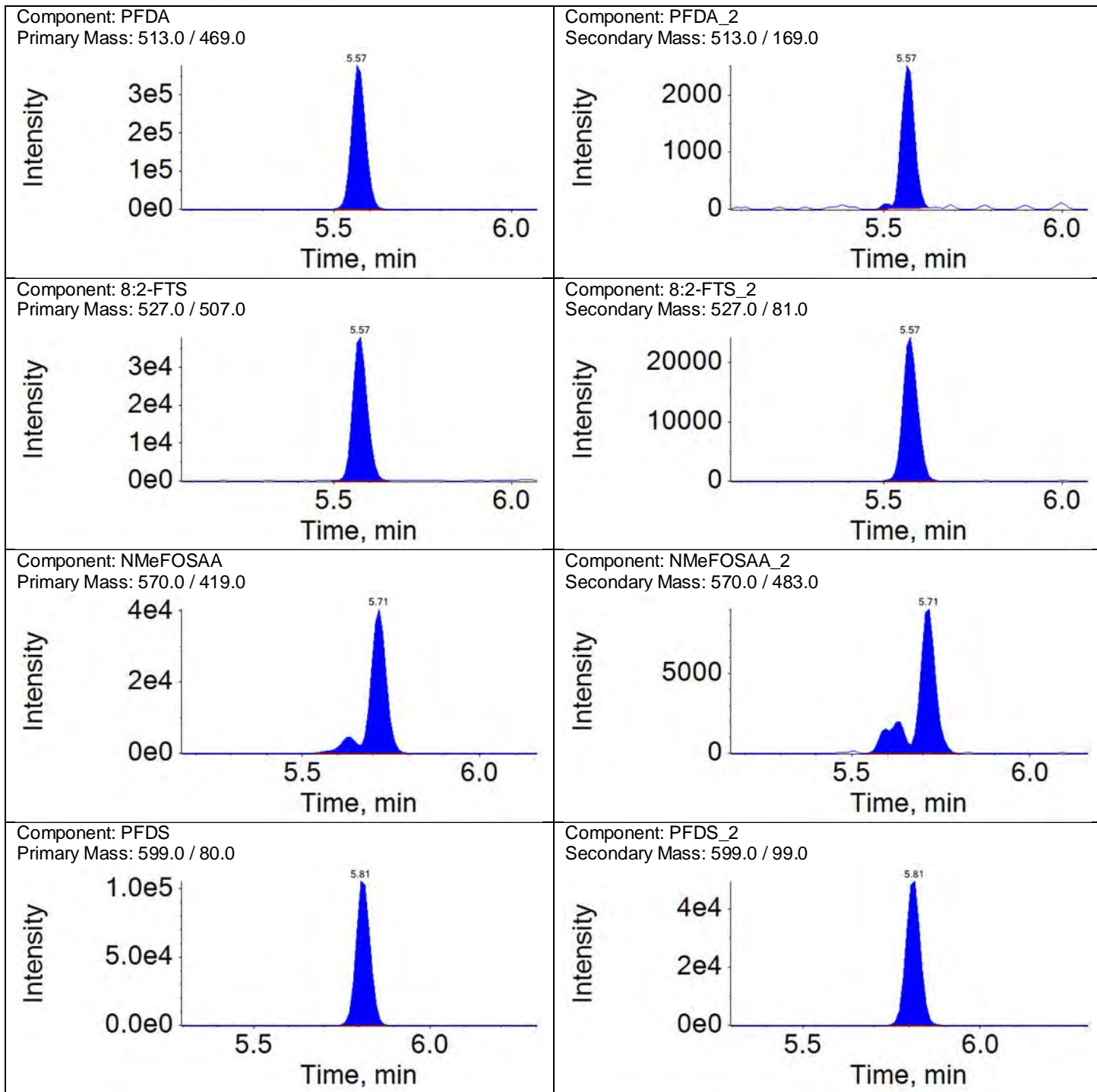




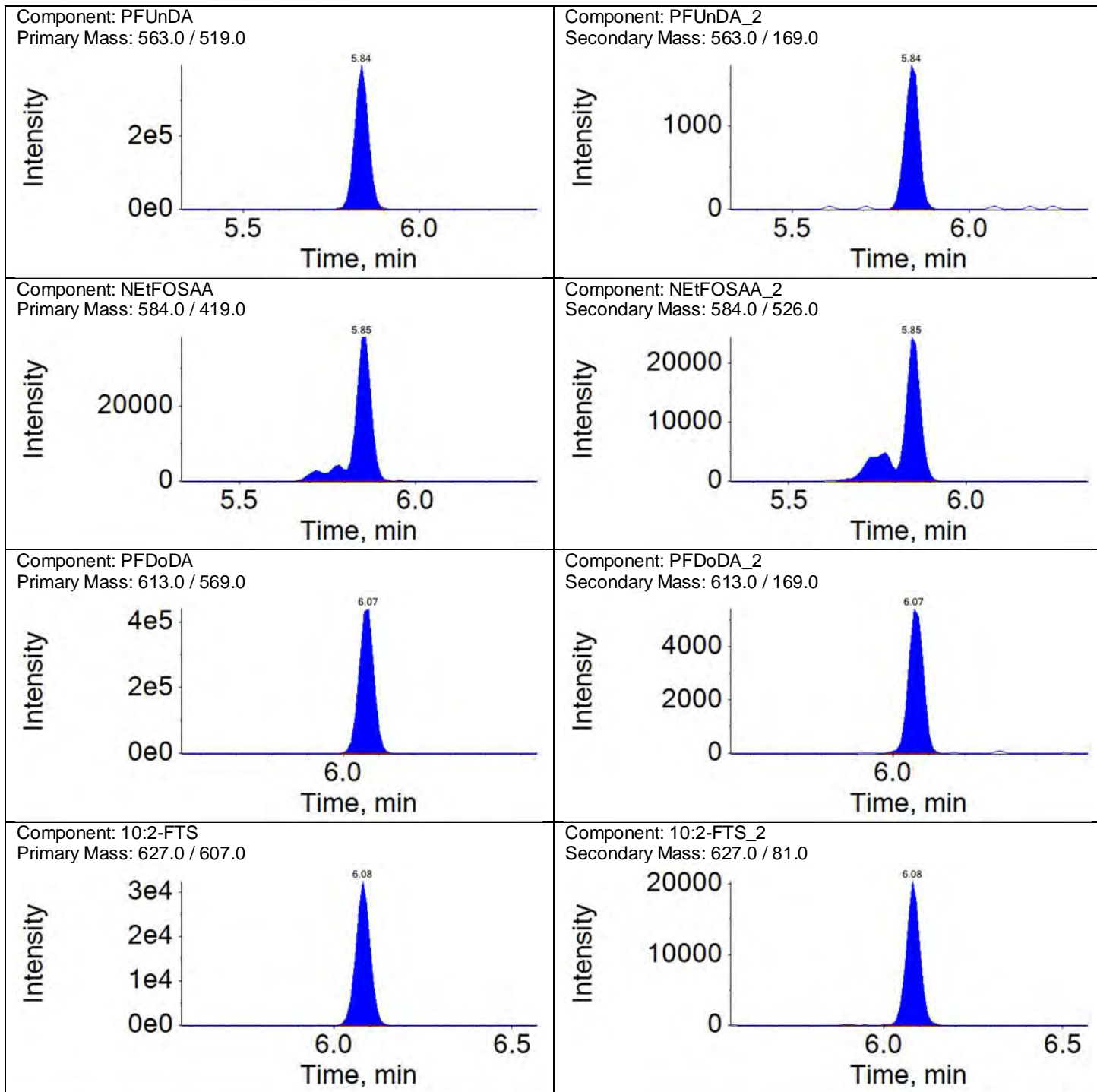




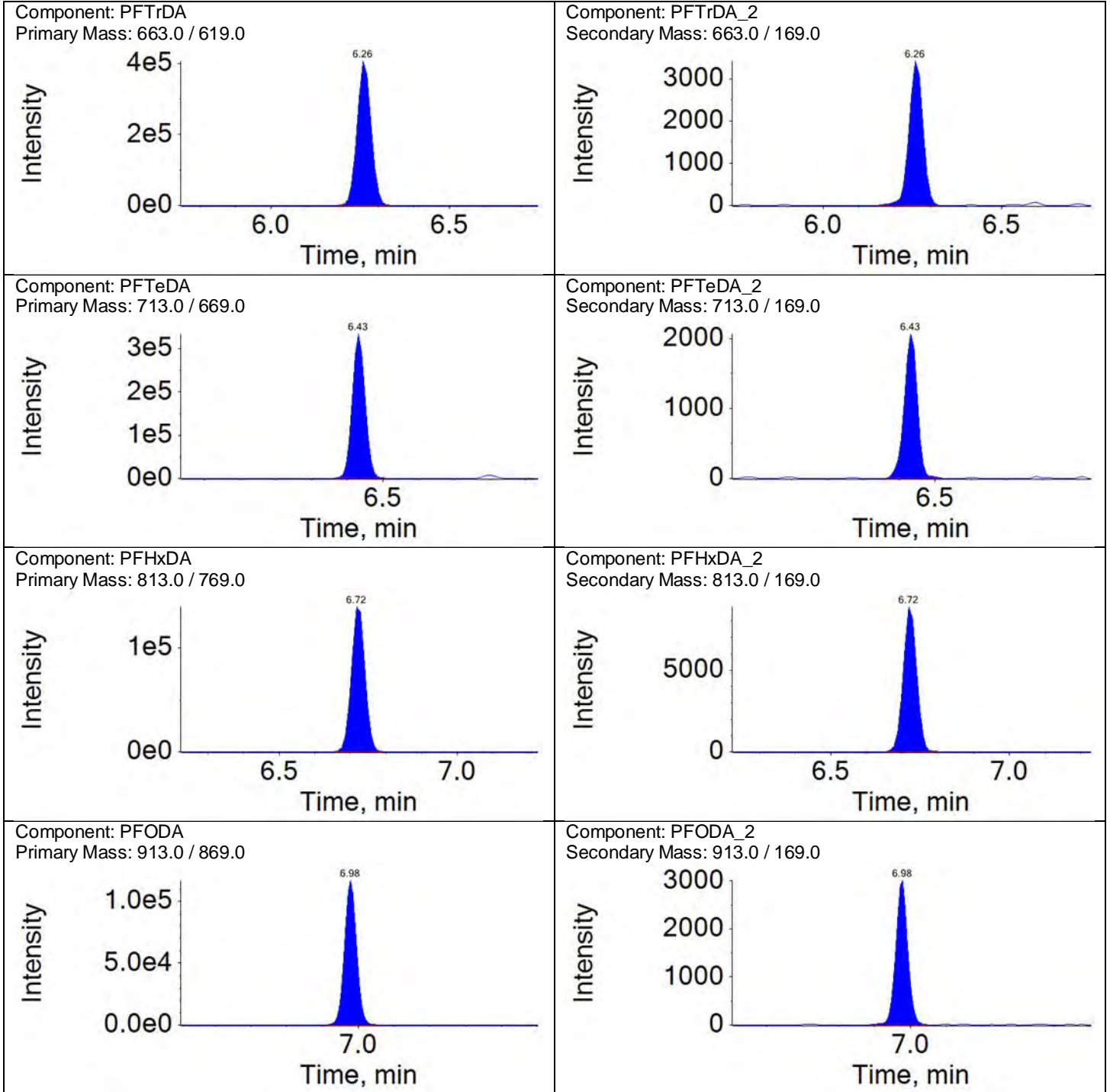












**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

Sample File Name	Acquisition Date	Sample ID	Sample Name
18DEC18DCAL-68.wiff	12/18/2018 11:34:56 PM	CALBRN11833C	CAL1
18DEC18DCAL-69.wiff	12/18/2018 11:43:56 PM	CALBRN21833C	CAL2
18DEC18DCAL-70.wiff	12/18/2018 11:52:56 PM	CALBRN31833B	CAL3
18DEC18DCAL-71.wiff	12/19/2018 12:01:56 AM	CALBRN41833B	CAL4
18DEC18DCAL-72.wiff	12/19/2018 12:10:55 AM	CALBRN51833B	CAL5
18DEC18DCAL-73.wiff	12/19/2018 12:19:55 AM	CALBRN61833B	CAL6
18DEC18DCAL-74.wiff	12/19/2018 12:28:56 AM	CALBRN71833B	CAL7

**CAL3 Injection Standard Areas**

Sample Name	Injection Std Name	Injection Std Area
CAL3	13C3-PFBA	941251.6
CAL3	13C2-PFOA	485595.3
CAL3	13C4-PFOS	292182.6
CAL3	13C2-PFDA	467216.0

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**Response Factor Table**

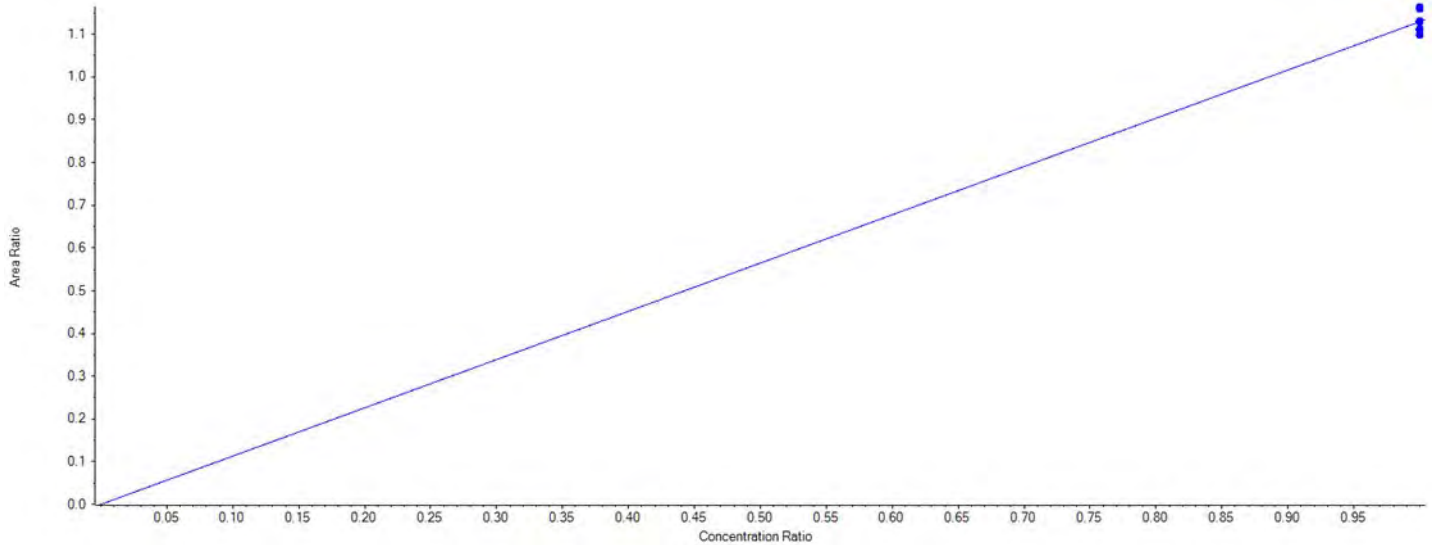
Analyte Name	CAL 1	CAL 2	CAL 3	CAL 4	CAL 5	CAL 6	CAL 7	%RSD	Limit	OOS	r <sup>2</sup>	OOS
PFBA	1.035	1.039	1.019	0.912	0.943	N/A	N/A	5	20		0.999	
PFPeA	1.073	1.048	1.088	0.943	0.964	N/A	N/A	6	20		0.999	
PFBS	1.050	1.017	1.043	0.973	0.941	0.932	0.942	5	20		1.000	
4:2-FTS	1.860	1.994	1.828	1.786	1.896	1.728	N/A	5	20		0.998	
PFHxA	1.333	1.356	1.237	1.221	1.204	N/A	N/A	5	20		1.000	
PFPeS	0.512	0.501	0.508	0.478	0.476	0.461	0.448	5	20		0.999	
PFHpA	1.871	1.766	1.686	1.503	1.482	N/A	N/A	9	20		0.999	
PFHxS	0.963	1.075	1.058	0.942	0.998	0.963	N/A	5	20		0.999	
6:2-FTS	2.445	2.288	2.173	2.111	1.856	1.880	N/A	10	20		0.998	
PFHpS	0.845	1.015	1.039	0.902	0.917	0.891	0.887	7	20		1.000	
PFOA	1.063	1.089	1.115	0.923	0.990	0.920	N/A	8	20		0.998	
PFOS	1.129	1.112	1.240	1.025	1.059	1.111	1.091	6	20		0.999	
PFNA	1.534	1.391	1.409	1.290	1.349	1.208	N/A	7	20		0.997	
PFNS	0.760	0.810	0.858	0.723	0.725	0.762	N/A	6	20		0.999	
PFDA	1.136	1.056	0.974	0.946	0.973	N/A	N/A	7	20		1.000	
8:2-FTS	2.678	2.650	2.593	2.440	2.325	N/A	N/A	5	20		0.999	
PFOSA	1.066	1.125	1.051	0.967	1.054	0.980	N/A	5	20		0.999	
NMeFOSAA	0.752	0.898	0.879	0.801	0.853	0.782	N/A	6	20		0.998	
PFDS	0.565	0.615	0.644	0.608	0.566	0.580	0.583	5	20		1.000	
PFUnDA	1.652	1.596	1.609	1.515	1.494	N/A	N/A	4	20		1.000	
NEtFOSAA	0.959	0.872	1.035	0.902	1.055	1.008	0.958	6	20		0.998	
PFDODA	1.207	1.061	1.069	0.932	1.005	N/A	N/A	9	20		0.998	
10:2-FTS	2.837	2.644	2.609	2.279	2.343	N/A	N/A	8	20		0.999	
NMePFOSAE	1.183	1.333	1.259	1.207	1.182	1.165	1.098	6	20		0.999	
NMePFOSA	0.981	1.153	1.075	0.960	0.981	0.994	N/A	7	20		1.000	
PFDoS	0.299	0.305	0.317	0.294	0.313	0.328	0.312	3	20		0.999	
NEtPFOSAE	1.727	1.736	1.611	1.421	1.559	N/A	N/A	7	20		0.998	
NEtPFOSA	1.031	1.099	1.185	1.137	1.061	1.050	1.072	5	20		1.000	
PFTrDA	1.036	1.057	0.995	0.923	0.991	N/A	N/A	5	20		0.999	
PFTeDA	1.015	0.955	0.992	0.868	0.945	N/A	N/A	5	20		0.998	
PFHxDA	0.540	0.478	0.521	0.478	0.482	0.438	N/A	7	20		0.998	
PFODA	0.358	0.354	0.386	0.354	0.362	0.340	N/A	4	20		0.999	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

E13C4-PFBA

$y = 1.12911 x$  (std. dev. = 0.02473) (weighting: None)



Extraction Standard Calibration Verification

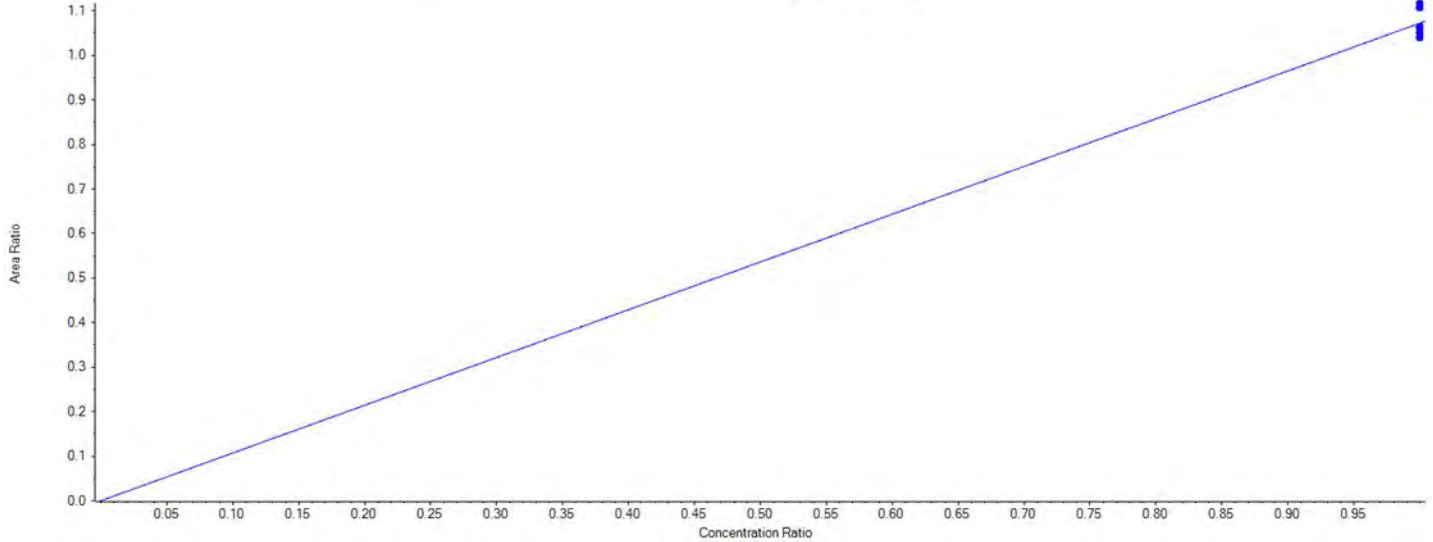
Sample Name	E13C4-PFBA Area	13C3-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	1106287.60	996186.00	True	5.00	1.111	3.26	1.000	5.000	4.918	-2	30	
CAL2	1122193.95	964316.66	True	5.00	1.164	3.26	1.000	5.000	5.153	3	30	
CAL3	1064422.79	941251.55	True	5.00	1.131	3.26	1.000	5.000	5.008	0	30	
CAL4	1092510.85	994245.80	True	5.00	1.099	3.26	1.000	5.000	4.866	-3	30	
CAL5	1029366.77	913001.04	True	5.00	1.127	3.26	1.000	5.000	4.993	0	30	
CAL6	976240.59	841816.85	True	5.00	1.160	3.26	1.000	5.000	5.135	3	30	
CAL7	849248.24	763214.46	True	5.00	1.113	3.25	1.000	5.000	4.927	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

E13C5-PFPeA

$y = 1.07223 x$  (std. dev. = 0.02851) (weighting: None)



Extraction Standard Calibration Verification

Sample Name	E13C5-PFPeA Area	13C3-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	1046699.00	996186.00	True	5.00	1.051	3.76	1.150	5.000	4.900	-2	30	
CAL2	1076428.66	964316.66	True	5.00	1.116	3.76	1.150	5.000	5.205	4	30	
CAL3	1002351.73	941251.55	True	5.00	1.065	3.77	1.150	5.000	4.966	-1	30	
CAL4	1033656.30	994245.80	True	5.00	1.040	3.76	1.150	5.000	4.848	-3	30	
CAL5	971672.04	913001.04	True	5.00	1.064	3.76	1.150	5.000	4.963	-1	30	
CAL6	931893.93	841816.85	True	5.00	1.107	3.76	1.150	5.000	5.162	3	30	
CAL7	811188.96	763214.46	True	5.00	1.063	3.75	1.150	5.000	4.956	-1	30	

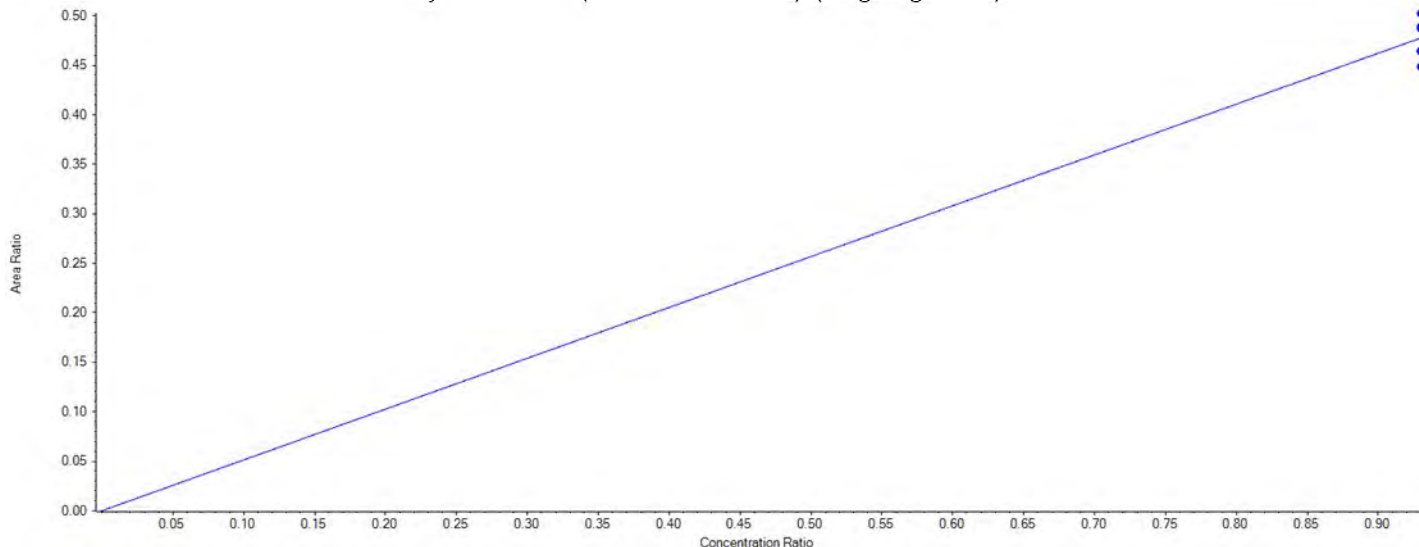


**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**E13C3-PFBS**

$y = 0.51350 x$  (std. dev. = 0.02045) (weighting: None)



**Extraction Standard Calibration Verification**

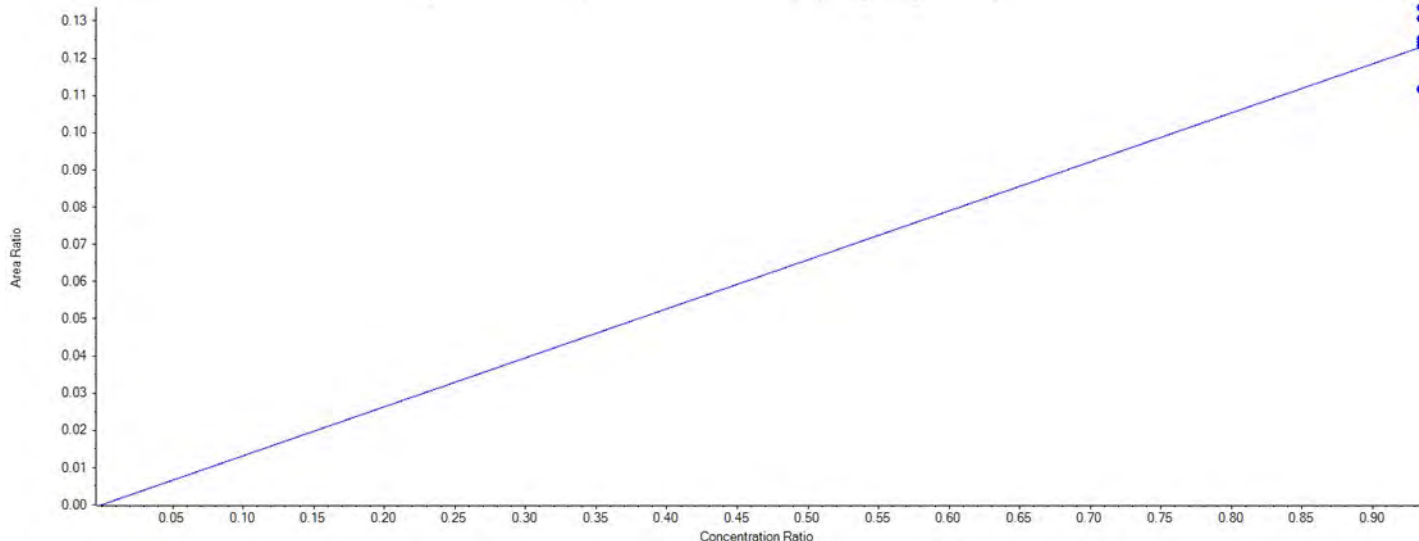
Sample Name	E13C3-PFBS Area	13C3-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	461605.31	996186.00	True	5.00	0.463	3.81	1.170	4.650	4.512	-3	30	
CAL2	471423.14	964316.66	True	5.00	0.489	3.81	1.170	4.650	4.760	2	30	
CAL3	437376.42	941251.55	True	5.00	0.465	3.82	1.170	4.650	4.525	-3	30	
CAL4	445696.19	994245.80	True	5.00	0.448	3.81	1.170	4.650	4.365	-6	30	
CAL5	446207.39	913001.04	True	5.00	0.489	3.81	1.170	4.650	4.759	2	30	
CAL6	422799.48	841816.85	True	5.00	0.502	3.81	1.170	4.650	4.890	5	30	
CAL7	371468.64	763214.46	True	5.00	0.487	3.80	1.170	4.650	4.739	2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C2-4:2-FTS

$y = 0.13165 x$  (std. dev. = 0.00912) (weighting: None)



Extraction Standard Calibration Verification

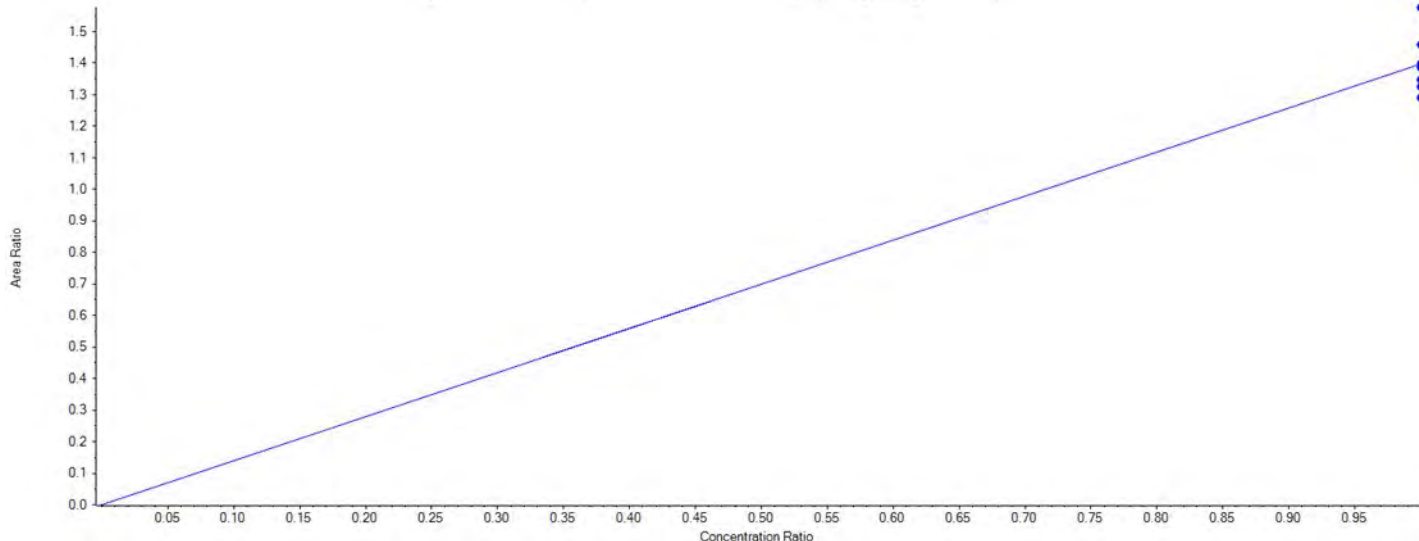
Sample Name	E13C2-4:2-FTS Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	70576.52	539687.50	True	5.00	0.131	4.12	0.840	4.670	4.967	6	30	
CAL2	65525.79	523533.32	True	5.00	0.125	4.12	0.840	4.670	4.754	2	30	
CAL3	64885.53	485595.29	True	5.00	0.134	4.13	0.840	4.670	5.075	9	30	
CAL4	64261.81	521121.54	True	5.00	0.123	4.12	0.840	4.670	4.683	0	30	
CAL5	60237.68	539893.39	True	5.00	0.112	4.12	0.840	4.670	4.237	-9	30	
CAL6	60811.26	543818.83	True	5.00	0.112	4.12	0.840	4.670	4.247	-9	30	
CAL7	60332.00	484733.39	True	5.00	0.124	4.11	0.840	4.670	4.727	1	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**E13C5-PFHxA**

$y = 1.39785 x$  (std. dev. = 0.09530) (weighting: None)



**Extraction Standard Calibration Verification**

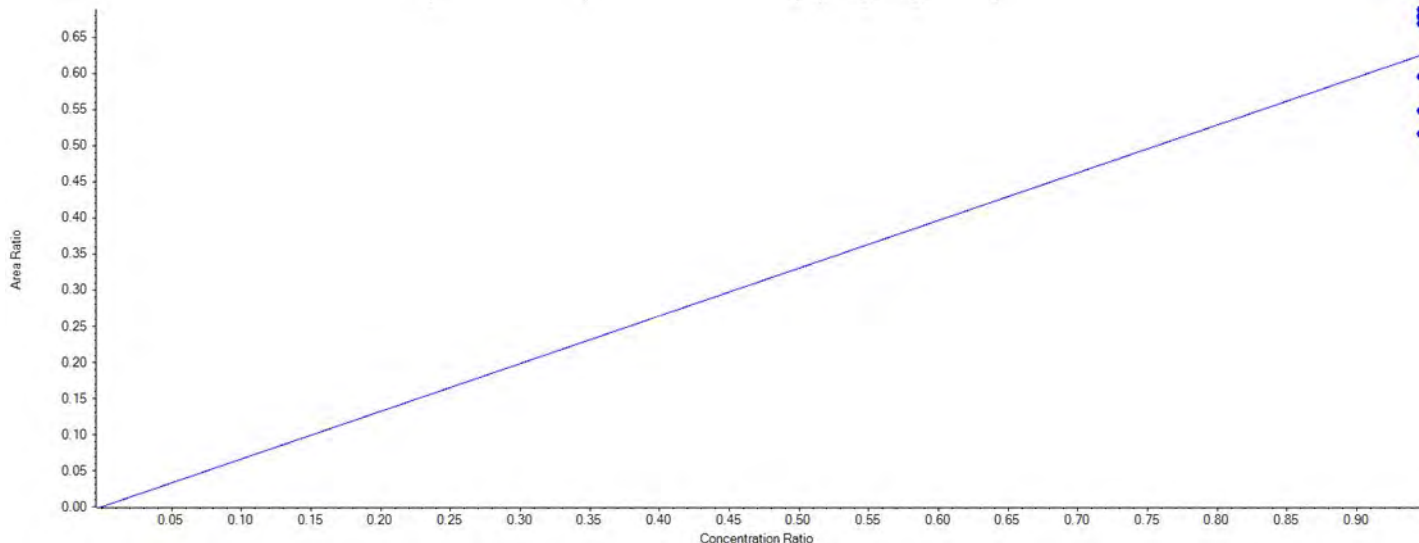
Sample Name	E13C5-PFHxA Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	748596.55	539687.50	True	5.00	1.387	4.16	0.850	5.000	4.962	-1	30	
CAL2	763341.69	523533.32	True	5.00	1.458	4.15	0.850	5.000	5.215	4	30	
CAL3	765483.52	485595.29	True	5.00	1.576	4.16	0.850	5.000	5.639	13	30	
CAL4	728009.89	521121.54	True	5.00	1.397	4.15	0.850	5.000	4.997	0	30	
CAL5	728204.42	539893.39	True	5.00	1.349	4.16	0.850	5.000	4.825	-4	30	
CAL6	702242.37	543818.83	True	5.00	1.291	4.16	0.850	5.000	4.619	-8	30	
CAL7	642893.13	484733.39	True	5.00	1.326	4.15	0.850	5.000	4.744	-5	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C3-PFHxS

$y = 0.66076 x$  (std. dev. = 0.07493) (weighting: None)



Extraction Standard Calibration Verification

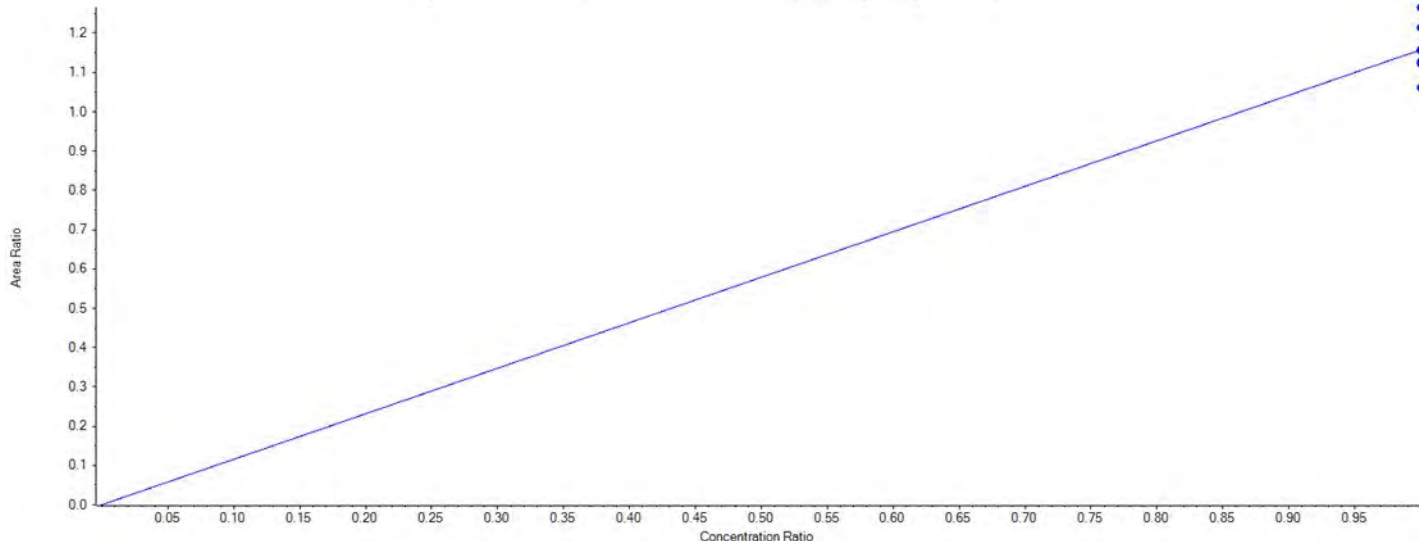
Sample Name	E13C3-PFHxS Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	371572.29	539687.50	True	5.00	0.688	4.54	0.930	4.730	5.210	10	30	
CAL2	354452.88	523533.32	True	5.00	0.677	4.54	0.930	4.730	5.123	8	30	
CAL3	330322.87	485595.29	True	5.00	0.680	4.55	0.930	4.730	5.147	9	30	
CAL4	348394.91	521121.54	True	5.00	0.669	4.54	0.930	4.730	5.059	7	30	
CAL5	321862.26	539893.39	True	5.00	0.596	4.54	0.930	4.730	4.511	-5	30	
CAL6	298442.34	543818.83	True	5.00	0.549	4.55	0.930	4.730	4.153	-12	30	
CAL7	250261.05	484733.39	True	5.00	0.516	4.54	0.930	4.730	3.907	-17	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C4-PFHpA

$y = 1.15755 x$  (std. dev. = 0.06604) (weighting: None)



Extraction Standard Calibration Verification

Sample Name	E13C4-PFHpA Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	573021.26	539687.50	True	5.00	1.062	4.54	0.930	5.000	4.586	-8	30	
CAL2	605519.18	523533.32	True	5.00	1.157	4.54	0.920	5.000	4.996	0	30	
CAL3	614238.84	485595.29	True	5.00	1.265	4.54	0.930	5.000	5.464	9	30	
CAL4	633233.30	521121.54	True	5.00	1.215	4.54	0.920	5.000	5.249	5	30	
CAL5	623382.42	539893.39	True	5.00	1.155	4.54	0.920	5.000	4.987	0	30	
CAL6	610591.63	543818.83	True	5.00	1.123	4.55	0.930	5.000	4.850	-3	30	
CAL7	546291.55	484733.39	True	5.00	1.127	4.53	0.920	5.000	4.868	-3	30	

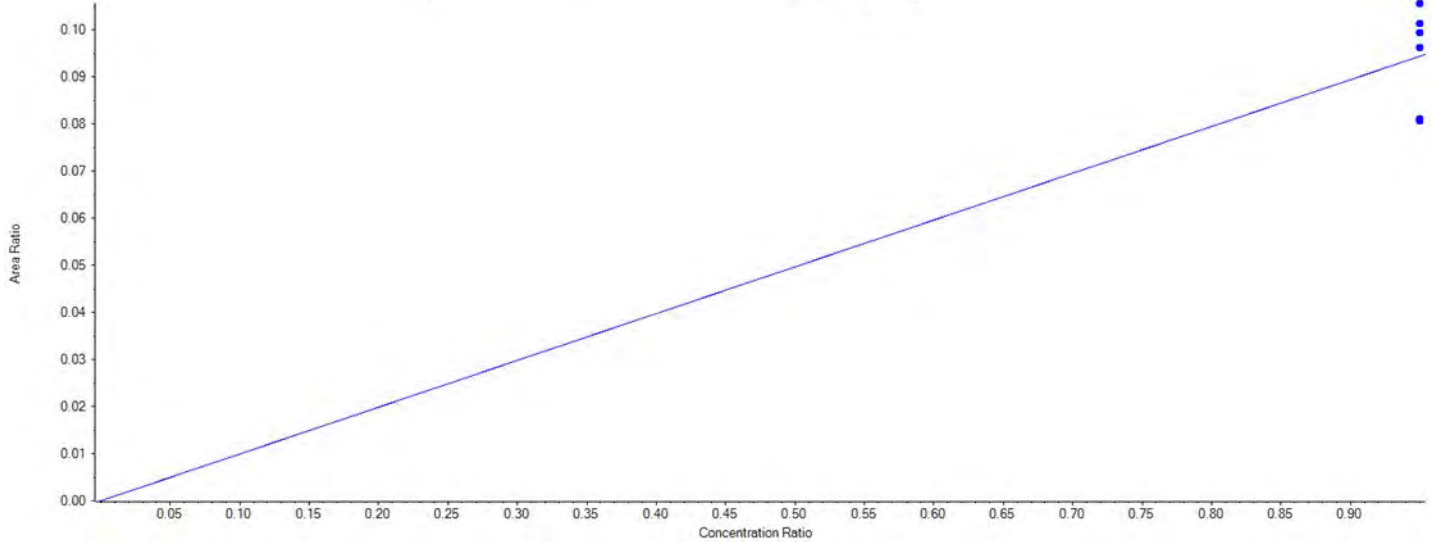


DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C2-6:2-FTS

$y = 0.09938 x$  (std. dev. = 0.01031) (weighting: None)



Extraction Standard Calibration Verification

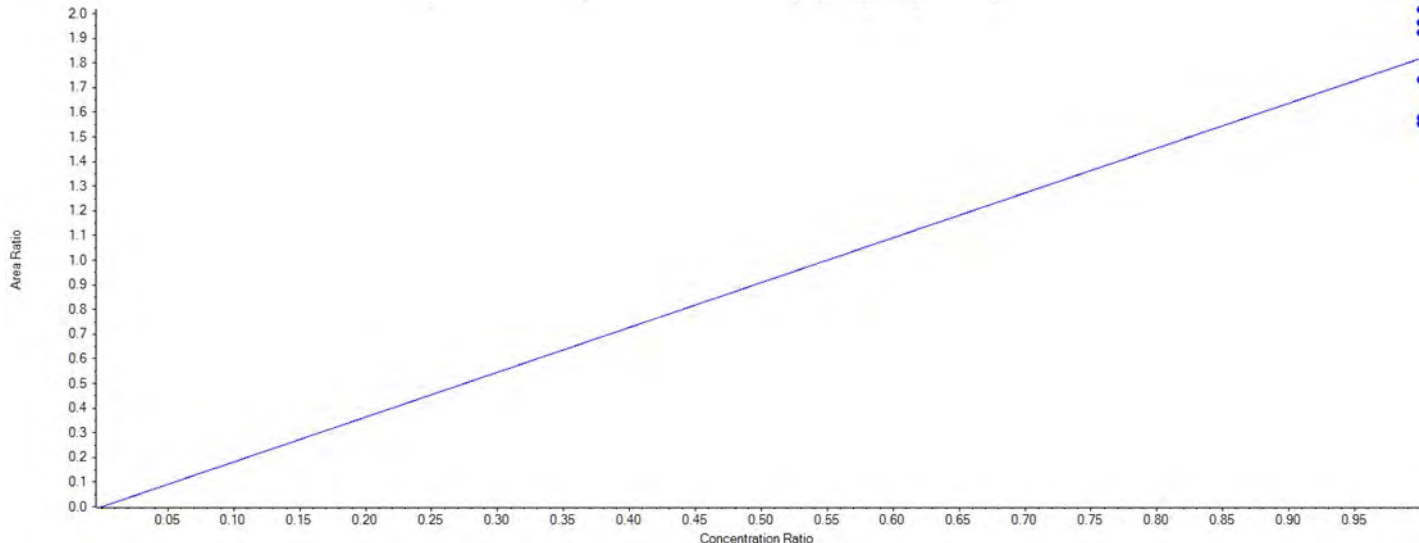
Sample Name	E13C2-6:2-FTS Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	53697.29	539687.50	True	5.00	0.099	4.89	1.000	4.750	5.006	5	30	
CAL2	53117.91	523533.32	True	5.00	0.101	4.89	1.000	4.750	5.105	7	30	
CAL3	51288.83	485595.29	True	5.00	0.106	4.90	1.000	4.750	5.314	12	30	
CAL4	50211.12	521121.54	True	5.00	0.096	4.89	1.000	4.750	4.848	2	30	
CAL5	51944.01	539893.39	True	5.00	0.096	4.89	1.000	4.750	4.841	2	30	
CAL6	44087.72	543818.83	True	5.00	0.081	4.90	1.000	4.750	4.079	-14	30	
CAL7	39094.47	484733.39	True	5.00	0.081	4.89	1.000	4.750	4.058	-15	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

E13C8-PFOA

$y = 1.81836 x$  (std. dev. = 0.19441) (weighting: None)



Extraction Standard Calibration Verification

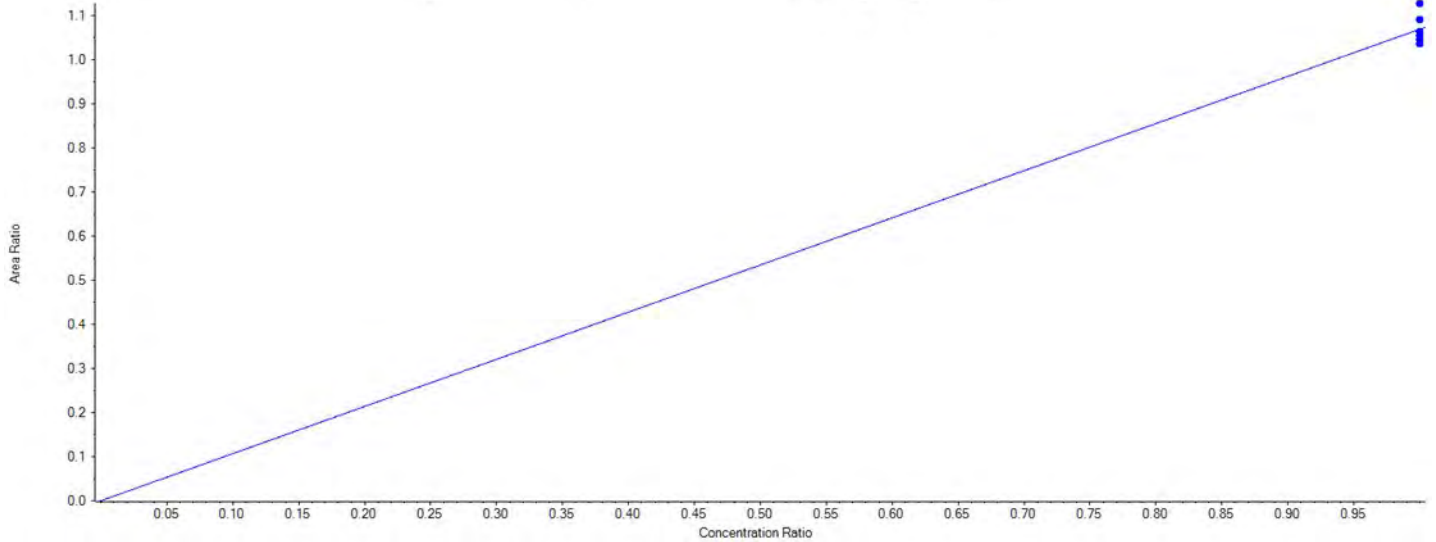
Sample Name	E13C8-PFOA Area	13C2-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	1059559.49	539687.50	True	5.00	1.963	4.91	1.000	5.000	5.399	8	30	
CAL2	1027981.98	523533.32	True	5.00	1.964	4.90	1.000	5.000	5.399	8	30	
CAL3	979199.85	485595.29	True	5.00	2.016	4.91	1.000	5.000	5.545	11	30	
CAL4	1001301.47	521121.54	True	5.00	1.921	4.90	1.000	5.000	5.283	6	30	
CAL5	934414.04	539893.39	True	5.00	1.731	4.91	1.000	5.000	4.759	-5	30	
CAL6	858182.66	543818.83	True	5.00	1.578	4.92	1.000	5.000	4.339	-13	30	
CAL7	753729.04	484733.39	True	5.00	1.555	4.90	1.000	5.000	4.276	-14	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**E13C8-PFOS**

$y = 1.06889 x$  (std. dev. = 0.03065) (weighting: None)



**Extraction Standard Calibration Verification**

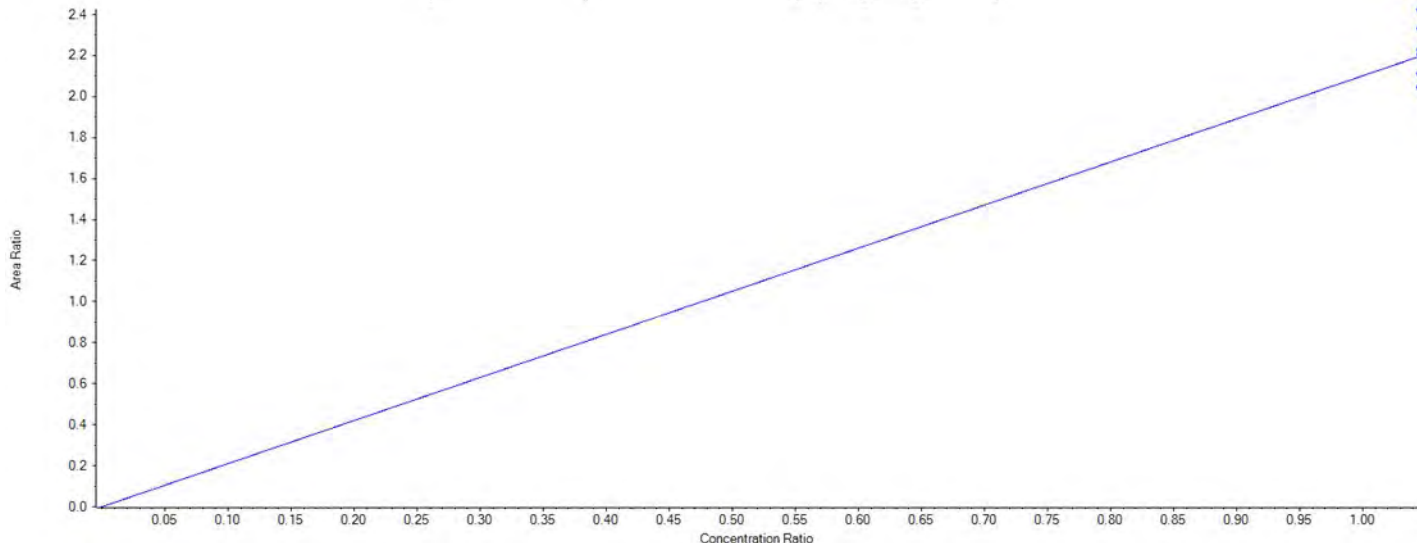
Sample Name	E13C8-PFOS Area	13C4-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	340125.34	319537.92	True	4.78	1.064	5.24	1.000	4.780	4.760	0	30	
CAL2	349492.67	310106.63	True	4.78	1.127	5.23	1.000	4.780	5.040	5	30	
CAL3	308110.34	292182.59	True	4.78	1.055	5.24	1.000	4.780	4.716	-1	30	
CAL4	334944.86	323226.96	True	4.78	1.036	5.23	1.000	4.780	4.634	-3	30	
CAL5	331539.36	311507.34	True	4.78	1.064	5.24	1.000	4.780	4.759	0	30	
CAL6	289236.33	276479.86	True	4.78	1.046	5.24	1.000	4.780	4.678	-2	30	
CAL7	268338.15	246274.53	True	4.78	1.090	5.23	1.000	4.780	4.873	2	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**E13C9-PFNA**

$y = 2.10117 x$  (std. dev. = 0.13787) (weighting: None)



**Extraction Standard Calibration Verification**

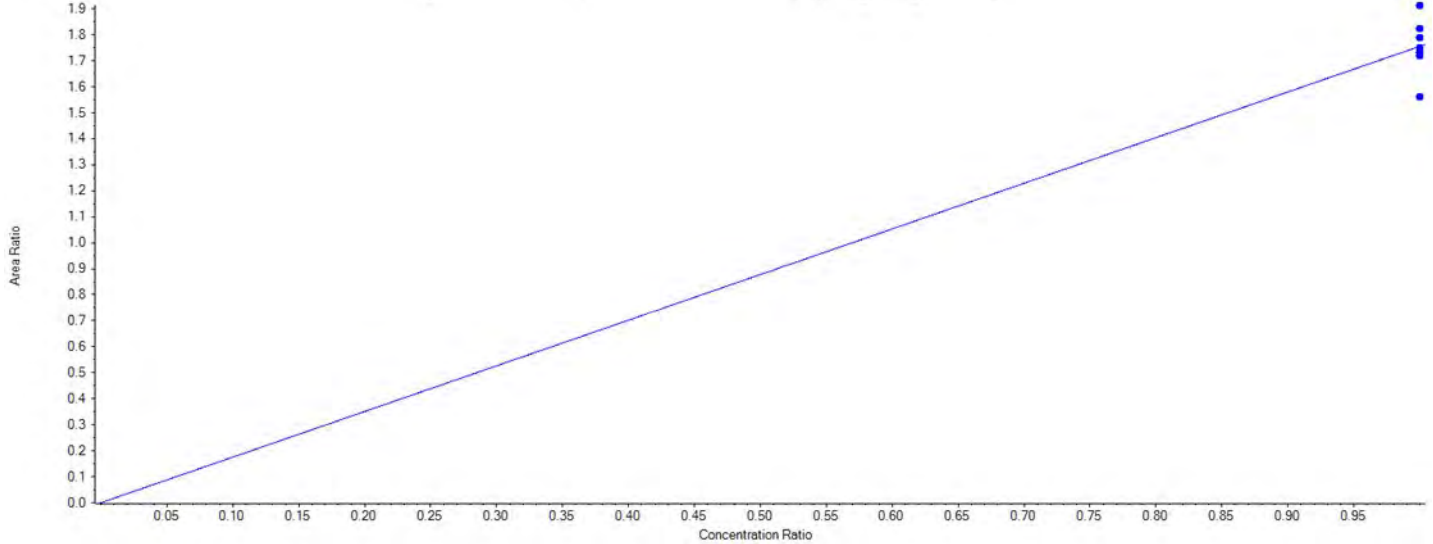
Sample Name	E13C9-PFNA Area	13C4-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	674406.01	319537.92	True	4.78	2.111	5.25	1.000	5.000	4.801	-4	30	
CAL2	683029.42	310106.63	True	4.78	2.203	5.25	1.000	5.000	5.011	0	30	
CAL3	651529.11	292182.59	True	4.78	2.230	5.25	1.000	5.000	5.073	1	30	
CAL4	661406.41	323226.96	True	4.78	2.046	5.25	1.000	5.000	4.655	-7	30	
CAL5	635976.18	311507.34	True	4.78	2.042	5.25	1.000	5.000	4.644	-7	30	
CAL6	644223.39	276479.86	True	4.78	2.330	5.26	1.000	5.000	5.301	6	30	
CAL7	597020.81	246274.53	True	4.78	2.424	5.25	1.000	5.000	5.515	10	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C6-PFDA

$y = 1.75530 x$  (std. dev. = 0.10776) (weighting: None)



Extraction Standard Calibration Verification

Sample Name	E13C6-PFDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	846045.46	492042.79	True	5.00	1.719	5.56	1.000	5.000	4.898	-2	30	
CAL2	929390.92	486052.71	True	5.00	1.912	5.56	1.000	5.000	5.447	9	30	
CAL3	851991.70	467216.04	True	5.00	1.824	5.56	1.000	5.000	5.194	4	30	
CAL4	880890.92	492670.33	True	5.00	1.788	5.56	1.000	5.000	5.093	2	30	
CAL5	823063.78	475016.51	True	5.00	1.733	5.56	1.000	5.000	4.936	-1	30	
CAL6	785276.61	448809.55	True	5.00	1.750	5.57	1.000	5.000	4.984	0	30	
CAL7	716919.49	459096.58	True	5.00	1.562	5.56	1.000	5.000	4.448	-11	30	

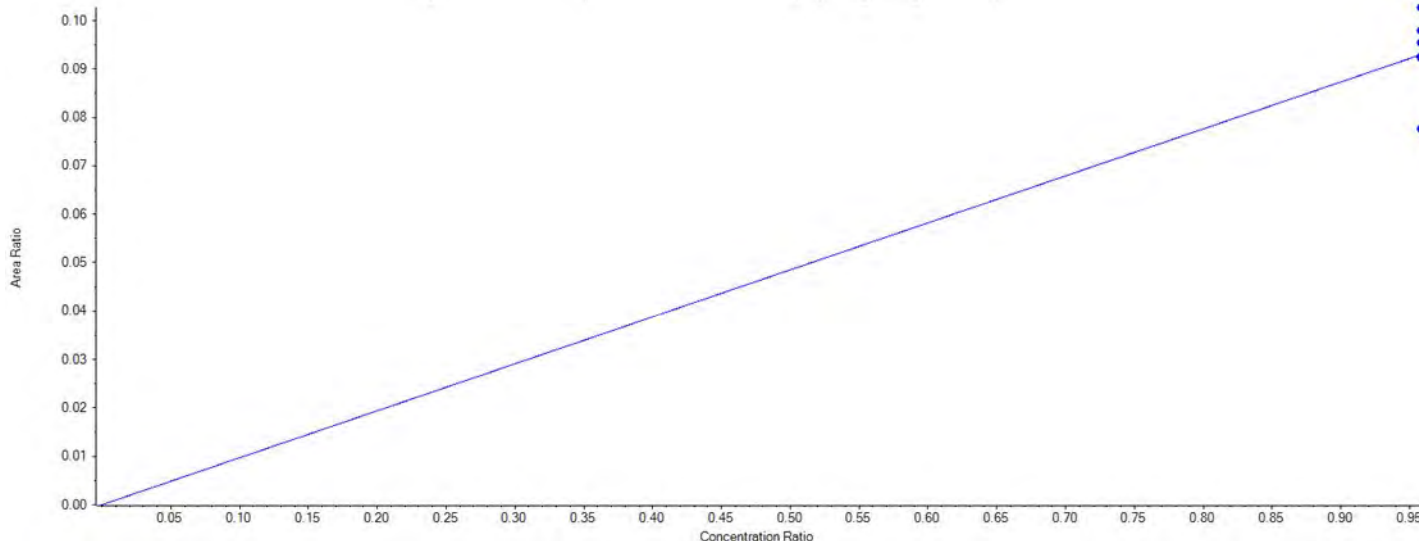


DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C2-8:2-FTS

$y = 0.09701 x$  (std. dev. = 0.00809) (weighting: None)



Extraction Standard Calibration Verification

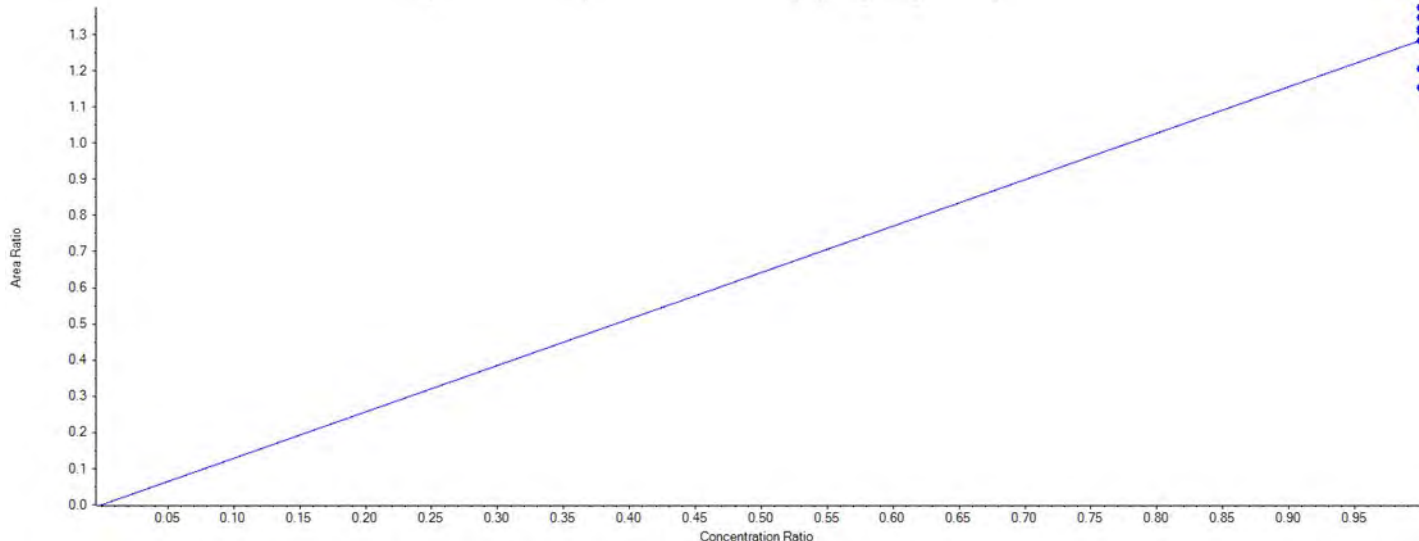
Sample Name	E13C2-8:2-FTS Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	48167.71	492042.79	True	5.00	0.098	5.56	1.000	4.790	5.045	5	30	
CAL2	46390.21	486052.71	True	5.00	0.095	5.56	1.000	4.790	4.919	3	30	
CAL3	47968.92	467216.04	True	5.00	0.103	5.56	1.000	4.790	5.292	10	30	
CAL4	45542.35	492670.33	True	5.00	0.092	5.56	1.000	4.790	4.764	-1	30	
CAL5	43810.43	475016.51	True	5.00	0.092	5.57	1.000	4.790	4.754	-1	30	
CAL6	41390.64	448809.55	True	5.00	0.092	5.57	1.000	4.790	4.753	-1	30	
CAL7	35654.26	459096.58	True	5.00	0.078	5.56	1.000	4.790	4.003	-16	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C8-PFOSA

$y = 1.28401 x$  (std. dev. = 0.07839) (weighting: None)



Extraction Standard Calibration Verification

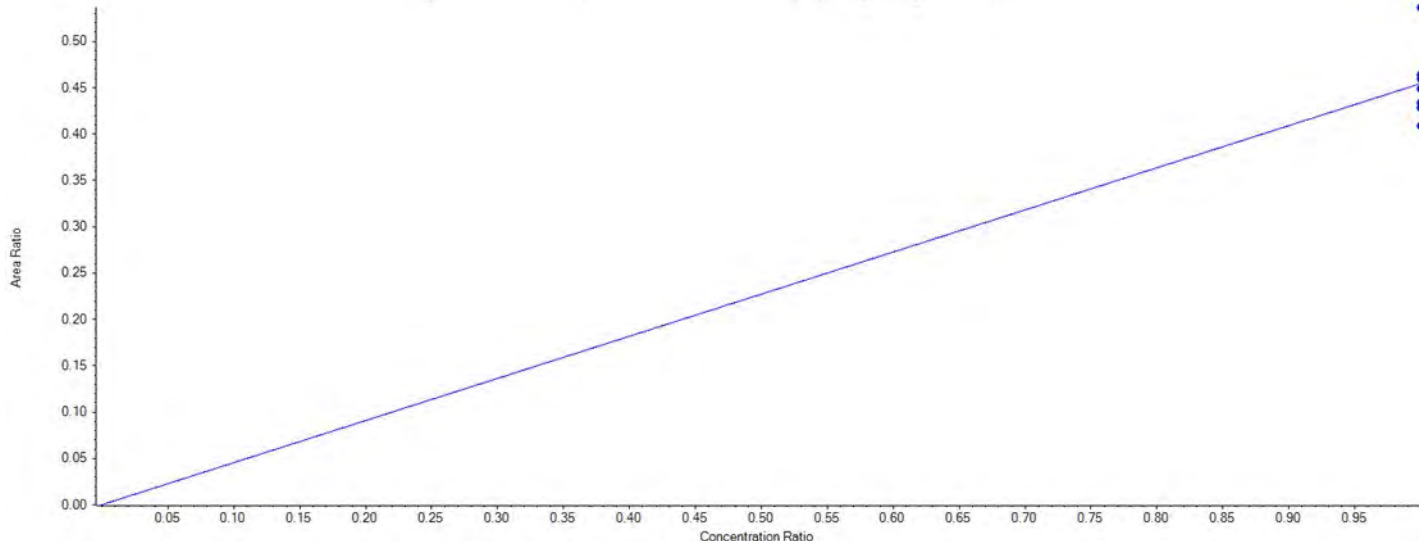
Sample Name	E13C8-PFOSA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	662399.72	492042.79	True	5.00	1.346	5.65	1.020	5.000	5.242	5	30	
CAL2	636077.52	486052.71	True	5.00	1.309	5.65	1.020	5.000	5.096	2	30	
CAL3	642239.55	467216.04	True	5.00	1.375	5.65	1.020	5.000	5.353	7	30	
CAL4	648373.15	492670.33	True	5.00	1.316	5.65	1.020	5.000	5.125	2	30	
CAL5	573278.73	475016.51	True	5.00	1.207	5.65	1.020	5.000	4.700	-6	30	
CAL6	575735.32	448809.55	True	5.00	1.283	5.66	1.020	5.000	4.995	0	30	
CAL7	529267.79	459096.58	True	5.00	1.153	5.65	1.020	5.000	4.489	-10	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

Ed3-NMeFOSAA

$y = 0.45447 x$  (std. dev. = 0.04087) (weighting: None)



Extraction Standard Calibration Verification

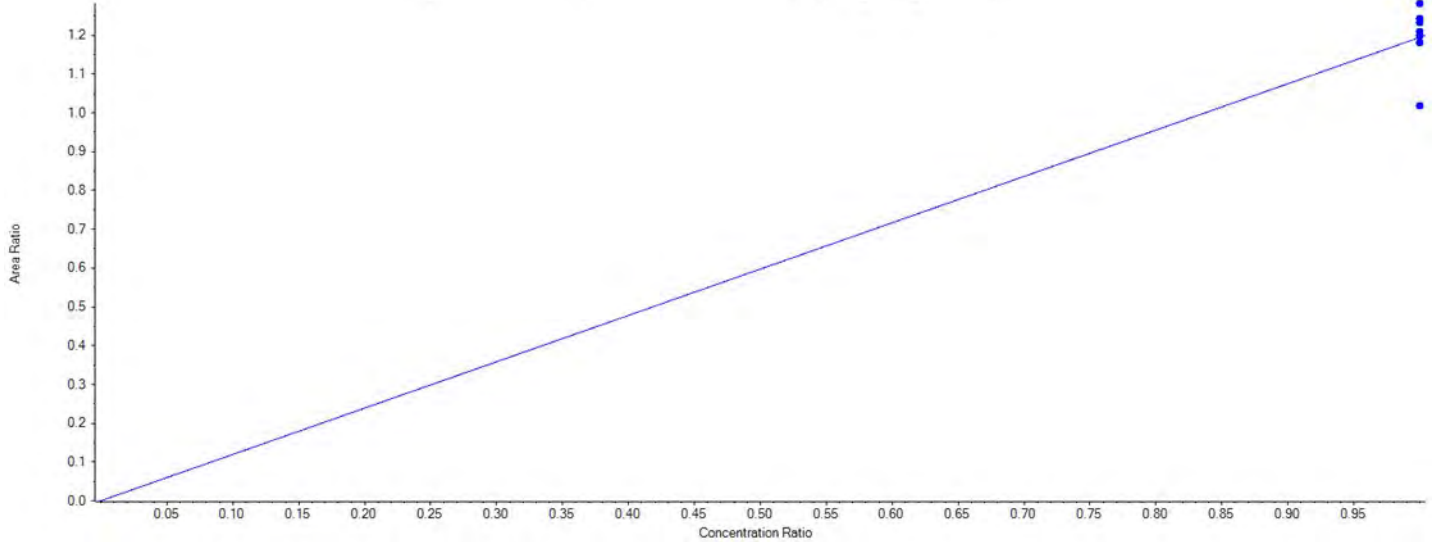
Sample Name	Ed3-NMeFOSAA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	263939.87	492042.79	True	5.00	0.536	5.70	1.030	5.000	5.902	18	30	
CAL2	218152.20	486052.71	True	5.00	0.449	5.70	1.030	5.000	4.938	-1	30	
CAL3	216983.67	467216.04	True	5.00	0.464	5.70	1.030	5.000	5.109	2	30	
CAL4	226675.05	492670.33	True	5.00	0.460	5.70	1.030	5.000	5.062	1	30	
CAL5	203504.71	475016.51	True	5.00	0.428	5.70	1.030	5.000	4.713	-6	30	
CAL6	194698.33	448809.55	True	5.00	0.434	5.71	1.030	5.000	4.773	-5	30	
CAL7	187926.13	459096.58	True	5.00	0.409	5.70	1.020	5.000	4.503	-10	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

E13C7-PFUnDA

$y = 1.19449 x$  (std. dev. = 0.08492) (weighting: None)



Extraction Standard Calibration Verification

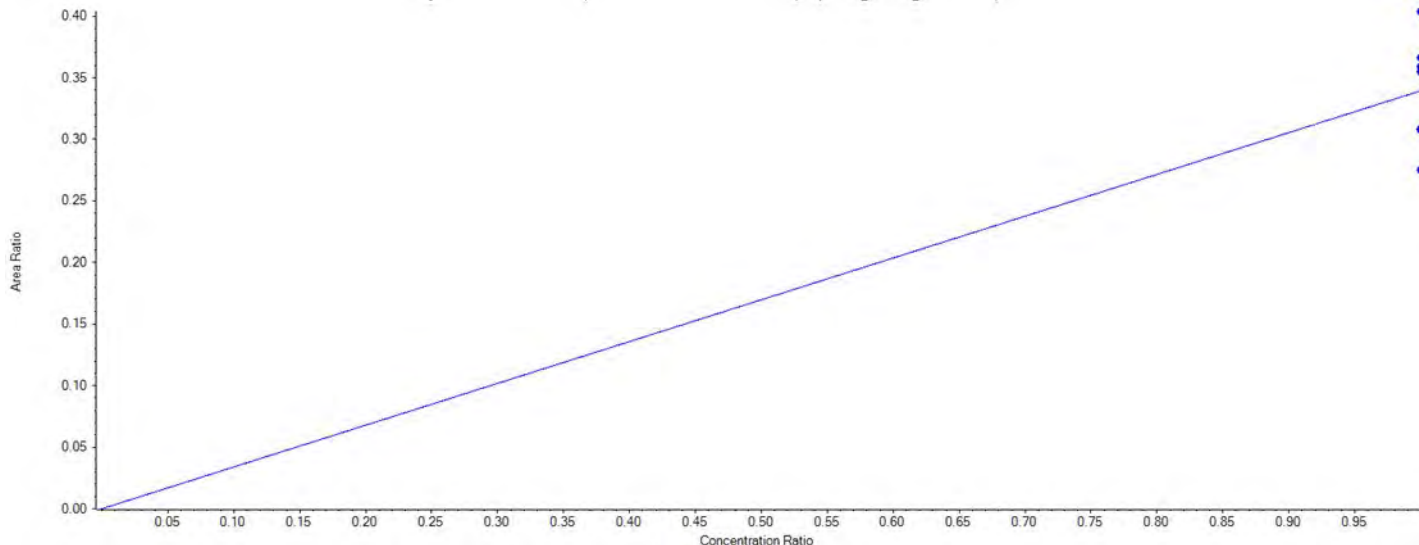
Sample Name	E13C7-PFUnDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	606291.55	492042.79	True	5.00	1.232	5.82	1.050	5.000	5.158	3	30	
CAL2	622971.70	486052.71	True	5.00	1.282	5.82	1.050	5.000	5.365	7	30	
CAL3	580977.27	467216.04	True	5.00	1.243	5.82	1.050	5.000	5.205	4	30	
CAL4	581922.53	492670.33	True	5.00	1.181	5.82	1.050	5.000	4.944	-1	30	
CAL5	568949.80	475016.51	True	5.00	1.198	5.83	1.050	5.000	5.014	0	30	
CAL6	542196.94	448809.55	True	5.00	1.208	5.83	1.050	5.000	5.057	1	30	
CAL7	466944.37	459096.58	True	5.00	1.017	5.82	1.050	5.000	4.257	-15	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

Ed5-NEtFOSAA

$y = 0.33939 x$  (std. dev. = 0.04389) (weighting: None)



Extraction Standard Calibration Verification

Sample Name	Ed5-NEtFOSAA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	174794.14	492042.79	True	5.00	0.355	5.83	1.050	5.000	5.234	5	30	
CAL2	196235.04	486052.71	True	5.00	0.404	5.83	1.050	5.000	5.948	19	30	
CAL3	167747.38	467216.04	True	5.00	0.359	5.83	1.050	5.000	5.289	6	30	
CAL4	180280.04	492670.33	True	5.00	0.366	5.83	1.050	5.000	5.391	8	30	
CAL5	146690.55	475016.51	True	5.00	0.309	5.84	1.050	5.000	4.550	-9	30	
CAL6	138273.55	448809.55	True	5.00	0.308	5.84	1.050	5.000	4.539	-9	30	
CAL7	126195.29	459096.58	True	5.00	0.275	5.83	1.050	5.000	4.050	-19	30	

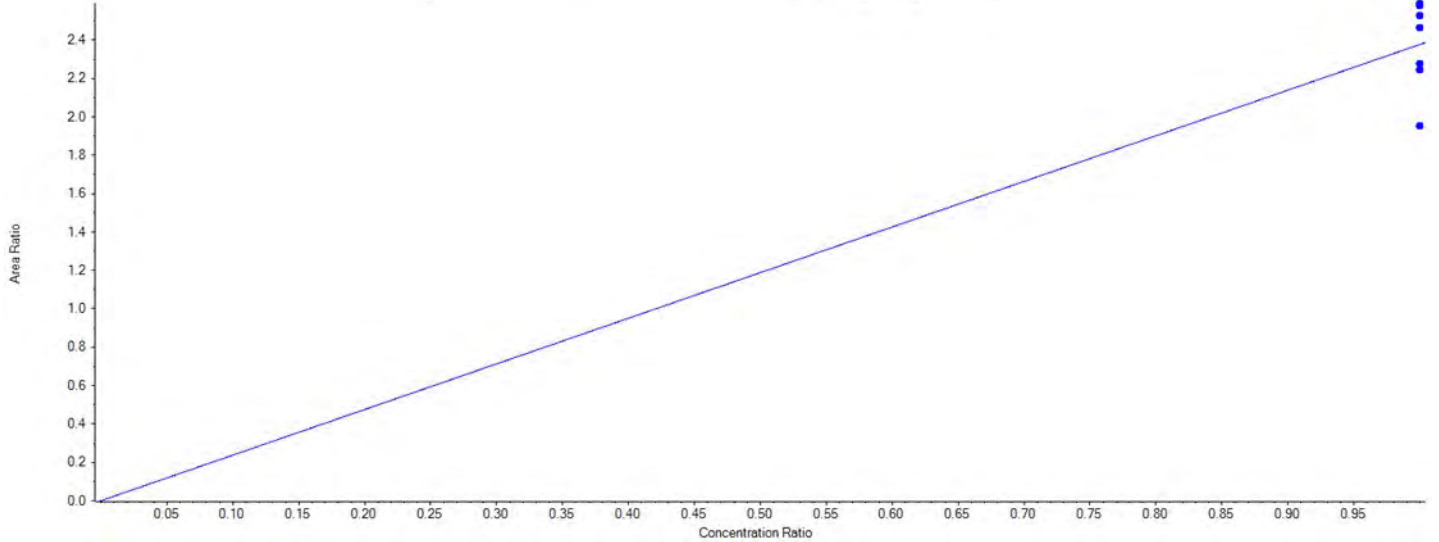


**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**E13C2-PFDoDA**

$y = 2.37659 x$  (std. dev. = 0.23283) (weighting: None)



**Extraction Standard Calibration Verification**

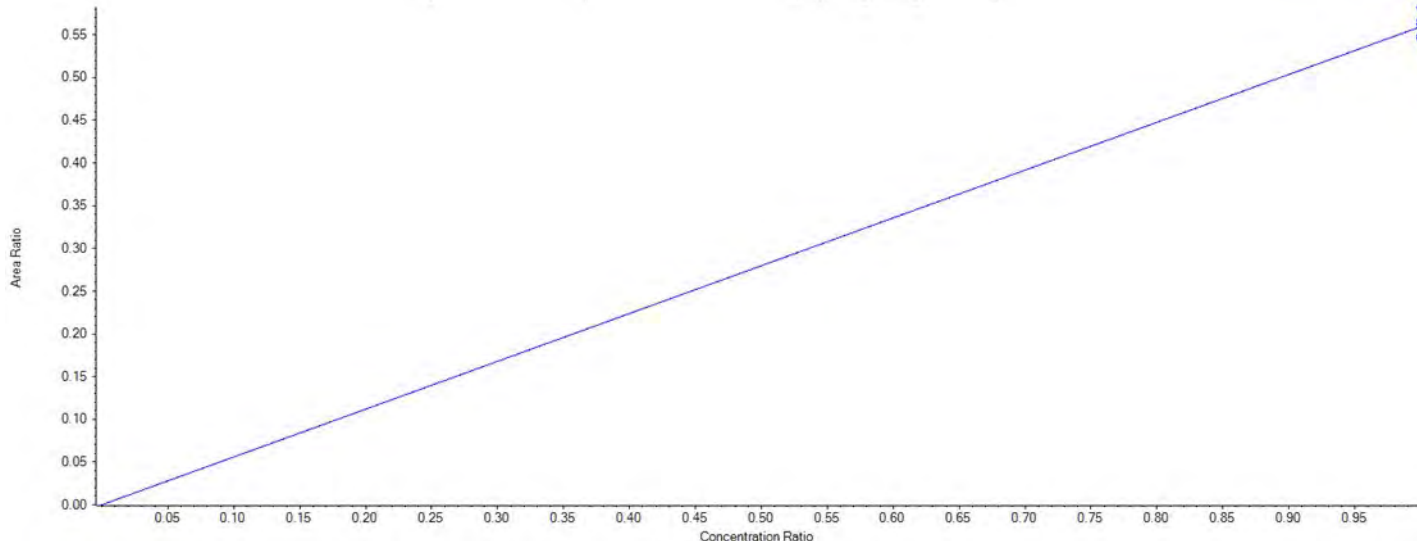
Sample Name	E13C2-PFDoDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	1268639.50	492042.79	True	5.00	2.578	6.04	1.090	5.000	5.424	8	30	
CAL2	1229301.70	486052.71	True	5.00	2.529	6.04	1.090	5.000	5.321	6	30	
CAL3	1210049.18	467216.04	True	5.00	2.590	6.04	1.090	5.000	5.449	9	30	
CAL4	1215089.10	492670.33	True	5.00	2.466	6.04	1.090	5.000	5.189	4	30	
CAL5	1065946.99	475016.51	True	5.00	2.244	6.05	1.090	5.000	4.721	-6	30	
CAL6	1021574.81	448809.55	True	5.00	2.276	6.05	1.090	5.000	4.789	-4	30	
CAL7	896268.09	459096.58	True	5.00	1.952	6.04	1.090	5.000	4.107	-18	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**Ed7-NMePFOSAE**

$y = 0.55960 x$  (std. dev. = 0.01317) (weighting: None)



**Extraction Standard Calibration Verification**

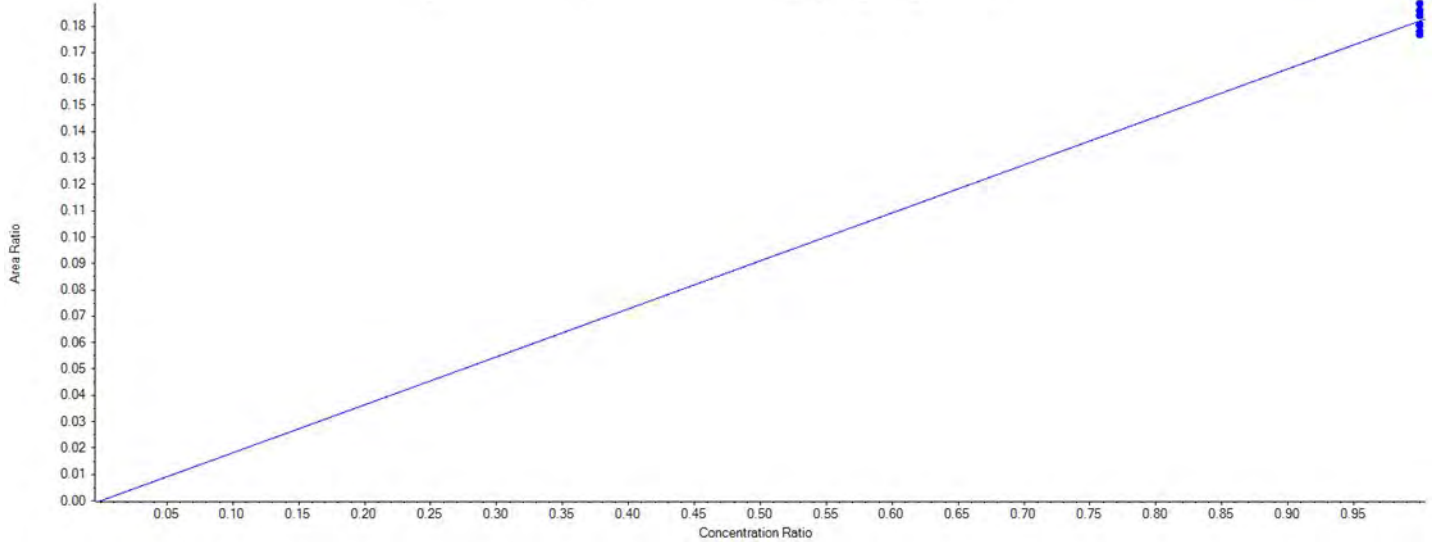
Sample Name	Ed7-NMePFOSA E Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	270192.01	492042.79	True	5.00	0.549	6.08	1.090	5.000	4.906	-2	30	
CAL2	273893.92	486052.71	True	5.00	0.564	6.08	1.090	5.000	5.035	1	30	
CAL3	265025.36	467216.04	True	5.00	0.567	6.09	1.090	5.000	5.068	1	30	
CAL4	268949.18	492670.33	True	5.00	0.546	6.08	1.090	5.000	4.878	-2	30	
CAL5	259783.25	475016.51	True	5.00	0.547	6.09	1.090	5.000	4.886	-2	30	
CAL6	261182.92	448809.55	True	5.00	0.582	6.09	1.090	5.000	5.200	4	30	
CAL7	258278.14	459096.58	True	5.00	0.563	6.08	1.090	5.000	5.027	1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

Ed3-NMePFOSA

$y = 0.18197 x$  (std. dev. = 0.00433) (weighting: None)



Extraction Standard Calibration Verification

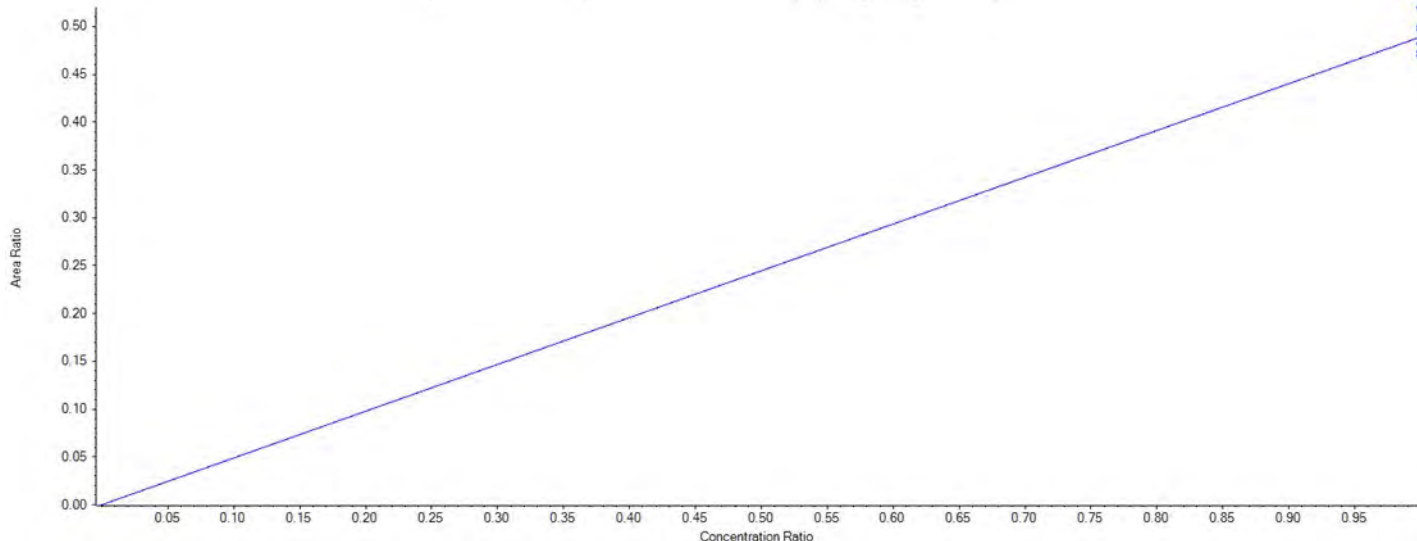
Sample Name	Ed3-NMePFOSA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	91399.47	492042.79	True	5.00	0.186	6.10	1.100	5.000	5.104	2	30	
CAL2	89487.32	486052.71	True	5.00	0.184	6.10	1.100	5.000	5.059	1	30	
CAL3	83036.40	467216.04	True	5.00	0.178	6.10	1.100	5.000	4.883	-2	30	
CAL4	88979.35	492670.33	True	5.00	0.181	6.10	1.100	5.000	4.963	-1	30	
CAL5	83956.43	475016.51	True	5.00	0.177	6.11	1.100	5.000	4.856	-3	30	
CAL6	84626.83	448809.55	True	5.00	0.189	6.11	1.100	5.000	5.181	4	30	
CAL7	82766.69	459096.58	True	5.00	0.180	6.10	1.100	5.000	4.954	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

Ed9-NEtPFOSAE

$y = 0.48906 x$  (std. dev. = 0.01734) (weighting: None)



Extraction Standard Calibration Verification

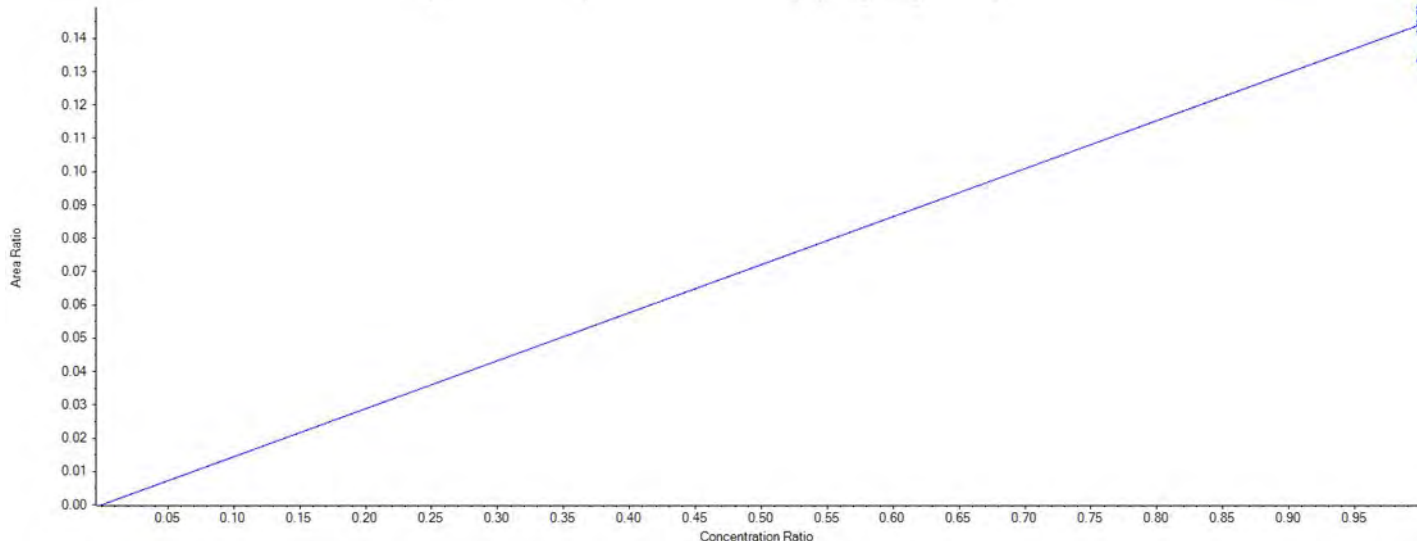
Sample Name	Ed9-NEtPFOSAE Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	245785.78	492042.79	True	5.00	0.500	6.24	1.120	5.000	5.107	2	30	
CAL2	234457.44	486052.71	True	5.00	0.482	6.23	1.120	5.000	4.932	-1	30	
CAL3	221303.40	467216.04	True	5.00	0.474	6.24	1.120	5.000	4.843	-3	30	
CAL4	237359.16	492670.33	True	5.00	0.482	6.23	1.120	5.000	4.926	-1	30	
CAL5	223224.92	475016.51	True	5.00	0.470	6.24	1.120	5.000	4.804	-4	30	
CAL6	222808.90	448809.55	True	5.00	0.496	6.24	1.120	5.000	5.075	2	30	
CAL7	238594.55	459096.58	True	5.00	0.520	6.23	1.120	5.000	5.313	6	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**Ed5-NEtPFOSA**

$y = 0.14416 x$  (std. dev. = 0.00539) (weighting: None)



**Extraction Standard Calibration Verification**

Sample Name	Ed5-NEtPFOSA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	72859.50	492042.79	True	5.00	0.148	6.26	1.130	5.000	5.136	3	30	
CAL2	70003.76	486052.71	True	5.00	0.144	6.26	1.130	5.000	4.995	0	30	
CAL3	67700.56	467216.04	True	5.00	0.145	6.26	1.130	5.000	5.026	1	30	
CAL4	69985.02	492670.33	True	5.00	0.142	6.26	1.130	5.000	4.927	-1	30	
CAL5	70043.92	475016.51	True	5.00	0.147	6.26	1.130	5.000	5.114	2	30	
CAL6	66987.38	448809.55	True	5.00	0.149	6.26	1.130	5.000	5.177	4	30	
CAL7	61214.00	459096.58	True	5.00	0.133	6.26	1.130	5.000	4.625	-8	30	

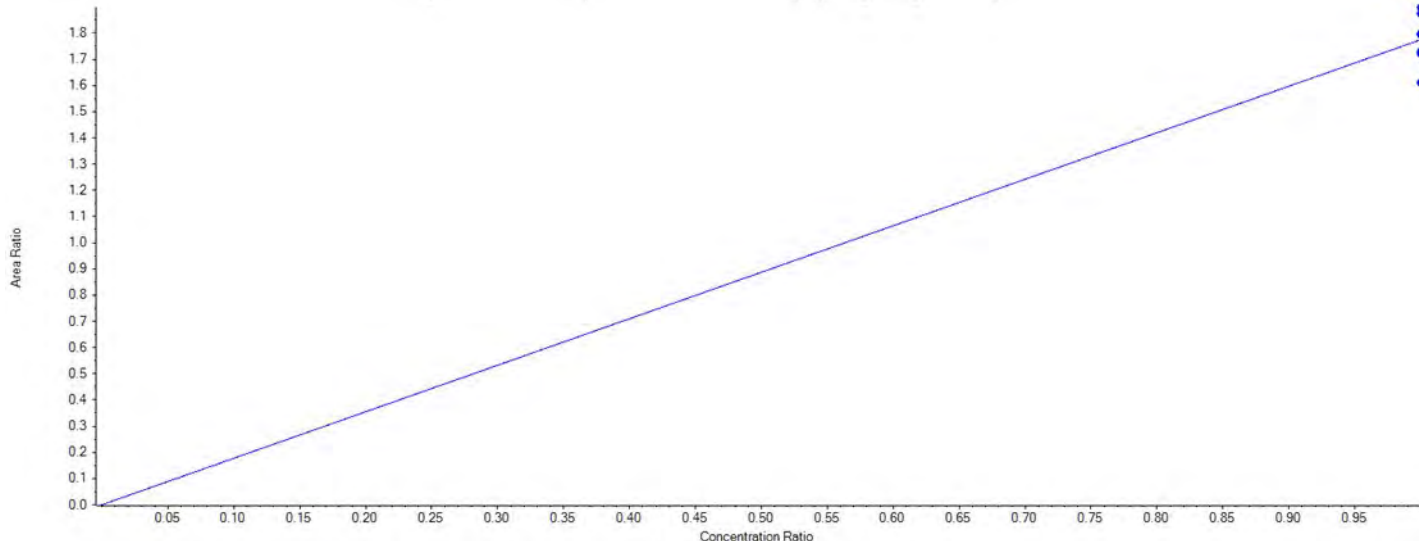


DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

E13C2-PFTeDA

$y = 1.77430 x$  (std. dev. = 0.09873) (weighting: None)



Extraction Standard Calibration Verification

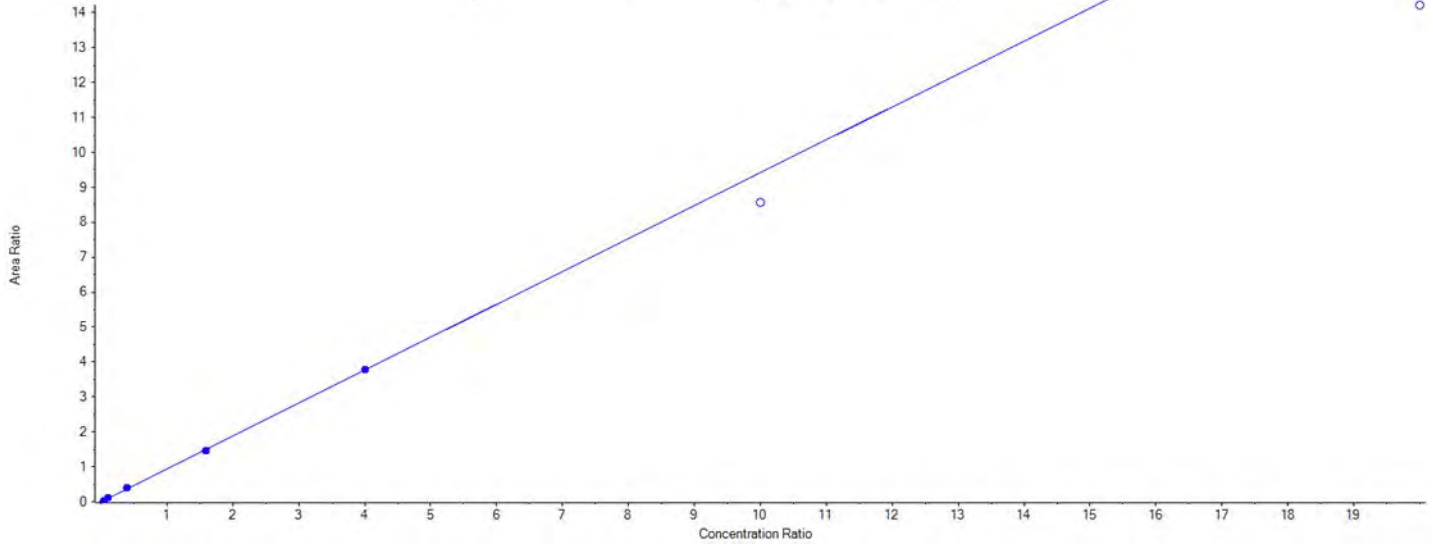
Sample Name	E13C2-PFTeDA Area	13C2-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	933408.92	492042.79	True	5.00	1.897	6.41	1.150	5.000	5.346	7	30	
CAL2	911481.82	486052.71	True	5.00	1.875	6.41	1.150	5.000	5.285	6	30	
CAL3	839561.71	467216.04	True	5.00	1.797	6.42	1.150	5.000	5.064	1	30	
CAL4	850800.59	492670.33	True	5.00	1.727	6.41	1.150	5.000	4.866	-3	30	
CAL5	816876.42	475016.51	True	5.00	1.720	6.42	1.150	5.000	4.846	-3	30	
CAL6	805412.88	448809.55	True	5.00	1.795	6.42	1.150	5.000	5.057	1	30	
CAL7	739019.13	459096.58	True	5.00	1.610	6.41	1.150	5.000	4.536	-9	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

PFBA

$y = 0.94171 x$  (r = 0.99964) (weighting: 1 / x)



Component Calibration Verification

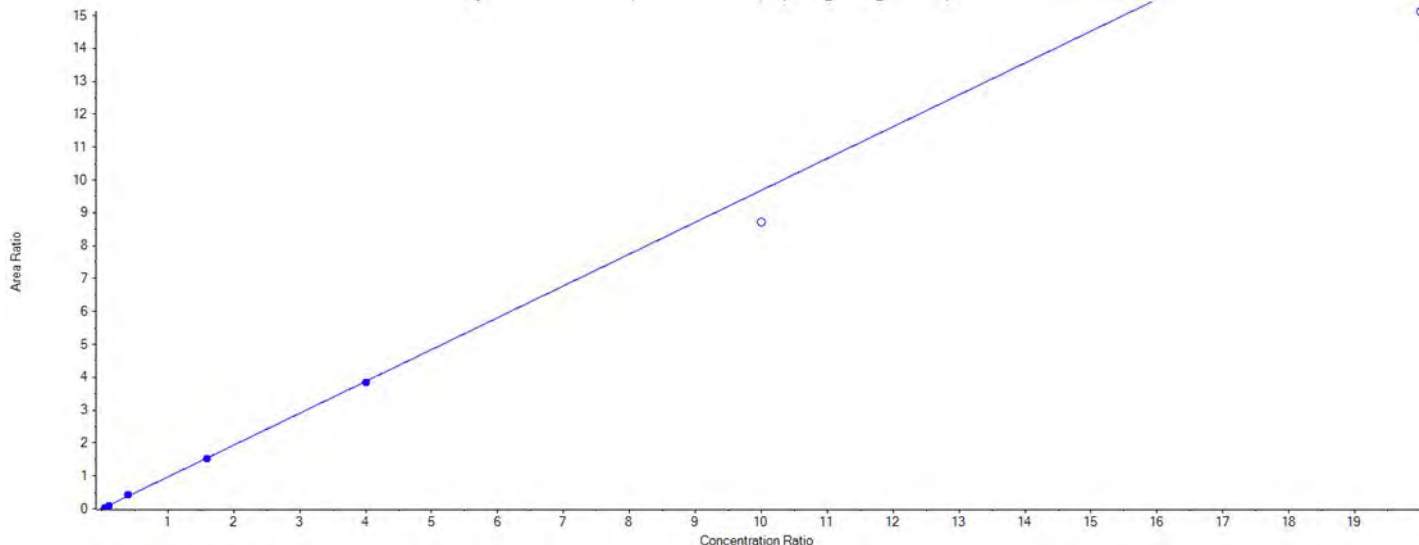
Sample Name	PFBA Area	S/N	13C4-PFBA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	45779.84	259.1	1106287.60	True	5.00	0.041	3.26	1.000	0.200	0.220	10	30	
CAL2	116635.75	386.2	1122193.95	True	5.00	0.104	3.26	1.000	0.500	0.552	10	30	
CAL3	433751.85	659.0	1064422.79	True	5.00	0.407	3.26	1.000	2.000	2.164	8	30	
CAL4	1594198.63	1247.6	1092510.85	True	5.00	1.459	3.25	1.000	8.000	7.748	-3	30	
CAL5	3880808.53	2180.8	1029366.77	True	5.00	3.770	3.26	1.000	20.000	20.017	0	30	
CAL6	8351267.12	2649.5	976240.59	False	5.00	8.555	3.26	1.000	50.000	45.420	-9	30	
CAL7	12069469.87	2622.6	849248.24	False	5.00	14.212	3.25	1.000	100.000	75.458	-25	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFPeA

$y = 0.96865 x$  ( $r = 0.99944$ ) (weighting:  $1 / x$ )



Component Calibration Verification

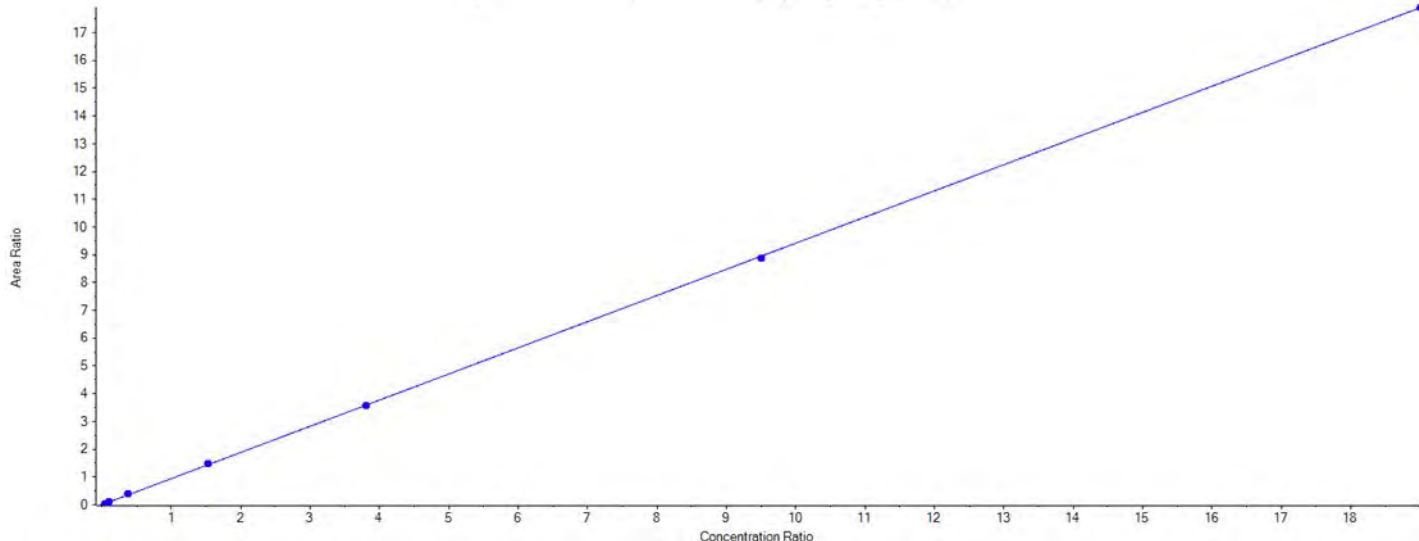
Sample Name	PFPeA Area	S/N	<sup>13</sup> C5-PFPeA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	44915.17	186.8	1046699.00	True	5.00	0.043	3.76	1.000	0.200	0.222	11	30	
CAL2	112858.39	331.6	1076428.66	True	5.00	0.105	3.76	1.000	0.500	0.541	8	30	
CAL3	436276.82	512.9	1002351.73	True	5.00	0.435	3.77	1.000	2.000	2.247	12	30	
CAL4	1560173.06	881.2	1033656.30	True	5.00	1.509	3.76	1.000	8.000	7.791	-3	30	
CAL5	3745895.47	1200.9	971672.04	True	5.00	3.855	3.76	1.000	20.000	19.899	-1	30	
CAL6	8138980.69	1456.4	931893.93	False	5.00	8.734	3.77	1.000	50.000	45.083	-10	30	
CAL7	12267933.08	2121.0	811188.96	False	5.00	15.123	3.75	1.000	100.000	78.065	-22	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

PFBS

$y = 0.94195 x$  (r = 0.99992) (weighting: 1 / x)



Component Calibration Verification

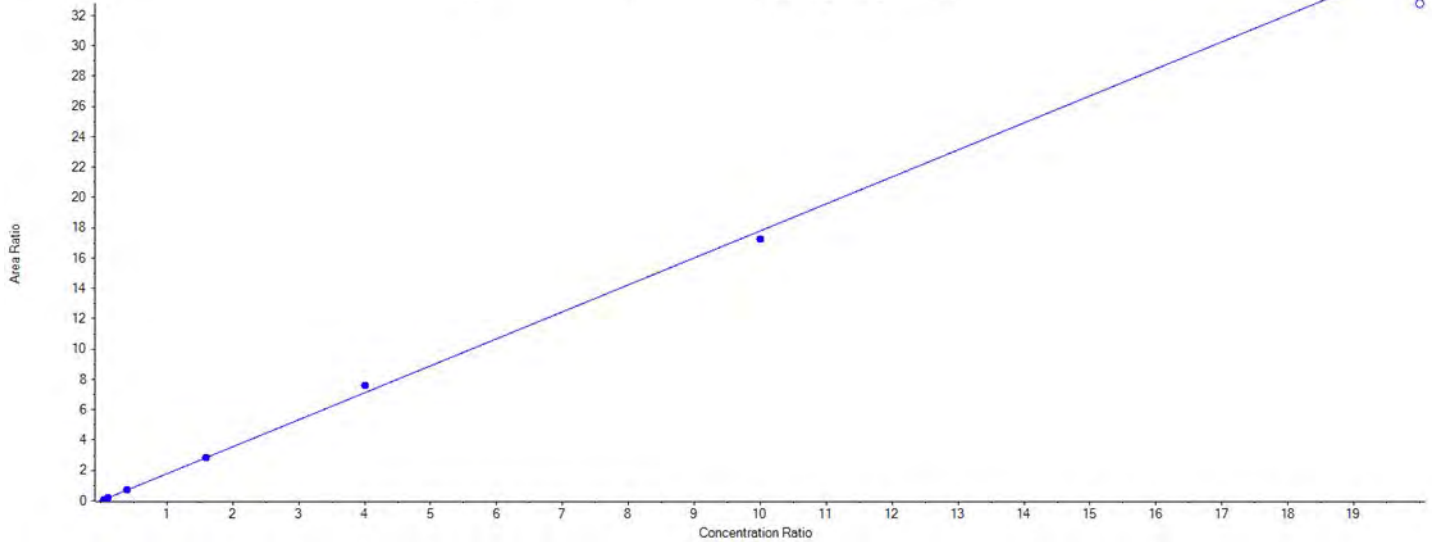
Sample Name	PFBS Area	S/N	13C3-PFBS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	18453.97	598.0	461605.31	True	4.65	0.040	3.81	1.000	0.177	0.197	11	30	
CAL2	45656.93	987.5	471423.14	True	4.65	0.097	3.81	1.000	0.443	0.478	8	30	
CAL3	173568.80	1760.6	437376.42	True	4.65	0.397	3.81	1.000	1.770	1.959	11	30	
CAL4	660159.83	2546.7	445696.19	True	4.65	1.481	3.81	1.000	7.080	7.312	3	30	
CAL5	1598291.60	3317.1	446207.39	True	4.65	3.582	3.81	1.000	17.700	17.683	0	30	
CAL6	3747060.81	3290.1	422799.48	True	4.65	8.863	3.81	1.000	44.200	43.750	-1	30	
CAL7	6651233.80	4578.4	371468.64	True	4.65	17.905	3.80	1.000	88.400	88.391	0	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**4:2-FTS**

$y = 1.77997 x$  (r = 0.99915) (weighting: 1 / x)



**Component Calibration Verification**

Sample Name	4:2-FTS Area	S/N	13C2-4:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	5256.25	270.1	70576.52	True	4.67	0.074	4.12	1.000	0.187	0.195	4	30	
CAL2	13063.14	349.0	65525.79	True	4.67	0.199	4.12	1.000	0.467	0.523	12	30	
CAL3	47502.48	1259.3	64885.53	True	4.67	0.732	4.12	1.000	1.870	1.921	3	30	
CAL4	183632.08	2108.1	64261.81	True	4.67	2.858	4.12	1.000	7.470	7.497	0	30	
CAL5	457278.35	2800.9	60237.68	True	4.67	7.591	4.12	1.000	18.700	19.917	7	30	
CAL6	1050923.97	2615.9	60811.26	True	4.67	17.282	4.12	1.000	46.700	45.341	-3	30	
CAL7	1978052.53	3311.8	60332.00	False	4.67	32.786	4.11	1.000	93.400	86.019	-8	30	

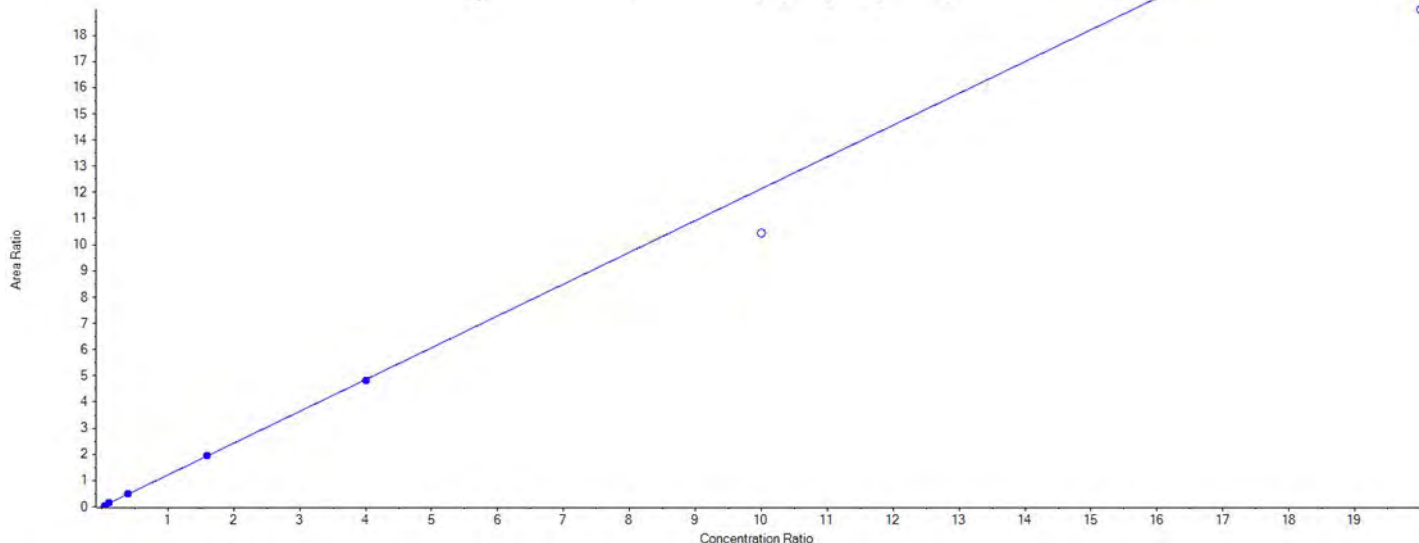


DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

PFHxA

$y = 1.21374 x$  ( $r = 0.99994$ ) (weighting:  $1 / x$ )



Component Calibration Verification

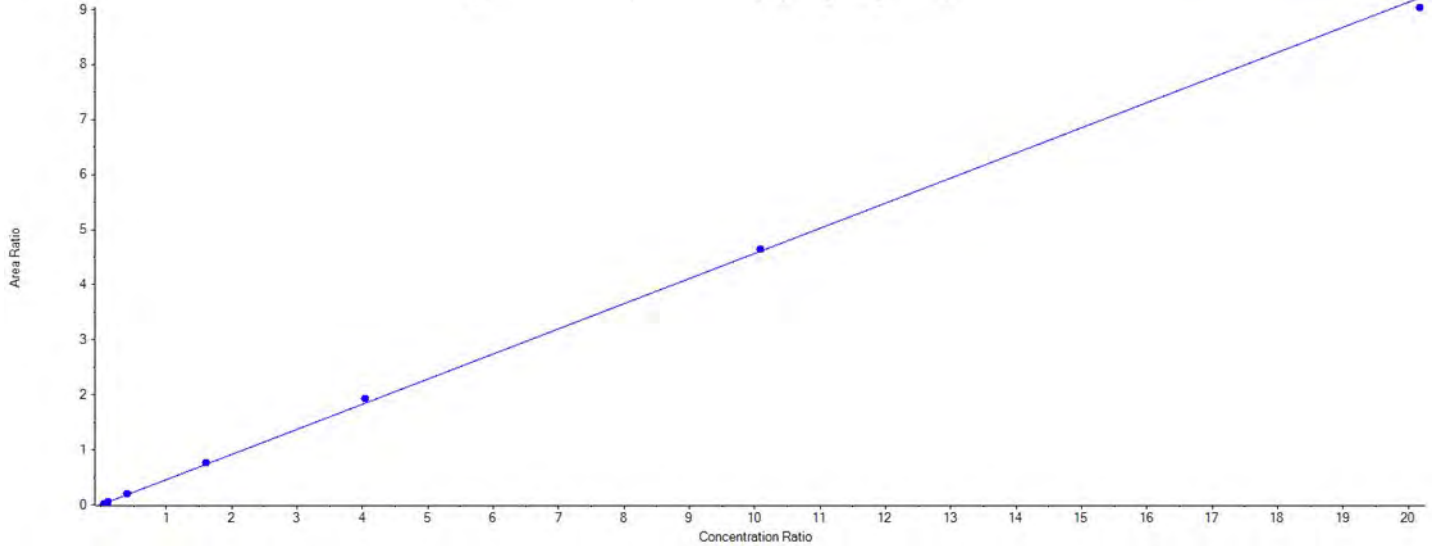
Sample Name	PFHxA Area	S/N	13C5-PFHxA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	39902.90	235.9	748596.55	True	5.00	0.053	4.15	1.000	0.200	0.220	10	30	
CAL2	103487.64	338.9	763341.69	True	5.00	0.136	4.15	1.000	0.500	0.558	12	30	
CAL3	378857.96	795.9	765483.52	True	5.00	0.495	4.16	1.000	2.000	2.039	2	30	
CAL4	1422618.69	1280.8	728009.89	True	5.00	1.954	4.15	1.000	8.000	8.050	1	30	
CAL5	3505877.05	1657.0	728204.42	True	5.00	4.814	4.16	1.000	20.000	19.833	-1	30	
CAL6	7325035.52	2172.6	702242.37	False	5.00	10.431	4.16	1.000	50.000	42.970	-14	30	
CAL7	12199404.08	2432.1	642893.13	False	5.00	18.976	4.15	1.000	100.000	78.171	-22	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFPeS

$y = 0.45675 x$  (r = 0.99970) (weighting: 1 / x)



Component Calibration Verification

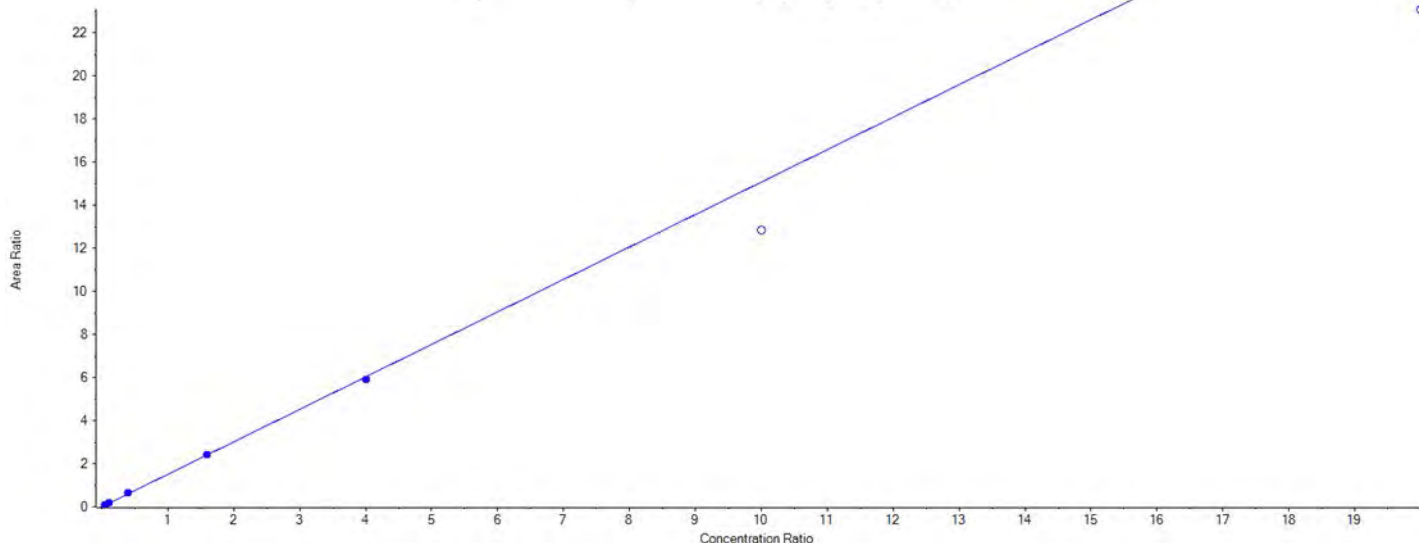
Sample Name	PFPeS Area	S/N	<sup>13</sup> C3-PFBS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	9547.00	377.5	461605.31	True	4.65	0.021	4.18	1.100	0.188	0.211	12	30	
CAL2	23803.26	589.7	471423.14	True	4.65	0.050	4.17	1.100	0.469	0.514	10	30	
CAL3	89858.44	1338.9	437376.42	True	4.65	0.205	4.18	1.100	1.880	2.092	11	30	
CAL4	343711.12	2166.9	445696.19	True	4.65	0.771	4.17	1.100	7.500	7.851	5	30	
CAL5	858571.61	2772.3	446207.39	True	4.65	1.924	4.18	1.100	18.800	19.589	4	30	
CAL6	1963865.79	3615.6	422799.48	True	4.65	4.645	4.18	1.100	46.900	47.288	1	30	
CAL7	3356554.18	3030.5	371468.64	True	4.65	9.036	4.17	1.100	93.800	91.992	-2	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFHpA

$y = 1.50788 x$  (r = 0.99958) (weighting: 1 / x)



Component Calibration Verification

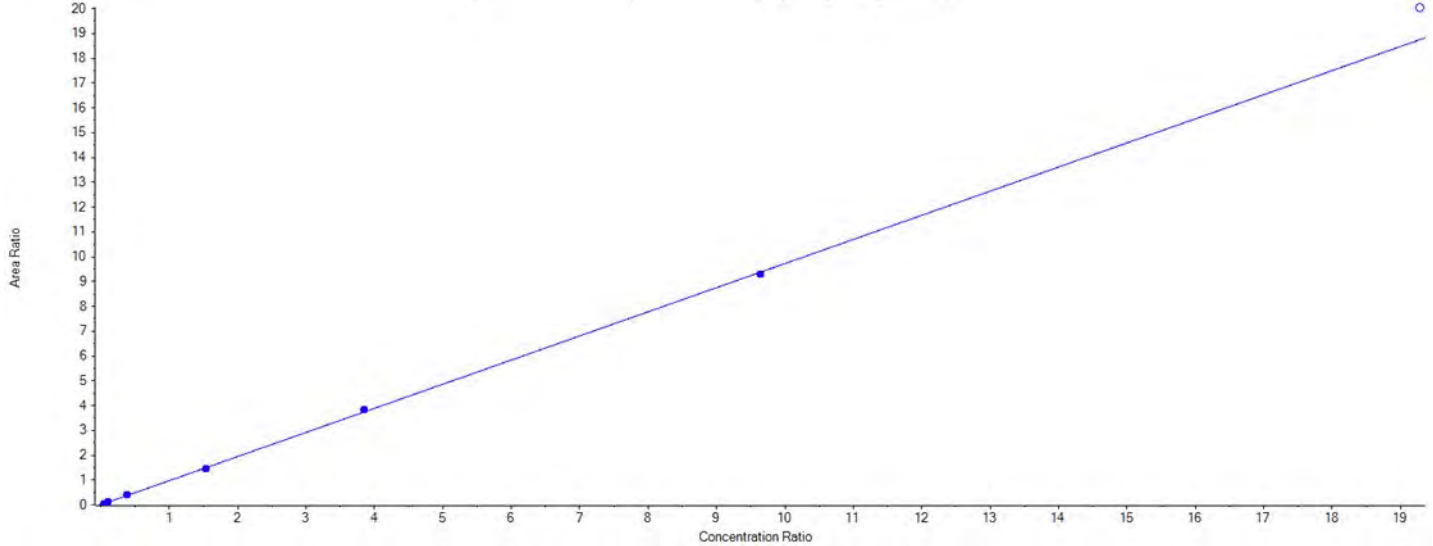
Sample Name	PFHpA Area	S/N	<sup>13</sup> C4-PFHpA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	42890.86	419.2	573021.26	True	5.00	0.075	4.54	1.000	0.200	0.248	24	30	
CAL2	106907.94	644.9	605519.18	True	5.00	0.177	4.54	1.000	0.500	0.585	17	30	
CAL3	414340.15	1239.7	614238.84	True	5.00	0.675	4.54	1.000	2.000	2.237	12	30	
CAL4	1522802.64	1683.5	633233.30	True	5.00	2.405	4.54	1.000	8.000	7.974	0	30	
CAL5	3695154.88	2565.7	623382.42	True	5.00	5.928	4.54	1.000	20.000	19.655	-2	30	
CAL6	7849138.67	3284.5	610591.63	False	5.00	12.855	4.55	1.000	50.000	42.626	-15	30	
CAL7	12613152.06	2980.5	546291.55	False	5.00	23.089	4.53	1.000	100.000	76.560	-23	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

PFHxS

$y = 0.97245 x$  (r = 0.99971) (weighting: 1 / x)



Component Calibration Verification

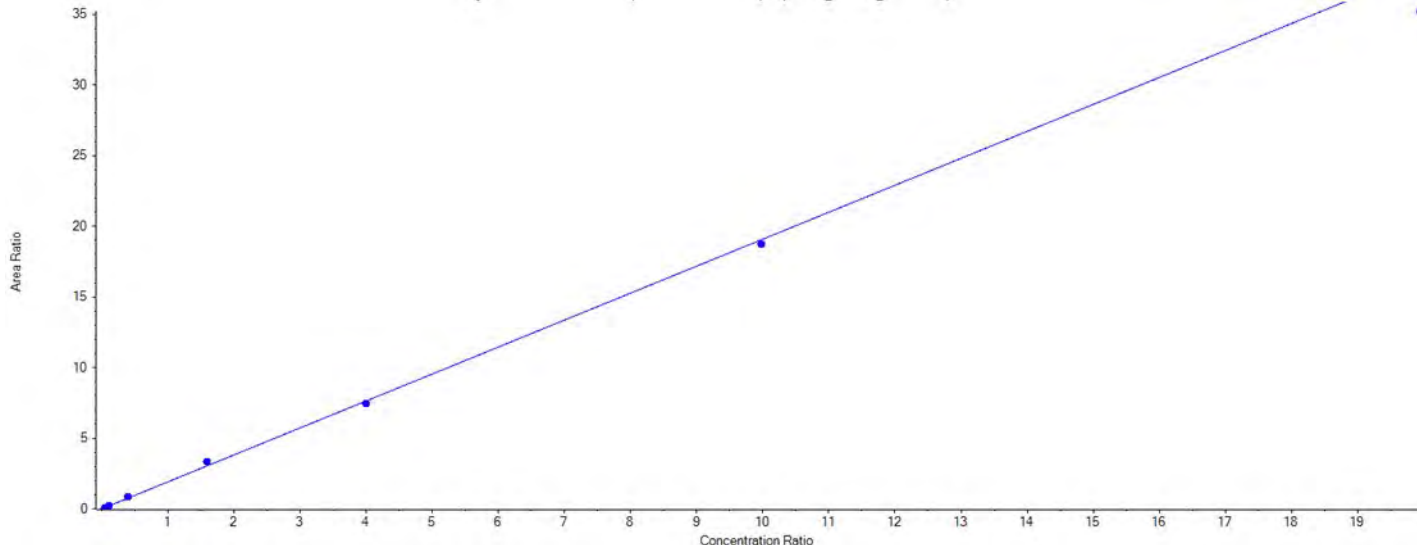
Sample Name	PFHxS Area	S/N	13C3-PFHxS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	13770.16	386.1	371572.29	True	4.73	0.037	4.55	1.000	0.182	0.180	-1	30	
CAL2	38176.07	1195.1	354452.88	True	4.73	0.108	4.54	1.000	0.474	0.524	11	30	
CAL3	134520.82	980.7	330322.87	True	4.73	0.407	4.55	1.000	1.820	1.981	9	30	
CAL4	506401.74	1205.4	348394.91	True	4.73	1.454	4.54	1.000	7.300	7.070	-3	30	
CAL5	1236035.62	1847.9	321862.26	True	4.73	3.840	4.54	1.000	18.200	18.679	3	30	
CAL6	2769777.02	1416.9	298442.34	True	4.73	9.281	4.55	1.000	45.600	45.142	-1	30	
CAL7	5016409.07	1755.5	250261.05	False	4.73	20.045	4.54	1.000	91.200	97.498	7	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

6:2-FTS

$y = 1.90808 x$  (r = 0.99916) (weighting: 1 / x)



Component Calibration Verification

Sample Name	6:2-FTS Area	S/N	13C2-6:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	5250.60	590.0	53697.29	True	4.75	0.098	4.89	1.000	0.190	0.243	28	30	
CAL2	12125.58	148990.6	53117.91	True	4.75	0.228	4.89	1.000	0.474	0.568	20	30	
CAL3	44576.07	2166.4	51288.83	True	4.75	0.869	4.90	1.000	1.900	2.164	14	30	
CAL4	169143.28	3870.7	50211.12	True	4.75	3.369	4.89	1.000	7.580	8.386	11	30	
CAL5	385557.32	2753.8	51944.01	True	4.75	7.423	4.89	1.000	19.000	18.478	-3	30	
CAL6	827147.20	2615.1	44087.72	True	4.75	18.761	4.90	1.000	47.400	46.705	-1	30	
CAL7	1375932.55	2488.5	39094.47	False	4.75	35.195	4.89	1.000	94.800	87.615	-8	30	

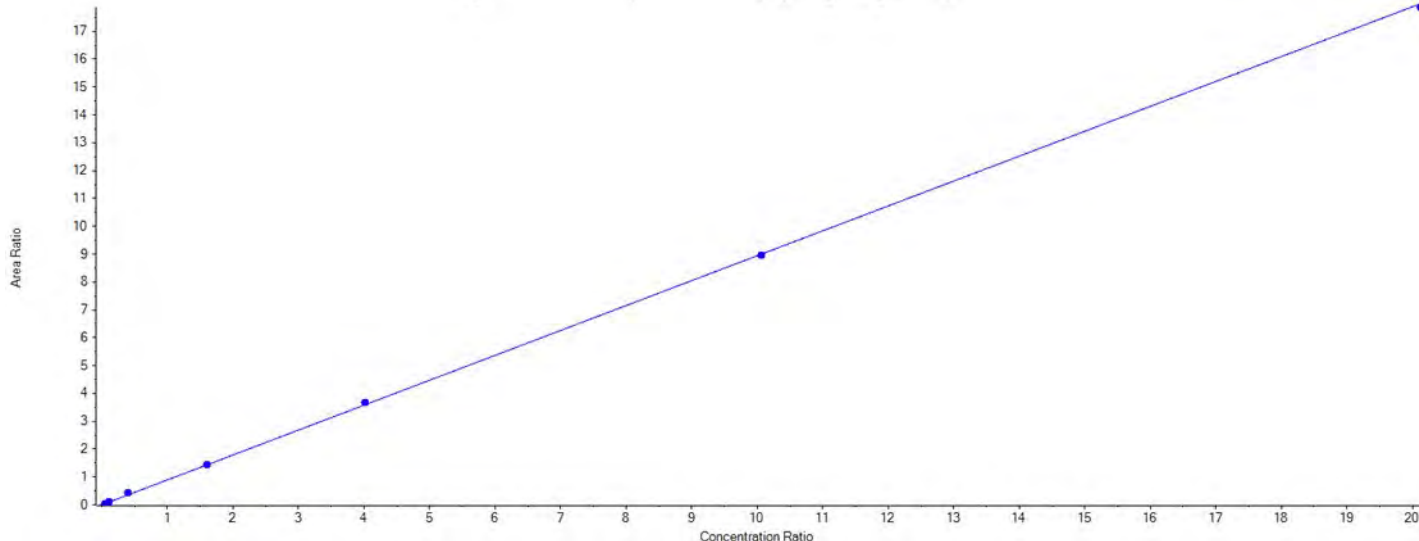


**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**PFHpS**

$y = 0.89414 x$  (r = 0.99979) (weighting: 1 / x)



**Component Calibration Verification**

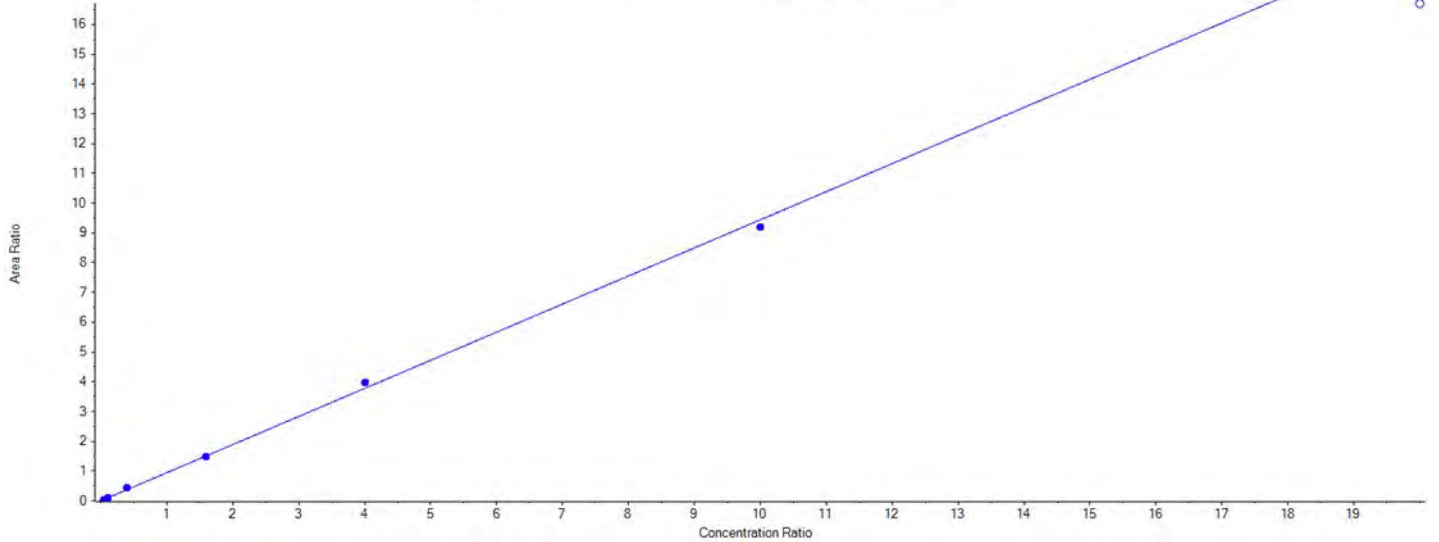
Sample Name	PFHpS Area	S/N	<sup>13</sup> C3-PFHxS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	12616.61	89172.6	371572.29	True	4.73	0.034	4.90	1.080	0.190	0.180	-5	30	
CAL2	36201.51	3797.1	354452.88	True	4.73	0.102	4.90	1.080	0.476	0.540	14	30	
CAL3	137901.36	2122.2	330322.87	True	4.73	0.417	4.90	1.080	1.900	2.208	16	30	
CAL4	505804.63	2567.5	348394.91	True	4.73	1.452	4.90	1.080	7.610	7.680	1	30	
CAL5	1185259.61	2204.3	321862.26	True	4.73	3.683	4.90	1.080	19.000	19.481	3	30	
CAL6	2676577.94	3193.9	298442.34	True	4.73	8.968	4.91	1.080	47.600	47.444	0	30	
CAL7	4467941.35	2691.7	250261.05	True	4.73	17.853	4.89	1.080	95.200	94.443	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFOA

$y = 0.94381 x (r = 0.99911)$  (weighting: 1 / x)



Component Calibration Verification

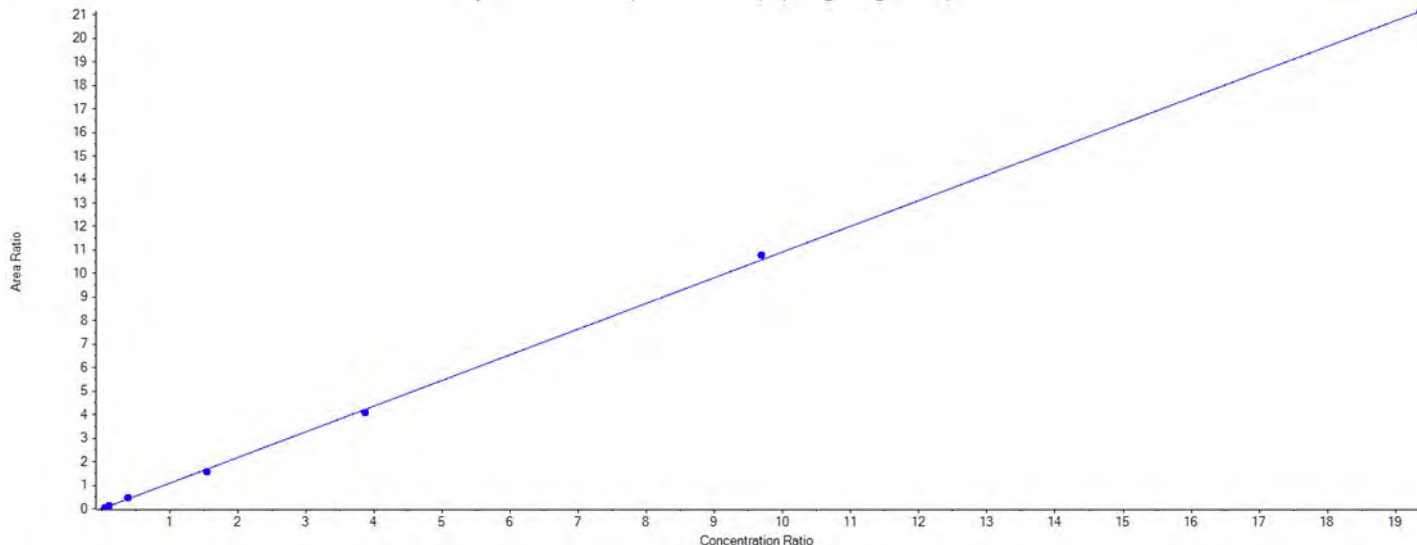
Sample Name	PFOA Area	S/N	13C8-PFOA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	45038.04	213.6	1059559.49	True	5.00	0.043	4.91	1.000	0.200	0.225	13	30	
CAL2	111923.34	301.6	1027981.98	True	5.00	0.109	4.90	1.000	0.500	0.577	15	30	
CAL3	436531.12	661.8	979199.85	True	5.00	0.446	4.91	1.000	2.000	2.362	18	30	
CAL4	1478030.41	1297.1	1001301.47	True	5.00	1.476	4.91	1.000	8.000	7.820	-2	30	
CAL5	3699938.84	1540.5	934414.04	True	5.00	3.960	4.91	1.000	20.000	20.977	5	30	
CAL6	7895459.16	2118.2	858182.66	True	5.00	9.200	4.92	1.000	50.000	48.740	-3	30	
CAL7	12588127.97	2168.7	753729.04	False	5.00	16.701	4.90	1.000	100.000	88.477	-12	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**PFOS**

$y = 1.09177 x$  (r = 0.99972) (weighting: 1 / x)



**Component Calibration Verification**

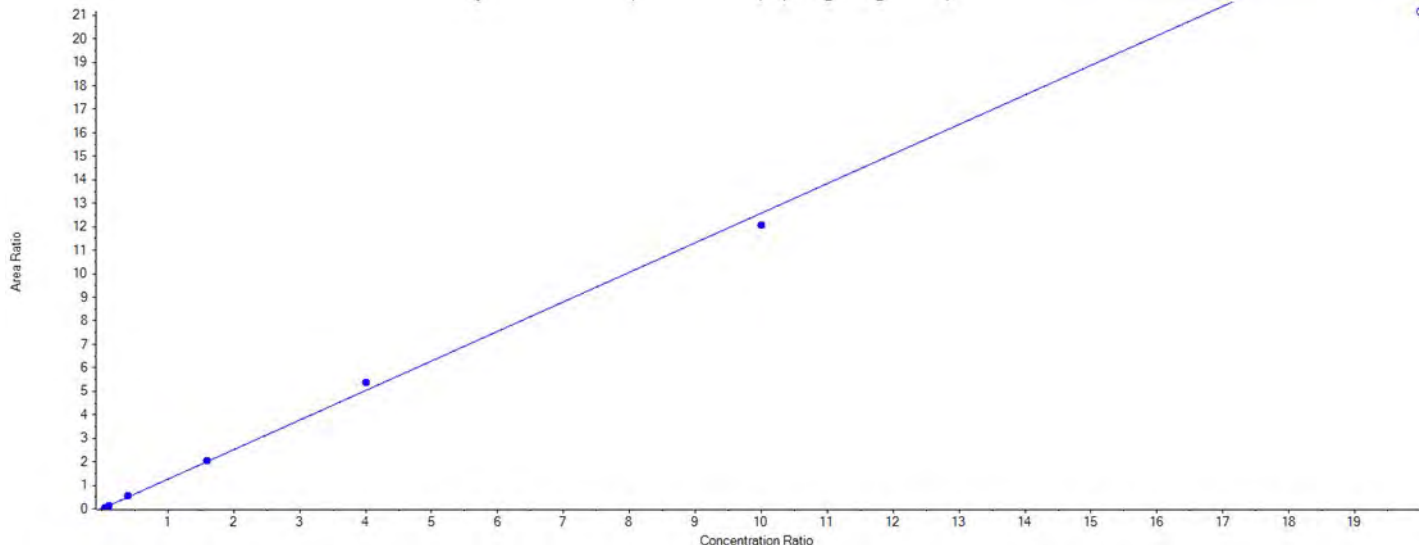
Sample Name	PFOS Area	S/N	13C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	14855.83	300.4	340125.34	True	4.78	0.044	5.24	1.000	0.185	0.191	3	30	
CAL2	37634.17	1247.2	349492.67	True	4.78	0.108	5.23	1.000	0.463	0.471	2	30	
CAL3	147878.25	1317.0	308110.34	True	4.78	0.480	5.24	1.000	1.850	2.101	14	30	
CAL4	531668.87	1931.8	334944.86	True	4.78	1.587	5.23	1.000	7.400	6.950	-6	30	
CAL5	1358485.16	1870.2	331539.36	True	4.78	4.098	5.24	1.000	18.500	17.940	-3	30	
CAL6	3112288.56	1291.5	289236.33	True	4.78	10.760	5.24	1.000	46.300	47.111	2	30	
CAL7	5671288.52	972.0	268338.15	True	4.78	21.135	5.23	1.000	92.600	92.533	0	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFNA

$y = 1.25807 x$  (r = 0.99869) (weighting: 1 / x)



Component Calibration Verification

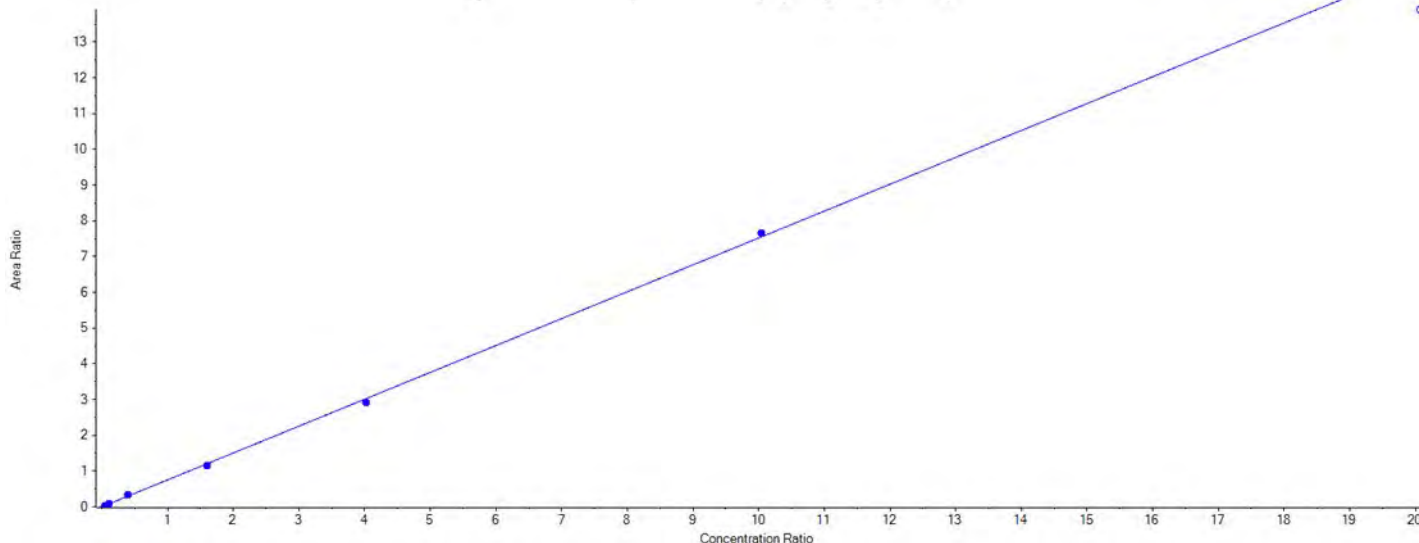
Sample Name	PFNA Area	S/N	13C9-PFNA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	41369.06	368.9	674406.01	True	5.00	0.061	5.25	1.000	0.200	0.244	22	30	
CAL2	95019.16	594.9	683029.42	True	5.00	0.139	5.25	1.000	0.500	0.553	11	30	
CAL3	367113.44	1128.7	651529.11	True	5.00	0.563	5.25	1.000	2.000	2.239	12	30	
CAL4	1365072.68	1903.9	661406.41	True	5.00	2.064	5.25	1.000	8.000	8.203	3	30	
CAL5	3431849.27	3515.6	635976.18	True	5.00	5.396	5.26	1.000	20.000	21.446	7	30	
CAL6	7783069.71	3200.6	644223.39	True	5.00	12.081	5.26	1.000	50.000	48.015	-4	30	
CAL7	12632479.09	3810.9	597020.81	False	5.00	21.159	5.25	1.000	100.000	84.094	-16	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**PFNS**

$y = 0.75172 x$  (r = 0.99944) (weighting: 1 / x)



**Component Calibration Verification**

Sample Name	PFNS Area	S/N	13C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	10377.64	8376.0	340125.34	True	4.78	0.031	5.54	1.060	0.192	0.194	1	30	
CAL2	28435.11	3238973.7	349492.67	True	4.78	0.081	5.54	1.060	0.480	0.517	8	30	
CAL3	106124.41	7839.7	308110.34	True	4.78	0.344	5.54	1.060	1.920	2.190	14	30	
CAL4	388892.87	2255.7	334944.86	True	4.78	1.161	5.53	1.060	7.680	7.383	-4	30	
CAL5	965546.94	3284.8	331539.36	True	4.78	2.912	5.54	1.060	19.200	18.519	-4	30	
CAL6	2213789.57	3142.8	289236.33	True	4.78	7.654	5.54	1.060	48.000	48.669	1	30	
CAL7	3731780.57	2405.5	268338.15	False	4.78	13.907	5.53	1.060	96.000	88.431	-8	30	

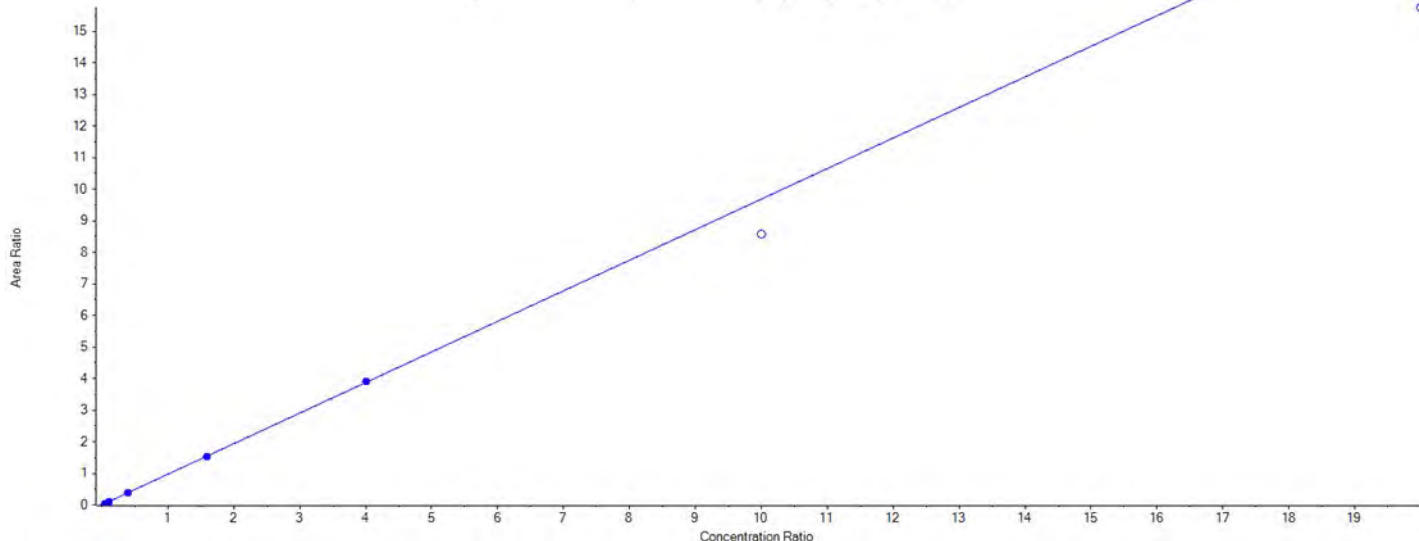


DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

PFDA

$y = 0.96815 x$  (r = 0.99990) (weighting: 1 / x)



Component Calibration Verification

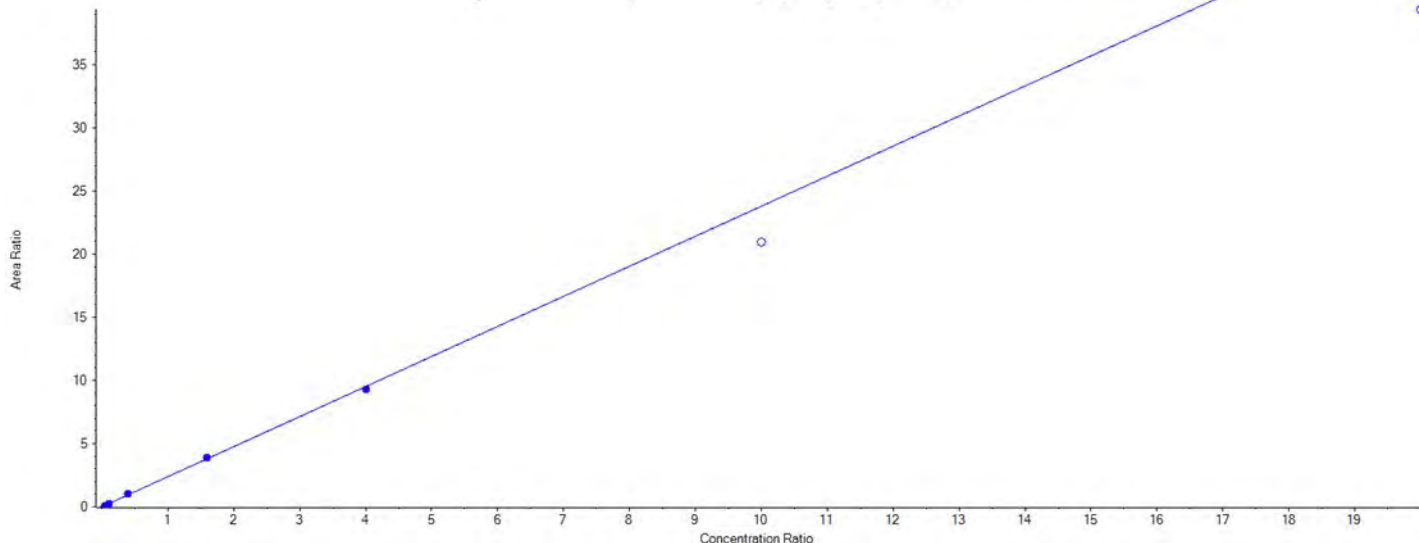
Sample Name	PFDA Area	S/N	13C6-PFDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	38431.05	299.6	846045.46	True	5.00	0.045	5.56	1.000	0.200	0.235	17	30	
CAL2	98187.60	702.1	929390.92	True	5.00	0.106	5.56	1.000	0.500	0.546	9	30	
CAL3	331802.23	994.3	851991.70	True	5.00	0.389	5.56	1.000	2.000	2.011	1	30	
CAL4	1333153.34	1882.2	880890.92	True	5.00	1.513	5.56	1.000	8.000	7.816	-2	30	
CAL5	3202129.65	2704.0	823063.78	True	5.00	3.890	5.56	1.000	20.000	20.092	0	30	
CAL6	6722193.64	2546.2	785276.61	False	5.00	8.560	5.57	1.000	50.000	44.210	-12	30	
CAL7	11290182.13	2678.7	716919.49	False	5.00	15.748	5.56	1.000	100.000	81.331	-19	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

8:2-FTS

$y = 2.37987 x (r = 0.99953) \text{ (weighting: } 1 / x \text{)}$



Component Calibration Verification

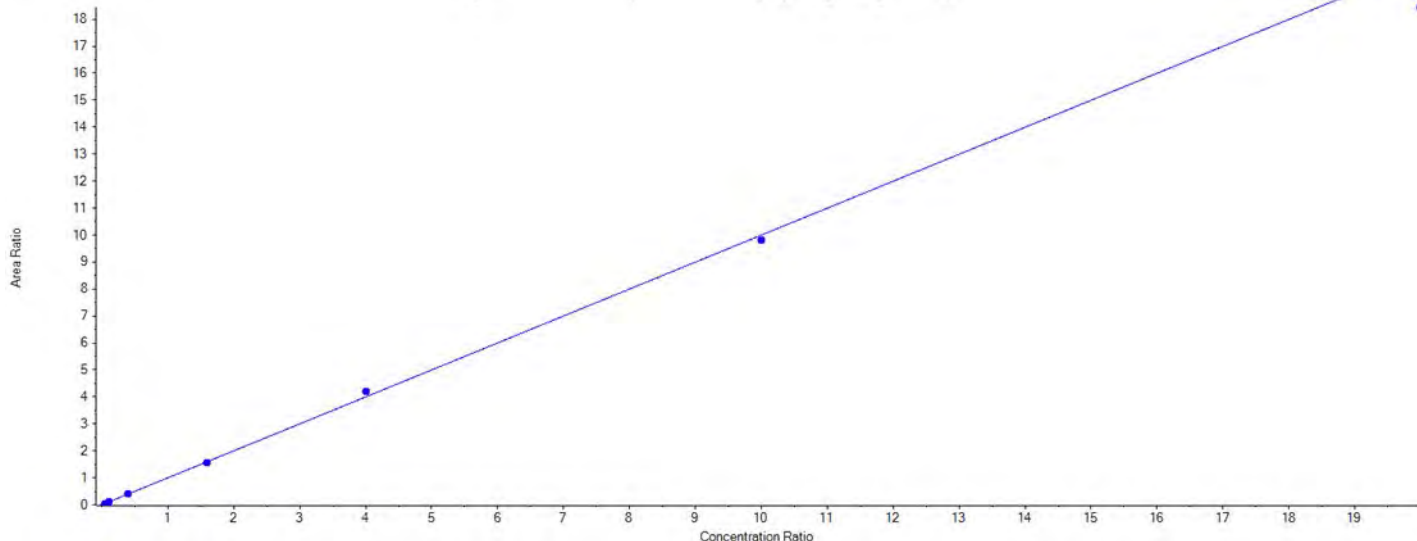
Sample Name	8:2-FTS Area	S/N	13C2-8:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	5170.26	115.2	48167.71	True	4.79	0.107	5.56	1.000	0.192	0.216	13	30	
CAL2	12295.63	282.2	46390.21	True	4.79	0.265	5.56	1.000	0.479	0.533	11	30	
CAL3	49849.82	694.5	47968.92	True	4.79	1.039	5.56	1.000	1.920	2.092	9	30	
CAL4	177681.99	1313.4	45542.35	True	4.79	3.901	5.56	1.000	7.660	7.853	3	30	
CAL5	408286.41	2088.7	43810.43	True	4.79	9.319	5.56	1.000	19.200	18.757	-2	30	
CAL6	866380.45	3217.8	41390.64	False	4.79	20.932	5.57	1.000	47.900	42.130	-12	30	
CAL7	1403687.59	2266.3	35654.26	False	4.79	39.369	5.56	1.000	95.800	79.240	-17	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFOSA

$y = 0.99975 x$  (r = 0.99939) (weighting: 1 / x)



Component Calibration Verification

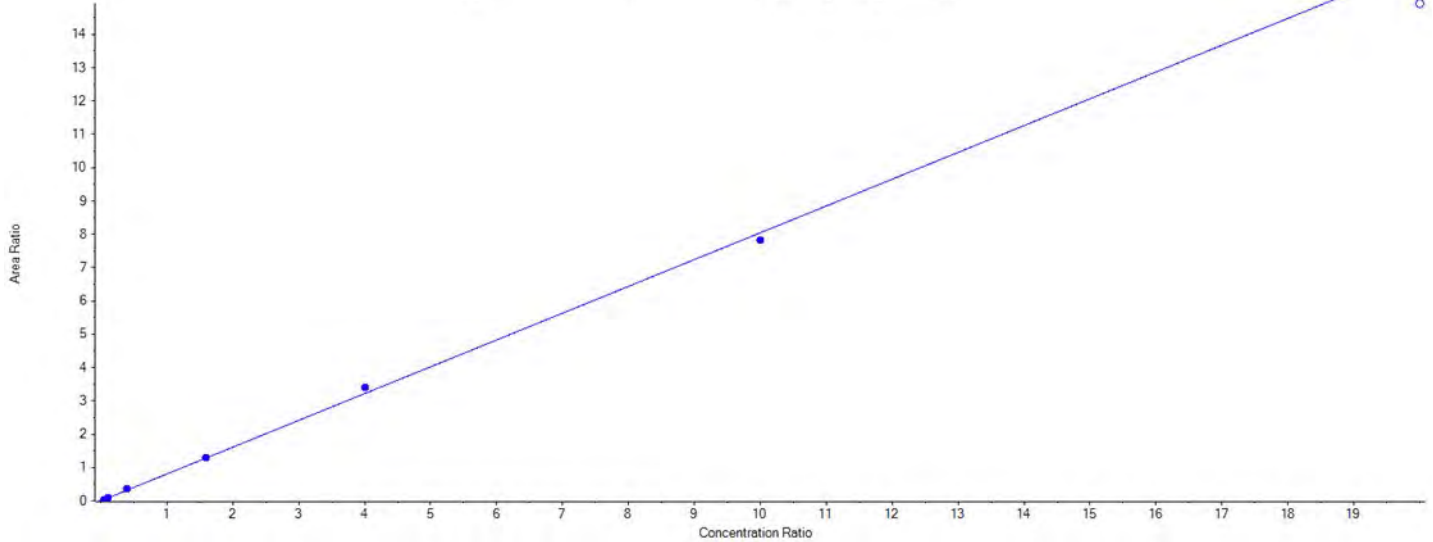
Sample Name	PFOSA Area	S/N	<sup>13</sup> C8-PFOSA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	28244.02	469.6	662399.72	True	5.00	0.043	5.65	1.000	0.200	0.213	7	30	
CAL2	71551.78	654.9	636077.52	True	5.00	0.112	5.65	1.000	0.500	0.563	13	30	
CAL3	269934.85	1115.9	642239.55	True	5.00	0.420	5.65	1.000	2.000	2.102	5	30	
CAL4	1003126.00	2484.2	648373.15	True	5.00	1.547	5.65	1.000	8.000	7.738	-3	30	
CAL5	2416611.44	1792.0	573278.73	True	5.00	4.215	5.65	1.000	20.000	21.082	5	30	
CAL6	5641072.47	1734.4	575735.32	True	5.00	9.798	5.66	1.000	50.000	49.002	-2	30	
CAL7	9756585.68	1632.9	529267.79	False	5.00	18.434	5.65	1.000	100.000	92.193	-8	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

NMeFOSAA

$y = 0.80451 x$  (r = 0.99913) (weighting: 1 / x)



Component Calibration Verification

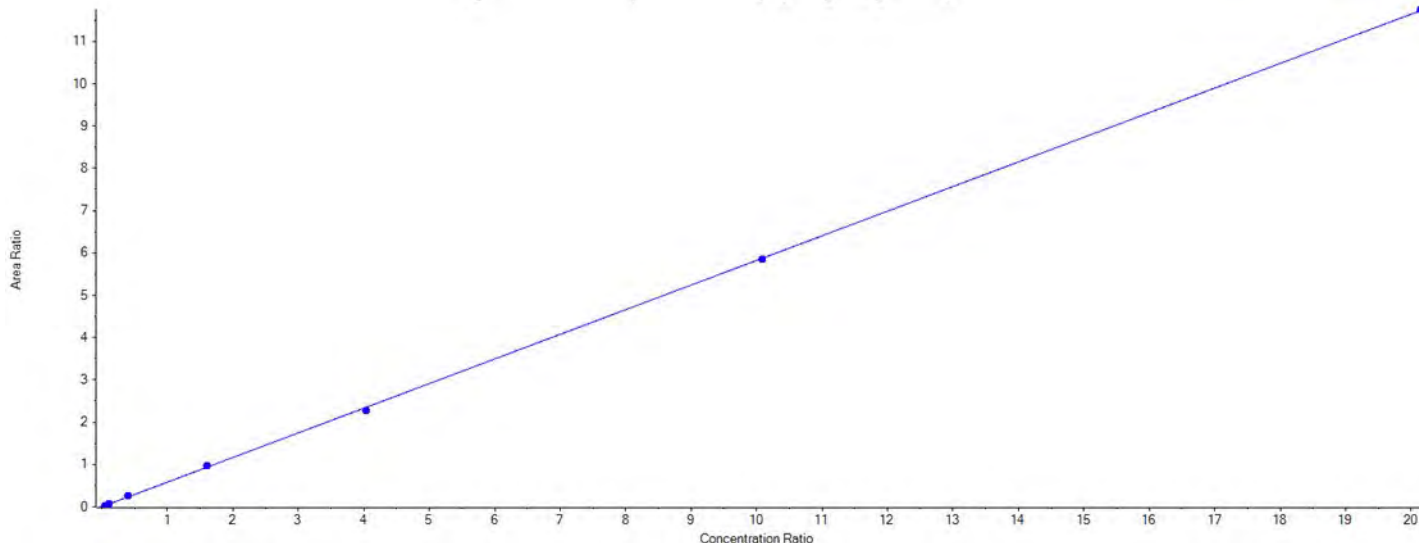
Sample Name	NMeFOSAA Area	S/N	d3-NMeFOSAA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	7941.11	319.1	263939.87	True	5.00	0.030	5.71	1.000	0.200	0.187	-7	30	
CAL2	19589.19	327.8	218152.20	True	5.00	0.090	5.70	1.000	0.500	0.558	12	30	
CAL3	76313.67	584.4	216983.67	True	5.00	0.352	5.71	1.000	2.000	2.186	9	30	
CAL4	290343.54	1101.9	226675.05	True	5.00	1.281	5.70	1.000	8.000	7.961	0	30	
CAL5	694349.44	1380.7	203504.71	True	5.00	3.412	5.71	1.000	20.000	21.205	6	30	
CAL6	1522626.11	1858.3	194698.33	True	5.00	7.820	5.71	1.000	50.000	48.603	-3	30	
CAL7	2804936.29	1414.7	187926.13	False	5.00	14.926	5.70	1.000	100.000	92.762	-7	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFDS

$y = 0.58226 x$  (r = 0.99985) (weighting: 1 / x)



Component Calibration Verification

Sample Name	PFDS Area	S/N	13C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	7762.53	60755.2	340125.34	True	4.78	0.023	5.80	1.110	0.193	0.187	-3	30	
CAL2	21675.31	3227.5	349492.67	True	4.78	0.062	5.79	1.110	0.482	0.509	6	30	
CAL3	80173.41	1640.8	308110.34	True	4.78	0.260	5.80	1.110	1.930	2.136	11	30	
CAL4	327865.26	1586.4	334944.86	True	4.78	0.979	5.79	1.110	7.700	8.036	4	30	
CAL5	758022.30	2334.8	331539.36	True	4.78	2.286	5.80	1.110	19.300	18.770	-3	30	
CAL6	1690515.86	3817.0	289236.33	True	4.78	5.845	5.80	1.110	48.200	47.982	0	30	
CAL7	3153807.53	3072.9	268338.15	True	4.78	11.753	5.79	1.110	96.300	96.485	0	30	

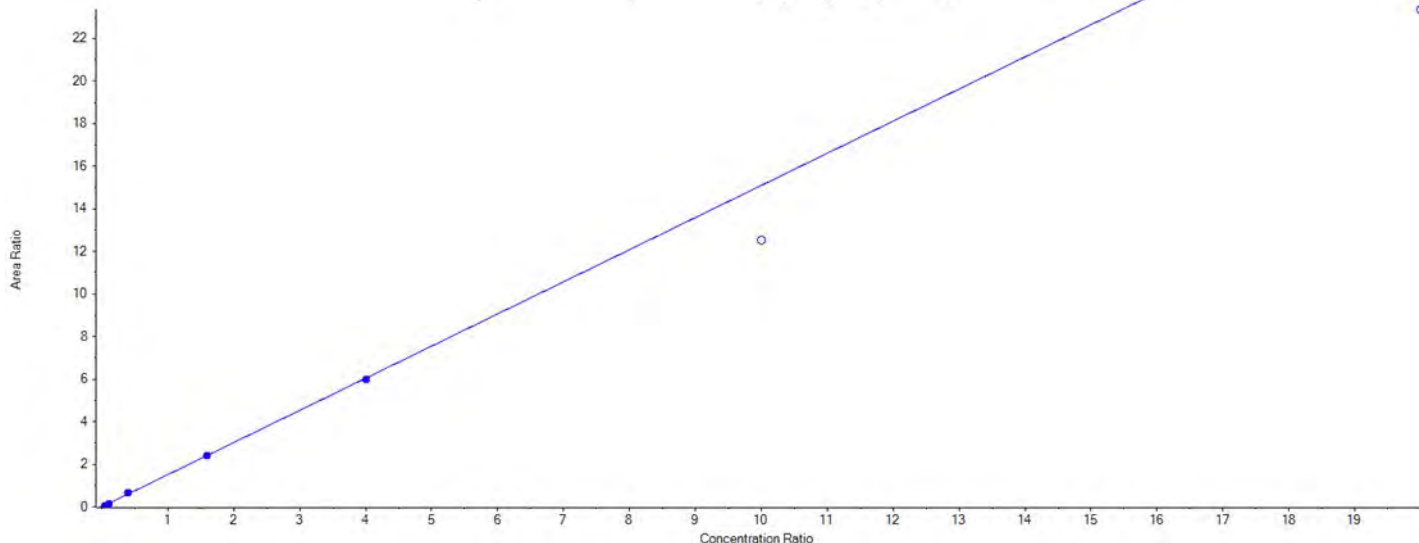


DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

PFUnDA

$y = 1.50972 x$  (r = 0.99986) (weighting: 1 / x)



Component Calibration Verification

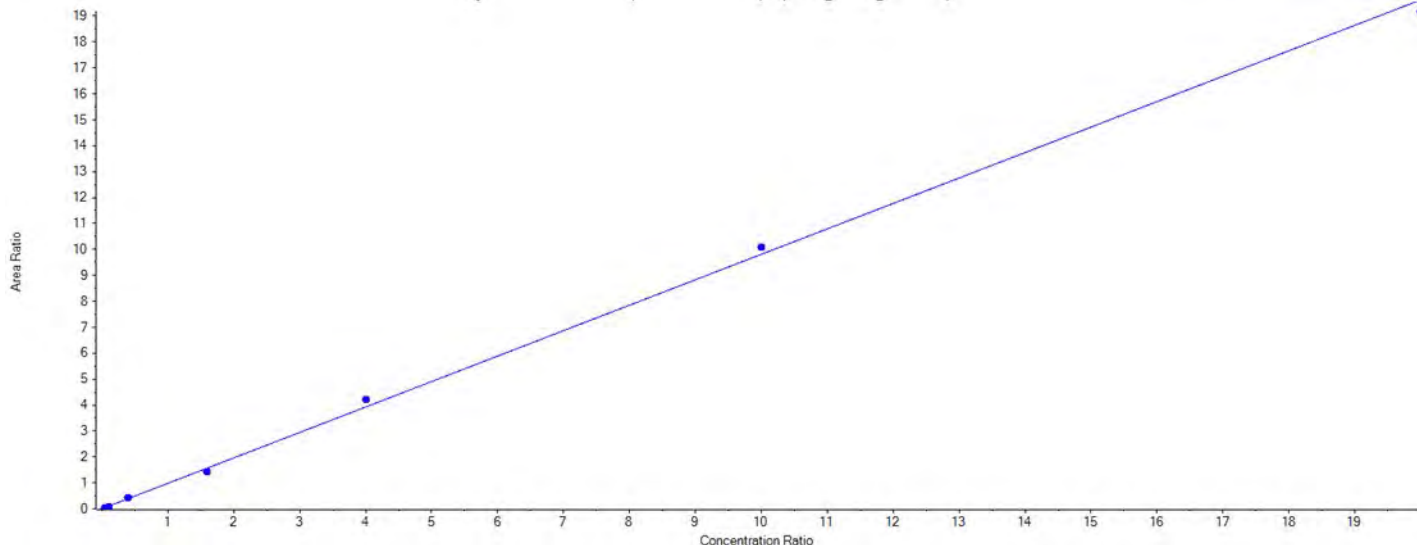
Sample Name	PFUnDA Area	S/N	13C7-PFUnDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	40073.99	226.6	606291.55	True	5.00	0.066	5.82	1.000	0.200	0.219	9	30	
CAL2	99413.67	448.8	622971.70	True	5.00	0.160	5.82	1.000	0.500	0.529	6	30	
CAL3	373908.44	873.0	580977.27	True	5.00	0.644	5.82	1.000	2.000	2.131	7	30	
CAL4	1410610.16	1384.0	581922.53	True	5.00	2.424	5.82	1.000	8.000	8.028	0	30	
CAL5	3400238.12	2108.5	568949.80	True	5.00	5.976	5.82	1.000	20.000	19.793	-1	30	
CAL6	6790806.92	2859.2	542196.94	False	5.00	12.525	5.83	1.000	50.000	41.480	-17	30	
CAL7	10906838.78	3011.7	466944.37	False	5.00	23.358	5.82	1.000	100.000	77.359	-23	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

NEtFOSAA

$y = 0.98102 x$  (r = 0.99923) (weighting: 1 / x)



Component Calibration Verification

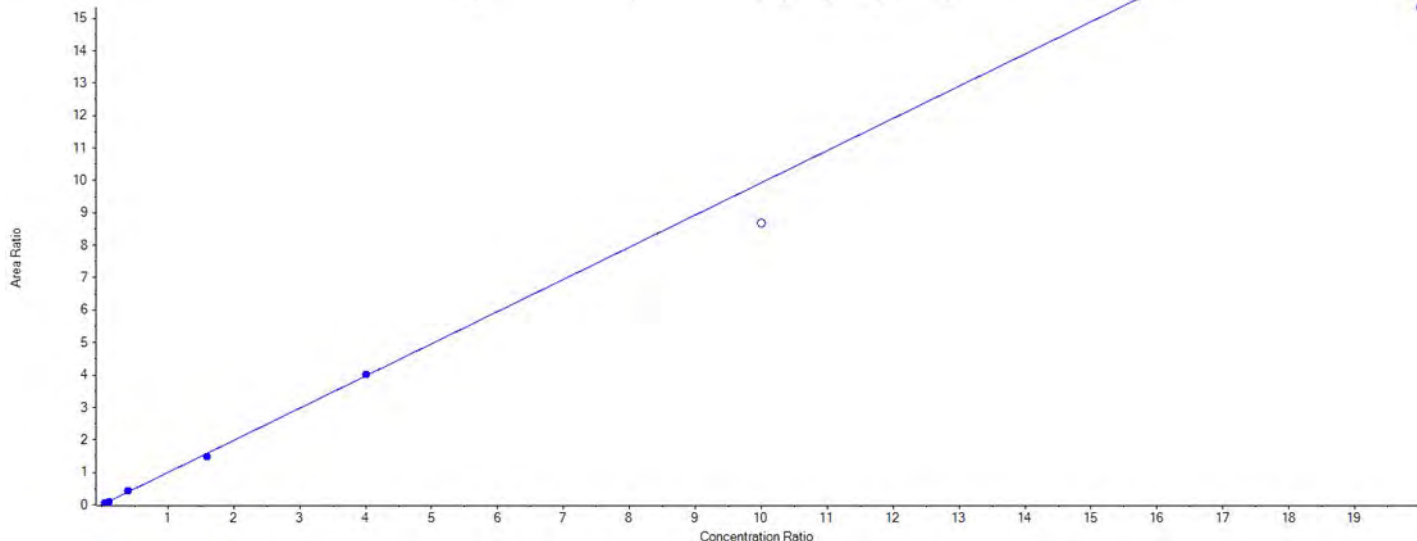
Sample Name	NEtFOSAA Area	S/N	d5-NEtFOSAA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	6705.24	27395.4	174794.14	True	5.00	0.038	5.84	1.000	0.200	0.196	-2	30	
CAL2	17104.70	108814.1	196235.04	True	5.00	0.087	5.83	1.000	0.500	0.444	-11	30	
CAL3	69414.28	1442.0	167747.38	True	5.00	0.414	5.84	1.000	2.000	2.109	5	30	
CAL4	260292.73	941.0	180280.04	True	5.00	1.444	5.83	1.000	8.000	7.359	-8	30	
CAL5	619081.11	1458.8	146690.55	True	5.00	4.220	5.84	1.000	20.000	21.510	8	30	
CAL6	1393940.73	1717.0	138273.55	True	5.00	10.081	5.84	1.000	50.000	51.380	3	30	
CAL7	2419106.27	1516.2	126195.29	True	5.00	19.170	5.83	1.000	100.000	97.702	-2	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**PFDODA**

$y = 0.99257 x$  (r = 0.99921) (weighting: 1 / x)



**Component Calibration Verification**

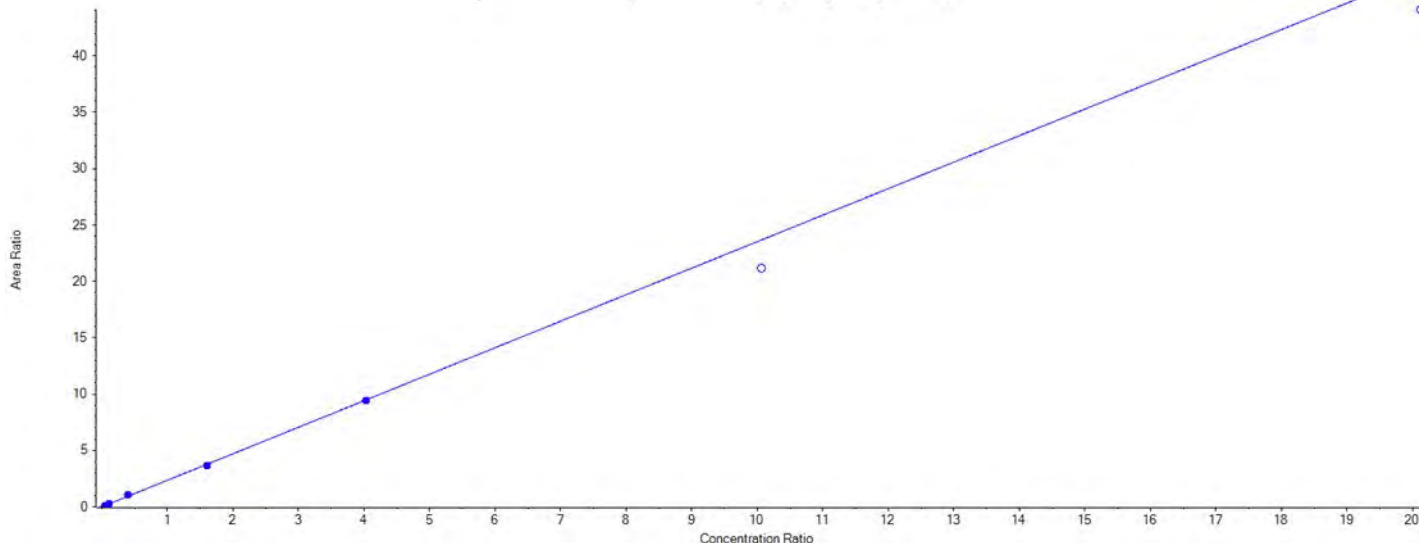
Sample Name	PFDODA Area	S/N	<sup>13</sup> C2-PFDODA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	61231.48	283.4	1268639.50	True	5.00	0.048	6.04	1.000	0.200	0.243	22	30	
CAL2	130434.37	553.6	1229301.70	True	5.00	0.106	6.04	1.000	0.500	0.534	7	30	
CAL3	517307.34	820.3	1210049.18	True	5.00	0.428	6.04	1.000	2.000	2.154	8	30	
CAL4	1811366.40	1643.1	1215089.10	True	5.00	1.491	6.04	1.000	8.000	7.509	-6	30	
CAL5	4286978.23	3060.1	1065946.99	True	5.00	4.022	6.05	1.000	20.000	20.259	1	30	
CAL6	8862936.24	2622.8	1021574.81	False	5.00	8.676	6.05	1.000	50.000	43.704	-13	30	
CAL7	13735940.73	2456.1	896268.09	False	5.00	15.326	6.04	1.000	100.000	77.202	-23	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

10:2-FTS

$y = 2.35188 x$  (r = 0.99955) (weighting: 1 / x)



Component Calibration Verification

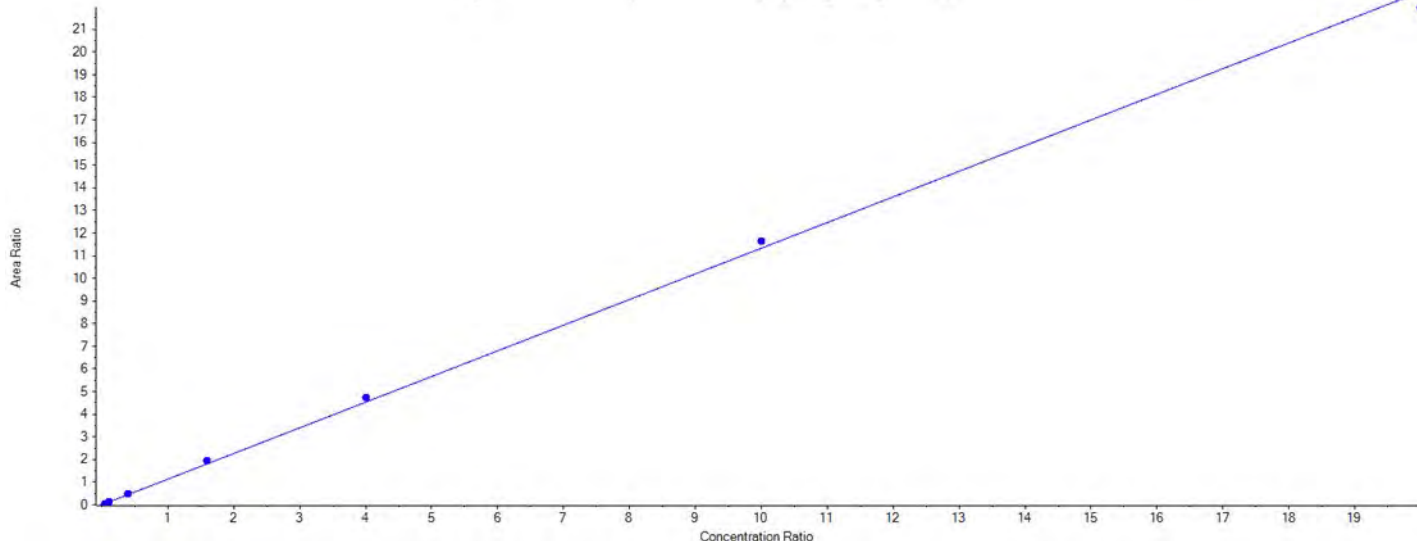
Sample Name	10:2-FTS Area	S/N	13C2-8:2-FTS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	5506.39	87418.0	48167.71	True	4.79	0.114	6.06	1.090	0.193	0.233	21	30	
CAL2	12341.83	743131.0	46390.21	True	4.79	0.266	6.05	1.090	0.482	0.542	12	30	
CAL3	50421.15	1630.5	47968.92	True	4.79	1.051	6.06	1.090	1.930	2.141	11	30	
CAL4	167061.25	7359.4	45542.35	True	4.79	3.668	6.05	1.090	7.710	7.471	-3	30	
CAL5	413620.67	14069.4	43810.43	True	4.79	9.441	6.06	1.090	19.300	19.229	0	30	
CAL6	875761.61	2524.2	41390.64	False	4.79	21.158	6.06	1.090	48.200	43.093	-11	30	
CAL7	1572726.66	1555.5	35654.26	False	4.79	44.110	6.05	1.090	96.400	89.839	-7	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

NMePFOSAE

$y = 1.13321 x (r = 0.99936)$  (weighting: 1 / x)



Component Calibration Verification

Sample Name	NMePFOSAE Area	S/N	d7-NMePFOSAE Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	12784.09	173.2	270192.01	True	5.00	0.047	6.09	1.000	0.200	0.209	4	30	
CAL2	36519.57	327.3	273893.92	True	5.00	0.133	6.09	1.000	0.500	0.588	18	30	
CAL3	133428.31	701.6	265025.36	True	5.00	0.503	6.10	1.000	2.000	2.221	11	30	
CAL4	519484.42	855.7	268949.18	True	5.00	1.932	6.09	1.000	8.000	8.522	7	30	
CAL5	1228026.61	1209.5	259783.25	True	5.00	4.727	6.10	1.000	20.000	20.857	4	30	
CAL6	3042548.56	1276.7	261182.92	True	5.00	11.649	6.10	1.000	50.000	51.399	3	30	
CAL7	5672407.27	1228.4	258278.14	True	5.00	21.962	6.09	1.000	100.000	96.903	-3	30	

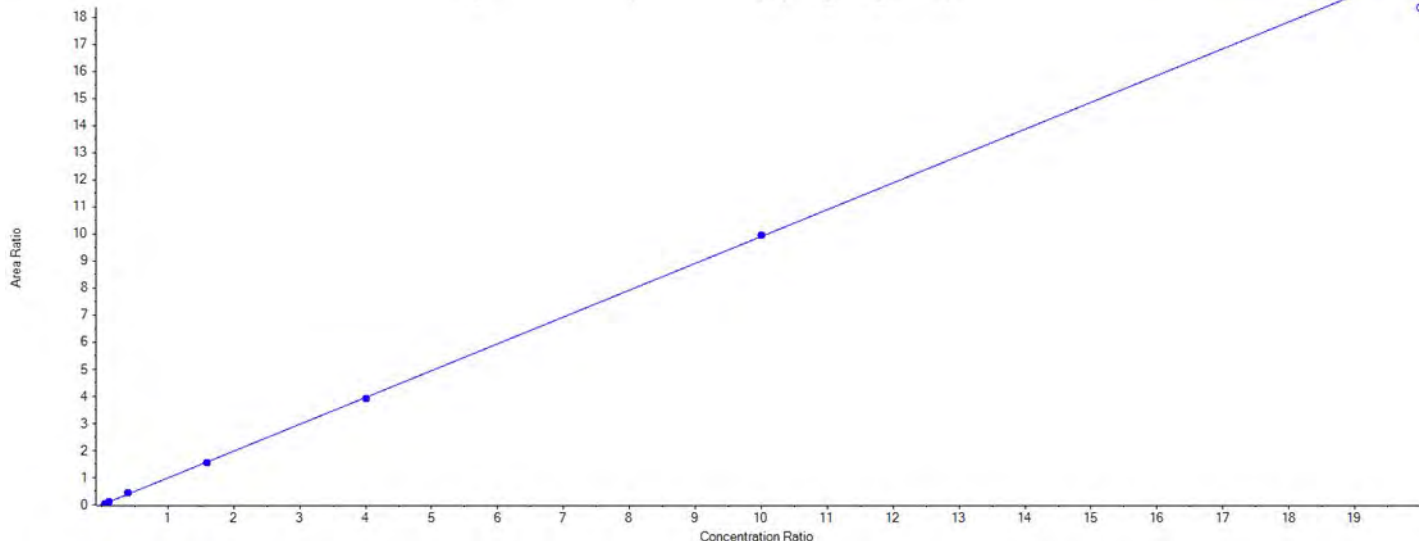


DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

NMePFOSA

$y = 0.99044 x$  (r = 0.99979) (weighting: 1 / x)



Component Calibration Verification

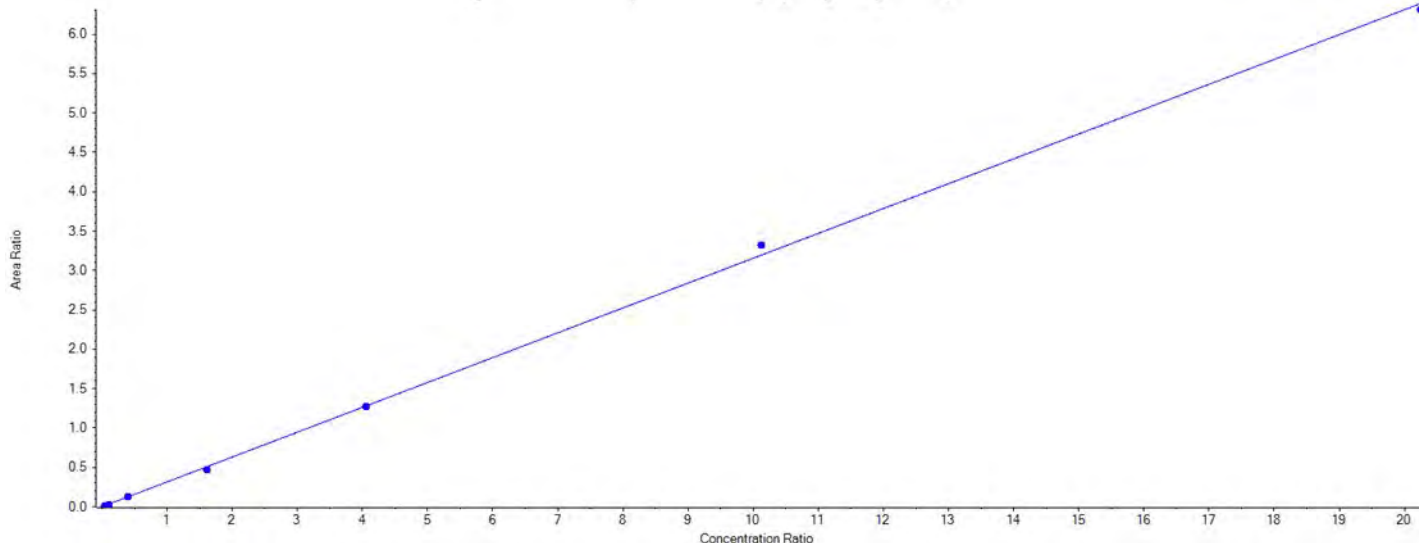
Sample Name	NMePFOSA Area	S/N	d3-NMePFOSA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	3587.64	126.9	91399.47	True	5.00	0.039	6.11	1.000	0.200	0.198	-1	30	
CAL2	10321.79	277.4	89487.32	True	5.00	0.115	6.10	1.000	0.500	0.582	16	30	
CAL3	35694.83	630.4	83036.40	True	5.00	0.430	6.11	1.000	2.000	2.170	9	30	
CAL4	136742.04	858.9	88979.35	True	5.00	1.537	6.10	1.000	8.000	7.758	-3	30	
CAL5	329483.70	927.4	83956.43	True	5.00	3.924	6.11	1.000	20.000	19.812	-1	30	
CAL6	841191.12	1152.2	84626.83	True	5.00	9.940	6.11	1.000	50.000	50.180	0	30	
CAL7	1519310.58	1031.3	82766.69	False	5.00	18.357	6.10	1.000	100.000	92.669	-7	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**PFDoS**

$y = 0.31550 x$  (r = 0.99963) (weighting: 1 / x)



**Component Calibration Verification**

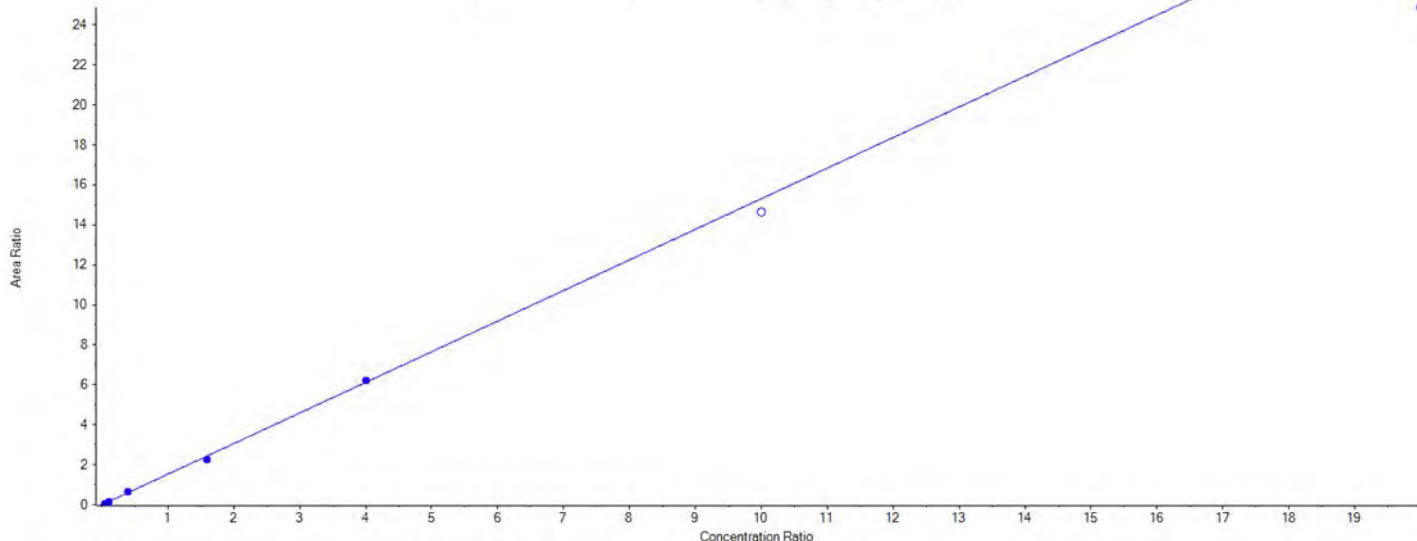
Sample Name	PFDoS Area	S/N	13C8-PFOS Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	4129.83	5450.6	340125.34	True	4.78	0.012	6.20	1.180	0.194	0.184	-5	30	
CAL2	10760.91	11716.2	349492.67	True	4.78	0.031	6.20	1.190	0.482	0.466	-3	30	
CAL3	39644.87	5374.9	308110.34	True	4.78	0.129	6.21	1.190	1.940	1.949	0	30	
CAL4	159190.74	2485.4	334944.86	True	4.78	0.475	6.20	1.180	7.740	7.201	-7	30	
CAL5	421406.91	2132.8	331539.36	True	4.78	1.271	6.21	1.190	19.400	19.257	-1	30	
CAL6	959645.69	2762.6	289236.33	True	4.78	3.318	6.21	1.180	48.400	50.267	4	30	
CAL7	1693764.81	3112.7	268338.15	True	4.78	6.312	6.20	1.190	96.800	95.631	-1	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
 Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

NEtPFOSAE

$y = 1.53050 x$  (r = 0.99898) (weighting: 1 / x)



Component Calibration Verification

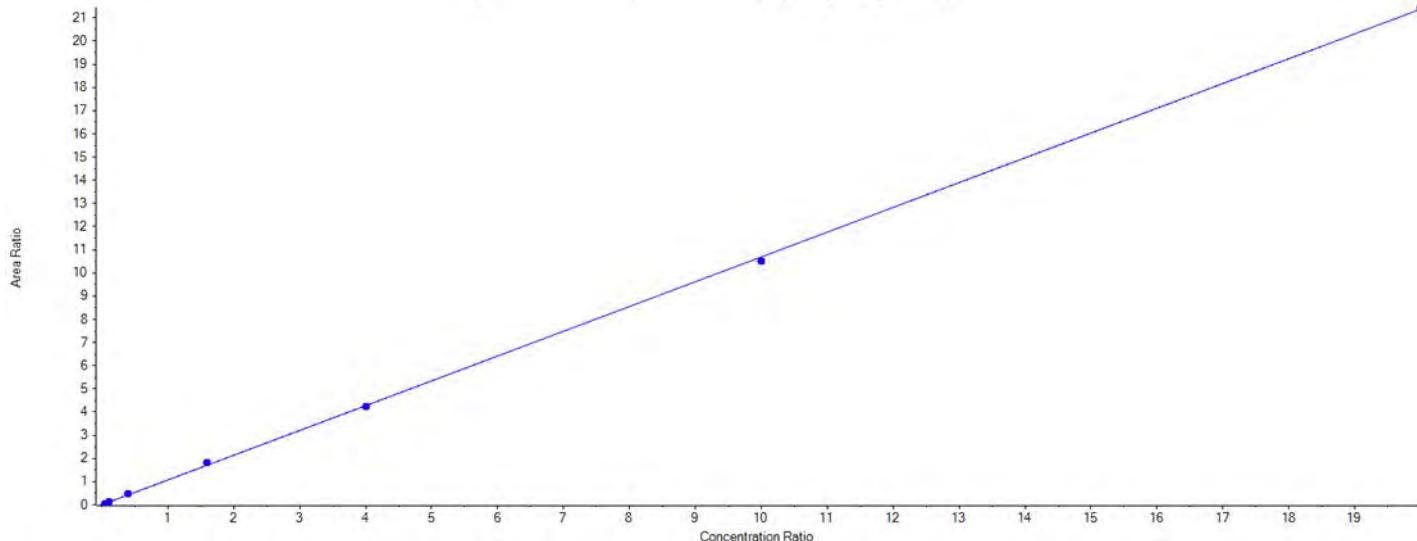
Sample Name	NEtPFOSAE Area	S/N	d9-NEtPFOSAE Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	16977.68	186.6	245785.78	True	5.00	0.069	6.25	1.000	0.200	0.226	13	30	
CAL2	40704.64	274.3	234457.44	True	5.00	0.174	6.24	1.000	0.500	0.567	13	30	
CAL3	142578.14	498.8	221303.40	True	5.00	0.644	6.25	1.000	2.000	2.105	5	30	
CAL4	539839.78	904.3	237359.16	True	5.00	2.274	6.24	1.000	8.000	7.430	-7	30	
CAL5	1392018.87	1088.1	223224.92	True	5.00	6.236	6.25	1.000	20.000	20.372	2	30	
CAL6	3257504.34	1117.8	222808.90	False	5.00	14.620	6.25	1.000	50.000	47.763	-4	30	
CAL7	5932510.36	1347.8	238594.55	False	5.00	24.864	6.24	1.000	100.000	81.230	-19	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

NEtPFOSA

$y = 1.06894 x$  (r = 0.99979) (weighting: 1 / x)



Component Calibration Verification

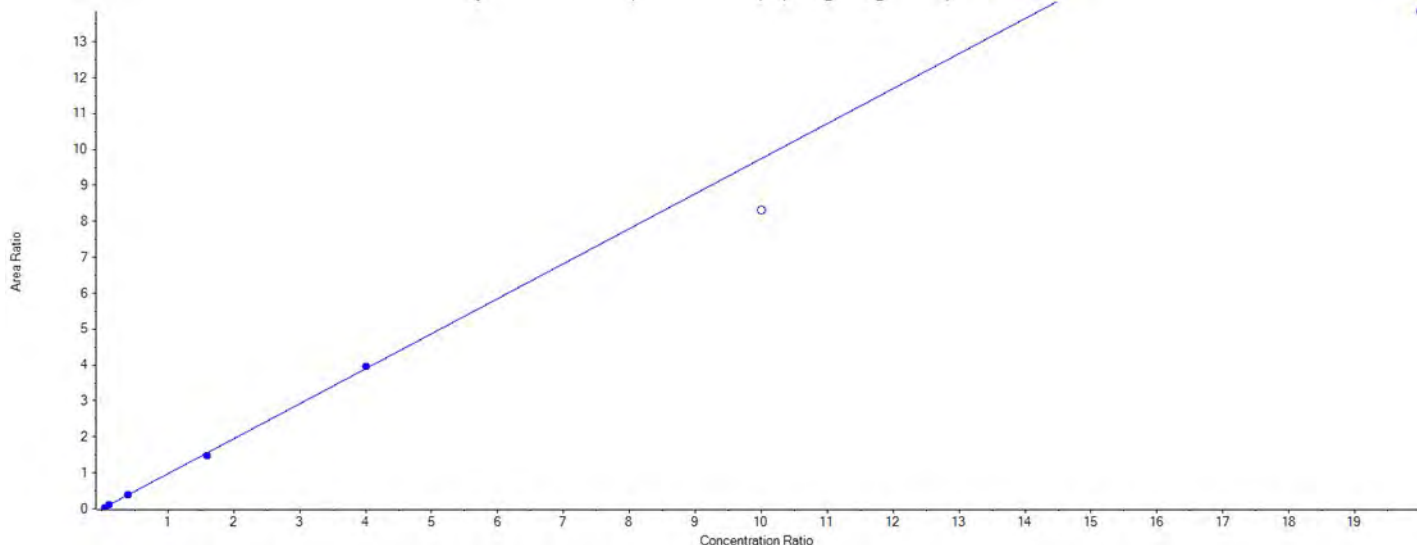
Sample Name	NEtPFOSA Area	S/N	d5-NEtPFOSA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	3003.59	95.2	72859.50	True	5.00	0.041	6.26	1.000	0.200	0.193	-4	30	
CAL2	7692.89	218.8	70003.76	True	5.00	0.110	6.26	1.000	0.500	0.514	3	30	
CAL3	32089.85	543.7	67700.56	True	5.00	0.474	6.27	1.000	2.000	2.217	11	30	
CAL4	127321.10	600.7	69985.02	True	5.00	1.819	6.26	1.000	8.000	8.510	6	30	
CAL5	297273.14	1244.5	70043.92	True	5.00	4.244	6.27	1.000	20.000	19.852	-1	30	
CAL6	703178.95	1096.4	66987.38	True	5.00	10.497	6.27	1.000	50.000	49.101	-2	30	
CAL7	1312776.75	1166.5	61214.00	True	5.00	21.446	6.26	1.000	100.000	100.313	0	30	

**DOD Initial Calibration Verification**

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

**PFTrDA**

$y = 0.97462 x$  (r = 0.99943) (weighting: 1 / x)



**Component Calibration Verification**

Sample Name	PFTrDA Area	S/N	13C2-PFDoDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	52549.49	431.8	1268639.50	True	5.00	0.041	6.23	1.030	0.200	0.213	6	30	
CAL2	129882.05	691.2	1229301.70	True	5.00	0.106	6.23	1.030	0.500	0.542	8	30	
CAL3	481635.82	1133.1	1210049.18	True	5.00	0.398	6.24	1.030	2.000	2.042	2	30	
CAL4	1793581.56	1729.4	1215089.10	True	5.00	1.476	6.23	1.030	8.000	7.573	-5	30	
CAL5	4224307.46	1950.2	1065946.99	True	5.00	3.963	6.24	1.030	20.000	20.331	2	30	
CAL6	8498735.48	2545.3	1021574.81	False	5.00	8.319	6.24	1.030	50.000	42.680	-15	30	
CAL7	12403653.15	2424.0	896268.09	False	5.00	13.839	6.23	1.030	100.000	70.998	-29	30	

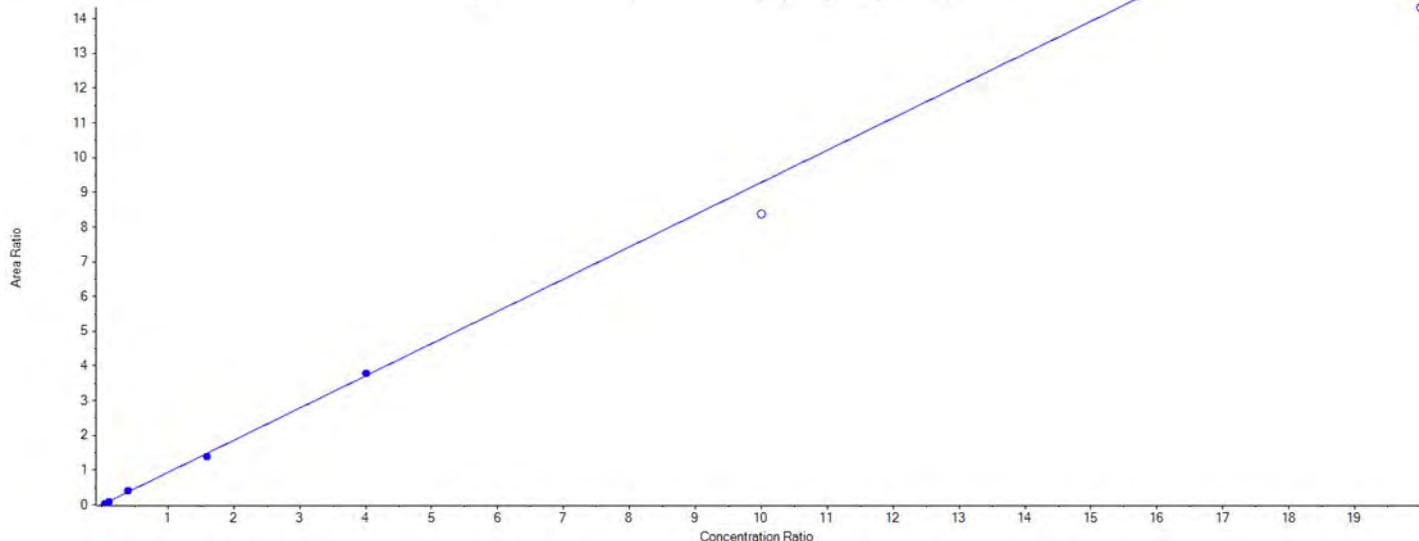


DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFTeDA

$y = 0.92853 x$  ( $r = 0.99910$ ) (weighting:  $1 / x$ )



Component Calibration Verification

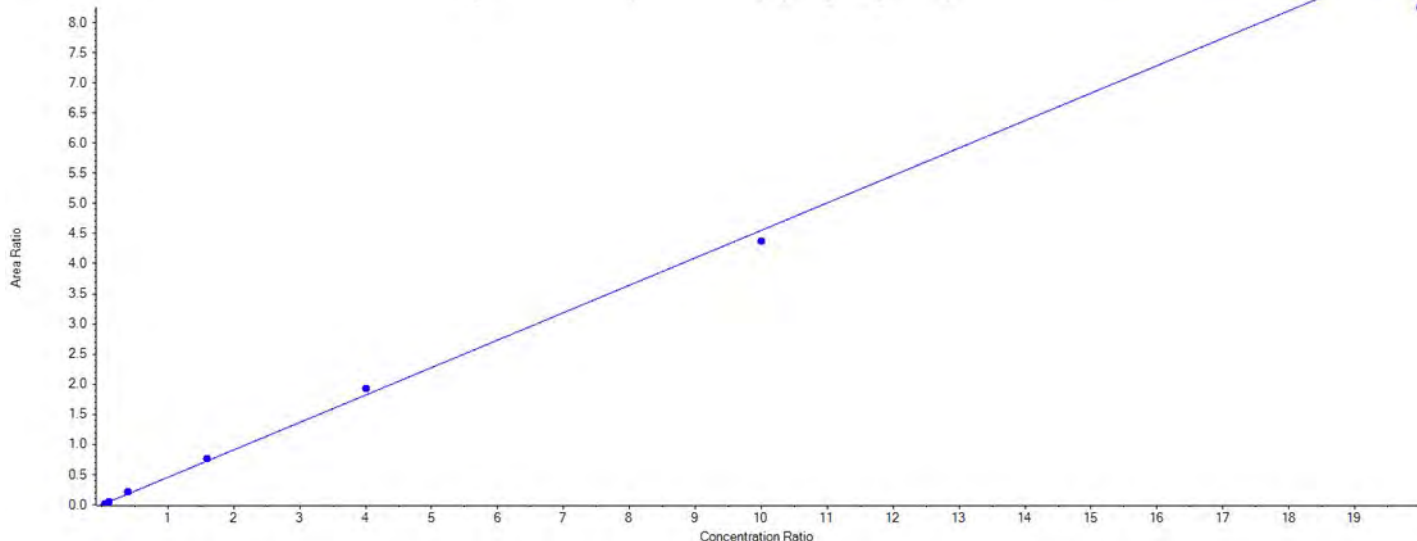
Sample Name	PFTeDA Area	S/N	<sup>13</sup> C2-PFTeDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	37886.50	327.2	933408.92	True	5.00	0.041	6.41	1.000	0.200	0.219	9	30	
CAL2	87023.98	499.2	911481.82	True	5.00	0.095	6.41	1.000	0.500	0.514	3	30	
CAL3	333217.04	1206.0	839561.71	True	5.00	0.397	6.42	1.000	2.000	2.137	7	30	
CAL4	1181484.10	1898.4	850800.59	True	5.00	1.389	6.41	1.000	8.000	7.478	-7	30	
CAL5	3087435.92	2401.8	816876.42	True	5.00	3.780	6.42	1.000	20.000	20.352	2	30	
CAL6	6745639.52	2794.8	805412.88	False	5.00	8.375	6.42	1.000	50.000	45.100	-10	30	
CAL7	10584696.41	2534.1	739019.13	False	5.00	14.323	6.41	1.000	100.000	77.125	-23	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFHxDA

$y = 0.45531 x$  (r = 0.99880) (weighting: 1 / x)



Component Calibration Verification

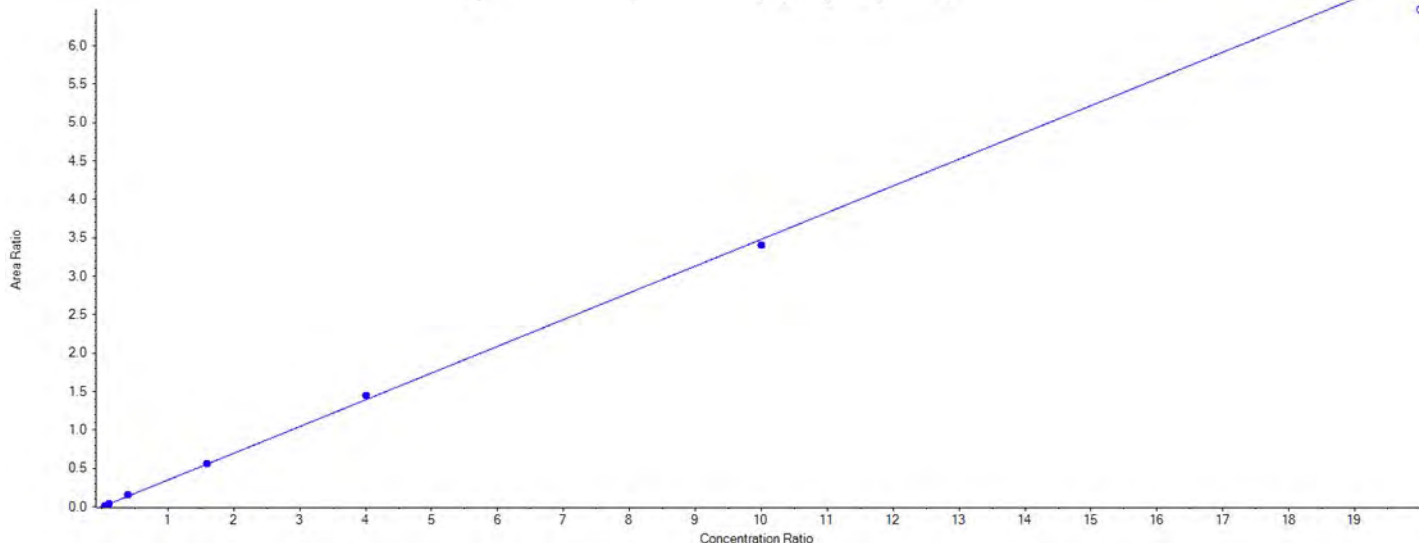
Sample Name	PFHxDA Area	S/N	<sup>13</sup> C2-PFTeDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	20158.26	565.3	933408.92	True	5.00	0.022	6.71	1.050	0.200	0.237	19	30	
CAL2	43591.46	1082.4	911481.82	True	5.00	0.048	6.71	1.050	0.500	0.525	5	30	
CAL3	174998.14	1831.9	839561.71	True	5.00	0.208	6.72	1.050	2.000	2.289	14	30	
CAL4	651302.63	2343.1	850800.59	True	5.00	0.766	6.71	1.050	8.000	8.406	5	30	
CAL5	1573324.99	3081.1	816876.42	True	5.00	1.926	6.71	1.050	20.000	21.151	6	30	
CAL6	3527192.44	4277.9	805412.88	True	5.00	4.379	6.72	1.050	50.000	48.092	-4	30	
CAL7	6096567.97	3546.9	739019.13	False	5.00	8.250	6.71	1.050	100.000	90.592	-9	30	

DOD Initial Calibration Verification

Instrument ID: LM27631 ICAL Name: 18DEC18DCAL QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM Acquisition Method: 18AUG13\_3uL.dam

PFODA

$y = 0.34797 x (r = 0.99947) \text{ (weighting: } 1 / x \text{)}$



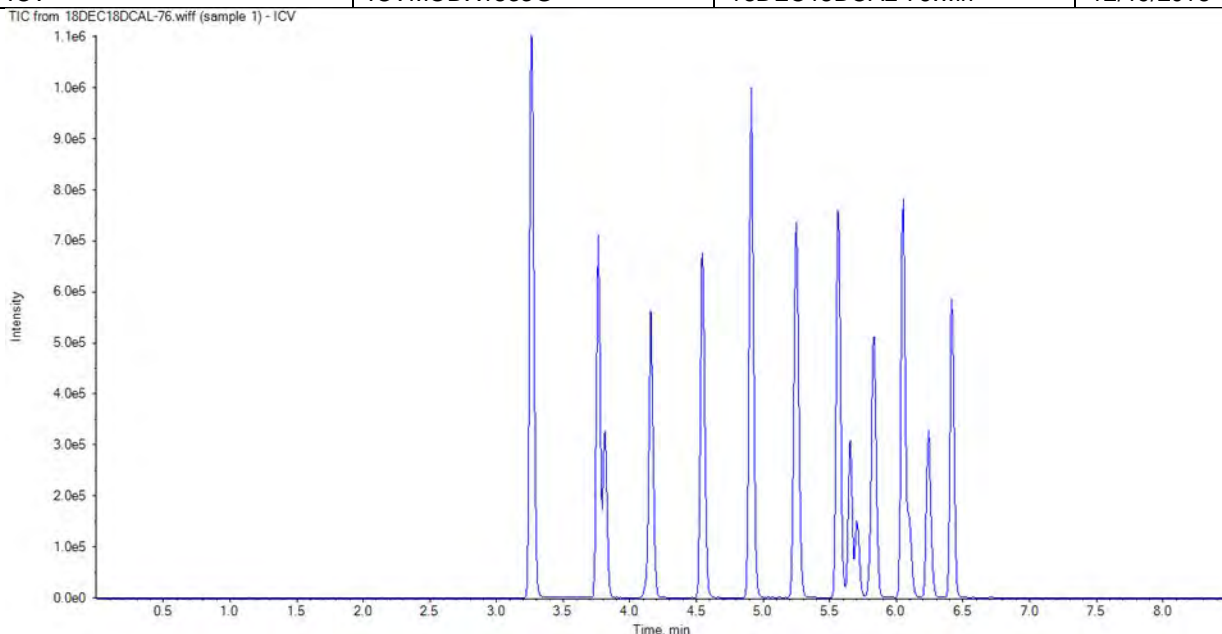
Component Calibration Verification

Sample Name	PFODA Area	S/N	<sup>13</sup> C2-PFTeDA Area	Used	ES Conc	Area Ratio	RT (min)	RRT	Spec Amount	Calc Amount	%Diff	%D Limit	%D OOS
CAL1	13384.23	917.5	933408.92	True	5.00	0.014	6.98	1.090	0.200	0.206	3	30	
CAL2	32232.07	1449.5	911481.82	True	5.00	0.035	6.97	1.090	0.500	0.508	2	30	
CAL3	129704.78	2655.1	839561.71	True	5.00	0.154	6.98	1.090	2.000	2.220	11	30	
CAL4	481905.32	3886.6	850800.59	True	5.00	0.566	6.97	1.090	8.000	8.139	2	30	
CAL5	1181984.36	5048.1	816876.42	True	5.00	1.447	6.98	1.090	20.000	20.791	4	30	
CAL6	2737389.49	4569.3	805412.88	True	5.00	3.399	6.98	1.090	50.000	48.836	-2	30	
CAL7	4781425.10	3708.0	739019.13	False	5.00	6.470	6.97	1.090	100.000	92.966	-7	30	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

Sample Name	Sample ID:	Sample File:	Acquisition Date:
ICV	ICVMODX1833G	18DEC18DCAL-76.wiff	12/19/2018 12:46:59 AM



Injection Standard Name	Inj Std Conc	Injection Std Peak Area	CAL3 Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.000	1001581.53	941251.6	6.4	50	
13C2-PFOA	5.000	545957.83	485595.3	12.4	50	
13C4-PFOS	4.780	314888.73	292182.6	7.8	50	
13C2-PFDA	5.000	489223.17	467216.0	4.7	50	

DOD Initial Calibration Verification

Instrument ID: LM27631      ICAL Name: 18DEC18DCAL      QMethod Name: 18AUG20QM  
Result Table: 18DEC18DCAL12/19/2018 9:34:01 AM      Acquisition Method: 18AUG13\_3uL.dam

Sample Name	Sample ID:	Sample File:	Acquisition Date:
ICV	ICVMODX1833G	18DEC18DCAL-76.wiff	12/19/2018 12:46:59 AM

Analyte Name	Analyte Area	Ext Std Name	Ext Std Area	Ext Std Con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	412745.70	13C4-PFBA	1094642.35	5.00	0.377	3.26	1.00	2.000	2.002	0	30	
PFPeA	395897.35	13C5-PFPeA	1008730.09	5.00	0.392	3.77	1.00	2.000	2.026	1	30	
PFBS	169696.97	13C3-PFBS	449153.37	4.65	0.378	3.81	1.00	1.769	1.865	5	30	
4:2-FTS	N/A	13C2-4:2-FTS	61415.72	4.67	N/A	N/A	N/A	0.000	N/A		30	
PFHxA	384443.42	13C5-PFHxA	791700.97	5.00	0.486	4.16	1.00	2.000	2.000	0	30	
PFPeS	N/A	13C3-PFBS	449153.37	4.65	N/A	N/A	N/A	0.000	N/A		30	
PFHpA	403375.85	13C4-PFHpA	592781.99	5.00	0.680	4.55	1.00	2.000	2.256	13	30	
PFHxS	130829.50	13C3-PFHxS	346627.14	4.73	0.377	4.55	1.00	1.890	1.836	-3	30	
6:2-FTS	N/A	13C2-6:2-FTS	51799.61	4.75	N/A	N/A	N/A	0.000	N/A		30	
PFHpS	129646.75	13C3-PFHxS	346627.14	4.73	0.374	4.90	1.08	1.900	1.979	4	30	
PFOA	398236.05	13C8-PFOA	993017.04	5.00	0.401	4.91	1.00	2.000	2.125	6	30	
PFOS	133872.01	13C8-PFOS	334311.48	4.78	0.400	5.24	1.00	1.910	1.753	-8	30	
PFNA	367059.53	13C9-PFNA	671215.93	5.00	0.547	5.26	1.00	2.000	2.173	9	30	
PFNS	N/A	13C8-PFOS	334311.48	4.78	N/A	N/A	N/A	0.000	N/A		30	
PFDA	331197.86	13C6-PFDA	872771.75	5.00	0.379	5.56	1.00	2.000	1.960	-2	30	
8:2-FTS	N/A	13C2-8:2-FTS	45316.10	4.79	N/A	N/A	N/A	0.000	N/A		30	
PFOSA	N/A	13C8-PFOSA	654848.92	5.00	N/A	N/A	N/A	0.000	N/A		30	
NMeFOSAA	83098.34	d3-NMeFOSAA	223608.66	5.00	0.372	5.71	1.00	2.000	2.310	15	30	
PFDS	81048.38	13C8-PFOS	334311.48	4.78	0.242	5.80	1.11	1.930	1.990	3	30	
PFUnDA	328698.42	13C7-PFUnDA	587076.91	5.00	0.560	5.83	1.00	2.000	1.854	-7	30	
NEtFOSAA	73598.96	d5-NEtFOSAA	178505.14	5.00	0.412	5.84	1.00	2.000	2.101	5	30	
PFDODA	471885.24	13C2-PFDODA	1224073.92	5.00	0.386	6.05	1.00	2.000	1.942	-3	30	
10:2-FTS	N/A	13C2-8:2-FTS	45316.10	4.79	N/A	N/A	N/A	0.000	N/A		30	
NMePFOSAE	N/A	d7-NMePFOSAE	269917.68	5.00	N/A	N/A	N/A	0.000	N/A		30	
NMePFOSA	N/A	d3-NMePFOSA	88738.22	5.00	N/A	N/A	N/A	0.000	N/A		30	
PFDoS	N/A	13C8-PFOS	334311.48	4.78	N/A	N/A	N/A	0.000	N/A		30	
NEtPFOSAE	N/A	d9-NEtPFOSAE	231171.37	5.00	N/A	N/A	N/A	0.000	N/A		30	
NEtPFOSA	N/A	d5-NEtPFOSA	70087.35	5.00	N/A	N/A	N/A	0.000	N/A		30	
PFTrDA	463980.11	13C2-PFDODA	1224073.92	5.00	0.379	6.24	1.03	2.000	1.945	-3	30	
PFTeDA	335133.74	13C2-PFTeDA	902755.25	5.00	0.371	6.42	1.00	2.000	1.999	0	30	
PFHxDA	N/A	13C2-PFTeDA	902755.25	5.00	N/A	N/A	N/A	0.000	N/A		30	
PFOA	N/A	13C2-PFTeDA	902755.25	5.00	N/A	N/A	N/A	0.000	N/A		30	



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL1	Data File:	18DEC18DCAL-68.wiff
Sample ID:	CALBRN11833C	Acquis Date:	2018-12-18T23:34:56
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	3	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	996186.0	941251.6	6	50	
13C2-PFOA	5.0	539687.5	485595.3	11	50	
13C4-PFOS	4.8	319537.9	292182.6	9	50	
13C2-PFDA	5.0	492042.8	467216.0	5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1106287.6	13C3-PFBA	996186.0	1.111	5.000	4.918	98	70-130	
E13C5-PFPeA	1046699.0	13C3-PFBA	996186.0	1.051	5.000	4.900	98	70-130	
E13C3-PFBS	461605.3	13C3-PFBA	996186.0	0.463	4.650	4.512	97	70-130	
E13C2-4:2-FTS	70576.5	13C2-PFOA	539687.5	0.131	4.670	4.967	106	70-130	
E13C5-PFHxA	748596.6	13C2-PFOA	539687.5	1.387	5.000	4.962	99	70-130	
E13C3-PFHxS	371572.3	13C2-PFOA	539687.5	0.688	4.730	5.210	110	70-130	
E13C4-PFHpA	573021.3	13C2-PFOA	539687.5	1.062	5.000	4.586	92	70-130	
E13C2-6:2-FTS	53697.3	13C2-PFOA	539687.5	0.099	4.750	5.006	105	70-130	
E13C8-PFOA	1059559.5	13C2-PFOA	539687.5	1.963	5.000	5.399	108	70-130	
E13C8-PFOS	340125.3	13C4-PFOS	319537.9	1.064	4.780	4.760	100	70-130	
E13C9-PFNA	674406.0	13C4-PFOS	319537.9	2.111	5.000	4.801	96	70-130	
E13C6-PFDA	846045.5	13C2-PFDA	492042.8	1.719	5.000	4.898	98	70-130	
E13C2-8:2-FTS	48167.7	13C2-PFDA	492042.8	0.098	4.790	5.045	105	70-130	
E13C8-PFOA	662399.7	13C2-PFDA	492042.8	1.346	5.000	5.242	105	70-130	
Ed3-NMeFOSAA	263939.9	13C2-PFDA	492042.8	0.536	5.000	5.902	118	70-130	
E13C7-PFUnDA	606291.6	13C2-PFDA	492042.8	1.232	5.000	5.158	103	70-130	
Ed5-NEtFOSAA	174794.1	13C2-PFDA	492042.8	0.355	5.000	5.234	105	70-130	
E13C2-PFDoDA	1268639.5	13C2-PFDA	492042.8	2.578	5.000	5.424	108	70-130	
Ed7-NMePFOSAE	270192.0	13C2-PFDA	492042.8	0.549	5.000	4.906	98	70-130	
Ed3-NMePFOSA	91399.5	13C2-PFDA	492042.8	0.186	5.000	5.104	102	70-130	
Ed9-NEtPFOSAE	245785.8	13C2-PFDA	492042.8	0.500	5.000	5.107	102	70-130	
Ed5-NEtPFOSA	72859.5	13C2-PFDA	492042.8	0.148	5.000	5.136	103	70-130	
E13C2-PFTeDA	933408.9	13C2-PFDA	492042.8	1.897	5.000	5.346	107	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

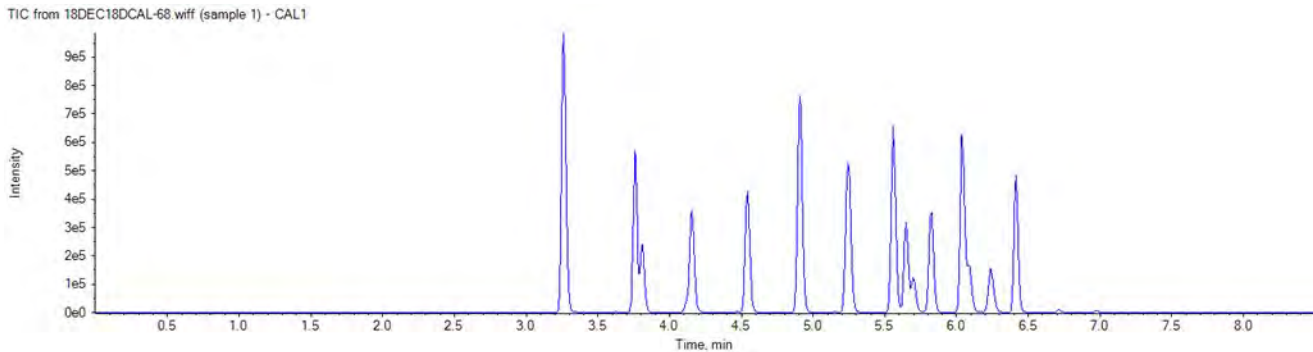
Analyte Quantitation Peak Table

Sample Name: CAL1 Instrument Name: LM27631 File Name: 18DEC18DCAL-68.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	45779.8		A	13C4-PFBA	3.26	1106287.6	0.041	0.220
PFPeA	3.76	1.000	44915.2		A	13C5-PFPeA	3.76	1046699.0	0.043	0.222
PFBS	3.81	1.000	18454.0		A	13C3-PFBS	3.81	461605.3	0.040	0.197
4:2-FTS	4.12	1.000	5256.3		A	13C2-4:2-FTS	4.12	70576.5	0.074	0.195
PFHxA	4.15	1.000	39902.9		A	13C5-PFHxA	4.16	748596.6	0.053	0.220
PFPeS	4.18	1.100	9547.0		A	13C3-PFBS	3.81	461605.3	0.021	0.211
PFHpA	4.54	1.000	42890.9		A	13C4-PFHpA	4.54	573021.3	0.075	0.248
PFHxS	4.55	1.000	13770.2		M	13C3-PFHxS	4.54	371572.3	0.037	0.180
6:2-FTS	4.89	1.000	5250.6		A	13C2-6:2-FTS	4.89	53697.3	0.098	0.243
PFHpS	4.90	1.080	12616.6		A	13C3-PFHxS	4.54	371572.3	0.034	0.180
PFOA	4.91	1.000	45038.0		A	13C8-PFOA	4.91	1059559.5	0.043	0.225
PFOS	5.24	1.000	14855.8		M	13C8-PFOS	5.24	340125.3	0.044	0.191
PFNA	5.25	1.000	41369.1		A	13C9-PFNA	5.25	674406.0	0.061	0.244
PFNS	5.54	1.060	10377.6		A	13C8-PFOS	5.24	340125.3	0.031	0.194
PFDA	5.56	1.000	38431.1		A	13C6-PFDA	5.56	846045.5	0.045	0.235
8:2-FTS	5.56	1.000	5170.3		A	13C2-8:2-FTS	5.56	48167.7	0.107	0.216
PFOSA	5.65	1.000	28244.0		A	13C8-PFOSA	5.65	662399.7	0.043	0.213
NMeFOSAA	5.71	1.000	7941.1		M	d3-NMeFOSAA	5.70	263939.9	0.030	0.187
PFDS	5.80	1.110	7762.5		A	13C8-PFOS	5.24	340125.3	0.023	0.187
PfUnDA	5.82	1.000	40074.0		A	13C7-PfUnDA	5.82	606291.6	0.066	0.219
NEtFOSAA	5.84	1.000	6705.2		M	d5-NEtFOSAA	5.83	174794.1	0.038	0.196
PFDaDA	6.04	1.000	61231.5		A	13C2-PFDaDA	6.04	1268639.5	0.048	0.243
10:2-FTS	6.06	1.090	5506.4		A	13C2-8:2-FTS	5.56	48167.7	0.114	0.233
NMePFOSAE	6.09	1.000	12784.1		A	d7-NMePFOSAE	6.08	270192.0	0.047	0.209
NMePFOSA	6.11	1.000	3587.6		A	d3-NMePFOSA	6.10	91399.5	0.039	0.198
PFDoS	6.20	1.180	4129.8		A	13C8-PFOS	5.24	340125.3	0.012	0.184
NEtPFOSAE	6.25	1.000	16977.7		A	d9-NEtPFOSAE	6.24	245785.8	0.069	0.226
NEtPFOSA	6.26	1.000	3003.6		A	d5-NEtPFOSA	6.26	72859.5	0.041	0.193
PFTTrDA	6.23	1.030	52549.5		A	13C2-PFDaDA	6.04	1268639.5	0.041	0.213
PFTeDA	6.41	1.000	37886.5		A	13C2-PFTeDA	6.41	933408.9	0.041	0.219
PFHxDA	6.71	1.050	20158.3		A	13C2-PFTeDA	6.41	933408.9	0.022	0.237
PFOA	6.98	1.090	13384.2		A	13C2-PFTeDA	6.41	933408.9	0.014	0.206

Total Ion Chromatogram

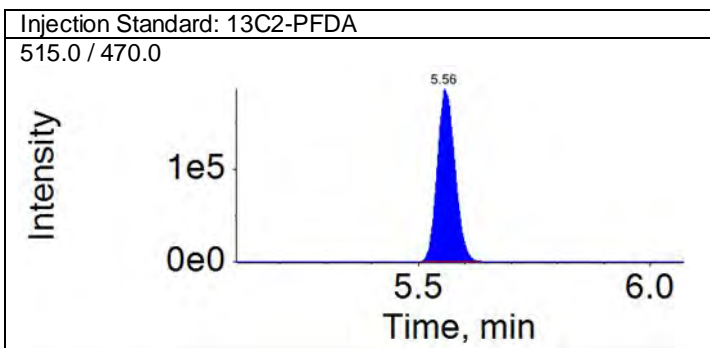
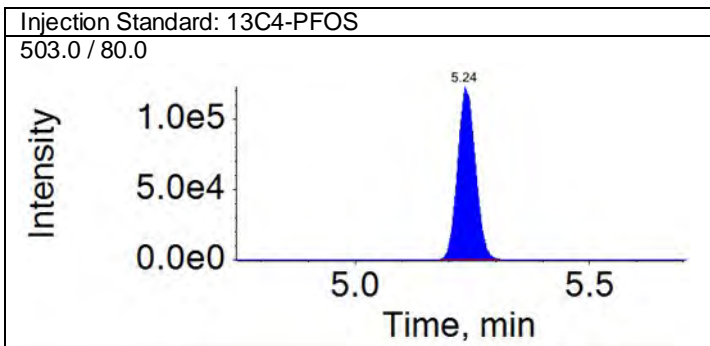
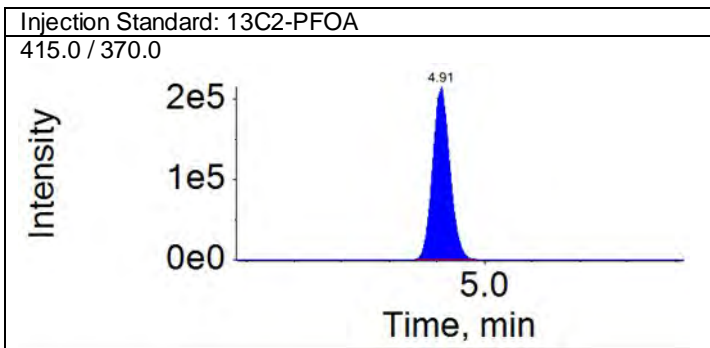
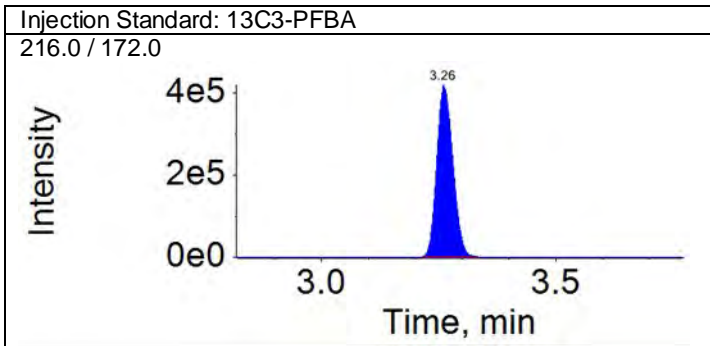


APPROVED  
By MSM at 11:49 am, 12/19/18

REVIEWED  
By HMK at 11:53 am, 12/21/18

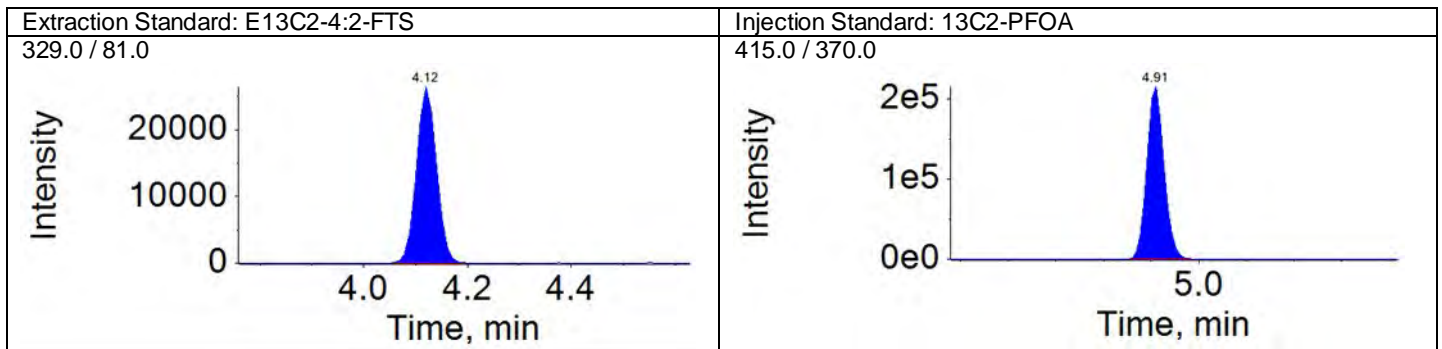
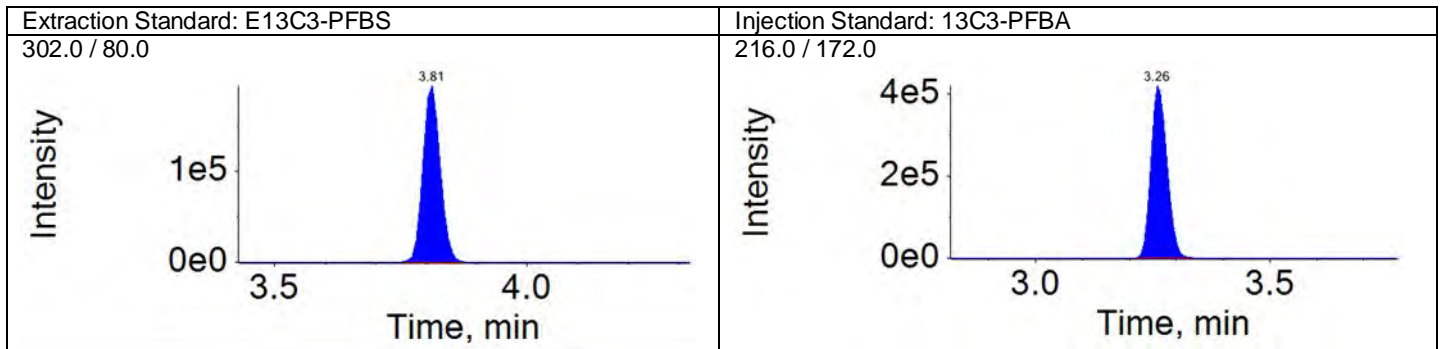
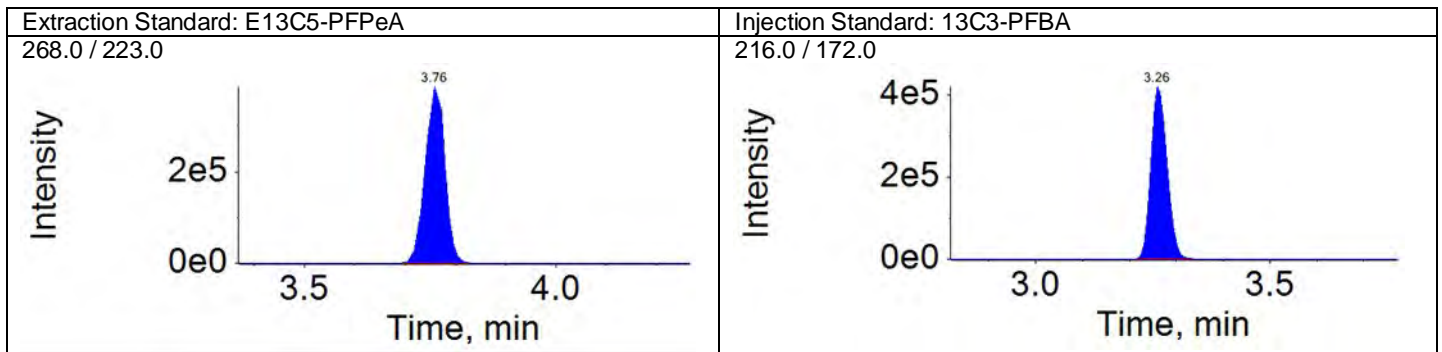
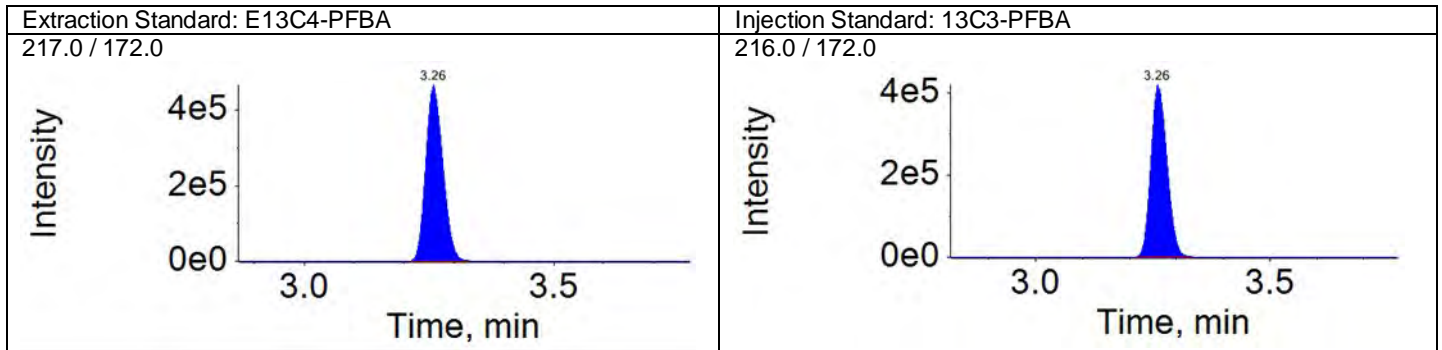
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



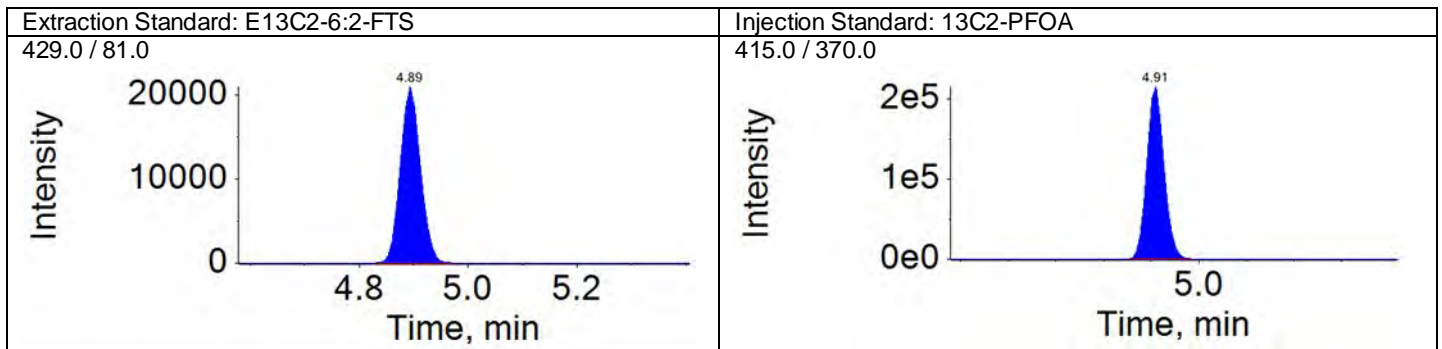
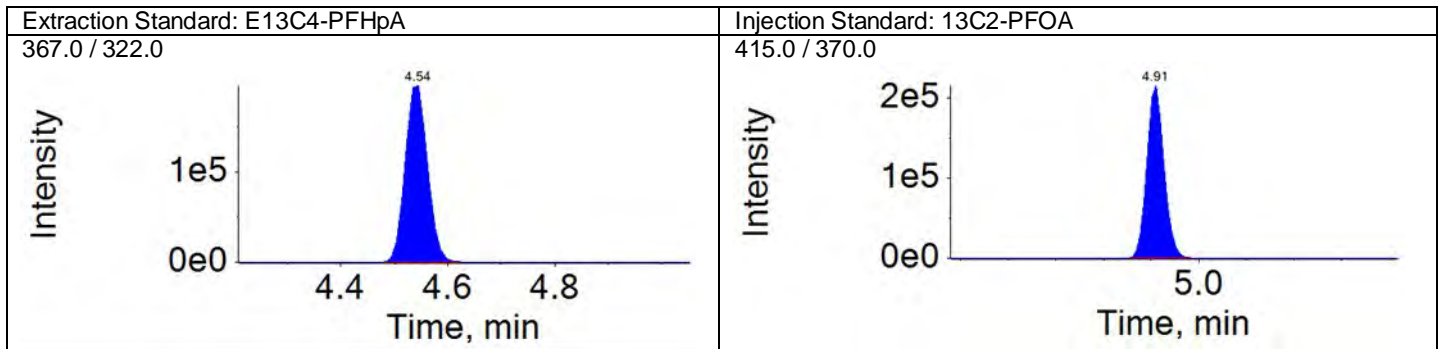
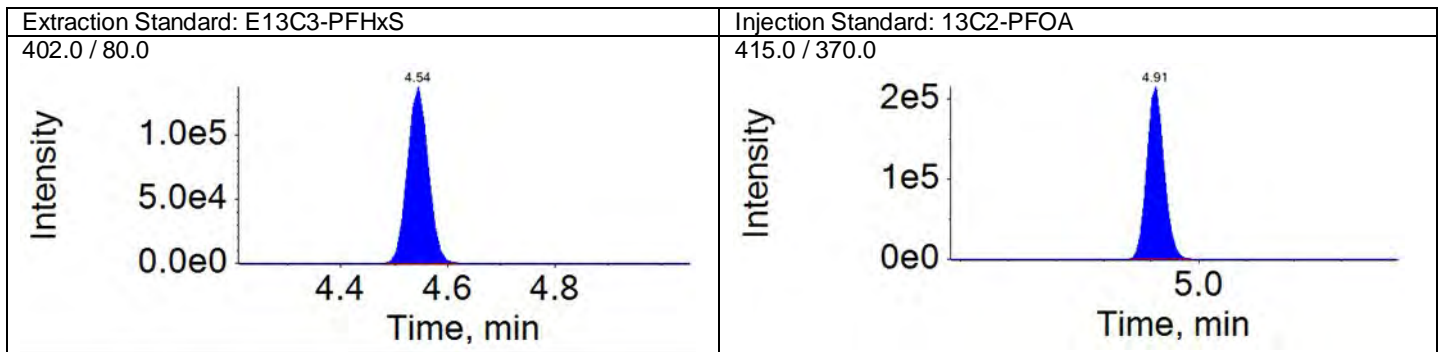
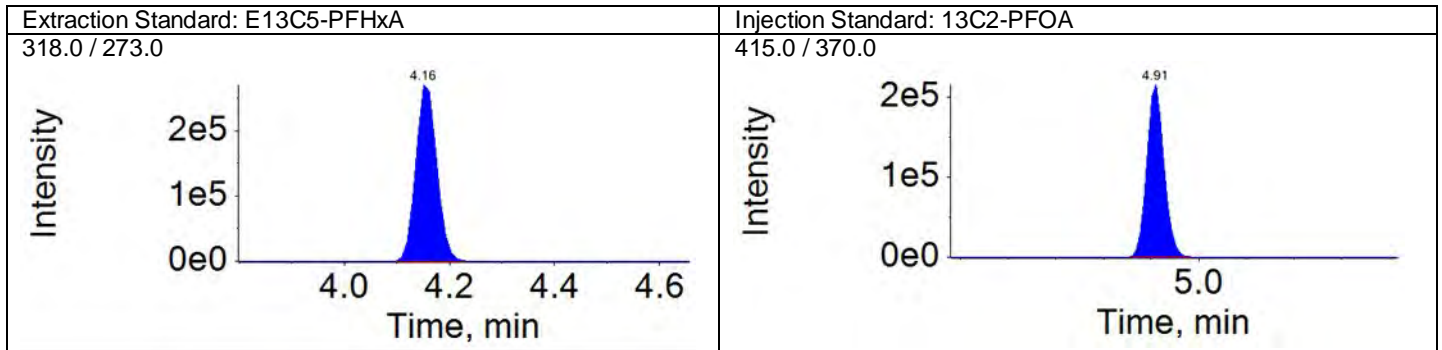
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

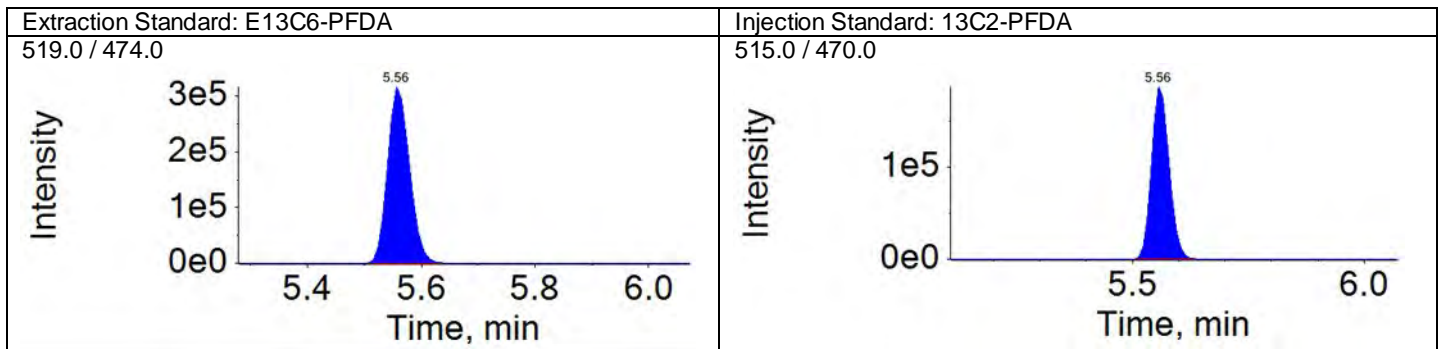
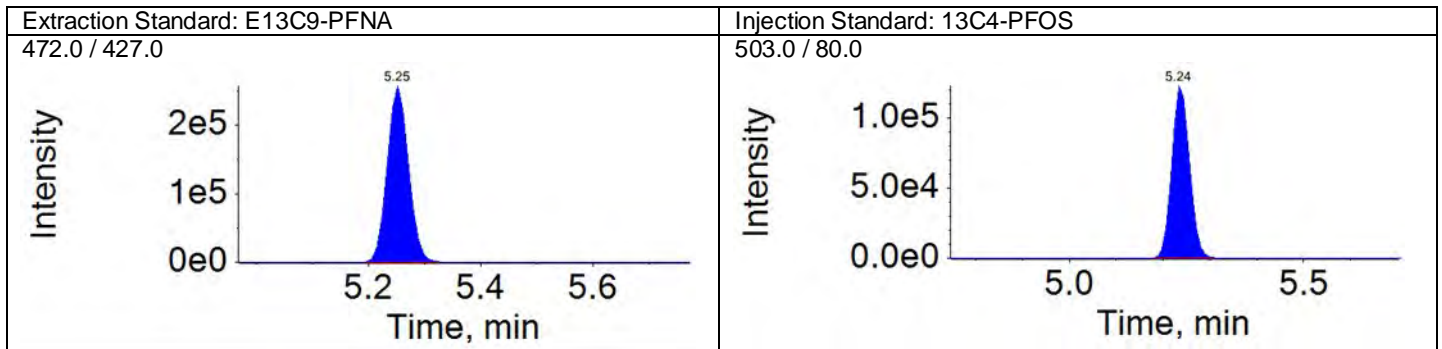
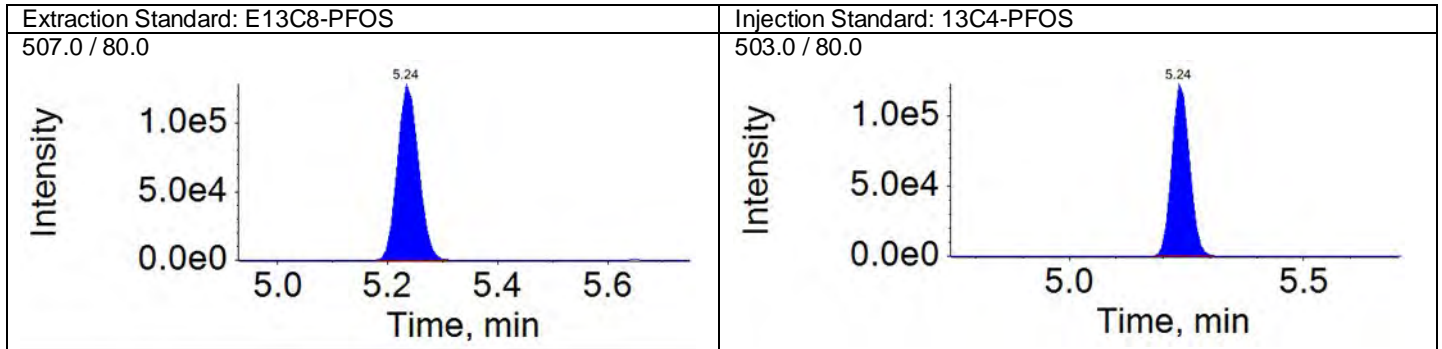
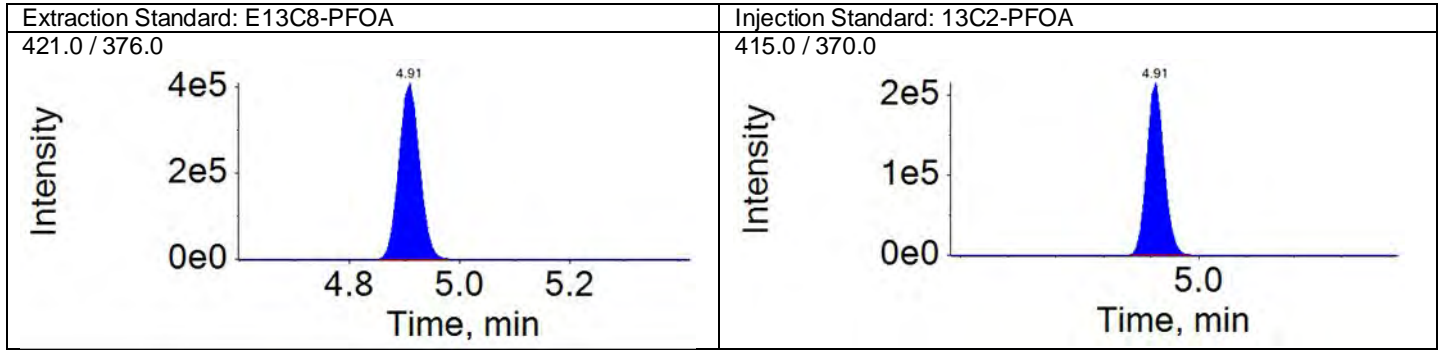
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Acquisition Method: 18AUG13\_3uL.dam





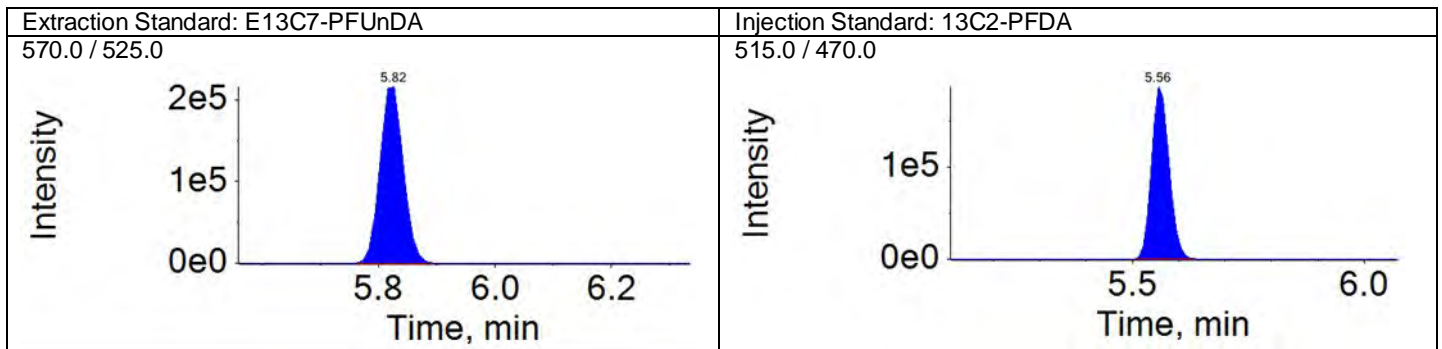
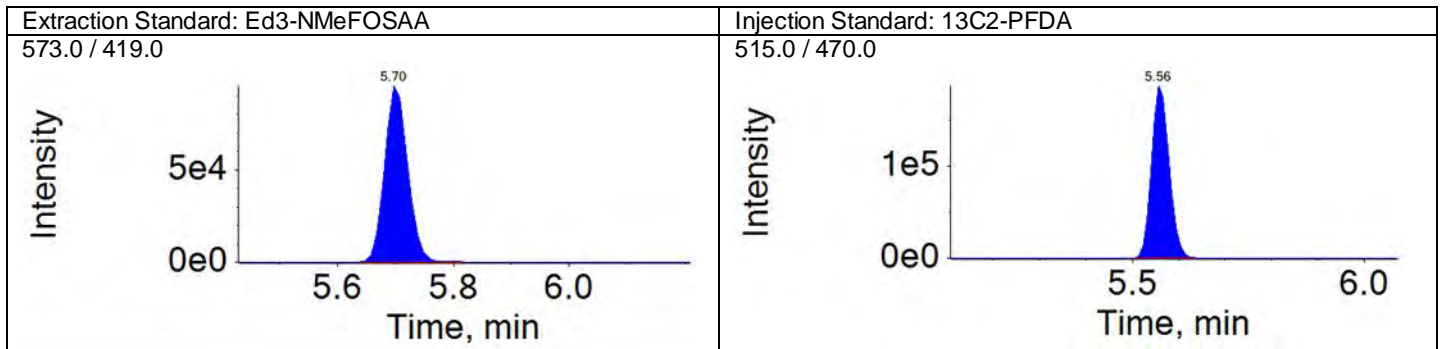
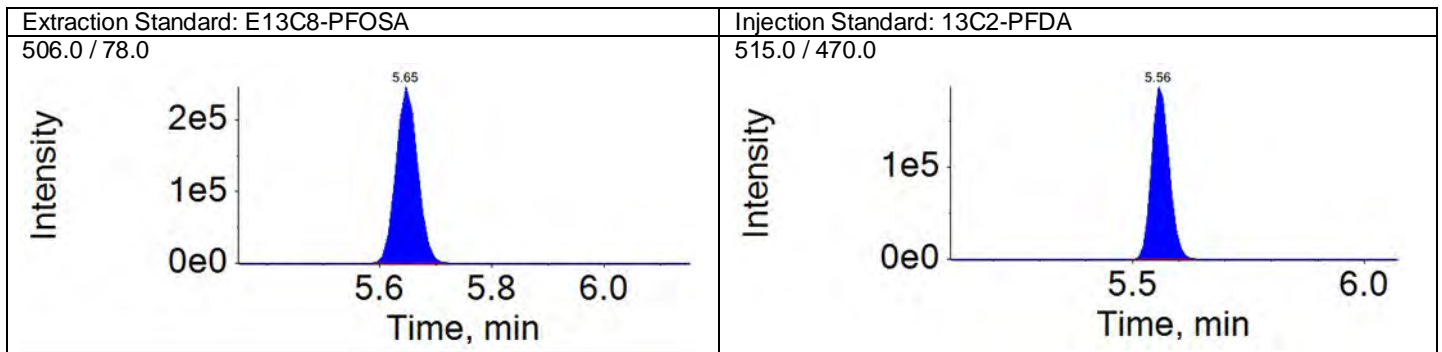
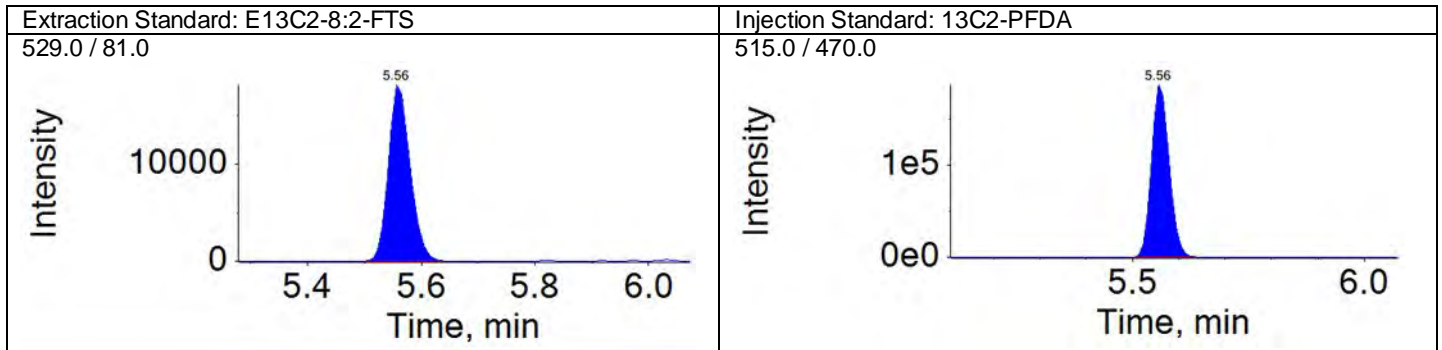
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



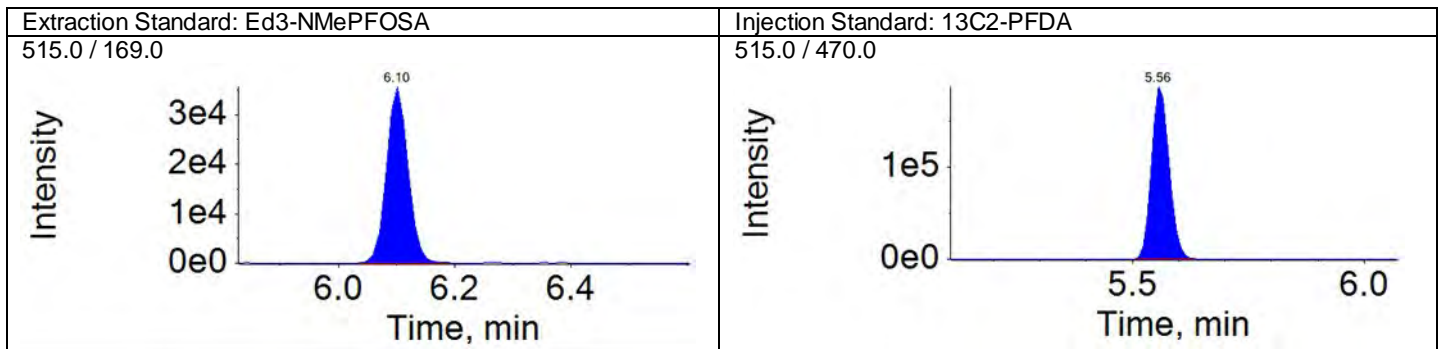
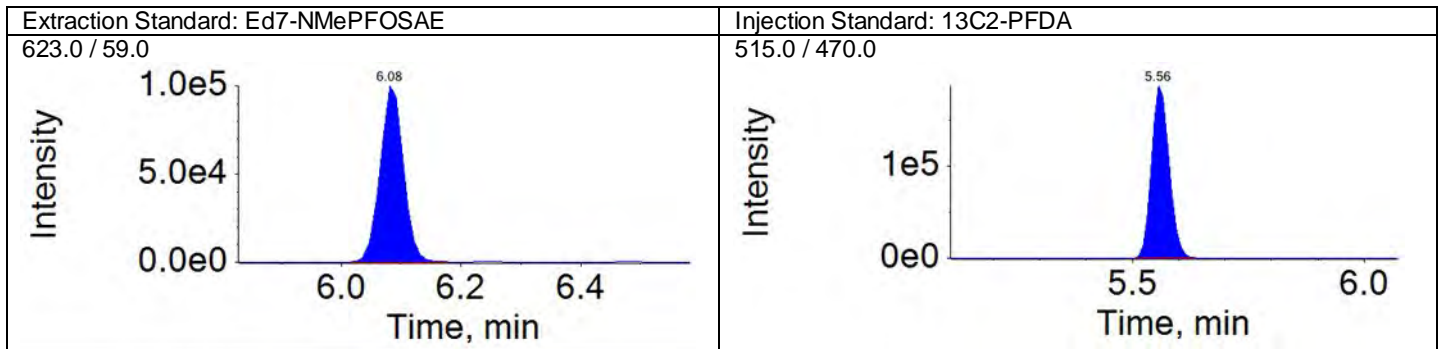
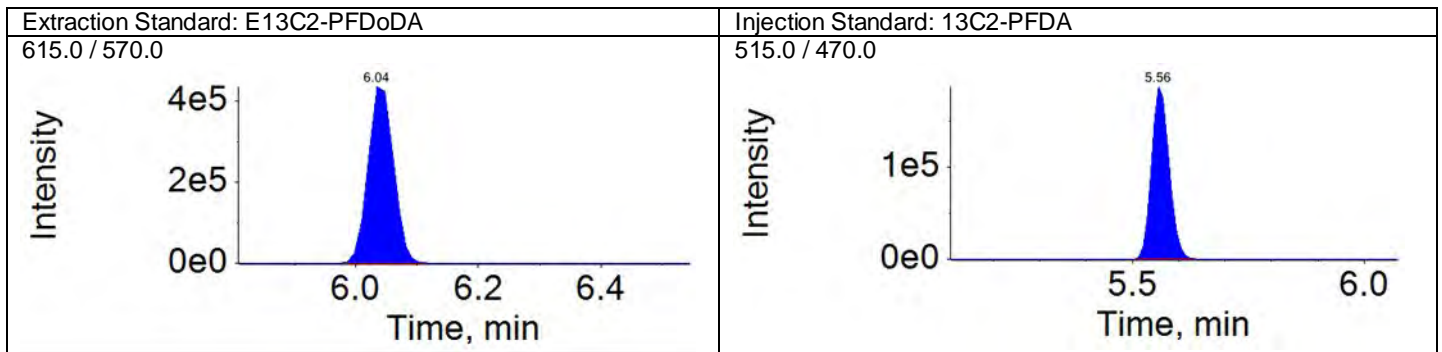
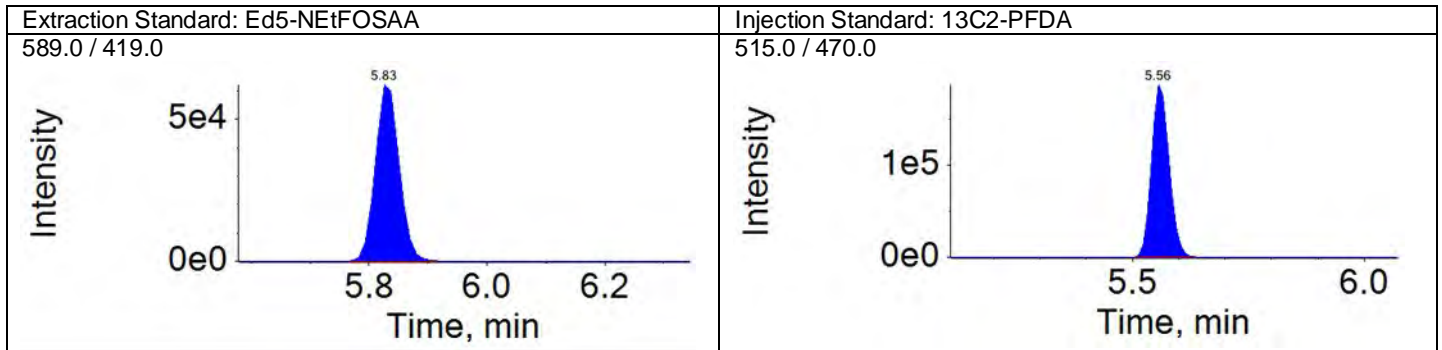
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



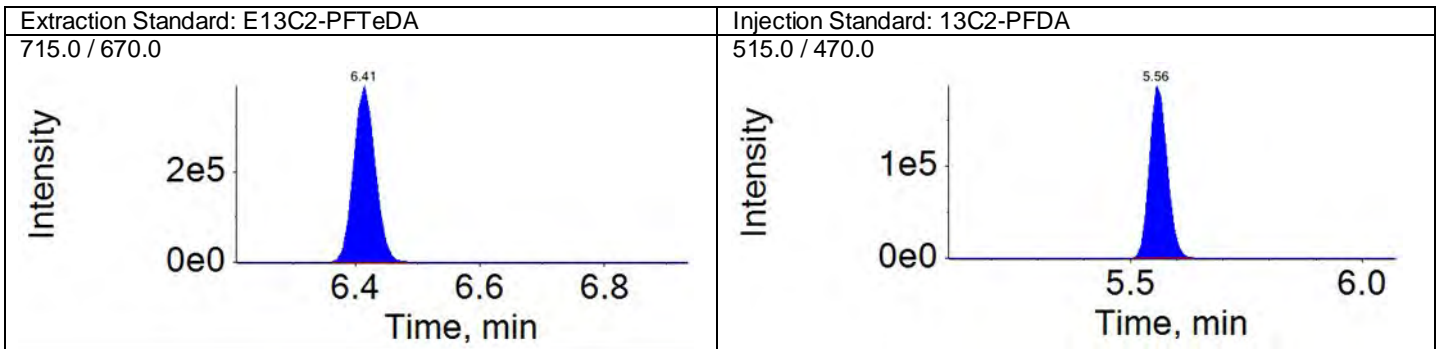
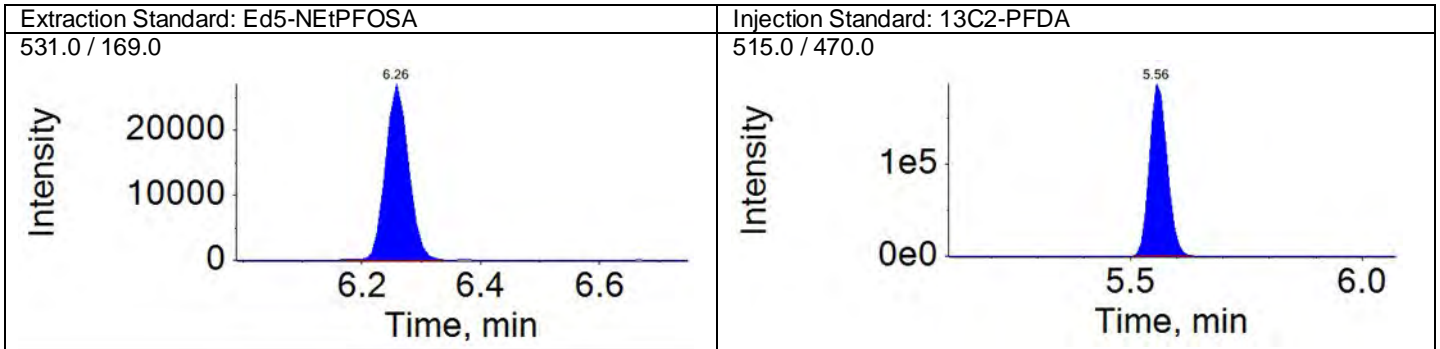
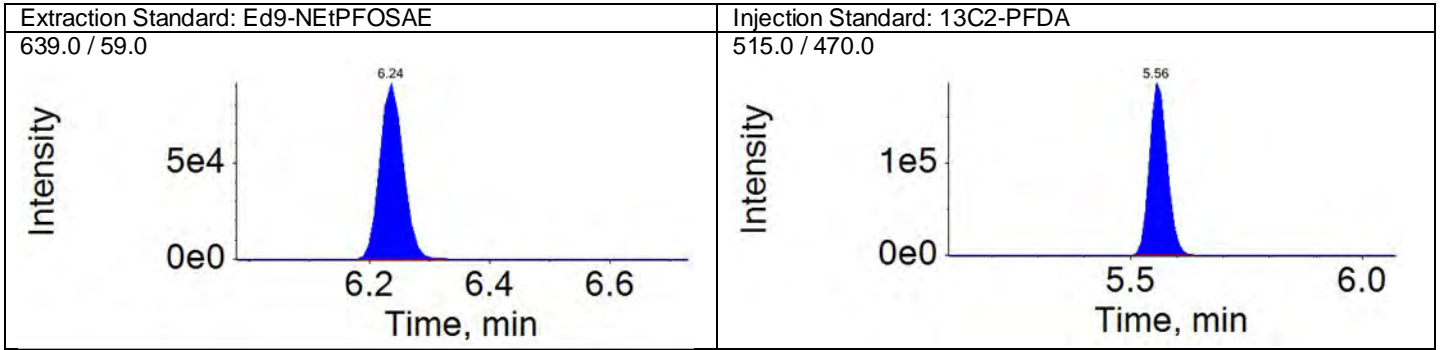
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

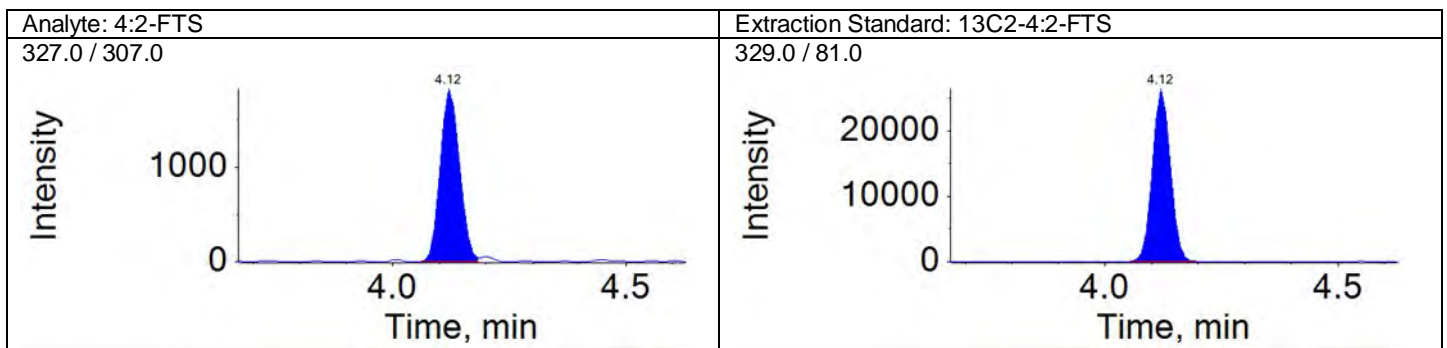
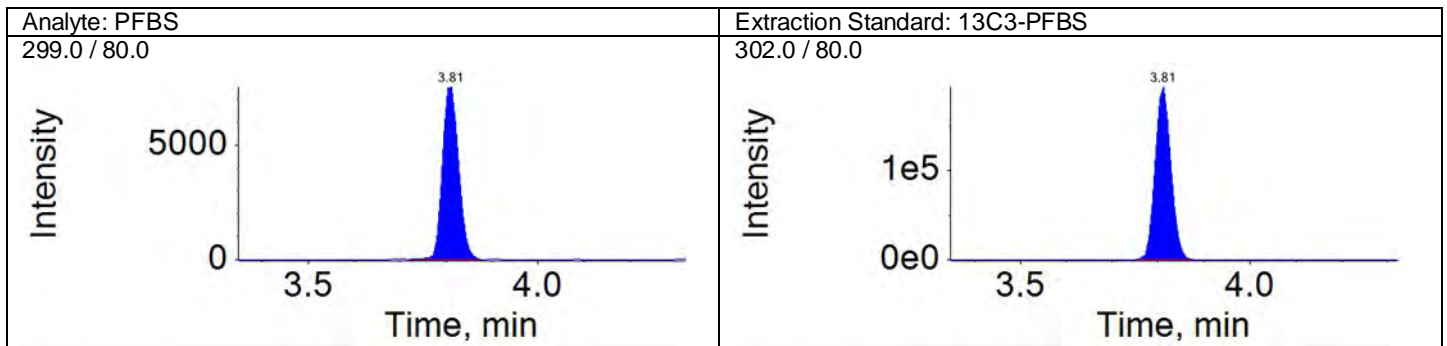
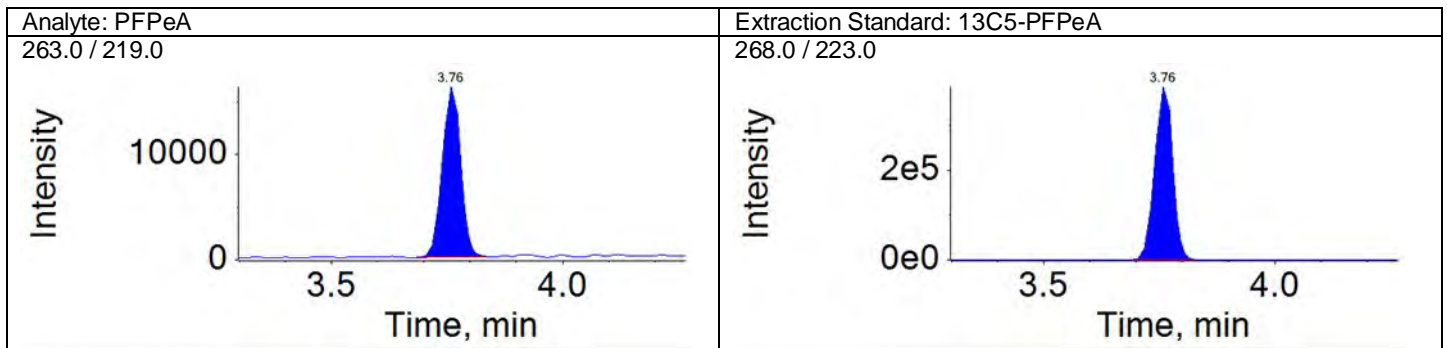
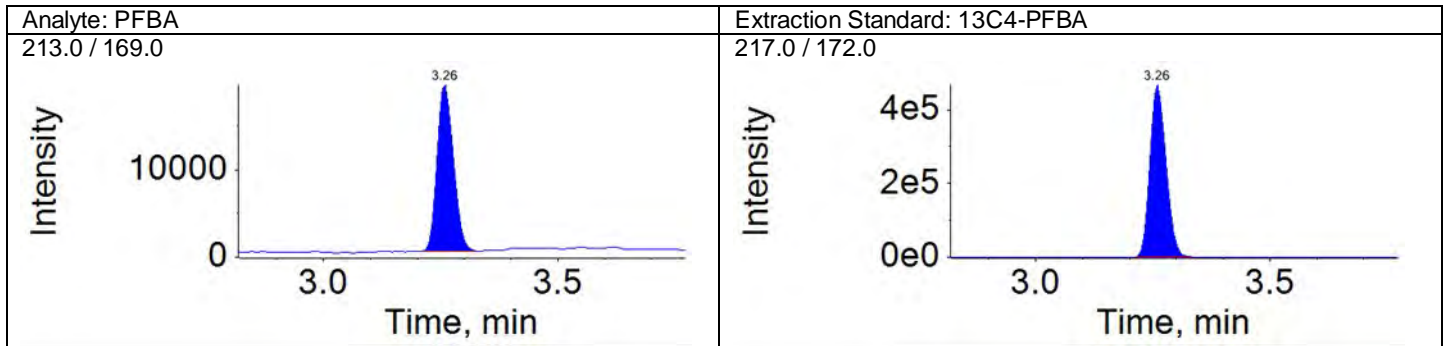
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

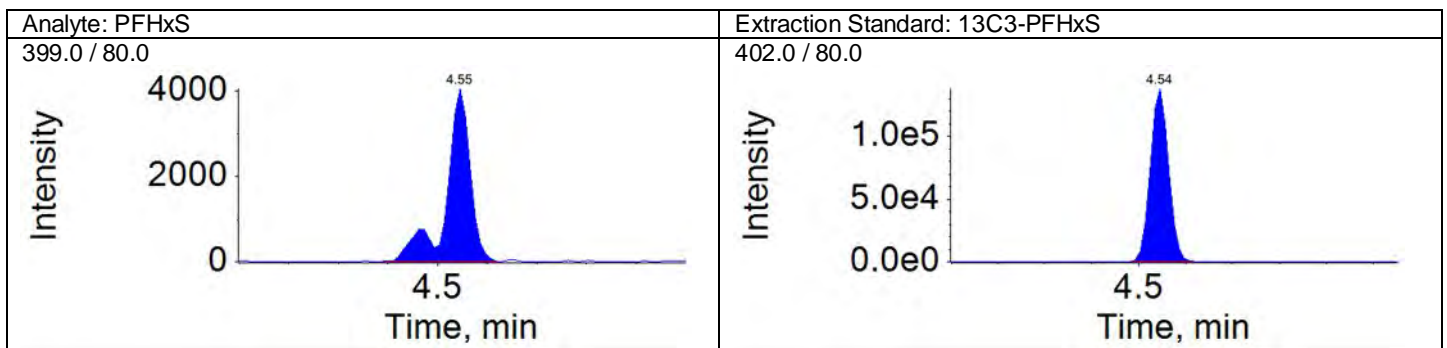
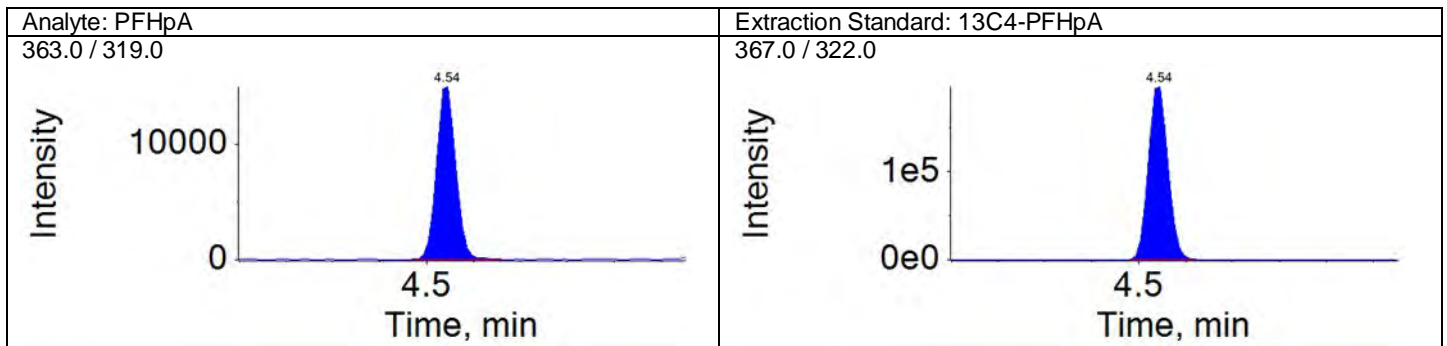
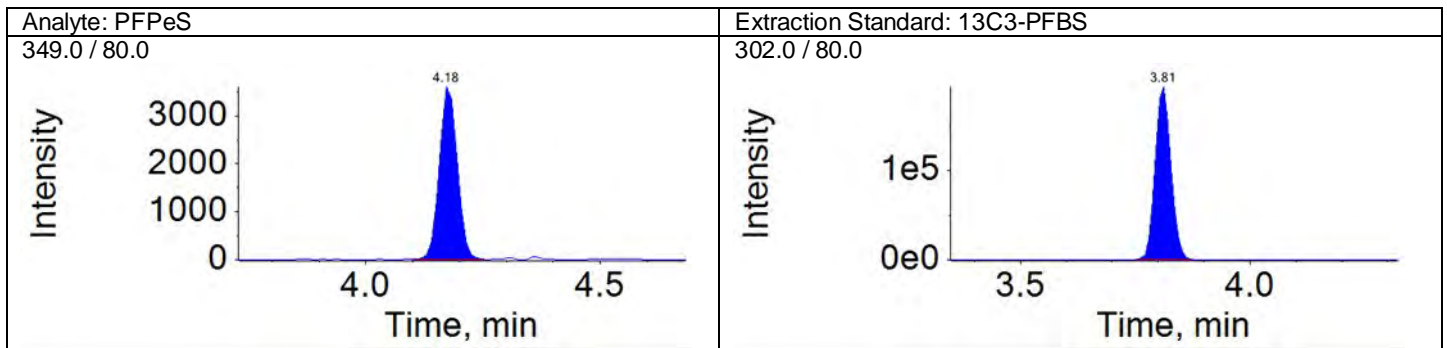
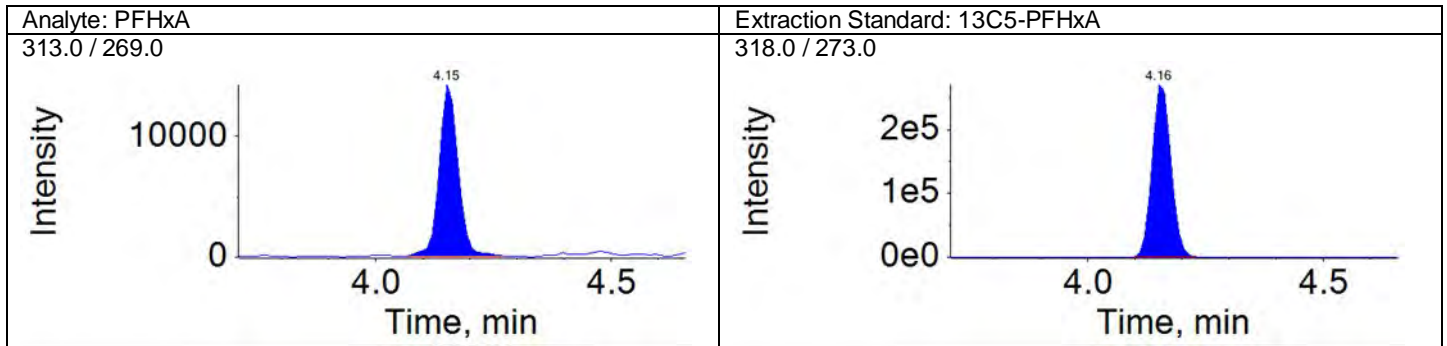
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Acquisition Method: 18AUG13\_3uL.dam





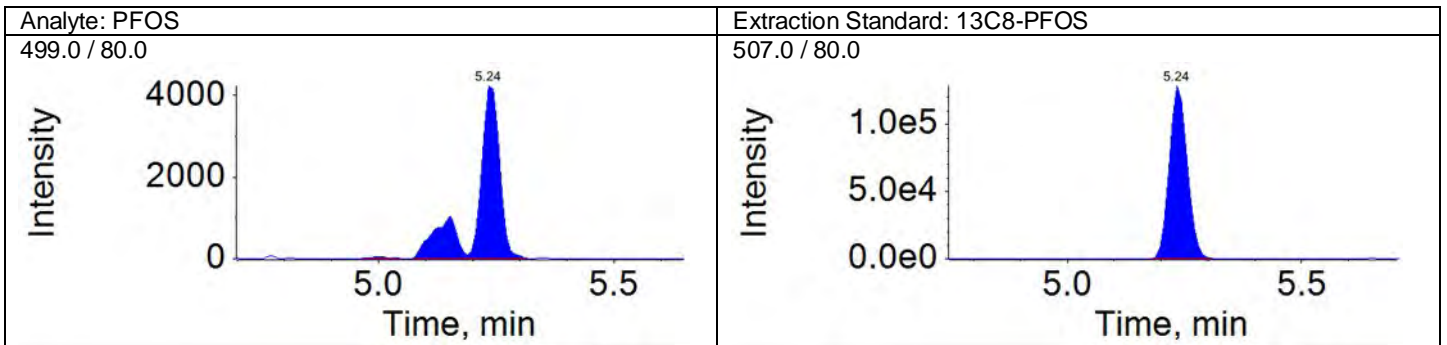
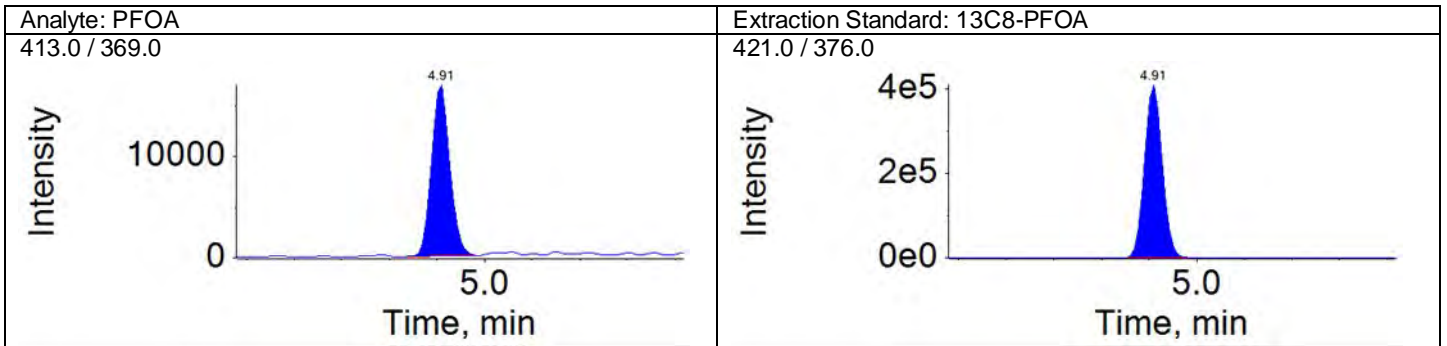
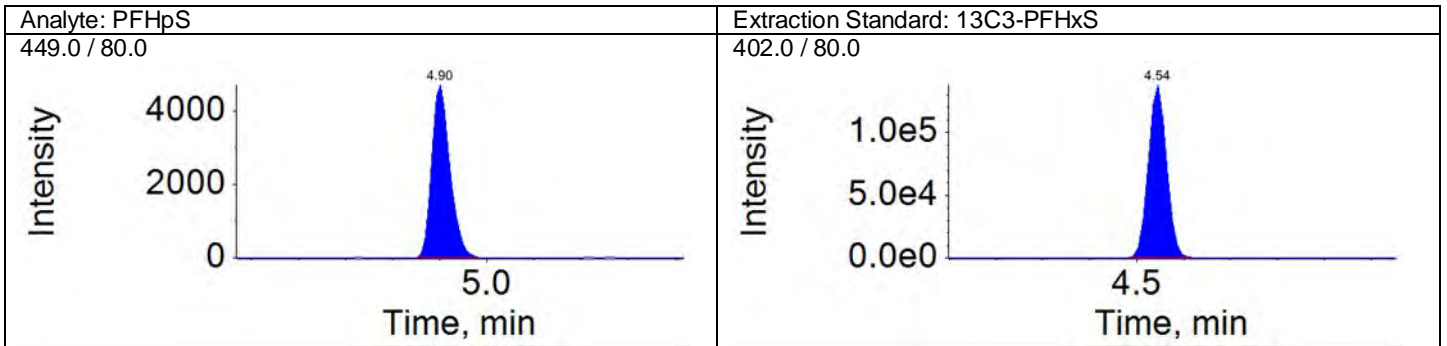
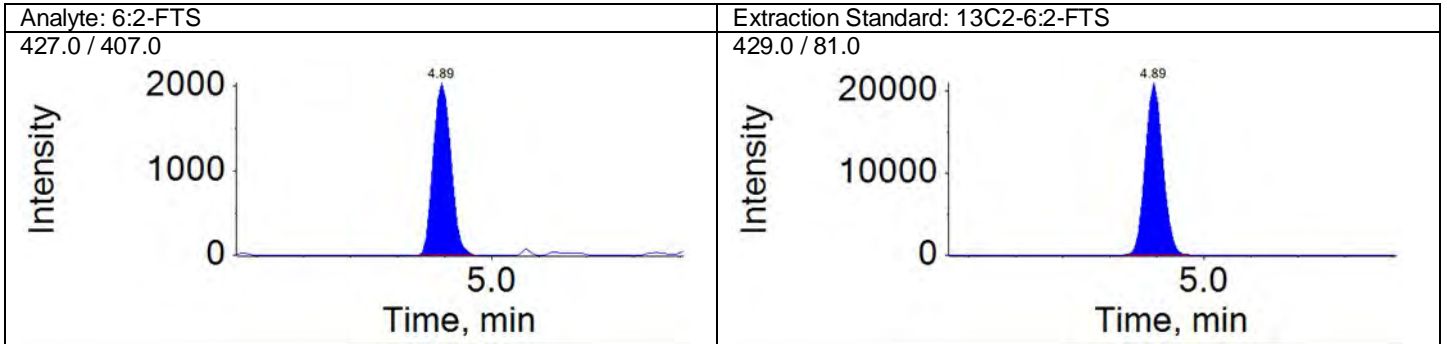
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



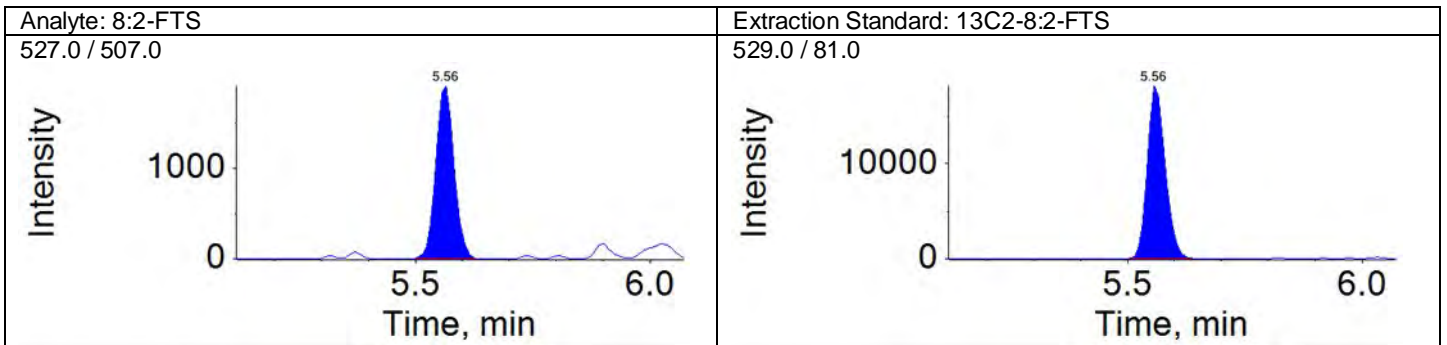
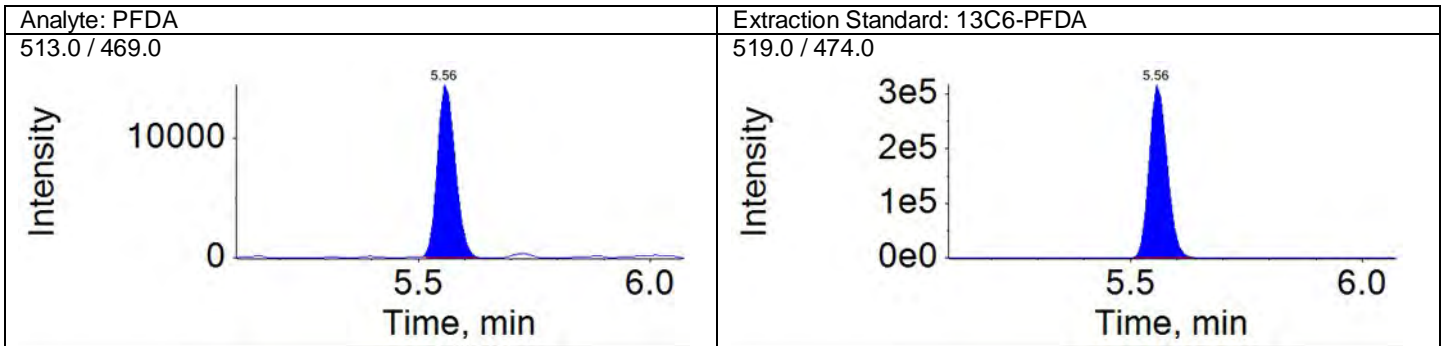
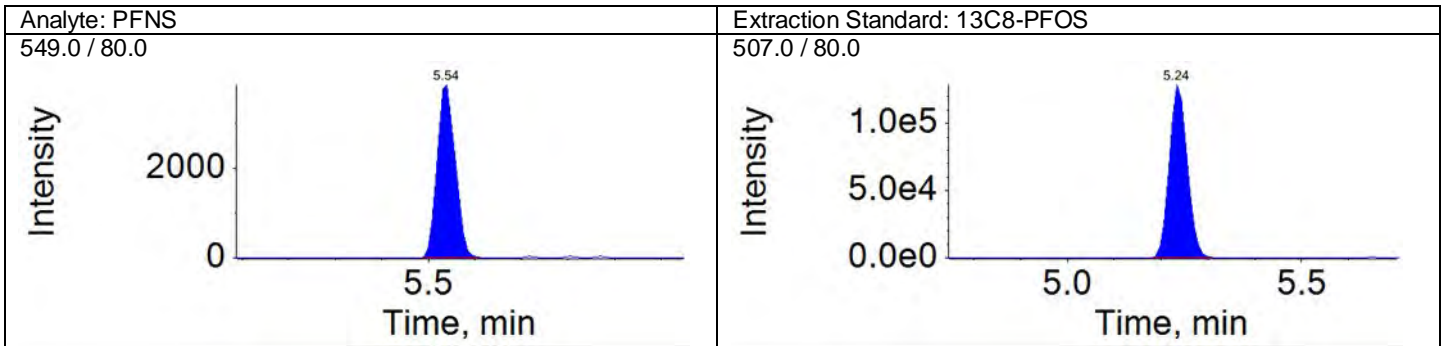
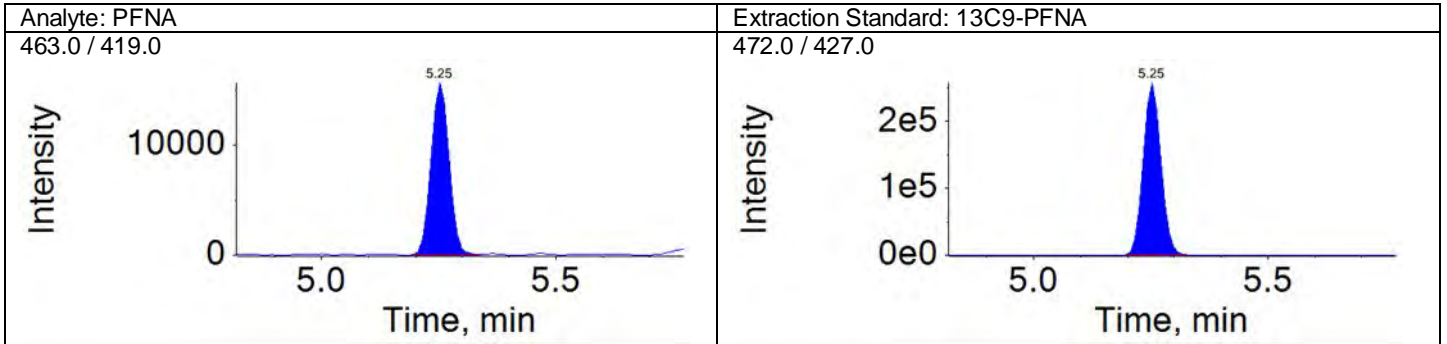
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
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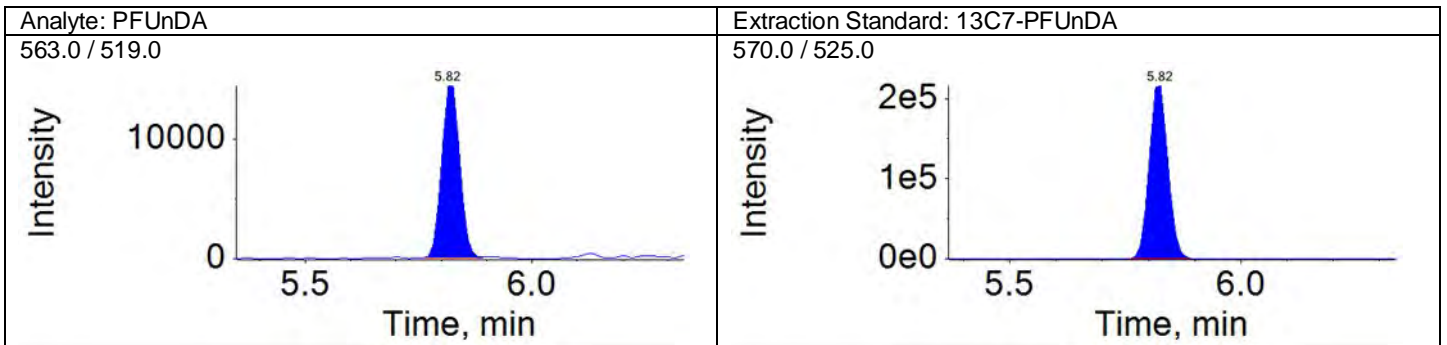
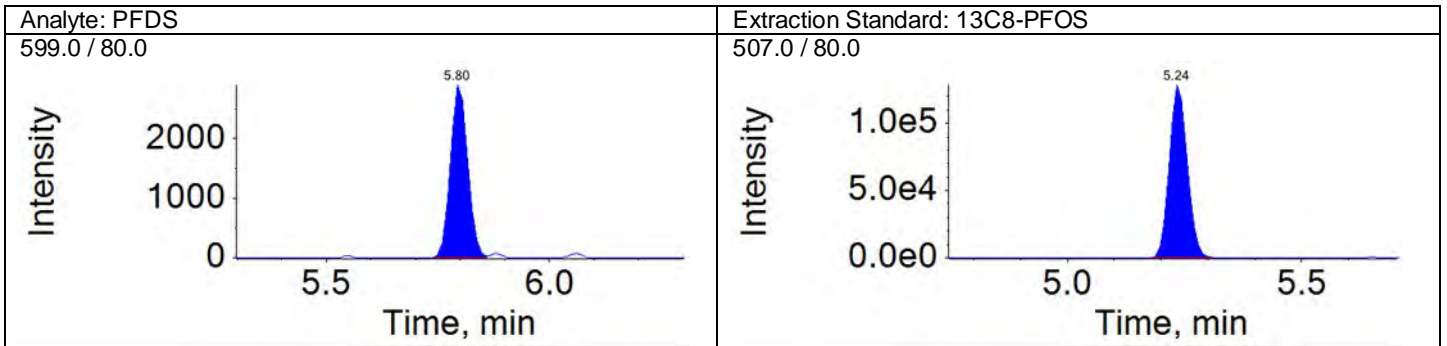
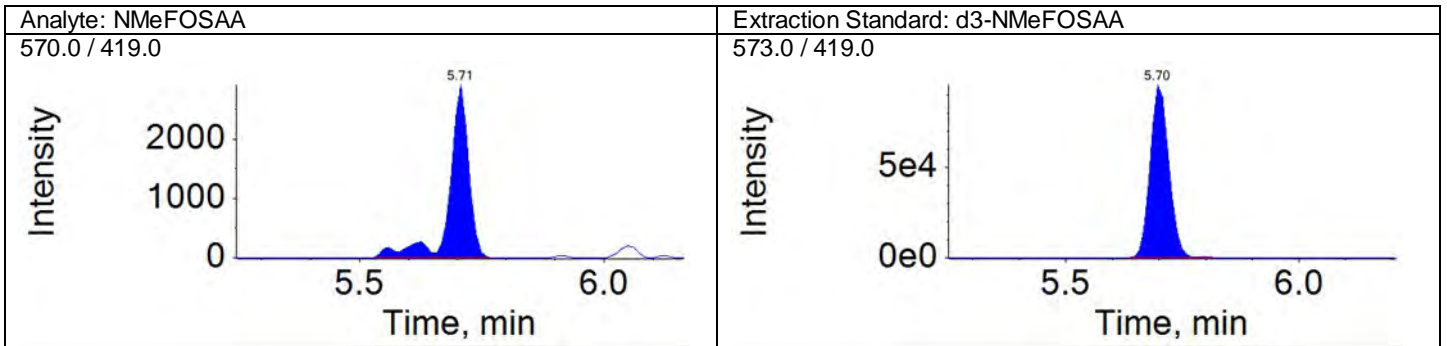
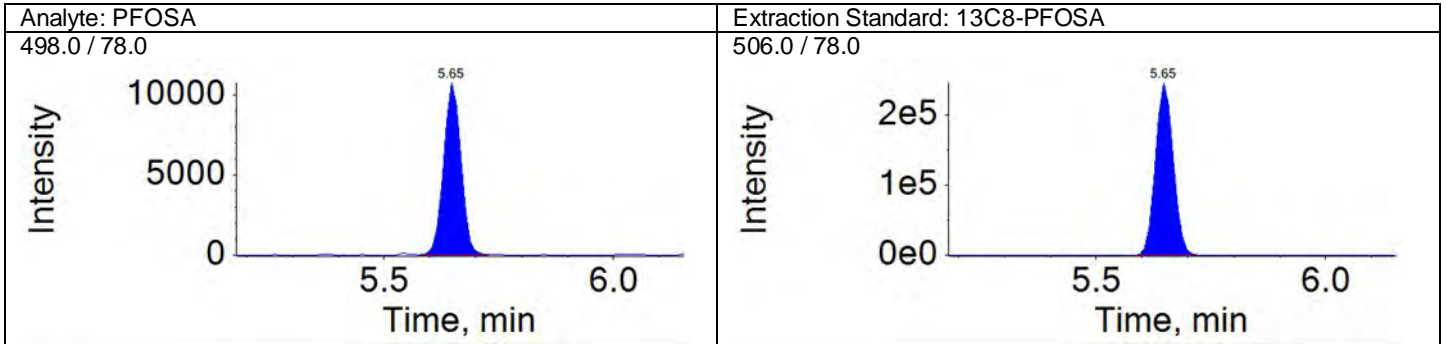
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Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

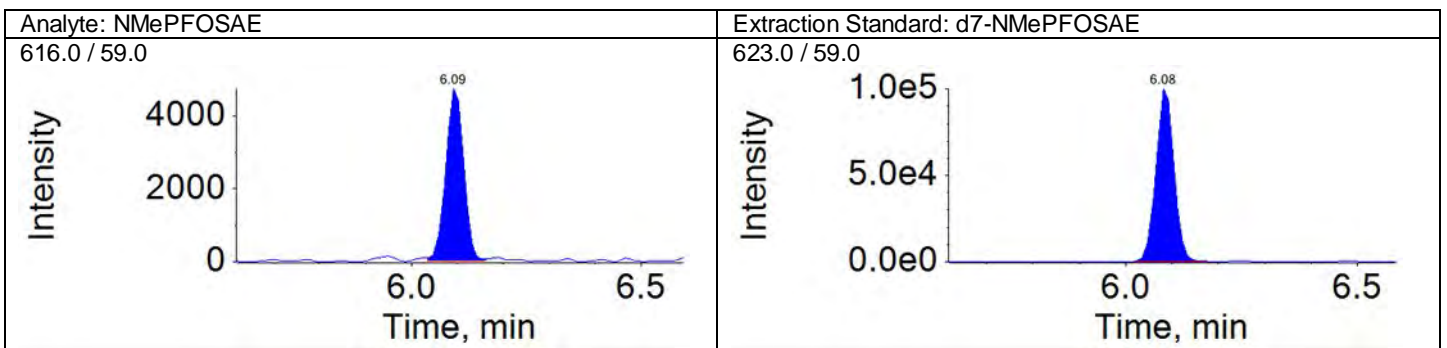
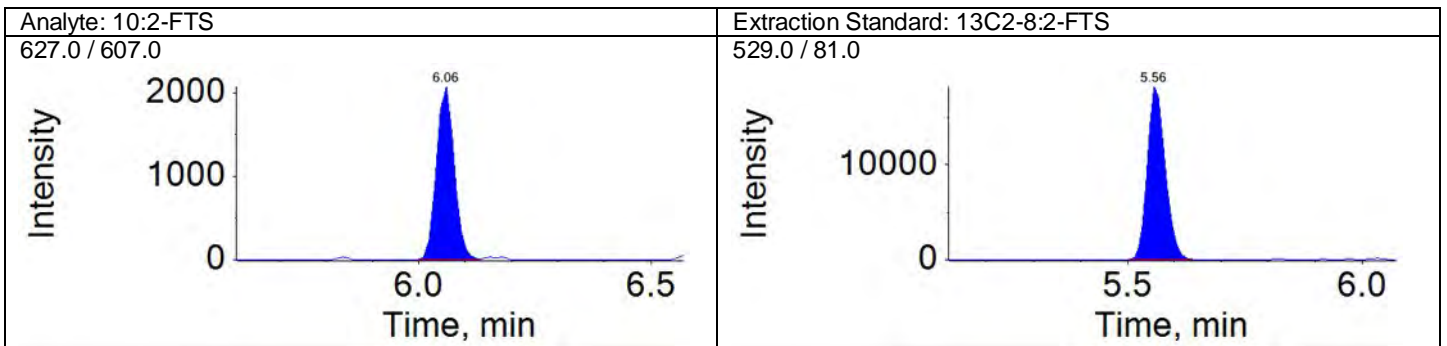
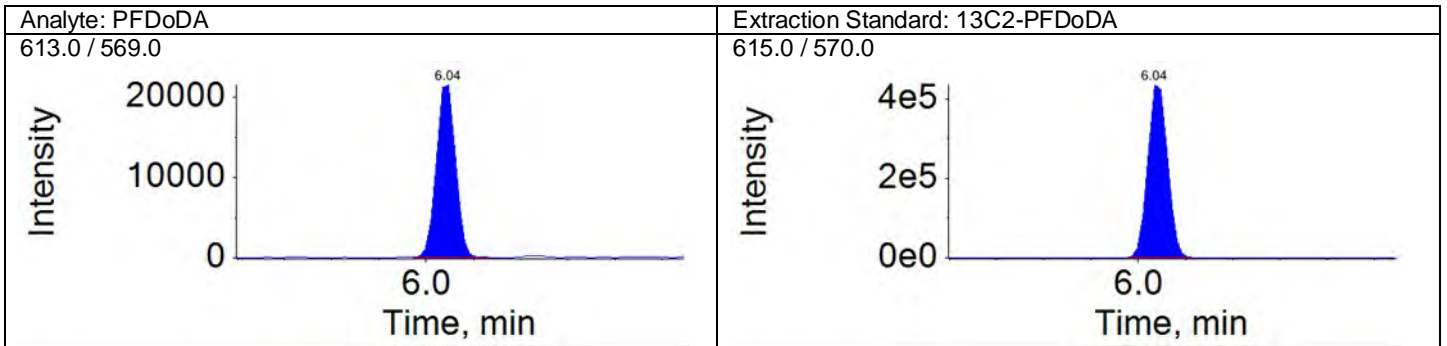
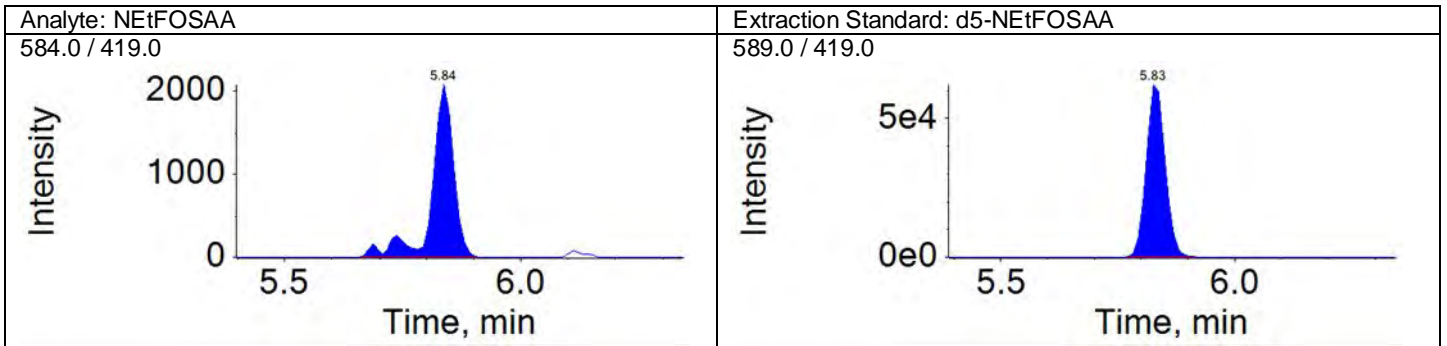
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Acquisition Method: 18AUG13\_3uL.dam





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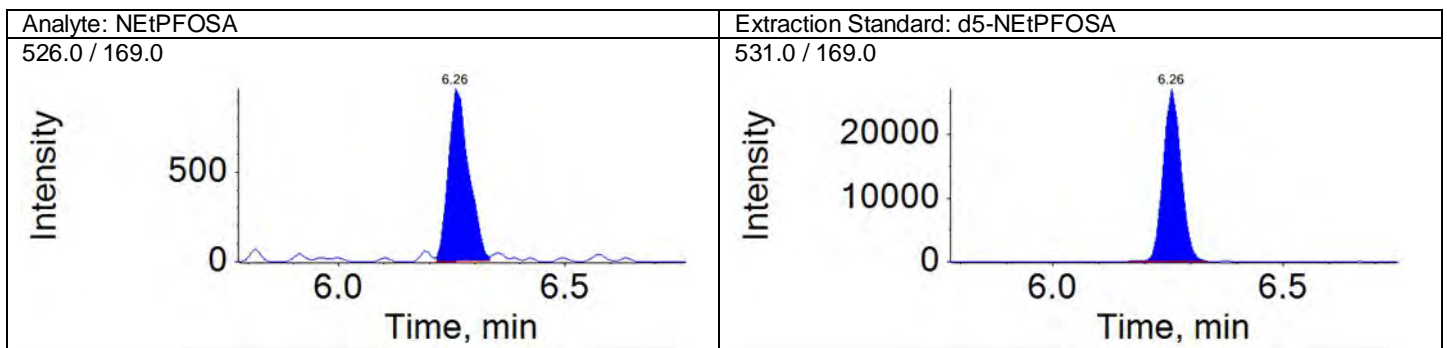
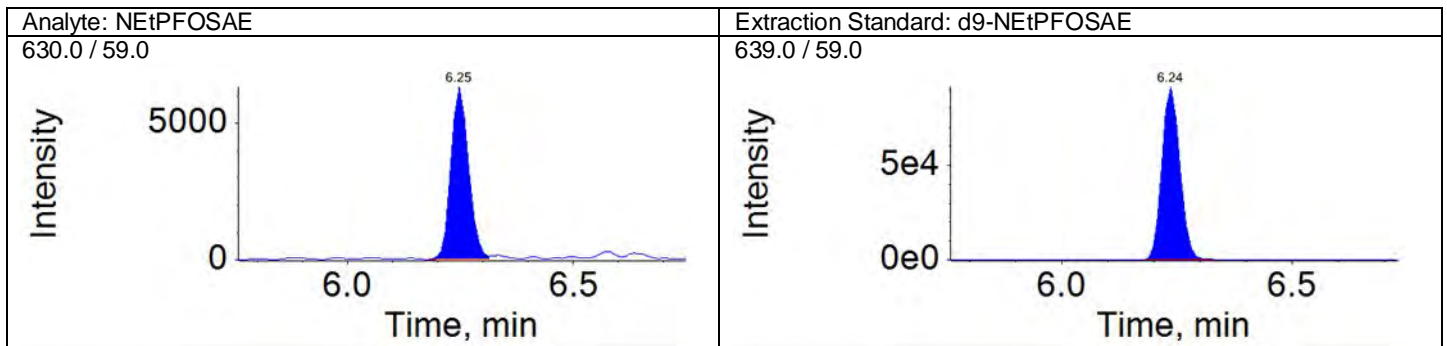
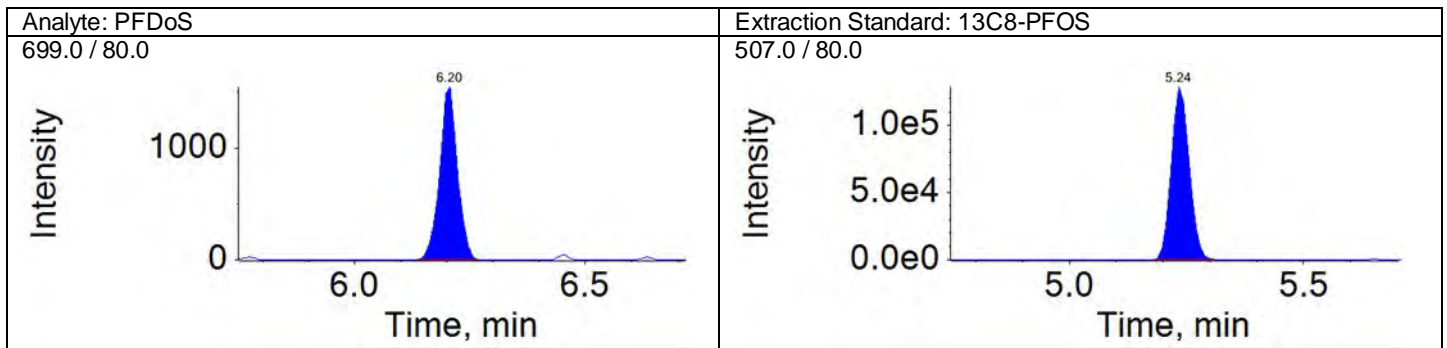
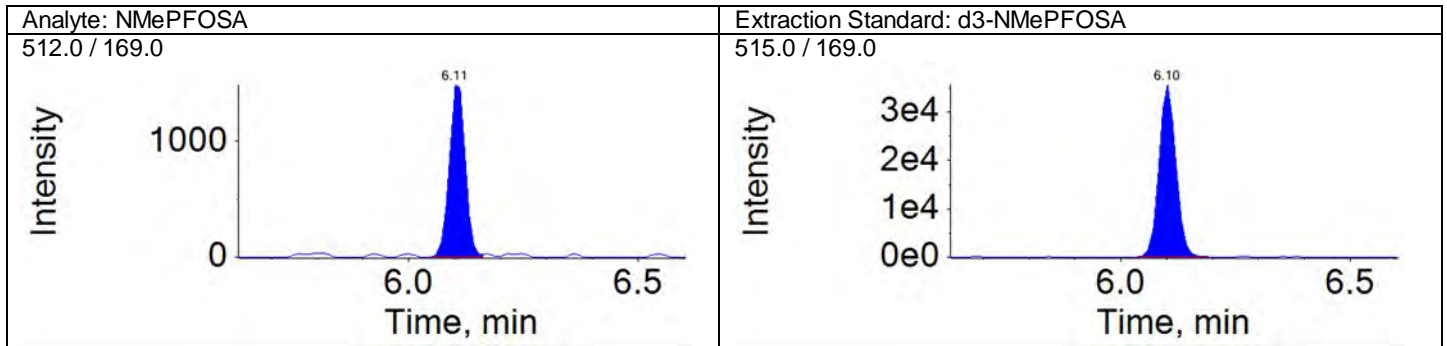
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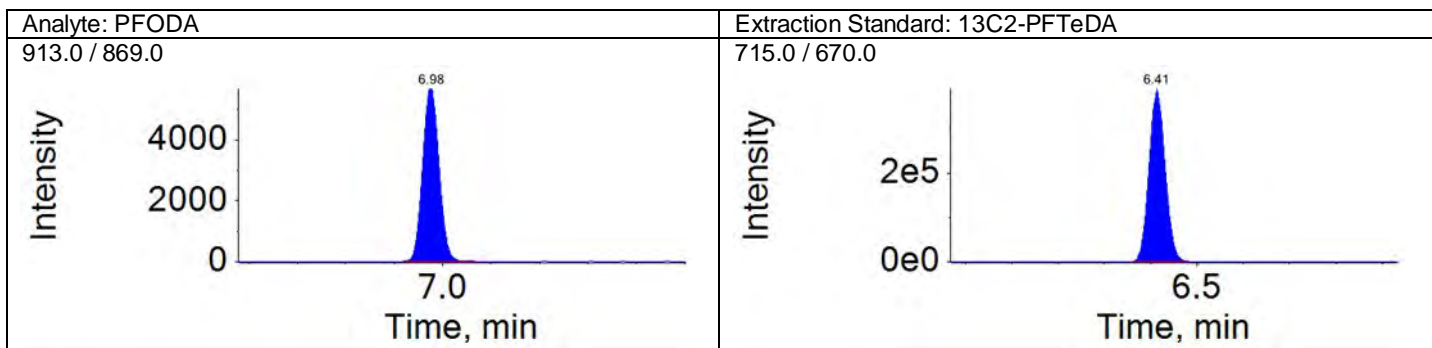
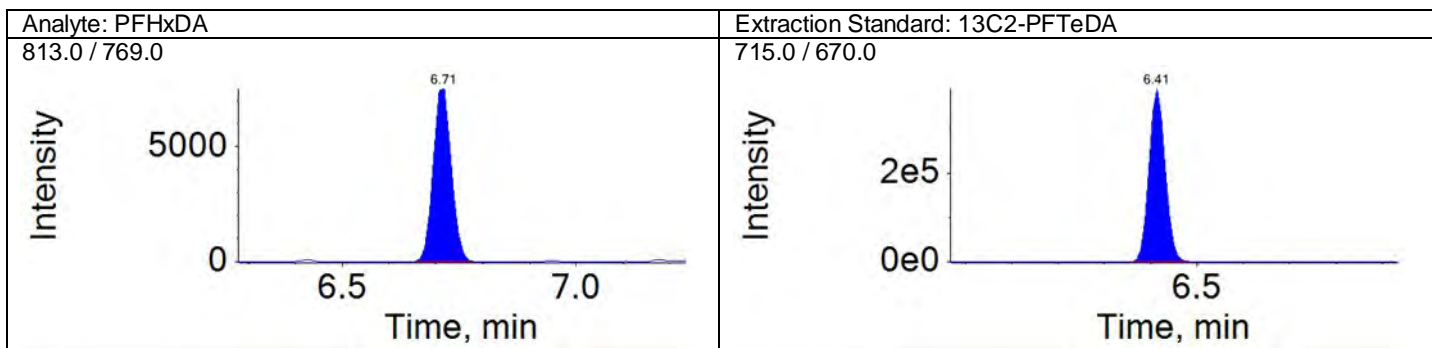
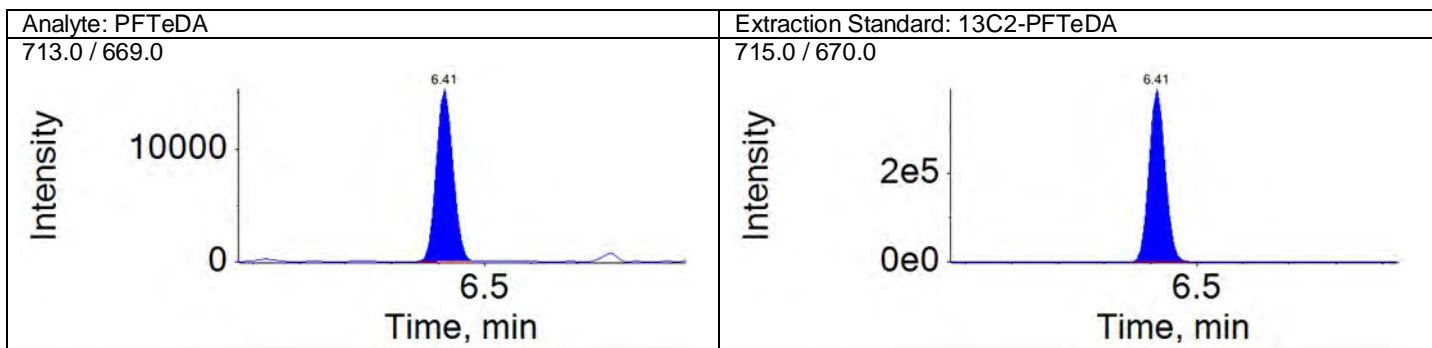
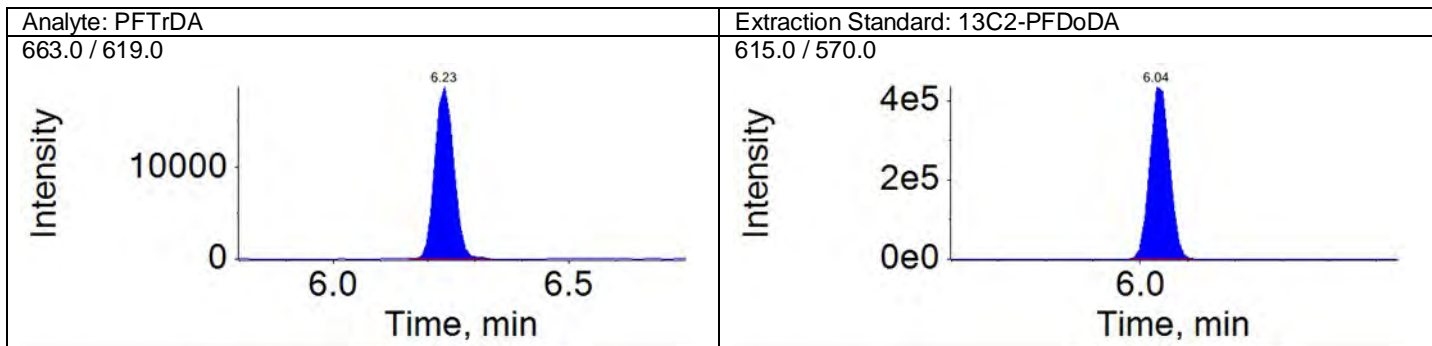
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



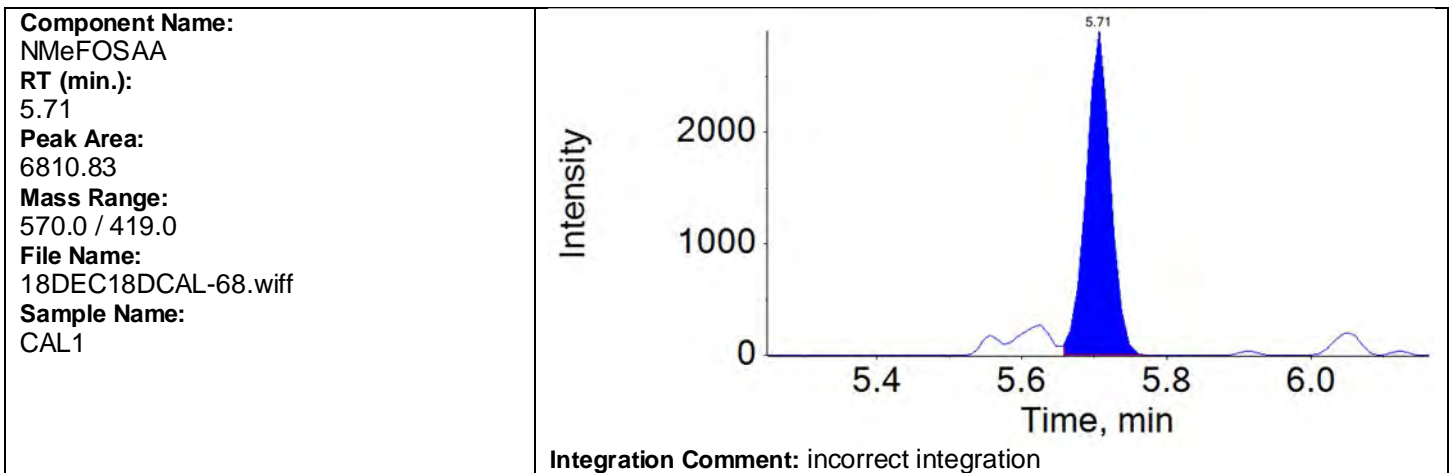
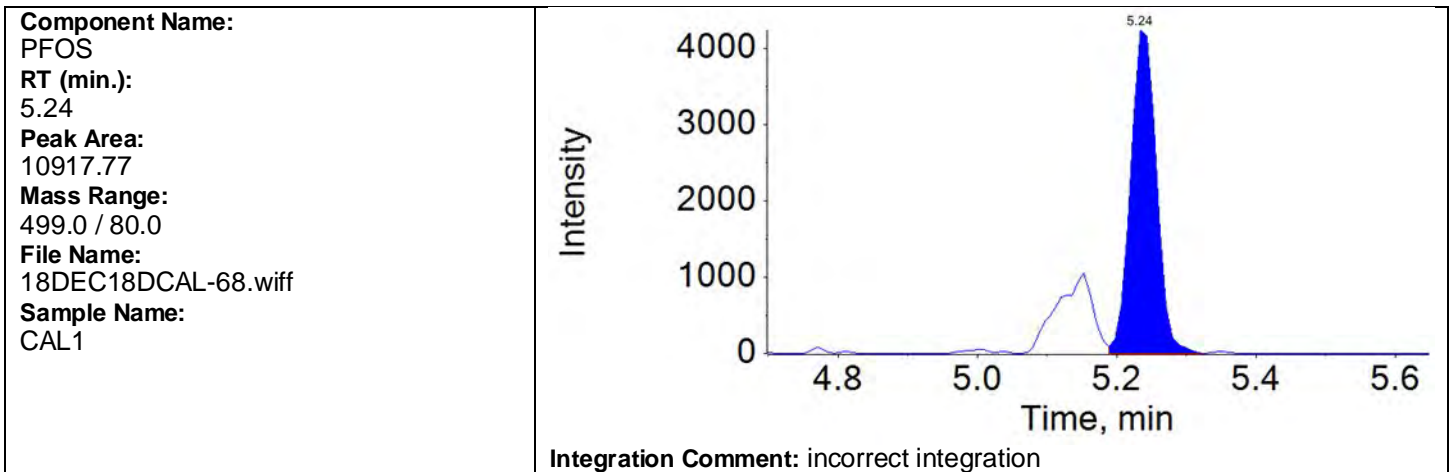
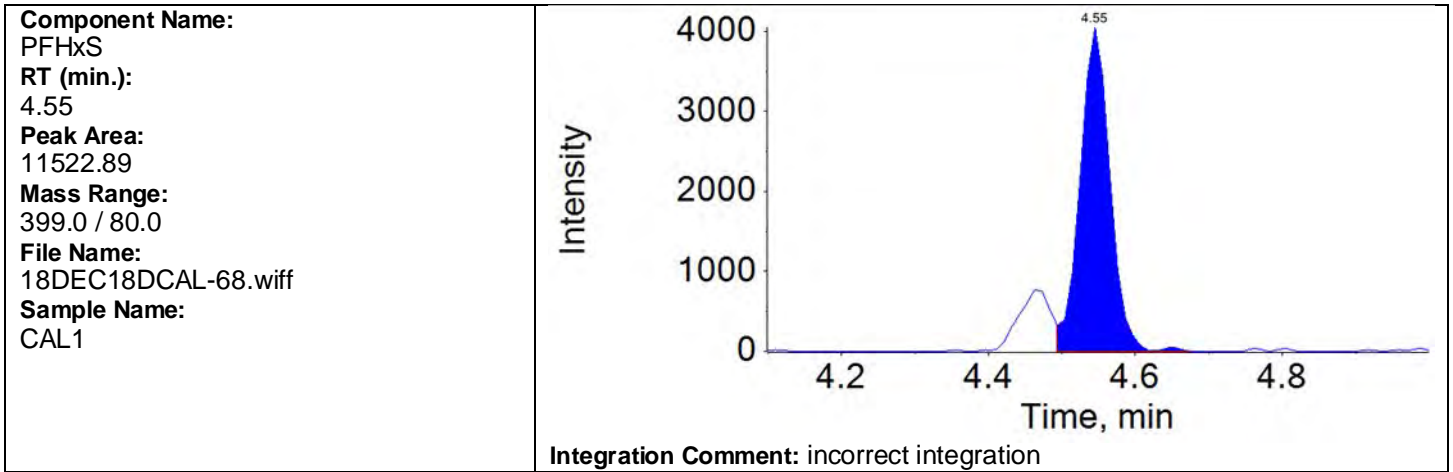
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



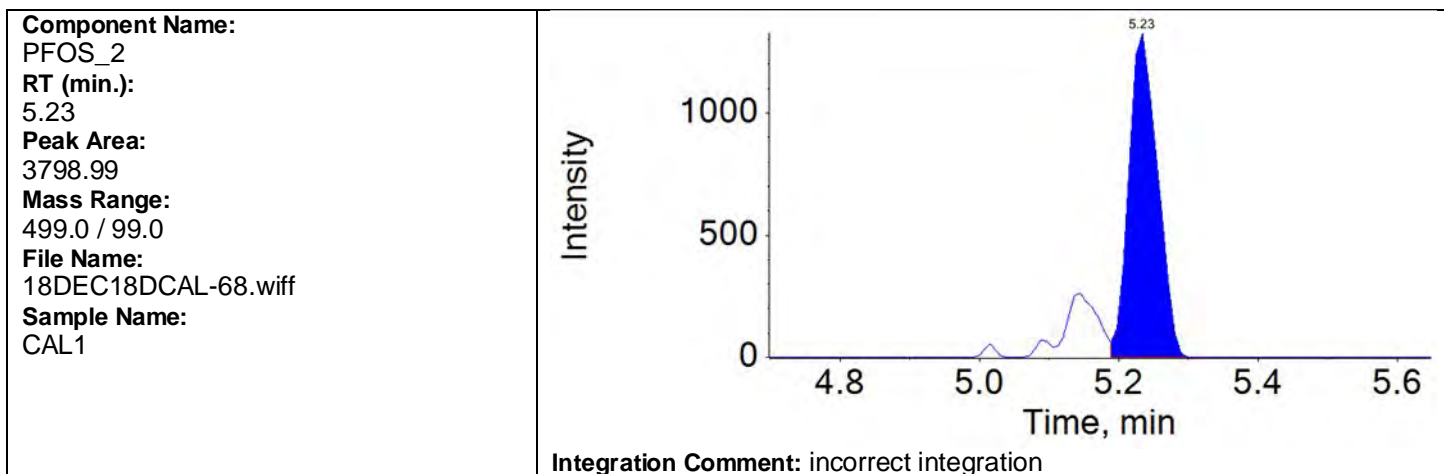
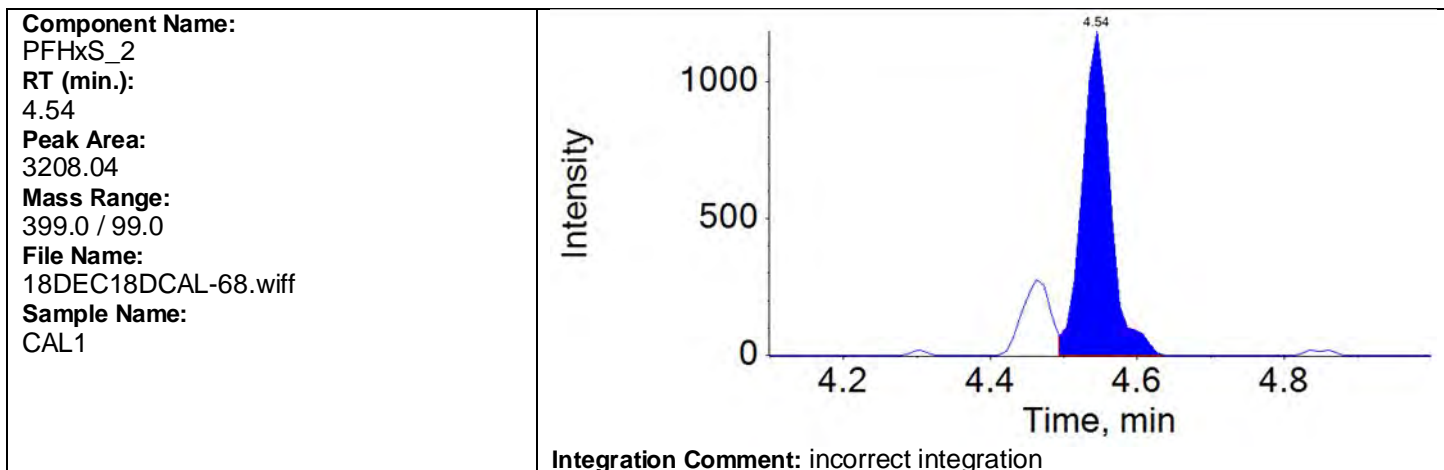
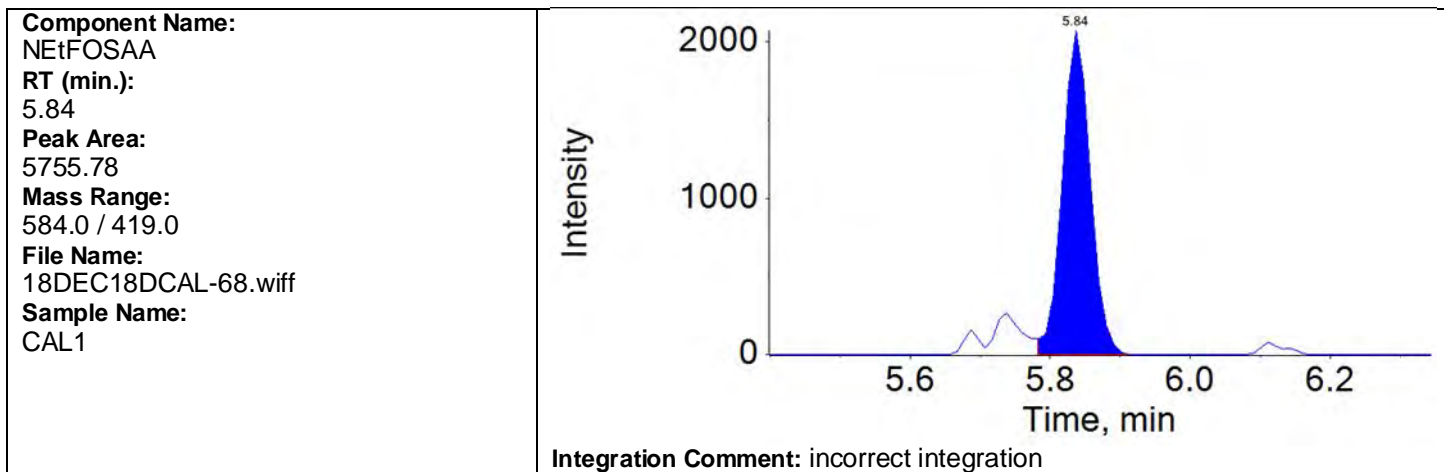
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Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



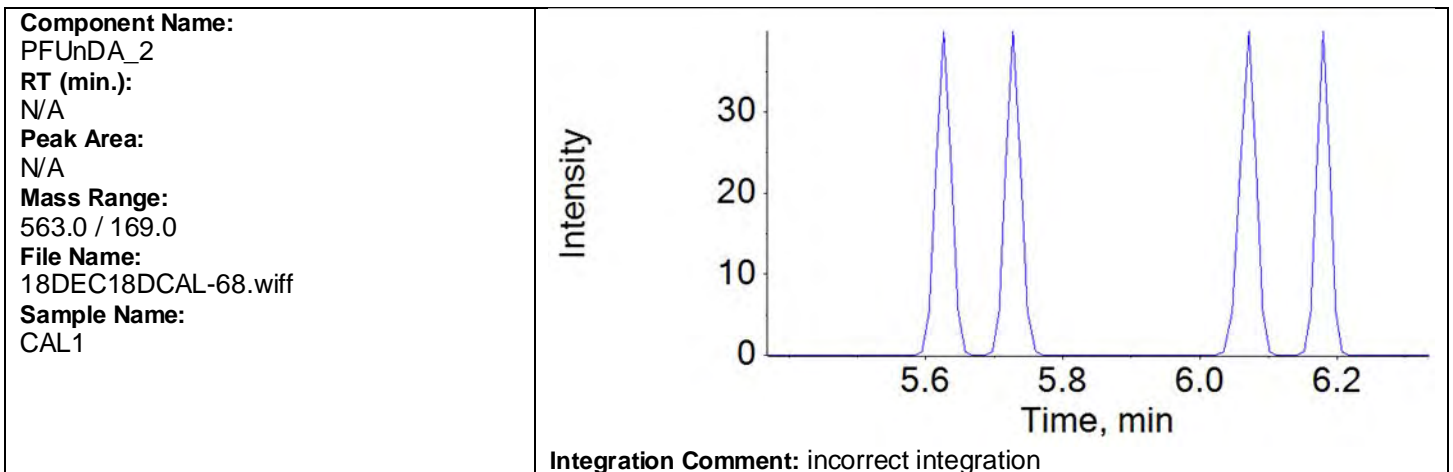
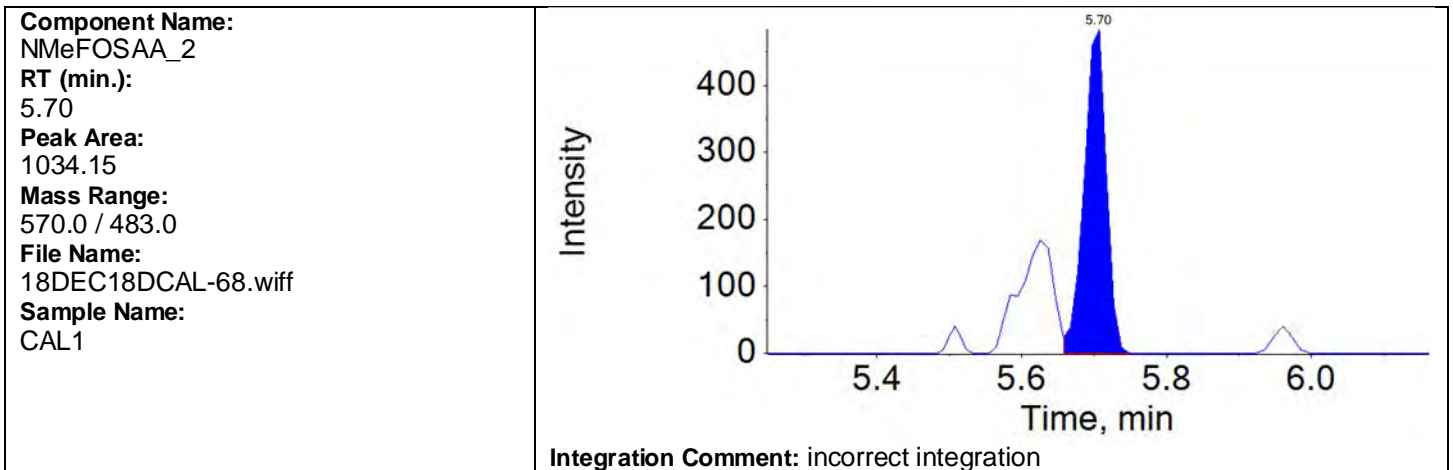
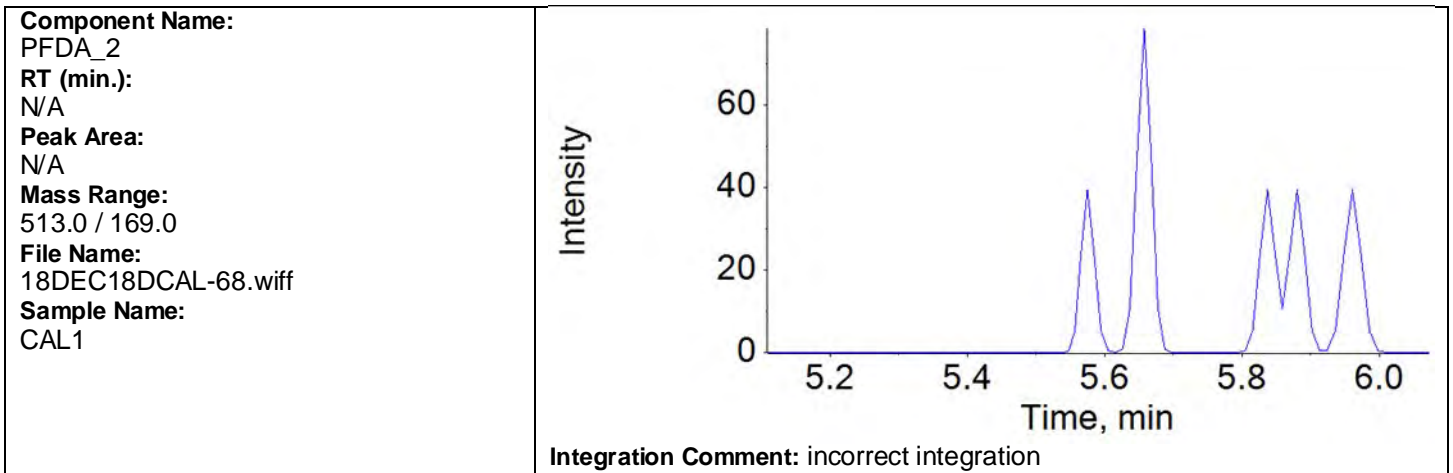
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Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

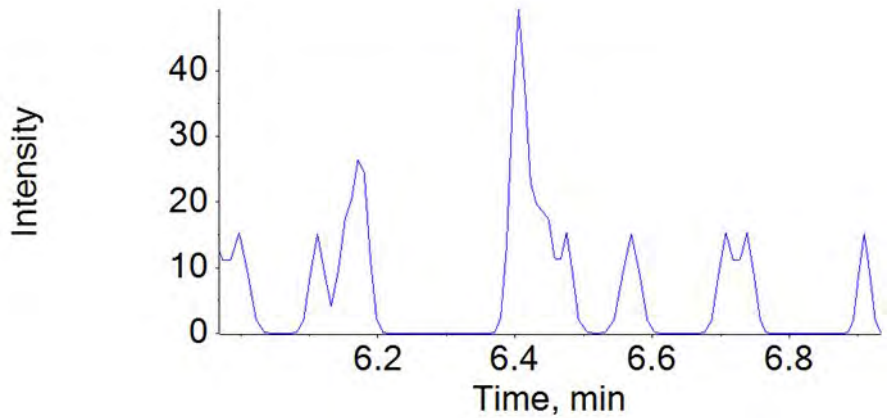




Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
PFTeDA\_2  
RT (min.):  
N/A  
Peak Area:  
N/A  
Mass Range:  
713.0 / 169.0  
File Name:  
18DEC18DCAL-68.wiff  
Sample Name:  
CAL1



Integration Comment: incorrect integration

**Results Table Name:** 18DEC18DCAL  
**Results Table Date:** 12/19/2018 9:34:01 AM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

Ion Ratio Report

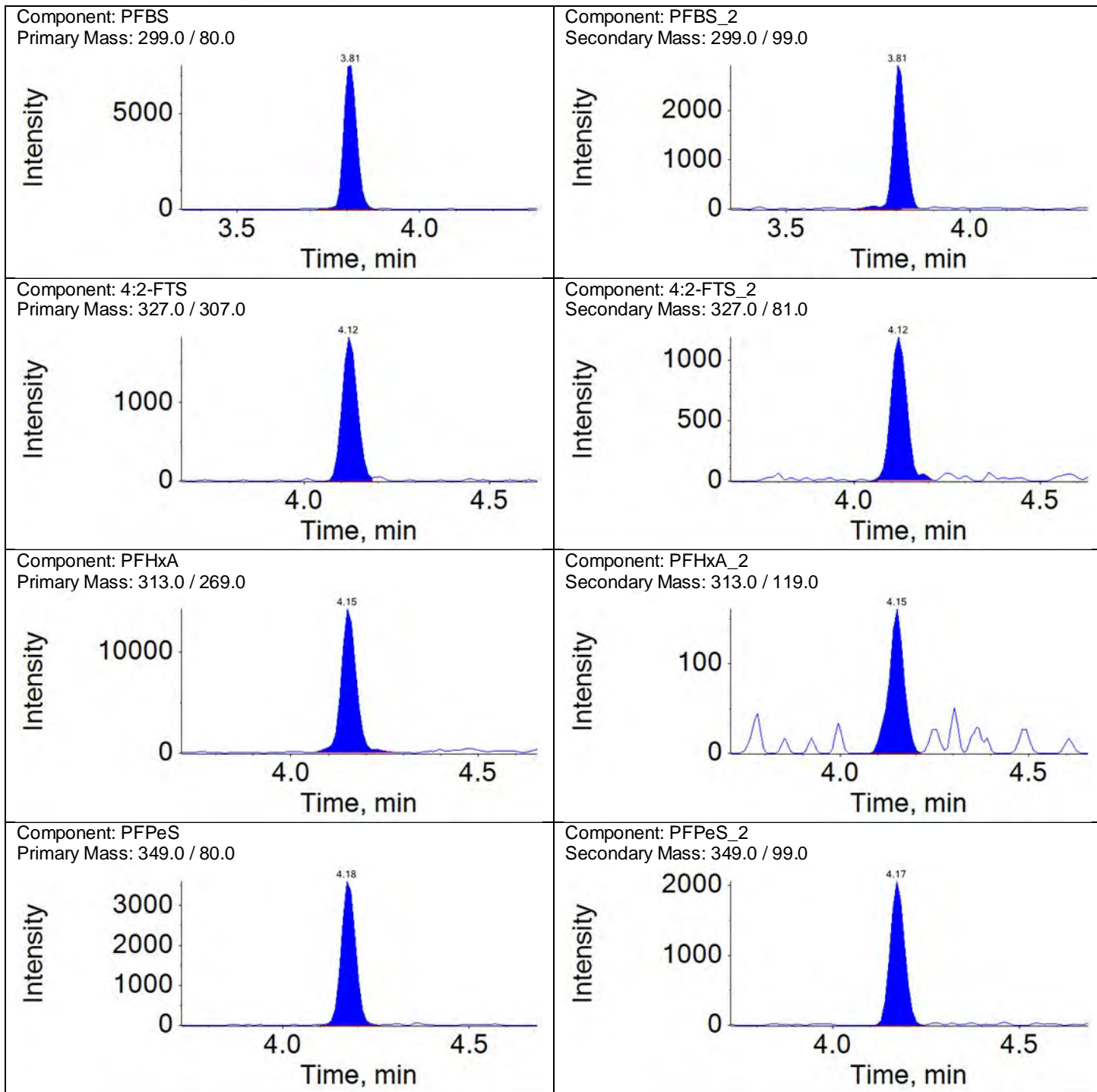
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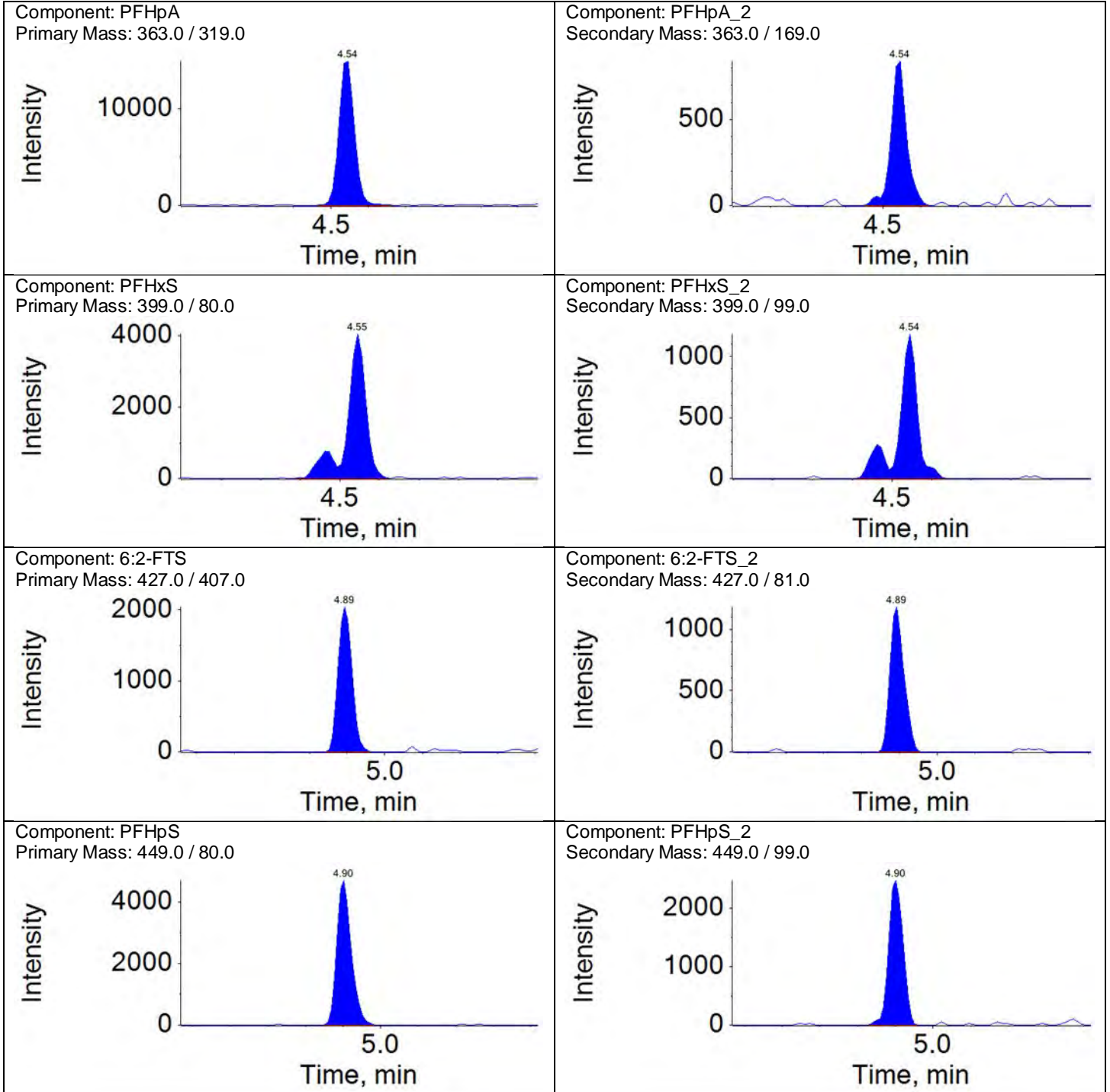
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File Name: 18DEC18DCAL-68.wiff

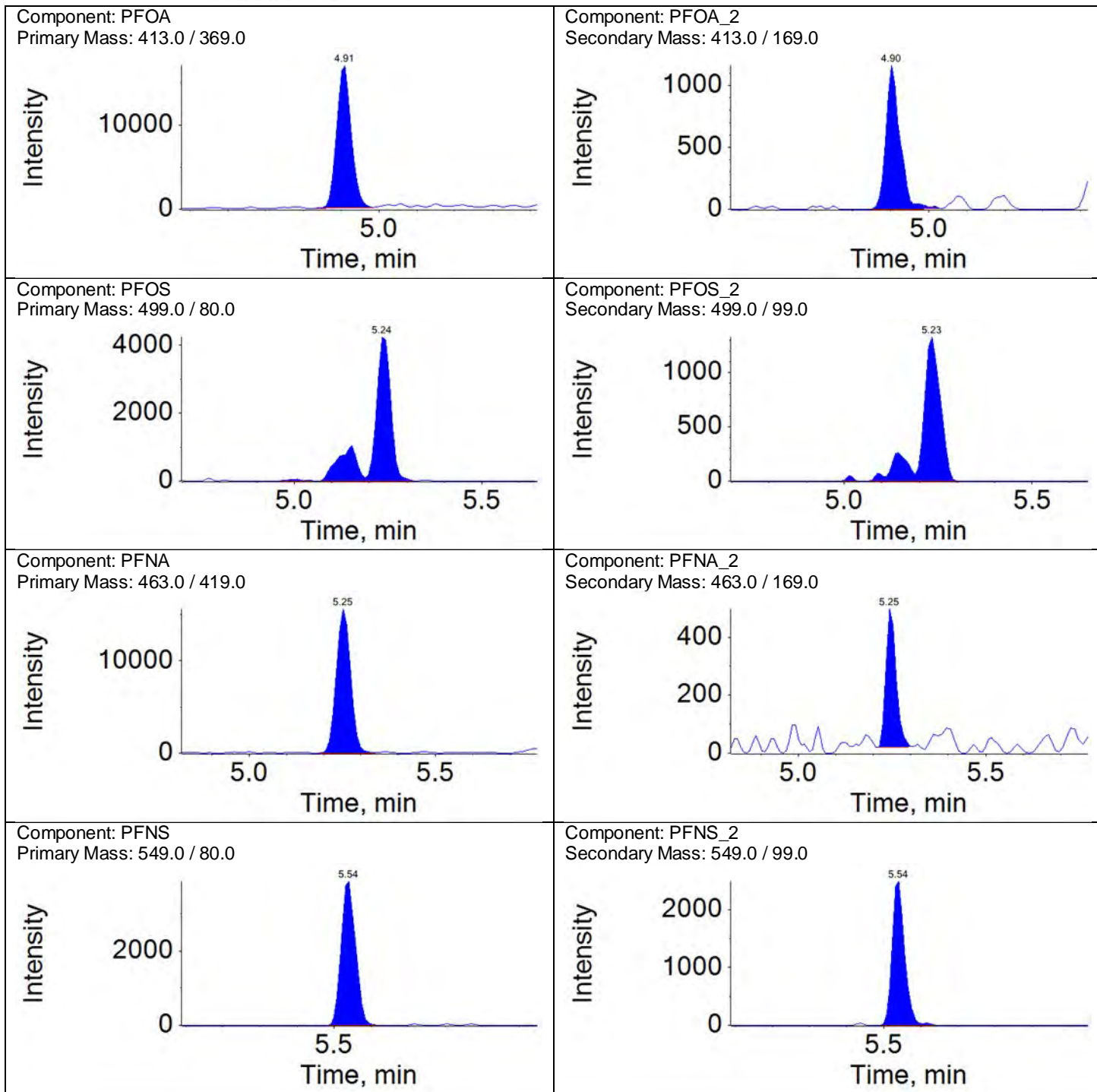
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PFBS_2	3.81	1.00	6770.16	A	0.3686	0.3669	0	50	
4:2-FTS	4.12	1.00	5256.25	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	3555.75	A	0.6123	0.6765	10	50	
PFHxA	4.15	1.00	39902.90	A	1.0000	1.0000			
PFHxA_2	4.15	1.00	446.47	A	0.0115	0.0112	-2	50	
PFPeS	4.18	1.10	9547.00	A	1.0000	1.0000			
PFPeS_2	4.17	1.10	5471.39	A	0.5256	0.5731	9	50	
PFHpA	4.54	1.00	42890.86	A	1.0000	1.0000			
PFHpA_2	4.54	1.00	2444.76	A	0.0547	0.0570	4	50	
PFHxS	4.55	1.00	13770.16	M	1.0000	1.0000			
PFHxS_2	4.54	1.00	3938.04	M	0.3359	0.2860	-15	50	
6:2-FTS	4.89	1.00	5250.60	A	1.0000	1.0000			
6:2-FTS_2	4.89	1.00	3056.87	A	0.6344	0.5822	-8	50	
PFHpS	4.90	1.08	12616.61	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	6590.32	A	0.4110	0.5224	27	50	
PFOA	4.91	1.00	45038.04	A	1.0000	1.0000			
PFOA_2	4.90	1.00	2973.34	A	0.0590	0.0660	12	50	
PFOS	5.24	1.00	14855.83	M	1.0000	1.0000			
PFOS_2	5.23	1.00	4748.77	M	0.2980	0.3197	7	50	
PFNA	5.25	1.00	41369.06	A	1.0000	1.0000			
PFNA_2	5.25	1.00	899.69	A	0.0214	0.0217	1	50	
PFNS	5.54	1.06	10377.64	A	1.0000	1.0000			
PFNS_2	5.54	1.06	5788.90	A	0.4608	0.5578	21	50	
PFDA	5.56	1.00	38431.05	A	1.0000	1.0000			
PFDA_2	5.57	1.00	55.91	M	0.0064	0.0015	-77	50	OOS
8:2-FTS	5.56	1.00	5170.26	A	1.0000	1.0000			
8:2-FTS_2	5.56	1.00	3090.85	A	0.5879	0.5978	2	50	
NMeFOSAA	5.71	1.00	7941.11	M	1.0000	1.0000			
NMeFOSAA_2	5.70	1.00	1598.82	M	0.2625	0.2013	-23	50	
PFDS	5.80	1.11	7762.53	A	1.0000	1.0000			
PFDS_2	5.80	1.11	4089.69	A	0.4962	0.5269	6	50	
PFOA_2	5.82	1.00	40073.99	A	1.0000	1.0000			
PFOA_2	5.73	0.98	61.65	M	0.0035	0.0015	-57	50	OOS
NEtFOSAA	5.84	1.00	6705.24	M	1.0000	1.0000			
NEtFOSAA_2	5.84	1.00	4870.36	A	0.6883	0.7264	6	50	
PFOA_2	6.04	1.00	61231.48	A	1.0000	1.0000			
PFOA_2	6.04	1.00	815.08	A	0.0134	0.0133	-1	50	
10:2-FTS	6.06	1.09	5506.39	A	1.0000	1.0000			
10:2-FTS_2	6.05	1.09	4345.65	A	0.7018	0.7892	12	50	
PFOA_2	6.23	1.03	52549.49	A	1.0000	1.0000			
PFOA_2	6.24	1.03	321.50	A	0.0093	0.0061	-35	50	
PFOA_2	6.41	1.00	37886.50	A	1.0000	1.0000			
PFOA_2	6.41	1.00	140.12	M	0.0058	0.0037	-37	50	
PFOA_2	6.71	1.05	20158.26	A	1.0000	1.0000			
PFOA_2	6.71	1.05	1366.33	A	0.0656	0.0678	3	50	
PFOA_2	6.98	1.09	13384.23	A	1.0000	1.0000			
PFOA_2	6.97	1.09	379.88	A	0.0273	0.0284	4	50	

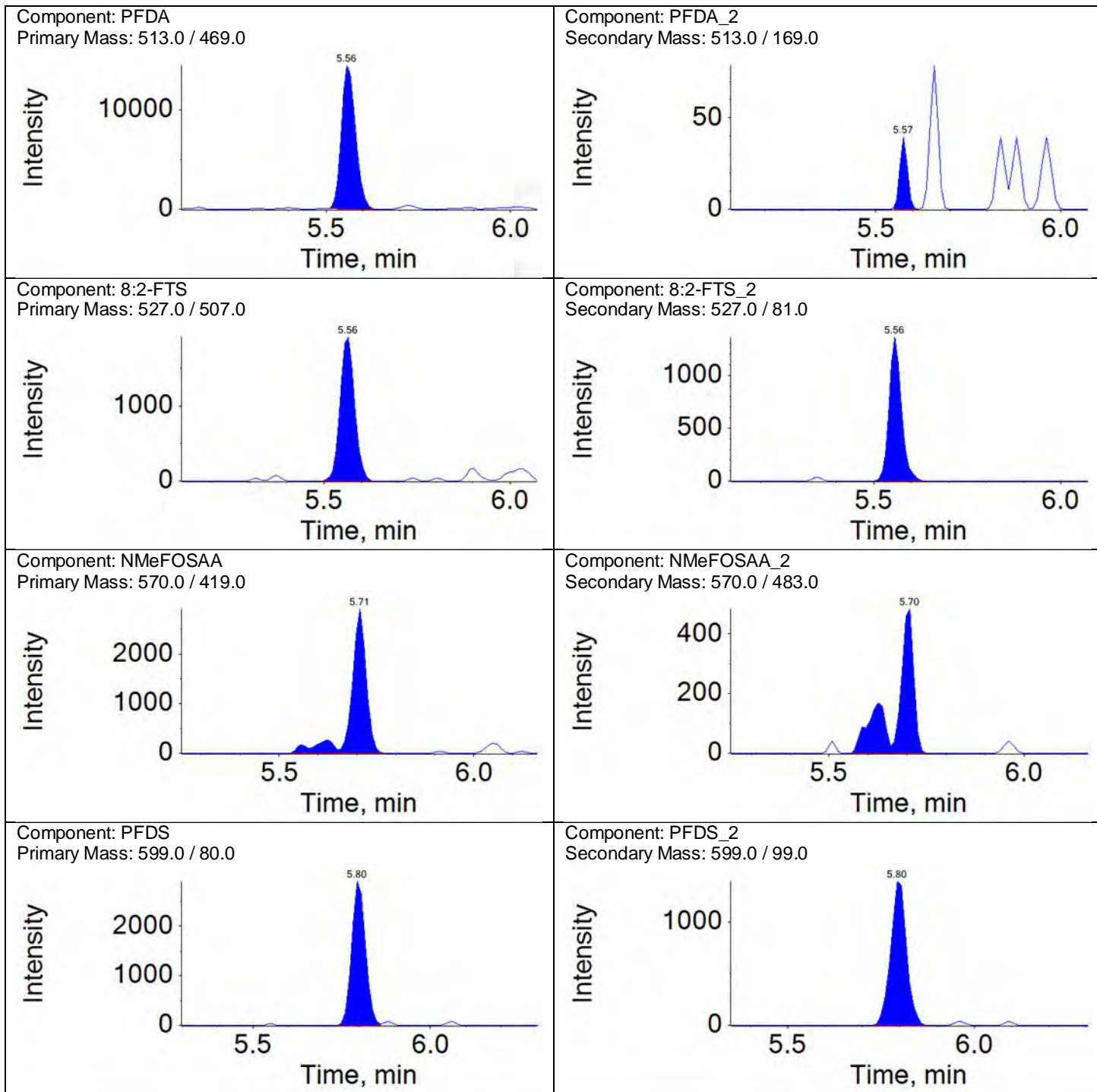


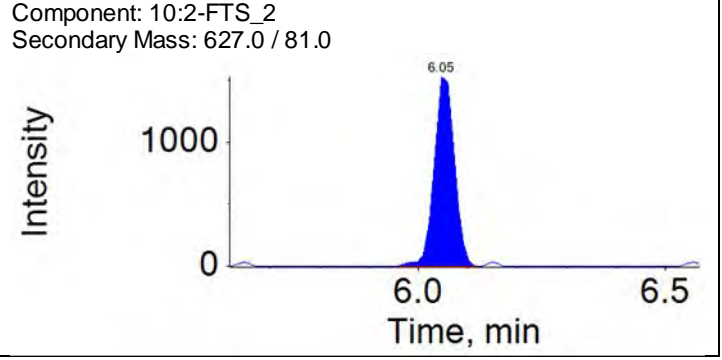
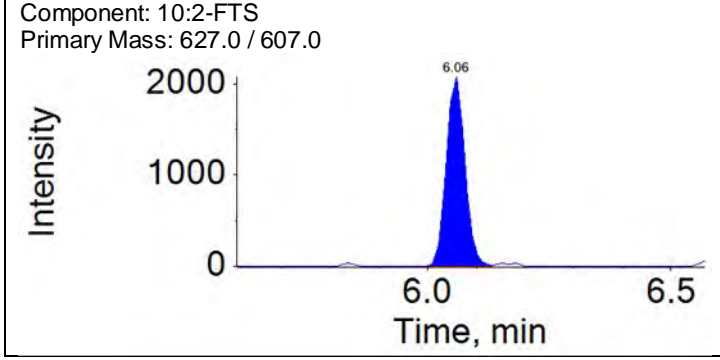
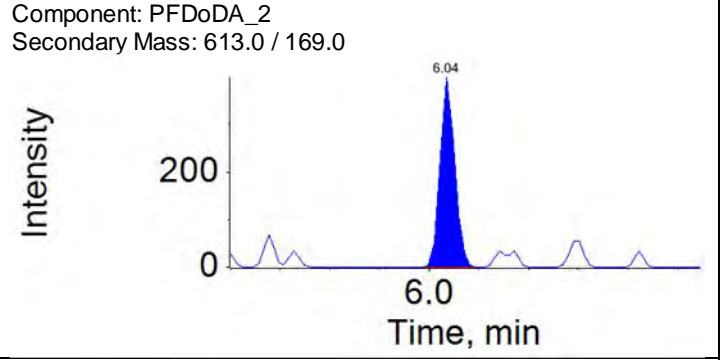
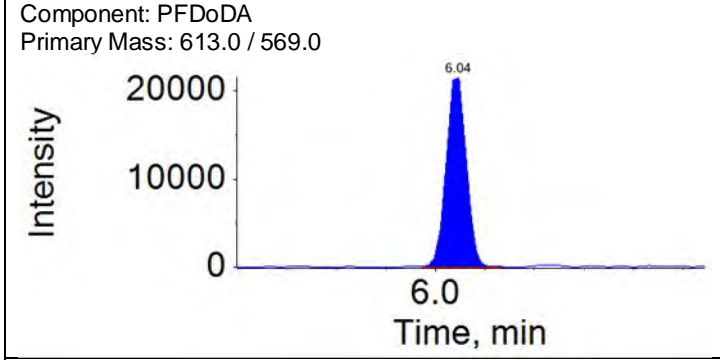
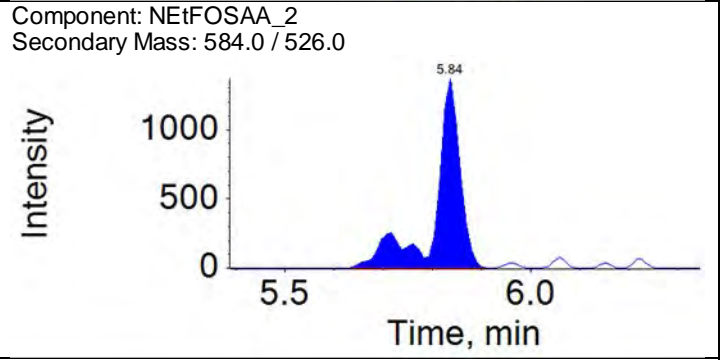
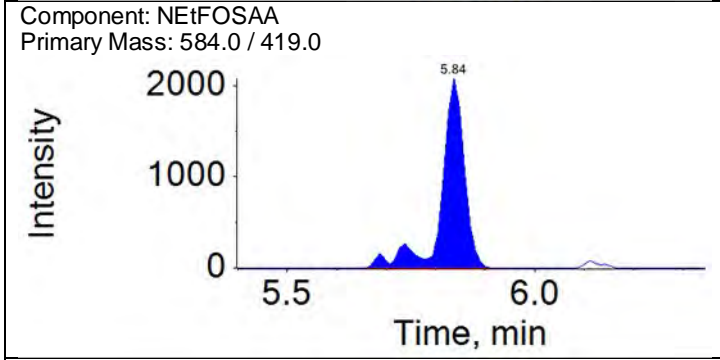
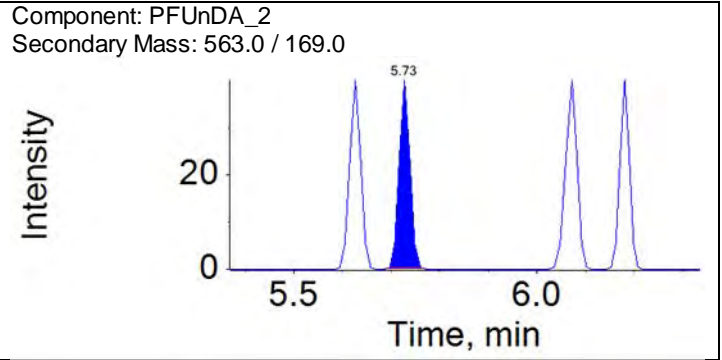
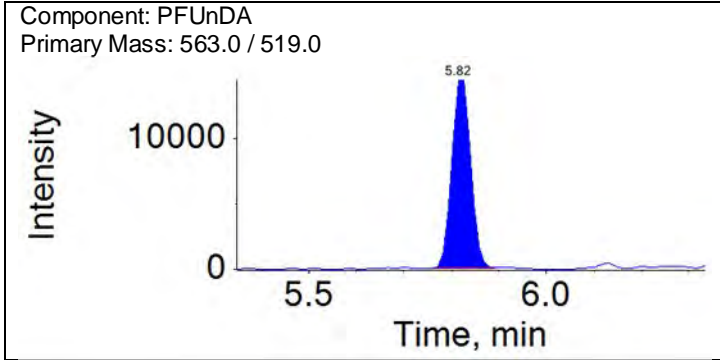


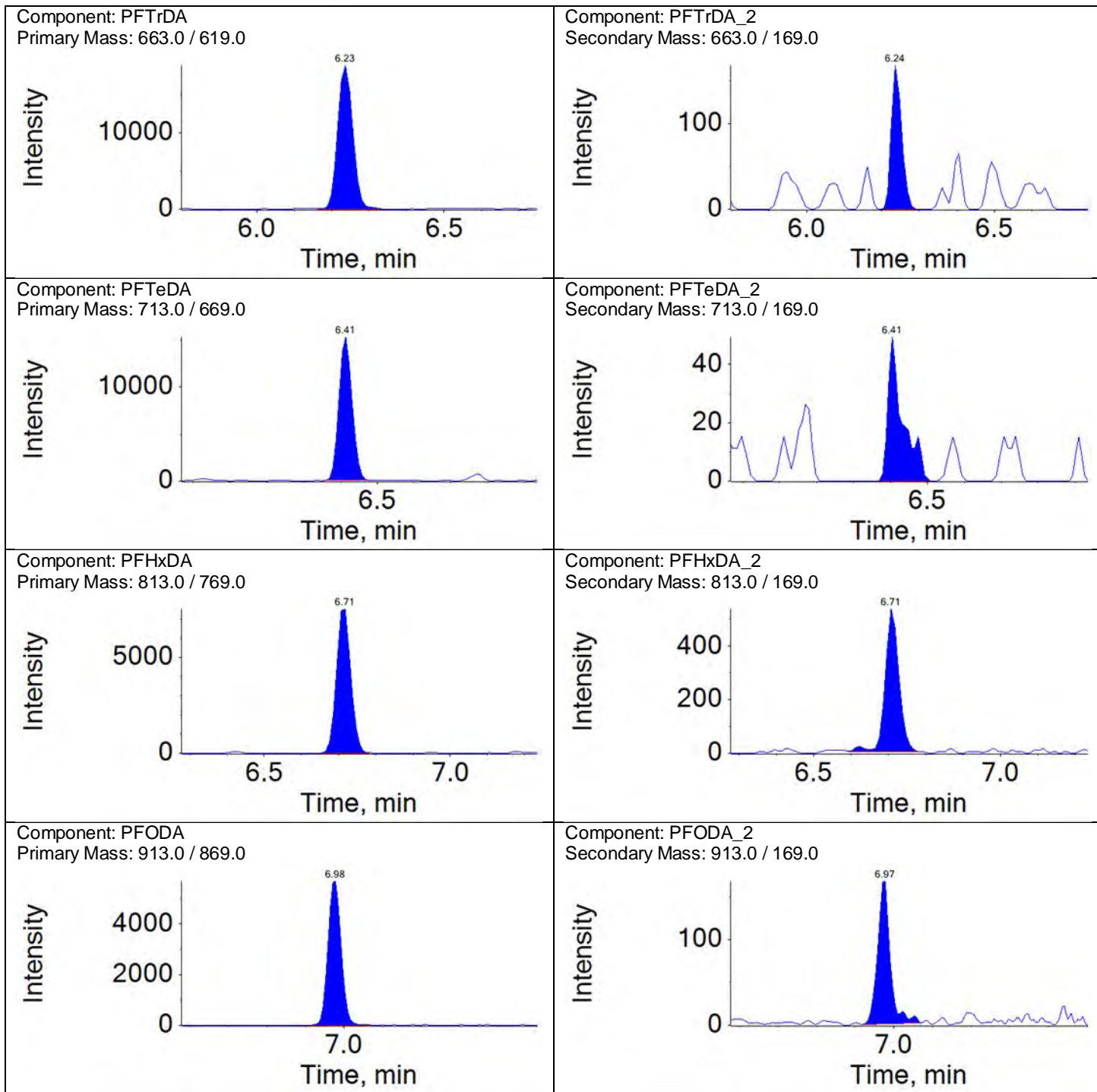














ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL2	Data File:	18DEC18DCAL-69.wiff
Sample ID:	CALBRN21833C	Acquis Date:	2018-12-18T23:43:56
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	4	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	964316.7	941251.6	2	50	
13C2-PFOA	5.0	523533.3	485595.3	8	50	
13C4-PFOS	4.8	310106.6	292182.6	6	50	
13C2-PFDA	5.0	486052.7	467216.0	4	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1122194.0	13C3-PFBA	964316.7	1.164	5.000	5.153	103	70-130	
E13C5-PFPeA	1076428.7	13C3-PFBA	964316.7	1.116	5.000	5.205	104	70-130	
E13C3-PFBS	471423.1	13C3-PFBA	964316.7	0.489	4.650	4.760	102	70-130	
E13C2-4:2-FTS	65525.8	13C2-PFOA	523533.3	0.125	4.670	4.754	102	70-130	
E13C5-PFHxA	763341.7	13C2-PFOA	523533.3	1.458	5.000	5.215	104	70-130	
E13C3-PFHxS	354452.9	13C2-PFOA	523533.3	0.677	4.730	5.123	108	70-130	
E13C4-PFHpA	605519.2	13C2-PFOA	523533.3	1.157	5.000	4.996	100	70-130	
E13C2-6:2-FTS	53117.9	13C2-PFOA	523533.3	0.101	4.750	5.105	107	70-130	
E13C8-PFOA	1027982.0	13C2-PFOA	523533.3	1.964	5.000	5.399	108	70-130	
E13C8-PFOS	349492.7	13C4-PFOS	310106.6	1.127	4.780	5.040	105	70-130	
E13C9-PFNA	683029.4	13C4-PFOS	310106.6	2.203	5.000	5.011	100	70-130	
E13C6-PFDA	929390.9	13C2-PFDA	486052.7	1.912	5.000	5.447	109	70-130	
E13C2-8:2-FTS	46390.2	13C2-PFDA	486052.7	0.095	4.790	4.919	103	70-130	
E13C8-PFOSA	636077.5	13C2-PFDA	486052.7	1.309	5.000	5.096	102	70-130	
Ed3-NMeFOSAA	218152.2	13C2-PFDA	486052.7	0.449	5.000	4.938	99	70-130	
E13C7-PFUnDA	622971.7	13C2-PFDA	486052.7	1.282	5.000	5.365	107	70-130	
Ed5-NEtFOSAA	196235.0	13C2-PFDA	486052.7	0.404	5.000	5.948	119	70-130	
E13C2-PFDoDA	1229301.7	13C2-PFDA	486052.7	2.529	5.000	5.321	106	70-130	
Ed7-NMePFOSAE	273893.9	13C2-PFDA	486052.7	0.564	5.000	5.035	101	70-130	
Ed3-NMePFOSA	89487.3	13C2-PFDA	486052.7	0.184	5.000	5.059	101	70-130	
Ed9-NEtPFOSAE	234457.4	13C2-PFDA	486052.7	0.482	5.000	4.932	99	70-130	
Ed5-NEtPFOSA	70003.8	13C2-PFDA	486052.7	0.144	5.000	4.995	100	70-130	
E13C2-PFTeDA	911481.8	13C2-PFDA	486052.7	1.875	5.000	5.285	106	70-130	



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

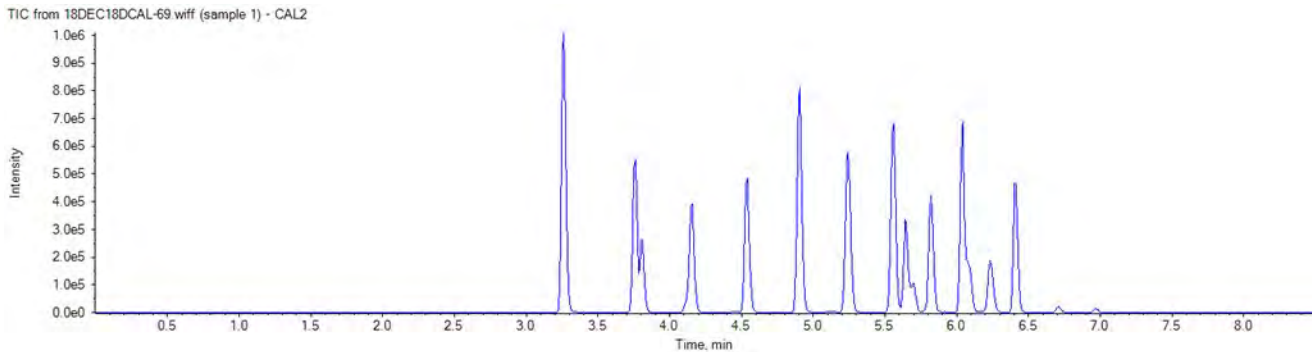
Analyte Quantitation Peak Table

Sample Name: CAL2 Instrument Name: LM27631 File Name: 18DEC18DCAL-69.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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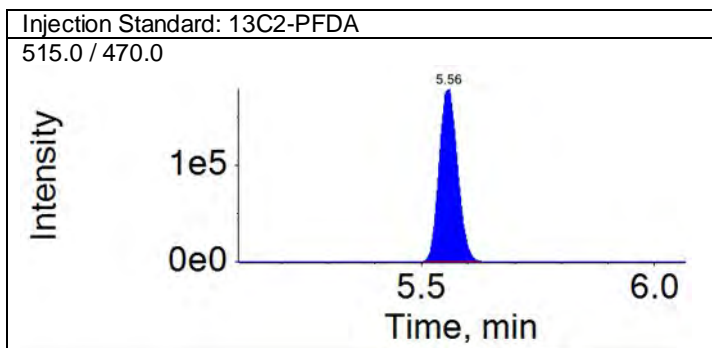
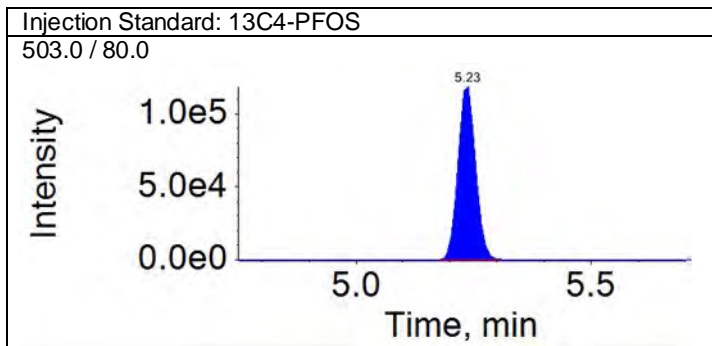
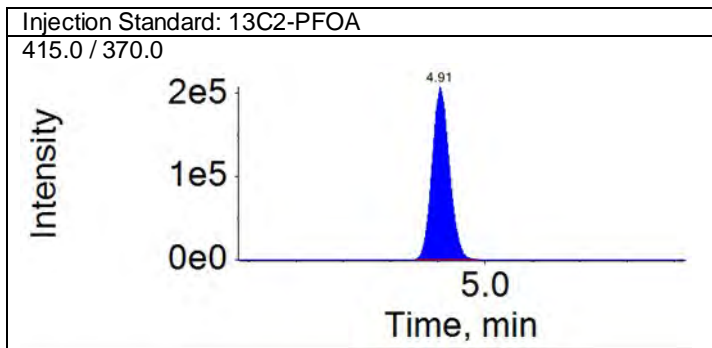
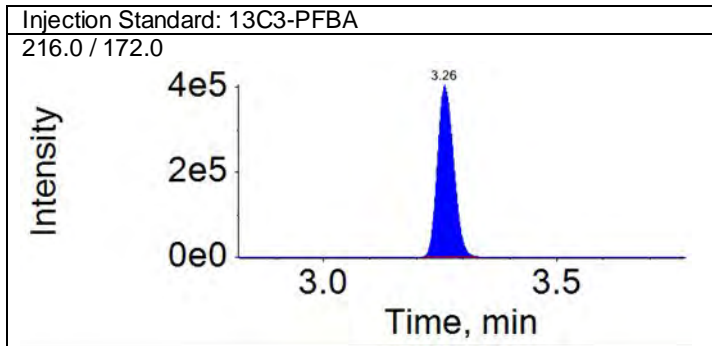
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	116635.8		A	13C4-PFBA	3.26	1122194.0	0.104	0.552
PFPeA	3.76	1.000	112858.4		A	13C5-PFPeA	3.76	1076428.7	0.105	0.541
PFBS	3.81	1.000	45656.9		A	13C3-PFBS	3.81	471423.1	0.097	0.478
4:2-FTS	4.12	1.000	13063.1		A	13C2-4:2-FTS	4.12	65525.8	0.199	0.523
PFHxA	4.15	1.000	103487.6		A	13C5-PFHxA	4.15	763341.7	0.136	0.558
PFPeS	4.17	1.100	23803.3		A	13C3-PFBS	3.81	471423.1	0.050	0.514
PFHpA	4.54	1.000	106907.9		A	13C4-PFHpA	4.54	605519.2	0.177	0.585
PFHxS	4.54	1.000	38176.1		M	13C3-PFHxS	4.54	354452.9	0.108	0.524
6:2-FTS	4.89	1.000	12125.6		A	13C2-6:2-FTS	4.89	53117.9	0.228	0.568
PFHpS	4.90	1.080	36201.5		A	13C3-PFHxS	4.54	354452.9	0.102	0.540
PFOA	4.90	1.000	111923.3		A	13C8-PFOA	4.90	1027982.0	0.109	0.577
PFOS	5.23	1.000	37634.2		M	13C8-PFOS	5.23	349492.7	0.108	0.471
PFNA	5.25	1.000	95019.2		A	13C9-PFNA	5.25	683029.4	0.139	0.553
PFNS	5.54	1.060	28435.1		A	13C8-PFOS	5.23	349492.7	0.081	0.517
PFDA	5.56	1.000	98187.6		A	13C6-PFDA	5.56	929390.9	0.106	0.546
8:2-FTS	5.56	1.000	12295.6		A	13C2-8:2-FTS	5.56	46390.2	0.265	0.533
PFOSA	5.65	1.000	71551.8		A	13C8-PFOSA	5.65	636077.5	0.112	0.563
NMeFOSAA	5.70	1.000	19589.2		M	d3-NMeFOSAA	5.70	218152.2	0.090	0.558
PFDS	5.79	1.110	21675.3		A	13C8-PFOS	5.23	349492.7	0.062	0.509
PfUnDA	5.82	1.000	99413.7		A	13C7-PfUnDA	5.82	622971.7	0.160	0.529
NEtFOSAA	5.83	1.000	17104.7		A	d5-NEtFOSAA	5.83	196235.0	0.087	0.444
PFDoDA	6.04	1.000	130434.4		A	13C2-PFDoDA	6.04	1229301.7	0.106	0.534
10:2-FTS	6.05	1.090	12341.8		A	13C2-8:2-FTS	5.56	46390.2	0.266	0.542
NMePFOSAE	6.09	1.000	36519.6		A	d7-NMePFOSAE	6.08	273893.9	0.133	0.588
NMePFOSA	6.10	1.000	10321.8		A	d3-NMePFOSA	6.10	89487.3	0.115	0.582
PFDoS	6.20	1.190	10760.9		A	13C8-PFOS	5.23	349492.7	0.031	0.466
NEtPFOSAE	6.24	1.000	40704.6		A	d9-NEtPFOSAE	6.23	234457.4	0.174	0.567
NEtPFOSA	6.26	1.000	7692.9		A	d5-NEtPFOSA	6.26	70003.8	0.110	0.514
PFTTrDA	6.23	1.030	129882.1		A	13C2-PFDoDA	6.04	1229301.7	0.106	0.542
PFTeDA	6.41	1.000	87024.0		A	13C2-PFTeDA	6.41	911481.8	0.095	0.514
PFHxDA	6.71	1.050	43591.5		A	13C2-PFTeDA	6.41	911481.8	0.048	0.525
PFOA	6.97	1.090	32232.1		A	13C2-PFTeDA	6.41	911481.8	0.035	0.508

Total Ion Chromatogram



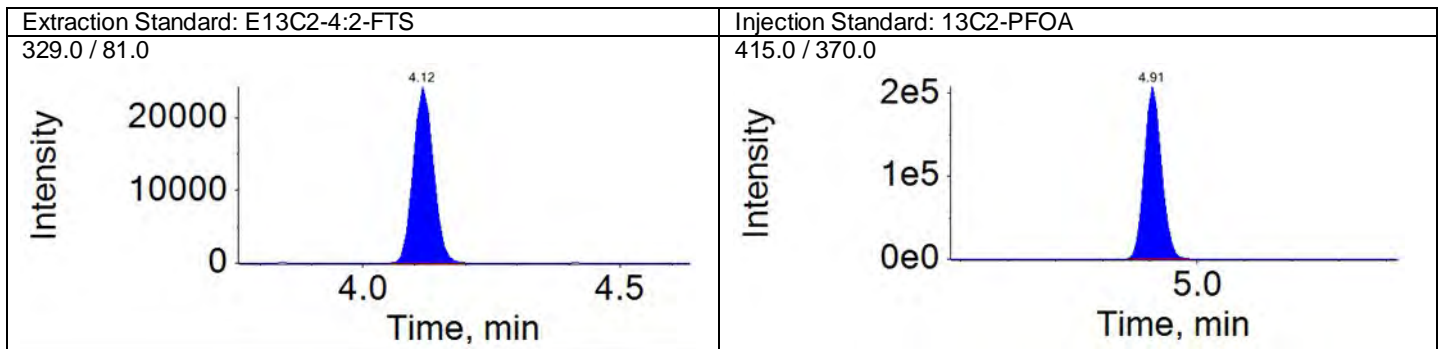
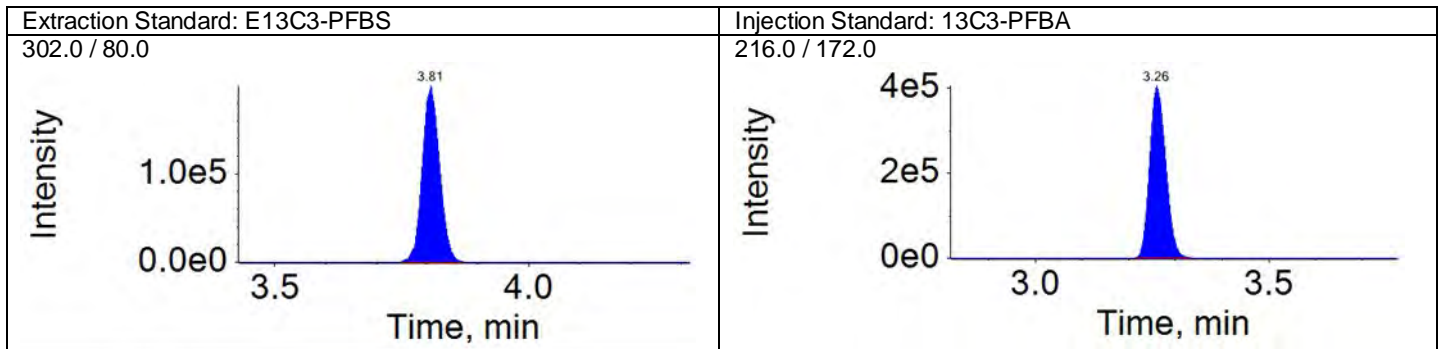
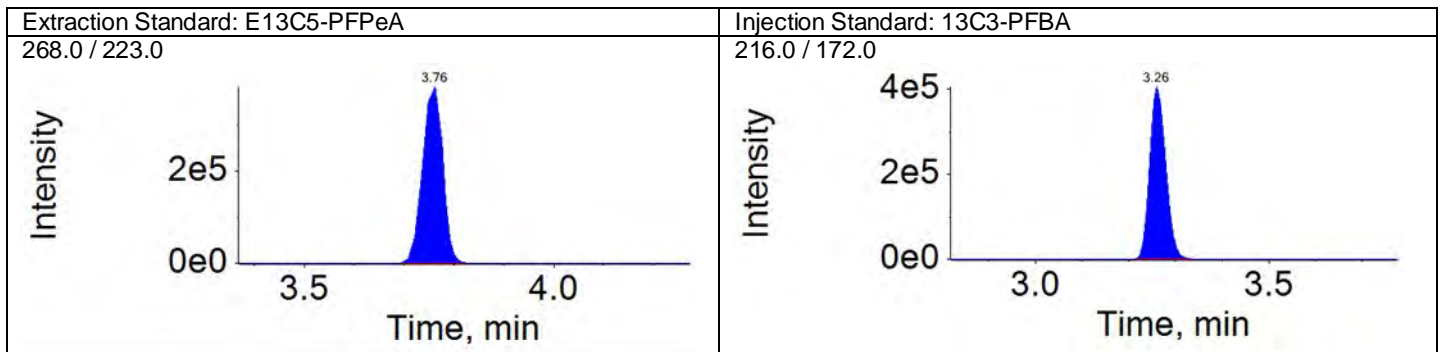
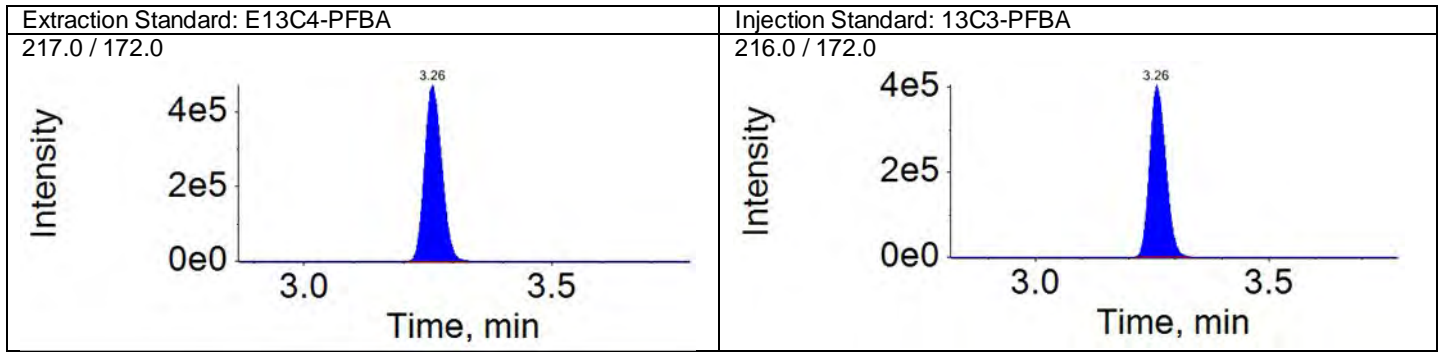
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



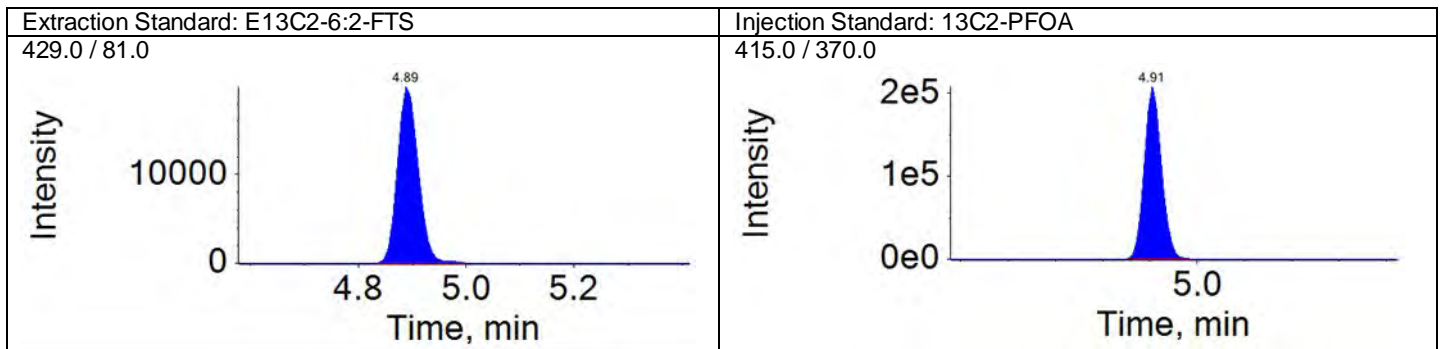
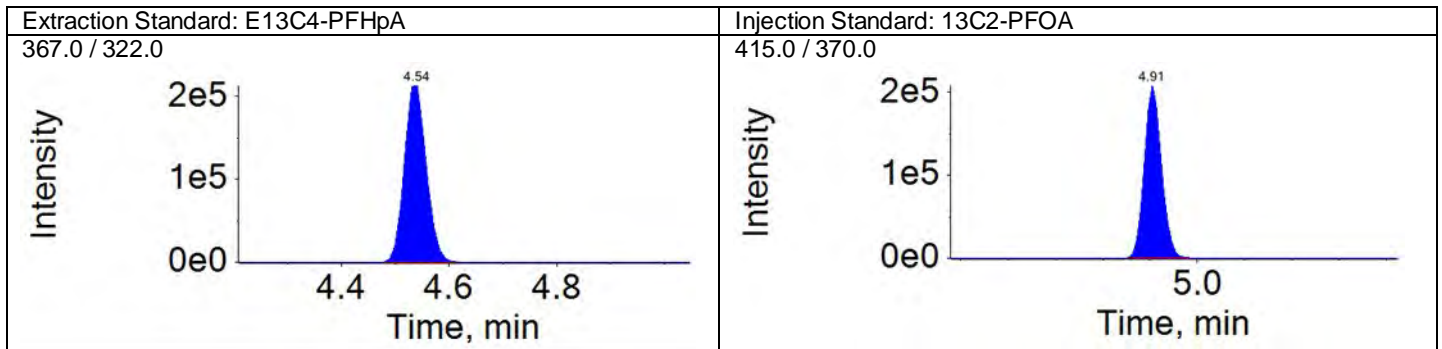
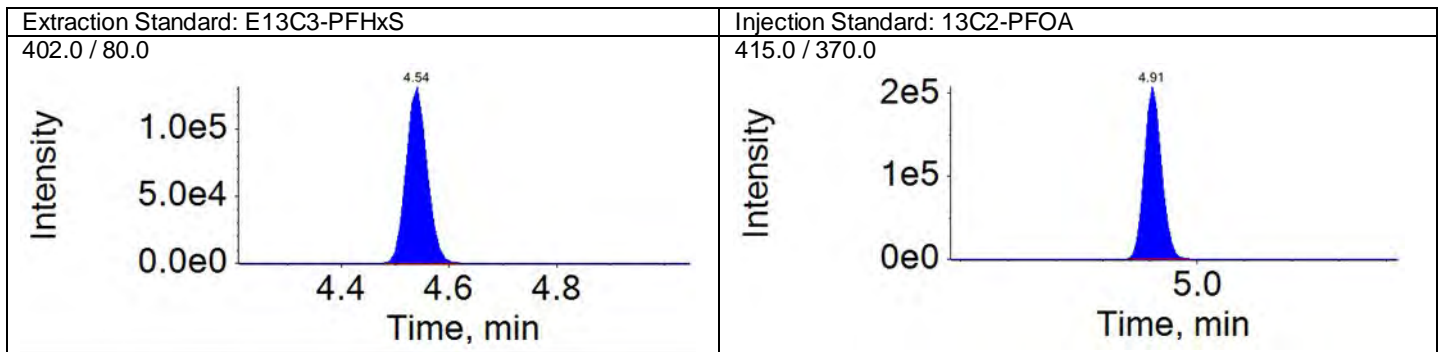
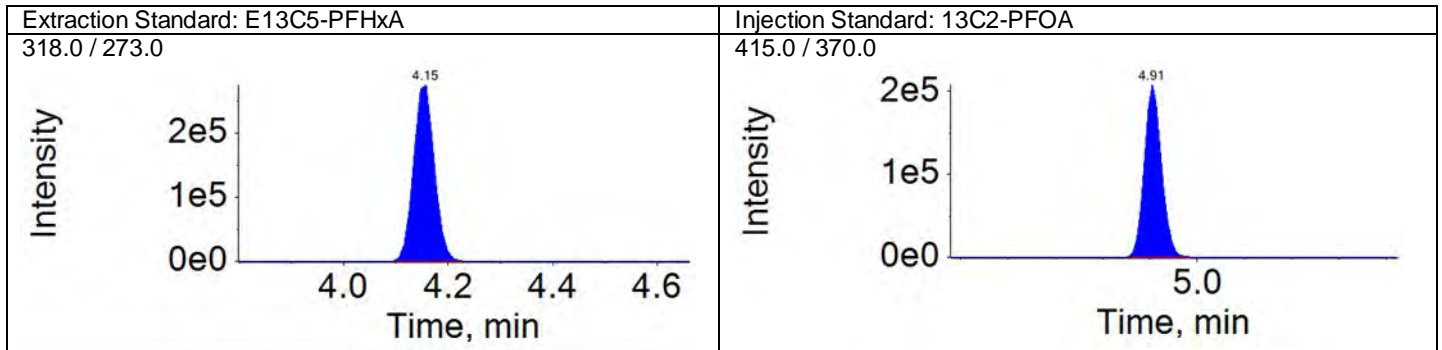
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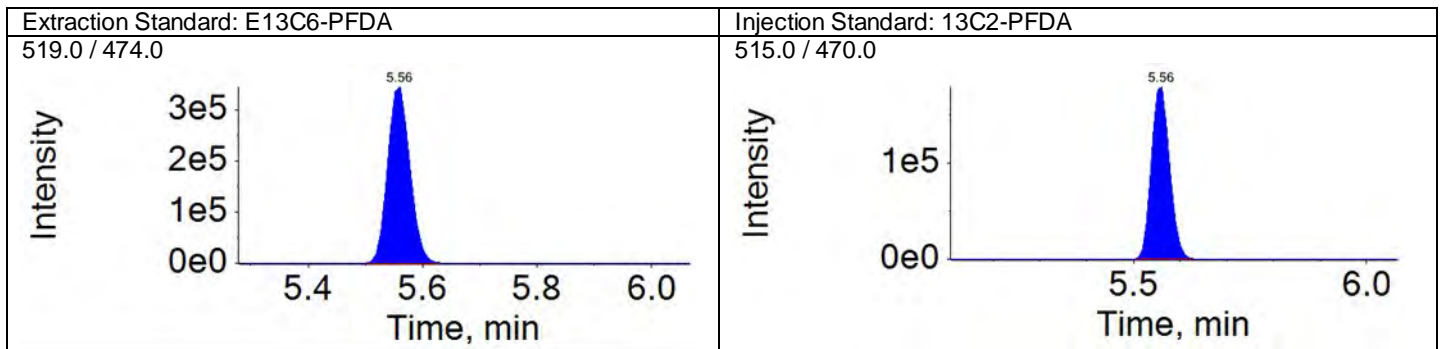
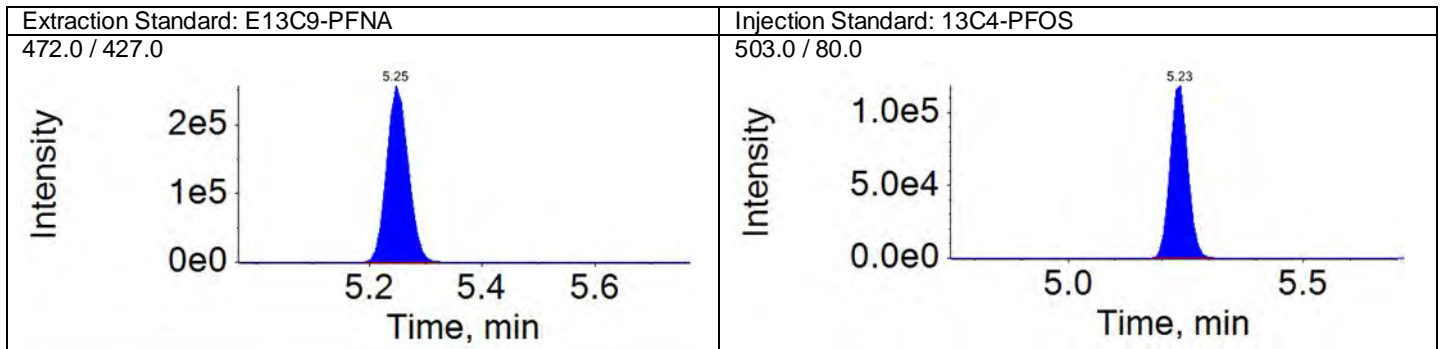
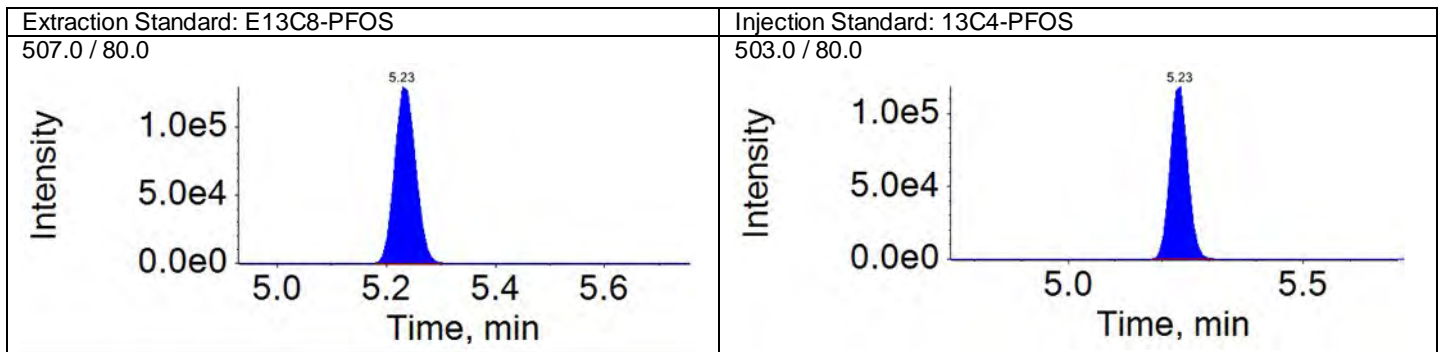
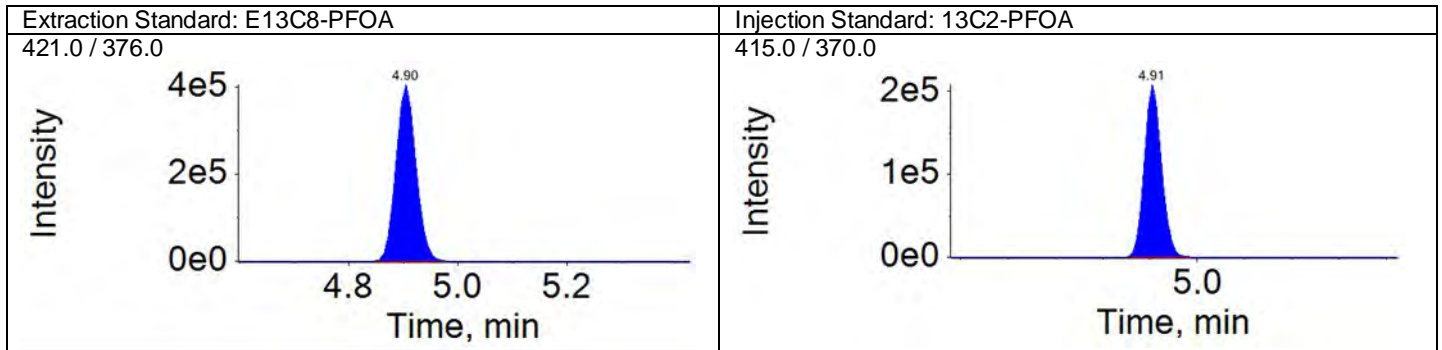
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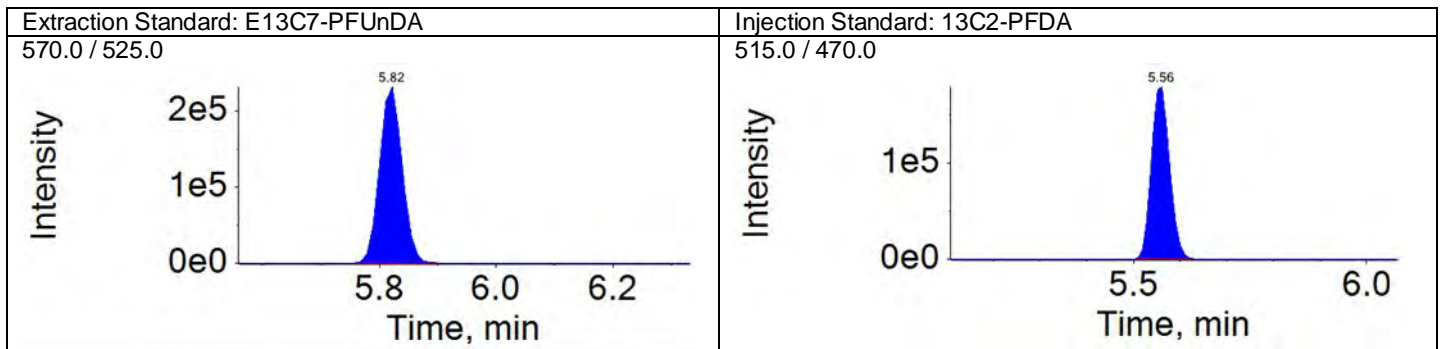
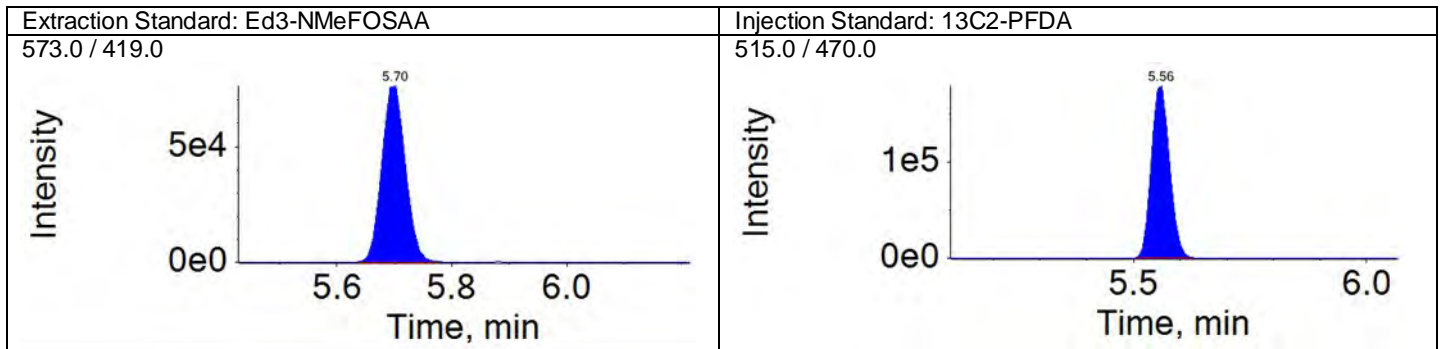
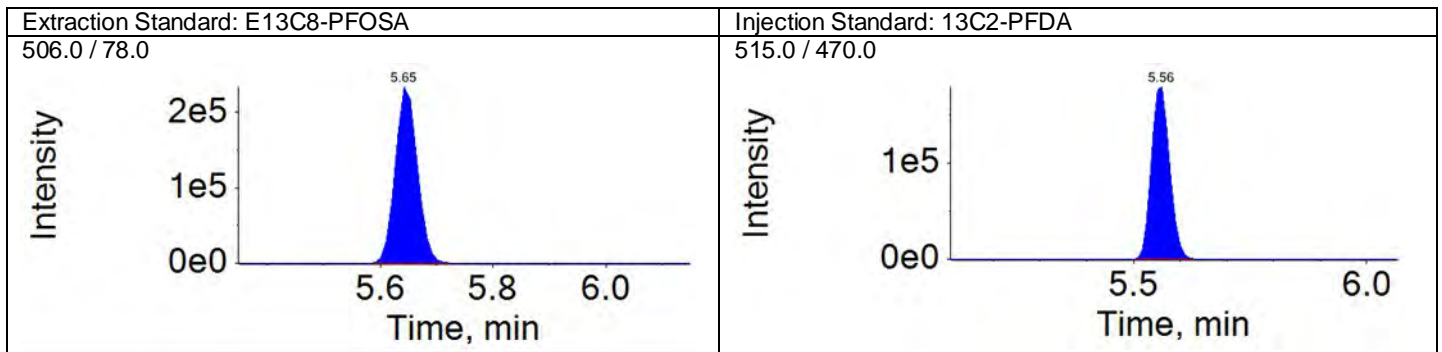
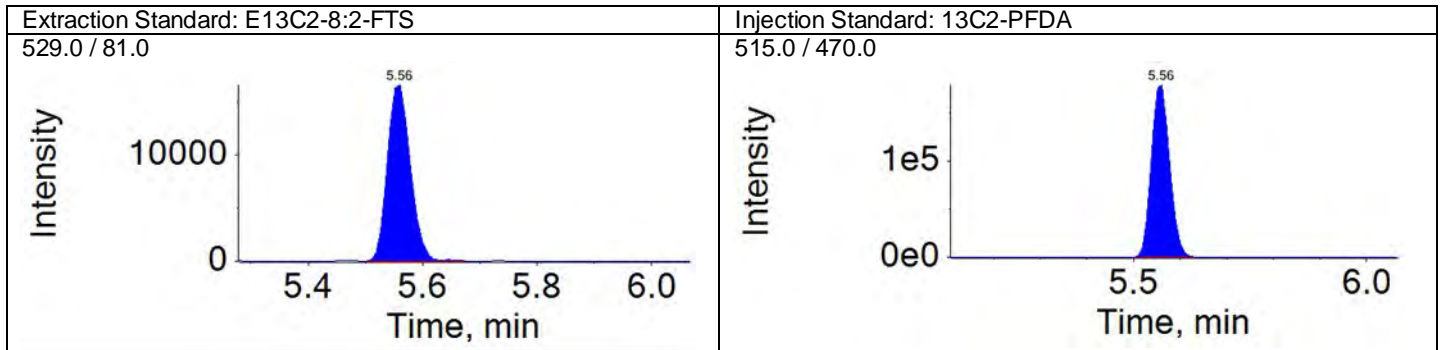
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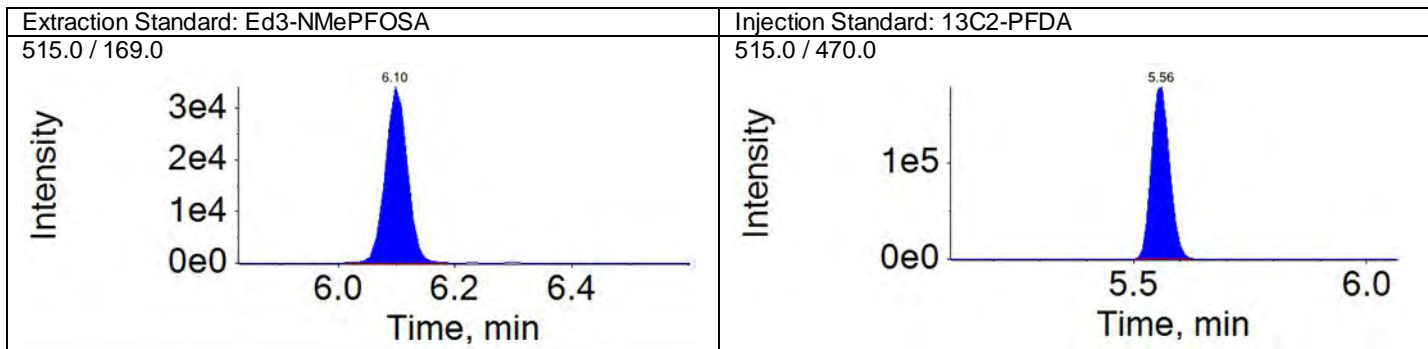
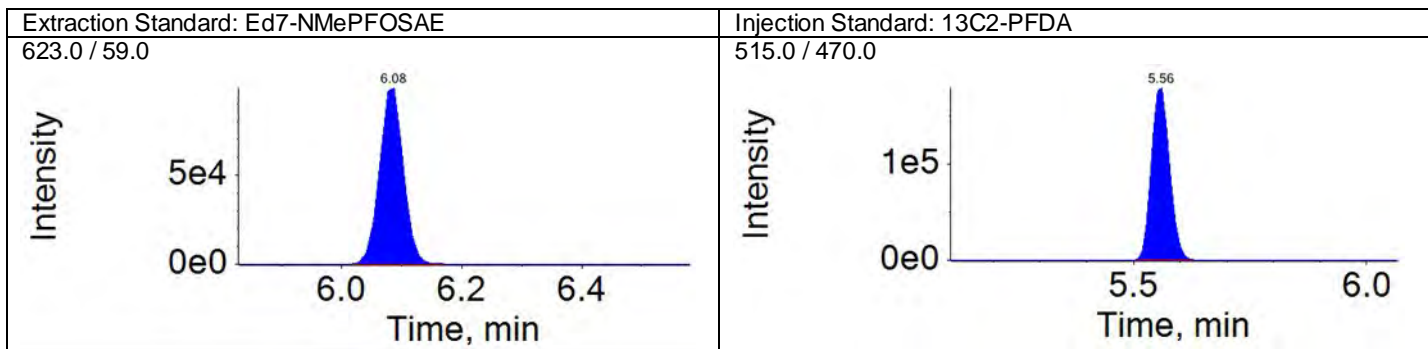
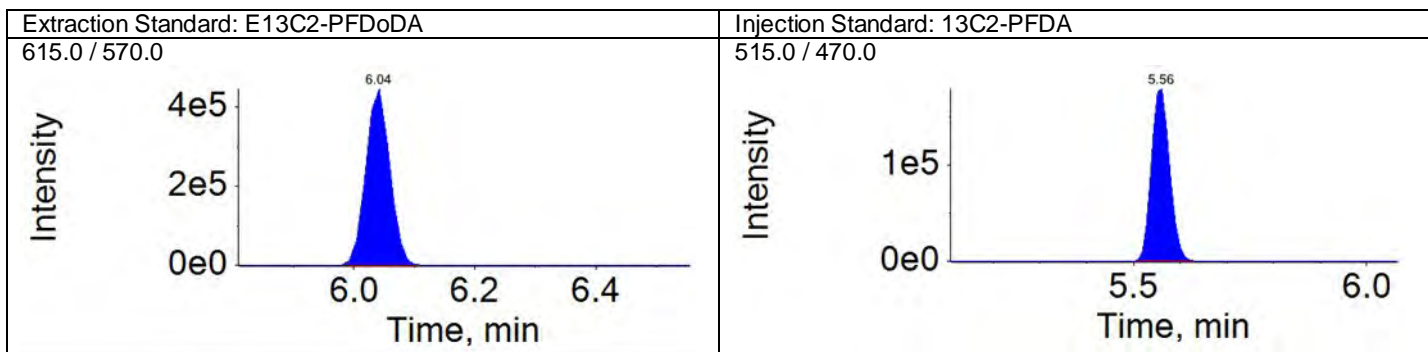
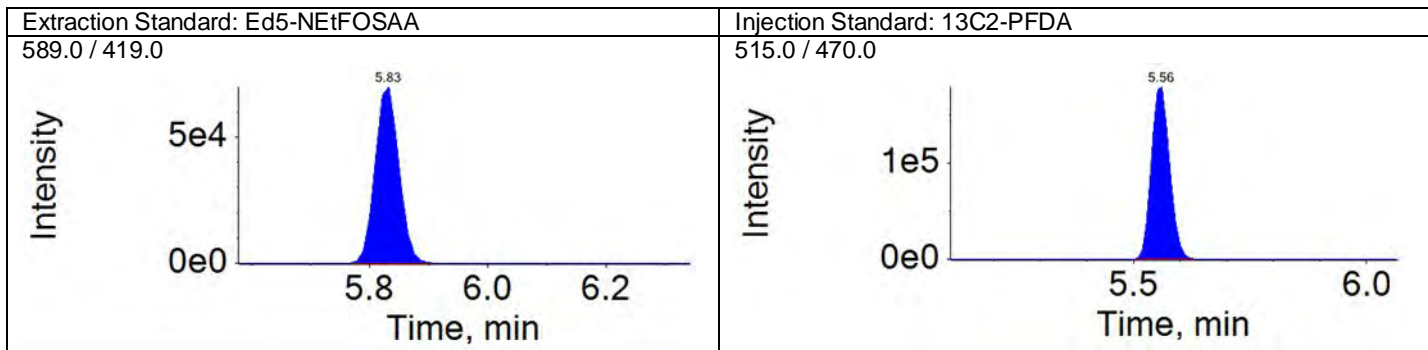
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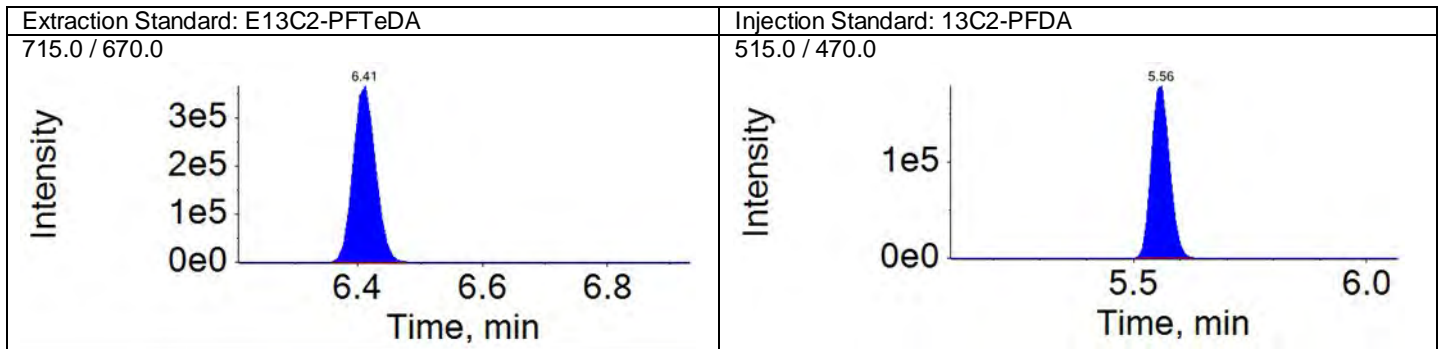
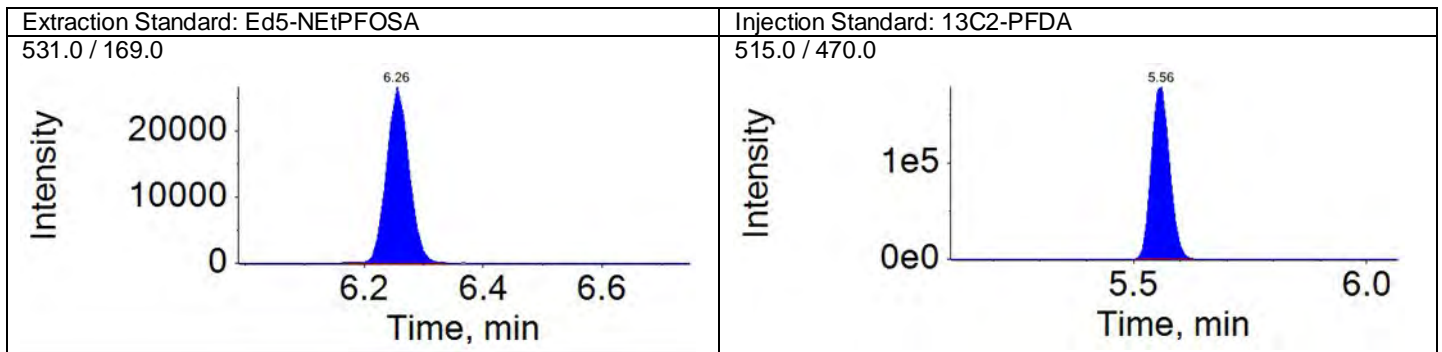
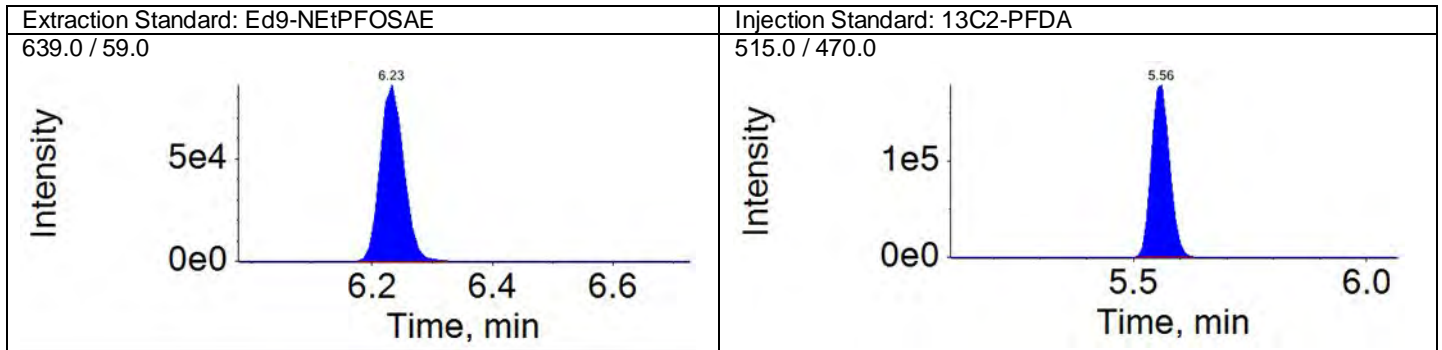
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Acquisition Method: 18AUG13\_3uL.dam



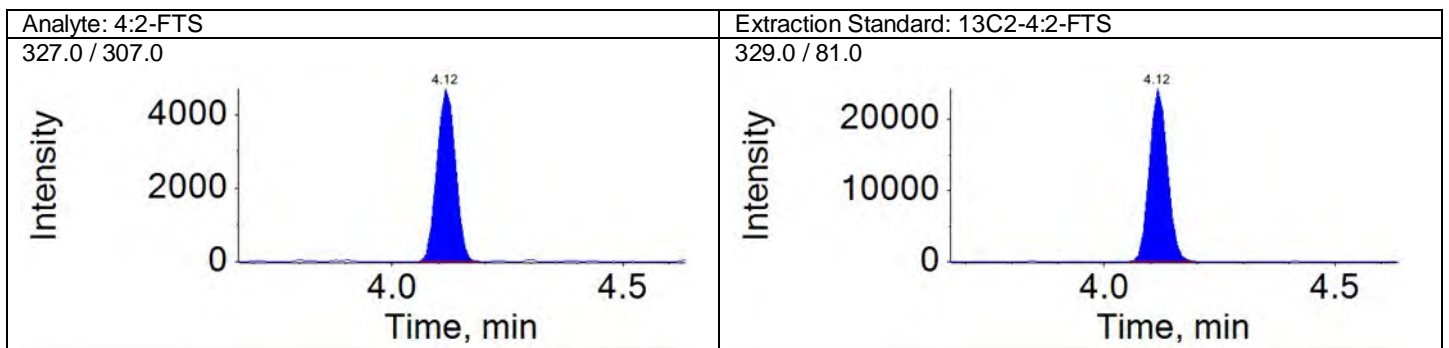
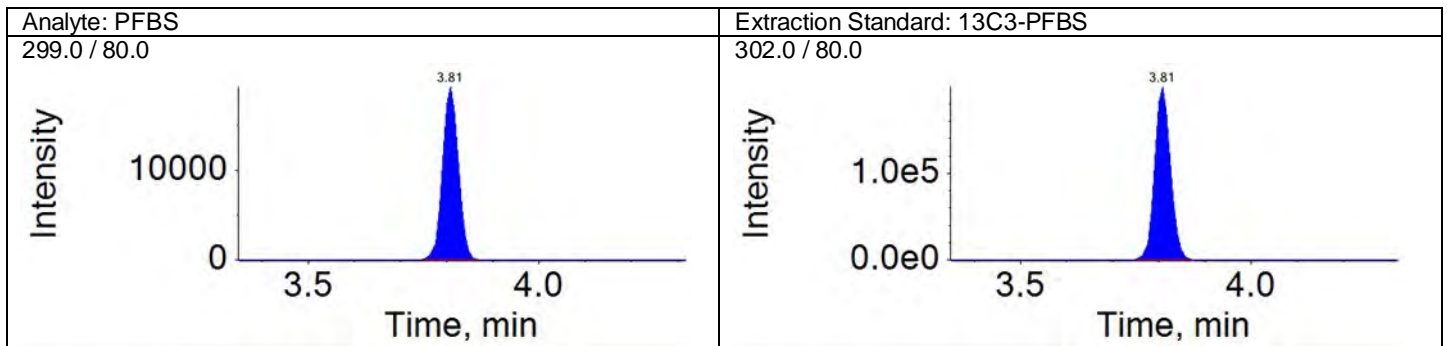
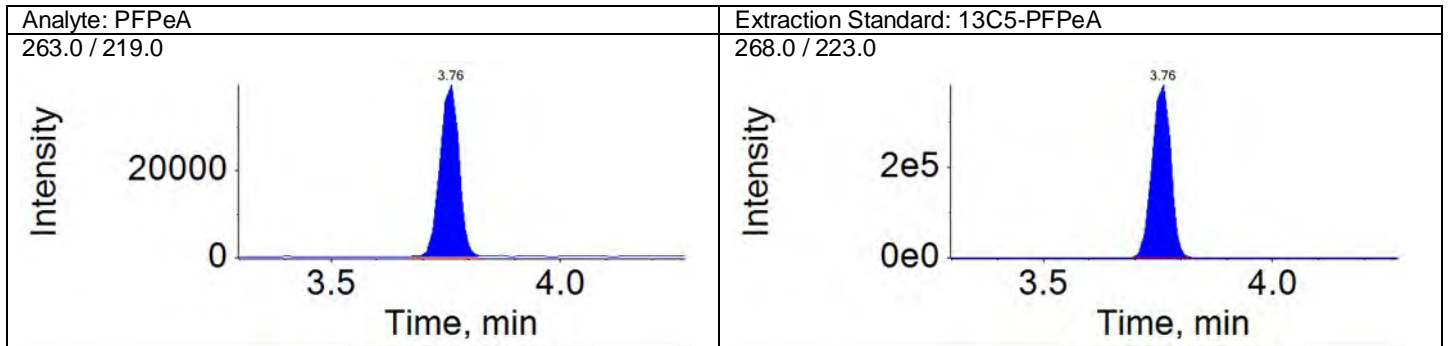
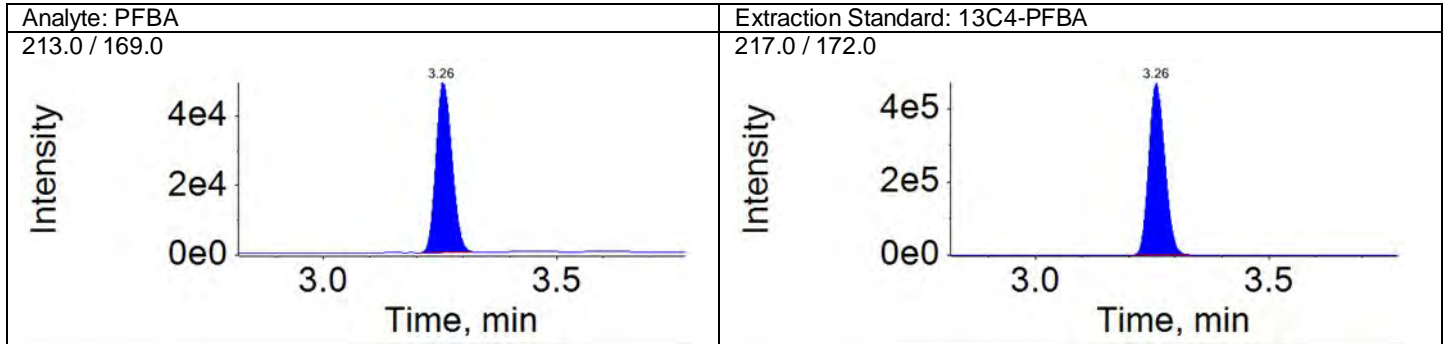
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

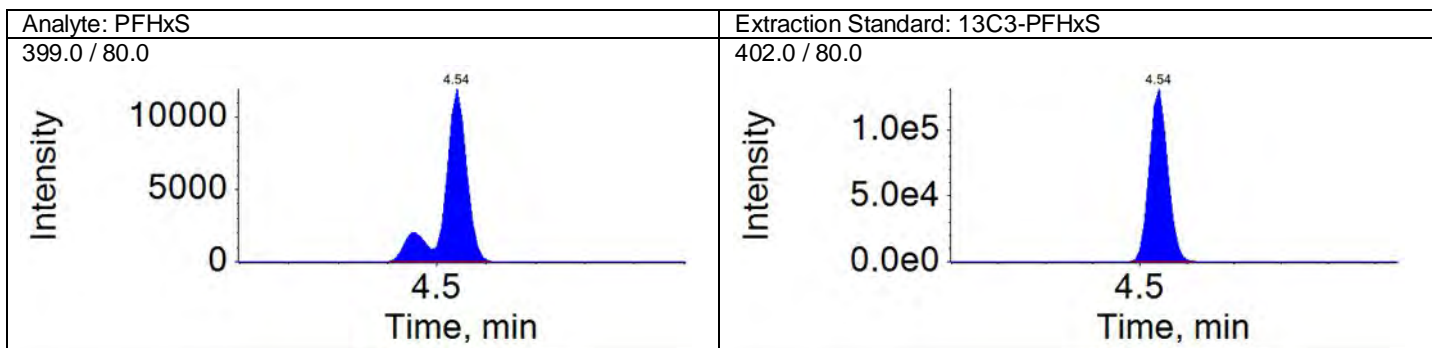
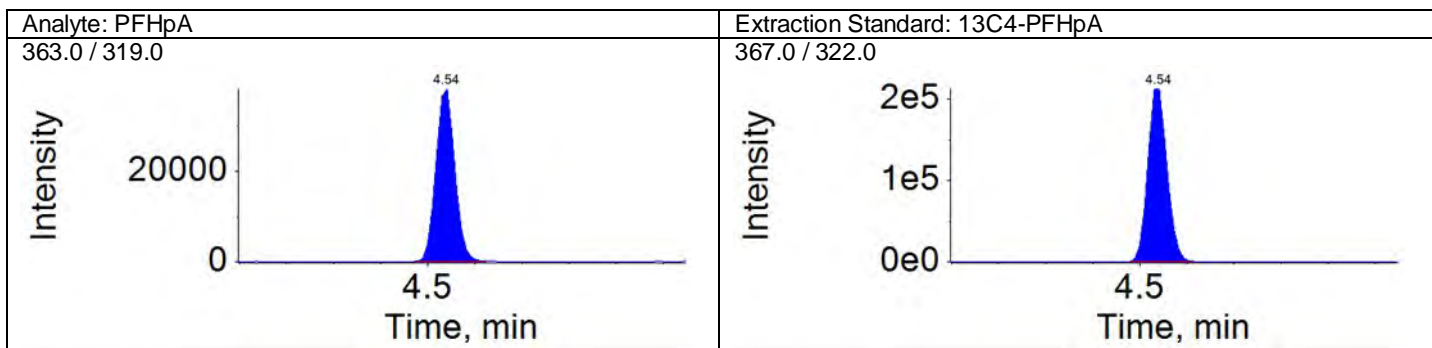
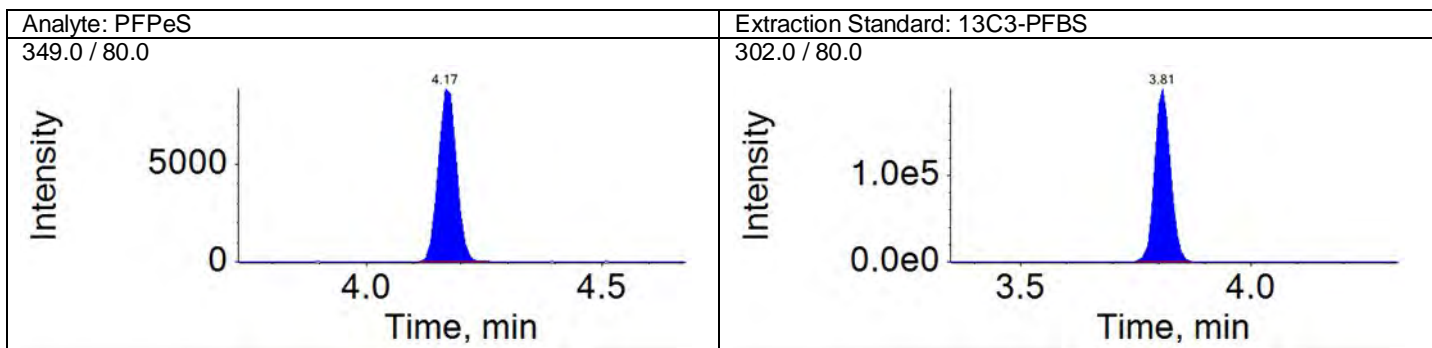
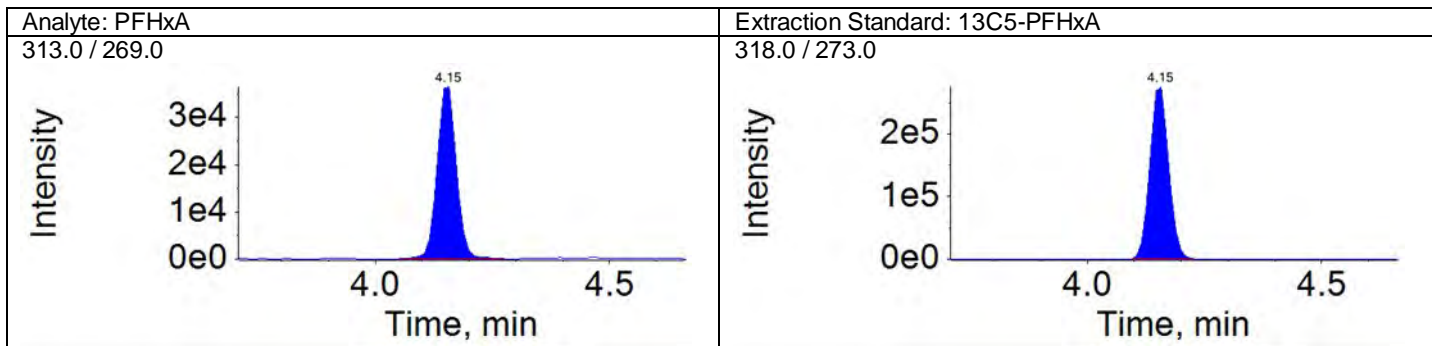
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

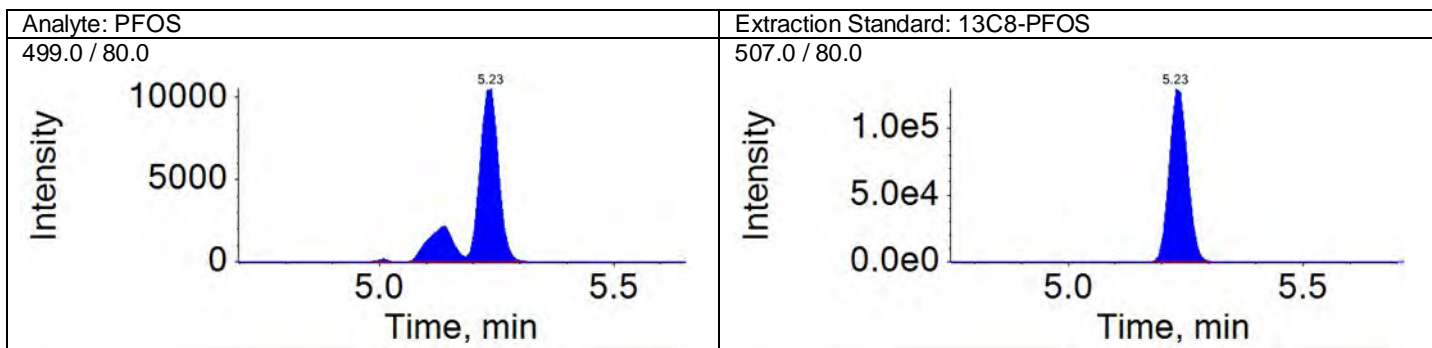
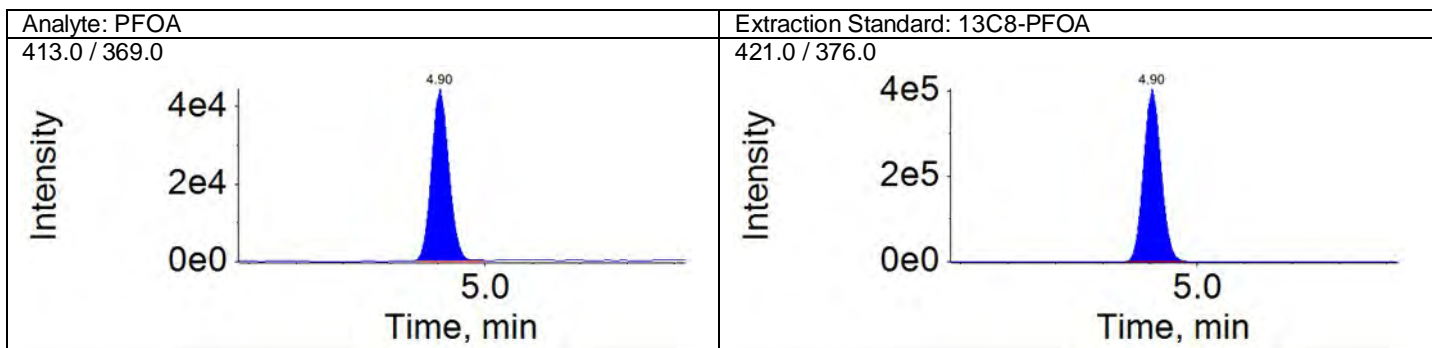
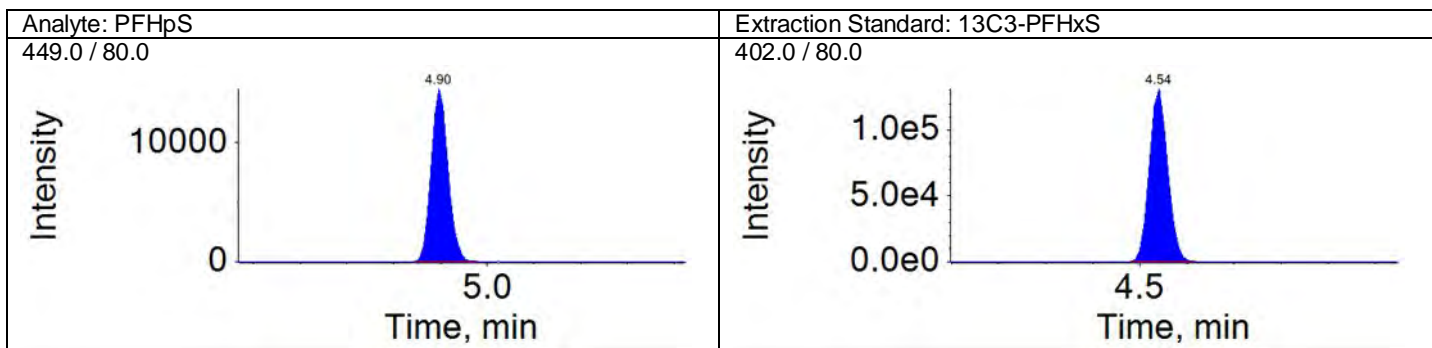
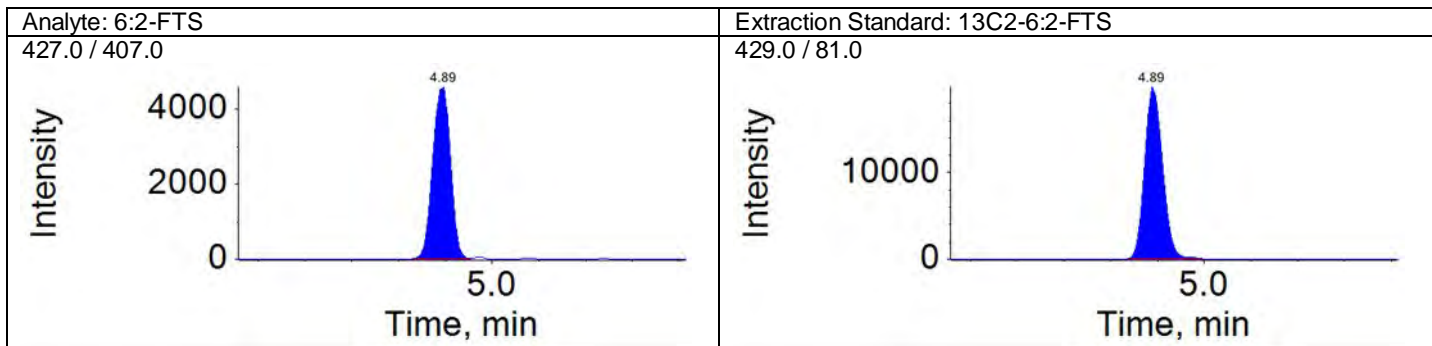
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Acquisition Method: 18AUG13\_3uL.dam





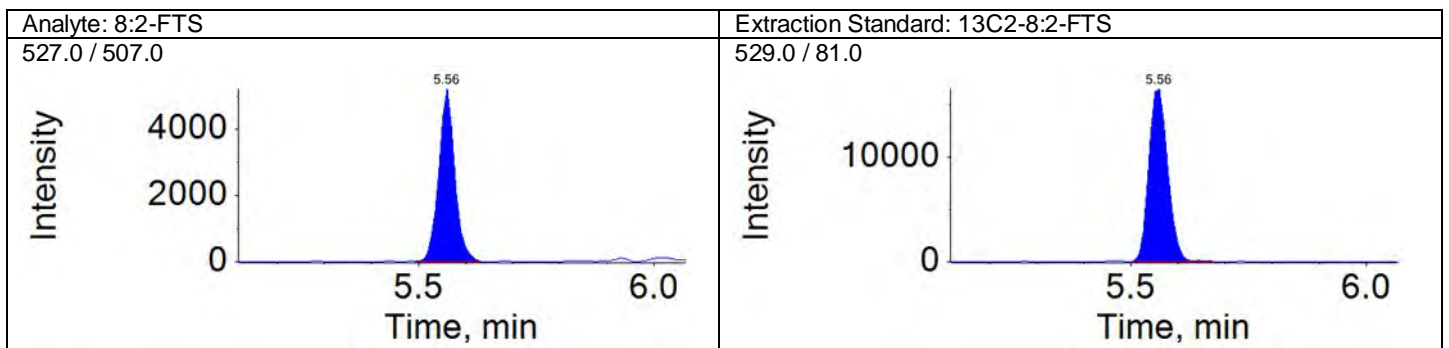
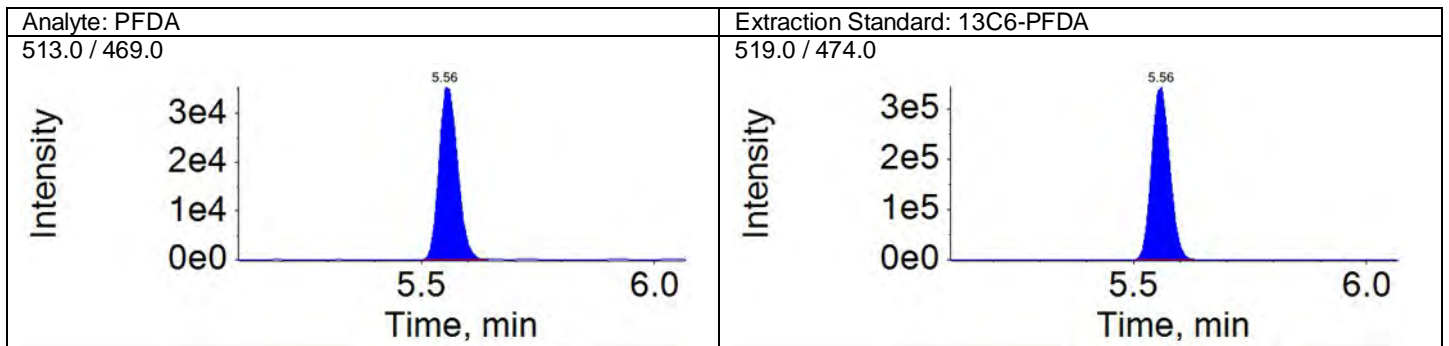
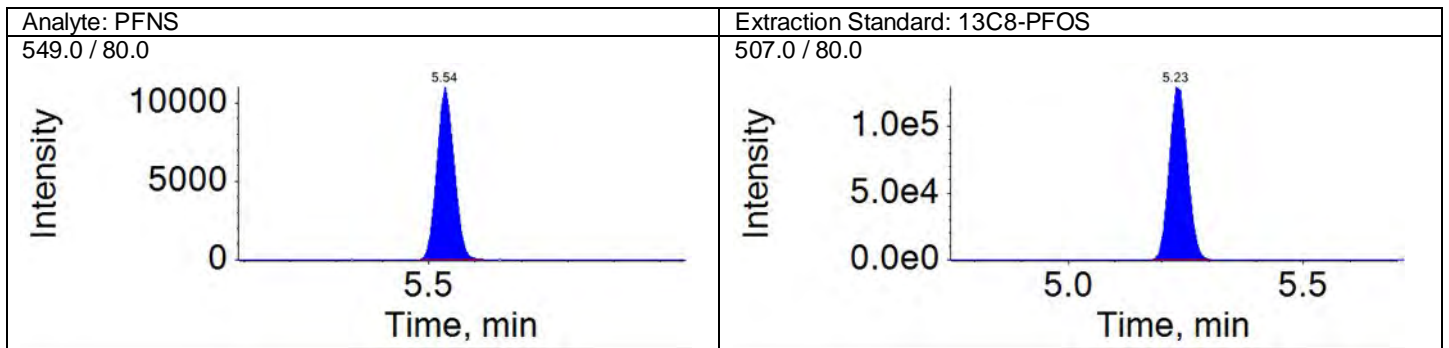
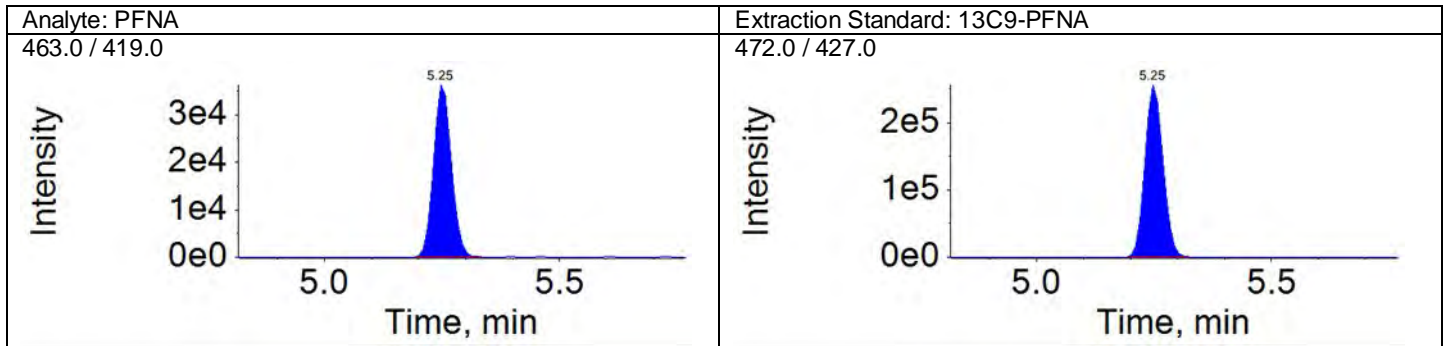
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



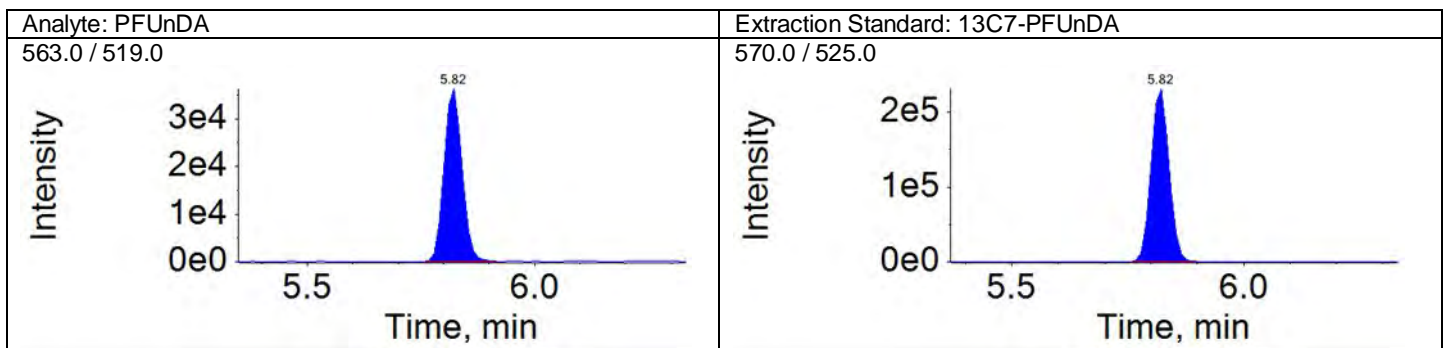
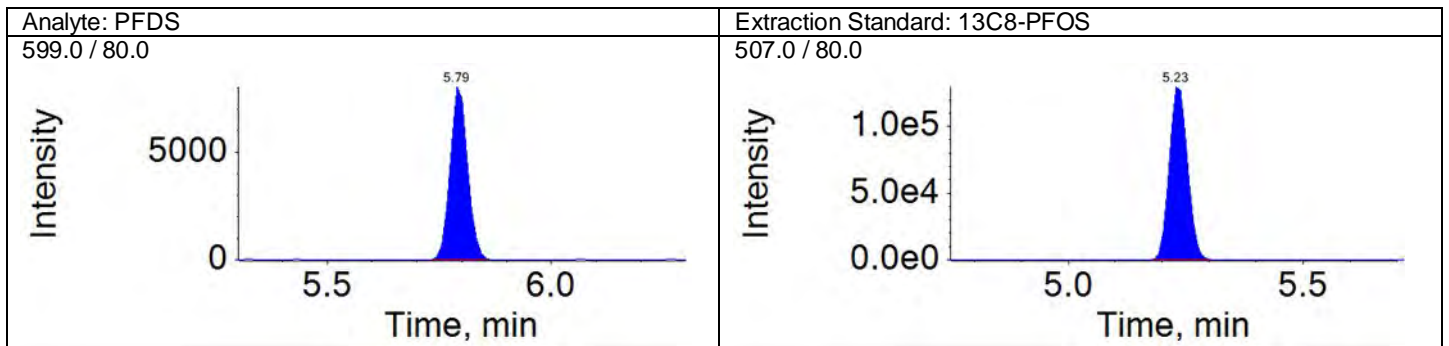
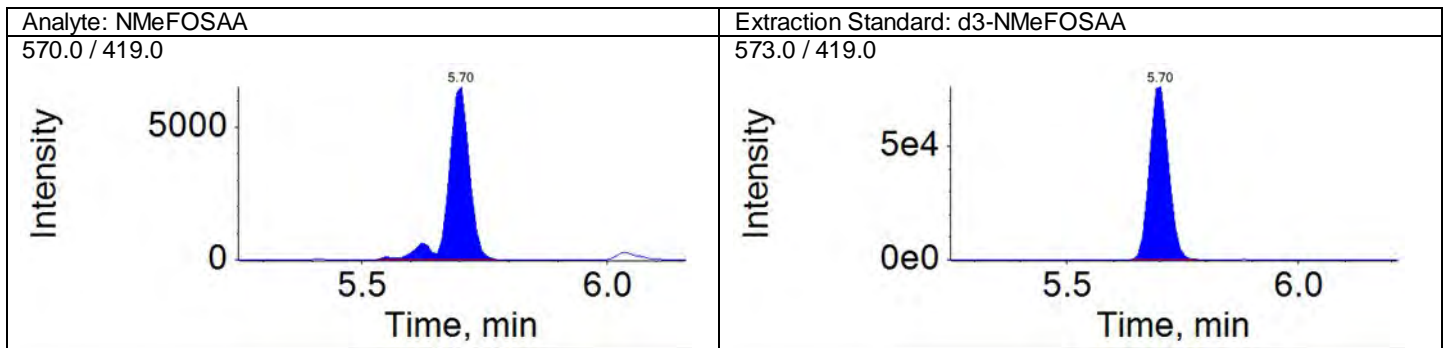
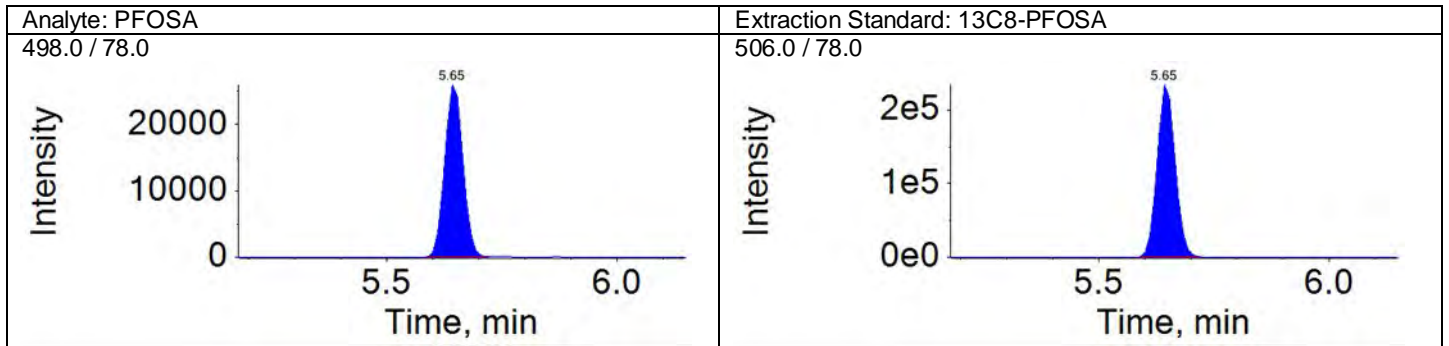
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



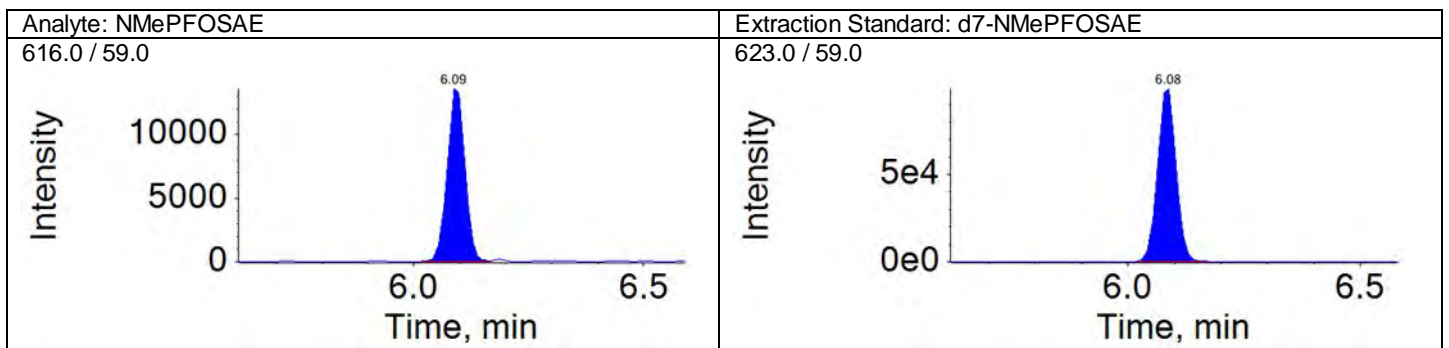
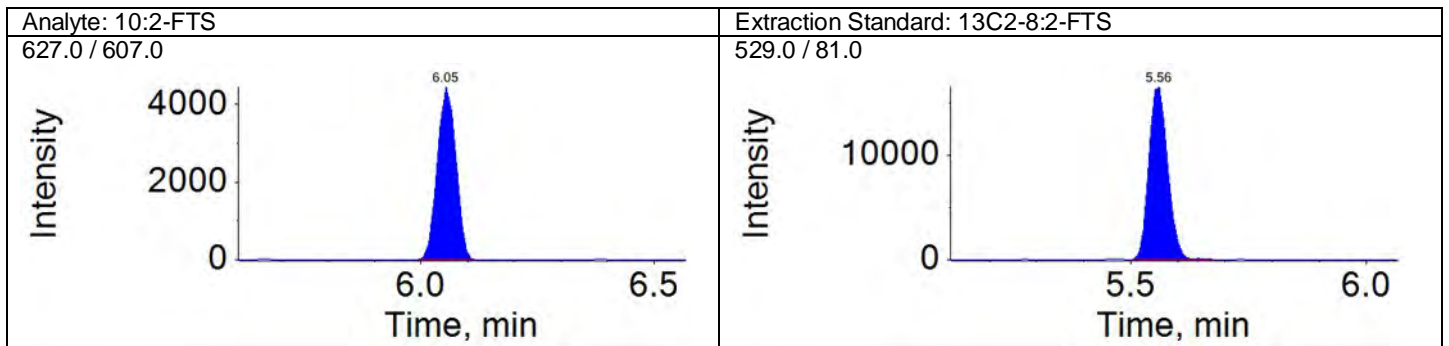
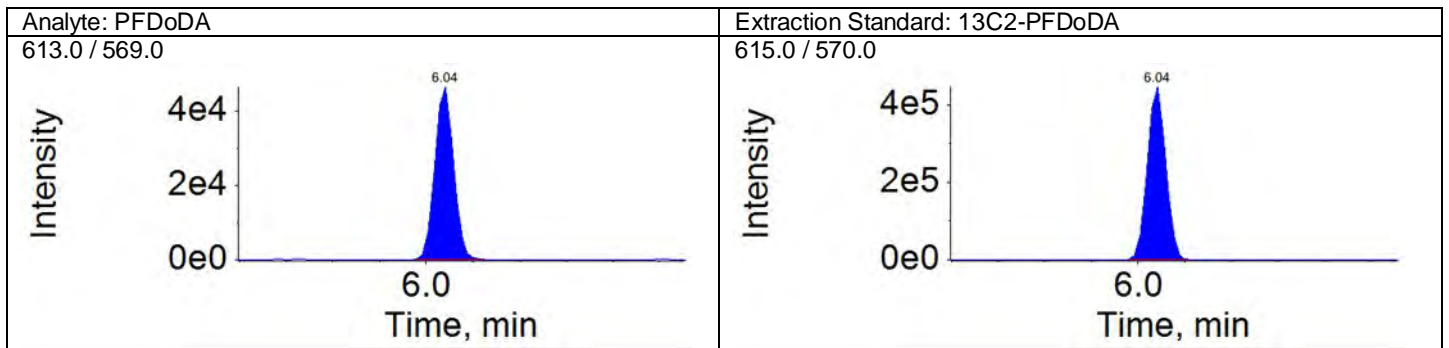
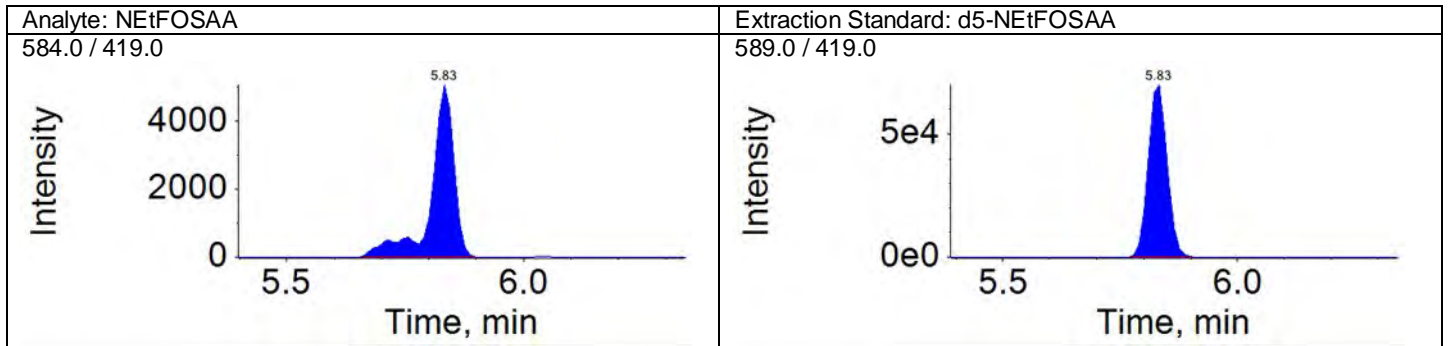
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

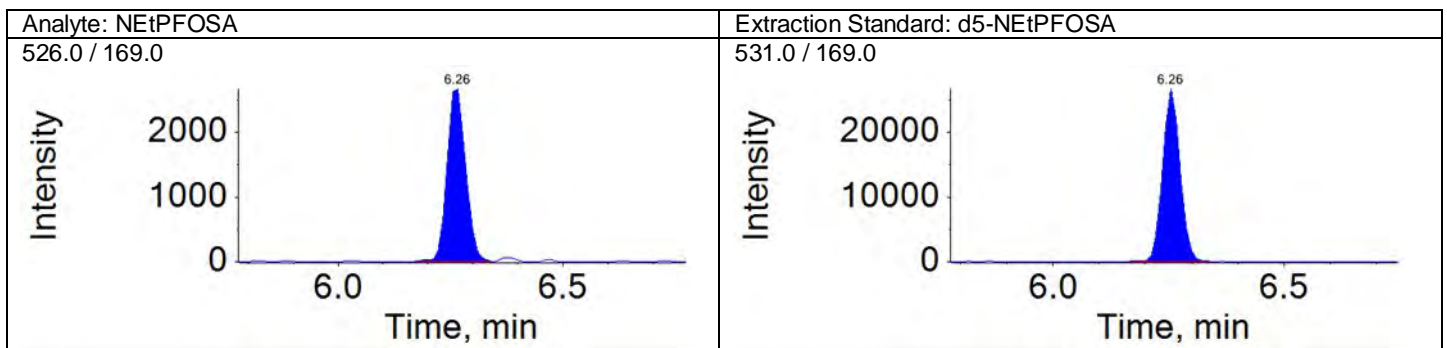
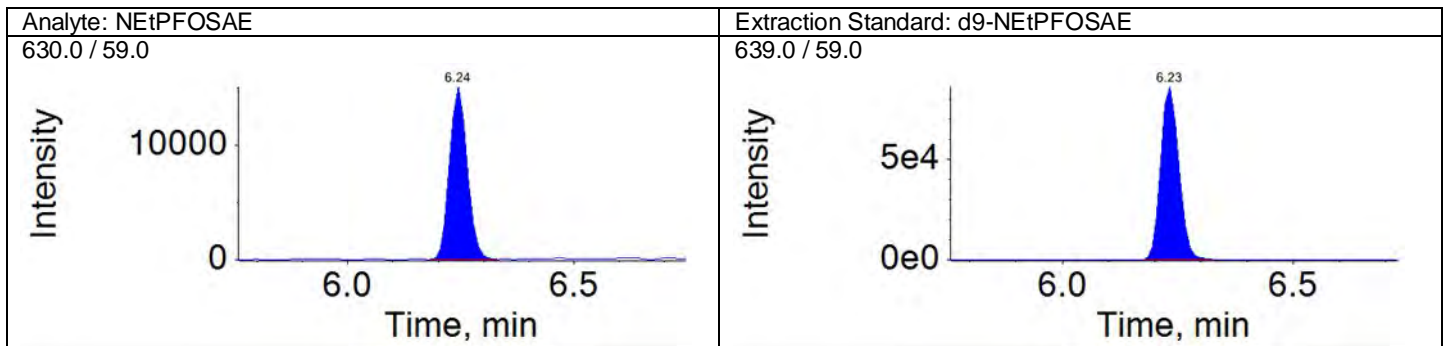
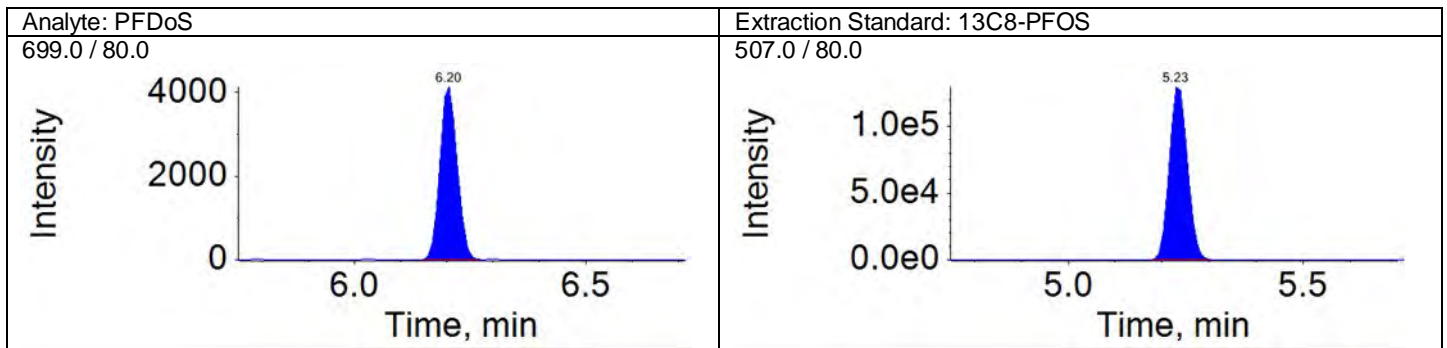
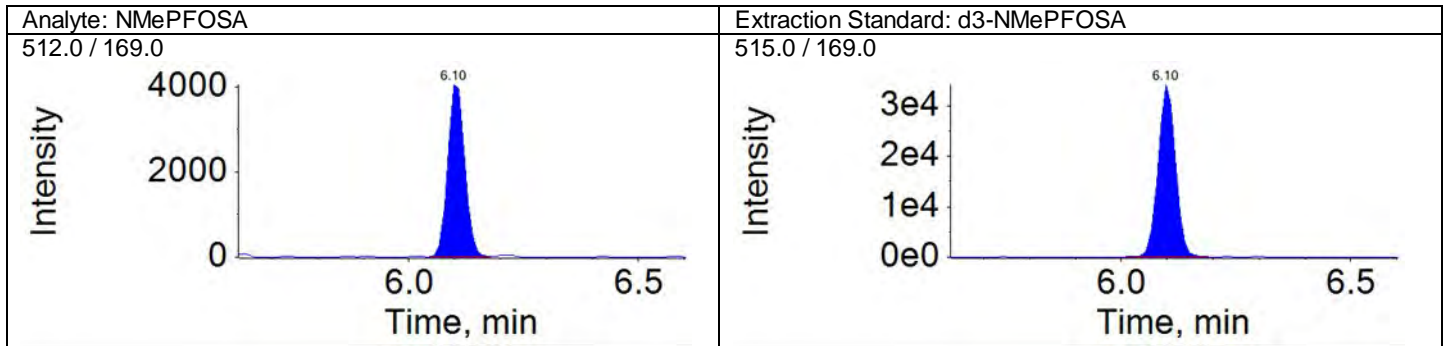
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

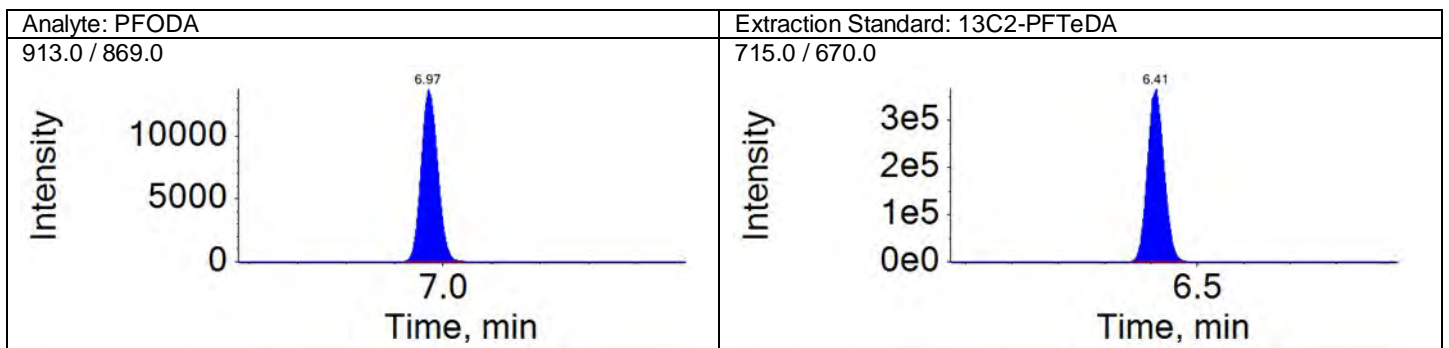
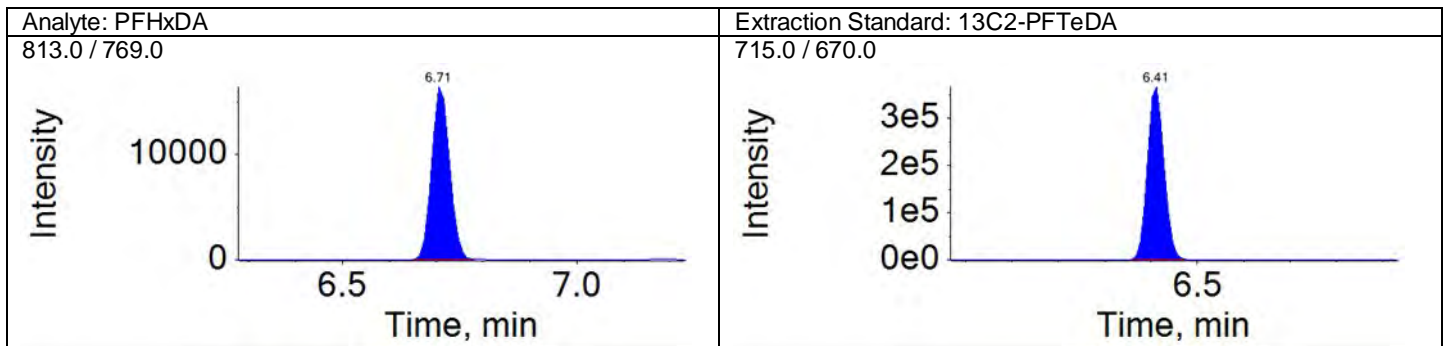
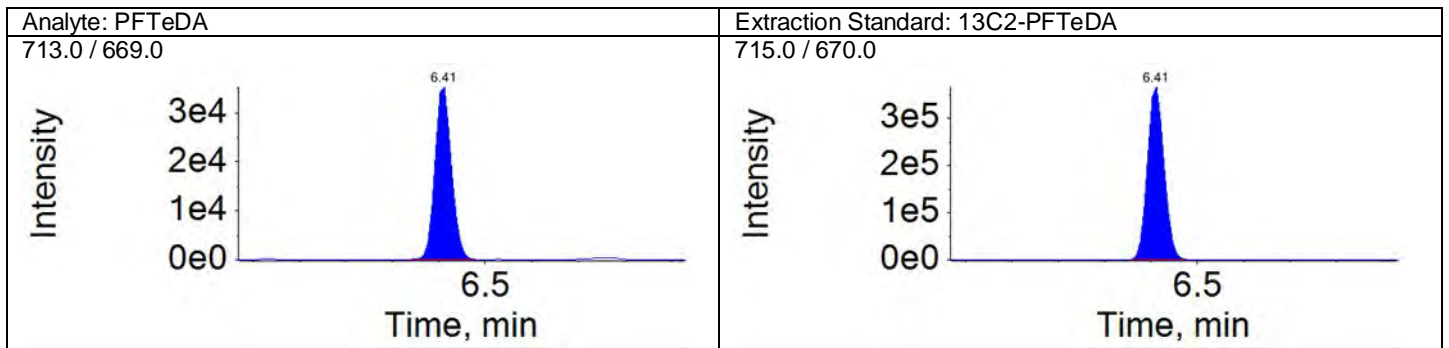
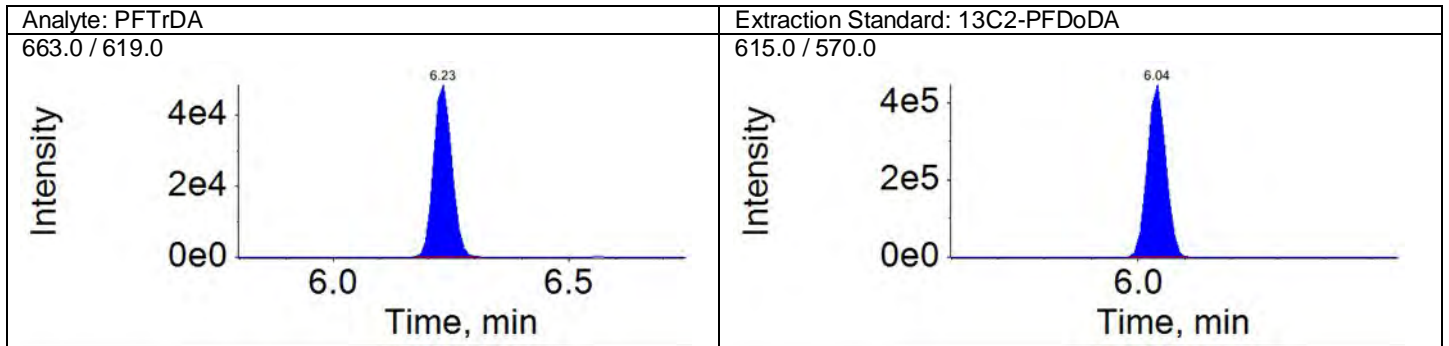
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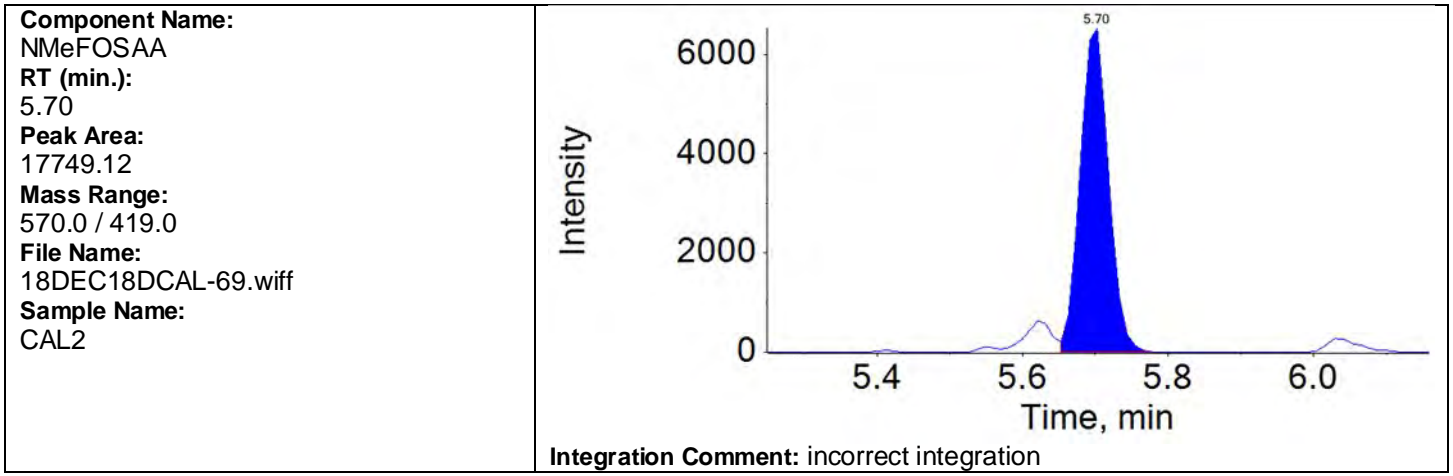
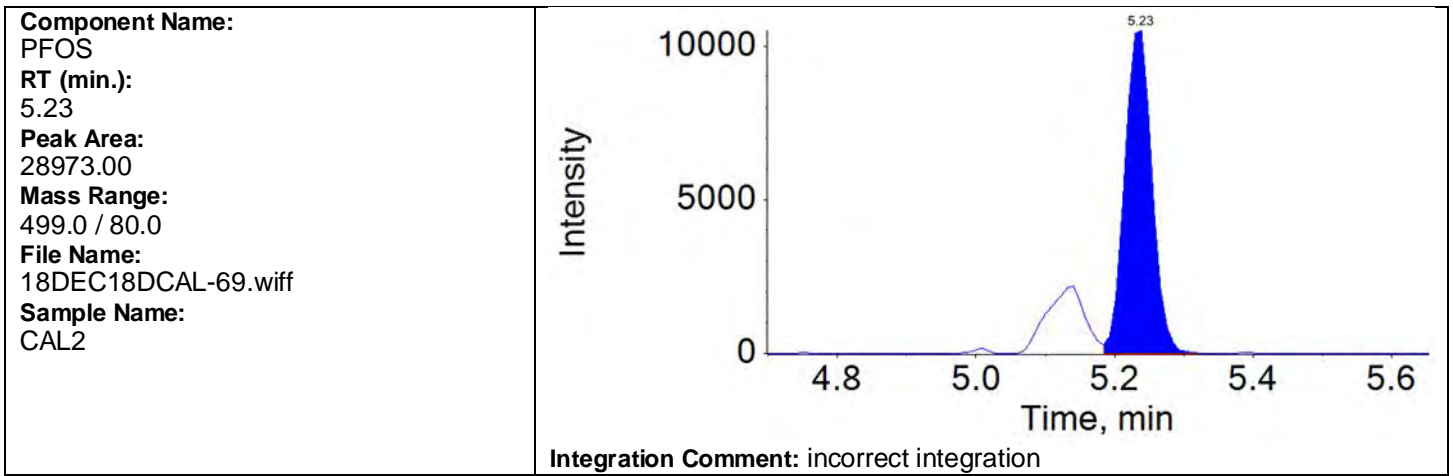
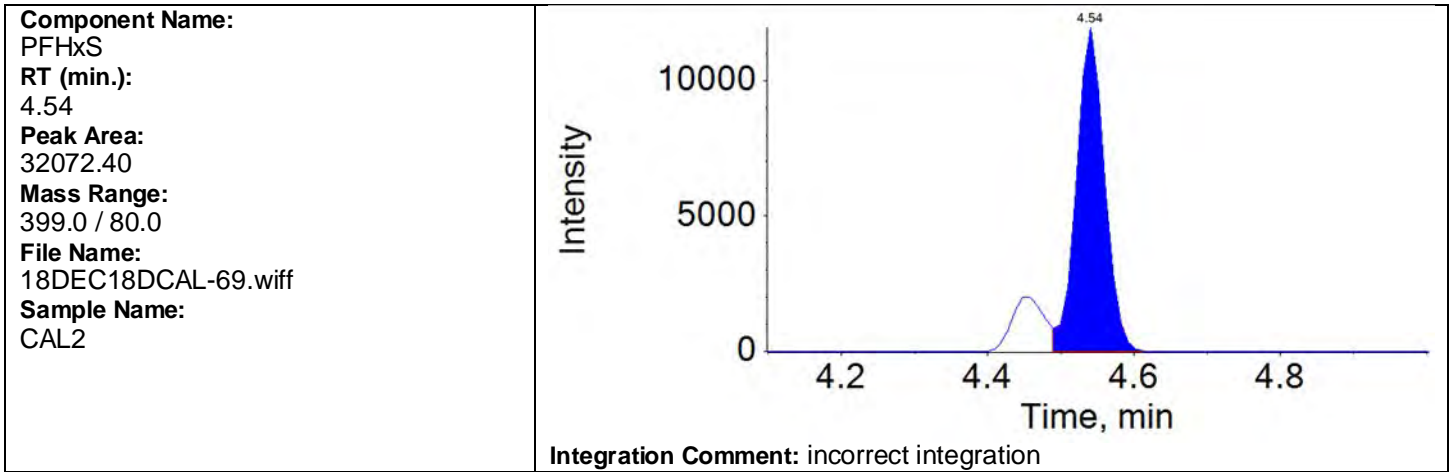
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



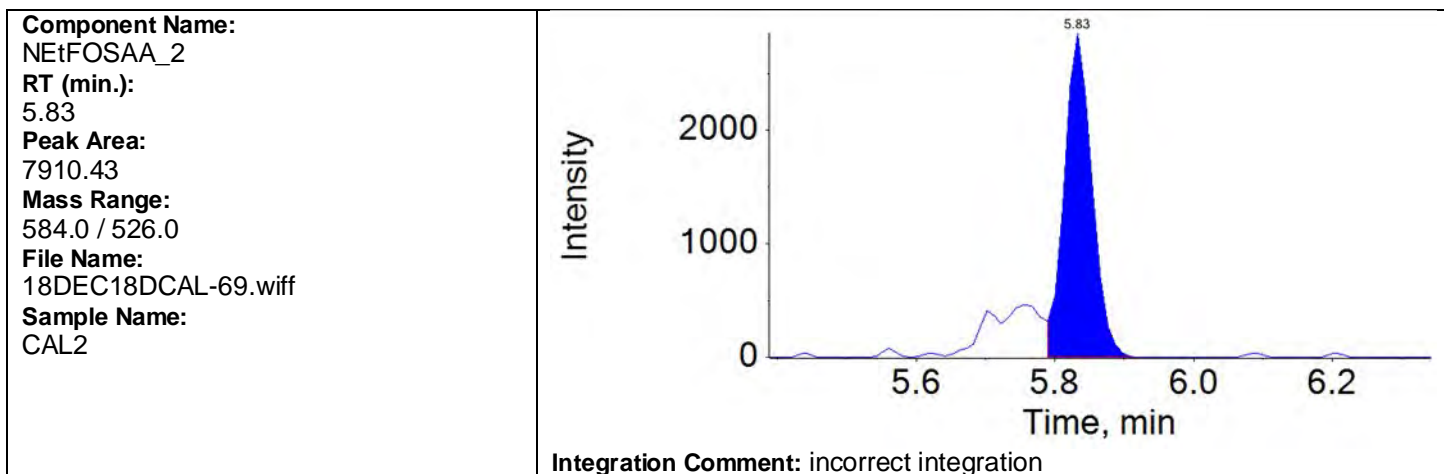
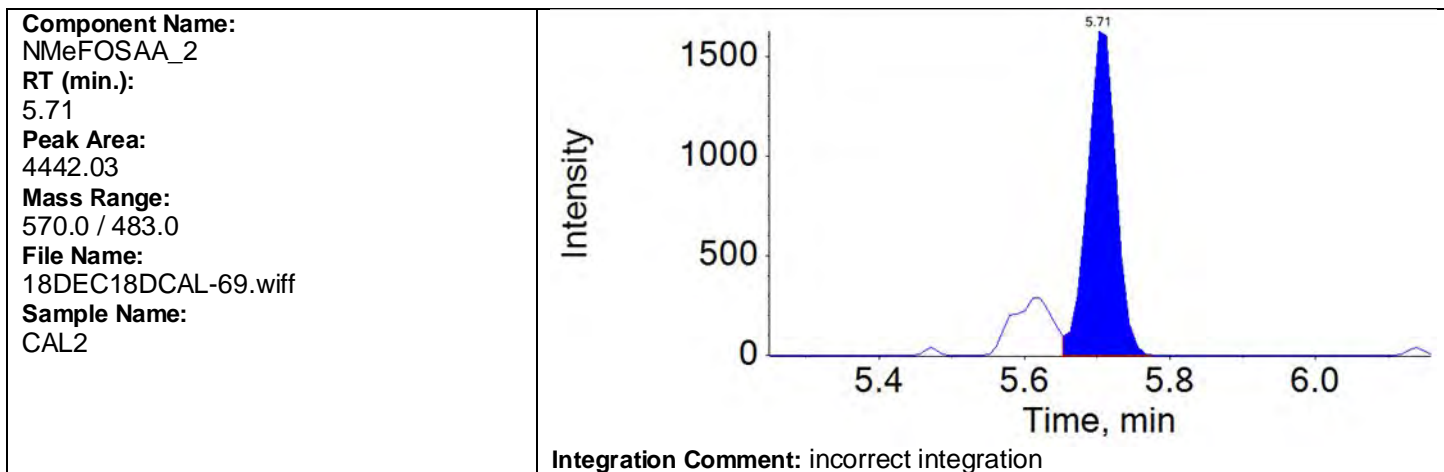
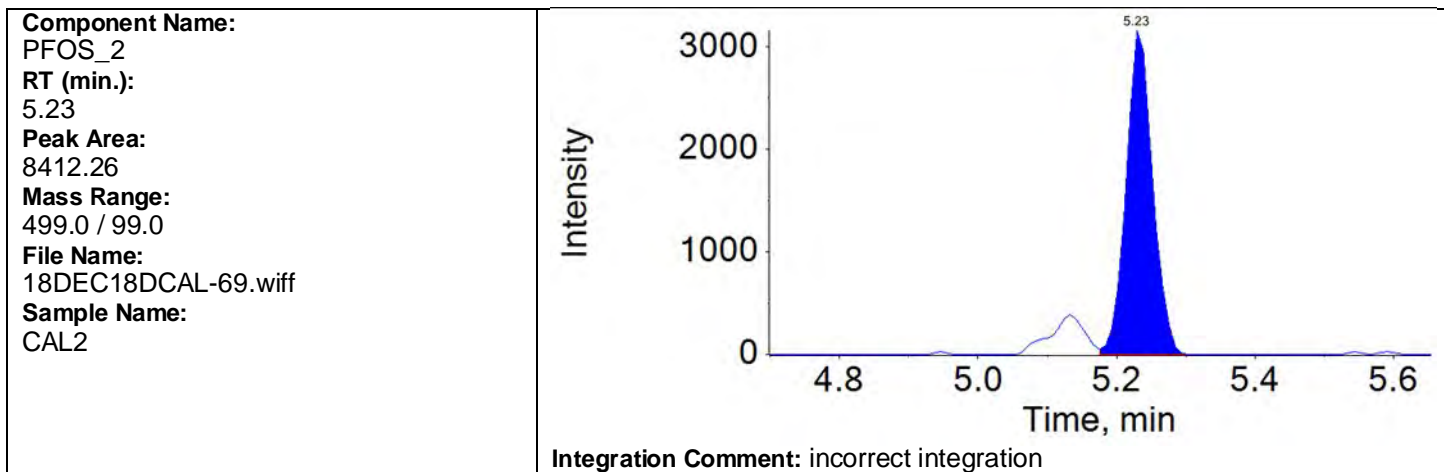
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Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

Ion Ratio Report

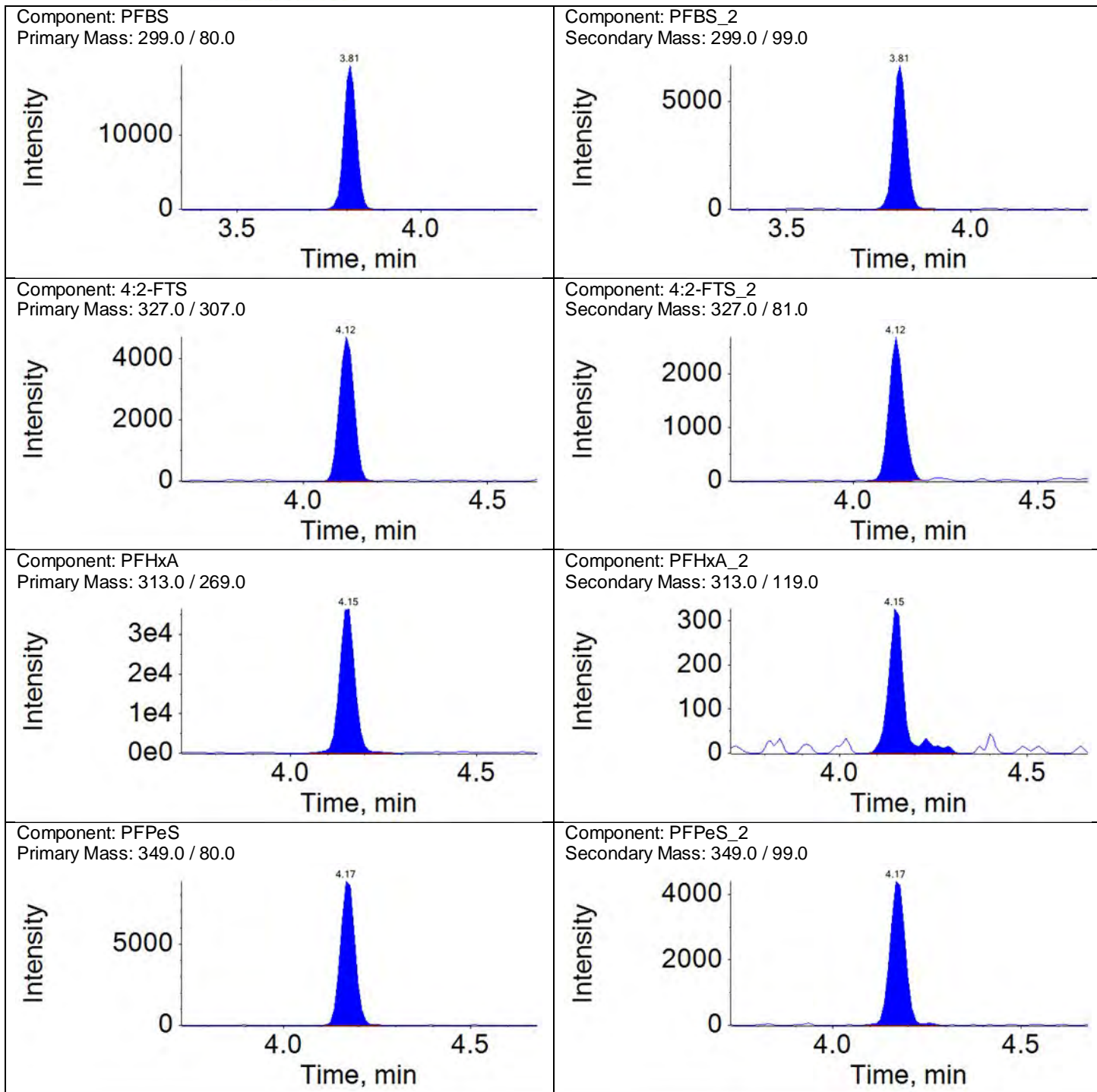
Sample Name: CAL2

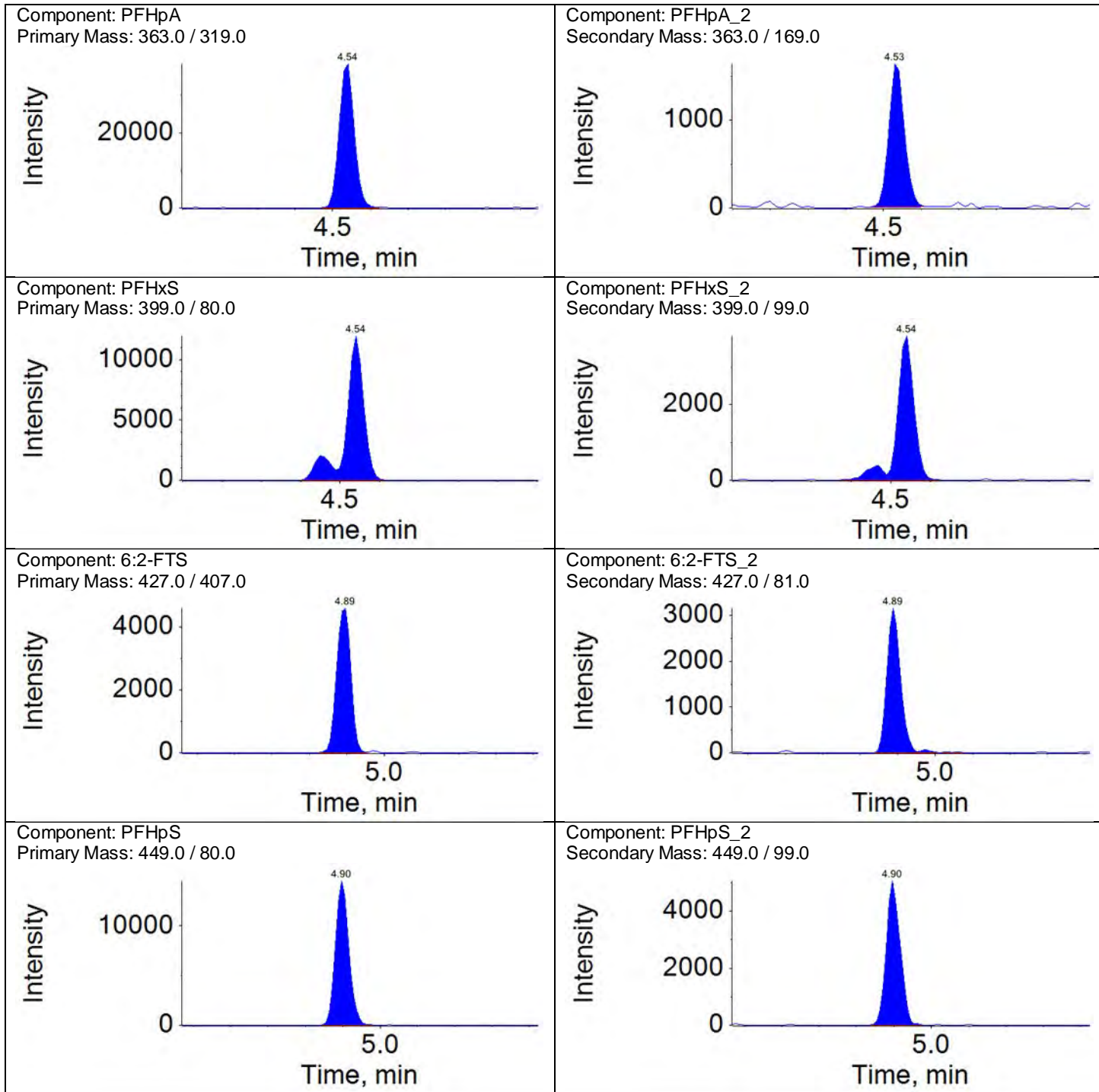
Instrument Name: LM27631

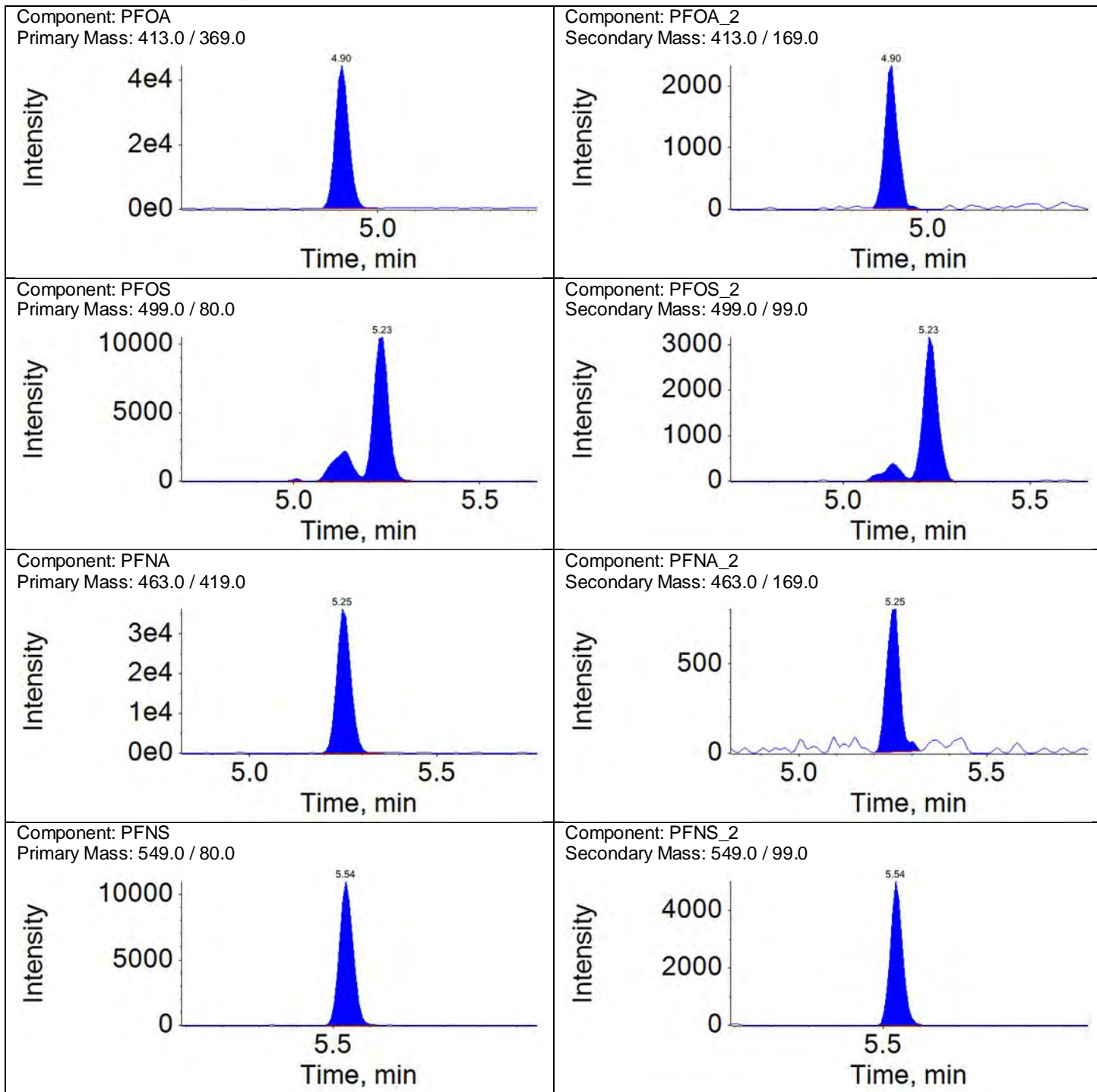
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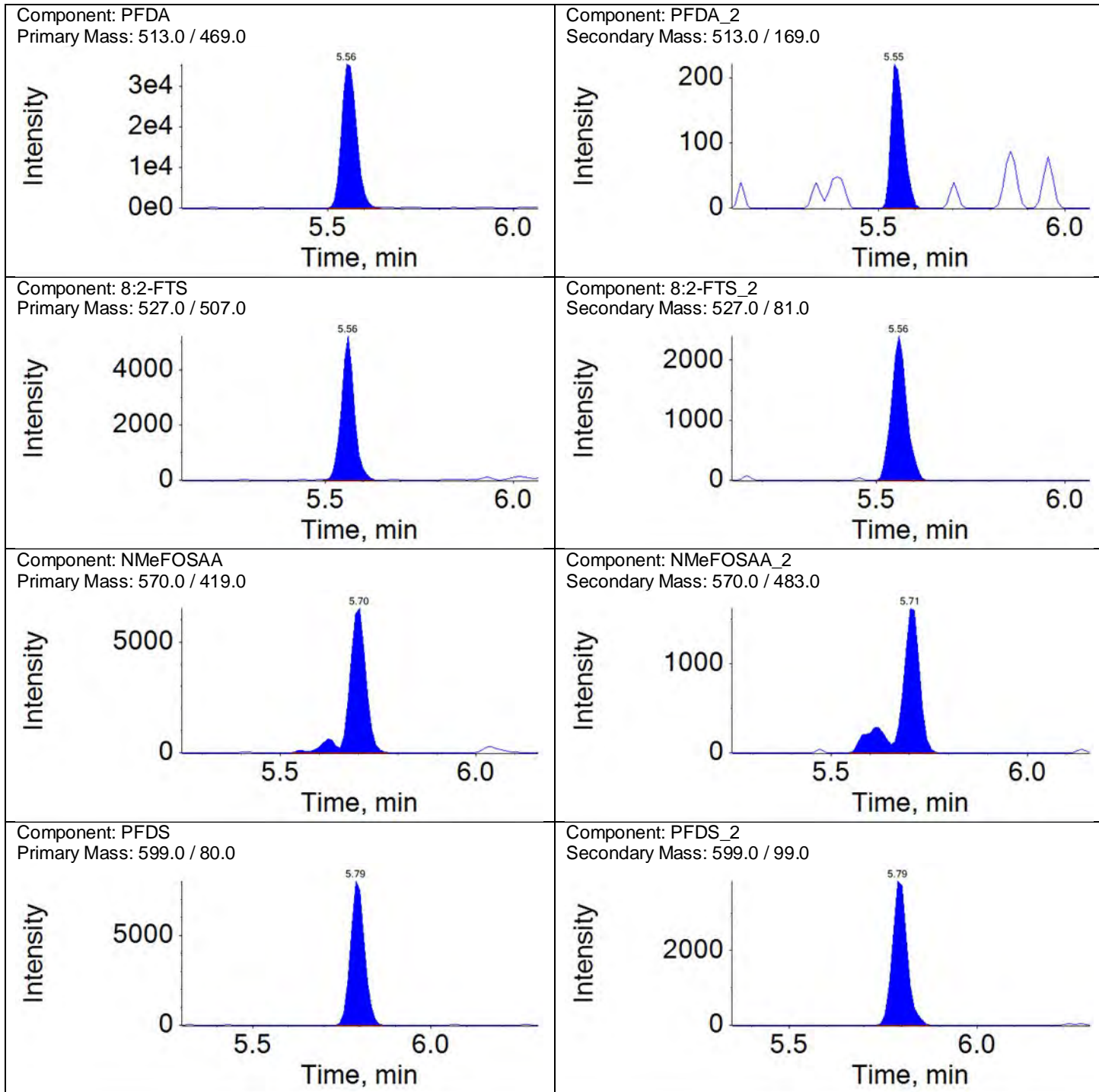
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	45656.93	A	1.0000	1.0000			
PFBS_2	3.81	1.00	16423.19	A	0.3686	0.3597	-2	50	
4:2-FTS	4.12	1.00	13063.14	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	7526.86	A	0.6123	0.5762	-6	50	
PFHxA	4.15	1.00	103487.64	A	1.0000	1.0000			
PFHxA_2	4.15	1.00	972.61	A	0.0115	0.0094	-18	50	
PFPeS	4.17	1.10	23803.26	A	1.0000	1.0000			
PFPeS_2	4.17	1.10	12419.32	A	0.5256	0.5217	-1	50	
PFHpA	4.54	1.00	106907.94	A	1.0000	1.0000			
PFHpA_2	4.53	1.00	4682.16	A	0.0547	0.0438	-20	50	
PFHxS	4.54	1.00	38176.07	M	1.0000	1.0000			
PFHxS_2	4.54	1.00	11538.55	A	0.3359	0.3022	-10	50	
6:2-FTS	4.89	1.00	12125.58	A	1.0000	1.0000			
6:2-FTS_2	4.89	1.00	8046.02	A	0.6344	0.6636	5	50	
PFHpS	4.90	1.08	36201.51	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	13046.44	A	0.4110	0.3604	-12	50	
PFOA	4.90	1.00	111923.34	A	1.0000	1.0000			
PFOA_2	4.90	1.00	5537.82	A	0.0590	0.0495	-16	50	
PFOS	5.23	1.00	37634.17	M	1.0000	1.0000			
PFOS_2	5.23	1.00	9750.99	M	0.2980	0.2591	-13	50	
PFNA	5.25	1.00	95019.16	A	1.0000	1.0000			
PFNA_2	5.25	1.00	2020.68	A	0.0214	0.0213	-1	50	
PFNS	5.54	1.06	28435.11	A	1.0000	1.0000			
PFNS_2	5.54	1.06	11402.60	A	0.4608	0.4010	-13	50	
PFDA	5.56	1.00	98187.60	A	1.0000	1.0000			
PFDA_2	5.55	1.00	521.35	A	0.0064	0.0053	-17	50	
8:2-FTS	5.56	1.00	12295.63	A	1.0000	1.0000			
8:2-FTS_2	5.56	1.00	6743.12	A	0.5879	0.5484	-7	50	
NMeFOSAA	5.70	1.00	19589.19	M	1.0000	1.0000			
NMeFOSAA_2	5.71	1.00	5562.20	M	0.2625	0.2839	8	50	
PFDS	5.79	1.11	21675.31	A	1.0000	1.0000			
PFDS_2	5.79	1.11	10462.41	A	0.4962	0.4827	-3	50	
PFOA_2	5.82	1.00	99413.67	A	1.0000	1.0000			
PFOA_2	5.82	1.00	258.22	A	0.0035	0.0026	-27	50	
NEtFOSAA	5.83	1.00	17104.70	A	1.0000	1.0000			
NEtFOSAA_2	5.83	1.00	10373.21	M	0.6883	0.6065	-12	50	
PFOA_2	6.04	1.00	130434.37	A	1.0000	1.0000			
PFOA_2	6.04	1.00	1718.19	A	0.0134	0.0132	-2	50	
10:2-FTS	6.05	1.09	12341.83	A	1.0000	1.0000			
10:2-FTS_2	6.06	1.09	7632.34	A	0.7018	0.6184	-12	50	
PFOA_2	6.23	1.03	129882.05	A	1.0000	1.0000			
PFOA_2	6.23	1.03	1724.69	A	0.0093	0.0133	42	50	
PFOA_2	6.41	1.00	87023.98	A	1.0000	1.0000			
PFOA_2	6.41	1.00	391.80	A	0.0058	0.0045	-23	50	
PFOA_2	6.71	1.05	43591.46	A	1.0000	1.0000			
PFOA_2	6.71	1.05	3125.05	A	0.0656	0.0717	9	50	
PFOA_2	6.97	1.09	32232.07	A	1.0000	1.0000			
PFOA_2	6.97	1.09	913.18	A	0.0273	0.0283	4	50	



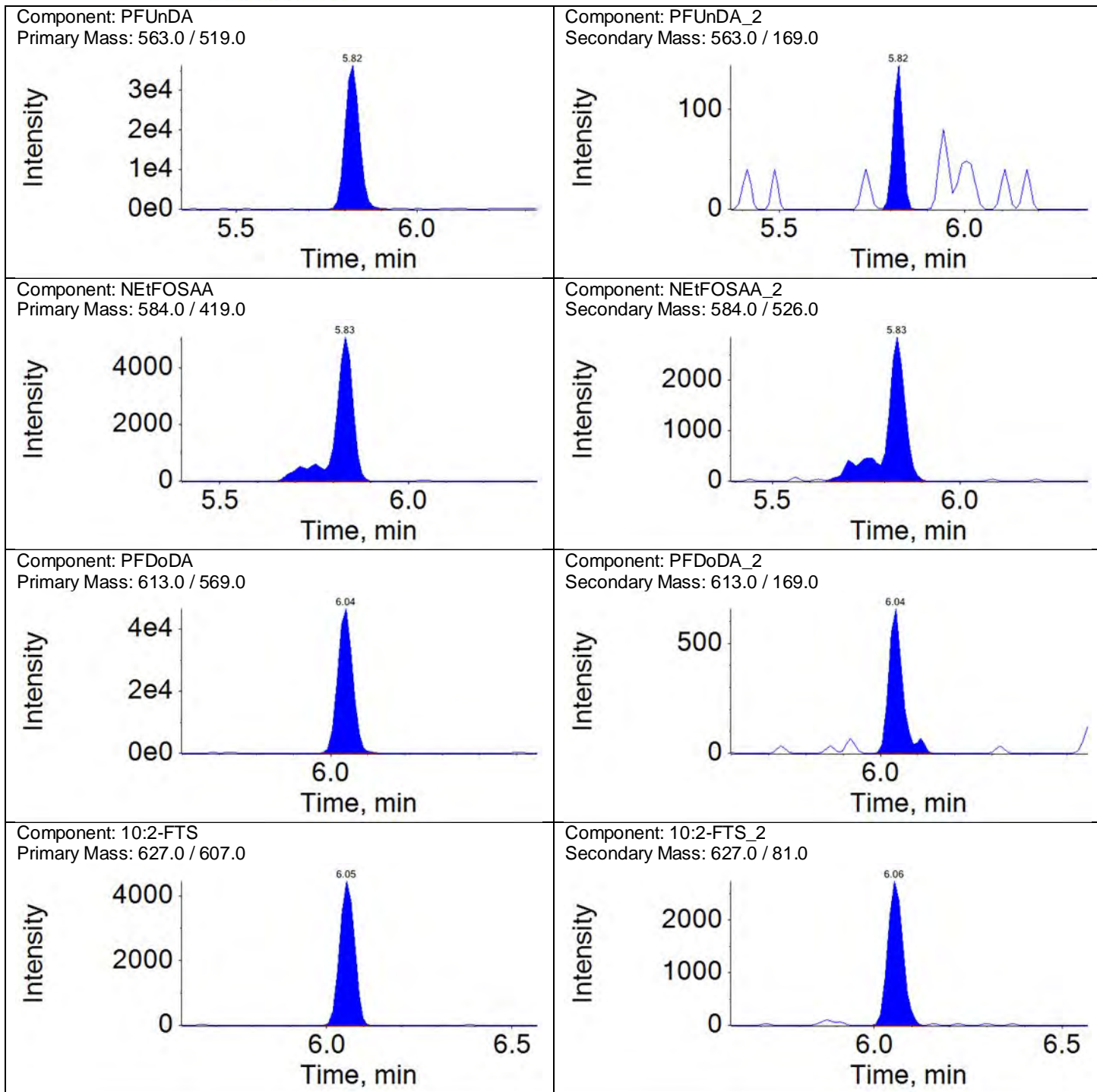




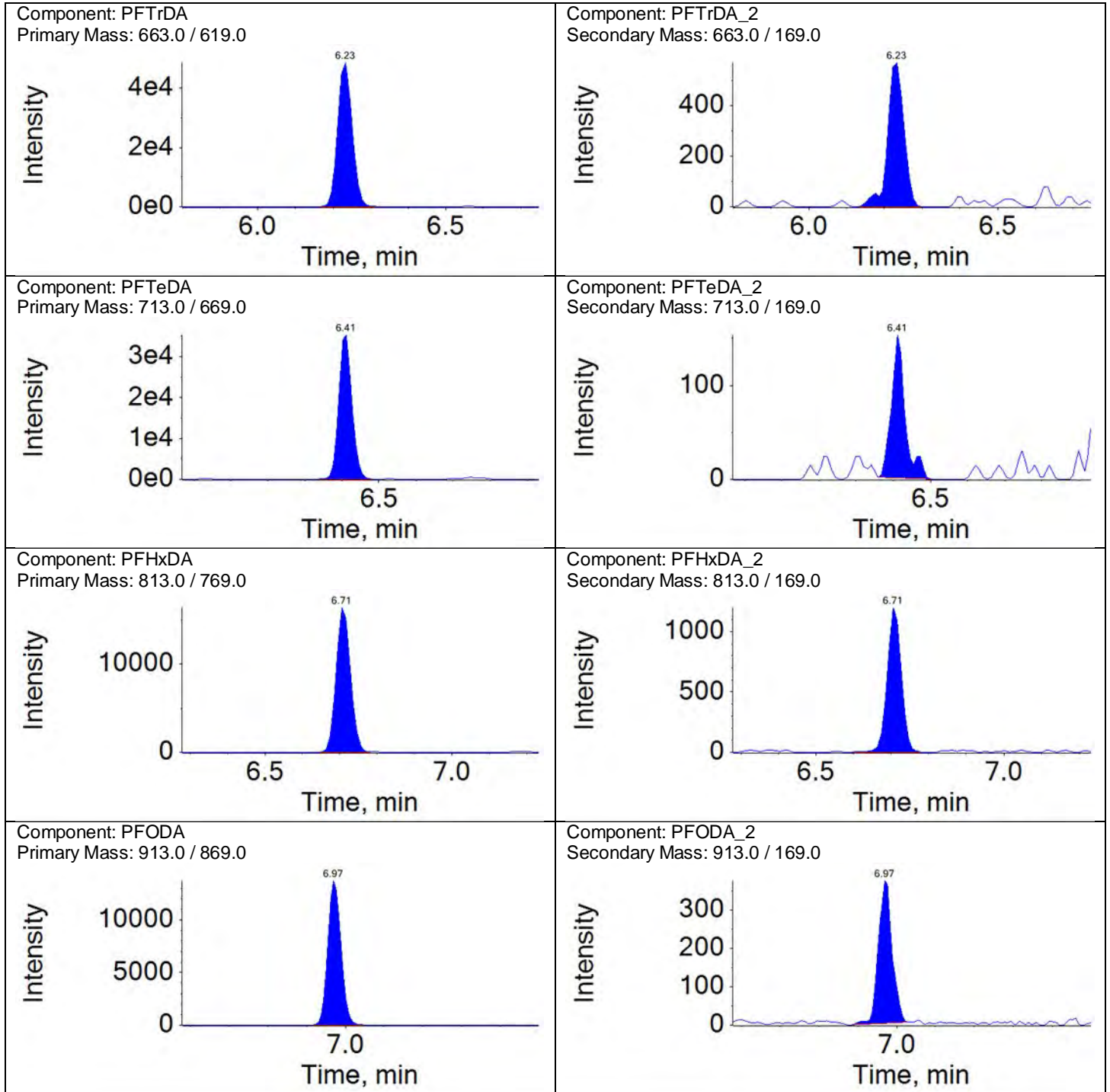












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL3	Data File:	18DEC18DCAL-70.wiff
Sample ID:	CALBRN31833B	Acquis Date:	2018-12-18T23:52:56
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	5	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	941251.6	941251.6	0	50	
13C2-PFOA	5.0	485595.3	485595.3	0	50	
13C4-PFOS	4.8	292182.6	292182.6	0	50	
13C2-PFDA	5.0	467216.0	467216.0	0	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1064422.8	13C3-PFBA	941251.6	1.131	5.000	5.008	100	70-130	
E13C5-PFPeA	1002351.7	13C3-PFBA	941251.6	1.065	5.000	4.966	99	70-130	
E13C3-PFBS	437376.4	13C3-PFBA	941251.6	0.465	4.650	4.525	97	70-130	
E13C2-4:2-FTS	64885.5	13C2-PFOA	485595.3	0.134	4.670	5.075	109	70-130	
E13C5-PFHxA	765483.5	13C2-PFOA	485595.3	1.576	5.000	5.639	113	70-130	
E13C3-PFHxS	330322.9	13C2-PFOA	485595.3	0.680	4.730	5.147	109	70-130	
E13C4-PFHpA	614238.8	13C2-PFOA	485595.3	1.265	5.000	5.464	109	70-130	
E13C2-6:2-FTS	51288.8	13C2-PFOA	485595.3	0.106	4.750	5.314	112	70-130	
E13C8-PFOA	979199.9	13C2-PFOA	485595.3	2.016	5.000	5.545	111	70-130	
E13C8-PFOS	308110.3	13C4-PFOS	292182.6	1.055	4.780	4.716	99	70-130	
E13C9-PFNA	651529.1	13C4-PFOS	292182.6	2.230	5.000	5.073	101	70-130	
E13C6-PFDA	851991.7	13C2-PFDA	467216.0	1.824	5.000	5.194	104	70-130	
E13C2-8:2-FTS	47968.9	13C2-PFDA	467216.0	0.103	4.790	5.292	110	70-130	
E13C8-PFOSA	642239.6	13C2-PFDA	467216.0	1.375	5.000	5.353	107	70-130	
Ed3-NMeFOSAA	216983.7	13C2-PFDA	467216.0	0.464	5.000	5.109	102	70-130	
E13C7-PFUnDA	580977.3	13C2-PFDA	467216.0	1.243	5.000	5.205	104	70-130	
Ed5-NEtFOSAA	167747.4	13C2-PFDA	467216.0	0.359	5.000	5.289	106	70-130	
E13C2-PFDoDA	1210049.2	13C2-PFDA	467216.0	2.590	5.000	5.449	109	70-130	
Ed7-NMePFOSAE	265025.4	13C2-PFDA	467216.0	0.567	5.000	5.068	101	70-130	
Ed3-NMePFOSA	83036.4	13C2-PFDA	467216.0	0.178	5.000	4.883	98	70-130	
Ed9-NEtPFOSAE	221303.4	13C2-PFDA	467216.0	0.474	5.000	4.843	97	70-130	
Ed5-NEtPFOSA	67700.6	13C2-PFDA	467216.0	0.145	5.000	5.026	101	70-130	
E13C2-PFTeDA	839561.7	13C2-PFDA	467216.0	1.797	5.000	5.064	101	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

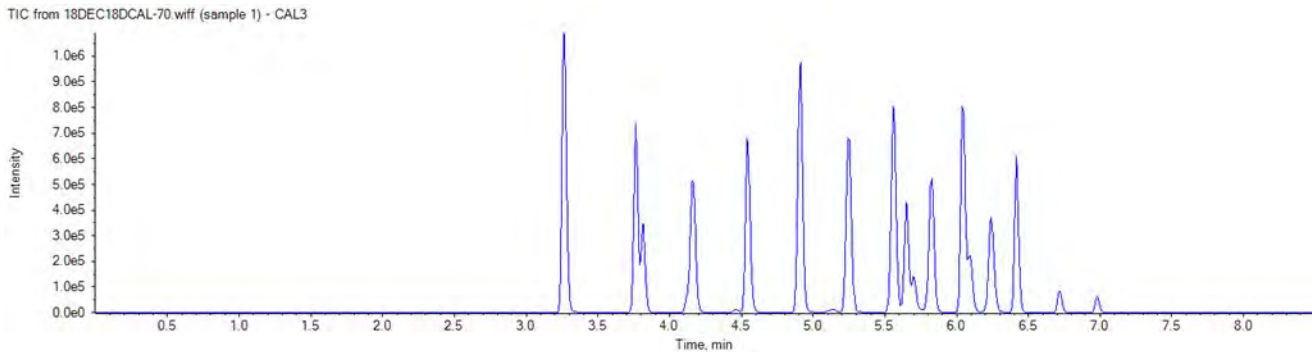
Analyte Quantitation Peak Table

Sample Name: CAL3 Instrument Name: LM27631 File Name: 18DEC18DCAL-70.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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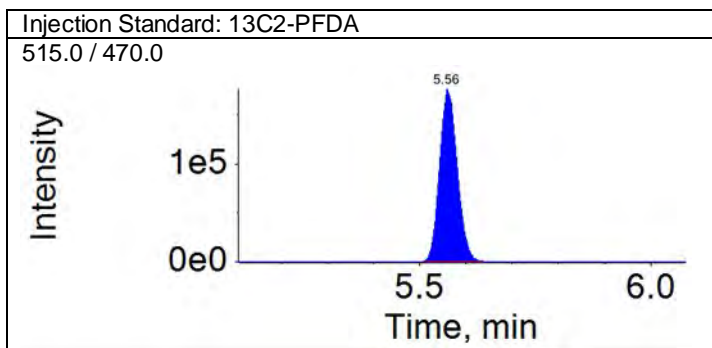
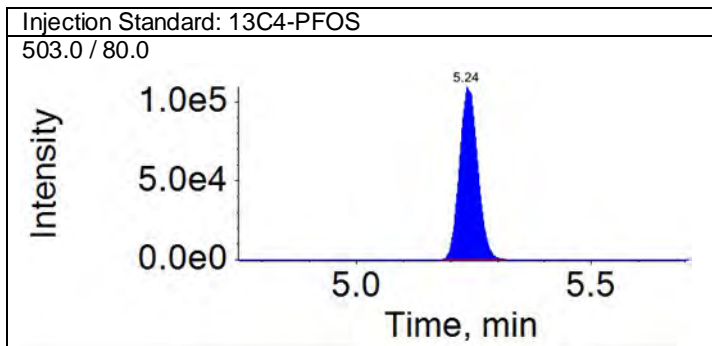
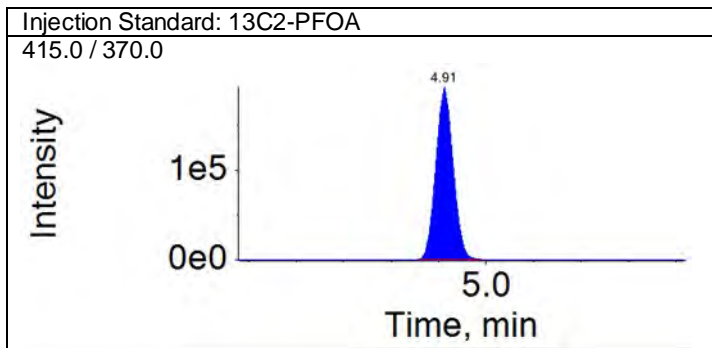
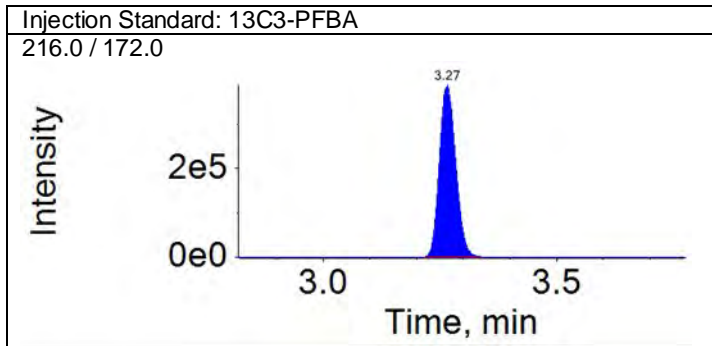
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PFBA	3.26	1.000	433751.9		A	13C4-PFBA	3.26	1064422.8	0.407	2.164
PFPeA	3.77	1.000	436276.8		A	13C5-PFPeA	3.77	1002351.7	0.435	2.247
PFBS	3.81	1.000	173568.8		A	13C3-PFBS	3.82	437376.4	0.397	1.959
4:2-FTS	4.12	1.000	47502.5		A	13C2-4:2-FTS	4.13	64885.5	0.732	1.921
PFHxA	4.16	1.000	378858.0		A	13C5-PFHxA	4.16	765483.5	0.495	2.039
PFPeS	4.18	1.100	89858.4		A	13C3-PFBS	3.82	437376.4	0.205	2.092
PFHpA	4.54	1.000	414340.2		A	13C4-PFHpA	4.54	614238.8	0.675	2.237
PFHxS	4.55	1.000	134520.8		M	13C3-PFHxS	4.55	330322.9	0.407	1.981
6:2-FTS	4.90	1.000	44576.1		A	13C2-6:2-FTS	4.90	51288.8	0.869	2.164
PFHpS	4.90	1.080	137901.4		A	13C3-PFHxS	4.55	330322.9	0.417	2.208
PFOA	4.91	1.000	436531.1		A	13C8-PFOA	4.91	979199.9	0.446	2.362
PFOS	5.24	1.000	147878.3		M	13C8-PFOS	5.24	308110.3	0.480	2.101
PFNA	5.25	1.000	367113.4		A	13C9-PFNA	5.25	651529.1	0.563	2.239
PFNS	5.54	1.060	106124.4		A	13C8-PFOS	5.24	308110.3	0.344	2.190
PFDA	5.56	1.000	331802.2		A	13C6-PFDA	5.56	851991.7	0.389	2.011
8:2-FTS	5.56	1.000	49849.8		A	13C2-8:2-FTS	5.56	47968.9	1.039	2.092
PFOSA	5.65	1.000	269934.9		A	13C8-PFOSA	5.65	642239.6	0.420	2.102
NMeFOSAA	5.71	1.000	76313.7		M	d3-NMeFOSAA	5.70	216983.7	0.352	2.186
PFDS	5.80	1.110	80173.4		A	13C8-PFOS	5.24	308110.3	0.260	2.136
PfUnDA	5.82	1.000	373908.4		A	13C7-PfUnDA	5.82	580977.3	0.644	2.131
NEtFOSAA	5.84	1.000	69414.3		M	d5-NEtFOSAA	5.83	167747.4	0.414	2.109
PFDoDA	6.04	1.000	517307.3		A	13C2-PFDoDA	6.04	1210049.2	0.428	2.154
10:2-FTS	6.06	1.090	50421.2		A	13C2-8:2-FTS	5.56	47968.9	1.051	2.141
NMePFOSAE	6.10	1.000	133428.3		A	d7-NMePFOSAE	6.09	265025.4	0.503	2.221
NMePFOSA	6.11	1.000	35694.8		A	d3-NMePFOSA	6.10	83036.4	0.430	2.170
PFDoS	6.21	1.190	39644.9		A	13C8-PFOS	5.24	308110.3	0.129	1.949
NEtPFOSAE	6.25	1.000	142578.1		A	d9-NEtPFOSAE	6.24	221303.4	0.644	2.105
NEtPFOSA	6.27	1.000	32089.9		A	d5-NEtPFOSA	6.26	67700.6	0.474	2.217
PfTrDA	6.24	1.030	481635.8		A	13C2-PFDoDA	6.04	1210049.2	0.398	2.042
PfTeDA	6.42	1.000	333217.0		A	13C2-PfTeDA	6.42	839561.7	0.397	2.137
PFHxDA	6.72	1.050	174998.1		A	13C2-PfTeDA	6.42	839561.7	0.208	2.289
PFODA	6.98	1.090	129704.8		A	13C2-PfTeDA	6.42	839561.7	0.154	2.220

Total Ion Chromatogram



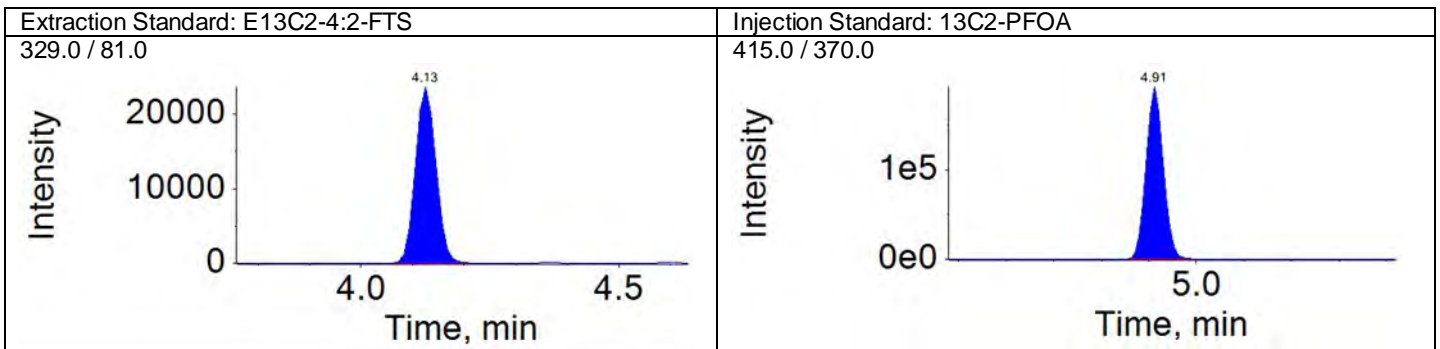
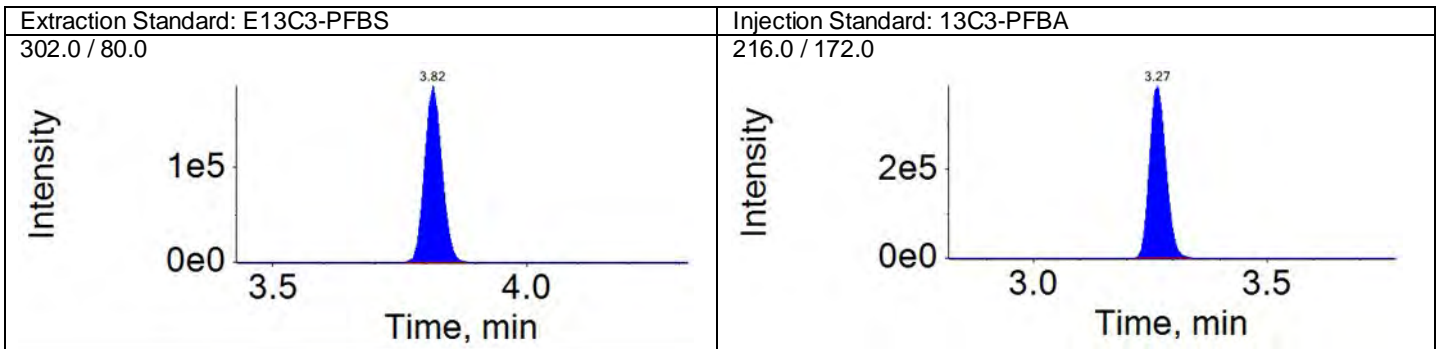
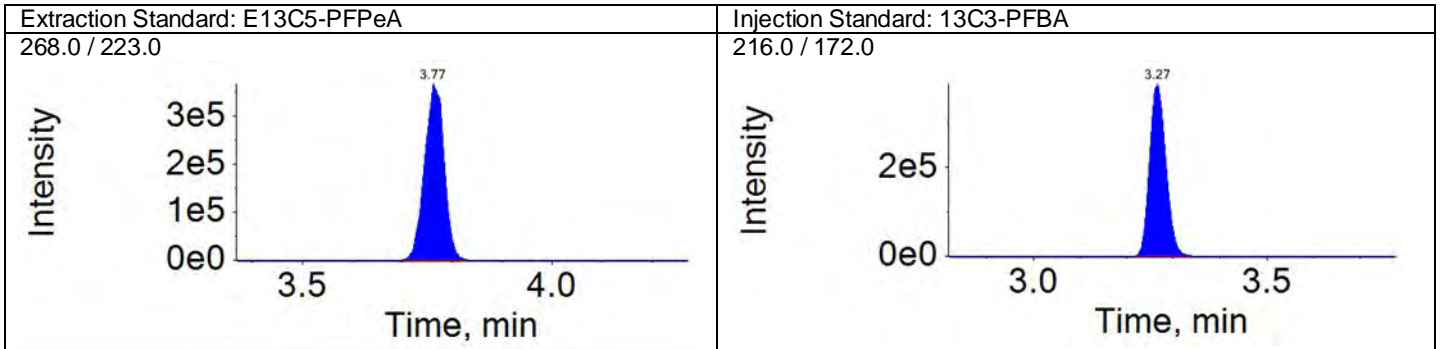
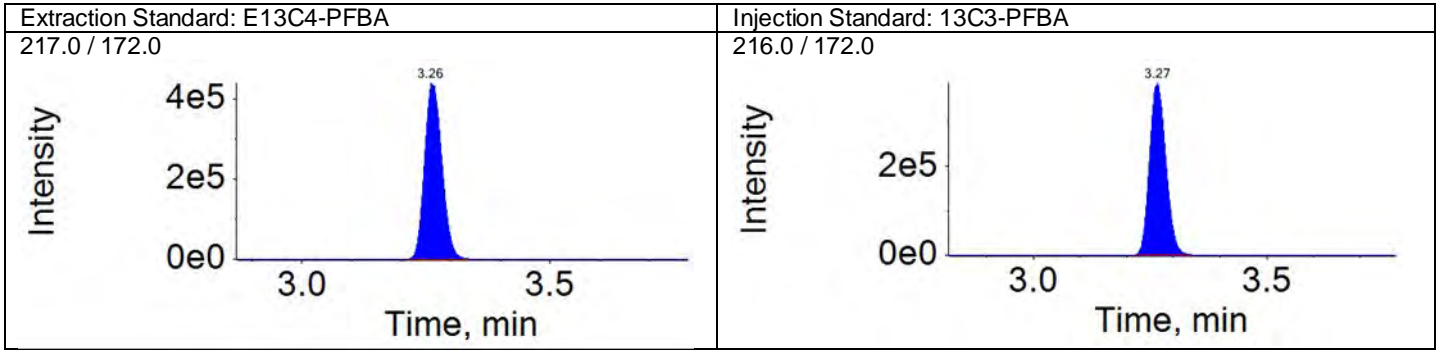
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



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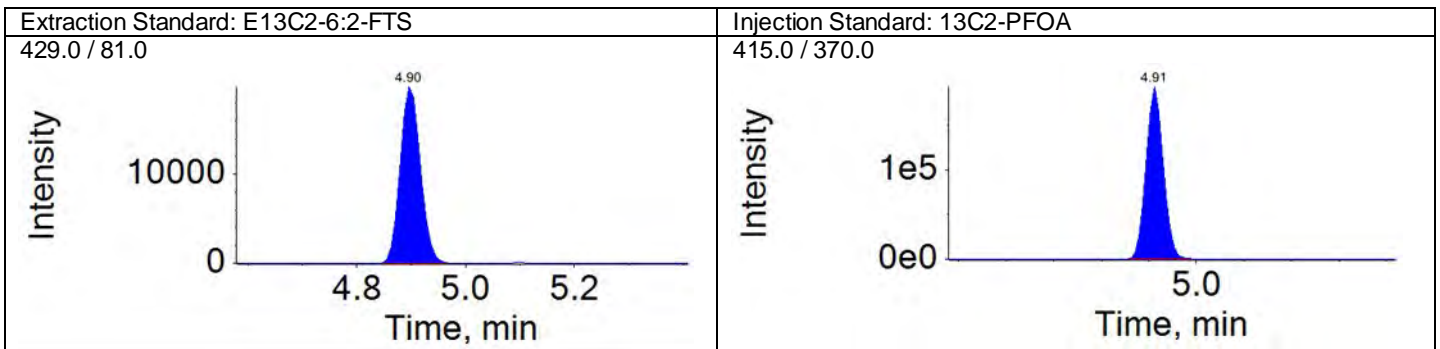
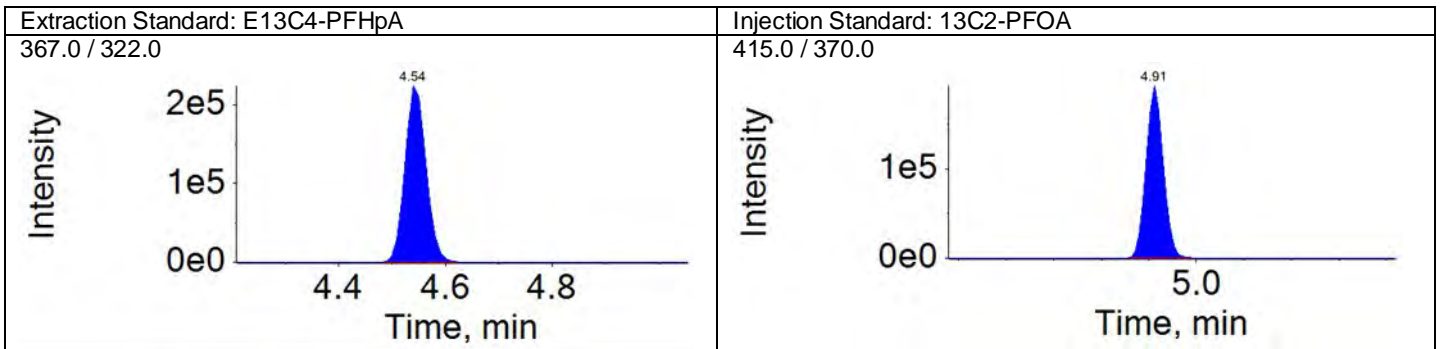
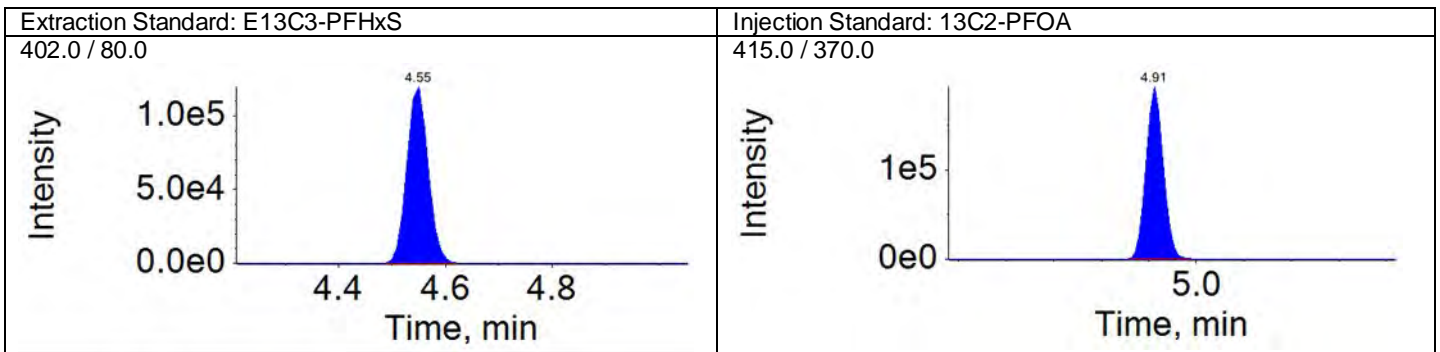
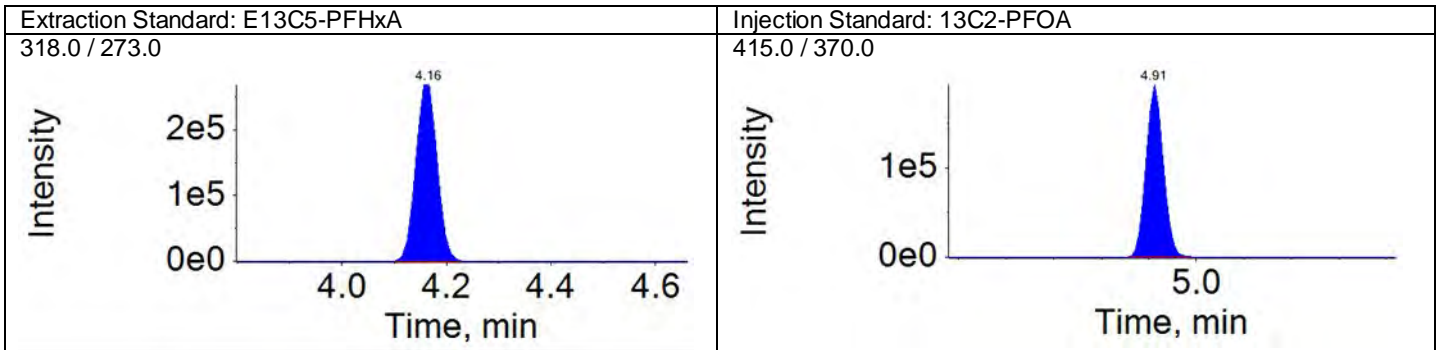
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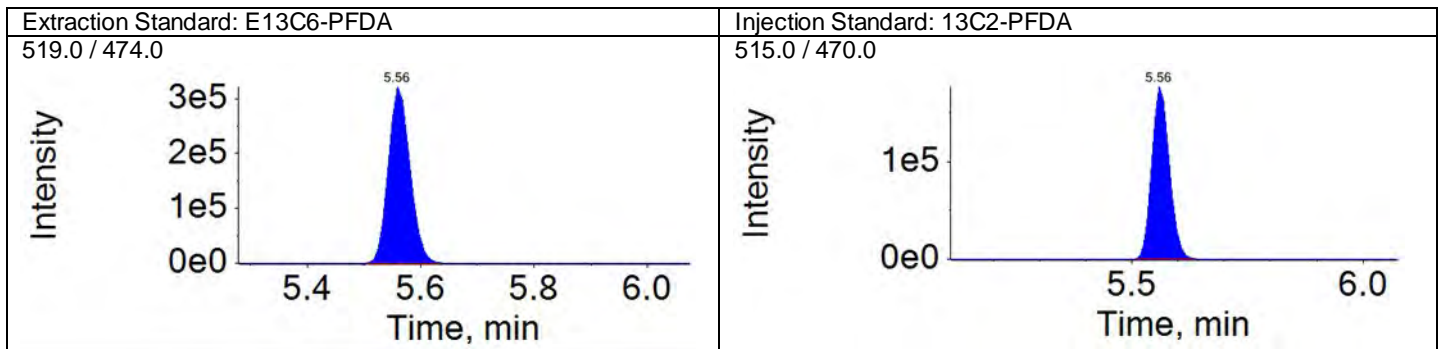
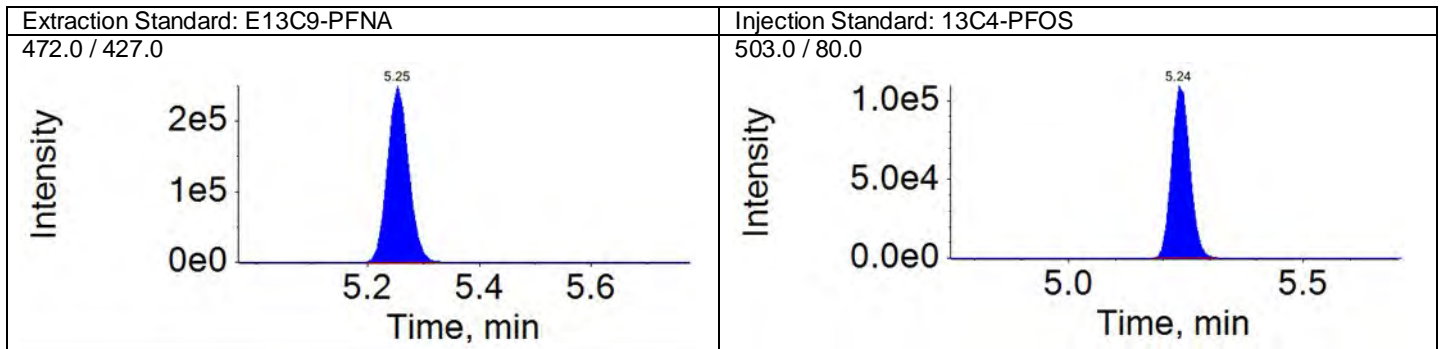
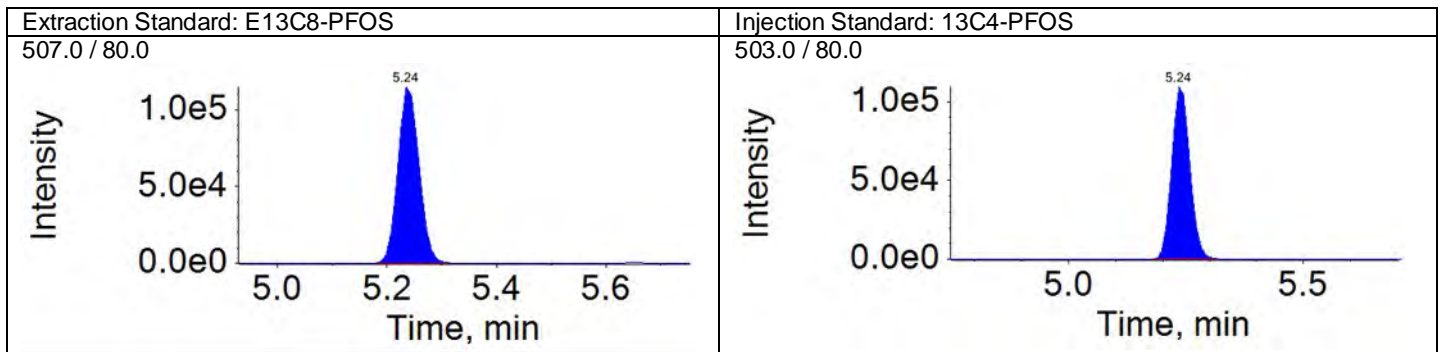
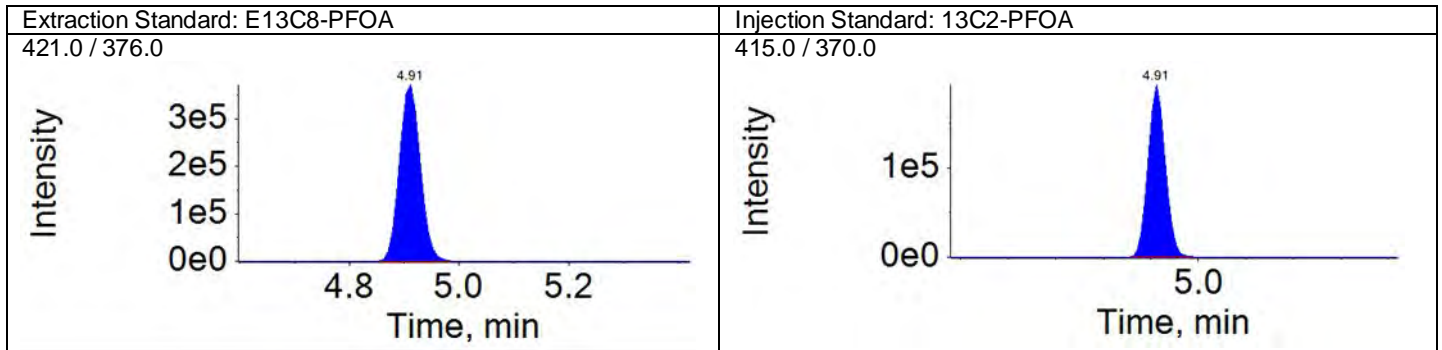
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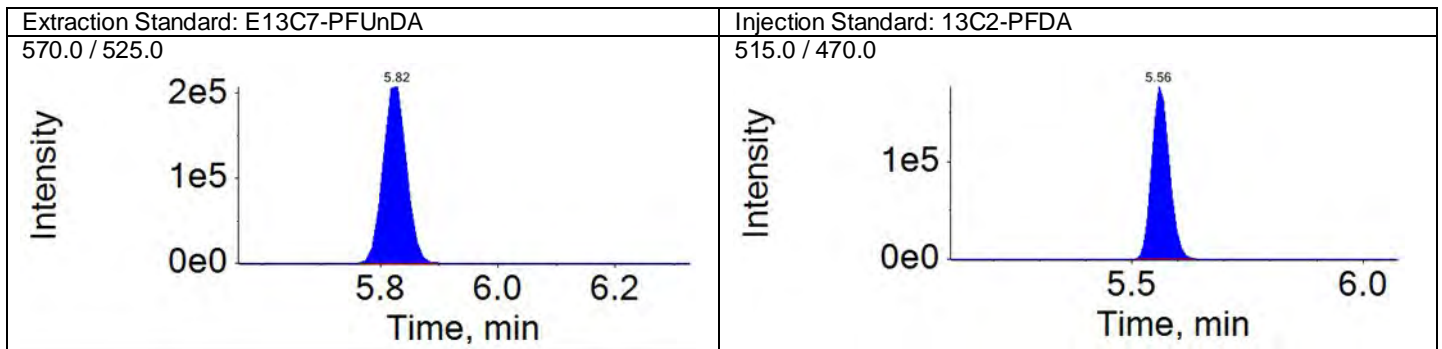
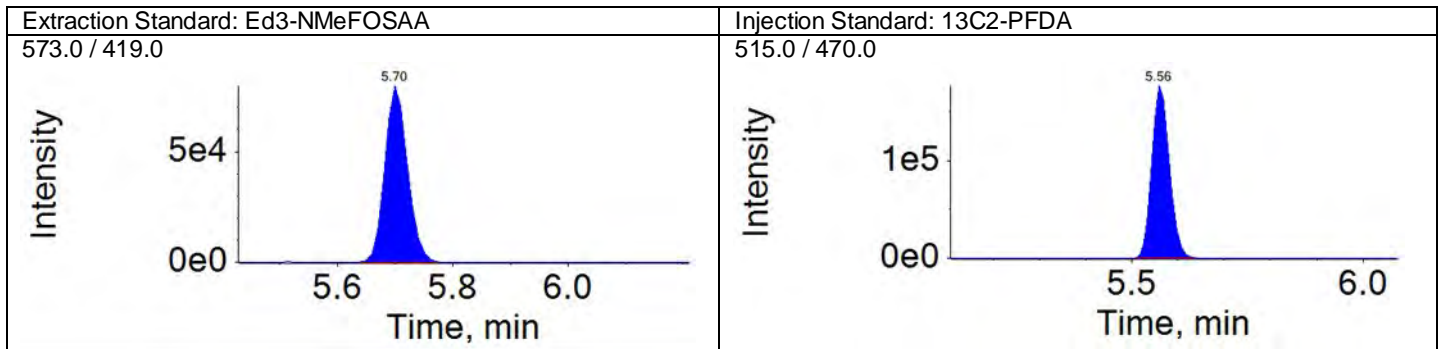
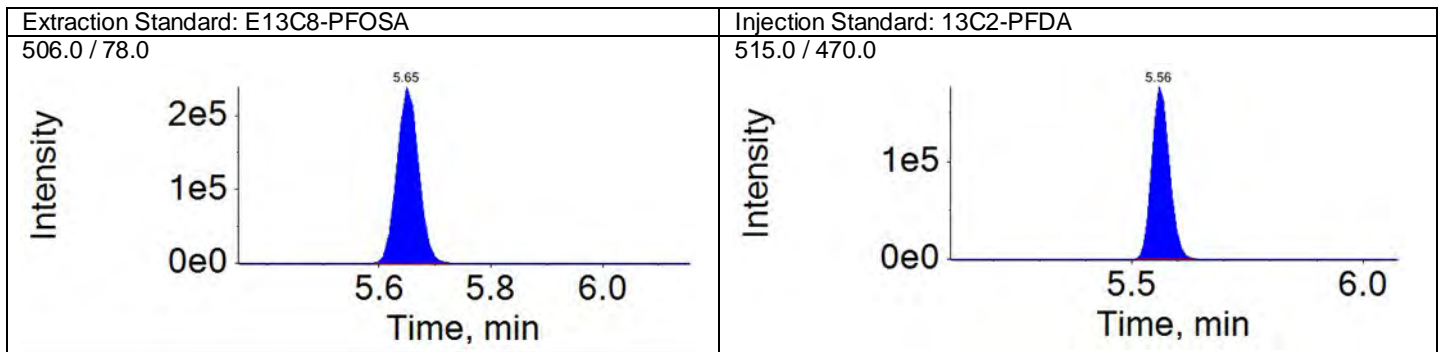
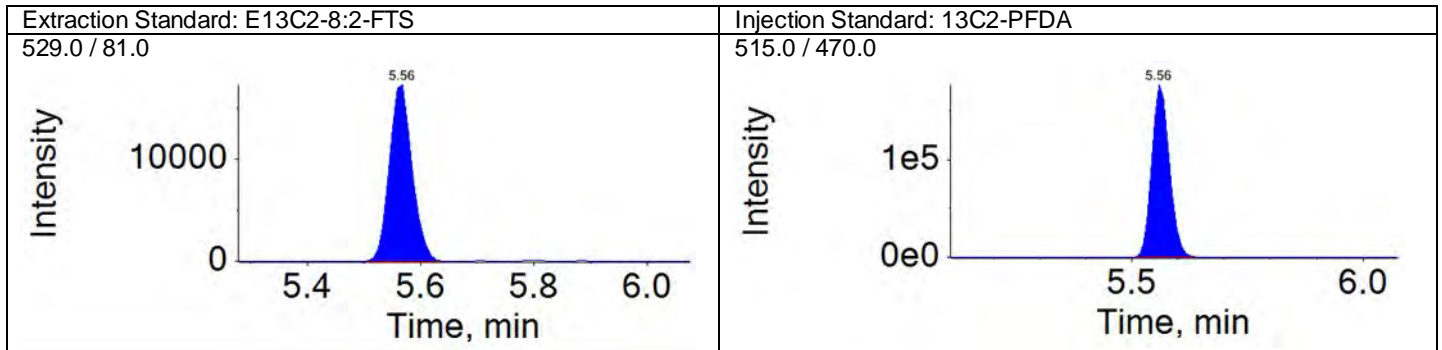
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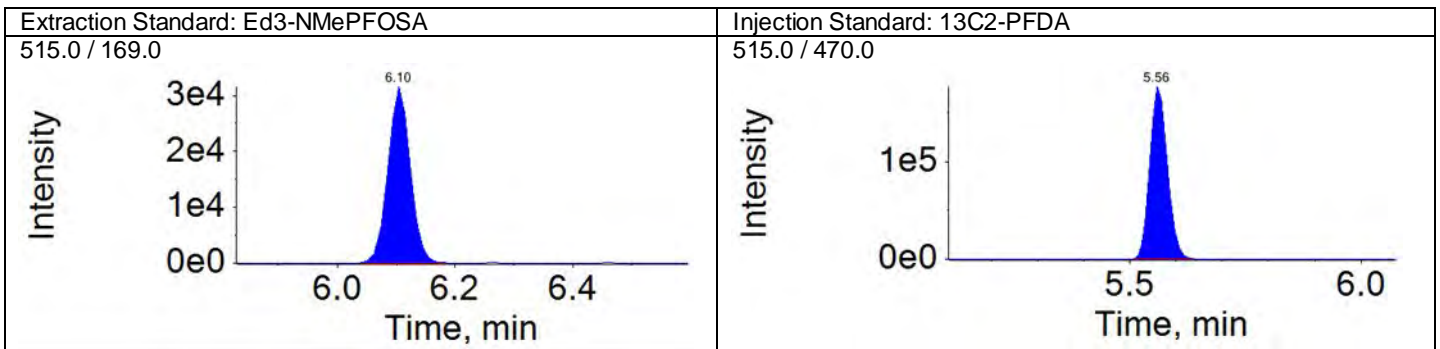
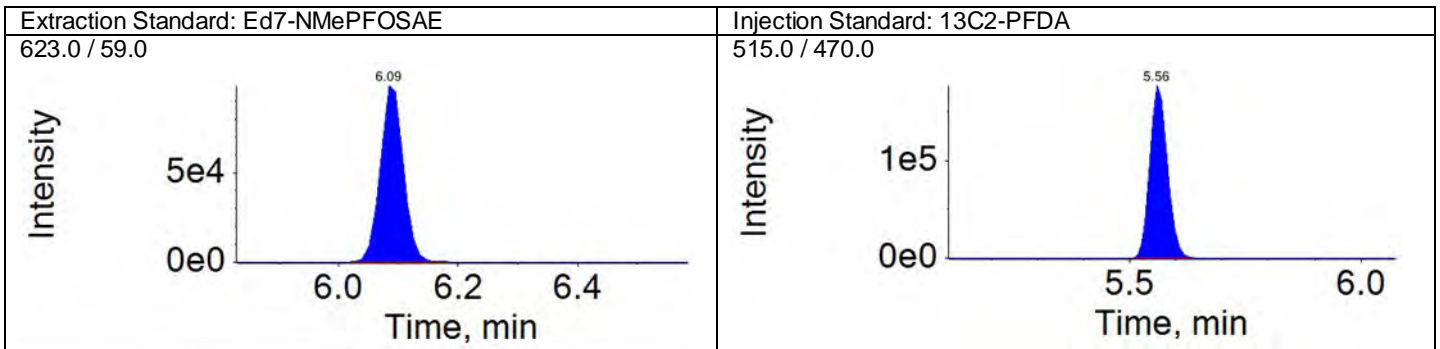
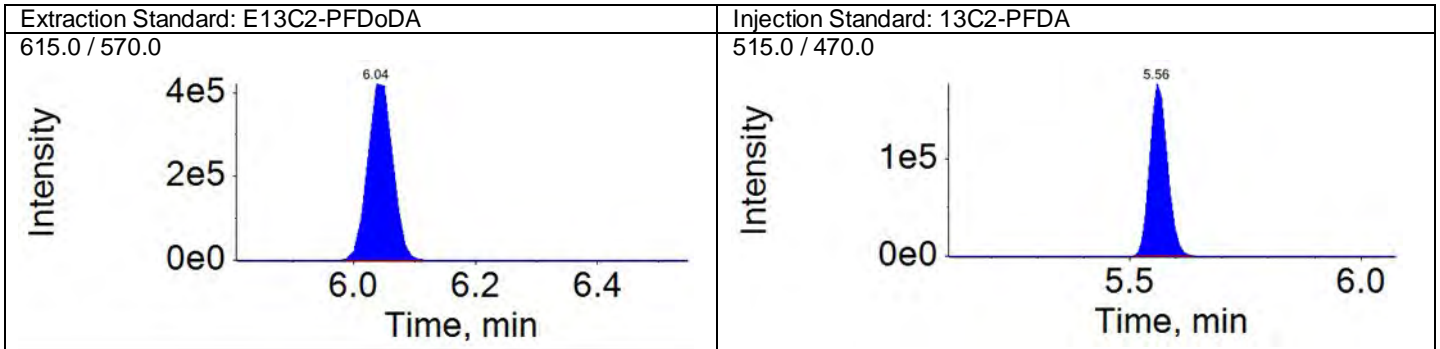
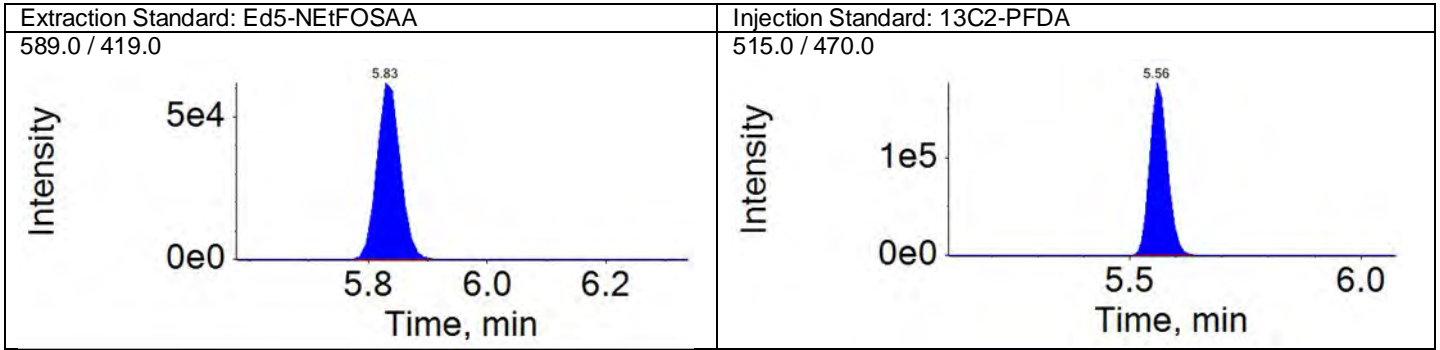
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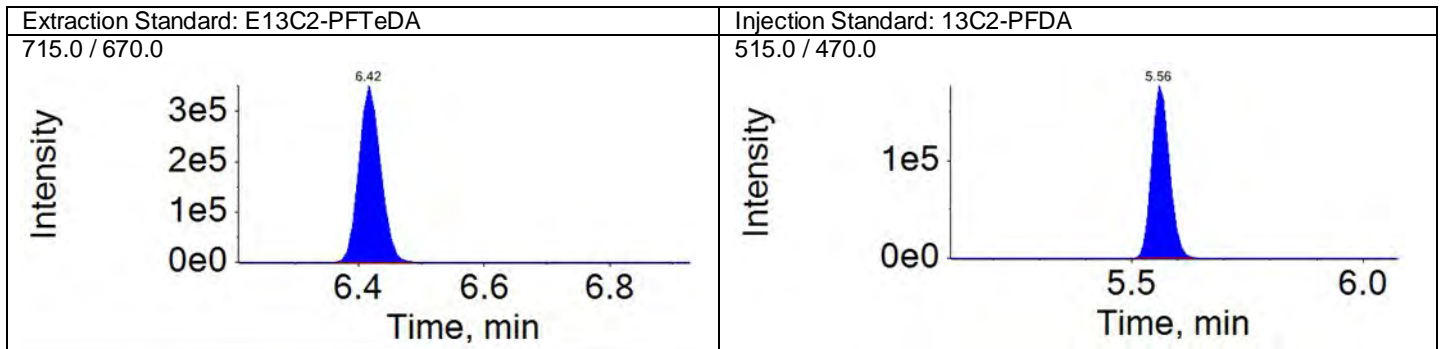
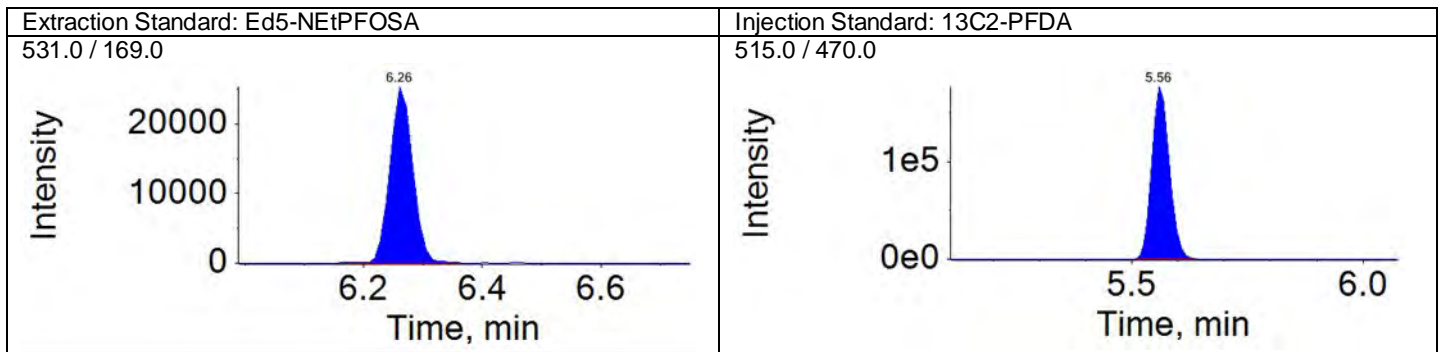
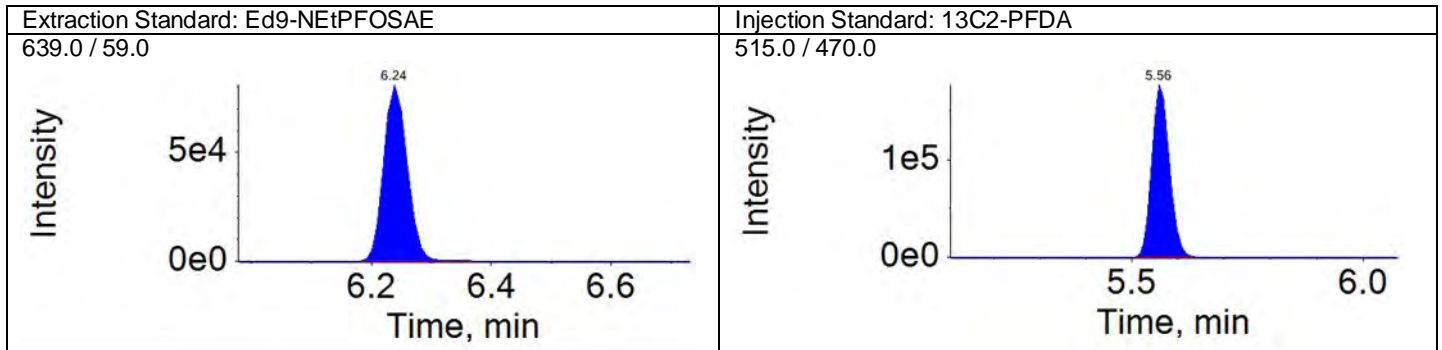
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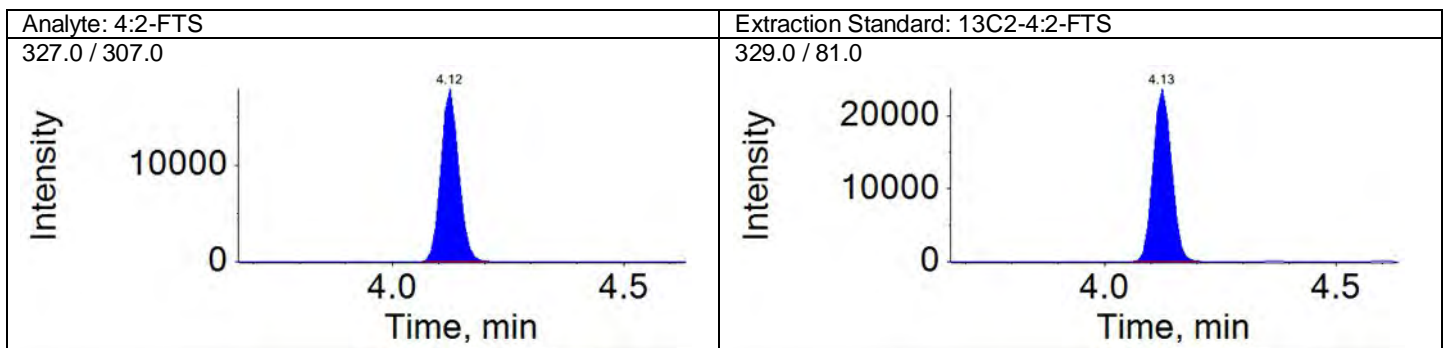
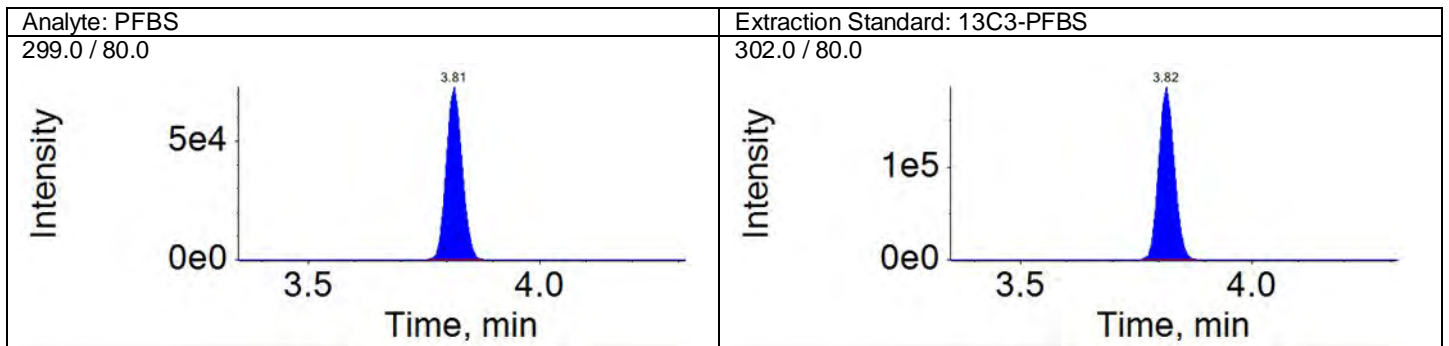
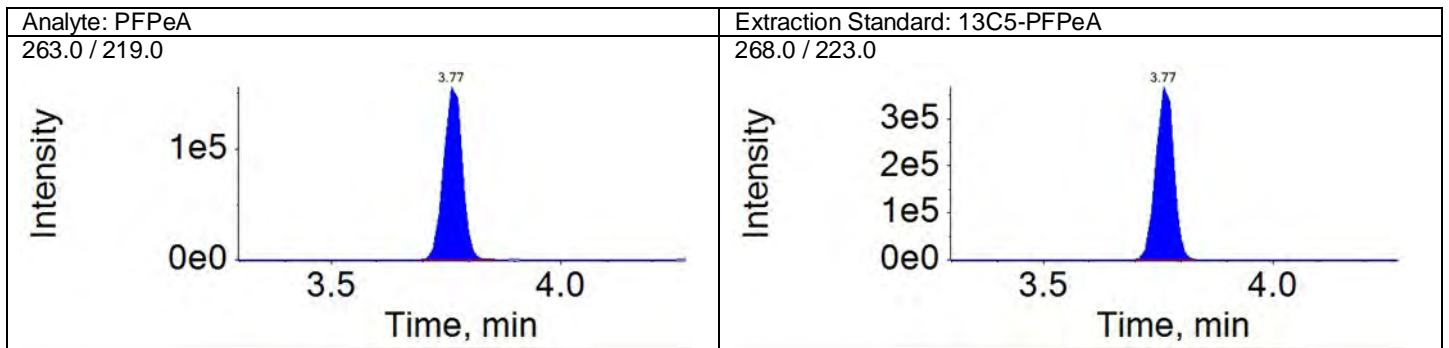
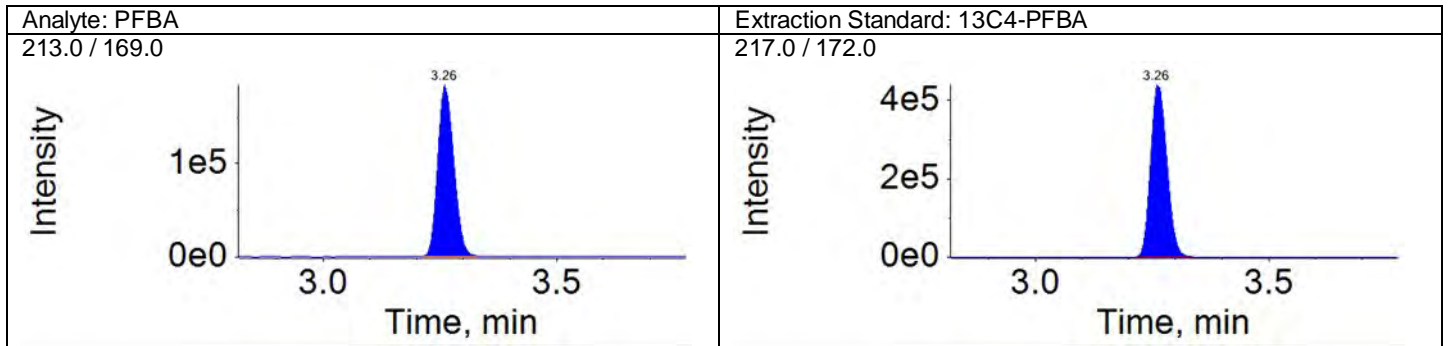
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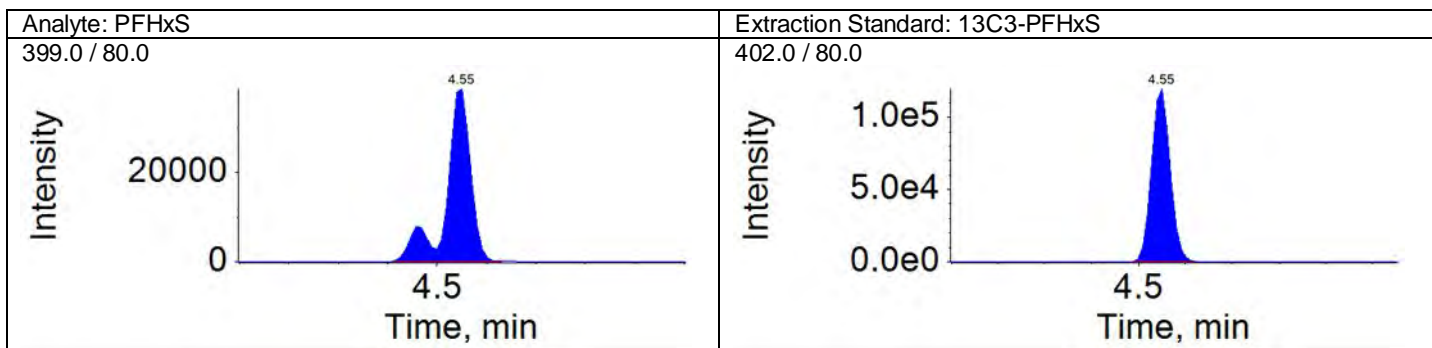
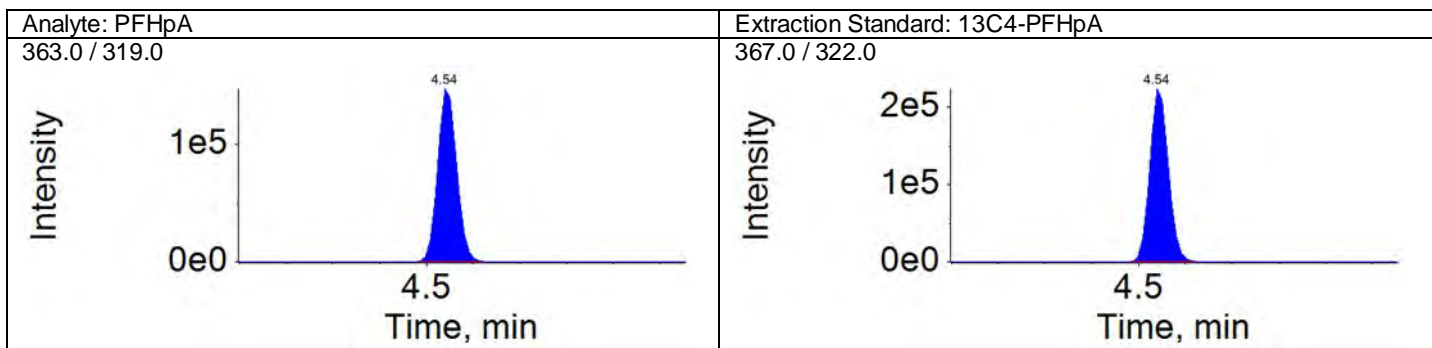
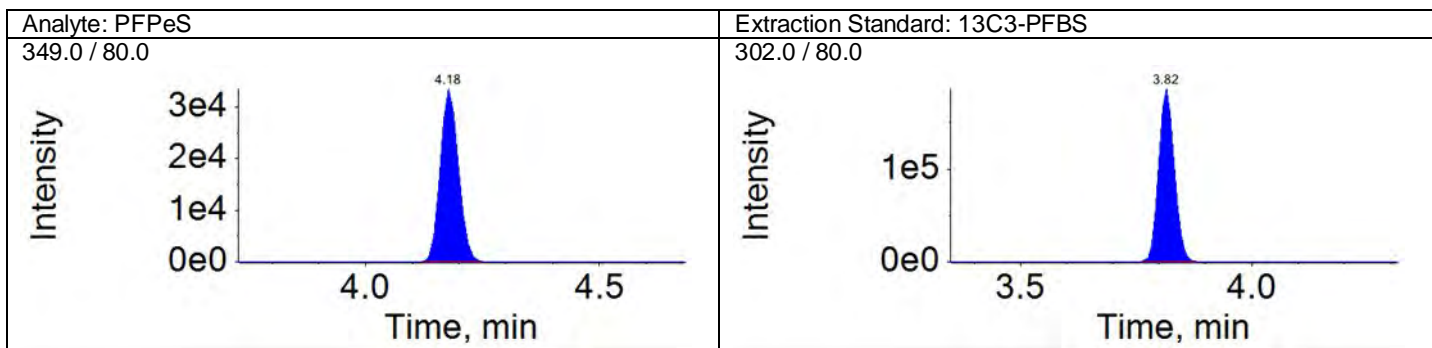
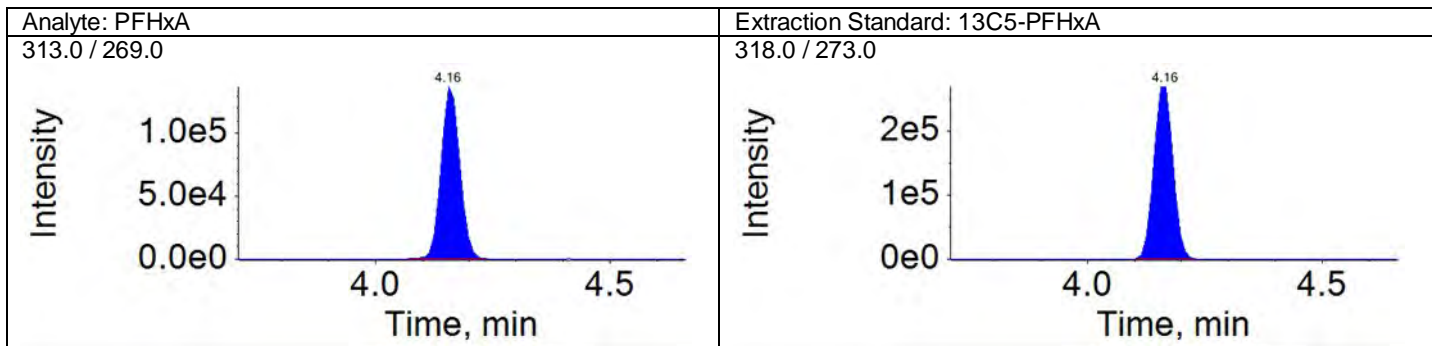
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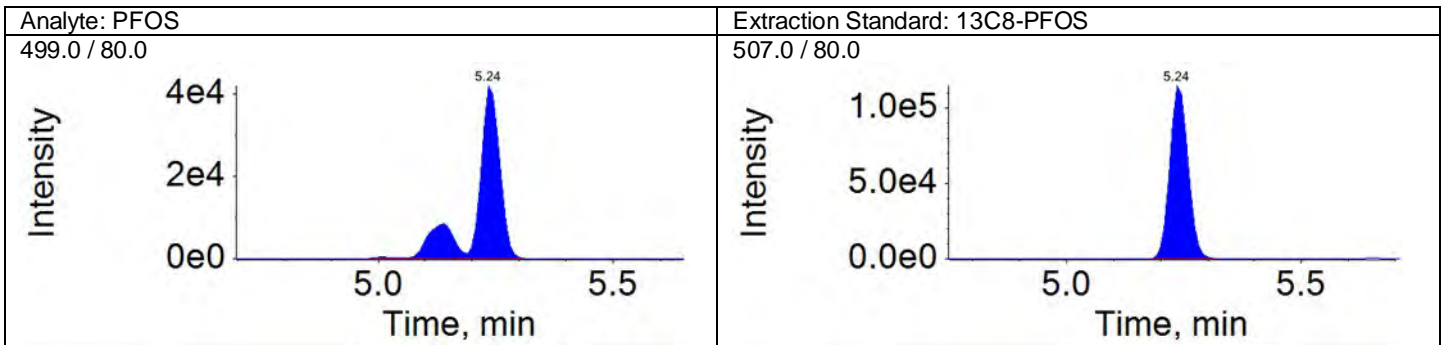
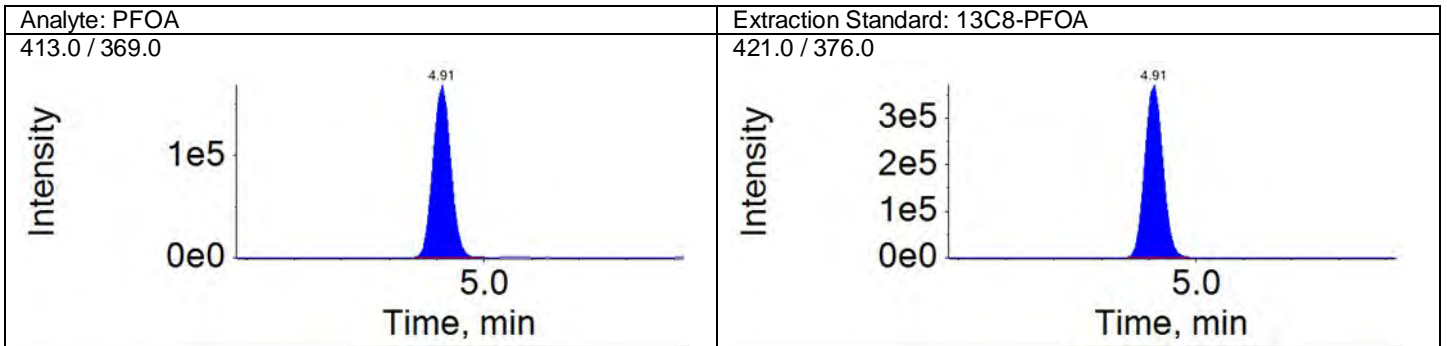
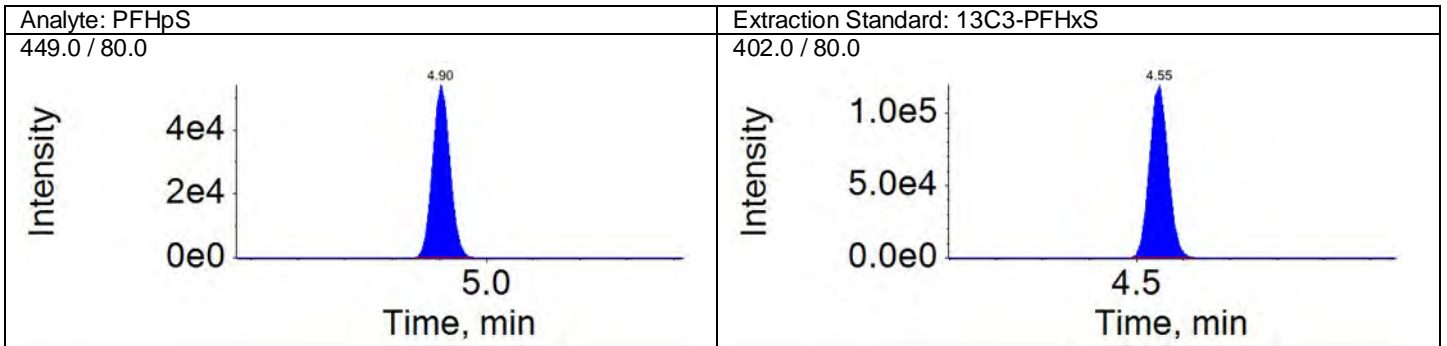
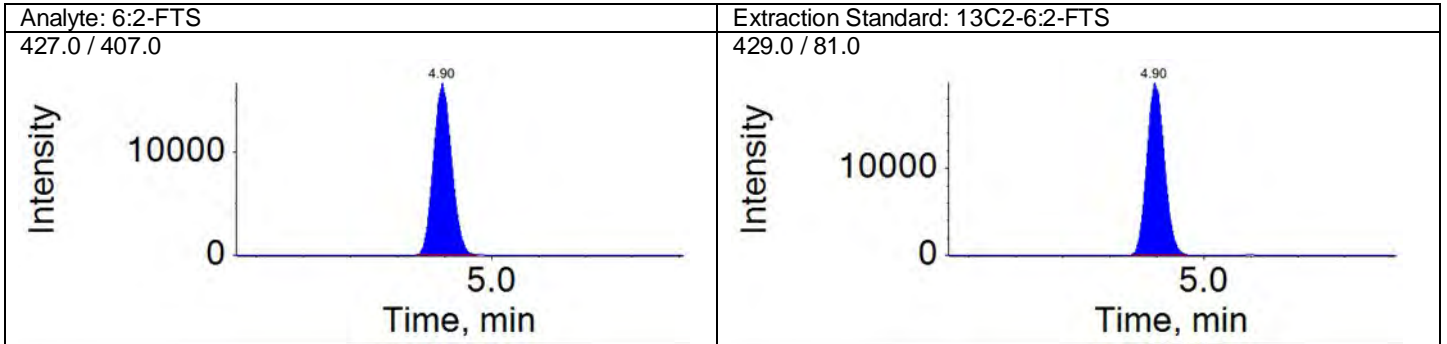
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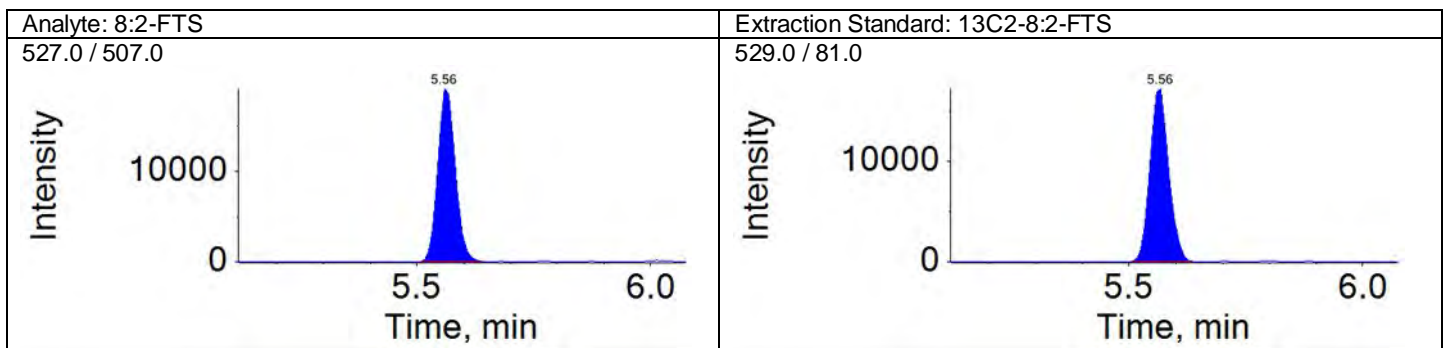
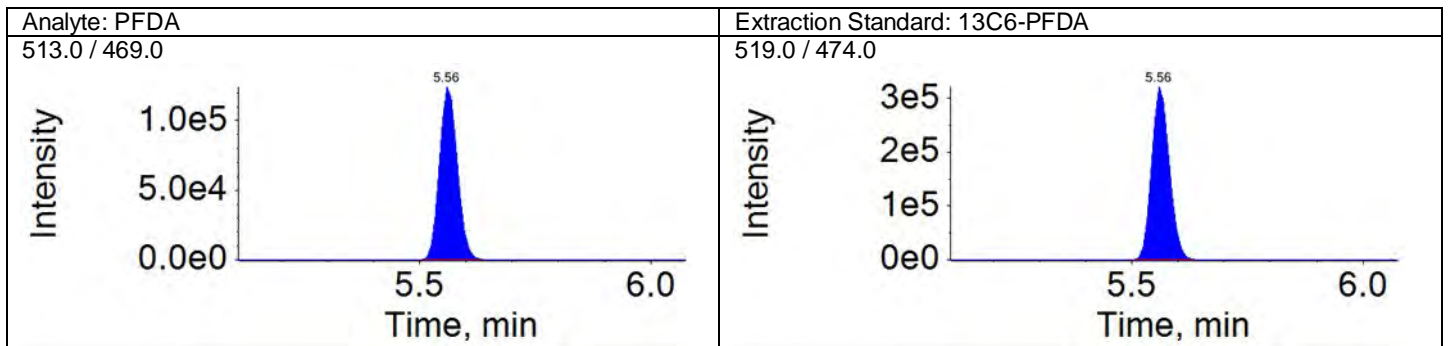
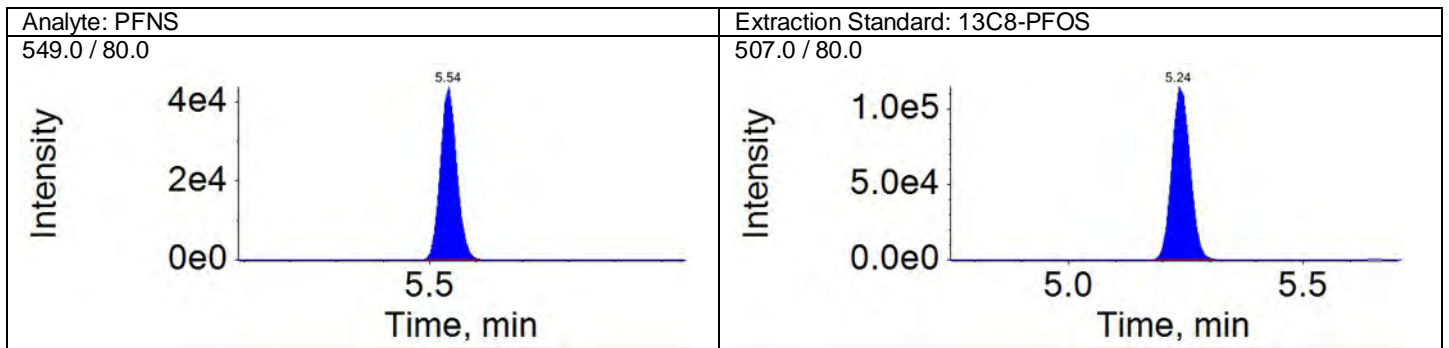
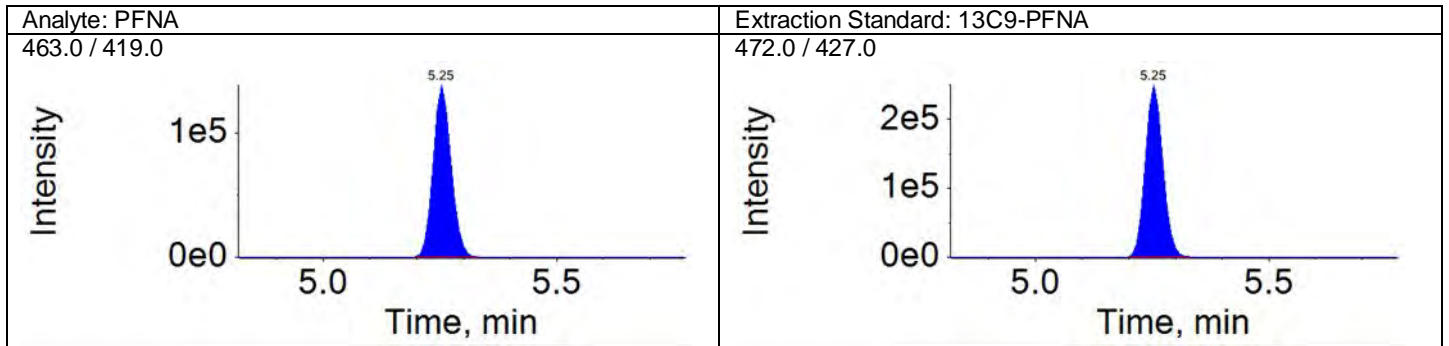
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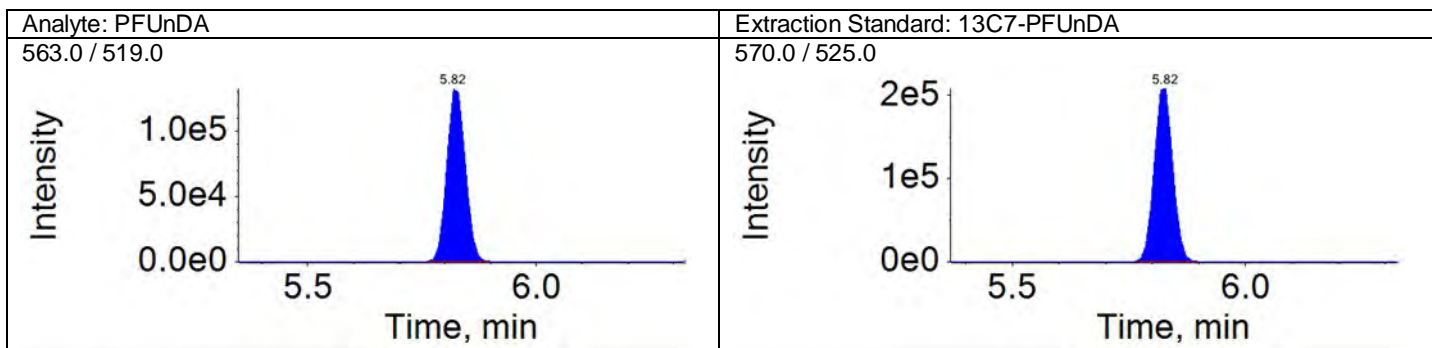
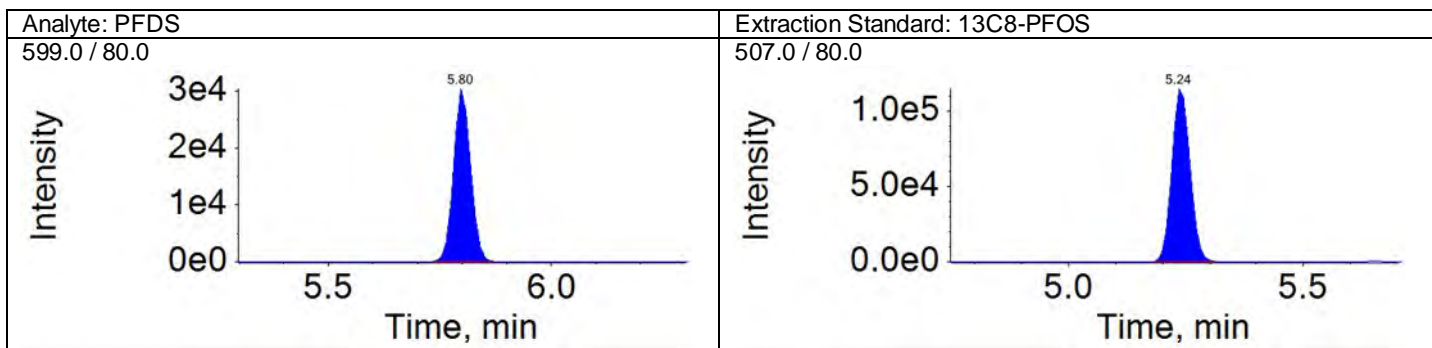
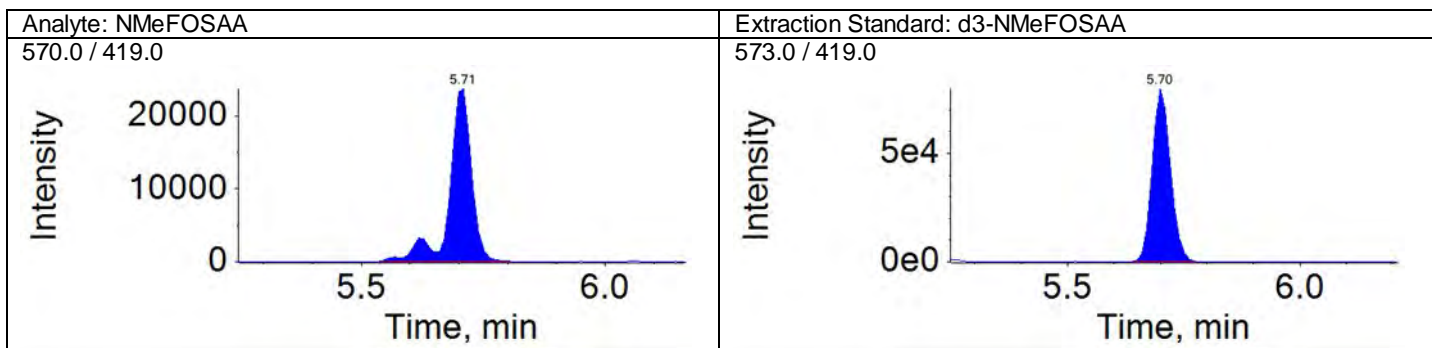
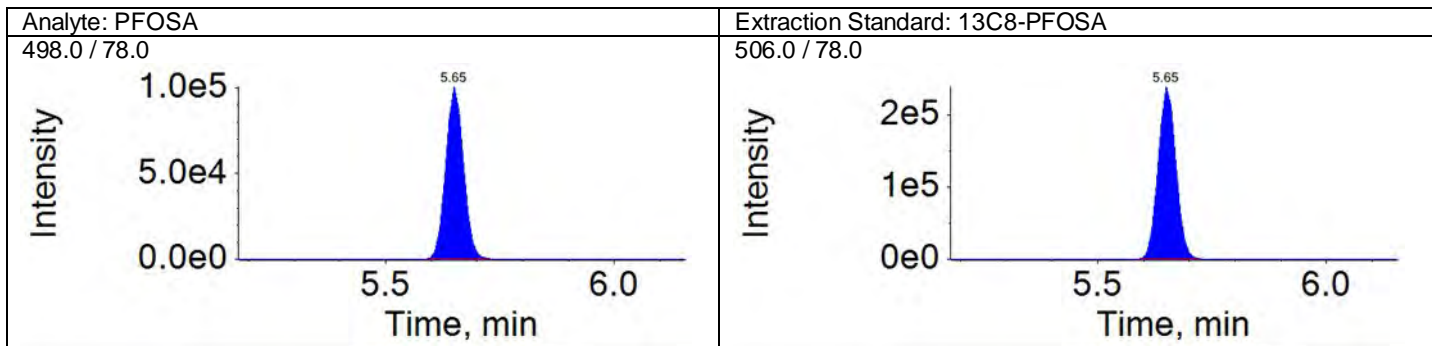
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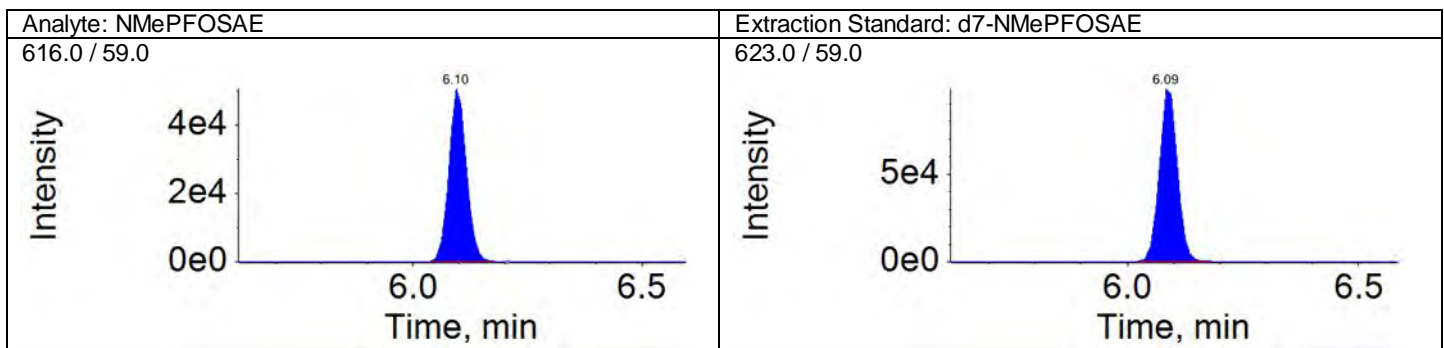
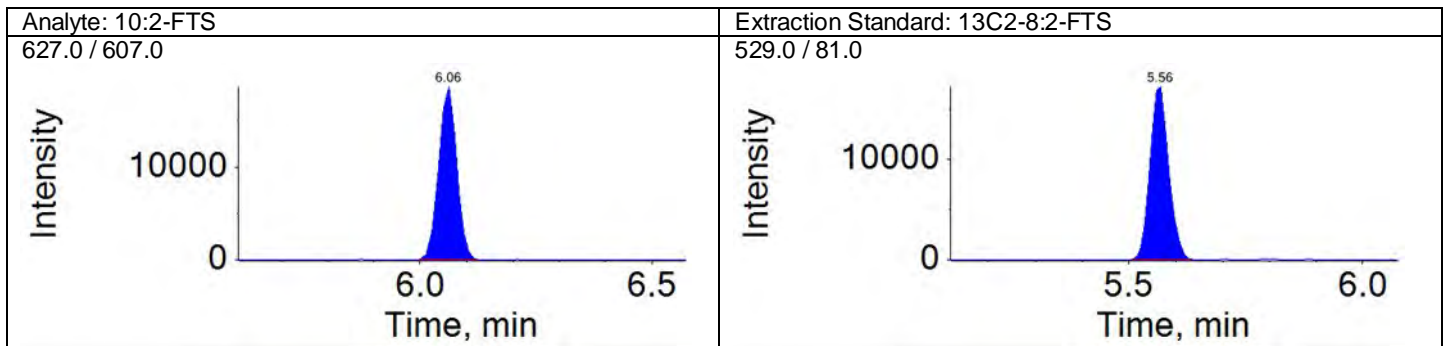
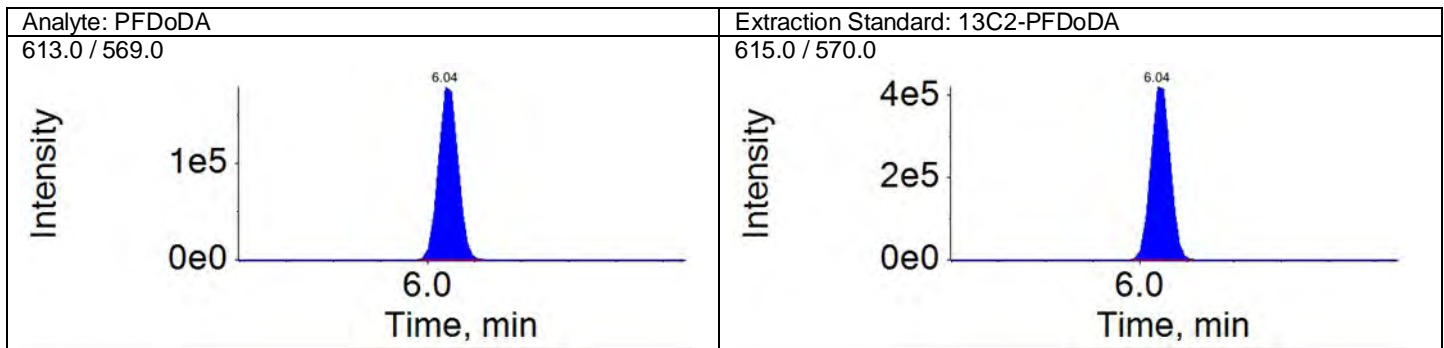
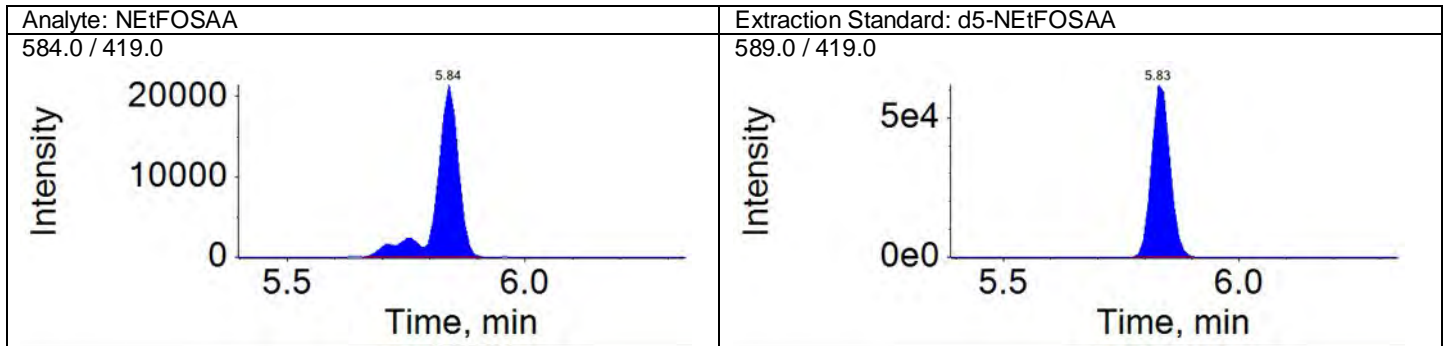
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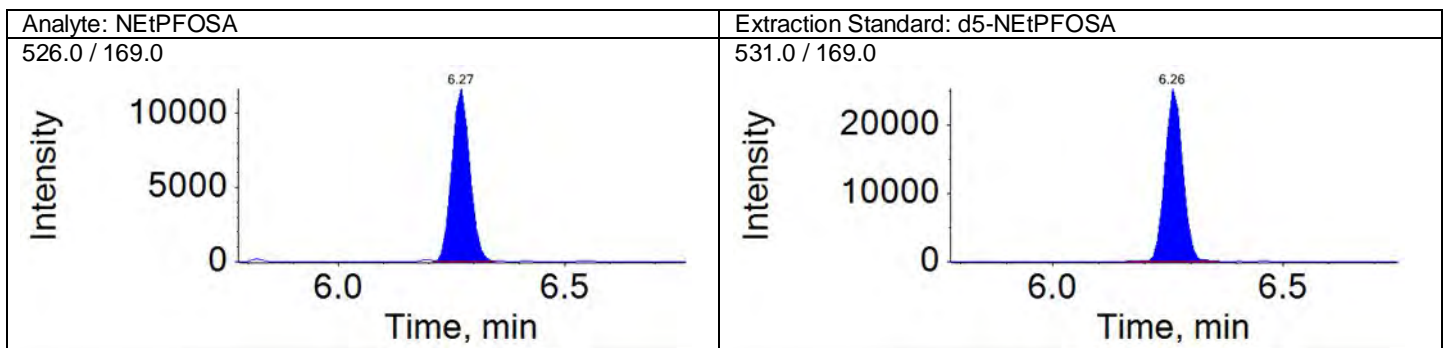
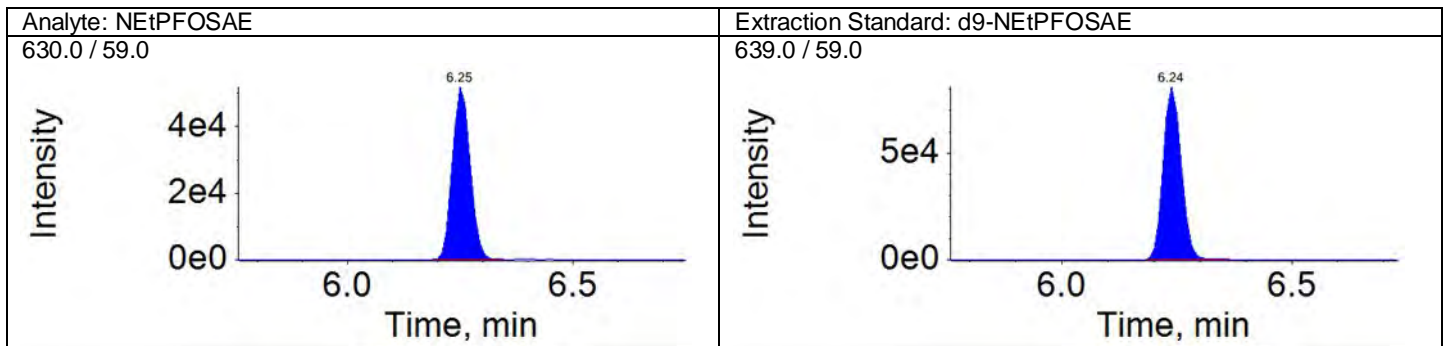
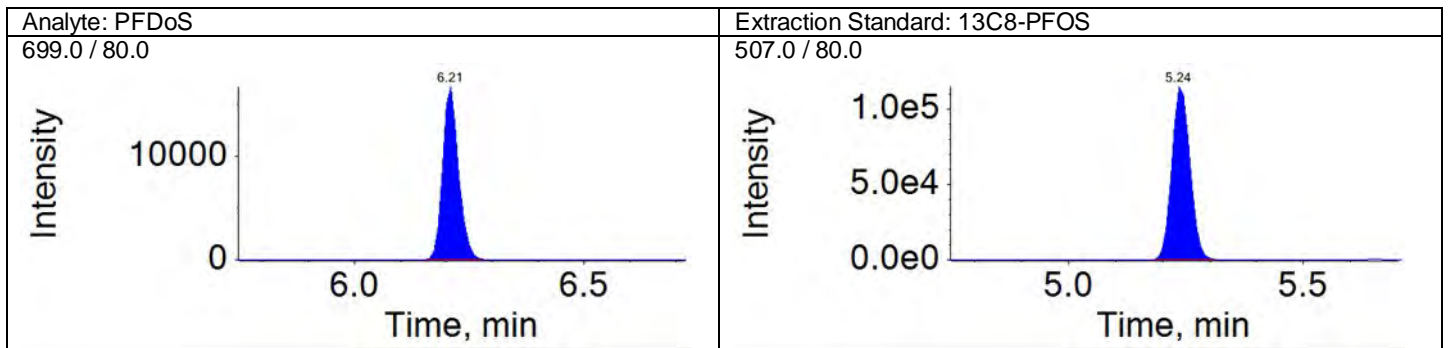
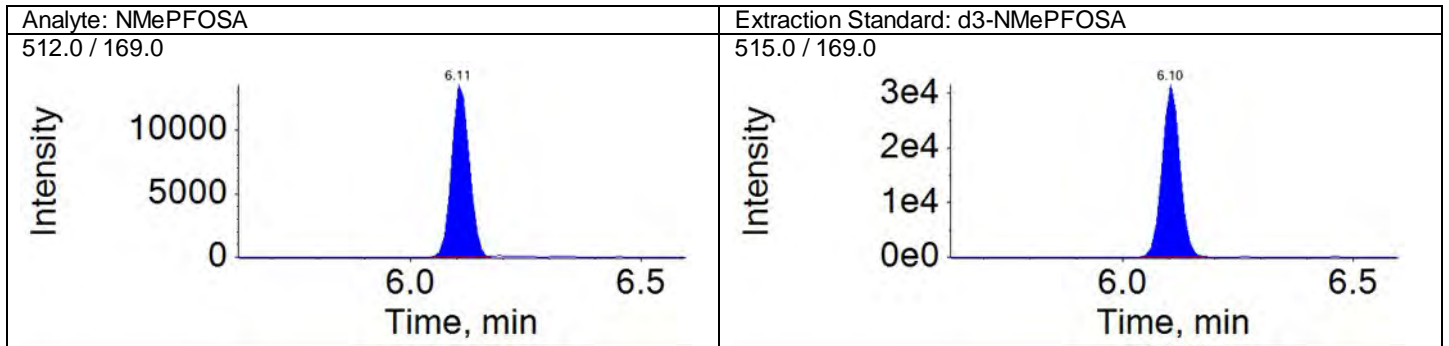
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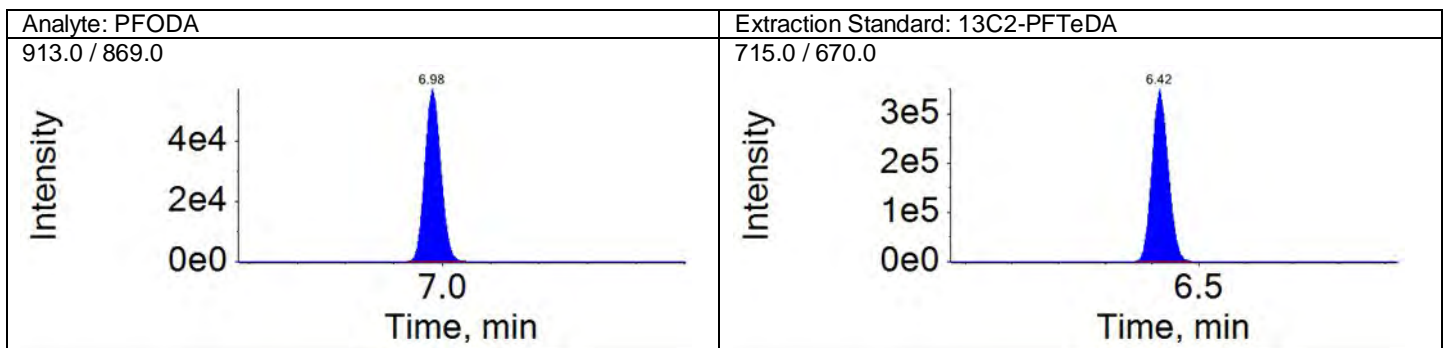
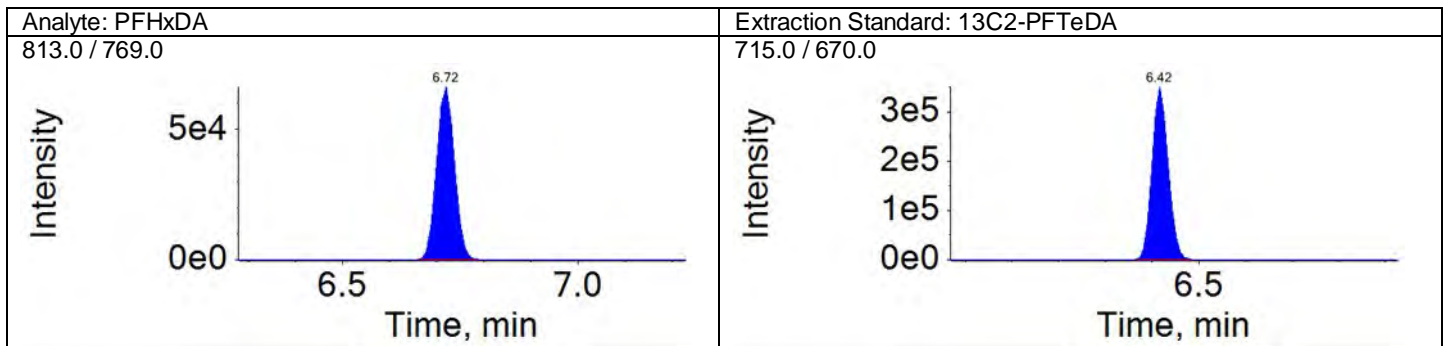
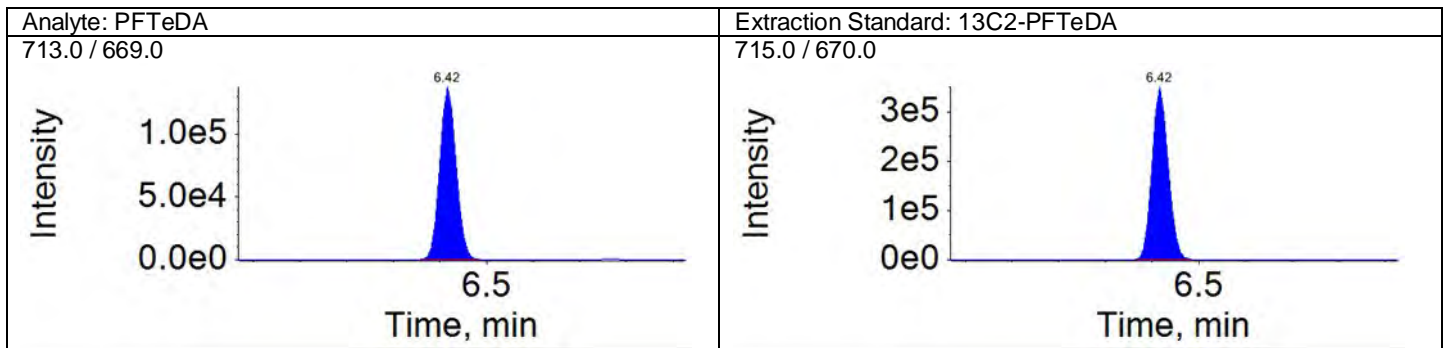
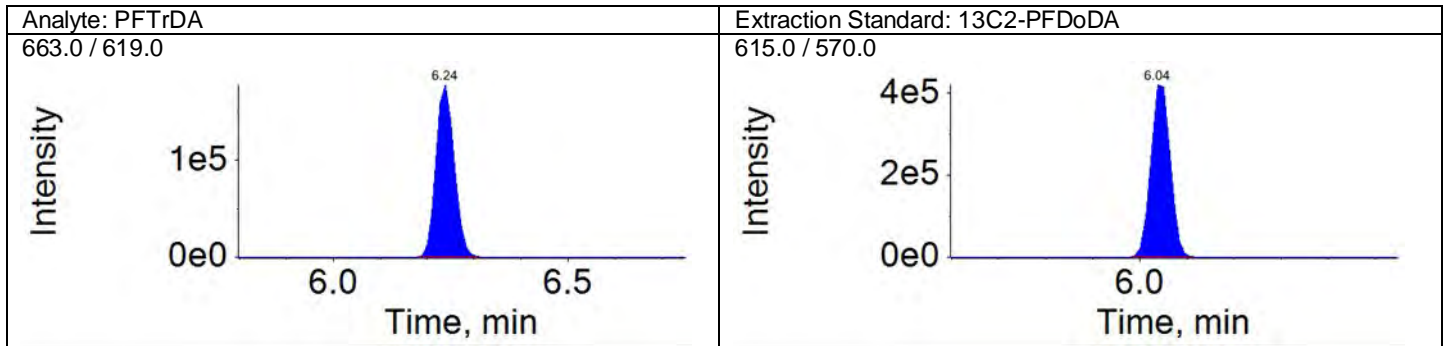
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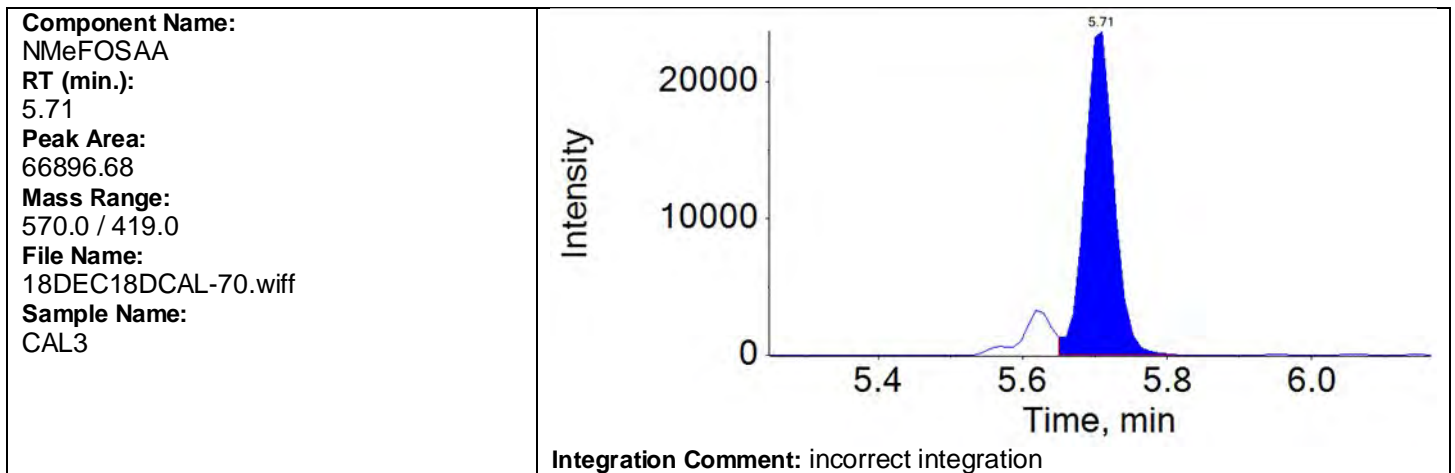
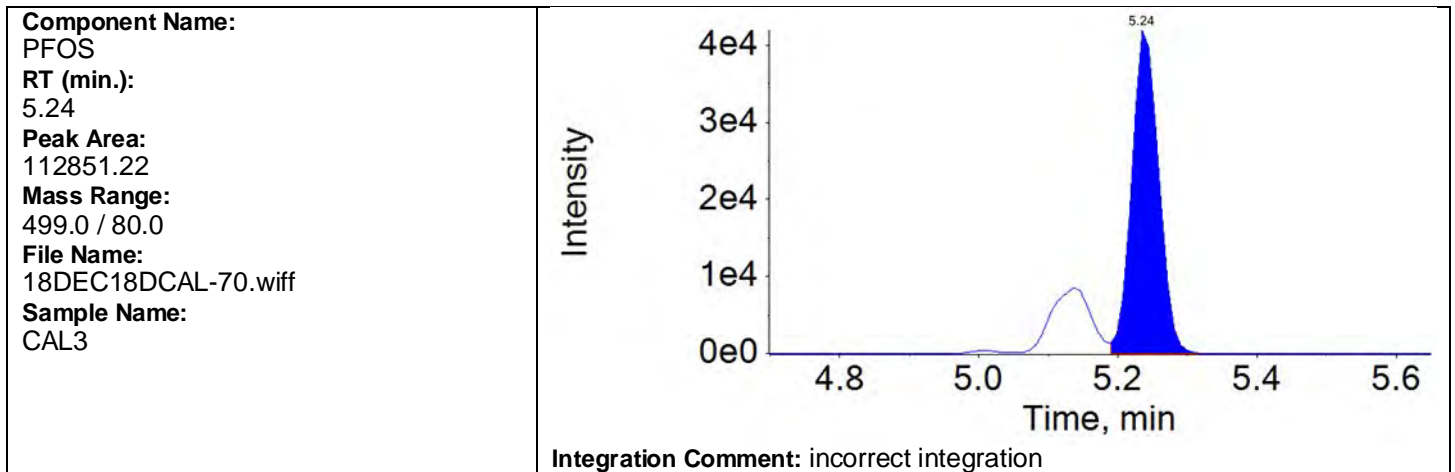
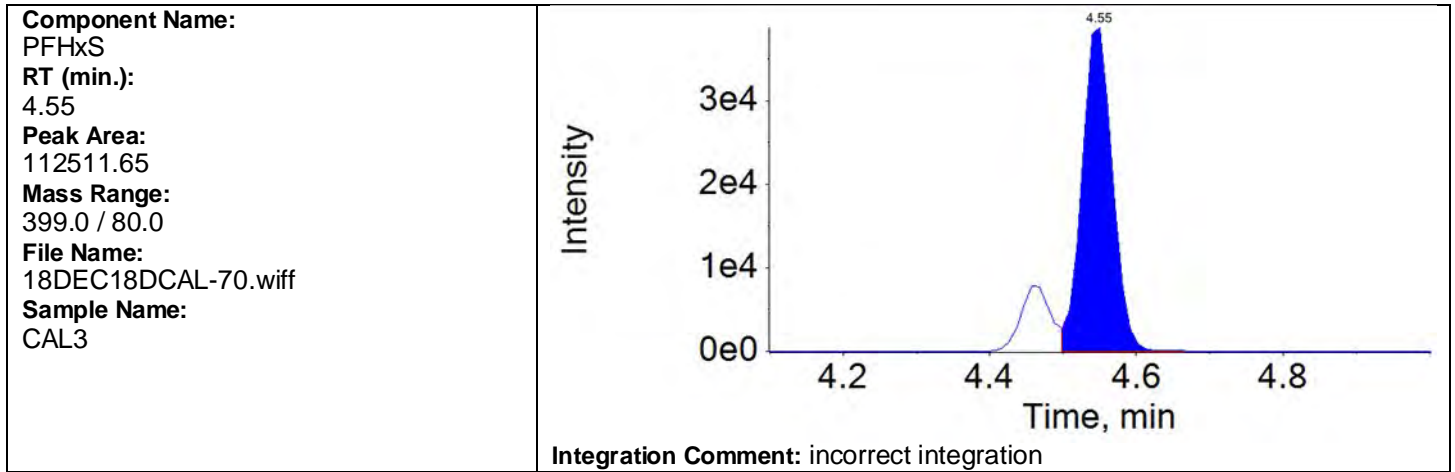
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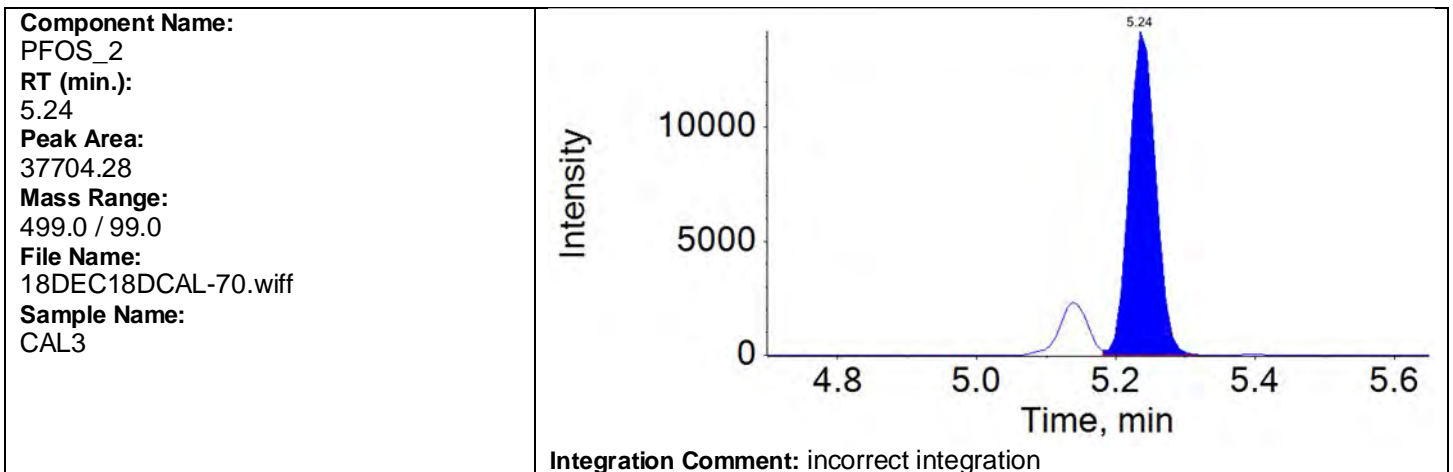
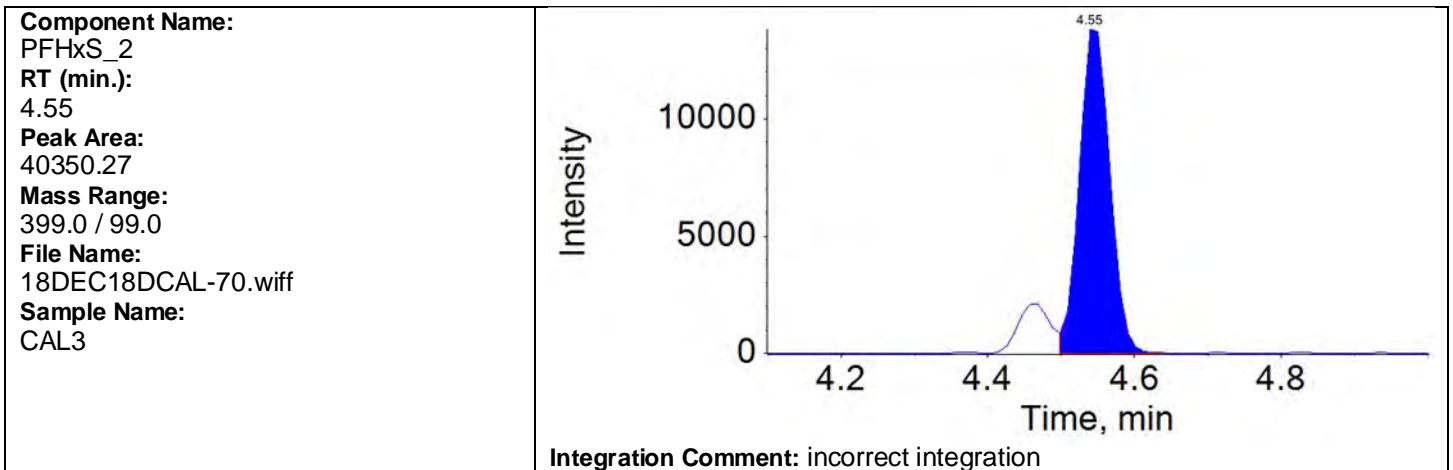
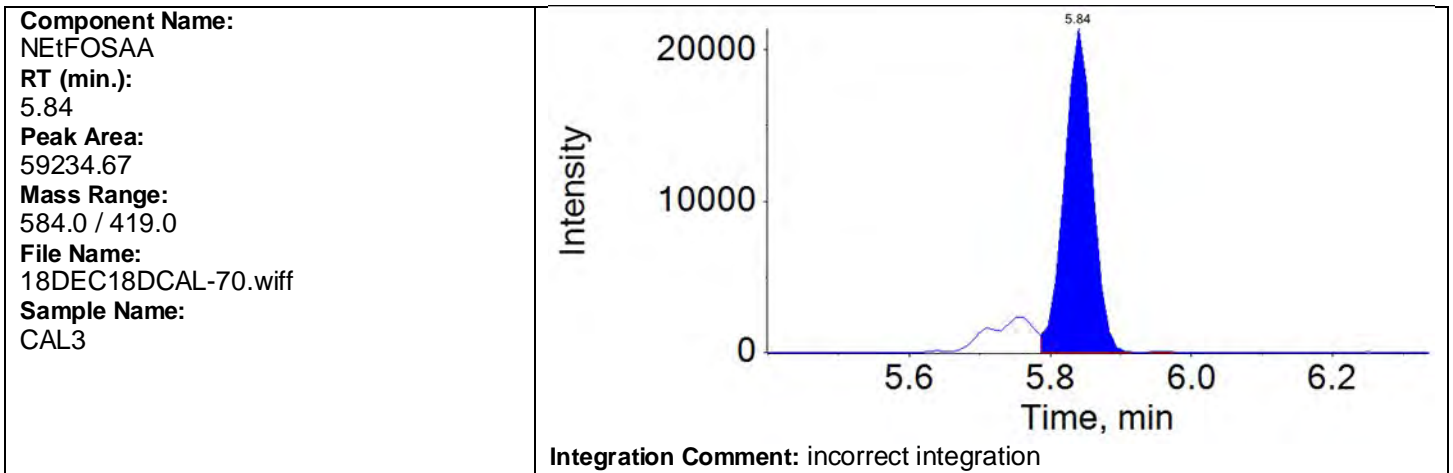
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Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

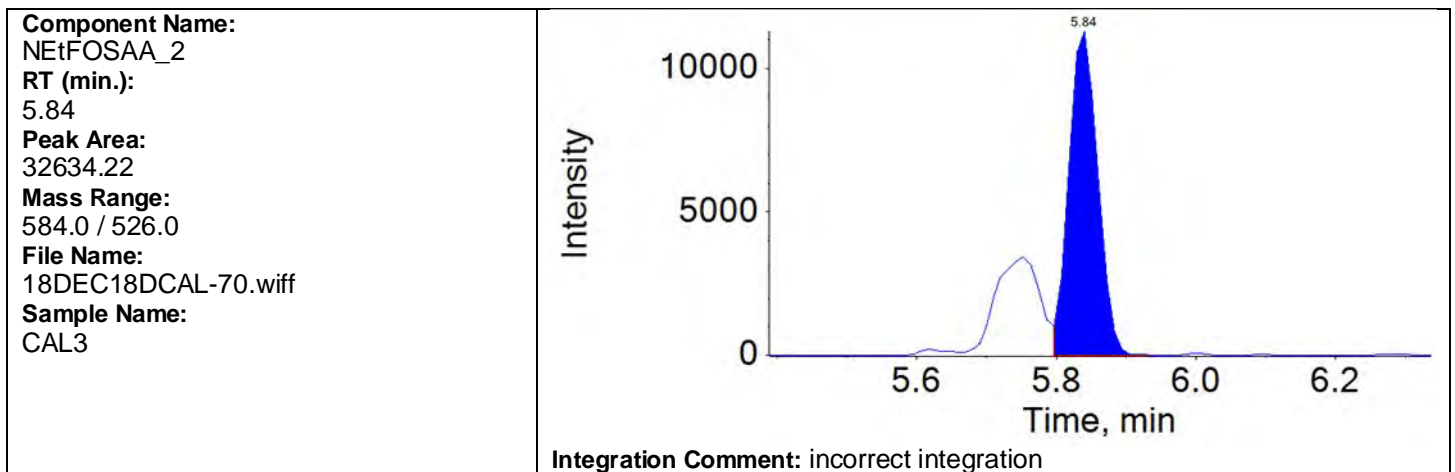
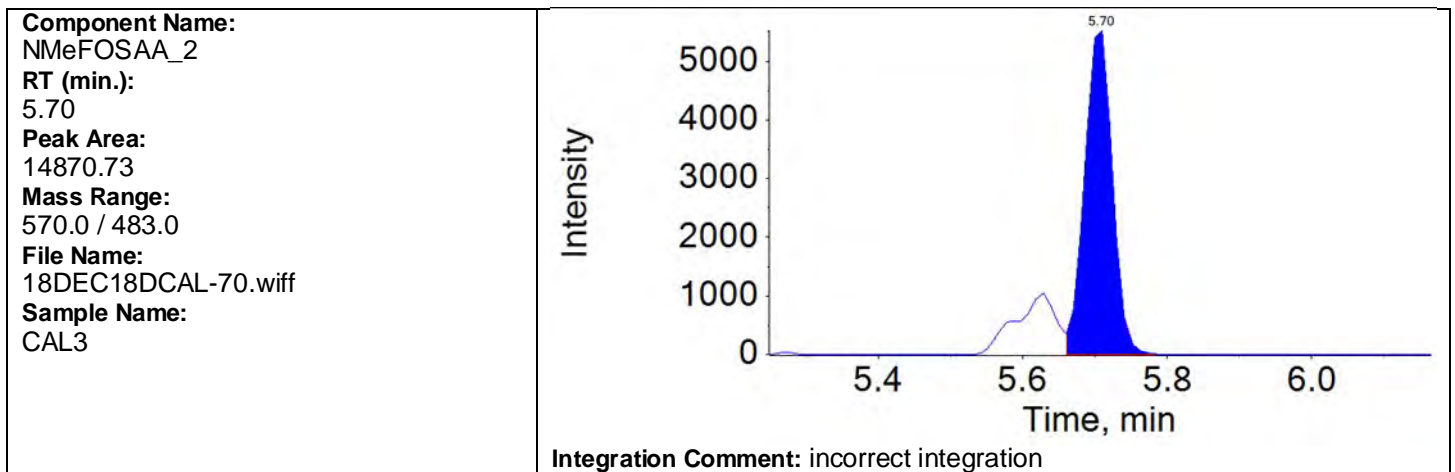
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM





Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

Ion Ratio Report

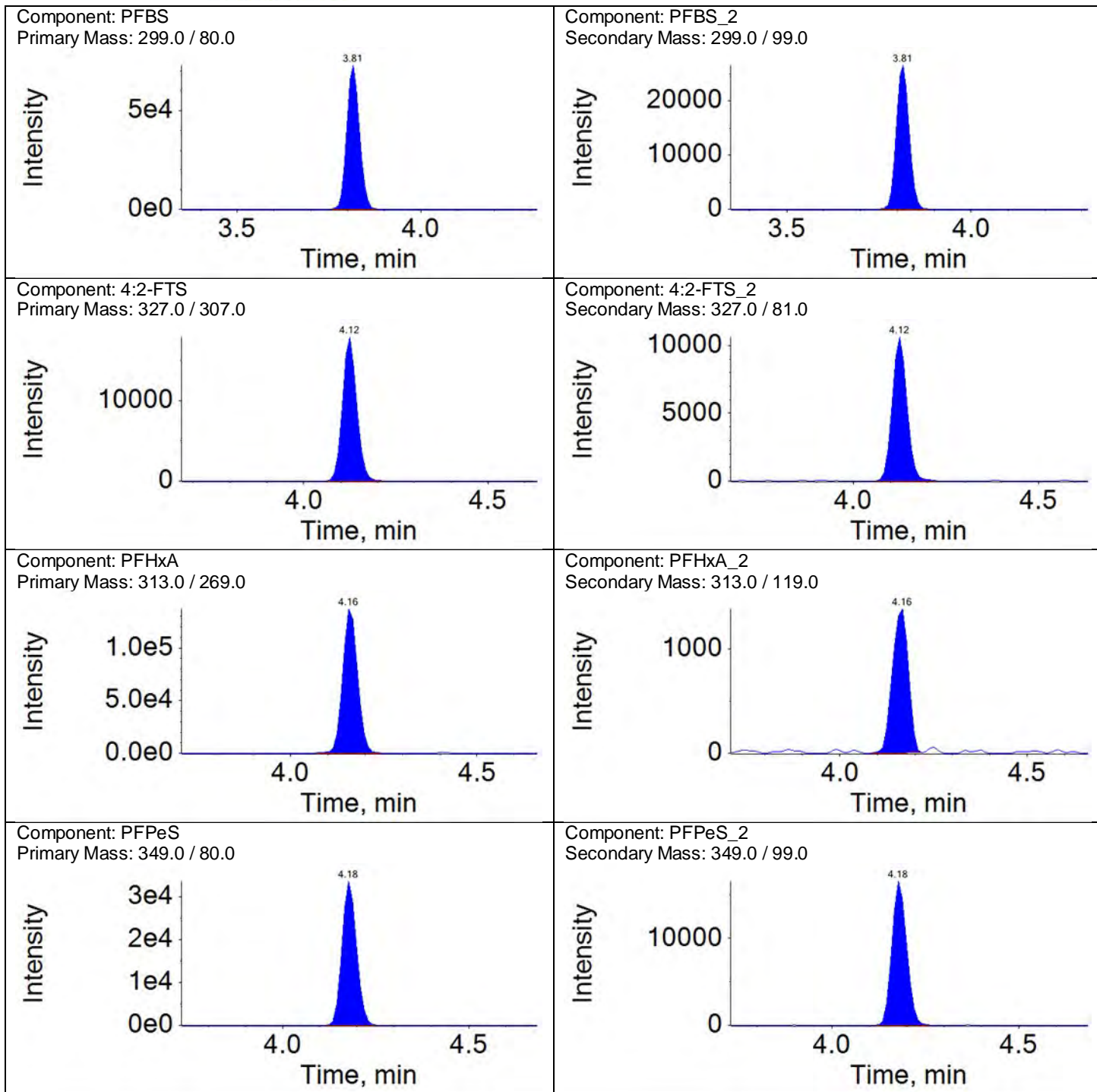
Sample Name: CAL3

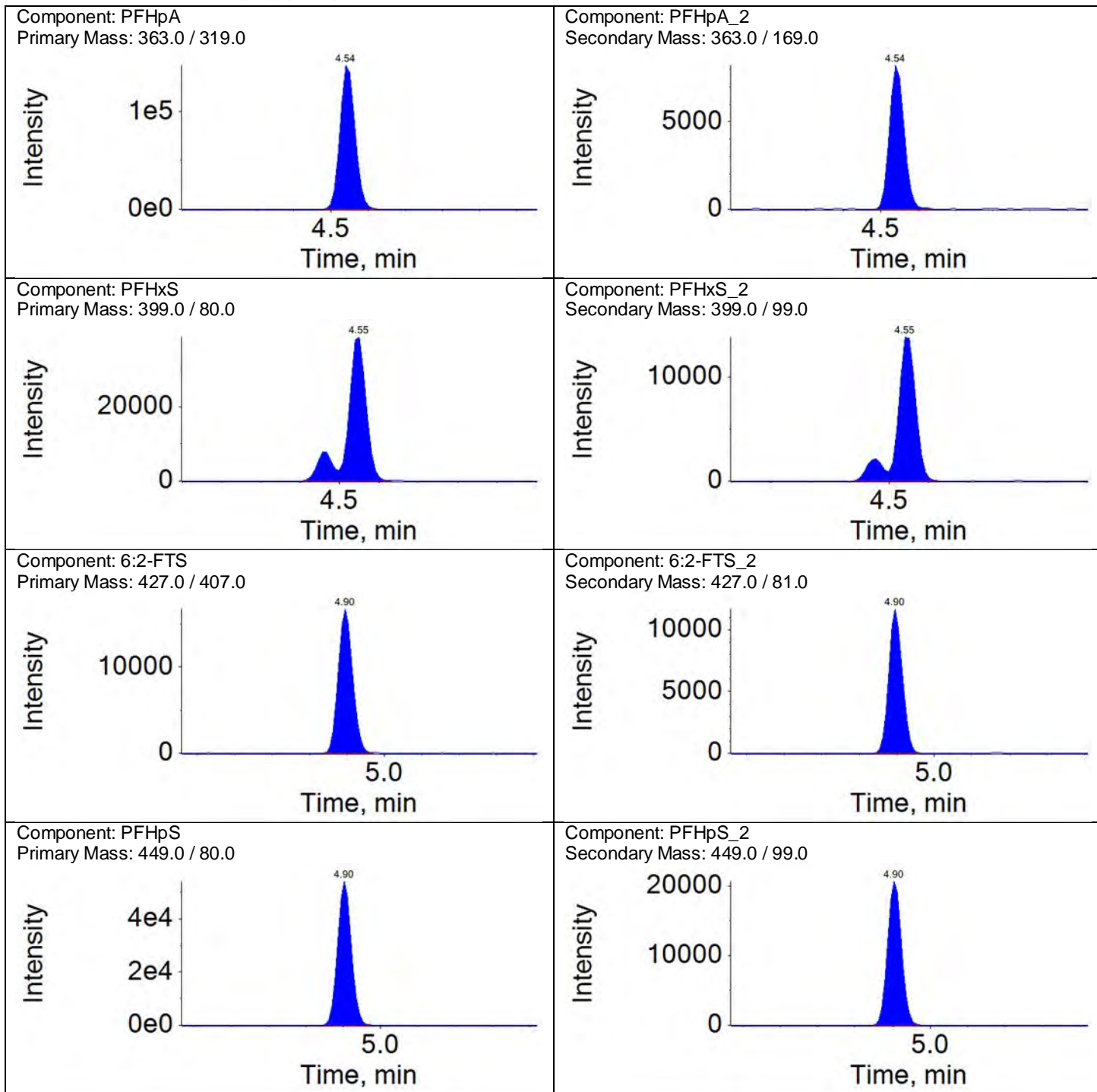
Instrument Name: LM27631

File Name: 18DEC18DCAL-70.wiff

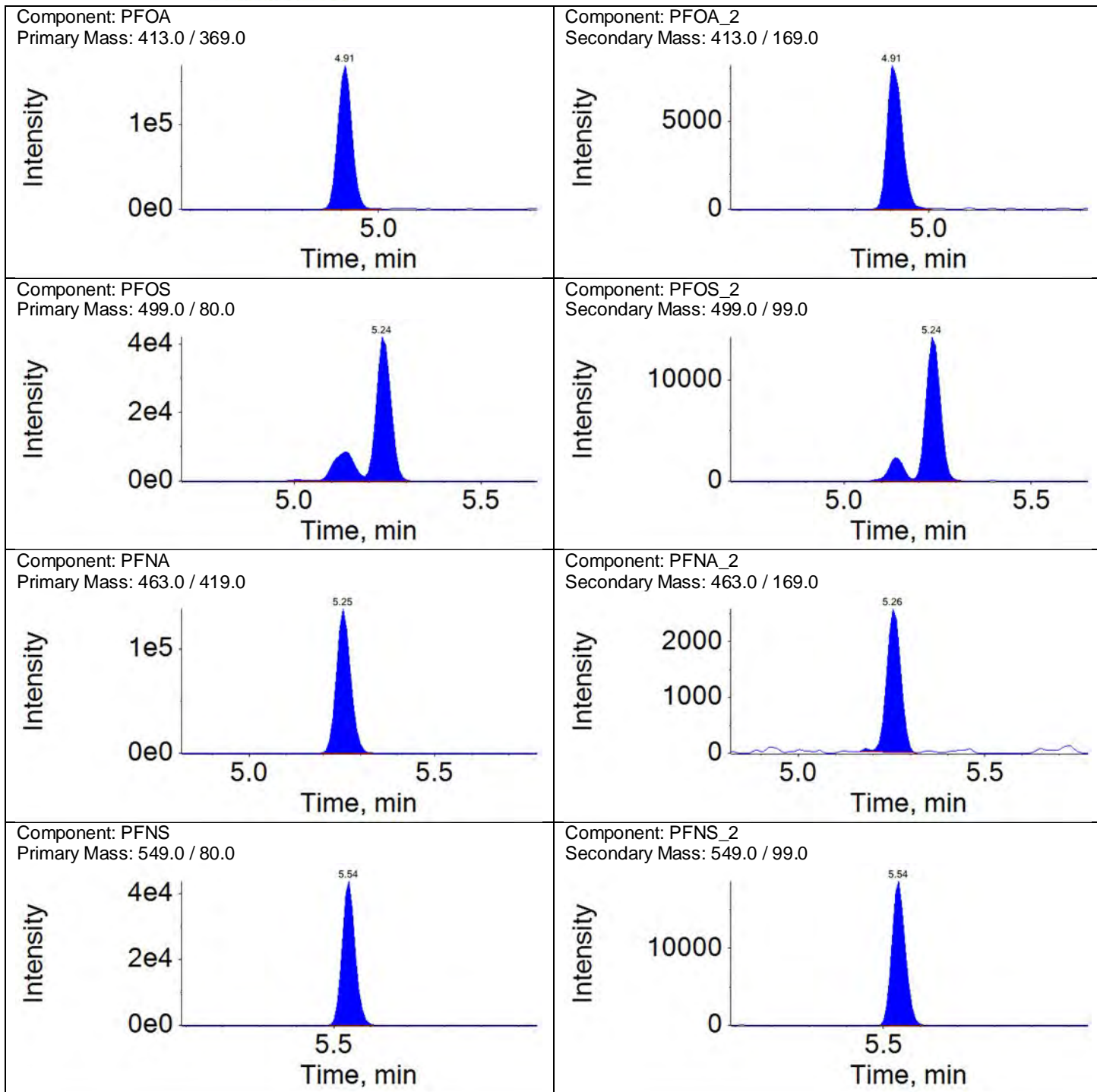
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	173568.80	A	1.0000	1.0000			
PFBS_2	3.81	1.00	63729.24	A	0.3686	0.3672	0	50	
4:2-FTS	4.12	1.00	47502.48	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	29162.61	A	0.6123	0.6139	0	50	
PFHxA	4.16	1.00	378857.96	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	4095.90	A	0.0115	0.0108	-6	50	
PFPeS	4.18	1.10	89858.44	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	45277.46	A	0.5256	0.5039	-4	50	
PFHpA	4.54	1.00	414340.15	A	1.0000	1.0000			
PFHpA_2	4.54	1.00	22599.64	A	0.0547	0.0545	0	50	
PFHxS	4.55	1.00	134520.82	M	1.0000	1.0000			
PFHxS_2	4.55	1.00	46787.20	M	0.3359	0.3478	4	50	
6:2-FTS	4.90	1.00	44576.07	A	1.0000	1.0000			
6:2-FTS_2	4.90	1.00	29339.34	A	0.6344	0.6582	4	50	
PFHpS	4.90	1.08	137901.36	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	53458.81	A	0.4110	0.3877	-6	50	
PFOA	4.91	1.00	436531.12	A	1.0000	1.0000			
PFOA_2	4.91	1.00	22587.19	A	0.0590	0.0517	-12	50	
PFOS	5.24	1.00	147878.25	M	1.0000	1.0000			
PFOS_2	5.24	1.00	44254.31	M	0.2980	0.2993	0	50	
PFNA	5.25	1.00	367113.44	A	1.0000	1.0000			
PFNA_2	5.26	1.00	6777.99	A	0.0214	0.0185	-14	50	
PFNS	5.54	1.06	106124.41	A	1.0000	1.0000			
PFNS_2	5.54	1.06	46569.17	A	0.4608	0.4388	-5	50	
PFDA	5.56	1.00	331802.23	A	1.0000	1.0000			
PFDA_2	5.57	1.00	2868.29	A	0.0064	0.0086	36	50	
8:2-FTS	5.56	1.00	49849.82	A	1.0000	1.0000			
8:2-FTS_2	5.56	1.00	28426.47	A	0.5879	0.5702	-3	50	
NMeFOSAA	5.71	1.00	76313.67	M	1.0000	1.0000			
NMeFOSAA_2	5.70	1.00	18935.22	M	0.2625	0.2481	-5	50	
PFDS	5.80	1.11	80173.41	A	1.0000	1.0000			
PFDS_2	5.80	1.11	39595.57	A	0.4962	0.4939	0	50	
PFOA_2	5.82	1.00	373908.44	A	1.0000	1.0000			
PFOA_2	5.82	1.00	1627.77	A	0.0035	0.0044	23	50	
NEtFOSAA	5.84	1.00	69414.28	M	1.0000	1.0000			
NEtFOSAA_2	5.84	1.00	47742.33	M	0.6883	0.6878	0	50	
PFOA_2	6.04	1.00	517307.34	A	1.0000	1.0000			
PFOA_2	6.04	1.00	6769.50	A	0.0134	0.0131	-3	50	
10:2-FTS	6.06	1.09	50421.15	A	1.0000	1.0000			
10:2-FTS_2	6.06	1.09	32910.94	A	0.7018	0.6527	-7	50	
PFOA_2	6.24	1.03	481635.82	A	1.0000	1.0000			
PFOA_2	6.24	1.03	3790.76	A	0.0093	0.0079	-16	50	
PFOA_2	6.42	1.00	333217.04	A	1.0000	1.0000			
PFOA_2	6.42	1.00	1970.27	A	0.0058	0.0059	1	50	
PFOA_2	6.72	1.05	174998.14	A	1.0000	1.0000			
PFOA_2	6.72	1.05	11233.99	A	0.0656	0.0642	-2	50	
PFOA_2	6.98	1.09	129704.78	A	1.0000	1.0000			
PFOA_2	6.98	1.09	3327.71	A	0.0273	0.0257	-6	50	

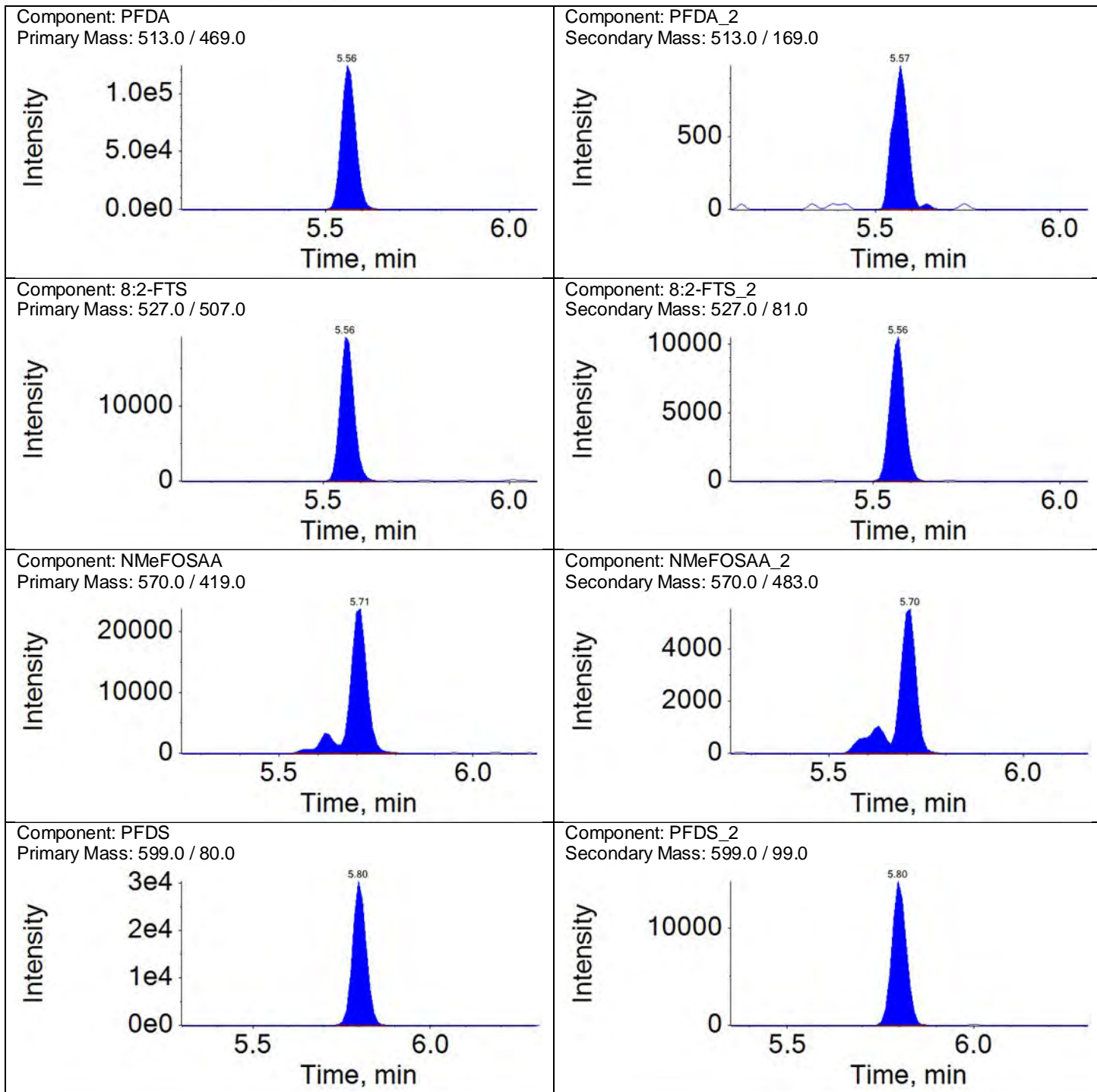


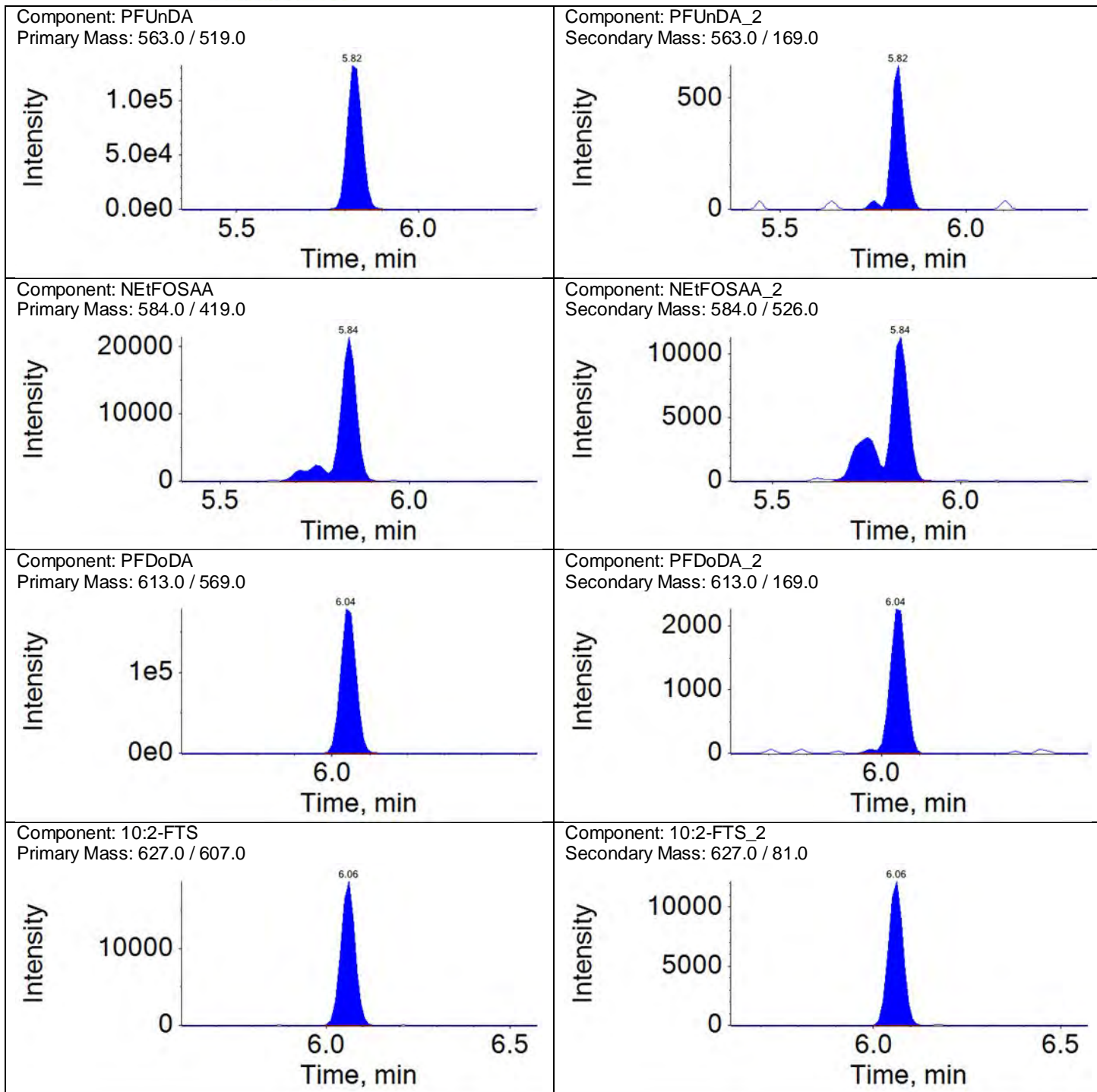


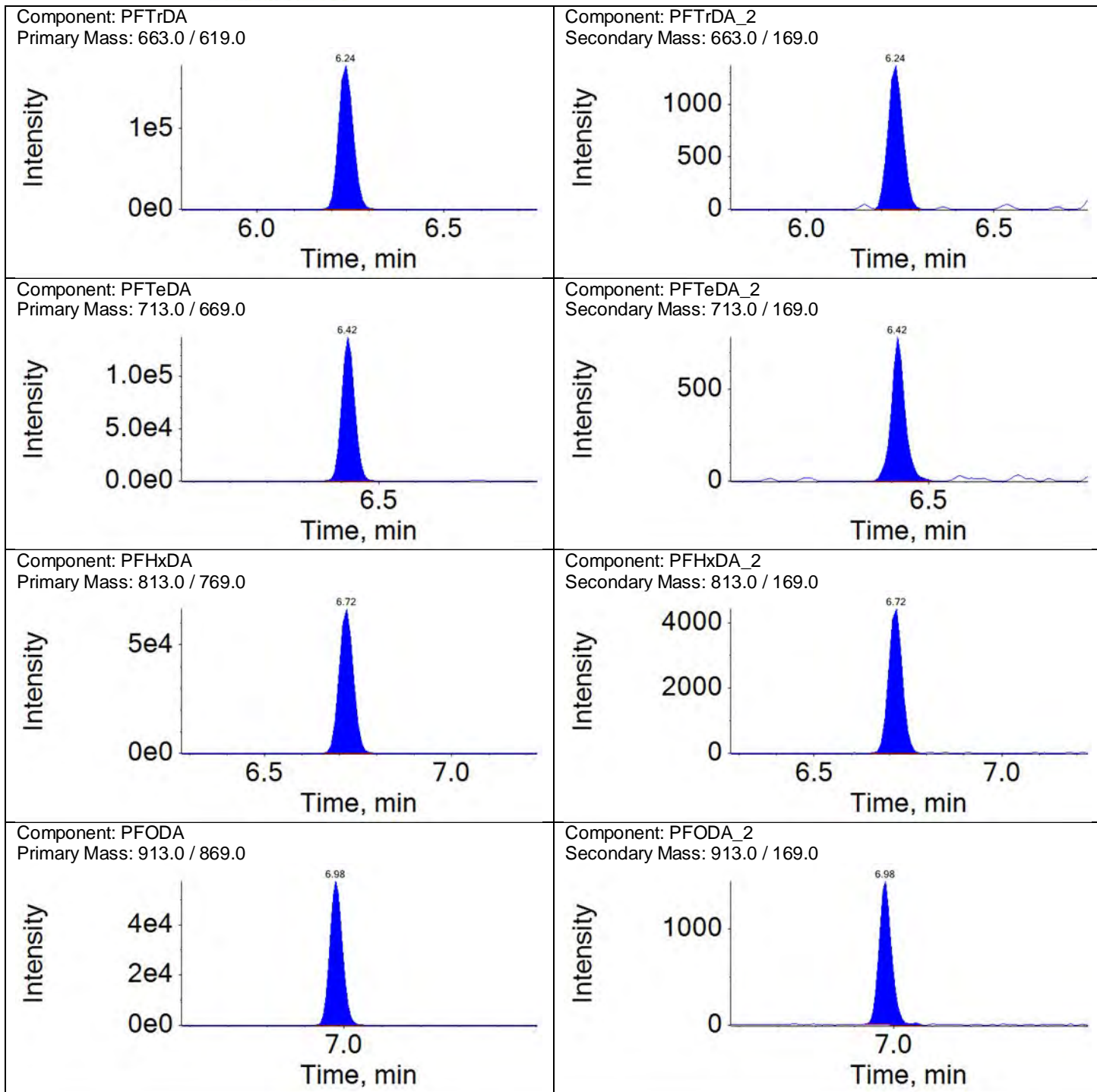














ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL4	Data File:	18DEC18DCAL-71.wiff
Sample ID:	CALBRN41833B	Acquis Date:	2018-12-19T00:01:56
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	6	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	994245.8	941251.6	6	50	
13C2-PFOA	5.0	521121.5	485595.3	7	50	
13C4-PFOS	4.8	323227.0	292182.6	11	50	
13C2-PFDA	5.0	492670.3	467216.0	5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1092510.9	13C3-PFBA	994245.8	1.099	5.000	4.866	97	70-130	
E13C5-PFPeA	1033656.3	13C3-PFBA	994245.8	1.040	5.000	4.848	97	70-130	
E13C3-PFBS	445696.2	13C3-PFBA	994245.8	0.448	4.650	4.365	94	70-130	
E13C2-4:2-FTS	64261.8	13C2-PFOA	521121.5	0.123	4.670	4.683	100	70-130	
E13C5-PFHxA	728009.9	13C2-PFOA	521121.5	1.397	5.000	4.997	100	70-130	
E13C3-PFHxS	348394.9	13C2-PFOA	521121.5	0.669	4.730	5.059	107	70-130	
E13C4-PFHpA	633233.3	13C2-PFOA	521121.5	1.215	5.000	5.249	105	70-130	
E13C2-6:2-FTS	50211.1	13C2-PFOA	521121.5	0.096	4.750	4.848	102	70-130	
E13C8-PFOA	1001301.5	13C2-PFOA	521121.5	1.921	5.000	5.283	106	70-130	
E13C8-PFOS	334944.9	13C4-PFOS	323227.0	1.036	4.780	4.634	97	70-130	
E13C9-PFNA	661406.4	13C4-PFOS	323227.0	2.046	5.000	4.655	93	70-130	
E13C6-PFDA	880890.9	13C2-PFDA	492670.3	1.788	5.000	5.093	102	70-130	
E13C2-8:2-FTS	45542.4	13C2-PFDA	492670.3	0.092	4.790	4.764	99	70-130	
E13C8-PFOSA	648373.2	13C2-PFDA	492670.3	1.316	5.000	5.125	102	70-130	
Ed3-NMeFOSAA	226675.1	13C2-PFDA	492670.3	0.460	5.000	5.062	101	70-130	
E13C7-PFUnDA	581922.5	13C2-PFDA	492670.3	1.181	5.000	4.944	99	70-130	
Ed5-NEtFOSAA	180280.0	13C2-PFDA	492670.3	0.366	5.000	5.391	108	70-130	
E13C2-PFDoDA	1215089.1	13C2-PFDA	492670.3	2.466	5.000	5.189	104	70-130	
Ed7-NMePFOSAE	268949.2	13C2-PFDA	492670.3	0.546	5.000	4.878	98	70-130	
Ed3-NMePFOSA	88979.4	13C2-PFDA	492670.3	0.181	5.000	4.963	99	70-130	
Ed9-NEtPFOSAE	237359.2	13C2-PFDA	492670.3	0.482	5.000	4.926	99	70-130	
Ed5-NEtPFOSA	69985.0	13C2-PFDA	492670.3	0.142	5.000	4.927	99	70-130	
E13C2-PFTeDA	850800.6	13C2-PFDA	492670.3	1.727	5.000	4.866	97	70-130	



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

### Analyte Quantitation Peak Table

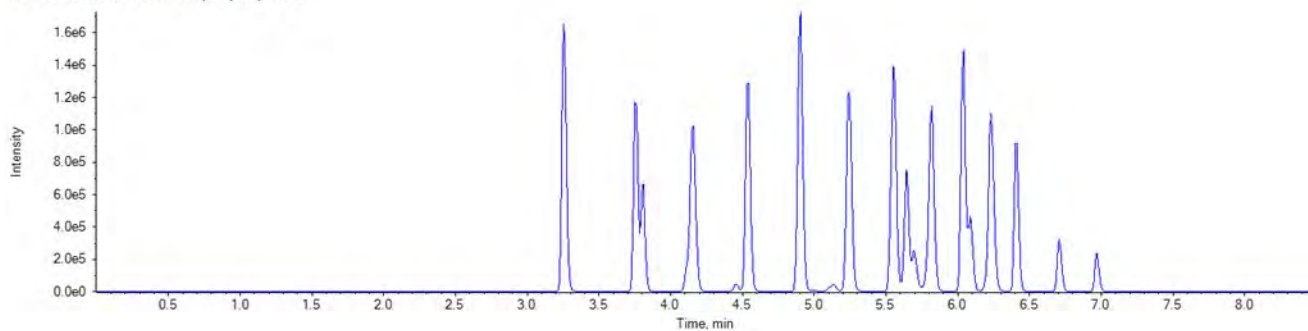
Sample Name: CAL4 Instrument Name: LM27631 File Name: 18DEC18DCAL-71.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.25	1.000	1594198.6		A	13C4-PFBA	3.26	1092510.9	1.459	7.748
PFPeA	3.76	1.000	1560173.1		A	13C5-PFPeA	3.76	1033656.3	1.509	7.791
PFBS	3.81	1.000	660159.8		A	13C3-PFBS	3.81	445696.2	1.481	7.312
4:2-FTS	4.12	1.000	183632.1		A	13C2-4:2-FTS	4.12	64261.8	2.858	7.497
PFHxA	4.15	1.000	1422618.7		A	13C5-PFHxA	4.15	728009.9	1.954	8.050
PFPeS	4.17	1.100	343711.1		A	13C3-PFBS	3.81	445696.2	0.771	7.851
PFHpA	4.54	1.000	1522802.6		A	13C4-PFHpA	4.54	633233.3	2.405	7.974
PFHxS	4.54	1.000	506401.7		M	13C3-PFHxS	4.54	348394.9	1.454	7.070
6:2-FTS	4.89	1.000	169143.3		A	13C2-6:2-FTS	4.89	50211.1	3.369	8.386
PFHpS	4.90	1.080	505804.6		A	13C3-PFHxS	4.54	348394.9	1.452	7.680
PFOA	4.91	1.000	1478030.4		A	13C8-PFOA	4.90	1001301.5	1.476	7.820
PFOS	5.23	1.000	531668.9		M	13C8-PFOS	5.23	334944.9	1.587	6.950
PFNA	5.25	1.000	1365072.7		A	13C9-PFNA	5.25	661406.4	2.064	8.203
PFNS	5.53	1.060	388892.9		A	13C8-PFOS	5.23	334944.9	1.161	7.383
PFDA	5.56	1.000	1333153.3		A	13C6-PFDA	5.56	880890.9	1.513	7.816
8:2-FTS	5.56	1.000	177682.0		A	13C2-8:2-FTS	5.56	45542.4	3.901	7.853
PFOSA	5.65	1.000	1003126.0		A	13C8-PFOSA	5.65	648373.2	1.547	7.738
NMeFOSAA	5.70	1.000	290343.5		M	d3-NMeFOSAA	5.70	226675.1	1.281	7.961
PFDS	5.79	1.110	327865.3		A	13C8-PFOS	5.23	334944.9	0.979	8.036
PUnDA	5.82	1.000	1410610.2		A	13C7-PUnDA	5.82	581922.5	2.424	8.028
NEtFOSAA	5.83	1.000	260292.7		A	d5-NEtFOSAA	5.83	180280.0	1.444	7.359
PFDoDA	6.04	1.000	1811366.4		A	13C2-PFDoDA	6.04	1215089.1	1.491	7.509
10:2-FTS	6.05	1.090	167061.3		A	13C2-8:2-FTS	5.56	45542.4	3.668	7.471
NMePFOSAE	6.09	1.000	519484.4		A	d7-NMePFOSAE	6.08	268949.2	1.932	8.522
NMePFOSA	6.10	1.000	136742.0		A	d3-NMePFOSA	6.10	88979.4	1.537	7.758
PFDoS	6.20	1.180	159190.7		A	13C8-PFOS	5.23	334944.9	0.475	7.201
NEtPFOSAE	6.24	1.000	539839.8		A	d9-NEtPFOSAE	6.23	237359.2	2.274	7.430
NEtPFOSA	6.26	1.000	127321.1		A	d5-NEtPFOSA	6.26	69985.0	1.819	8.510
PFTeDA	6.23	1.030	1793581.6		A	13C2-PFDoDA	6.04	1215089.1	1.476	7.573
PFTeDA	6.41	1.000	1181484.1		A	13C2-PFTeDA	6.41	850800.6	1.389	7.478
PFHxDA	6.71	1.050	651302.6		A	13C2-PFTeDA	6.41	850800.6	0.766	8.406
PFODA	6.97	1.090	481905.3		A	13C2-PFTeDA	6.41	850800.6	0.566	8.139

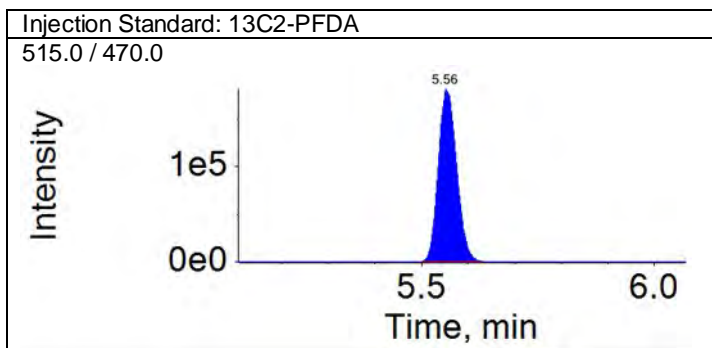
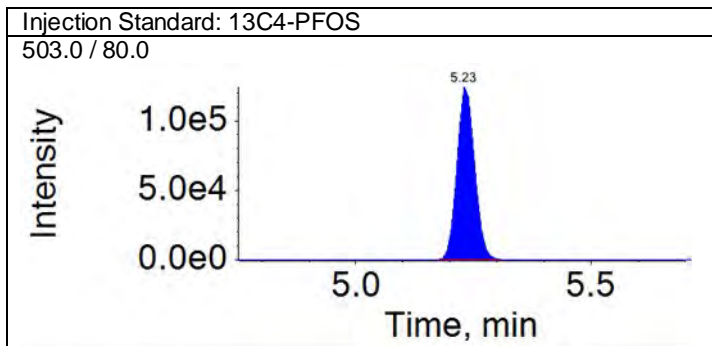
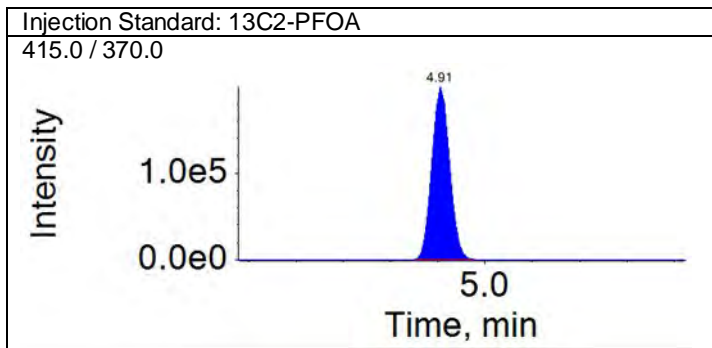
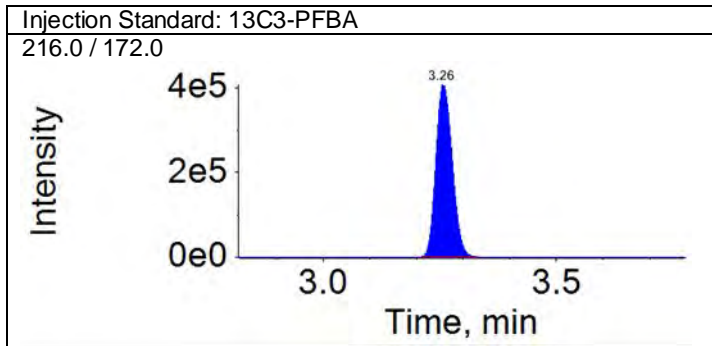
### Total Ion Chromatogram

TIC from 18DEC18DCAL-71.wiff (sample 1) - CAL4



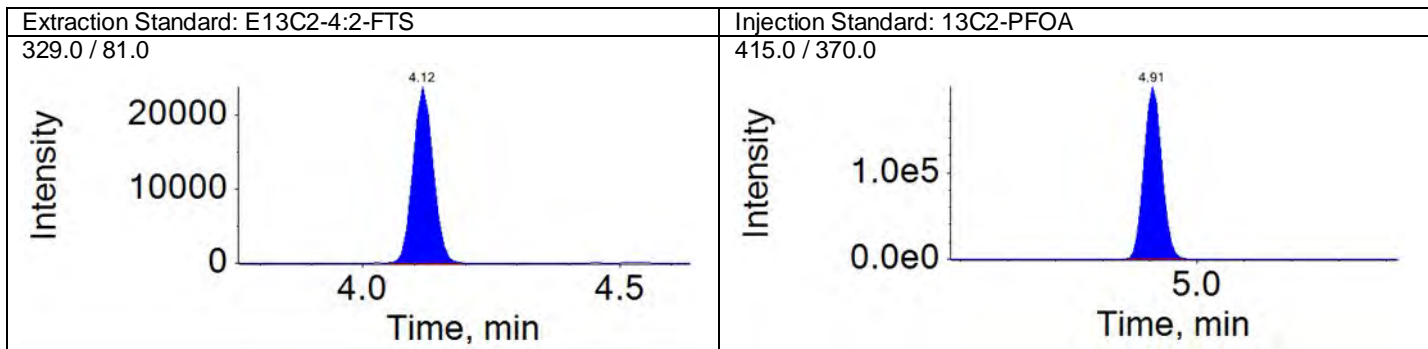
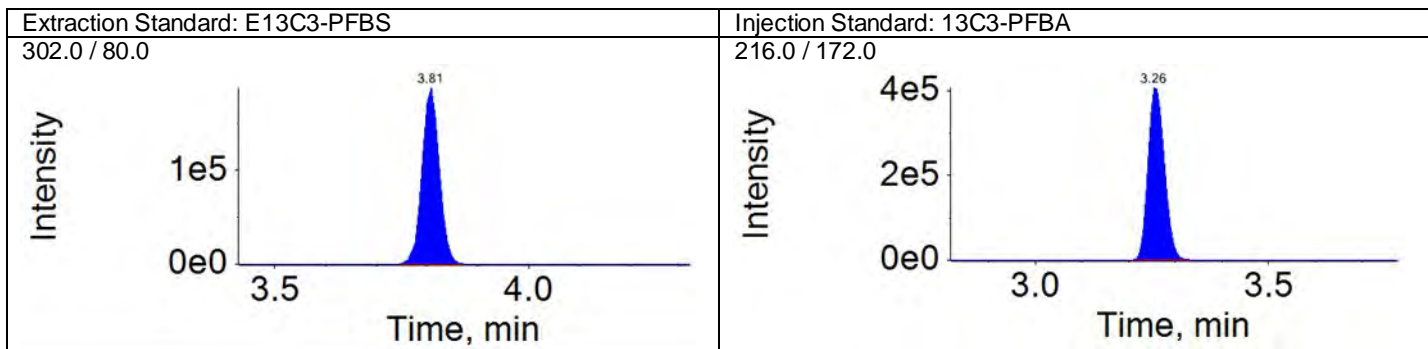
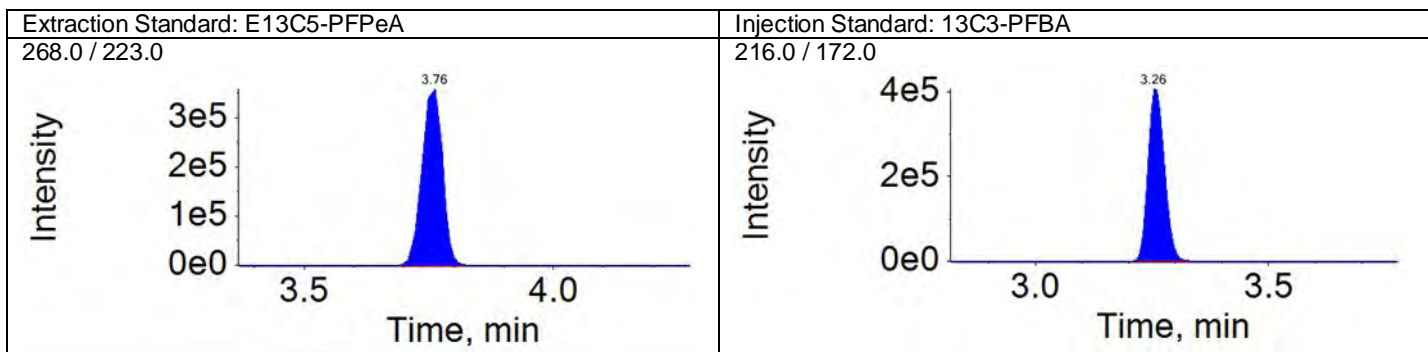
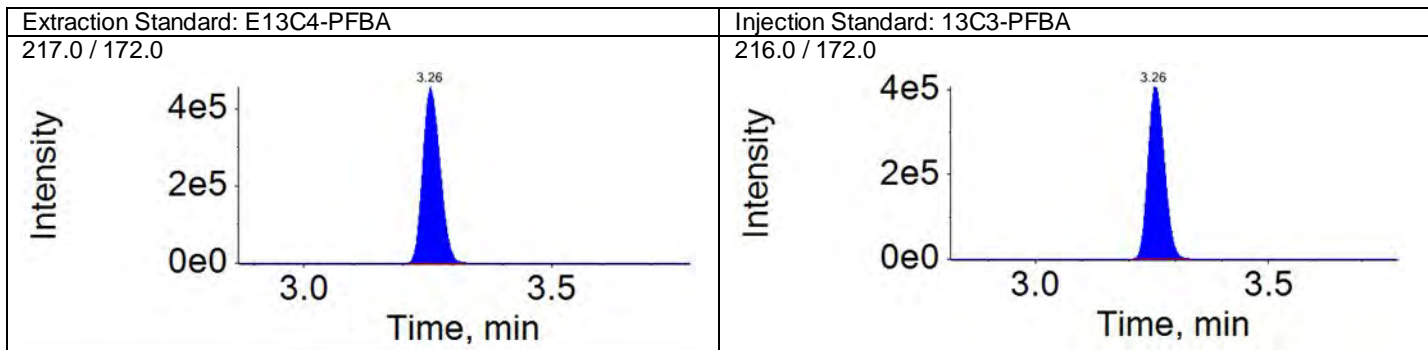
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



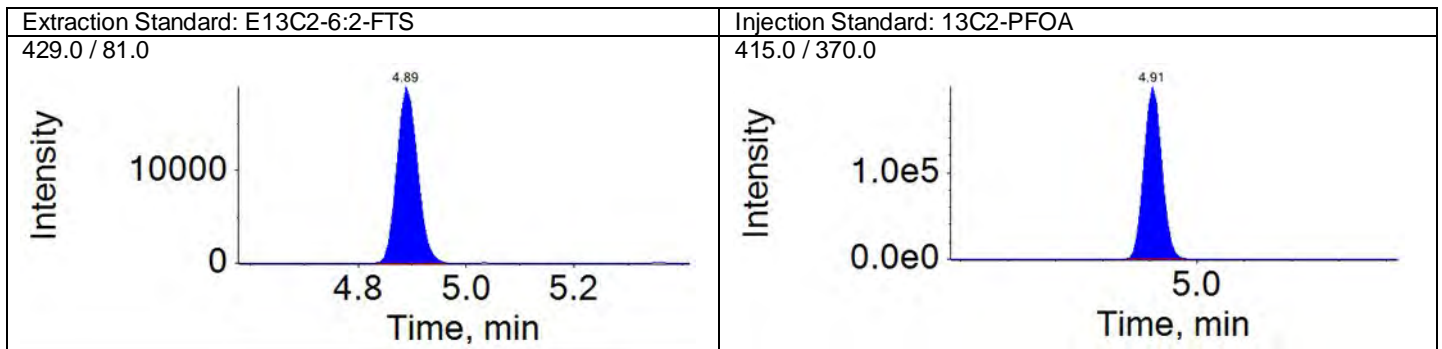
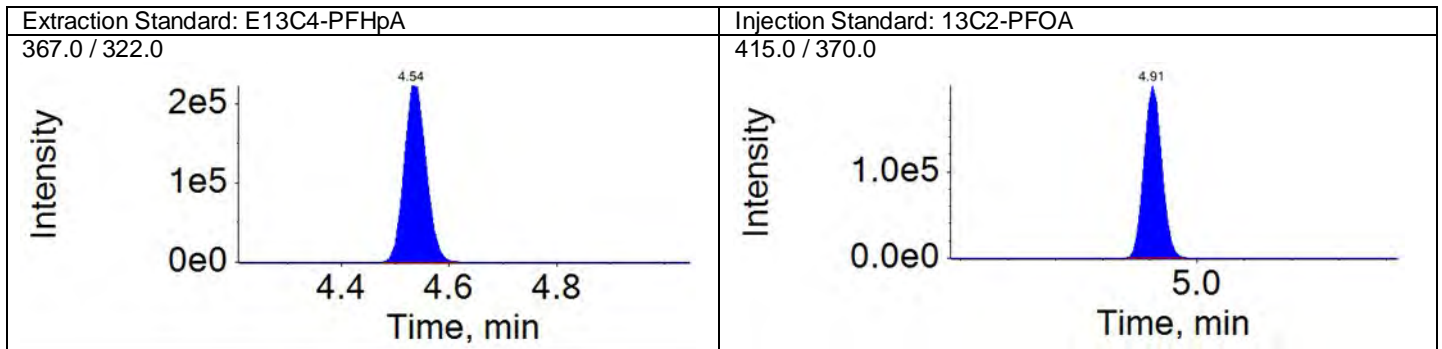
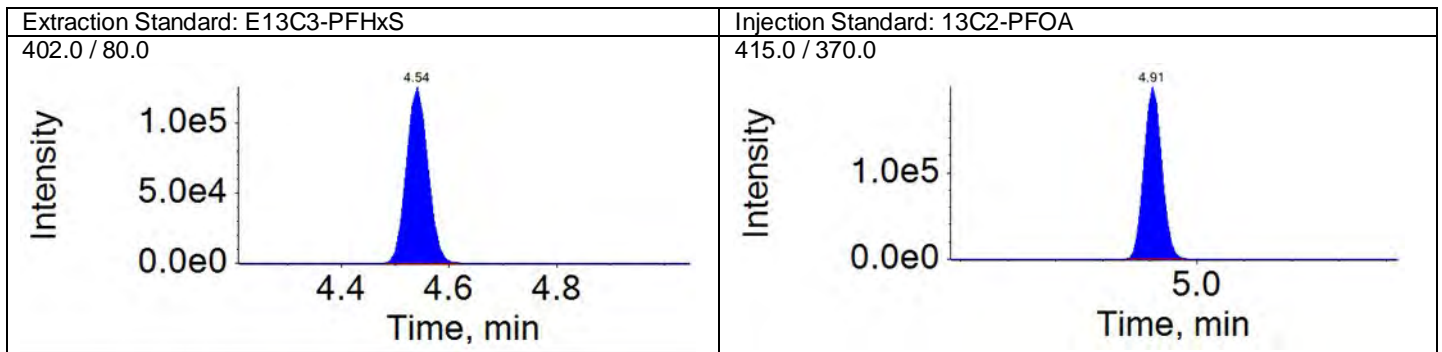
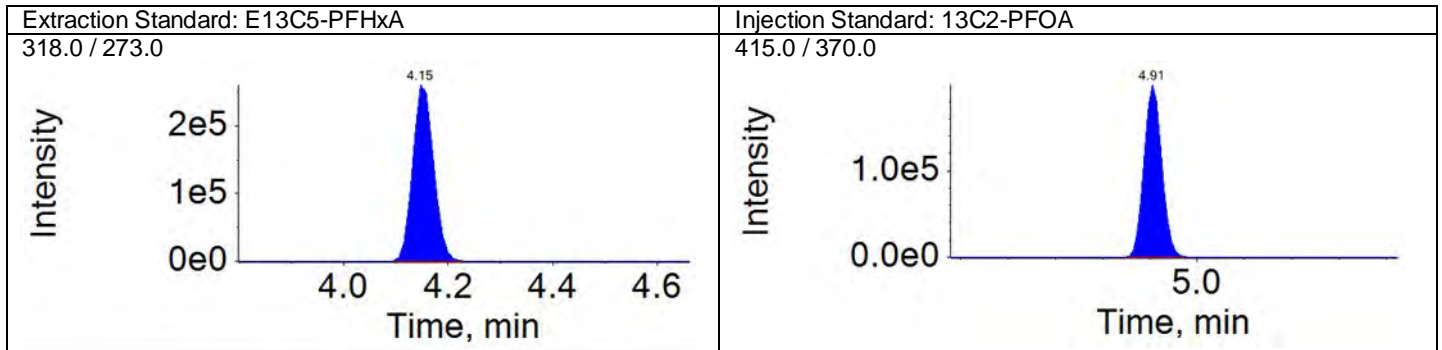
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

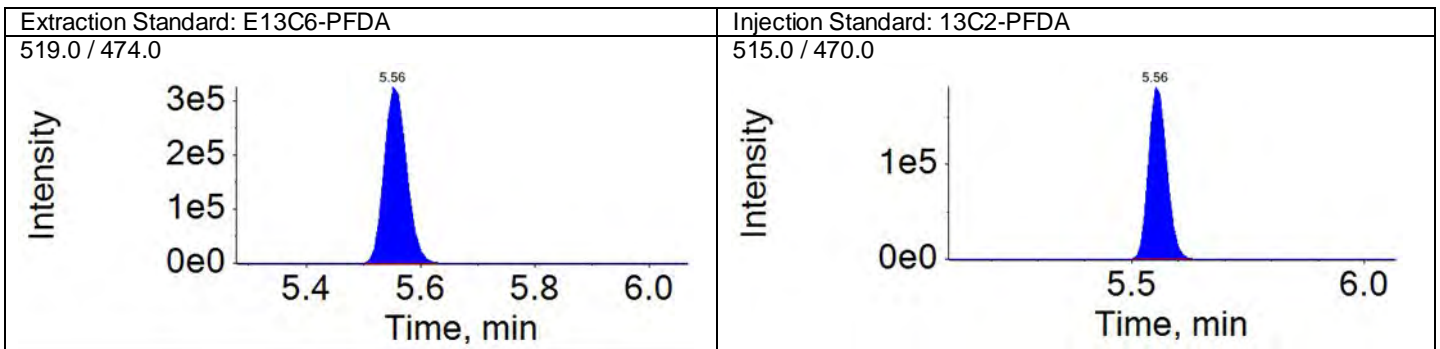
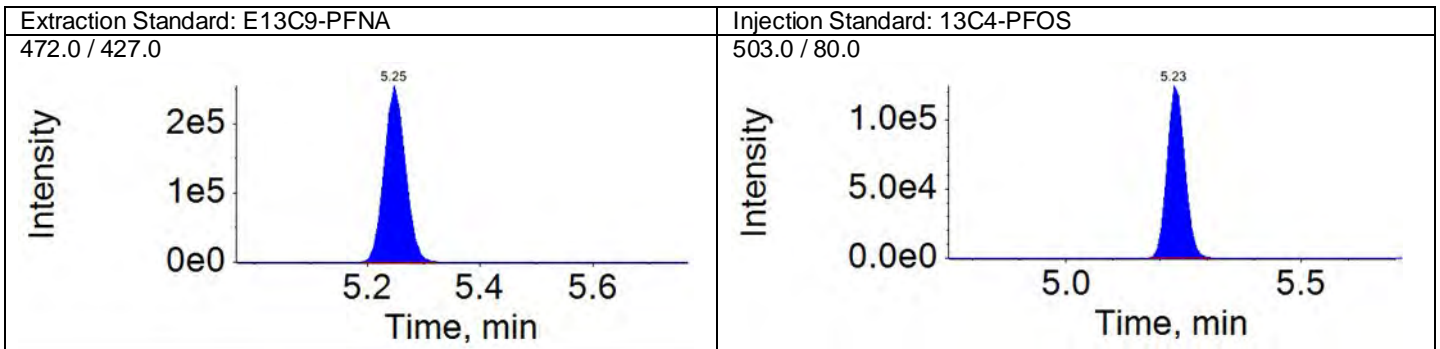
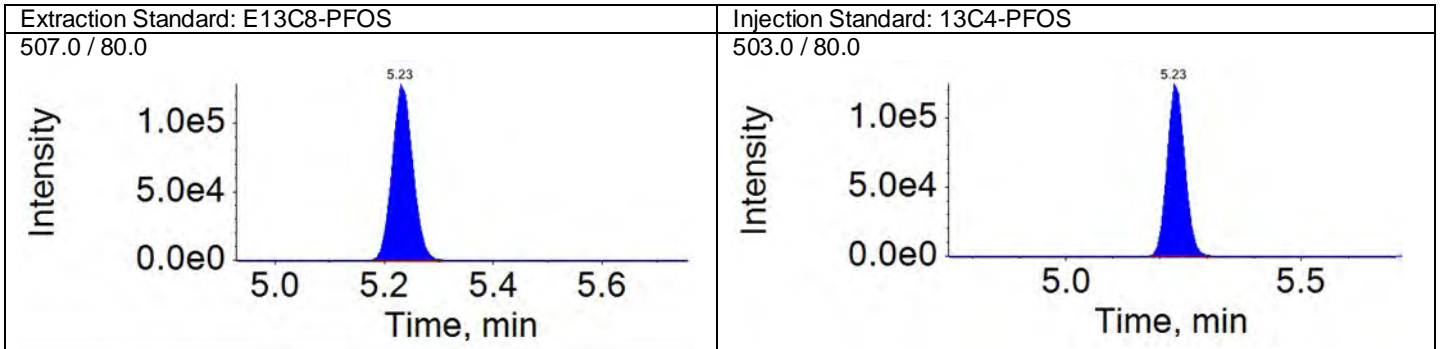
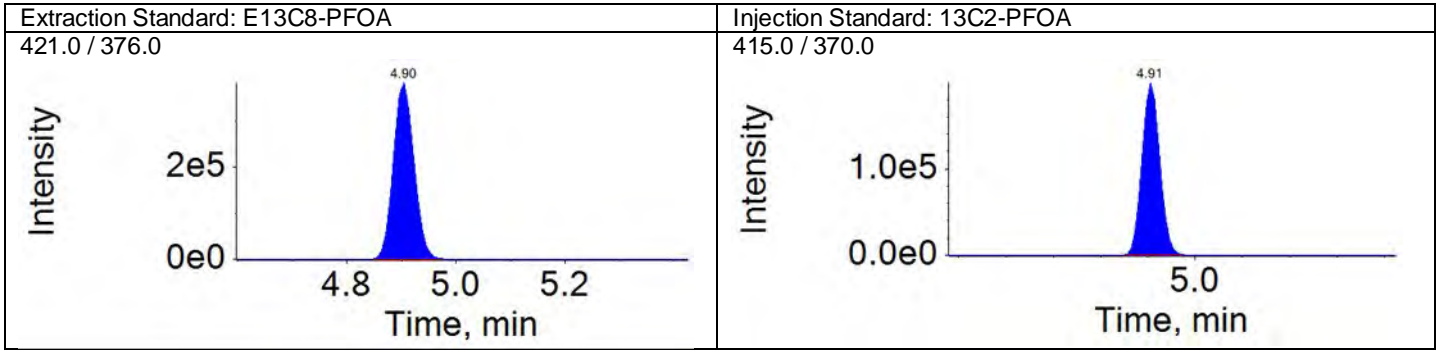
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

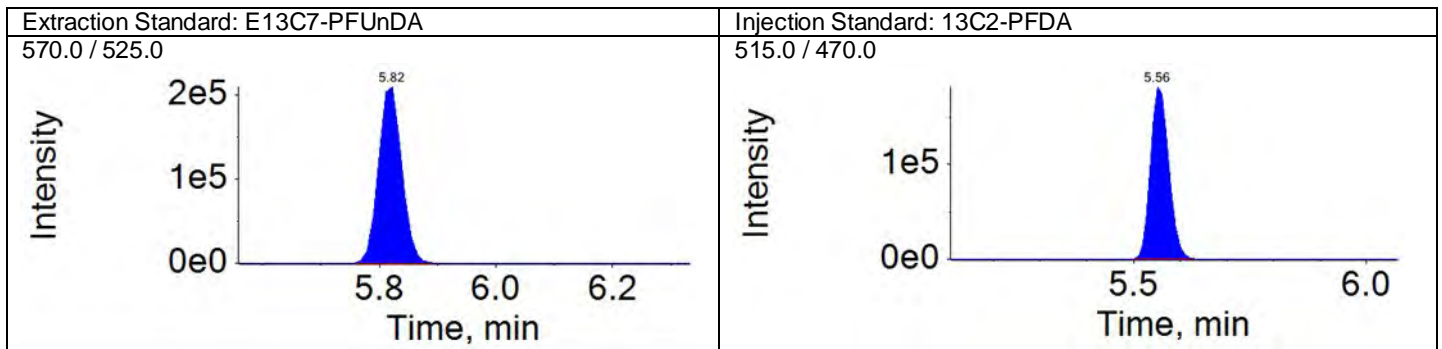
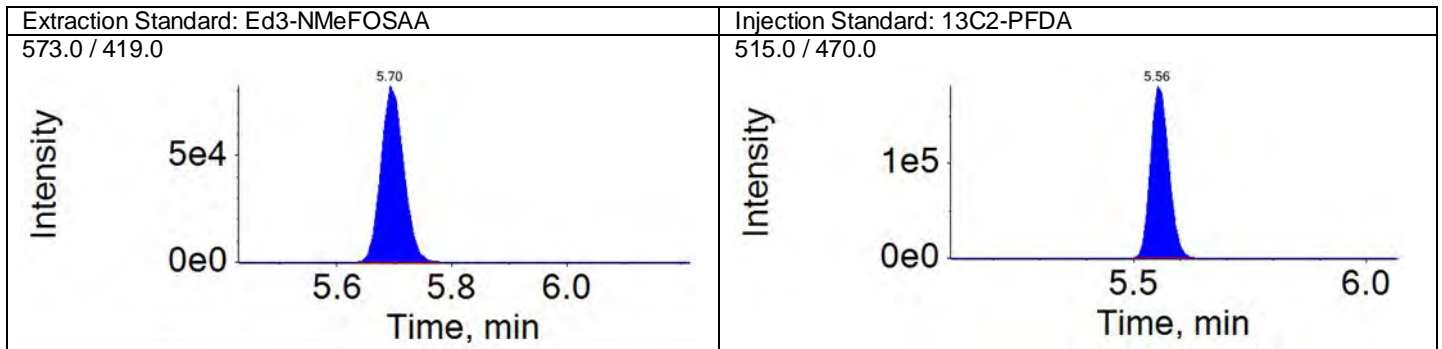
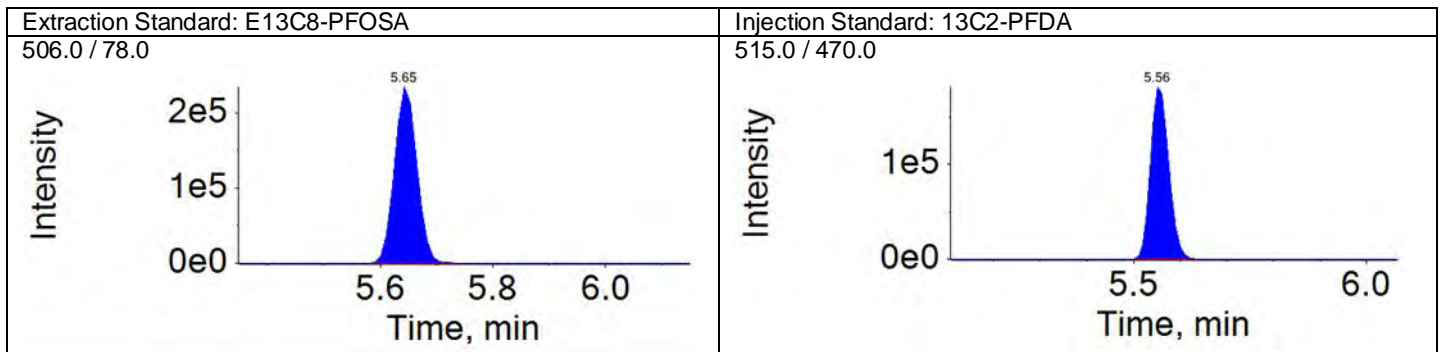
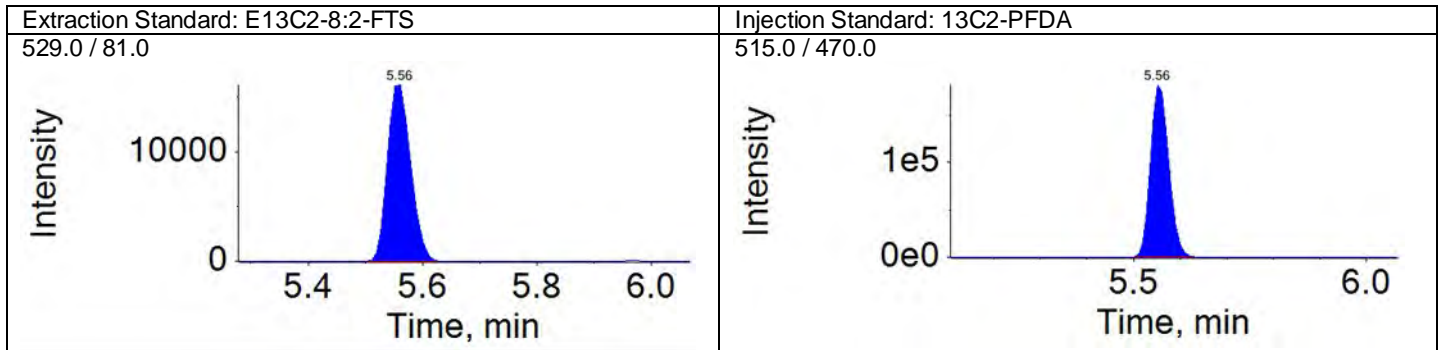
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Acquisition Method: 18AUG13\_3uL.dam





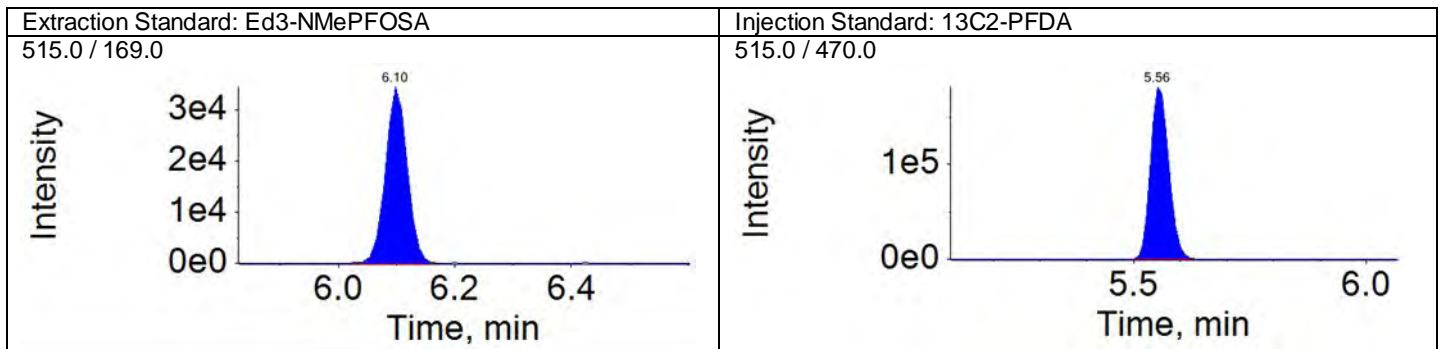
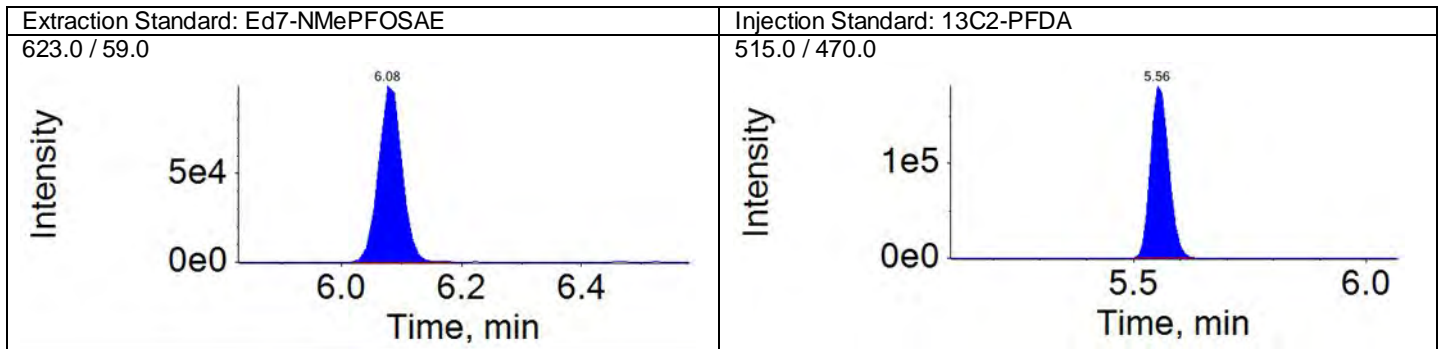
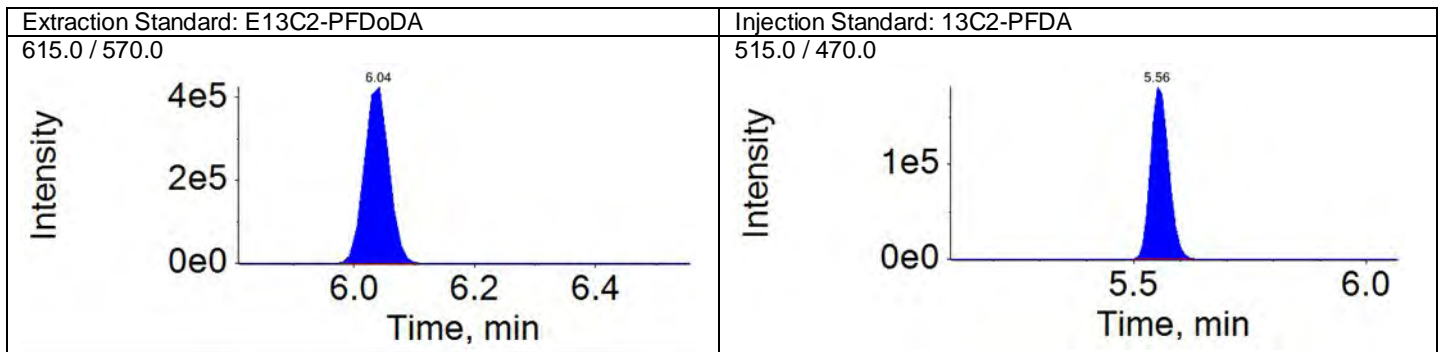
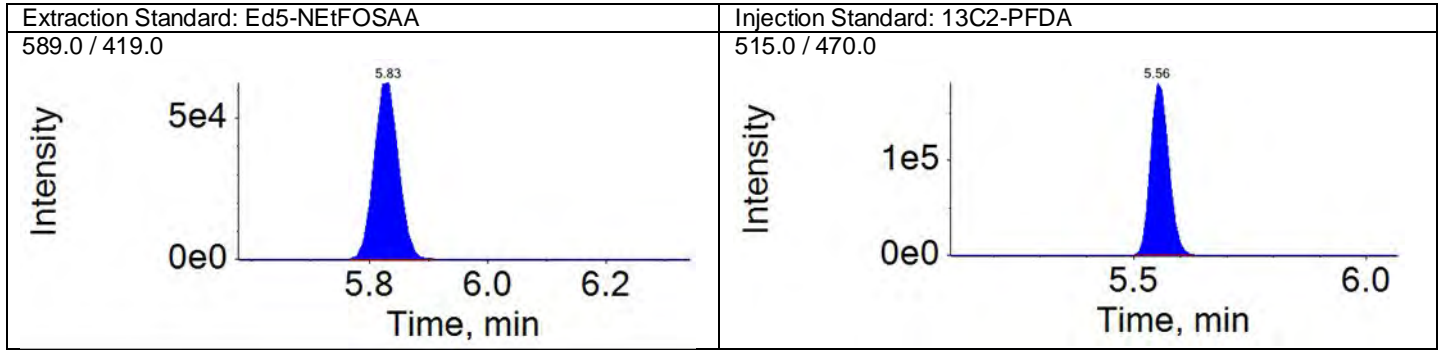
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



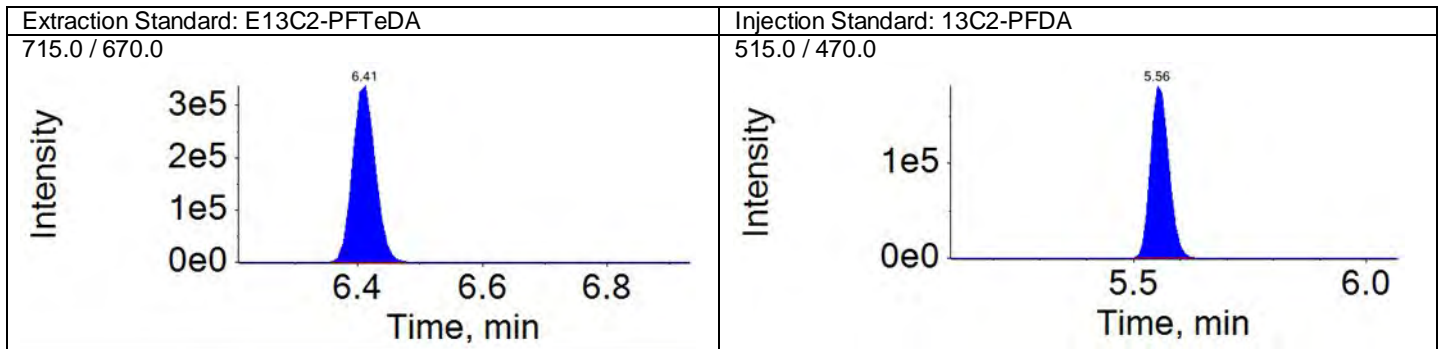
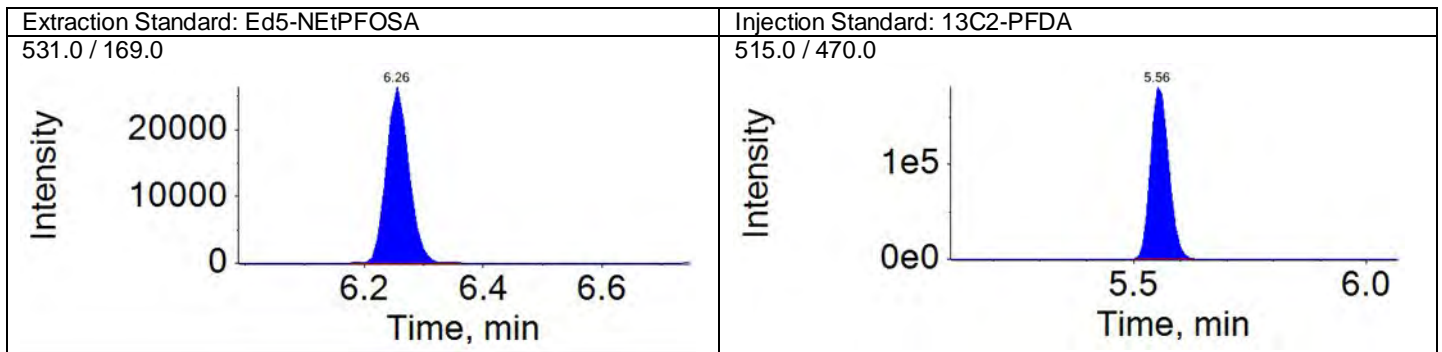
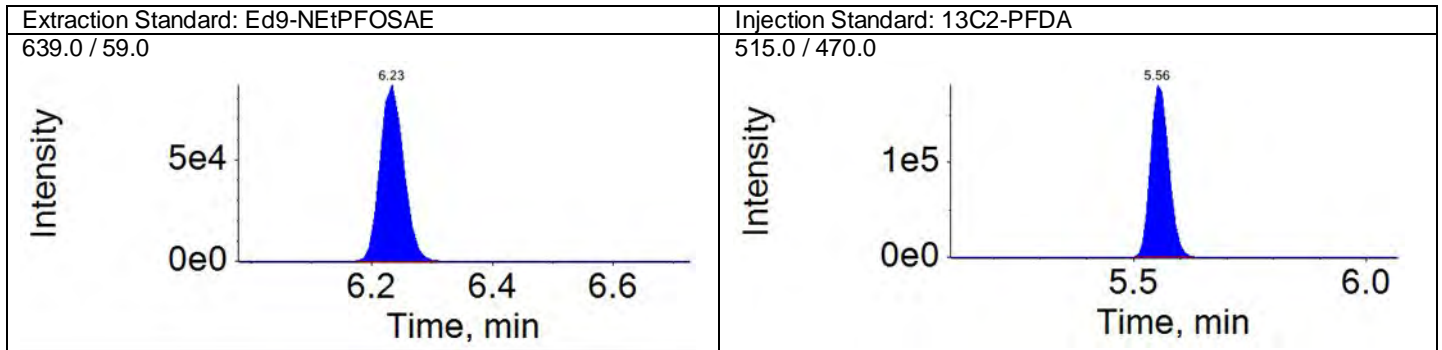
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



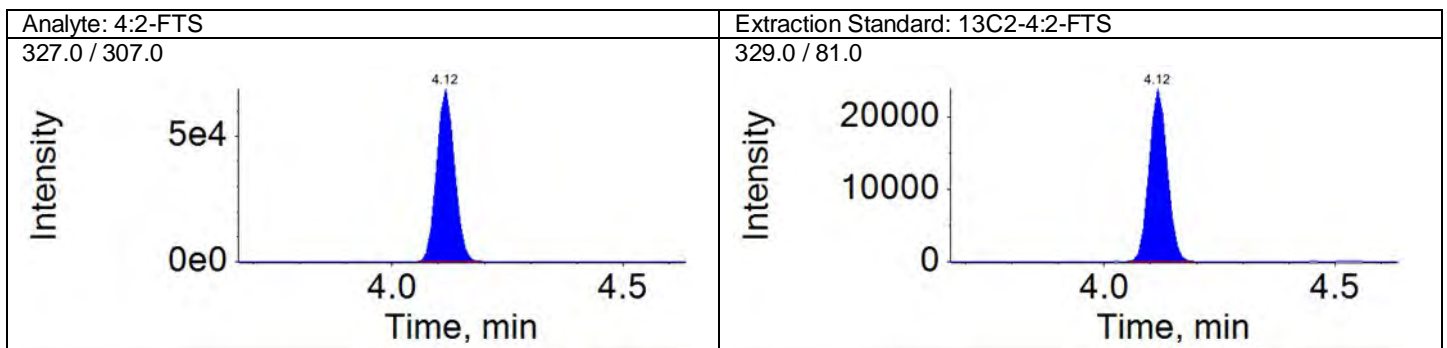
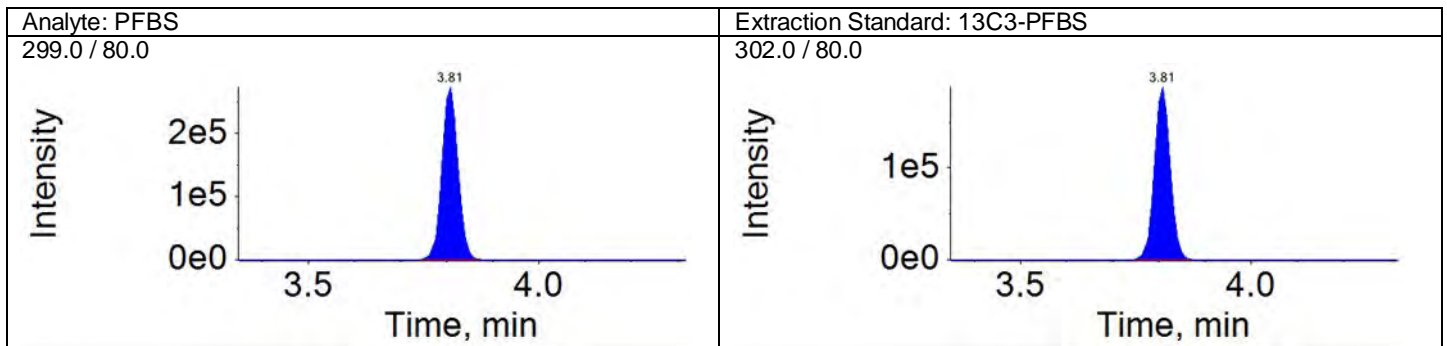
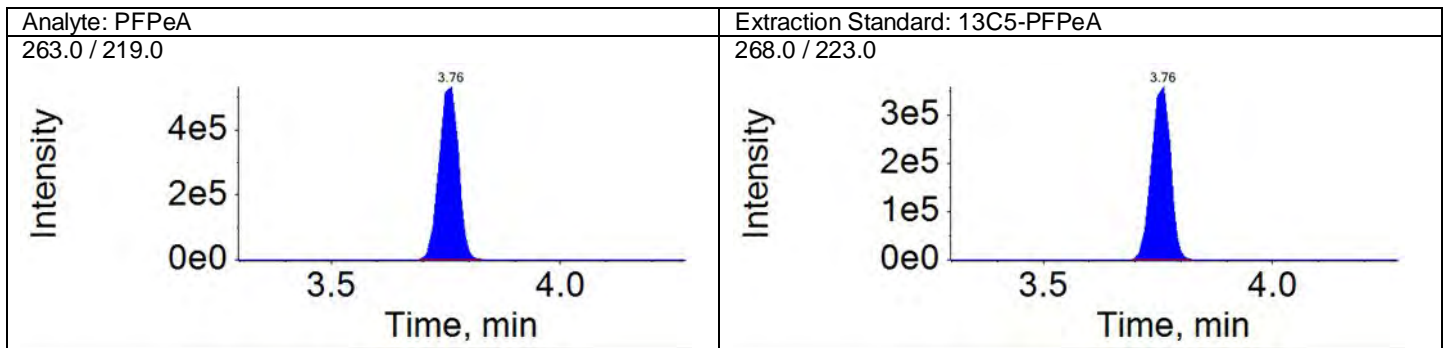
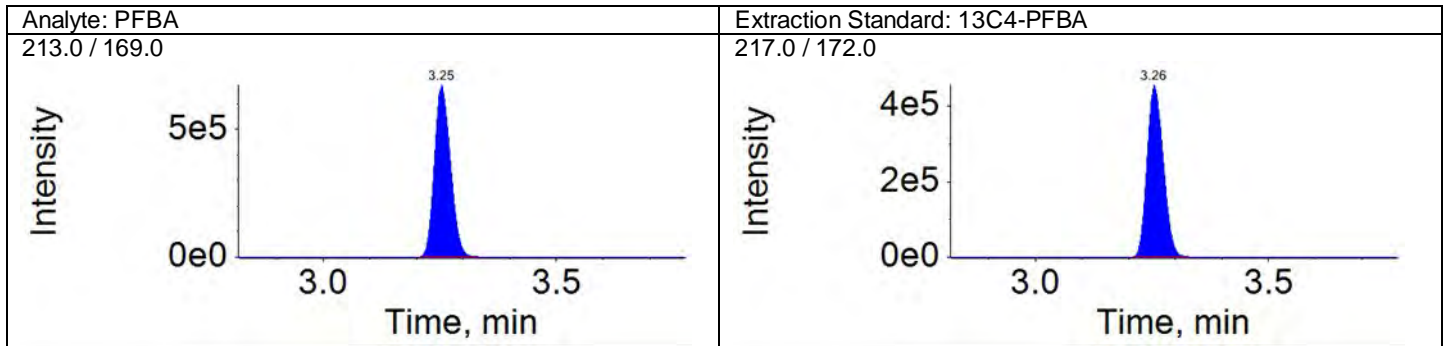
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

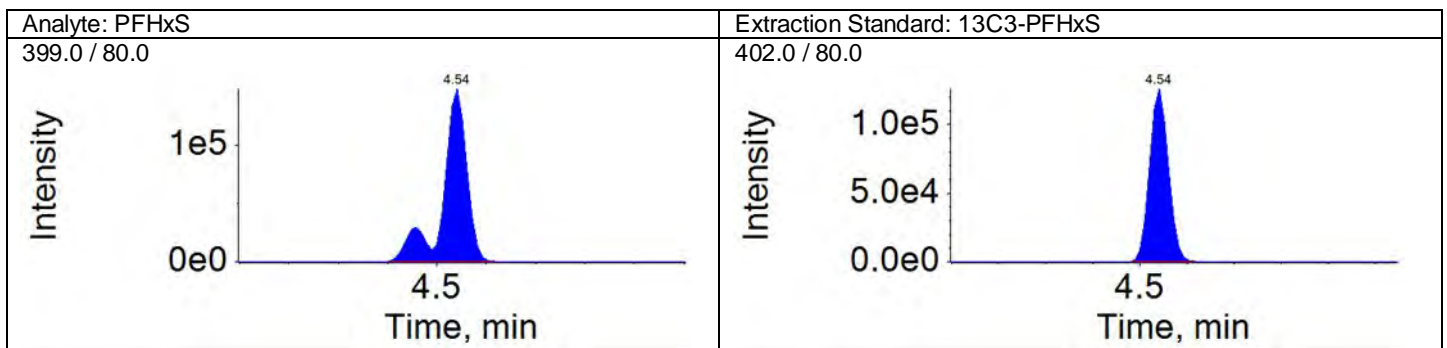
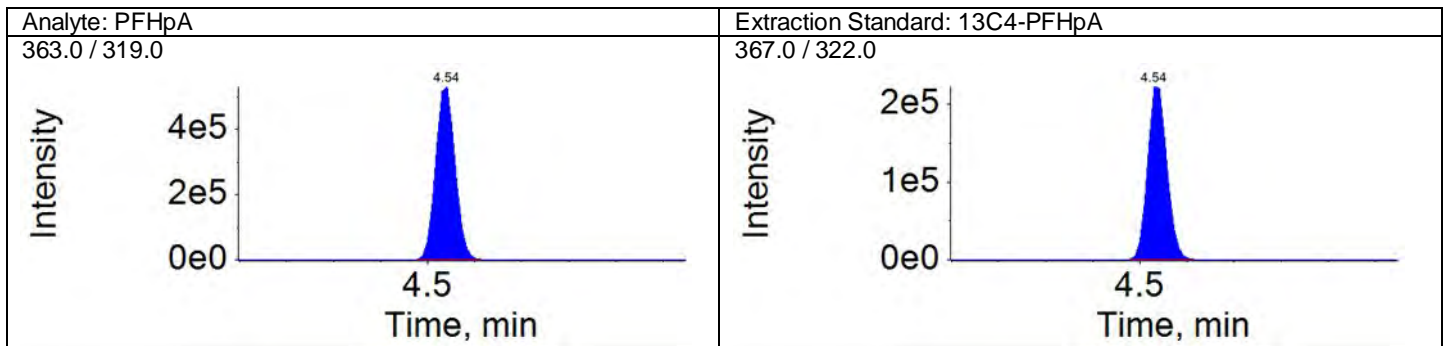
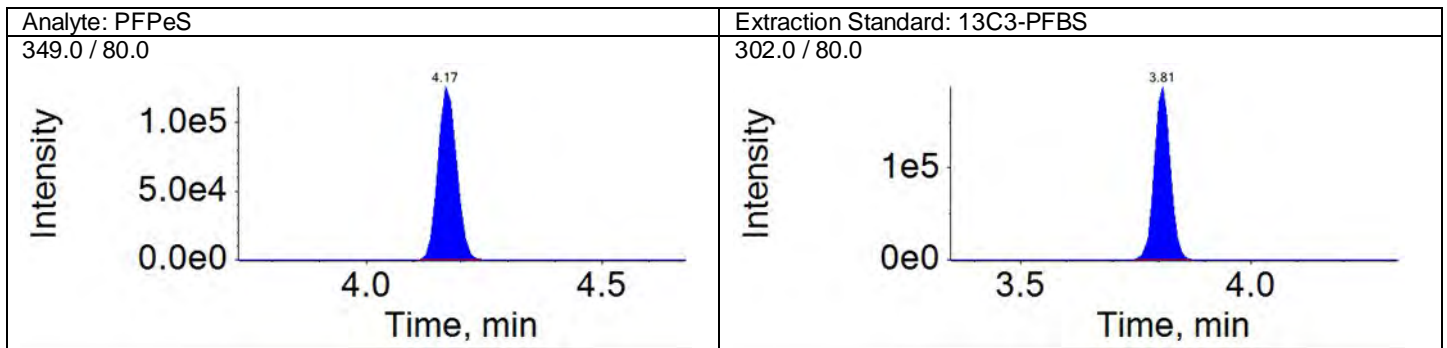
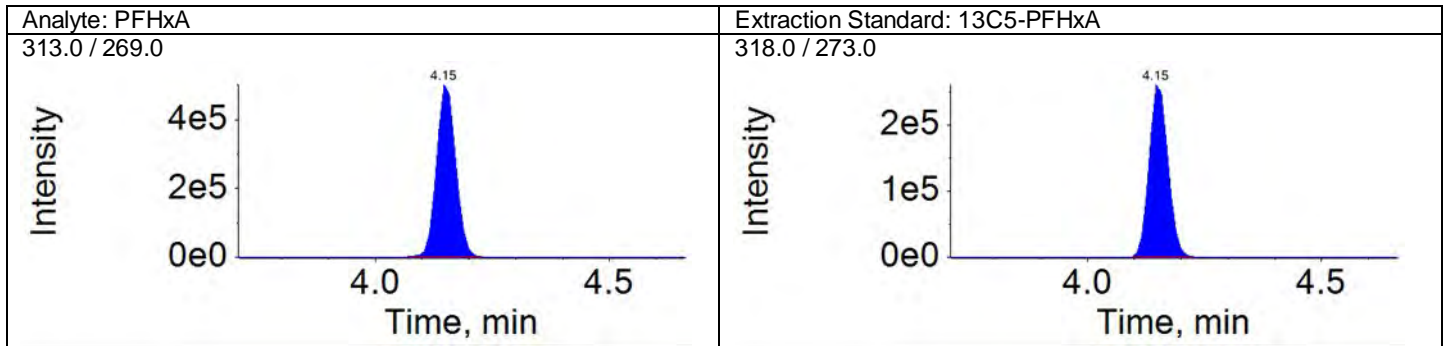
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

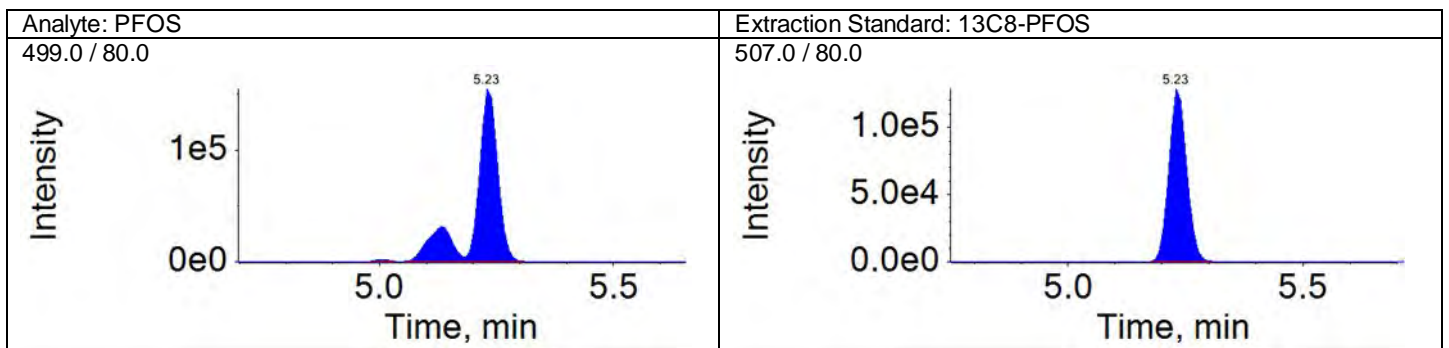
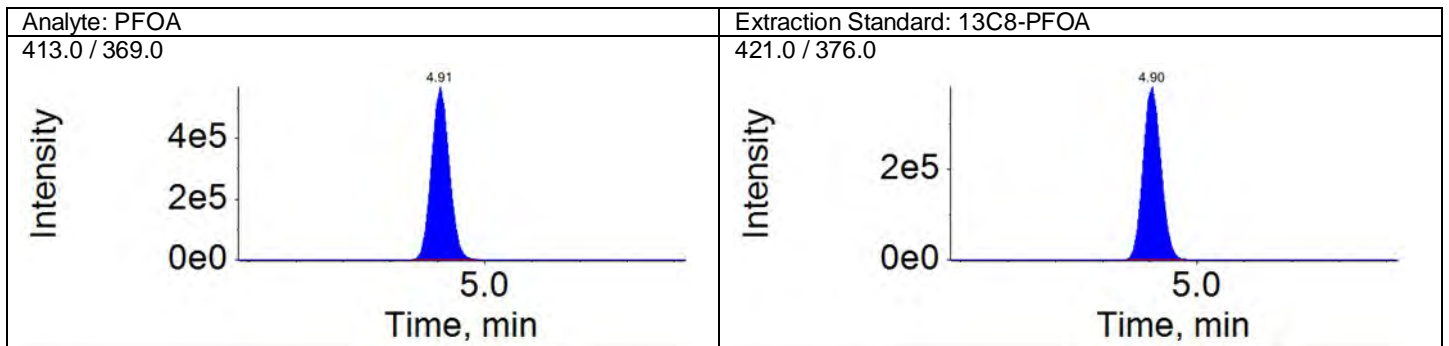
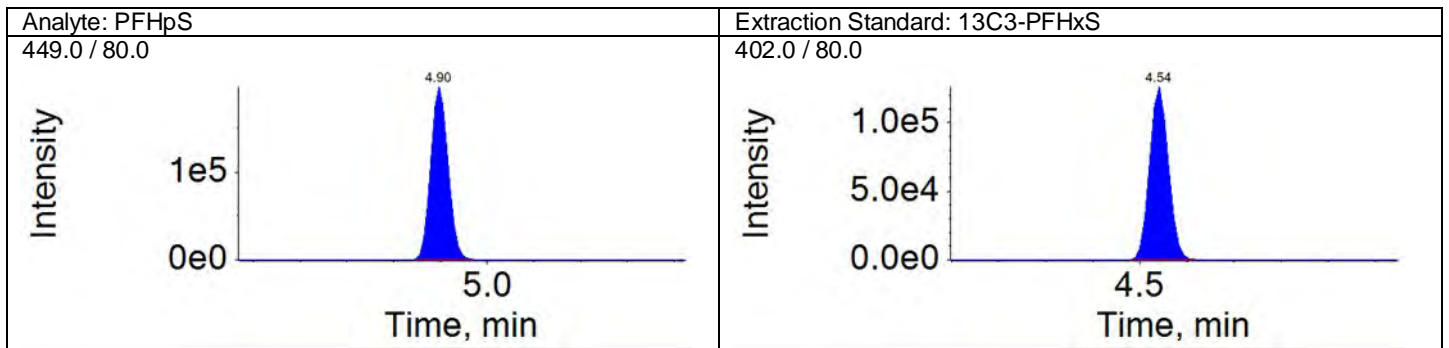
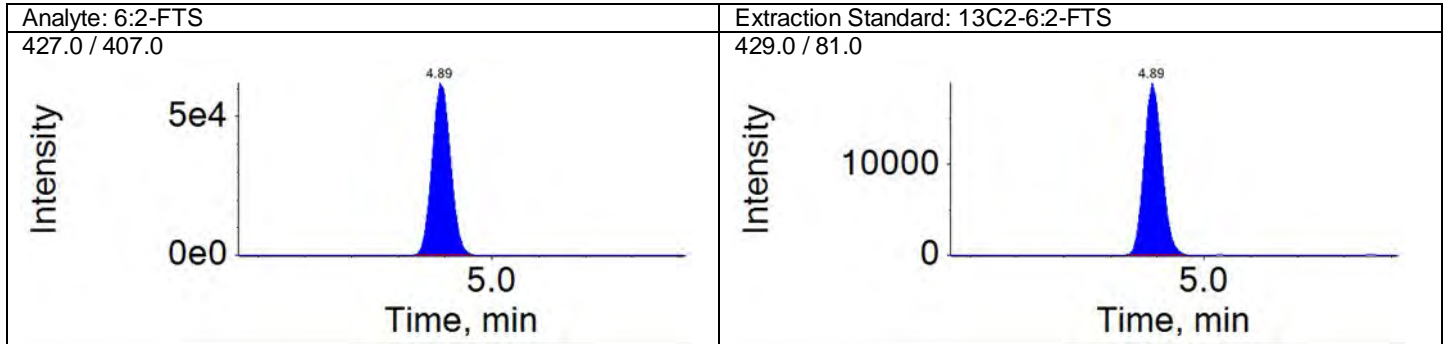
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Acquisition Method: 18AUG13\_3uL.dam





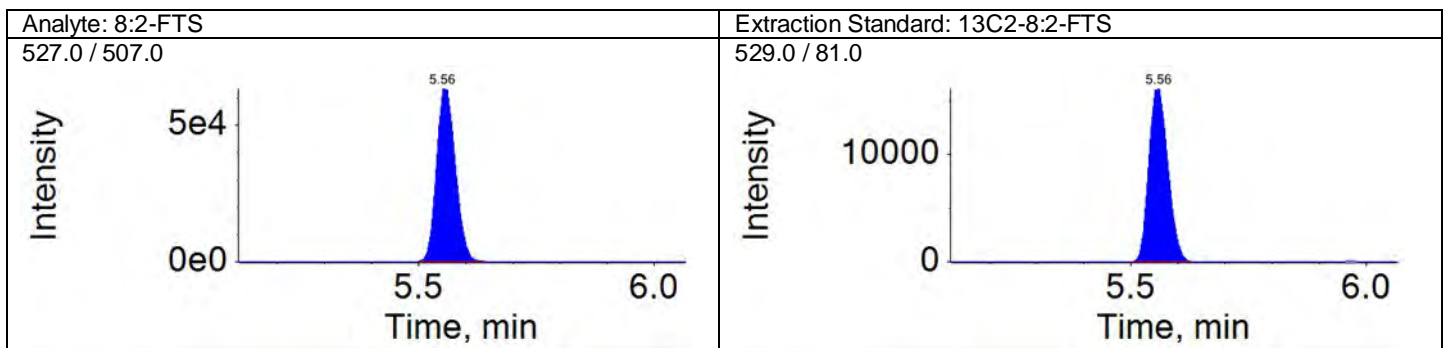
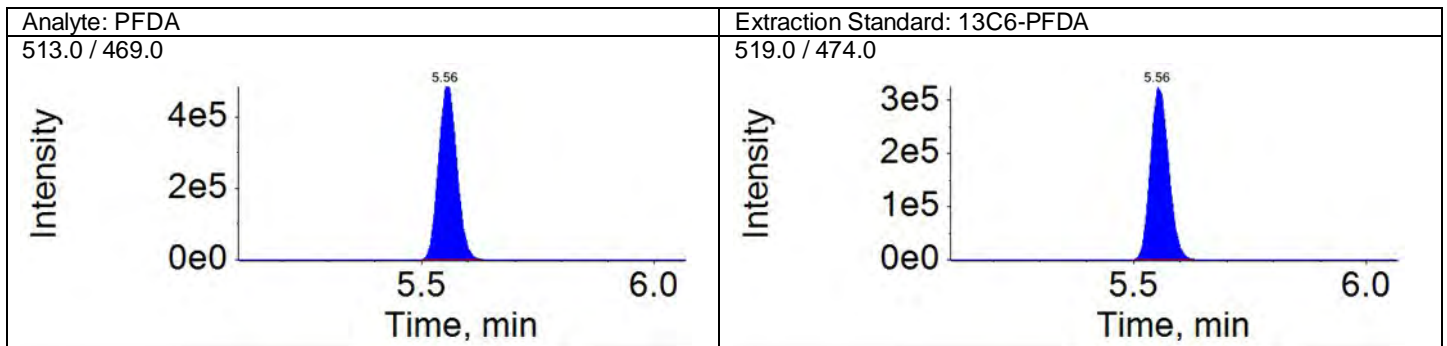
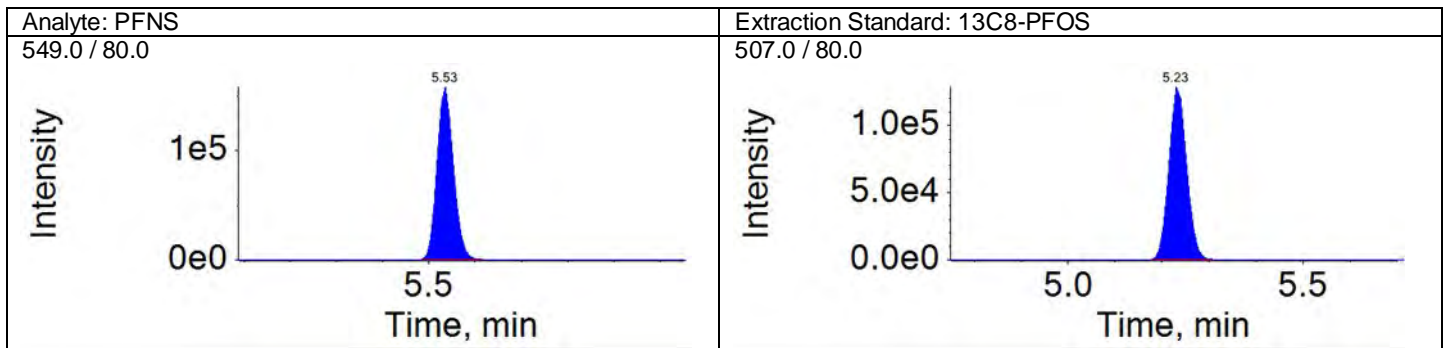
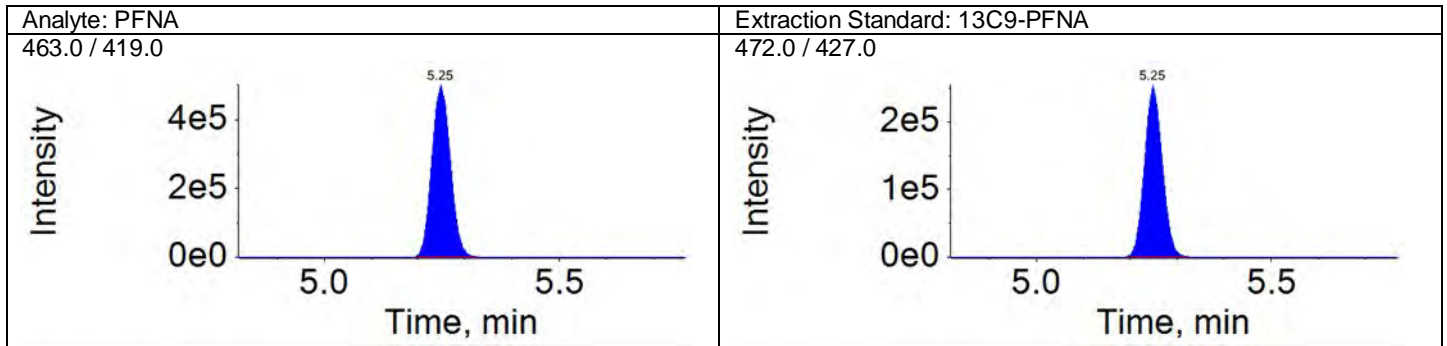
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



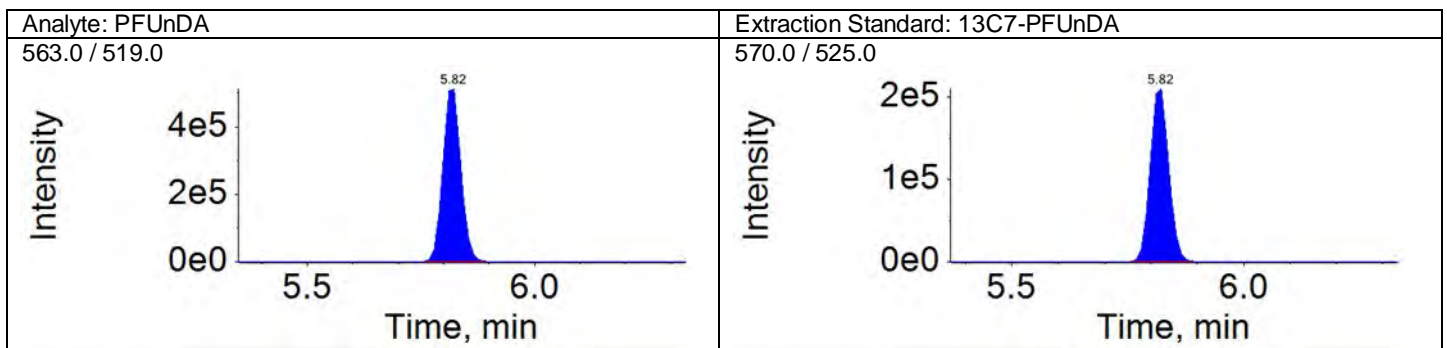
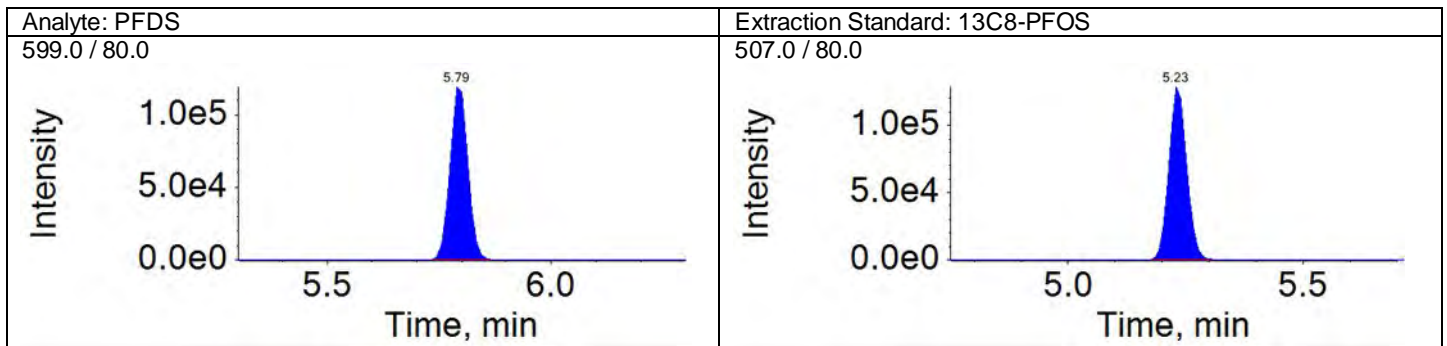
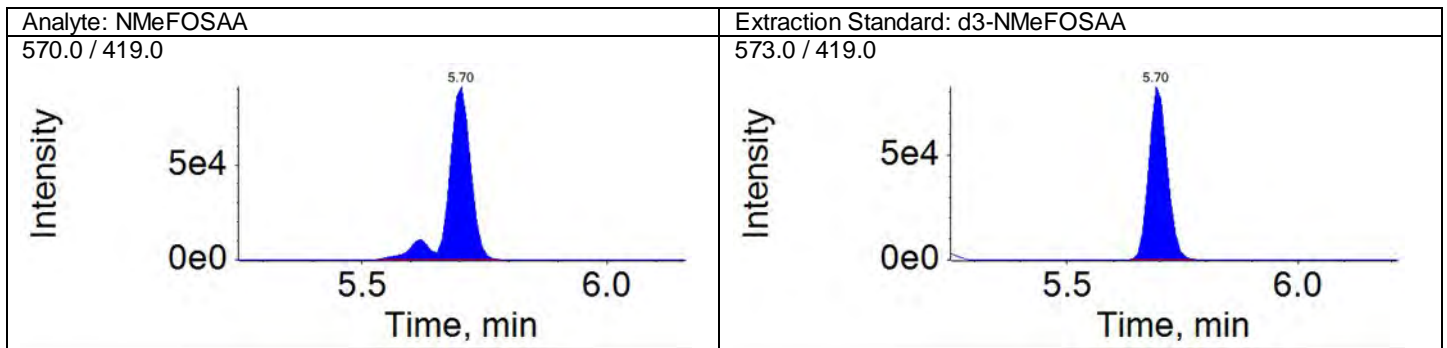
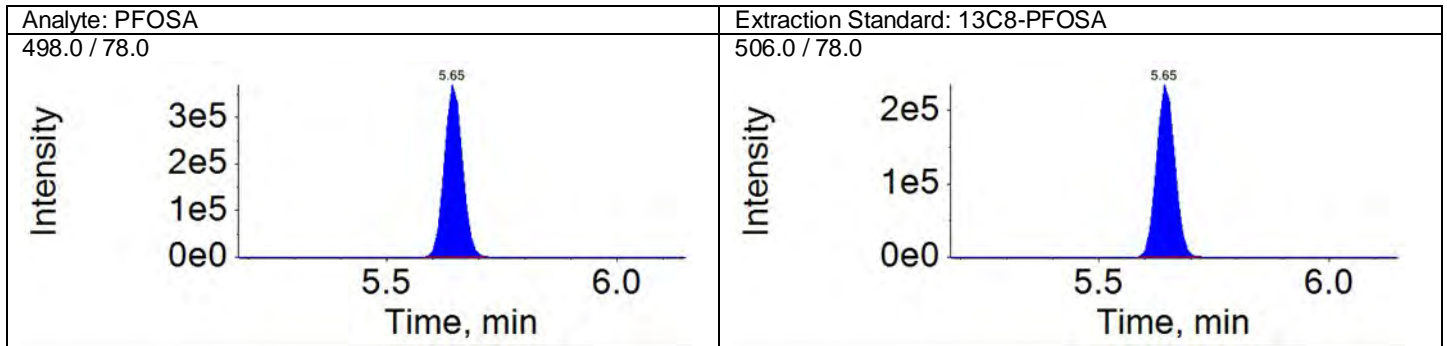
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



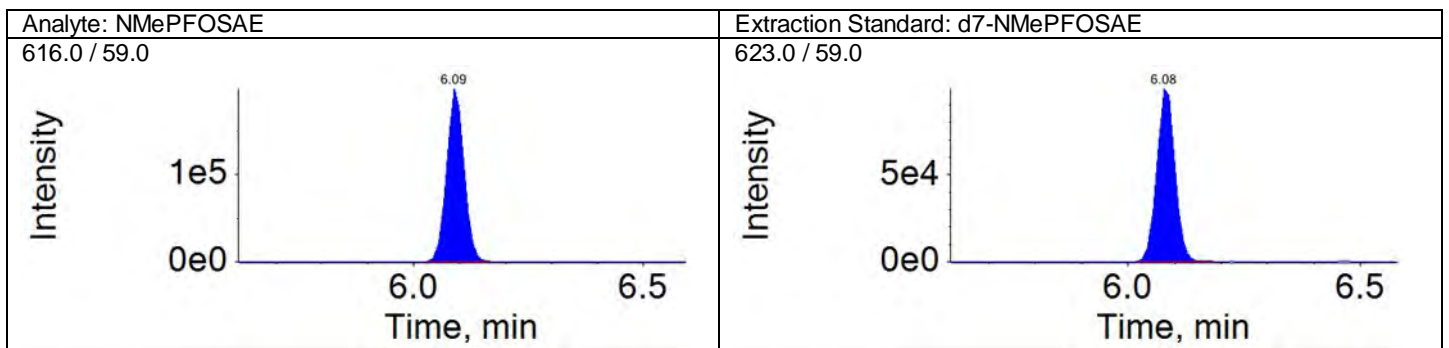
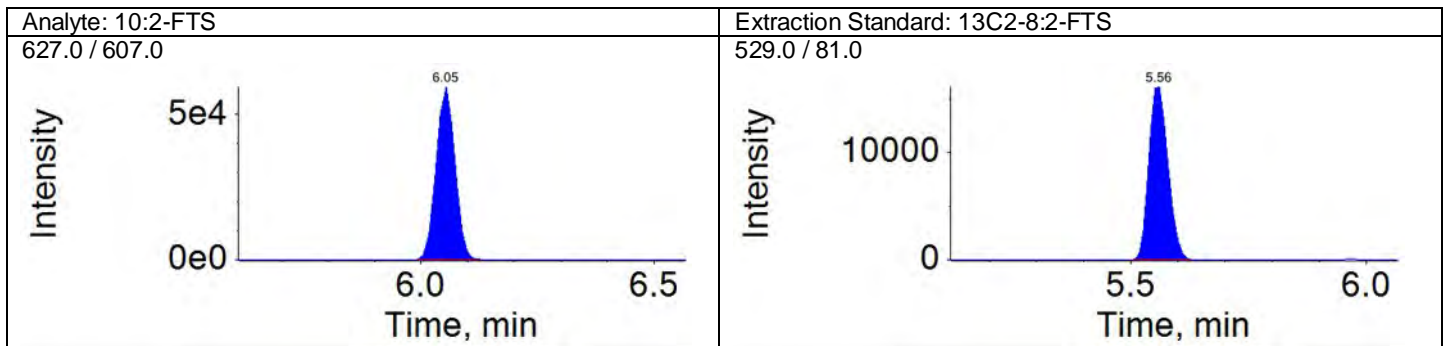
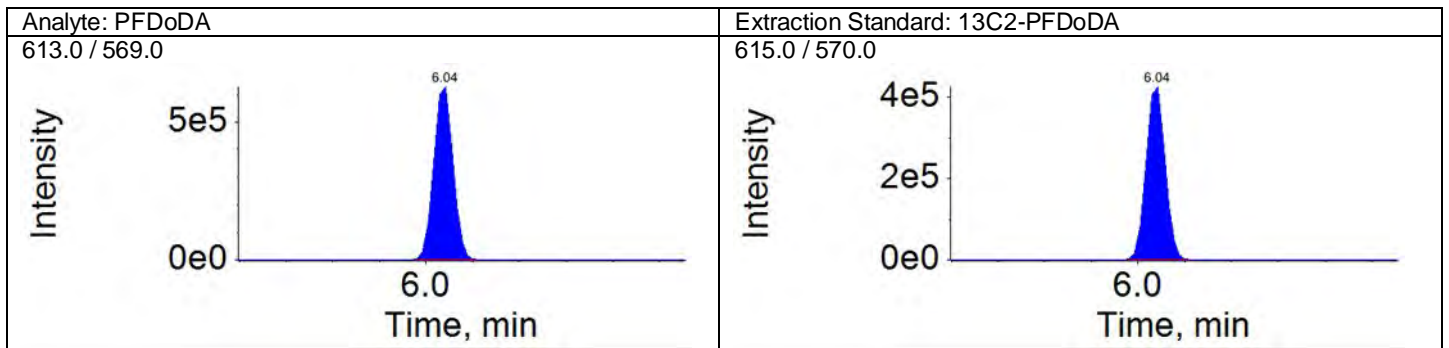
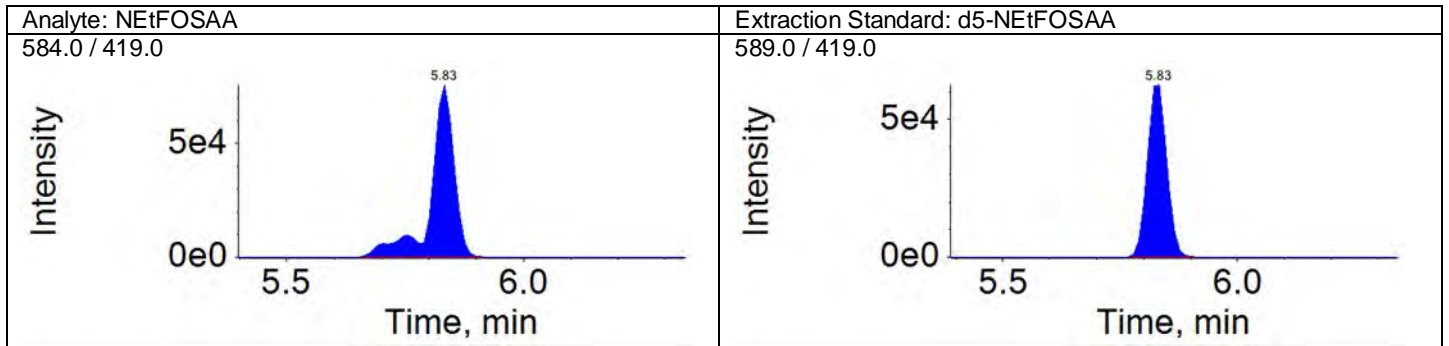
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

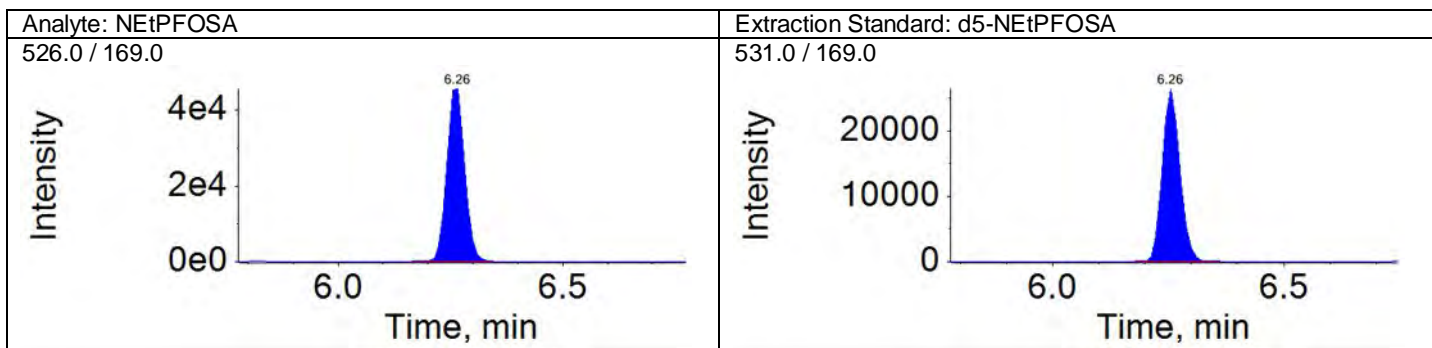
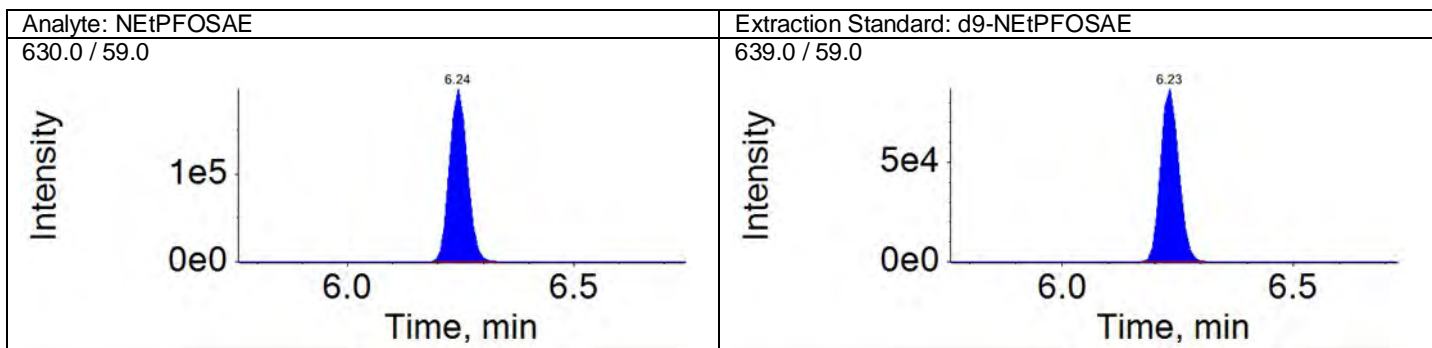
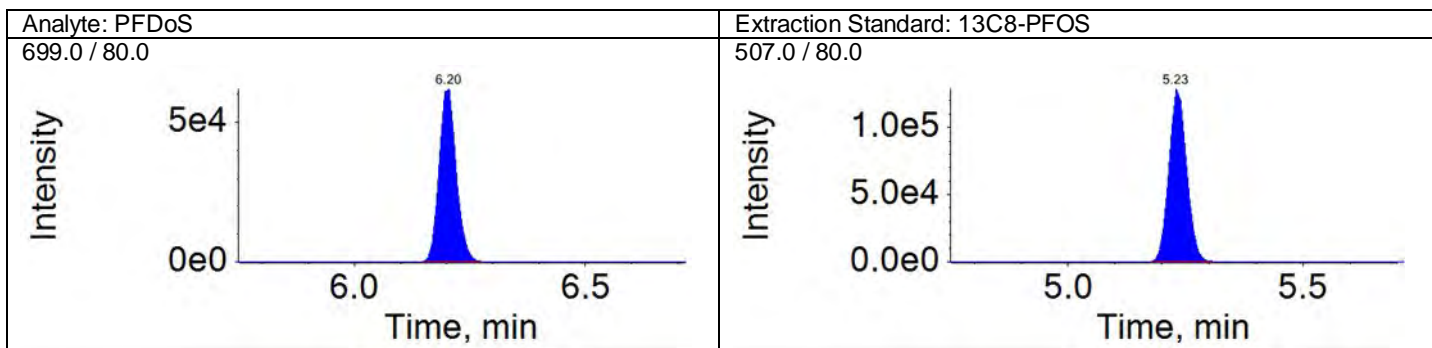
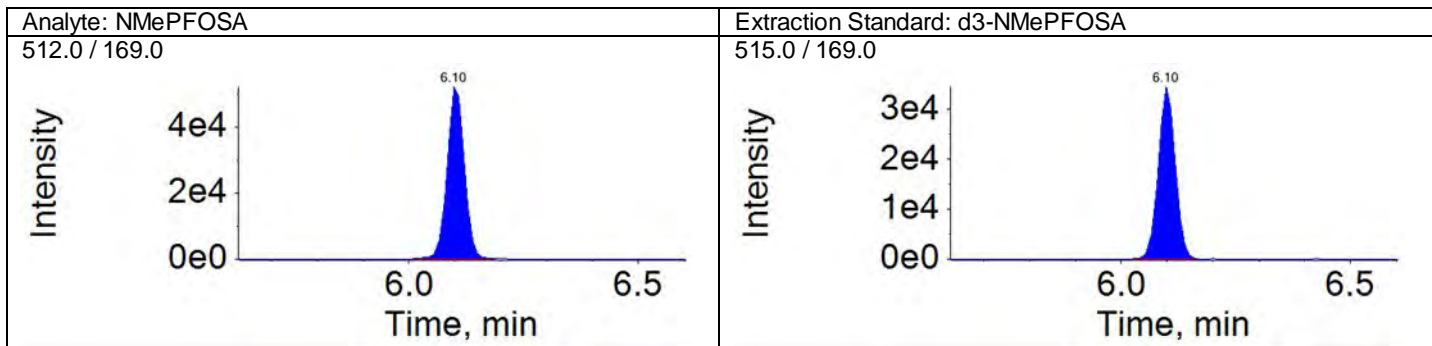
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

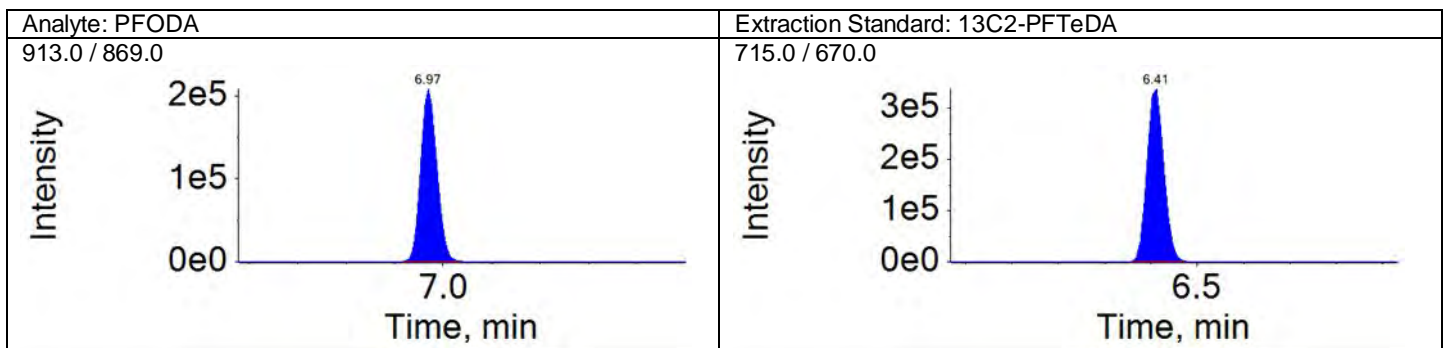
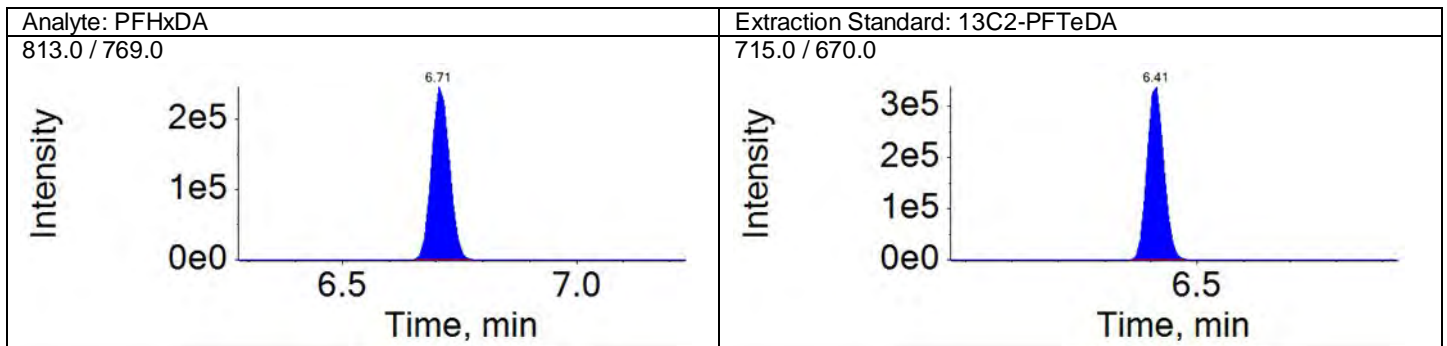
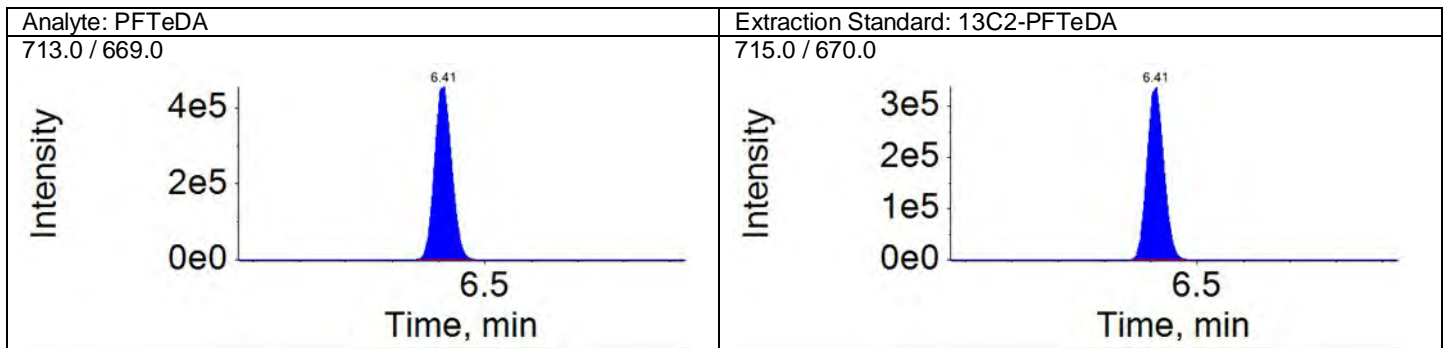
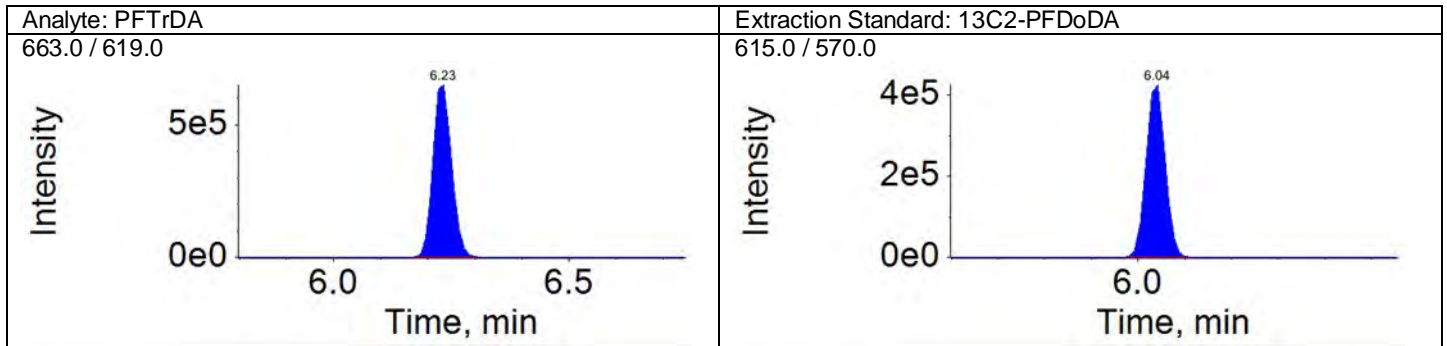
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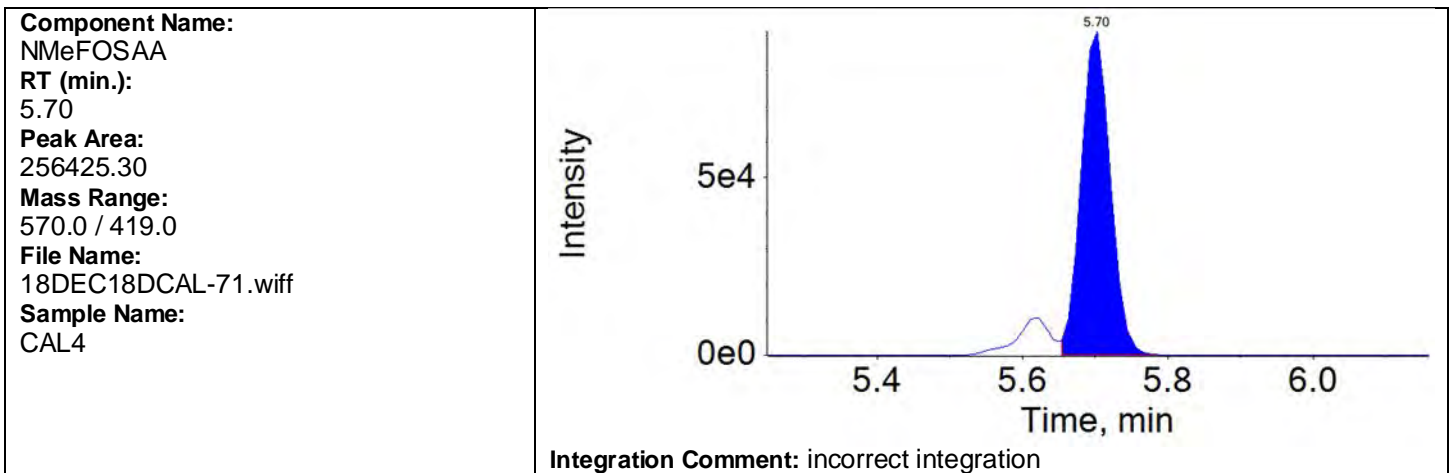
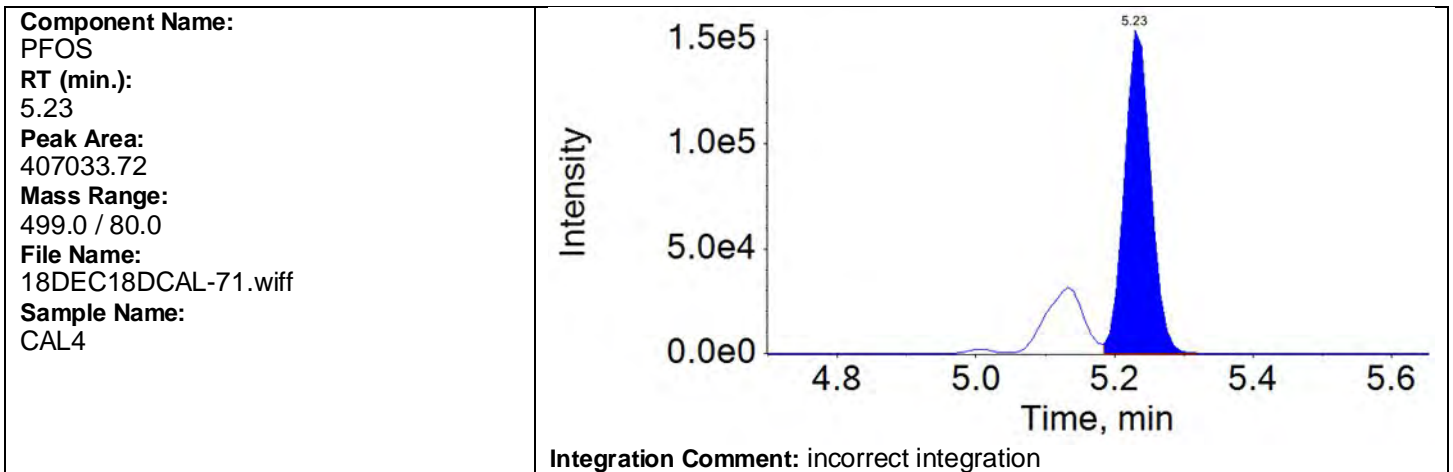
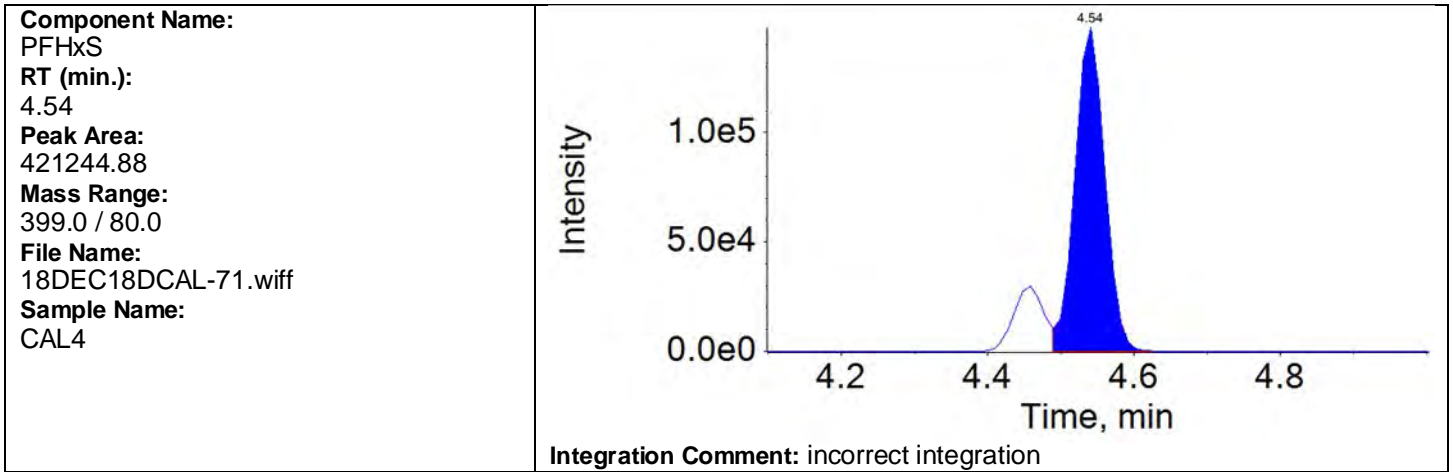
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



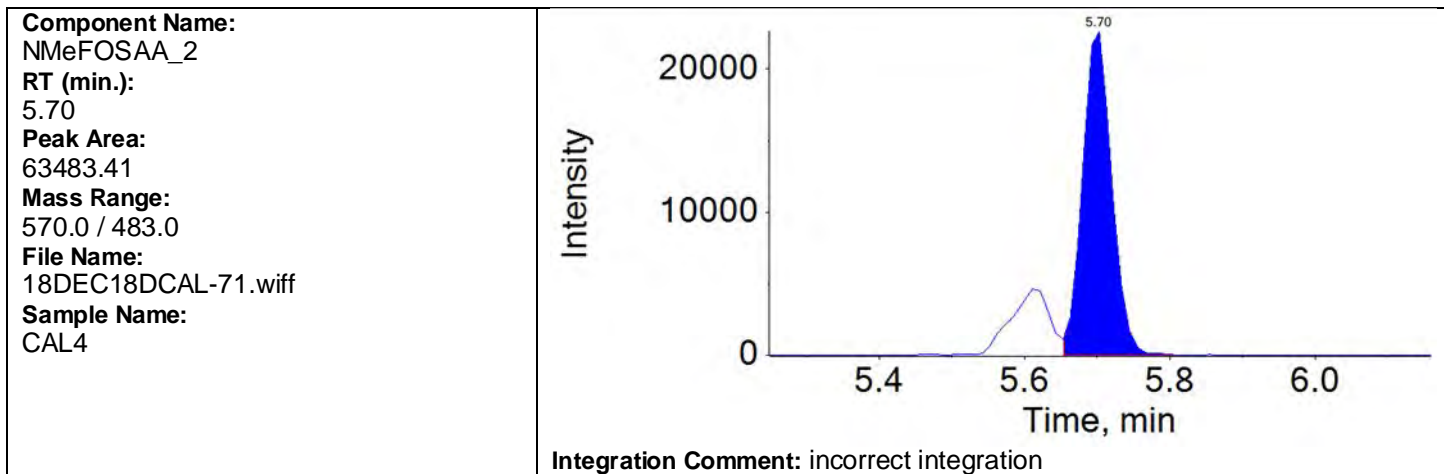
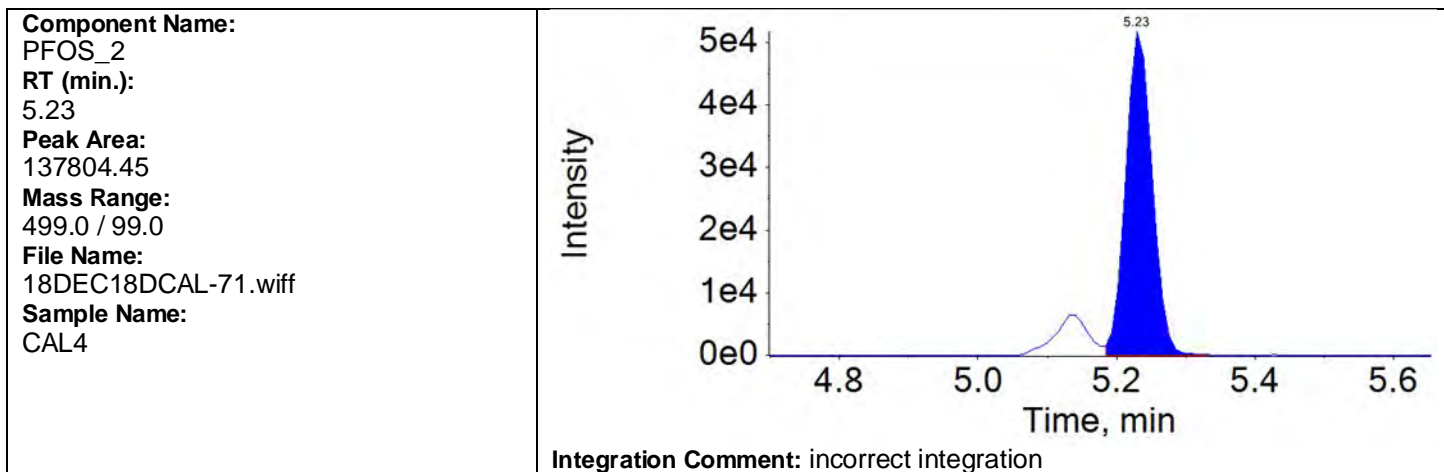
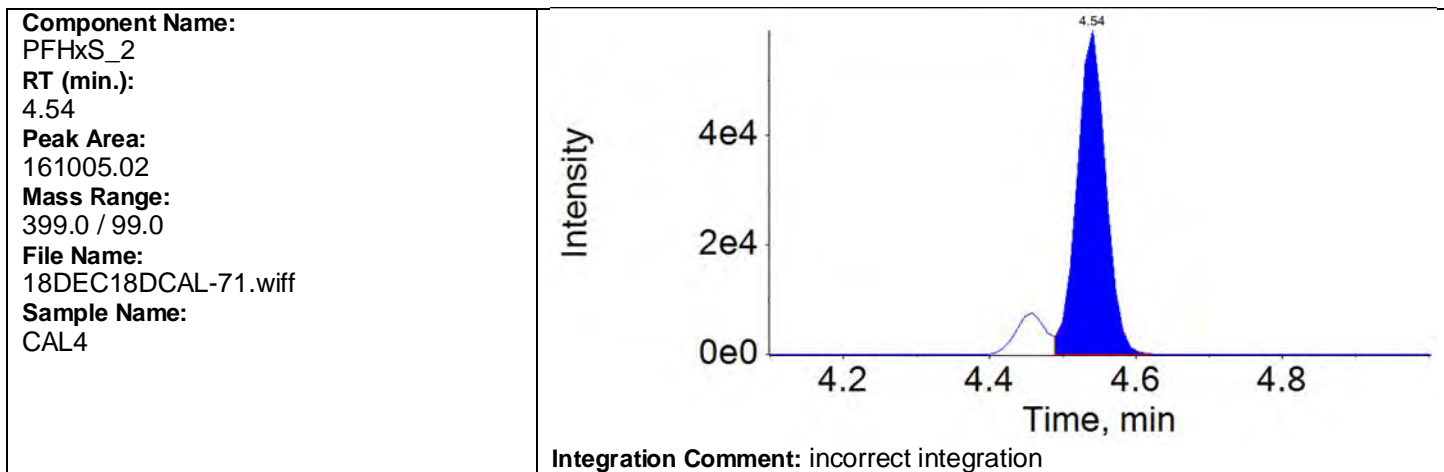
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Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

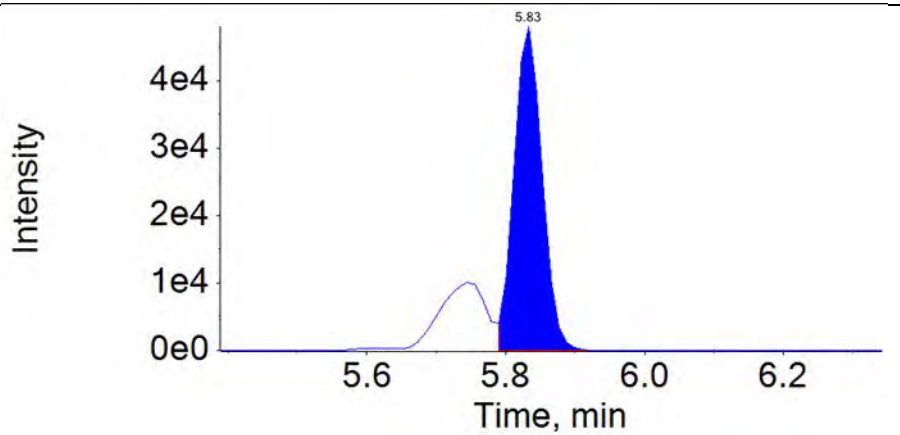
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
NEtFOSAA\_2  
RT (min.):  
5.83  
Peak Area:  
135009.13  
Mass Range:  
584.0 / 526.0  
File Name:  
18DEC18DCAL-71.wiff  
Sample Name:  
CAL4



Integration Comment: incorrect integration

**Results Table Name:** 18DEC18DCAL  
**Results Table Date:** 12/19/2018 9:34:01 AM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18



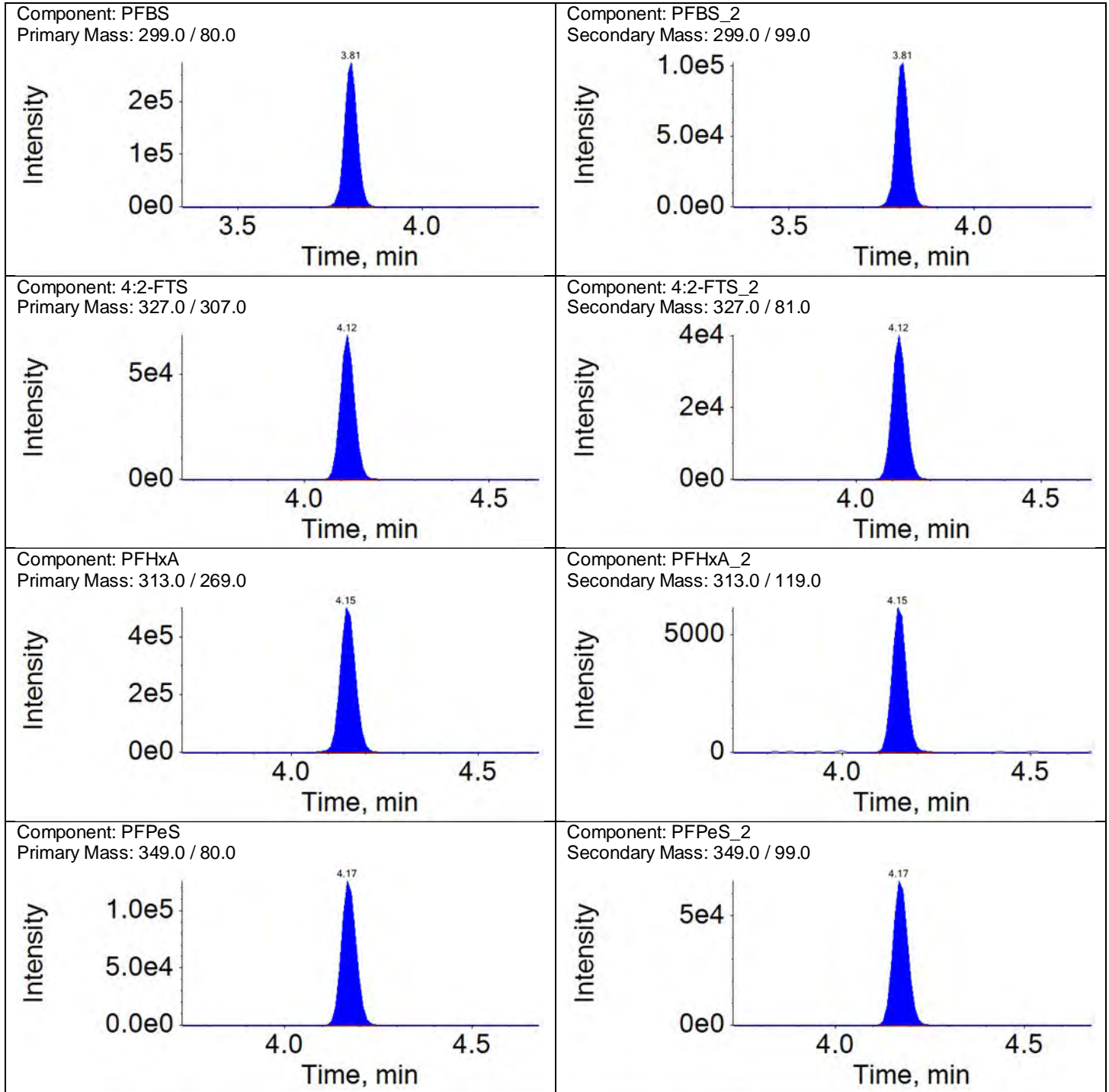
Ion Ratio Report

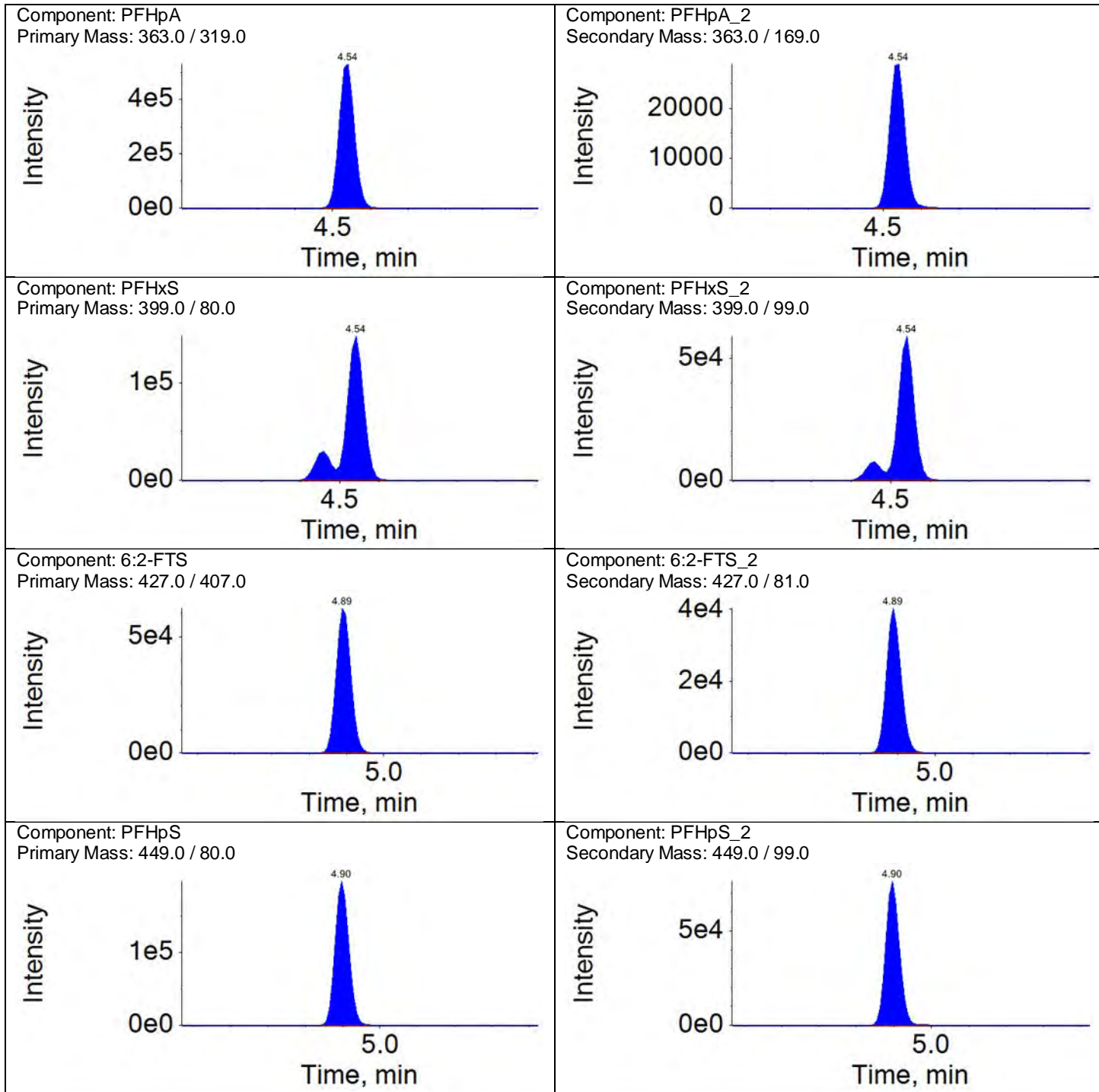
Sample Name: CAL4

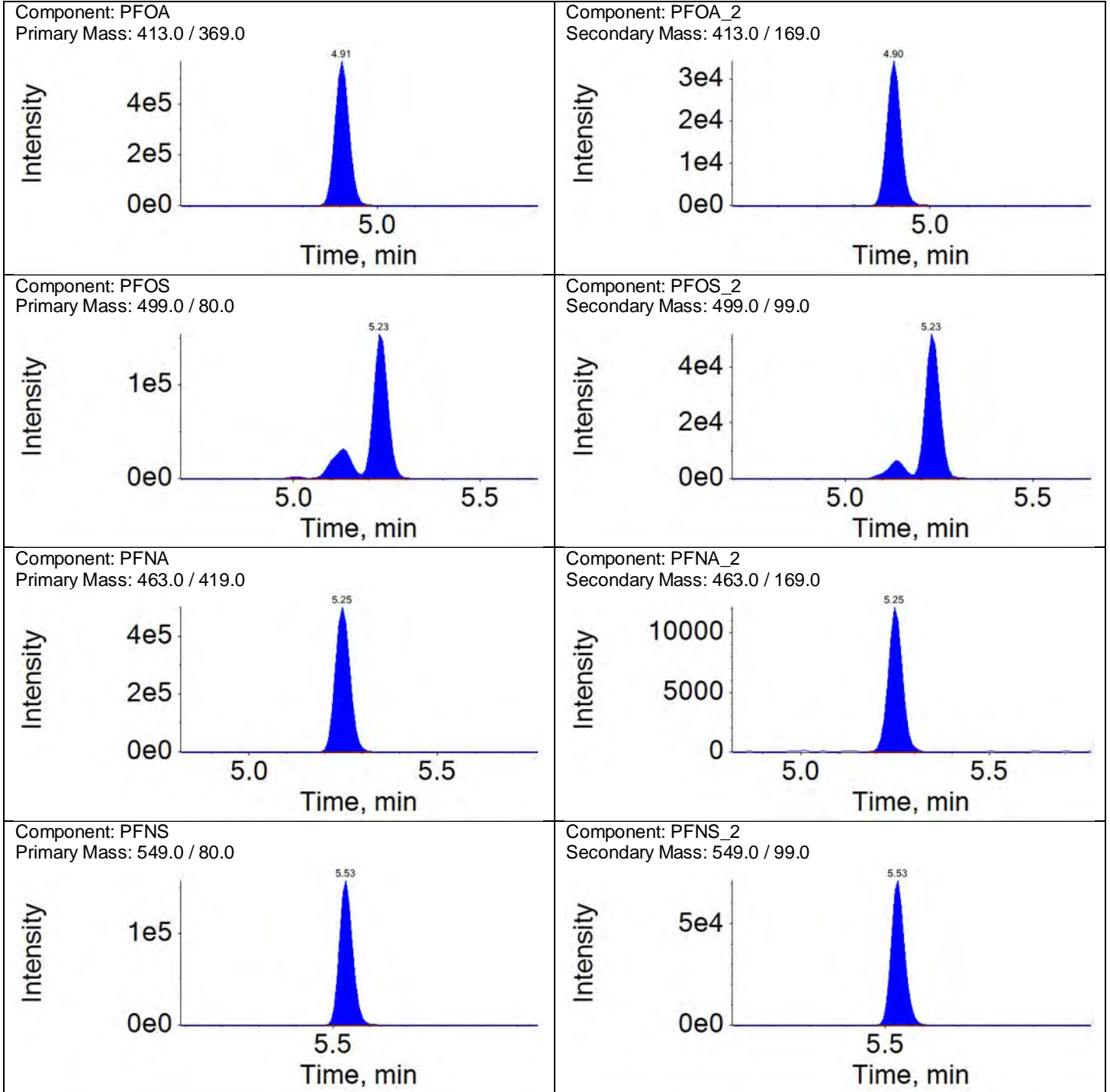
Instrument Name: LM27631

File Name: 18DEC18DCAL-71.wiff

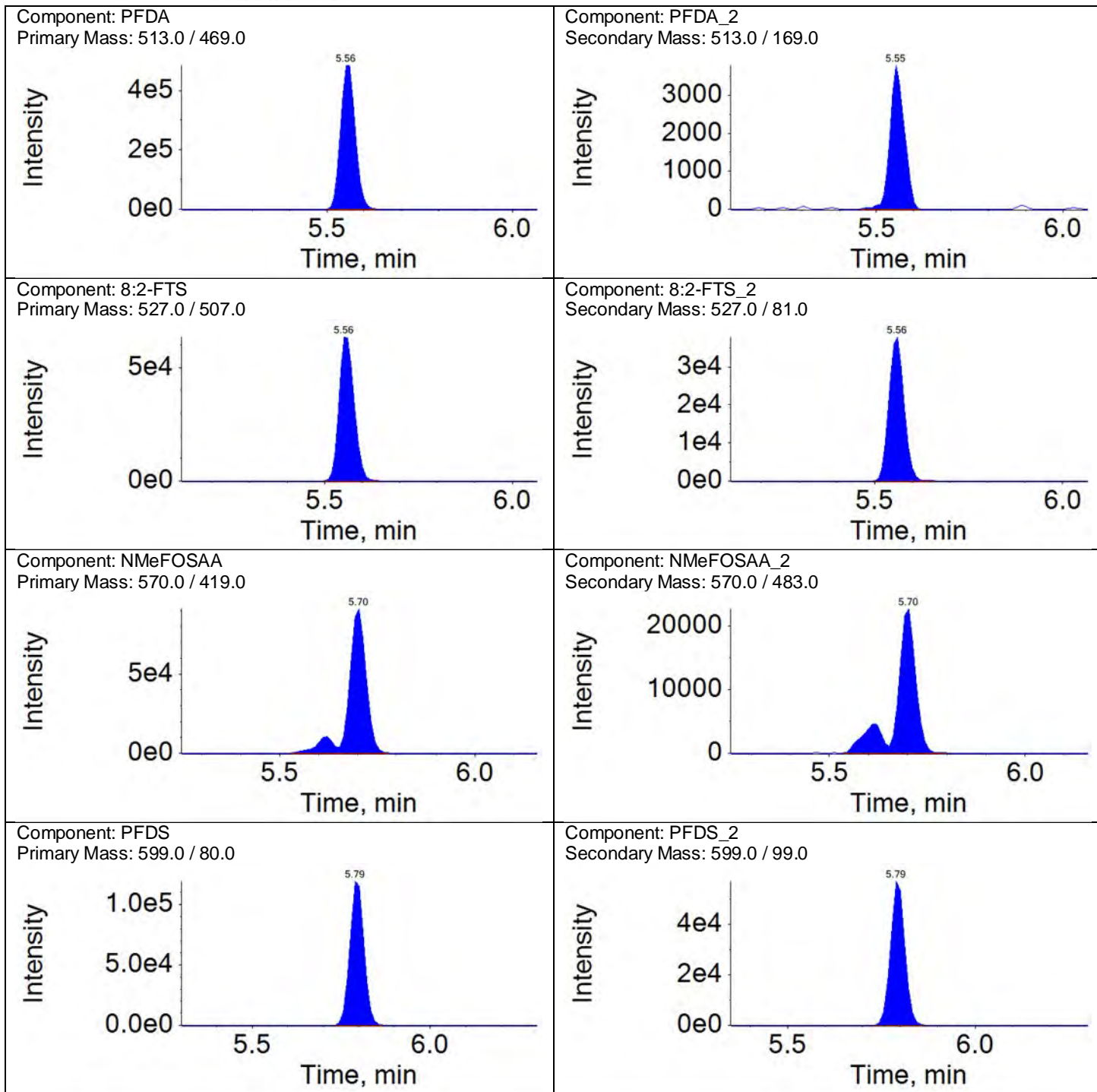
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	660159.83	A	1.0000	1.0000			
PFBS_2	3.81	1.00	248735.76	A	0.3686	0.3768	2	50	
4:2-FTS	4.12	1.00	183632.08	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	106167.60	A	0.6123	0.5782	-6	50	
PFHxA	4.15	1.00	1422618.69	A	1.0000	1.0000			
PFHxA_2	4.15	1.00	16437.18	A	0.0115	0.0116	1	50	
PFPeS	4.17	1.10	343711.12	A	1.0000	1.0000			
PFPeS_2	4.17	1.10	180169.26	A	0.5256	0.5242	0	50	
PFHpA	4.54	1.00	1522802.64	A	1.0000	1.0000			
PFHpA_2	4.54	1.00	83499.68	A	0.0547	0.0548	0	50	
PFHxS	4.54	1.00	506401.74	M	1.0000	1.0000			
PFHxS_2	4.54	1.00	182447.96	M	0.3359	0.3603	7	50	
6:2-FTS	4.89	1.00	169143.28	A	1.0000	1.0000			
6:2-FTS_2	4.89	1.00	108454.12	A	0.6344	0.6412	1	50	
PFHpS	4.90	1.08	505804.63	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	194362.78	A	0.4110	0.3843	-7	50	
PFOA	4.91	1.00	1478030.41	A	1.0000	1.0000			
PFOA_2	4.90	1.00	87662.18	A	0.0590	0.0593	1	50	
PFOS	5.23	1.00	531668.87	M	1.0000	1.0000			
PFOS_2	5.23	1.00	159861.70	M	0.2980	0.3007	1	50	
PFNA	5.25	1.00	1365072.68	A	1.0000	1.0000			
PFNA_2	5.25	1.00	31550.94	A	0.0214	0.0231	8	50	
PFNS	5.53	1.06	388892.87	A	1.0000	1.0000			
PFNS_2	5.53	1.06	178083.63	A	0.4608	0.4579	-1	50	
PFDA	5.56	1.00	1333153.34	A	1.0000	1.0000			
PFDA_2	5.55	1.00	10106.22	A	0.0064	0.0076	19	50	
8:2-FTS	5.56	1.00	177681.99	A	1.0000	1.0000			
8:2-FTS_2	5.56	1.00	105688.42	A	0.5879	0.5948	1	50	
NMeFOSAA	5.70	1.00	290343.54	M	1.0000	1.0000			
NMeFOSAA_2	5.70	1.00	80754.48	M	0.2625	0.2781	6	50	
PFDS	5.79	1.11	327865.26	A	1.0000	1.0000			
PFDS_2	5.79	1.11	150578.90	A	0.4962	0.4593	-7	50	
PUnDA	5.82	1.00	1410610.16	A	1.0000	1.0000			
PUnDA_2	5.82	1.00	4880.61	A	0.0035	0.0035	-2	50	
NEtFOSAA	5.83	1.00	260292.73	A	1.0000	1.0000			
NEtFOSAA_2	5.83	1.00	181923.74	M	0.6883	0.6989	2	50	
PFDODA	6.04	1.00	1811366.40	A	1.0000	1.0000			
PFDODA_2	6.04	1.00	18150.78	A	0.0134	0.0100	-25	50	
10:2-FTS	6.05	1.09	167061.25	A	1.0000	1.0000			
10:2-FTS_2	6.05	1.09	121860.49	A	0.7018	0.7294	4	50	
PFTrDA	6.23	1.03	1793581.56	A	1.0000	1.0000			
PFTrDA_2	6.23	1.03	15099.28	A	0.0093	0.0084	-10	50	
PFTeDA	6.41	1.00	1181484.10	A	1.0000	1.0000			
PFTeDA_2	6.41	1.00	8312.40	A	0.0058	0.0070	21	50	
PFHxDA	6.71	1.05	651302.63	A	1.0000	1.0000			
PFHxDA_2	6.71	1.05	41500.36	A	0.0656	0.0637	-3	50	
PFOA	6.97	1.09	481905.32	A	1.0000	1.0000			
PFOA_2	6.97	1.09	13114.49	A	0.0273	0.0272	0	50	



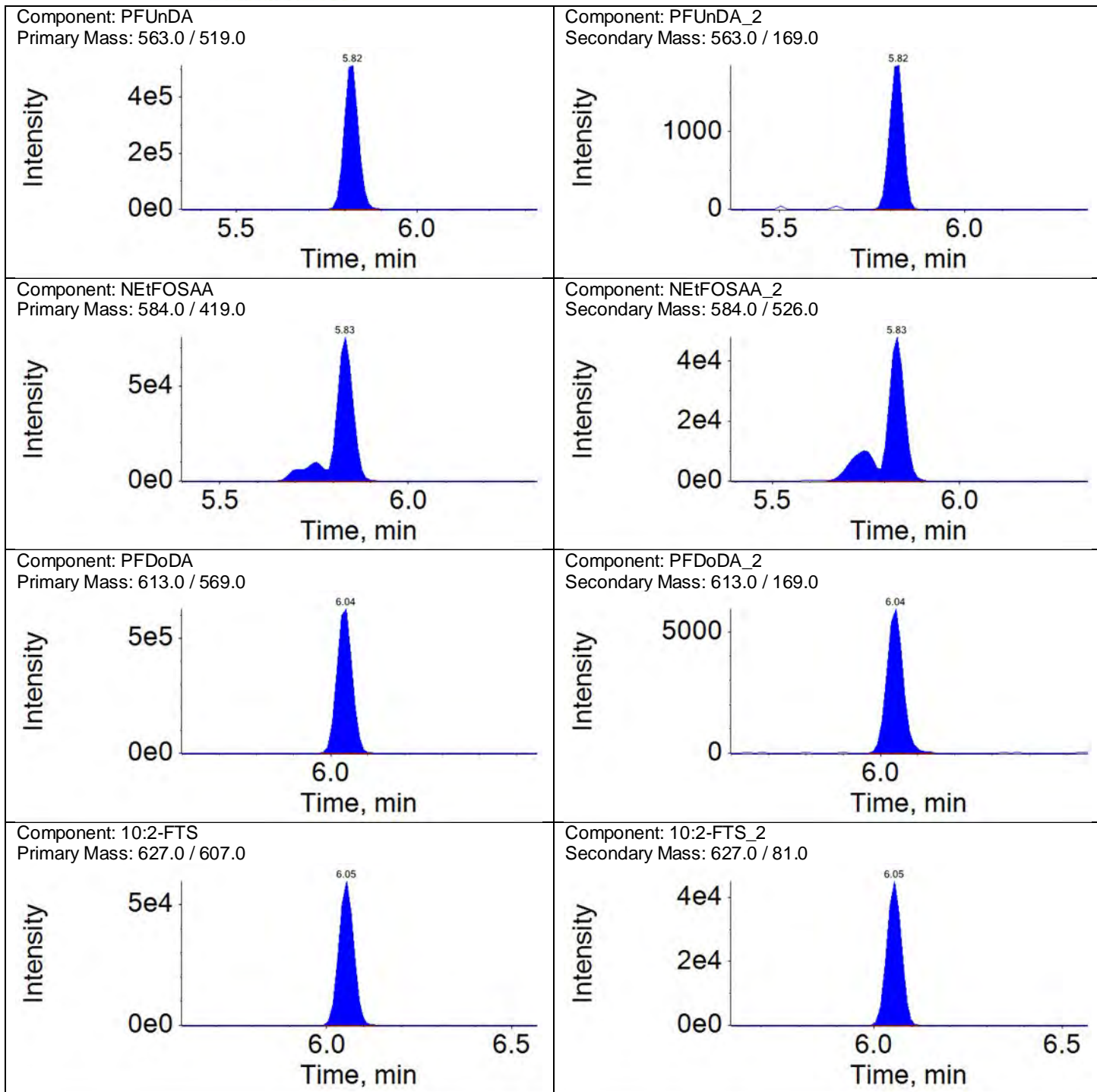


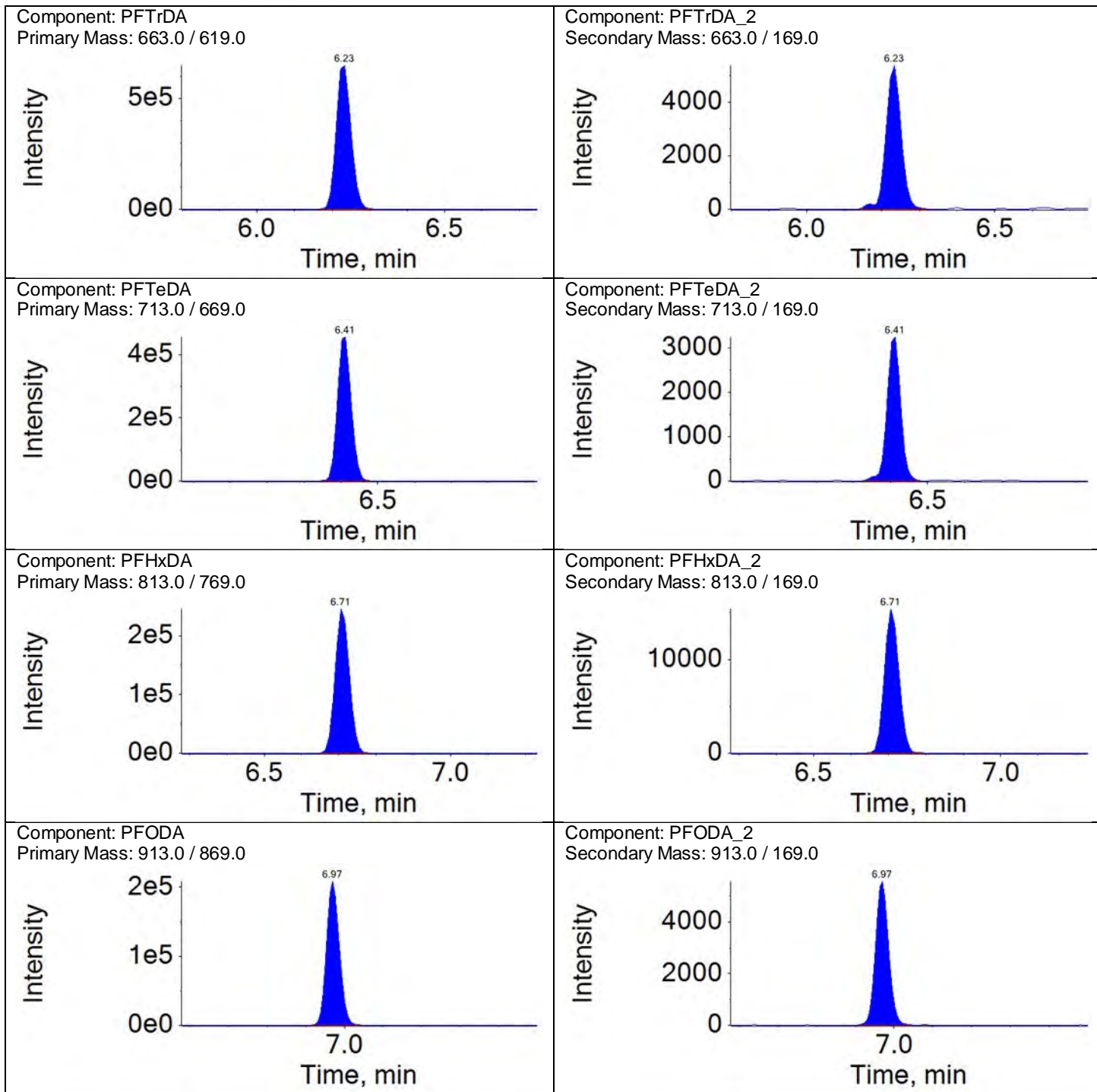












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL5	Data File:	18DEC18DCAL-72.wiff
Sample ID:	CALBRN51833B	Acquis Date:	2018-12-19T00:10:55
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	7	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	913001.0	941251.6	-3	50	
13C2-PFOA	5.0	539893.4	485595.3	11	50	
13C4-PFOS	4.8	311507.3	292182.6	7	50	
13C2-PFDA	5.0	475016.5	467216.0	2	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1029366.8	13C3-PFBA	913001.0	1.127	5.000	4.993	100	70-130	
E13C5-PFPeA	971672.0	13C3-PFBA	913001.0	1.064	5.000	4.963	99	70-130	
E13C3-PFBS	446207.4	13C3-PFBA	913001.0	0.489	4.650	4.759	102	70-130	
E13C2-4:2-FTS	60237.7	13C2-PFOA	539893.4	0.112	4.670	4.237	91	70-130	
E13C5-PFHxA	728204.4	13C2-PFOA	539893.4	1.349	5.000	4.825	96	70-130	
E13C3-PFHxS	321862.3	13C2-PFOA	539893.4	0.596	4.730	4.511	95	70-130	
E13C4-PFHpA	623382.4	13C2-PFOA	539893.4	1.155	5.000	4.987	100	70-130	
E13C2-6:2-FTS	51944.0	13C2-PFOA	539893.4	0.096	4.750	4.841	102	70-130	
E13C8-PFOA	934414.0	13C2-PFOA	539893.4	1.731	5.000	4.759	95	70-130	
E13C8-PFOS	331539.4	13C4-PFOS	311507.3	1.064	4.780	4.759	100	70-130	
E13C9-PFNA	635976.2	13C4-PFOS	311507.3	2.042	5.000	4.644	93	70-130	
E13C6-PFDA	823063.8	13C2-PFDA	475016.5	1.733	5.000	4.936	99	70-130	
E13C2-8:2-FTS	43810.4	13C2-PFDA	475016.5	0.092	4.790	4.754	99	70-130	
E13C8-PFOSA	573278.7	13C2-PFDA	475016.5	1.207	5.000	4.700	94	70-130	
Ed3-NMeFOSAA	203504.7	13C2-PFDA	475016.5	0.428	5.000	4.713	94	70-130	
E13C7-PFUnDA	568949.8	13C2-PFDA	475016.5	1.198	5.000	5.014	100	70-130	
Ed5-NEtFOSAA	146690.6	13C2-PFDA	475016.5	0.309	5.000	4.550	91	70-130	
E13C2-PFDoDA	1065947.0	13C2-PFDA	475016.5	2.244	5.000	4.721	94	70-130	
Ed7-NMePFOSAE	259783.3	13C2-PFDA	475016.5	0.547	5.000	4.886	98	70-130	
Ed3-NMePFOSA	83956.4	13C2-PFDA	475016.5	0.177	5.000	4.856	97	70-130	
Ed9-NEtPFOSAE	223224.9	13C2-PFDA	475016.5	0.470	5.000	4.804	96	70-130	
Ed5-NEtPFOSA	70043.9	13C2-PFDA	475016.5	0.147	5.000	5.114	102	70-130	
E13C2-PFTeDA	816876.4	13C2-PFDA	475016.5	1.720	5.000	4.846	97	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

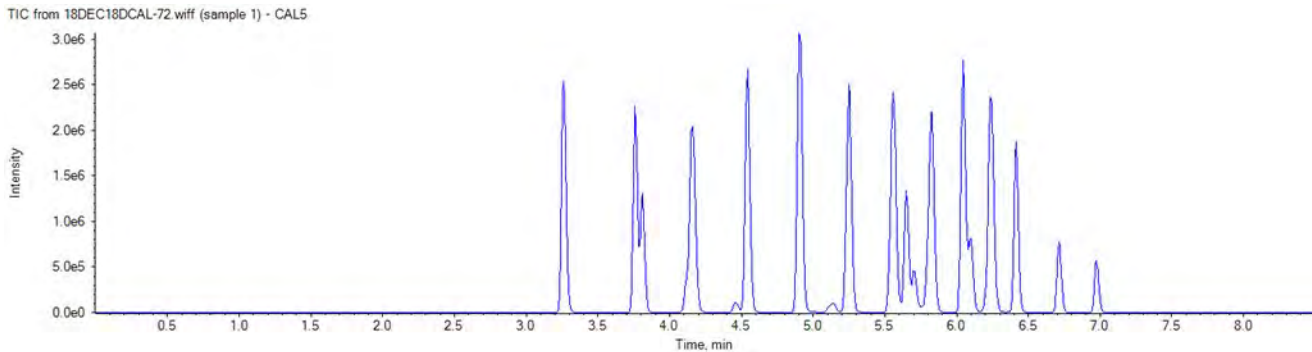
**Analyte Quantitation Peak Table**

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Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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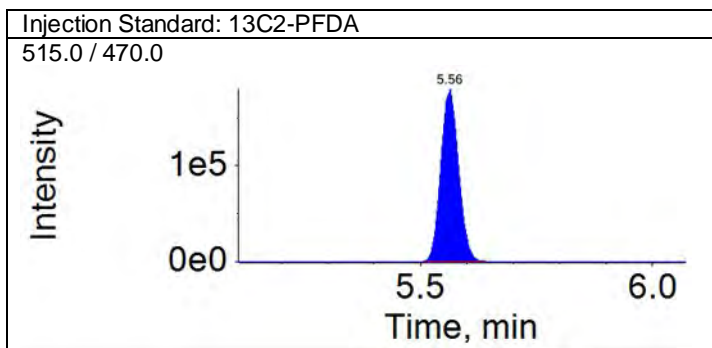
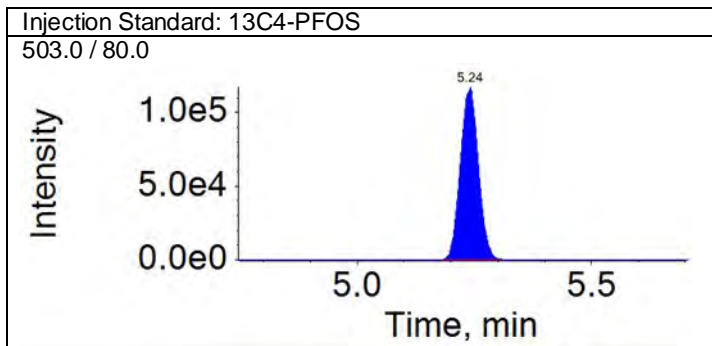
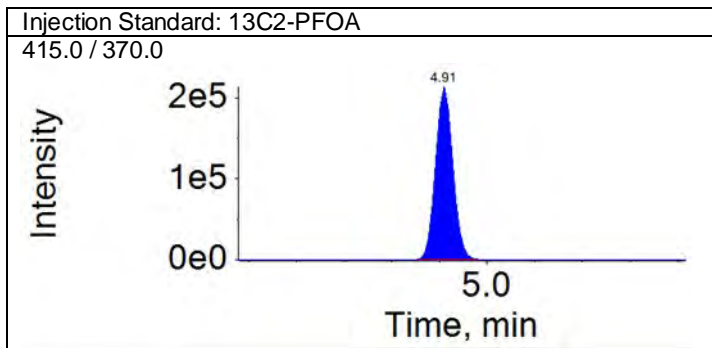
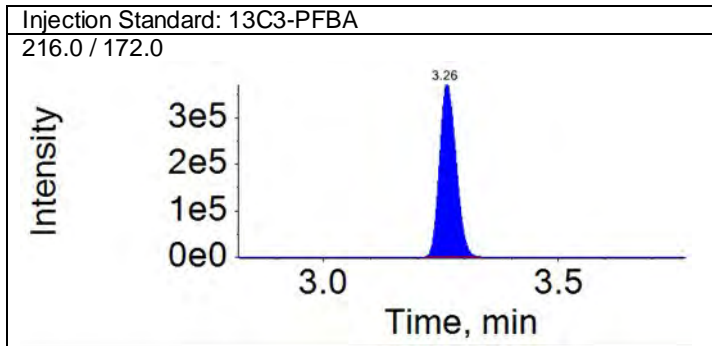
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	3880808.5		A	13C4-PFBA	3.26	1029366.8	3.770	20.017
PFPeA	3.76	1.000	3745895.5		A	13C5-PFPeA	3.76	971672.0	3.855	19.899
PFBS	3.81	1.000	1598291.6		A	13C3-PFBS	3.81	446207.4	3.582	17.683
4:2-FTS	4.12	1.000	457278.4		A	13C2-4:2-FTS	4.12	60237.7	7.591	19.917
PFHxA	4.16	1.000	3505877.1		A	13C5-PFHxA	4.16	728204.4	4.814	19.833
PFPeS	4.18	1.100	858571.6		A	13C3-PFBS	3.81	446207.4	1.924	19.589
PFHpA	4.54	1.000	3695154.9		A	13C4-PFHpA	4.54	623382.4	5.928	19.655
PFHxS	4.54	1.000	1236035.6		M	13C3-PFHxS	4.54	321862.3	3.840	18.679
6:2-FTS	4.89	1.000	385557.3		A	13C2-6:2-FTS	4.89	51944.0	7.423	18.478
PFHpS	4.90	1.080	1185259.6		A	13C3-PFHxS	4.54	321862.3	3.683	19.481
PFOA	4.91	1.000	3699938.8		A	13C8-PFOA	4.91	934414.0	3.960	20.977
PFOS	5.24	1.000	1358485.2		M	13C8-PFOS	5.24	331539.4	4.098	17.940
PFNA	5.26	1.000	3431849.3		A	13C9-PFNA	5.25	635976.2	5.396	21.446
PFNS	5.54	1.060	965546.9		A	13C8-PFOS	5.24	331539.4	2.912	18.519
PFDA	5.56	1.000	3202129.7		A	13C6-PFDA	5.56	823063.8	3.890	20.092
8:2-FTS	5.56	1.000	408286.4		A	13C2-8:2-FTS	5.57	43810.4	9.319	18.757
PFOSA	5.65	1.000	2416611.4		A	13C8-PFOSA	5.65	573278.7	4.215	21.082
NMeFOSAA	5.71	1.000	694349.4		M	d3-NMeFOSAA	5.70	203504.7	3.412	21.205
PFDS	5.80	1.110	758022.3		A	13C8-PFOS	5.24	331539.4	2.286	18.770
PfUnDA	5.82	1.000	3400238.1		A	13C7-PfUnDA	5.83	568949.8	5.976	19.793
NEtFOSAA	5.84	1.000	619081.1		M	d5-NEtFOSAA	5.84	146690.6	4.220	21.510
PFDoDA	6.05	1.000	4286978.2		A	13C2-PFDoDA	6.05	1065947.0	4.022	20.259
10:2-FTS	6.06	1.090	413620.7		A	13C2-8:2-FTS	5.57	43810.4	9.441	19.229
NMePFOSAE	6.10	1.000	1228026.6		A	d7-NMePFOSAE	6.09	259783.3	4.727	20.857
NMePFOSA	6.11	1.000	329483.7		A	d3-NMePFOSA	6.11	83956.4	3.924	19.812
PFDoS	6.21	1.190	421406.9		A	13C8-PFOS	5.24	331539.4	1.271	19.257
NEtPFOSAE	6.25	1.000	1392018.9		A	d9-NEtPFOSAE	6.24	223224.9	6.236	20.372
NEtPFOSA	6.27	1.000	297273.1		A	d5-NEtPFOSA	6.26	70043.9	4.244	19.852
PFTTrDA	6.24	1.030	4224307.5		A	13C2-PFDoDA	6.05	1065947.0	3.963	20.331
PFTeDA	6.42	1.000	3087435.9		A	13C2-PFTeDA	6.42	816876.4	3.780	20.352
PFHxDA	6.71	1.050	1573325.0		A	13C2-PFTeDA	6.42	816876.4	1.926	21.151
PFODA	6.98	1.090	1181984.4		A	13C2-PFTeDA	6.42	816876.4	1.447	20.791

**Total Ion Chromatogram**



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QMethod Name: 18AUG20QM

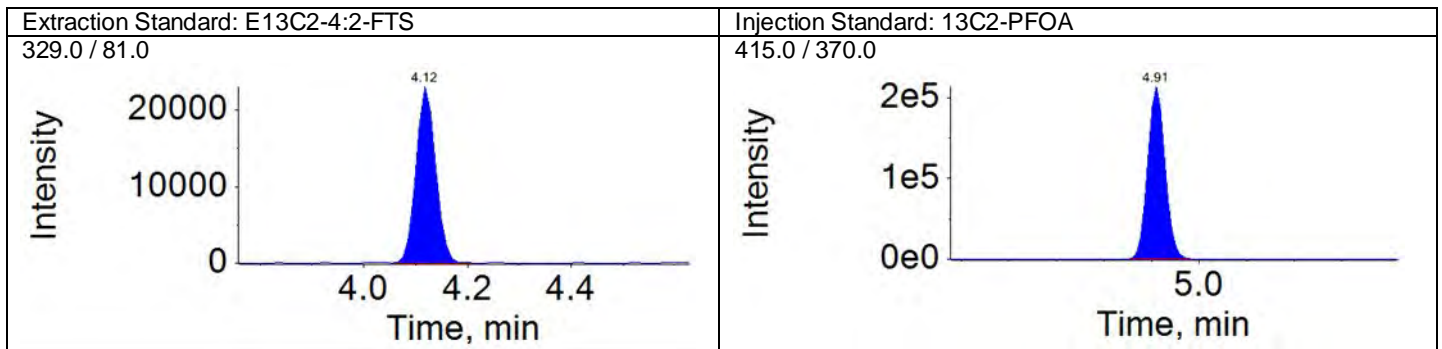
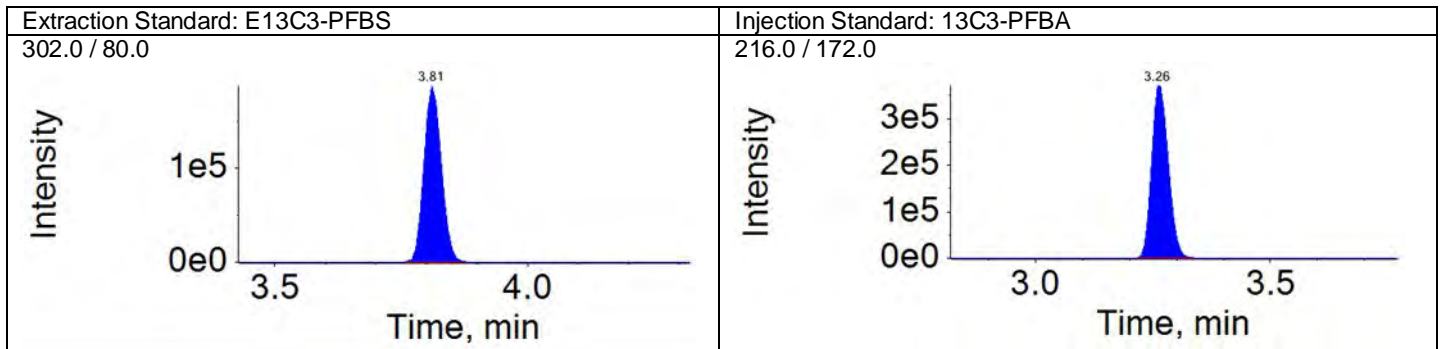
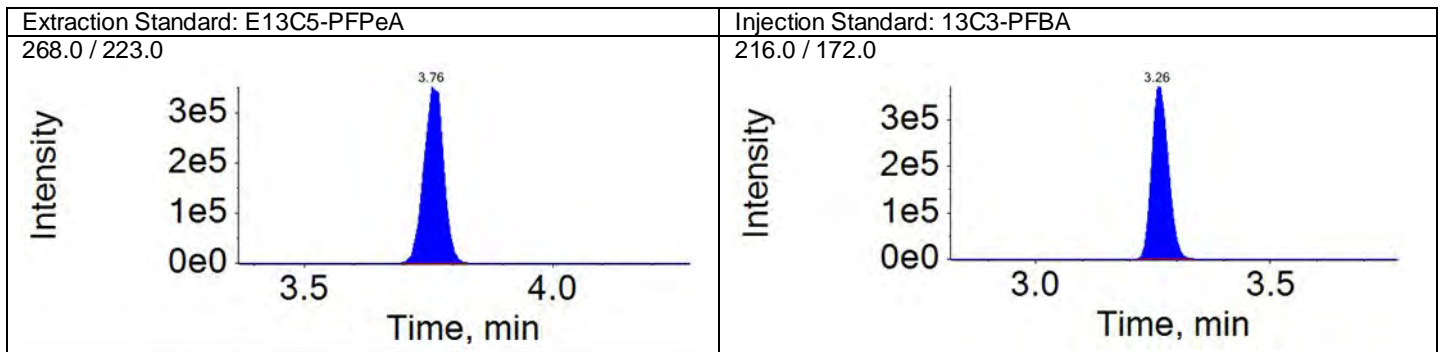
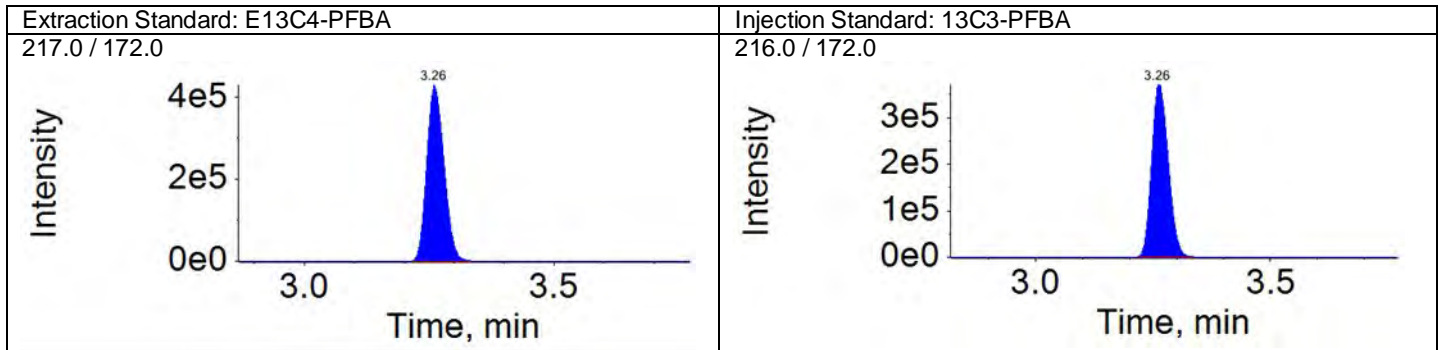
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Acquisition Method: 18AUG13\_3uL.dam





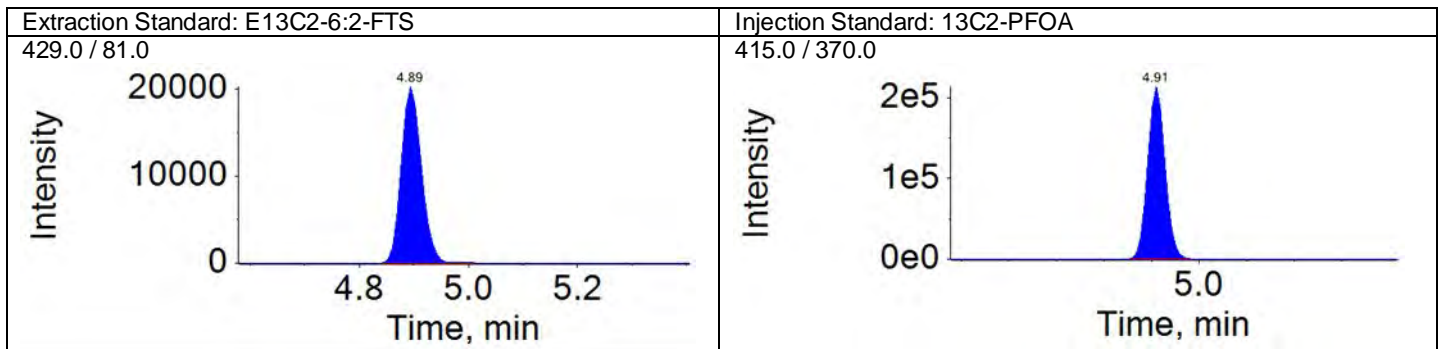
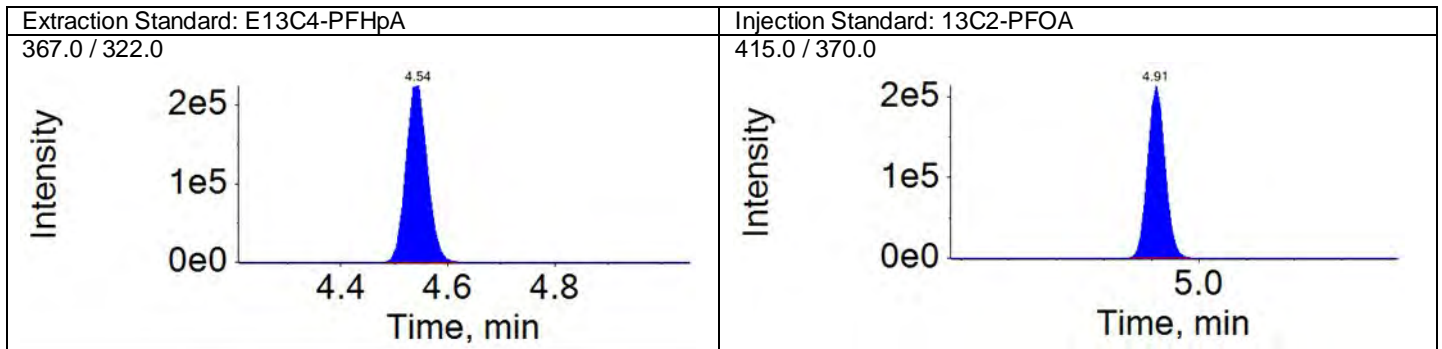
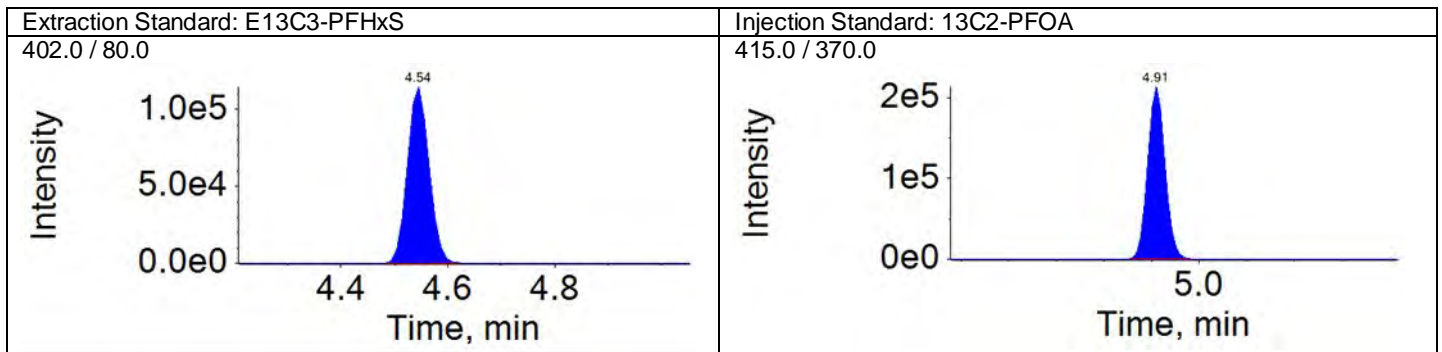
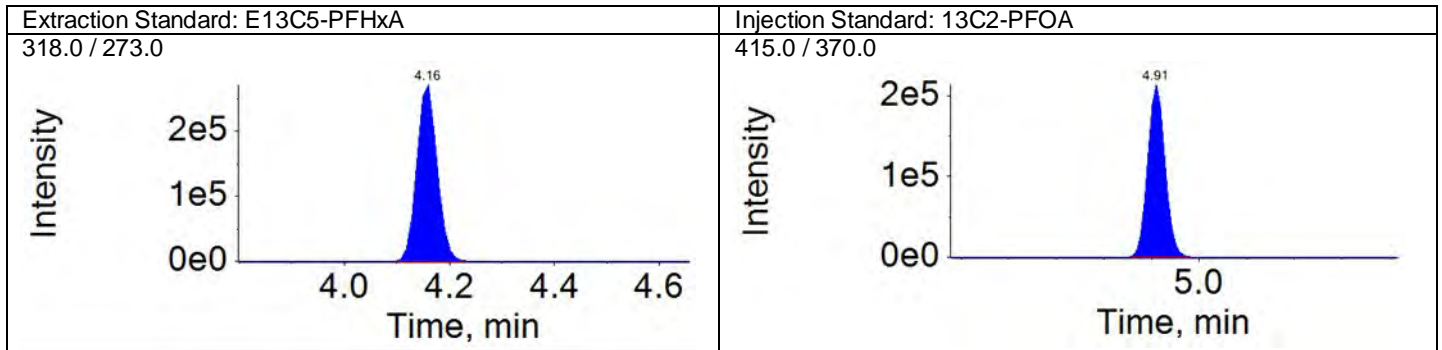
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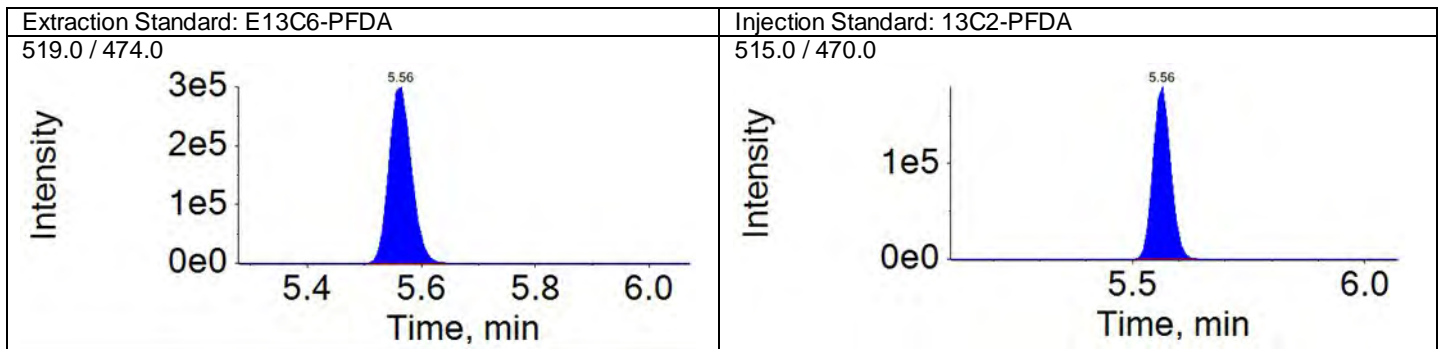
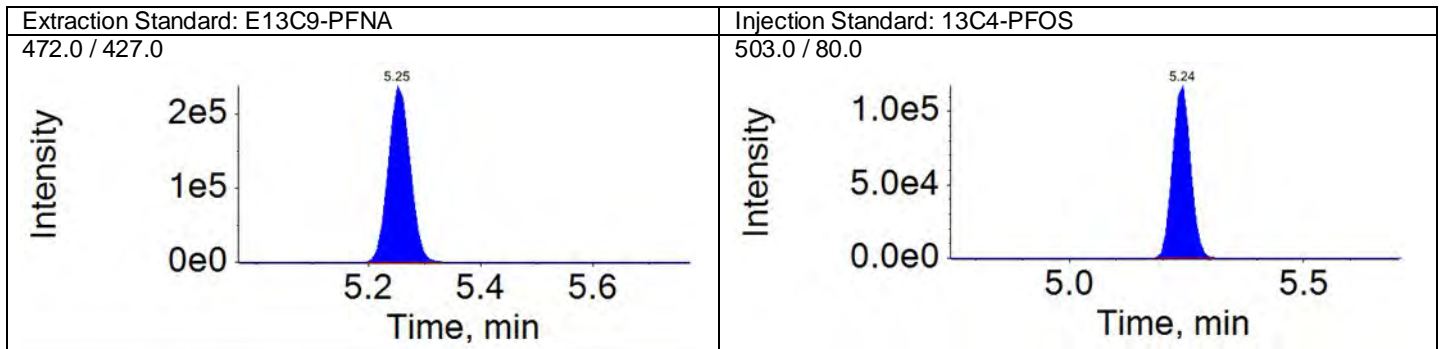
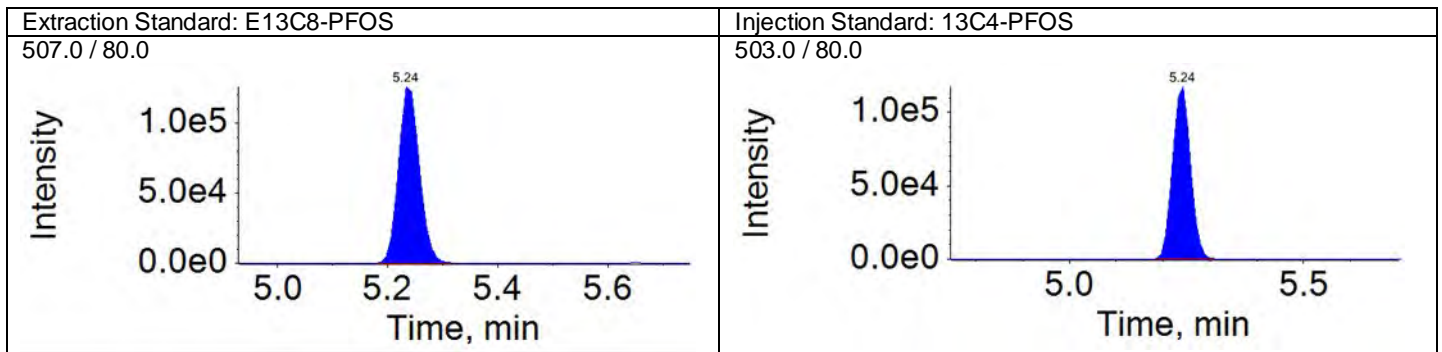
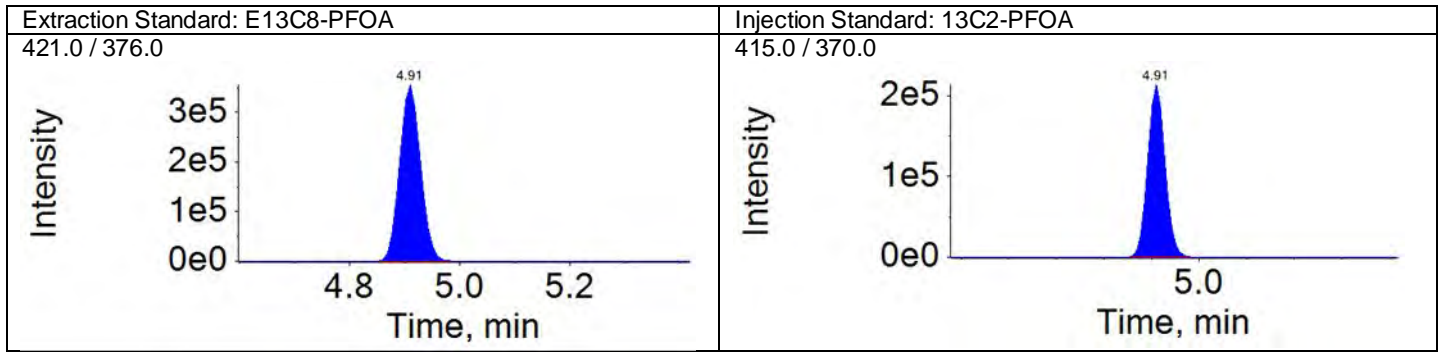
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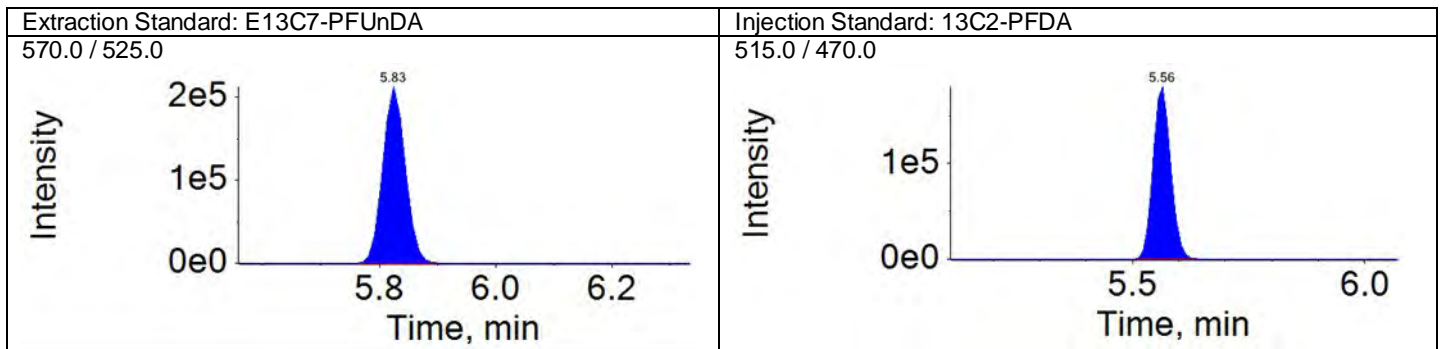
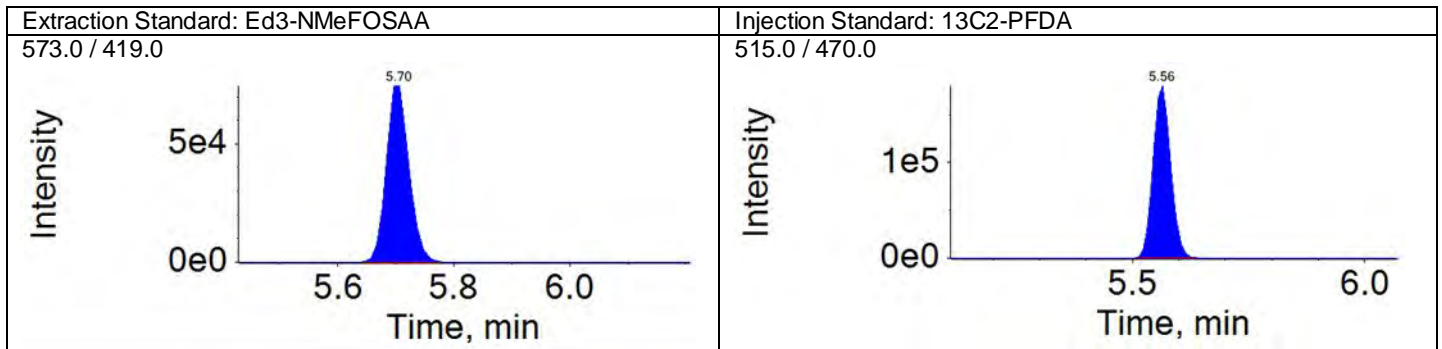
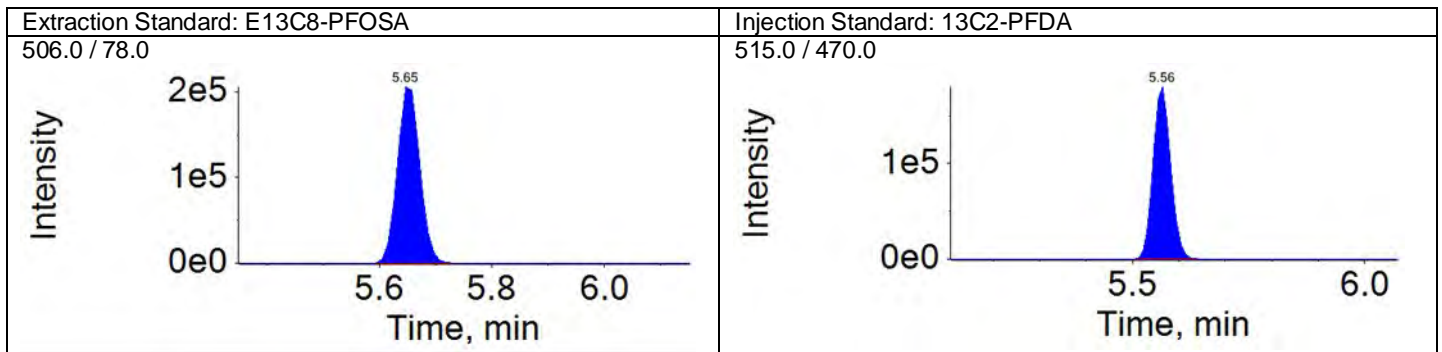
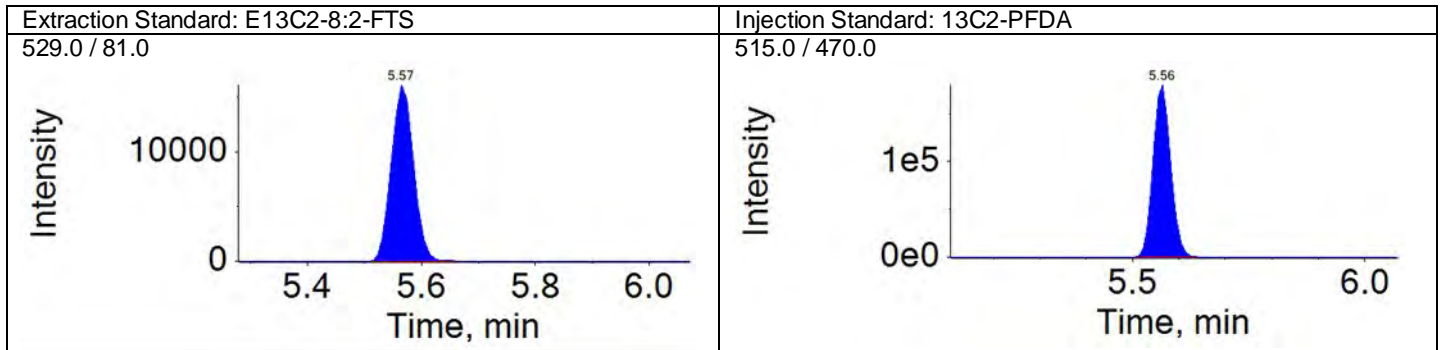
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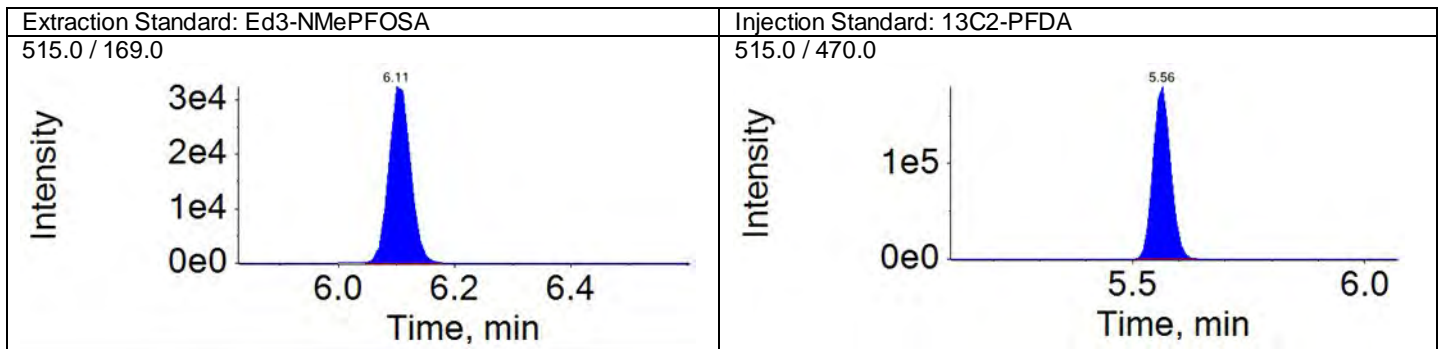
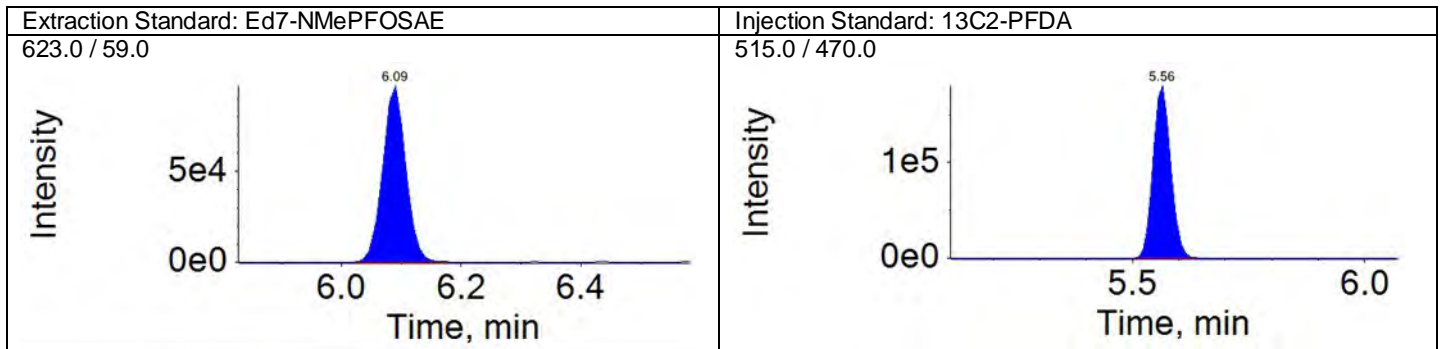
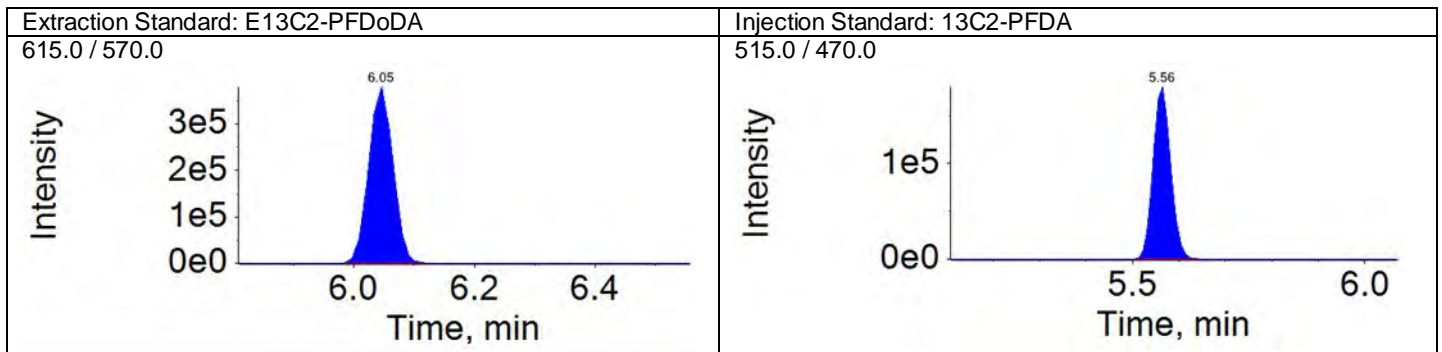
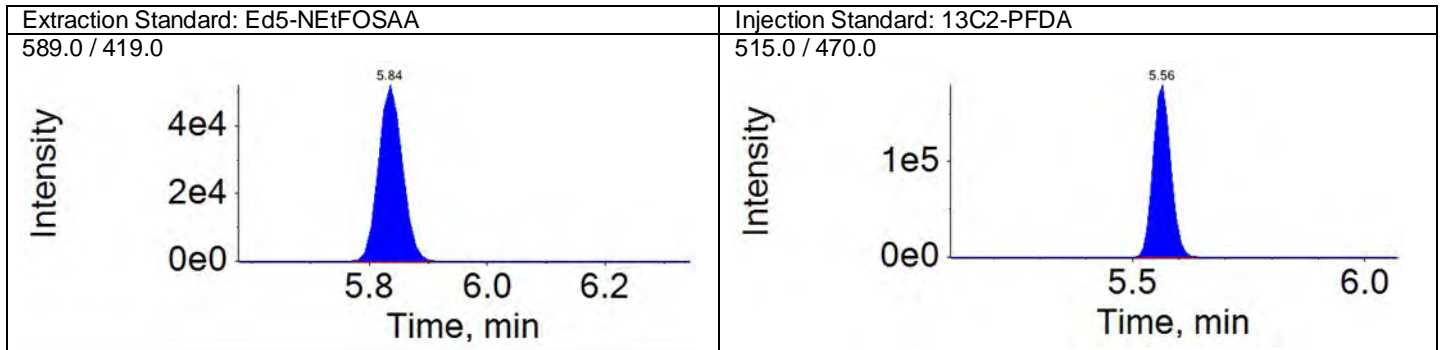
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ICAL Name: 18DEC18DCAL  
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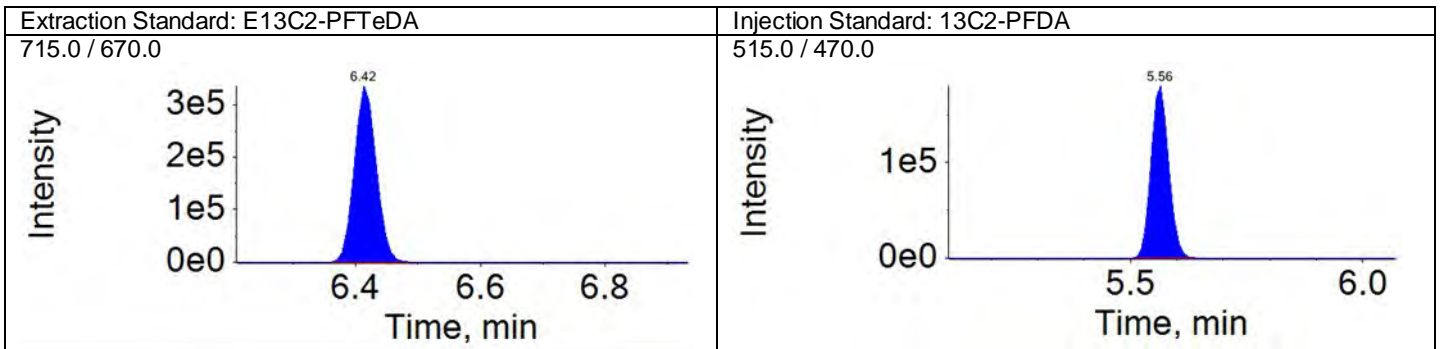
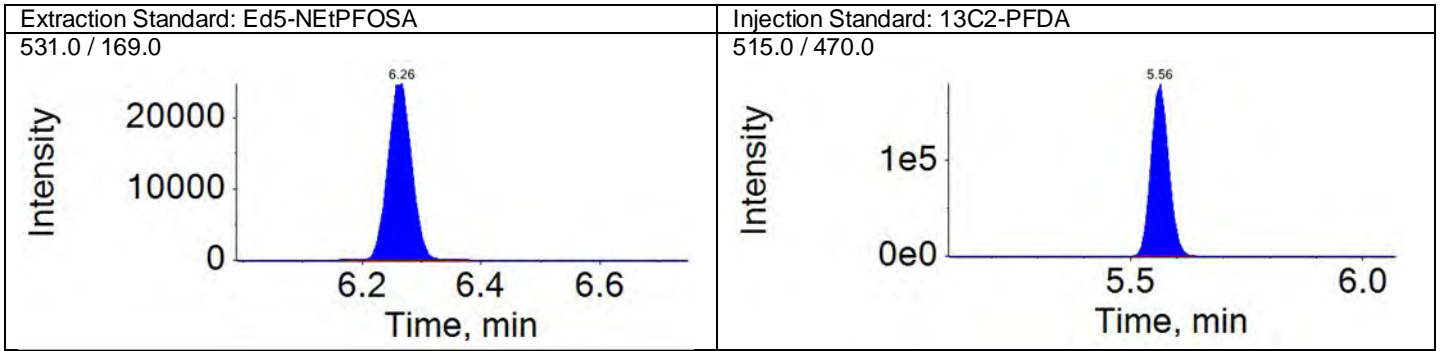
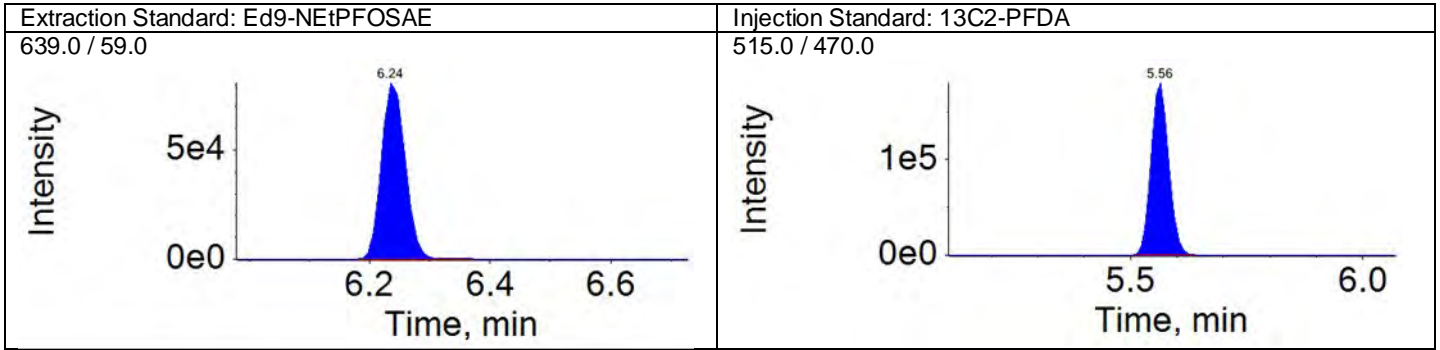
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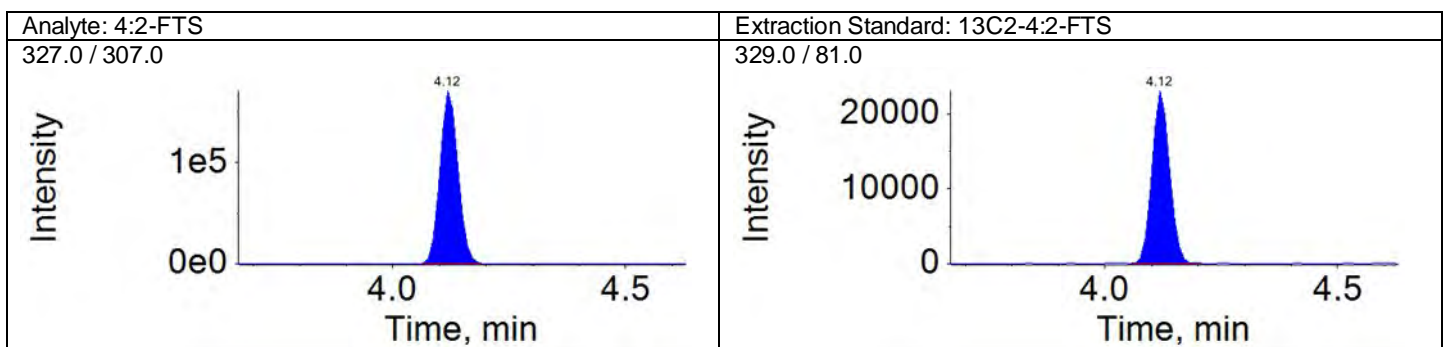
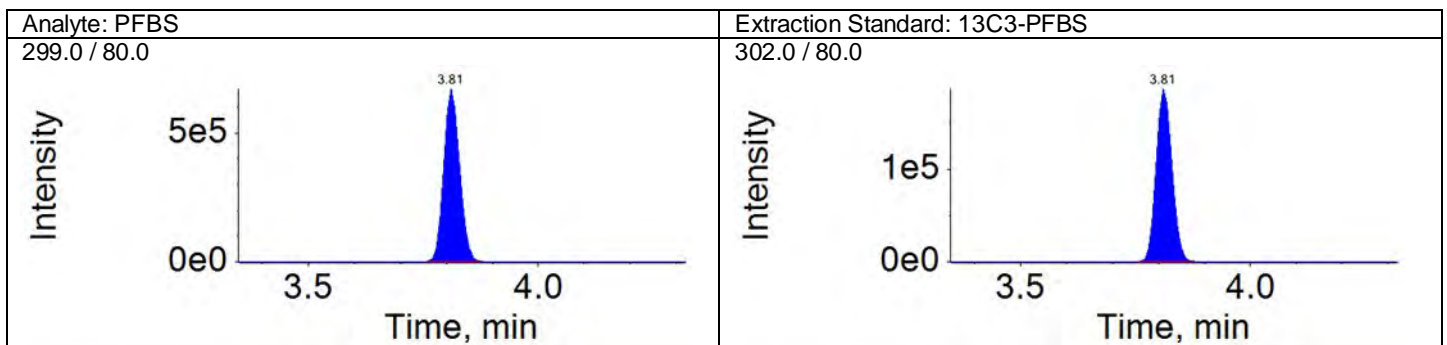
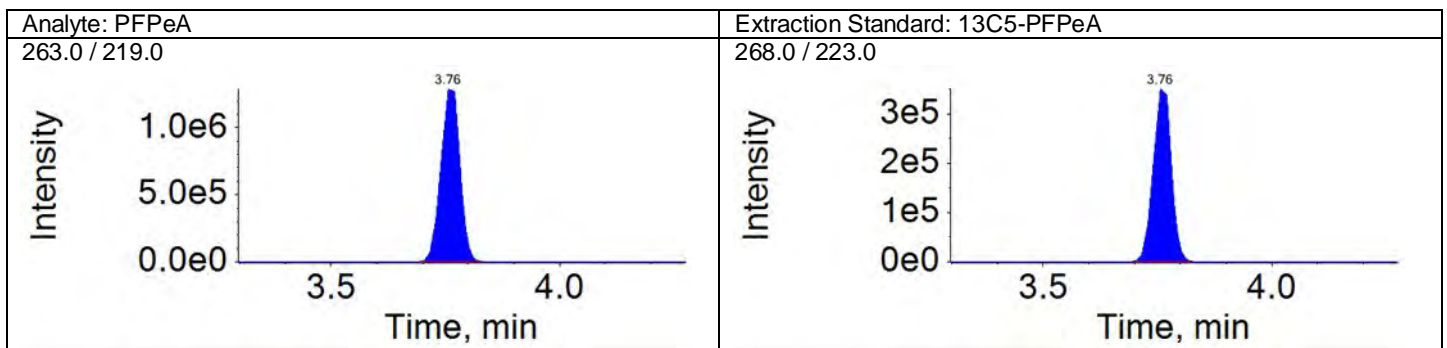
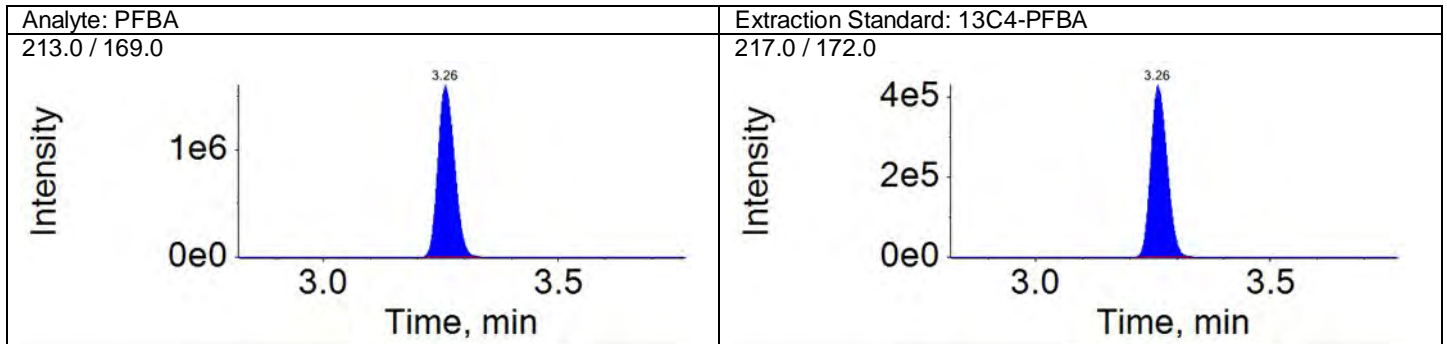
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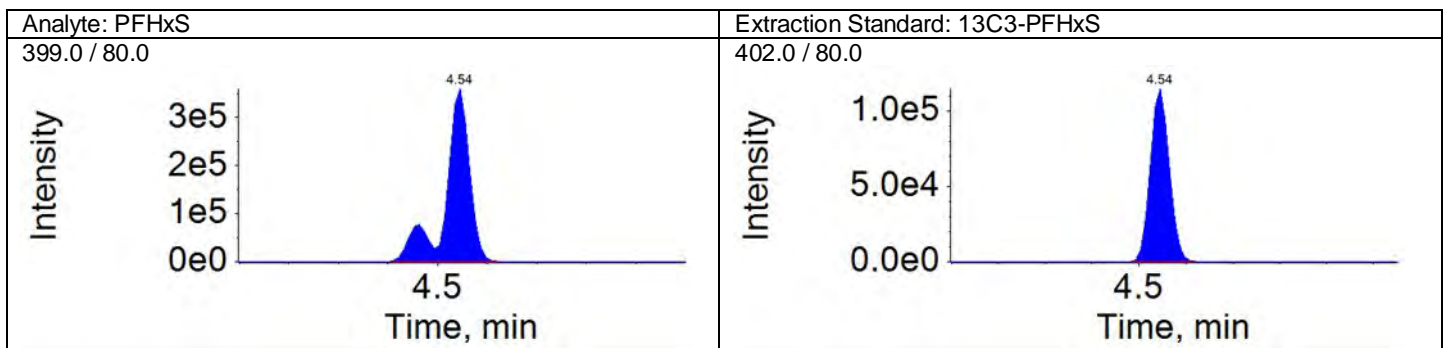
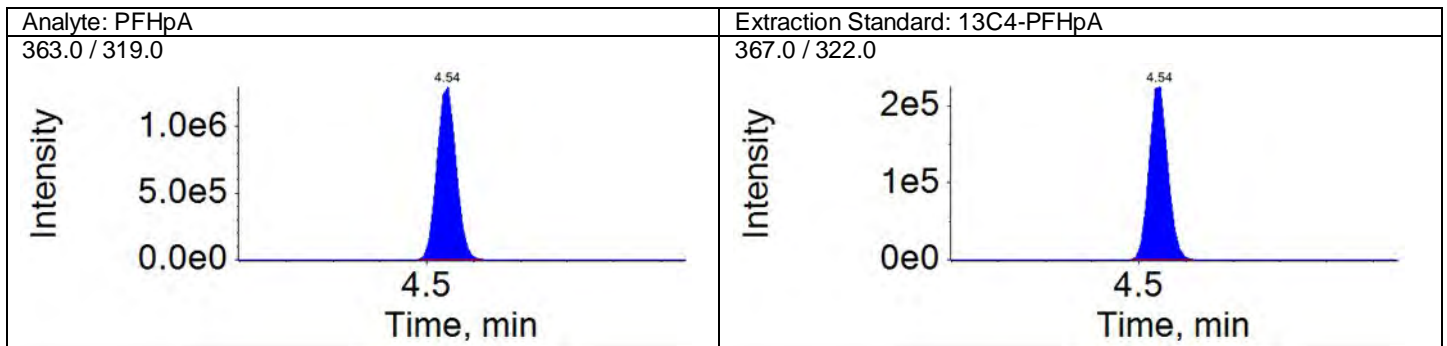
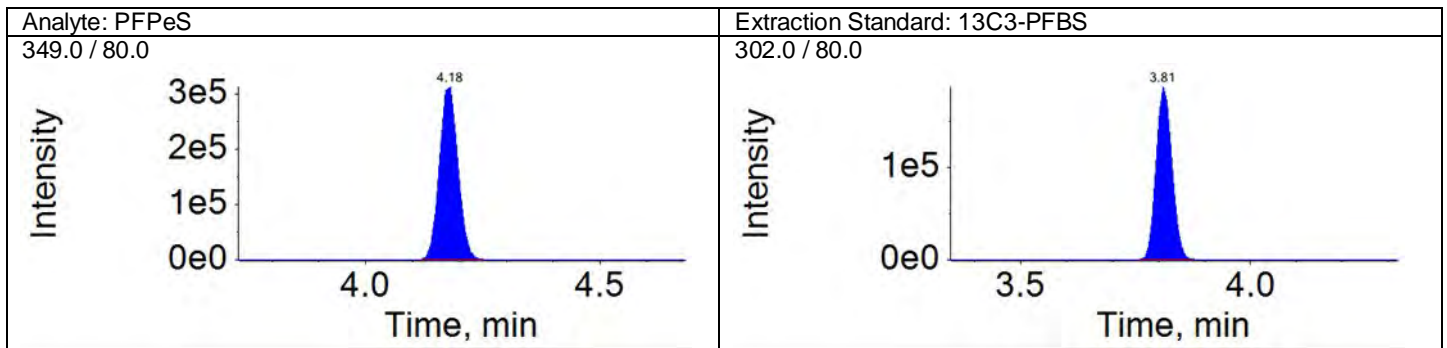
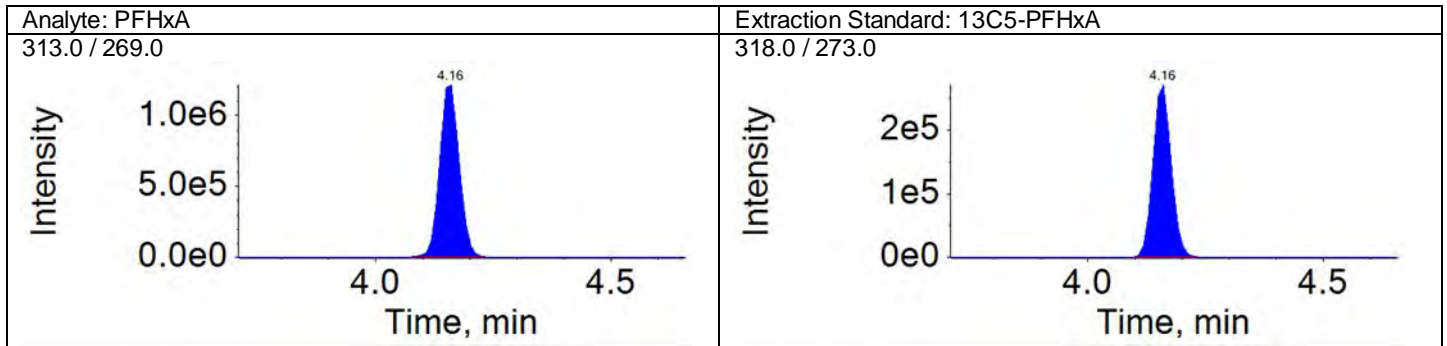
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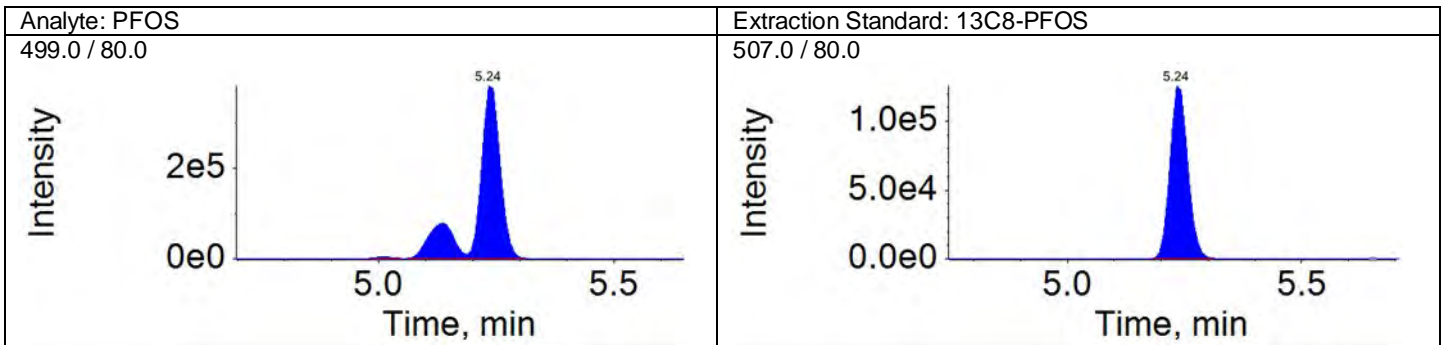
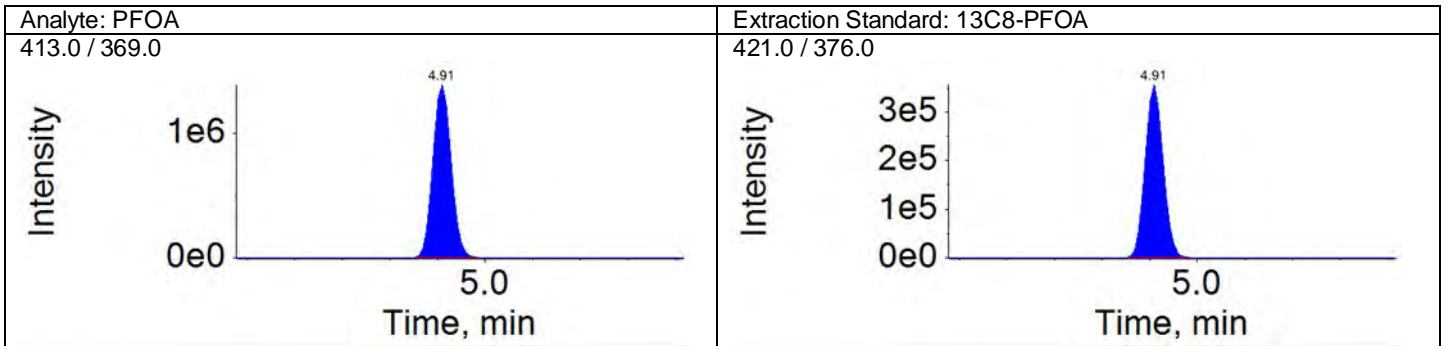
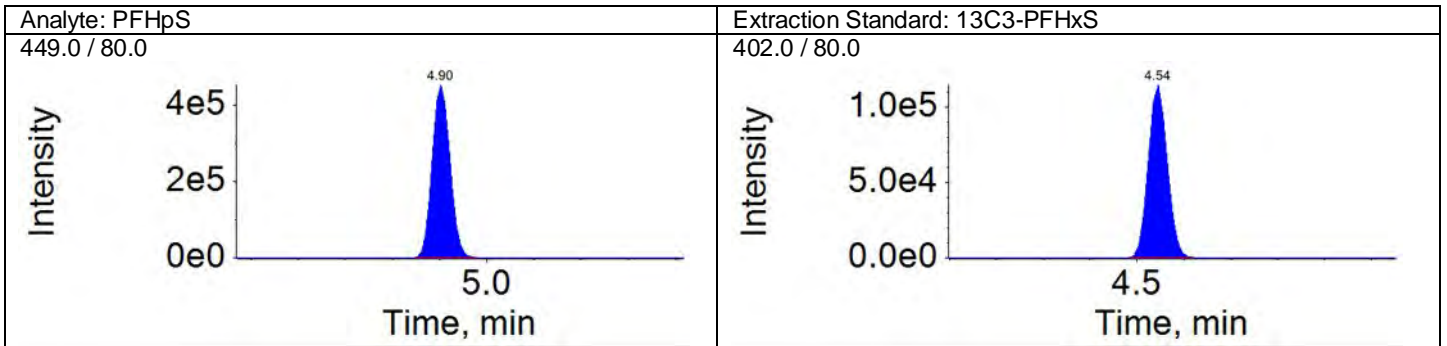
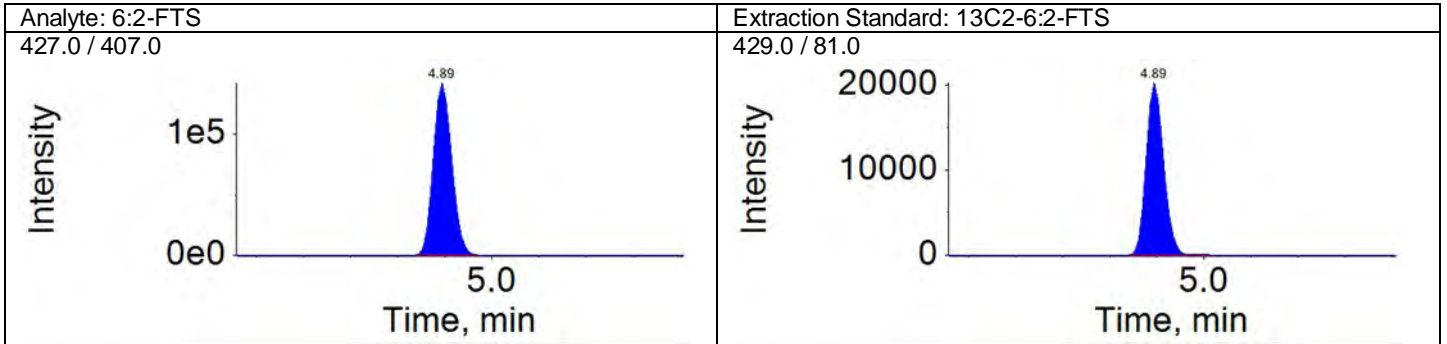
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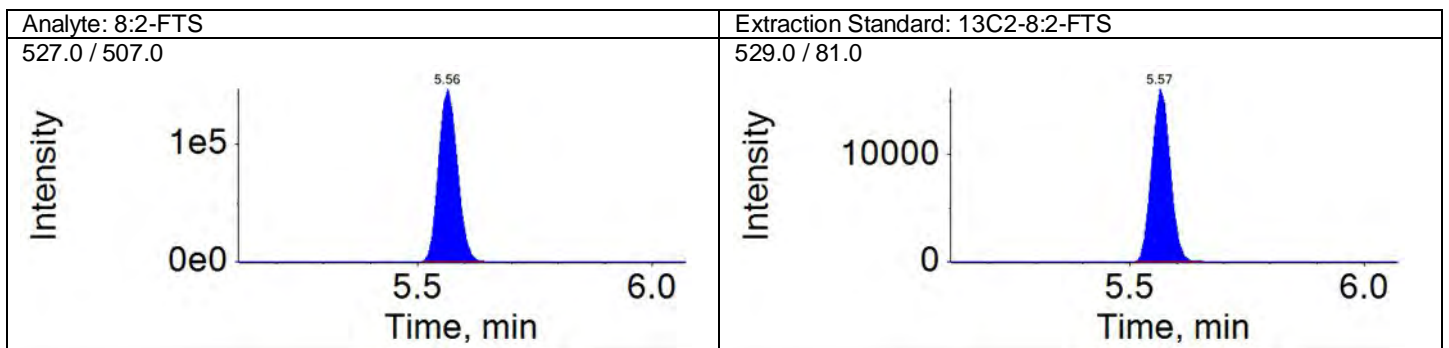
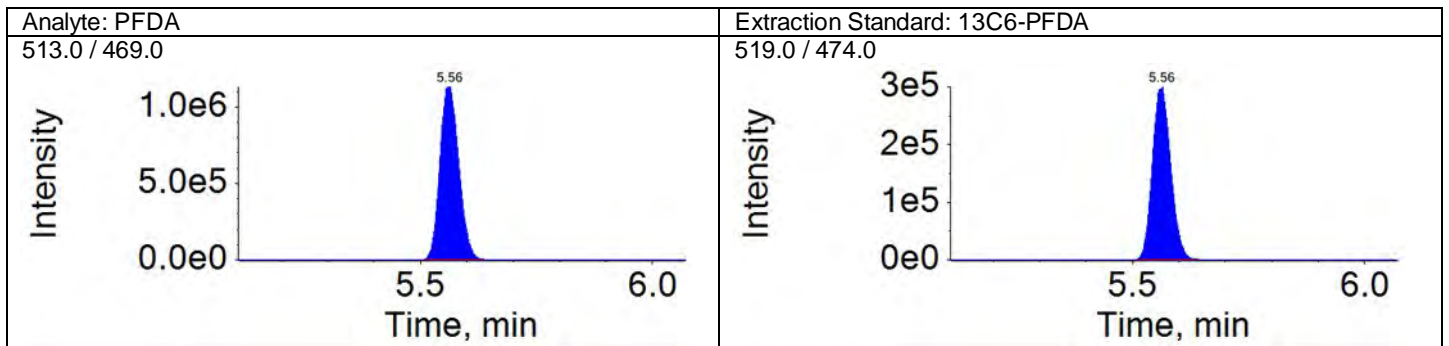
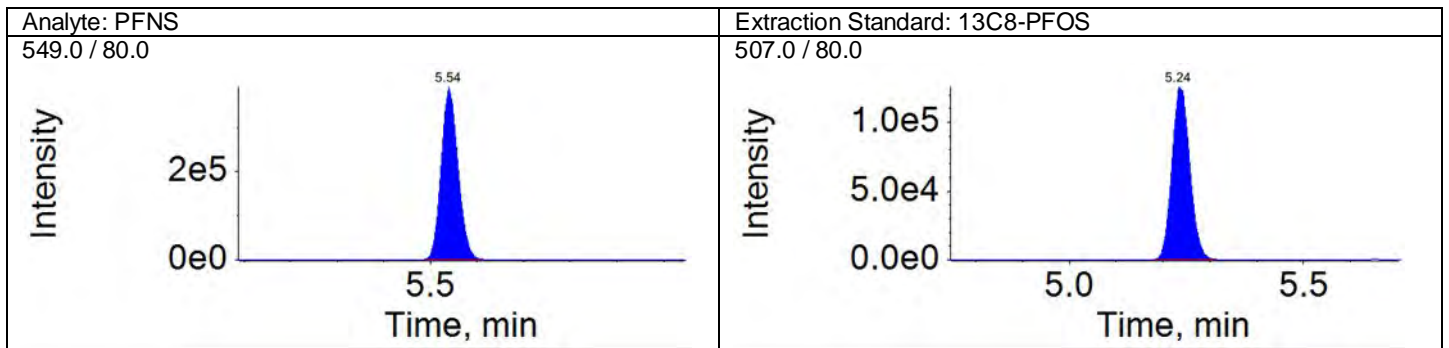
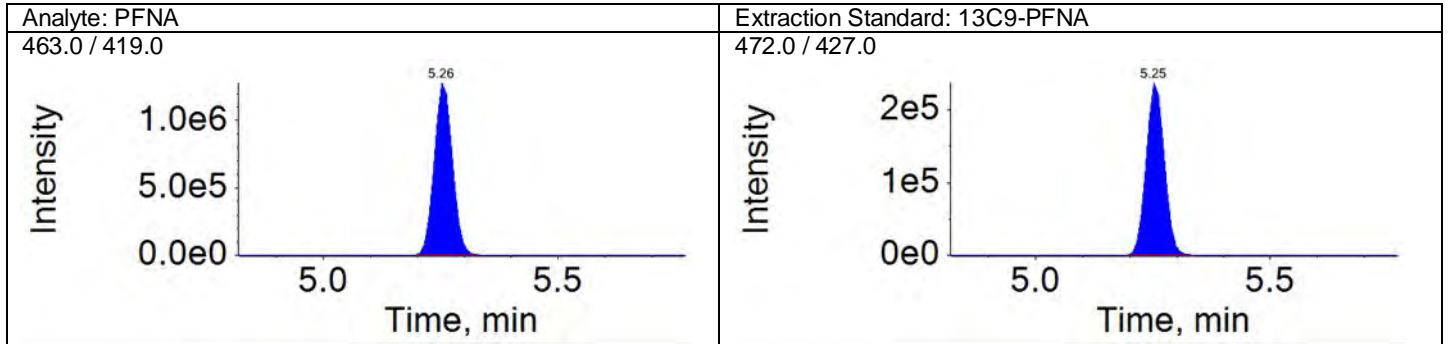
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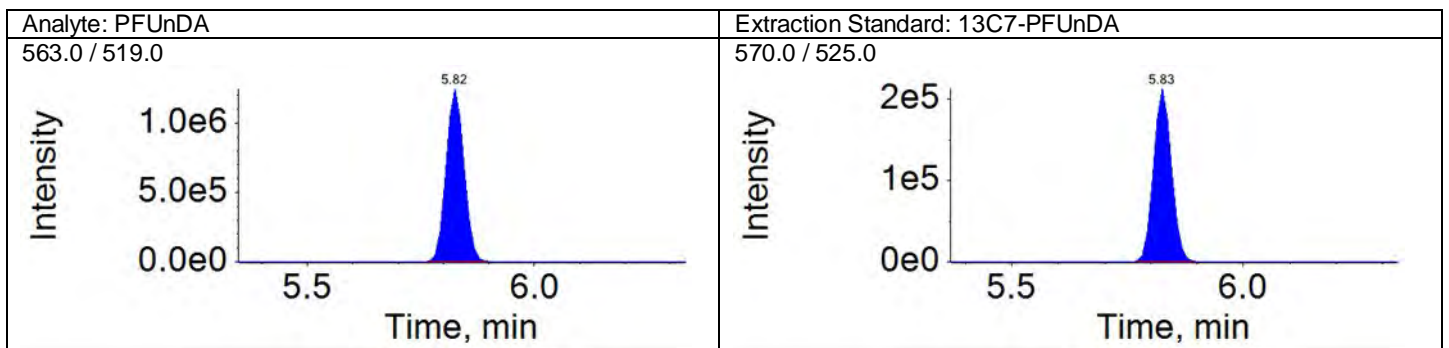
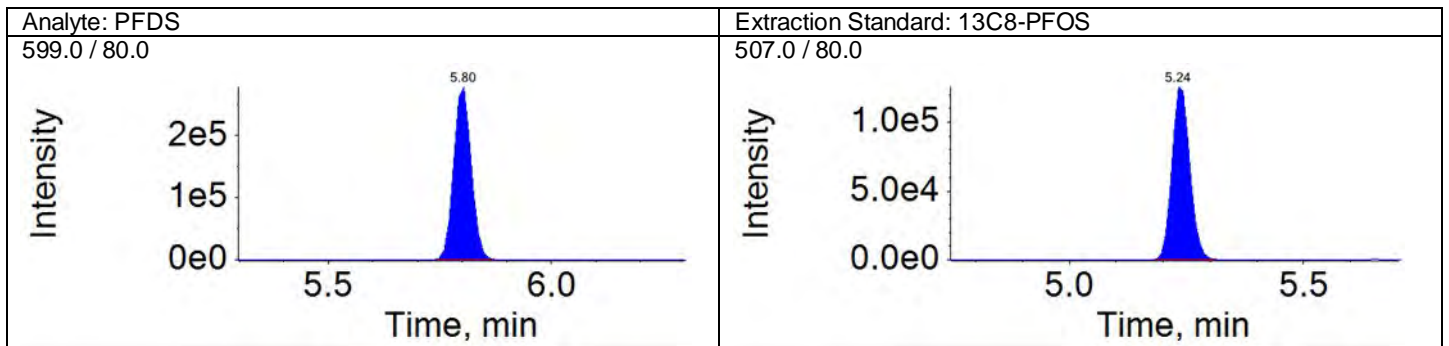
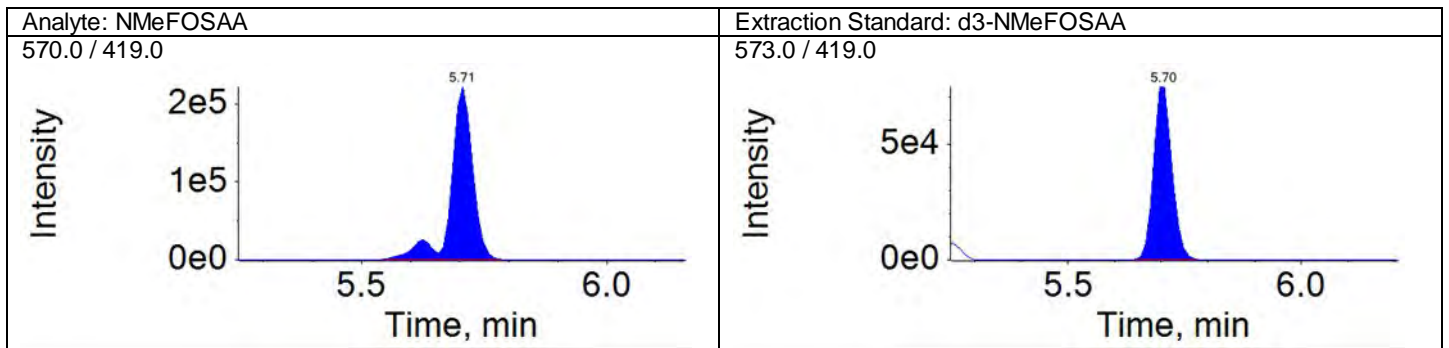
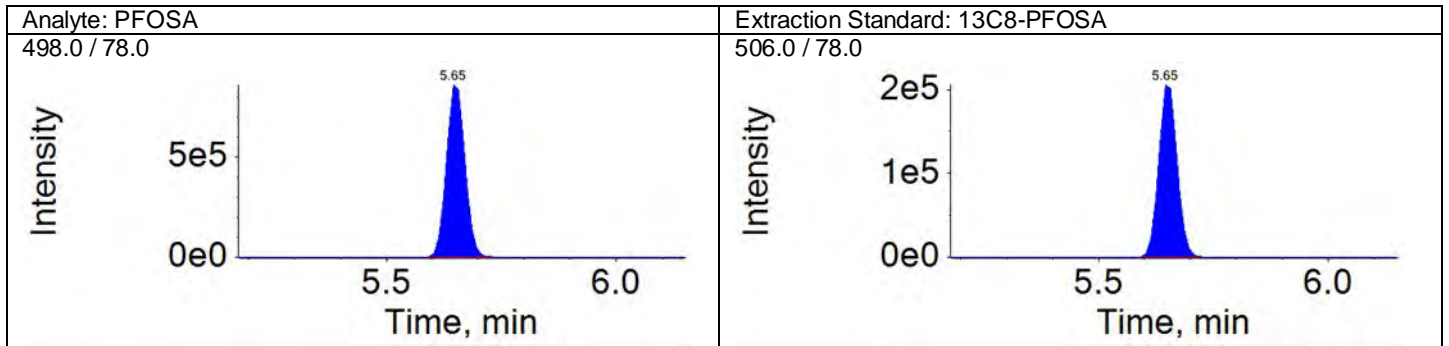
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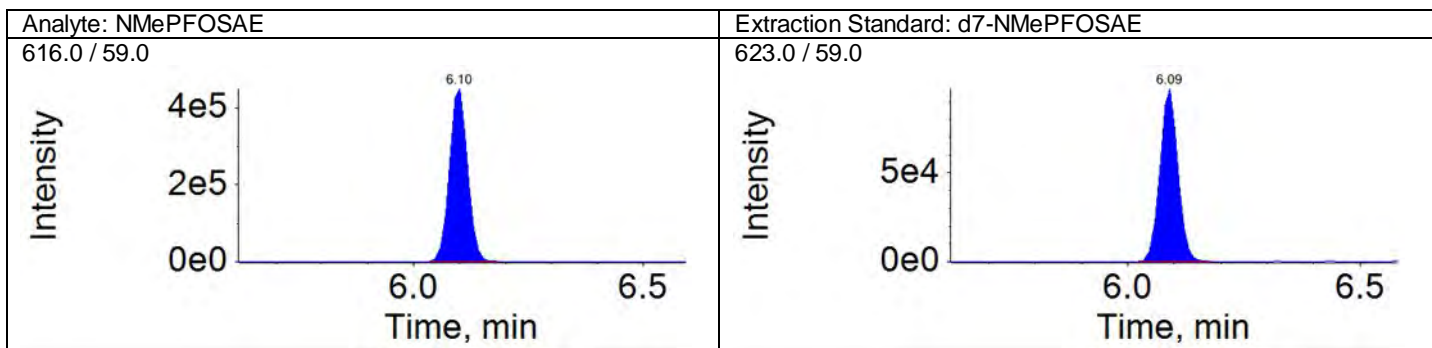
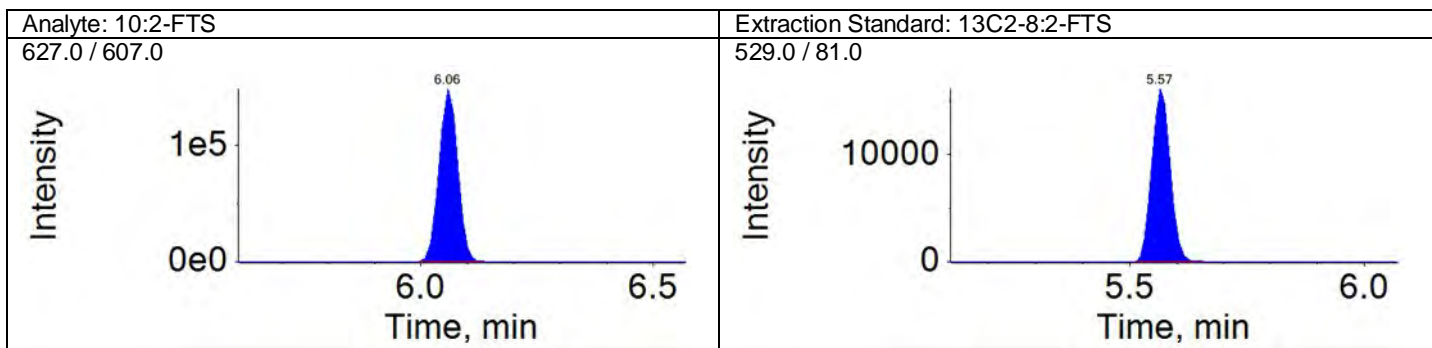
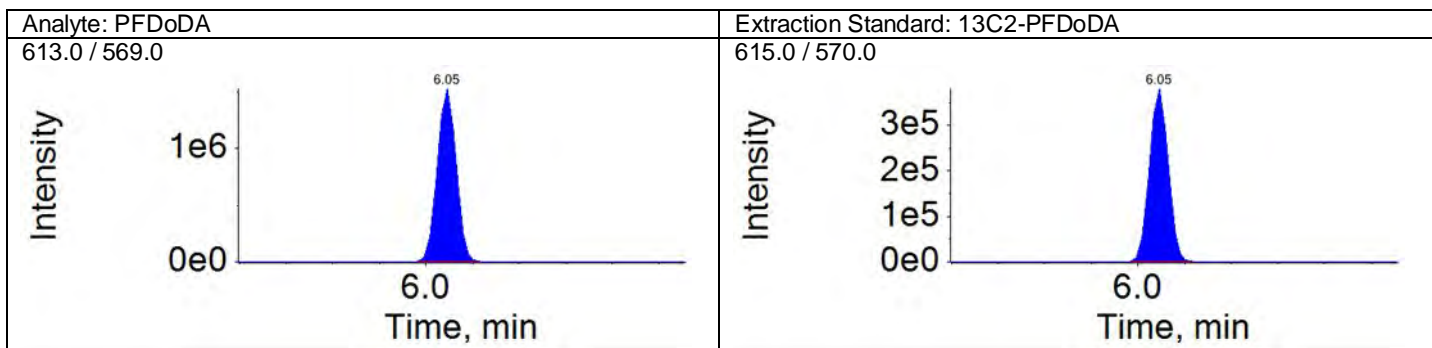
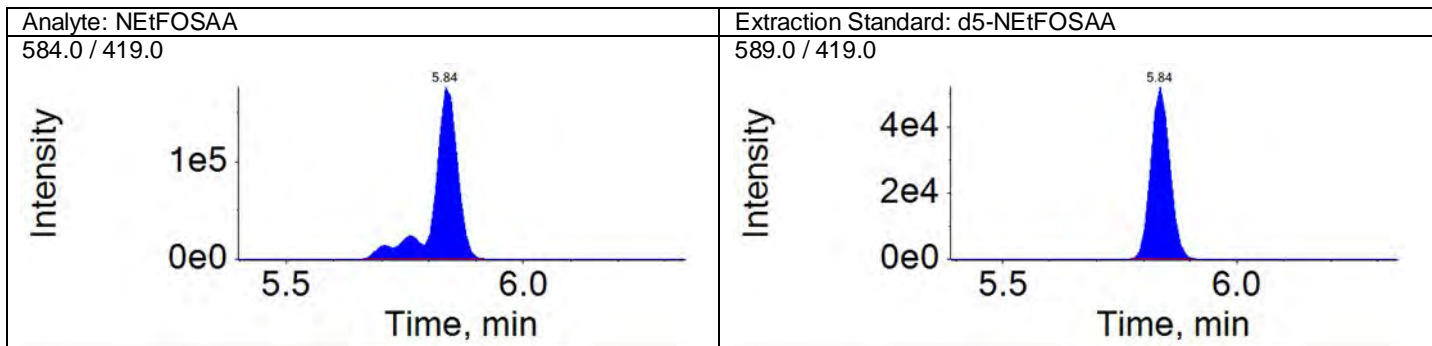
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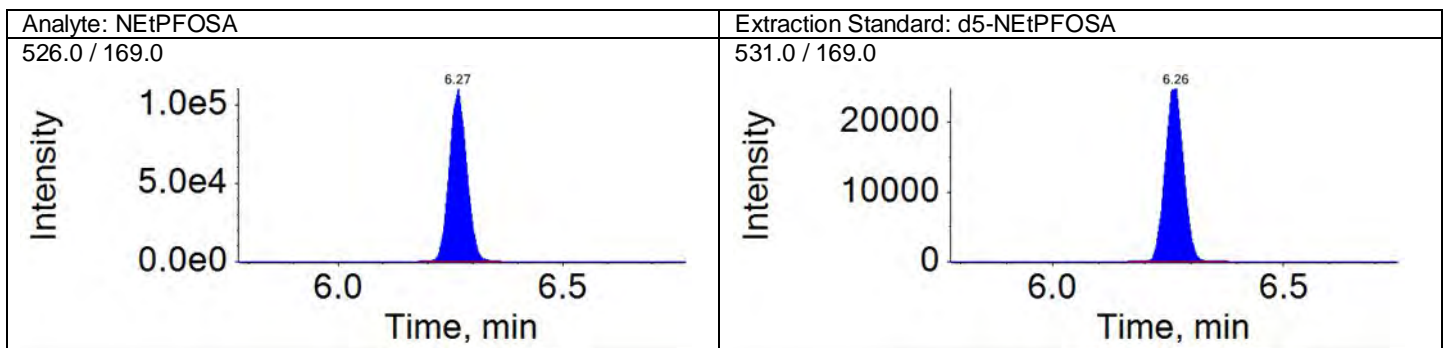
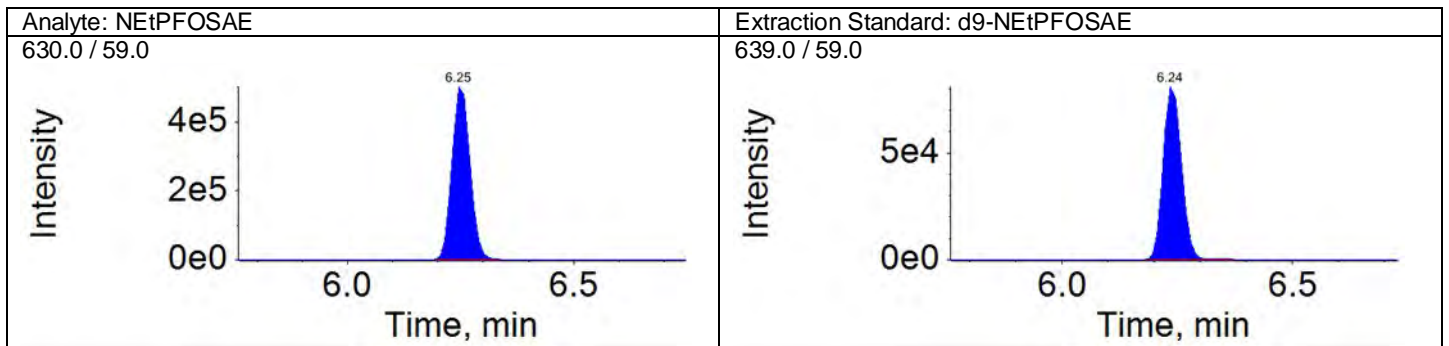
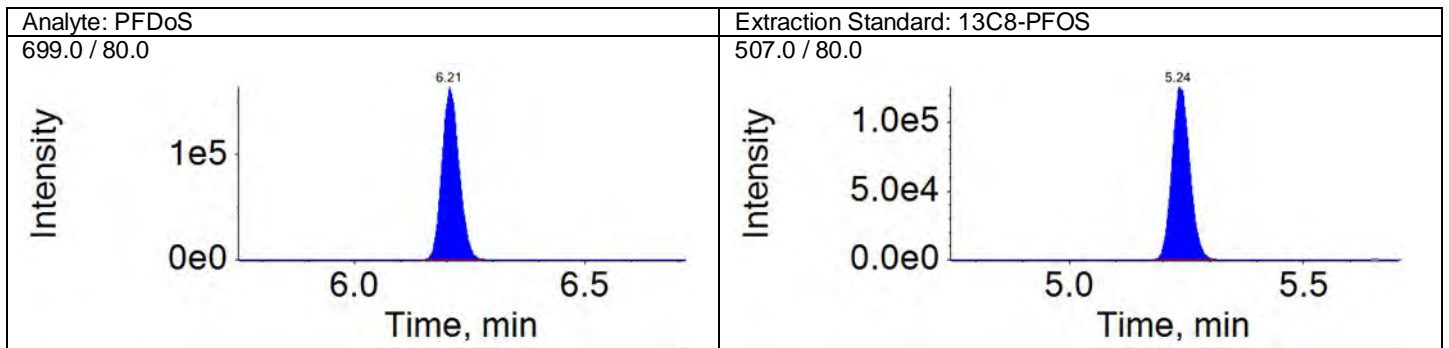
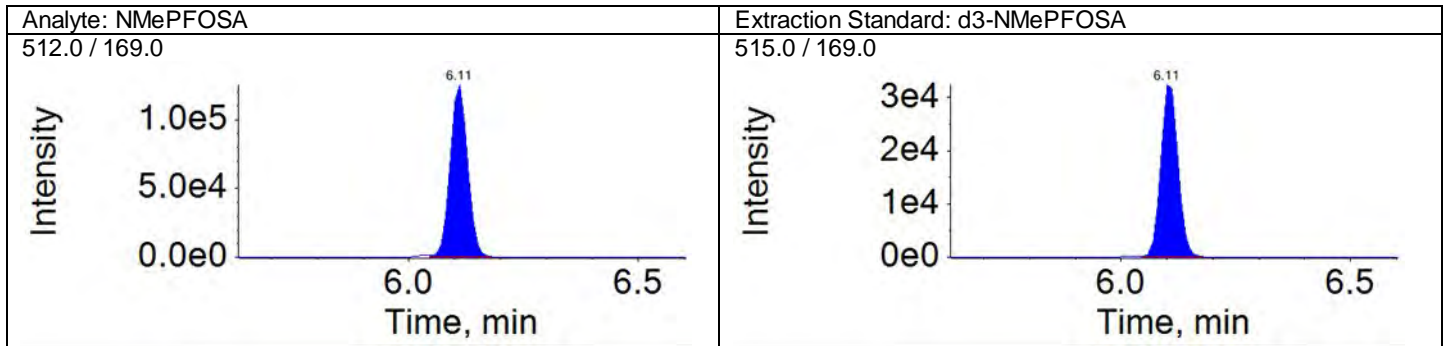
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Acquisition Method: 18AUG13\_3uL.dam



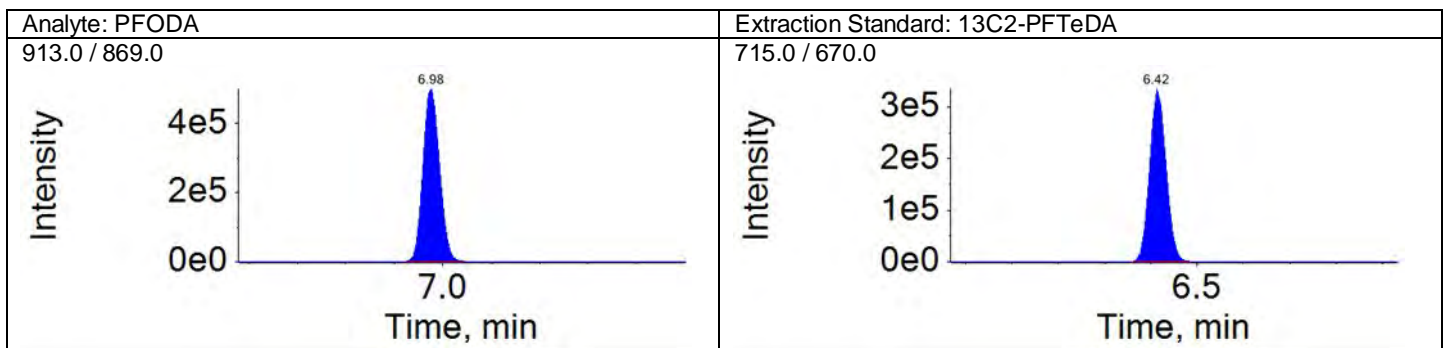
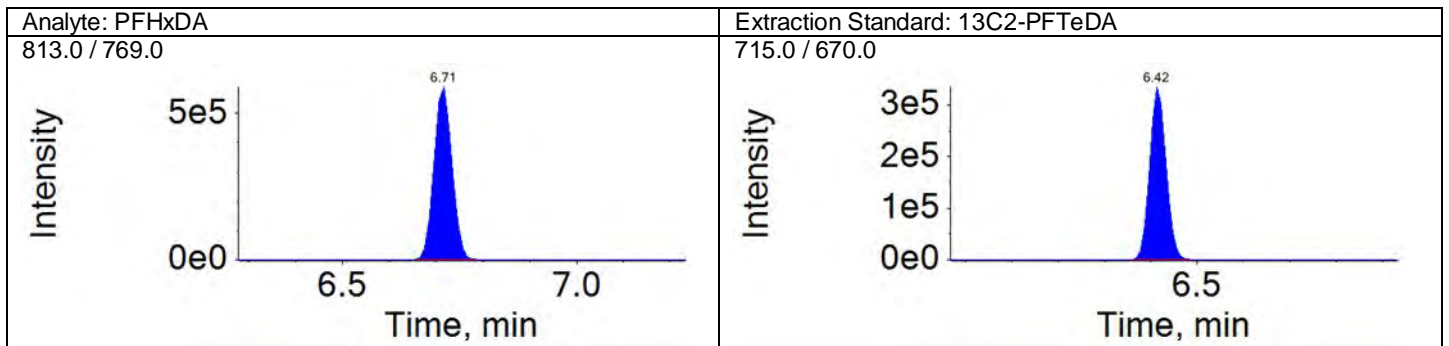
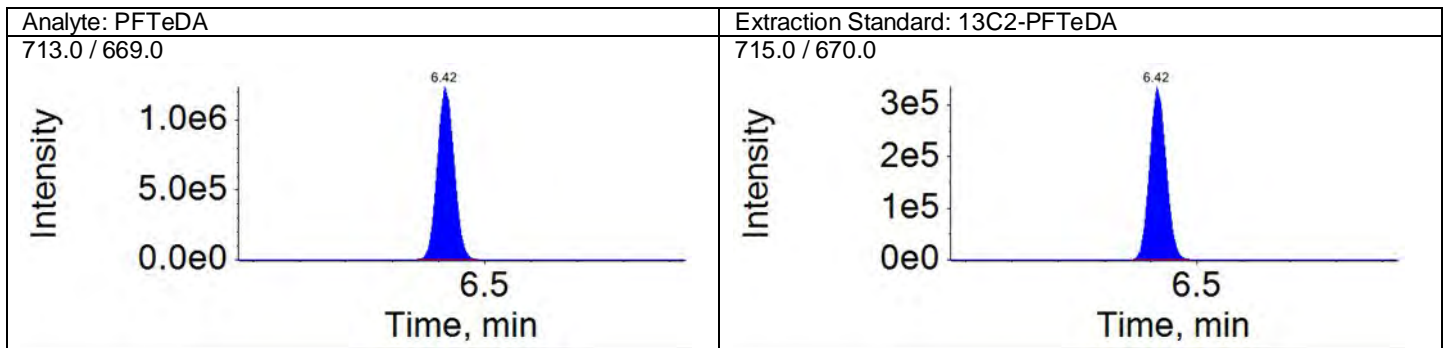
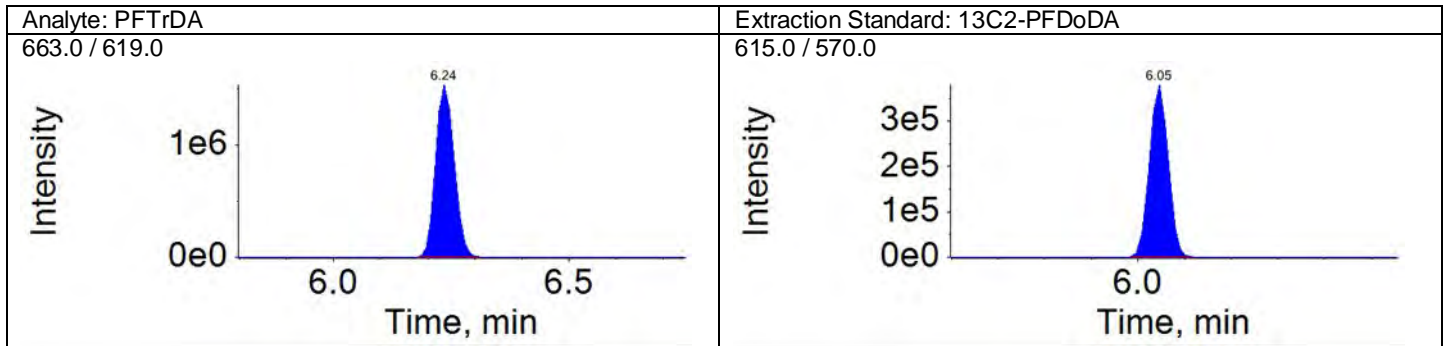
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

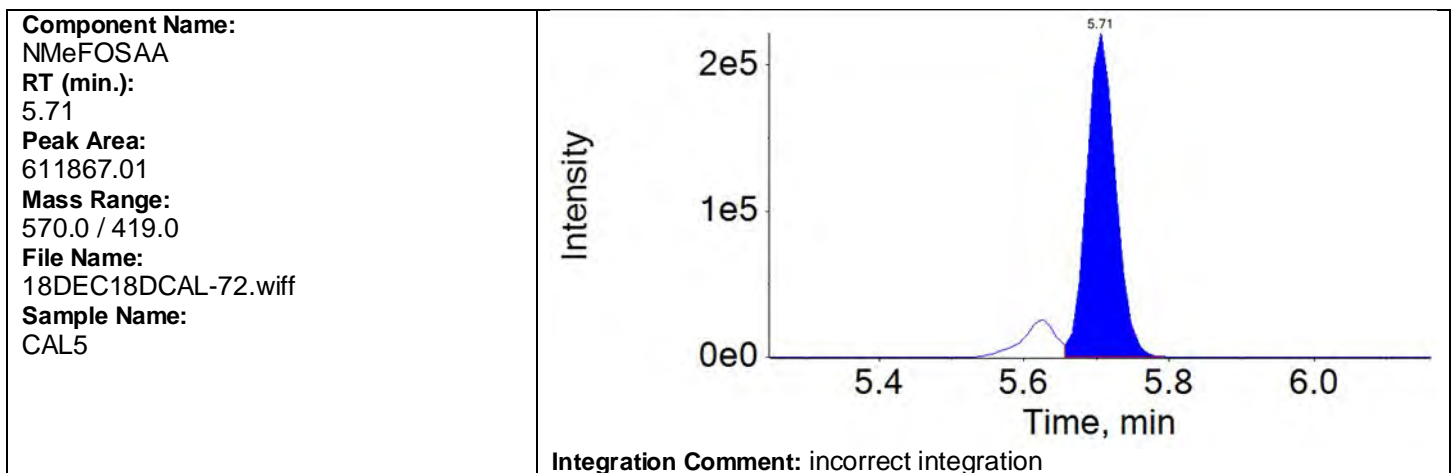
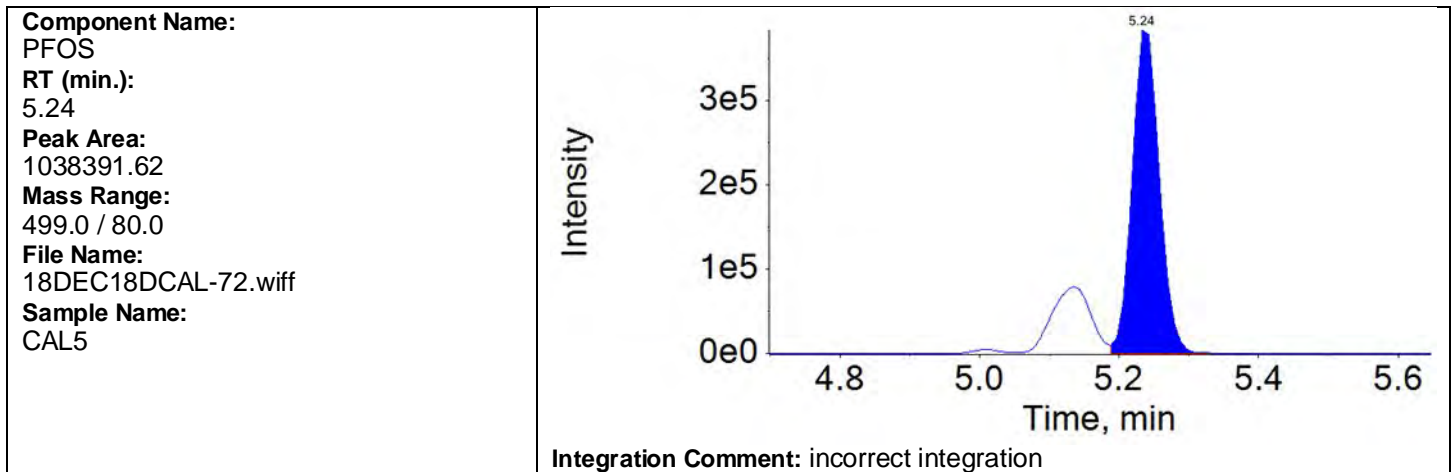
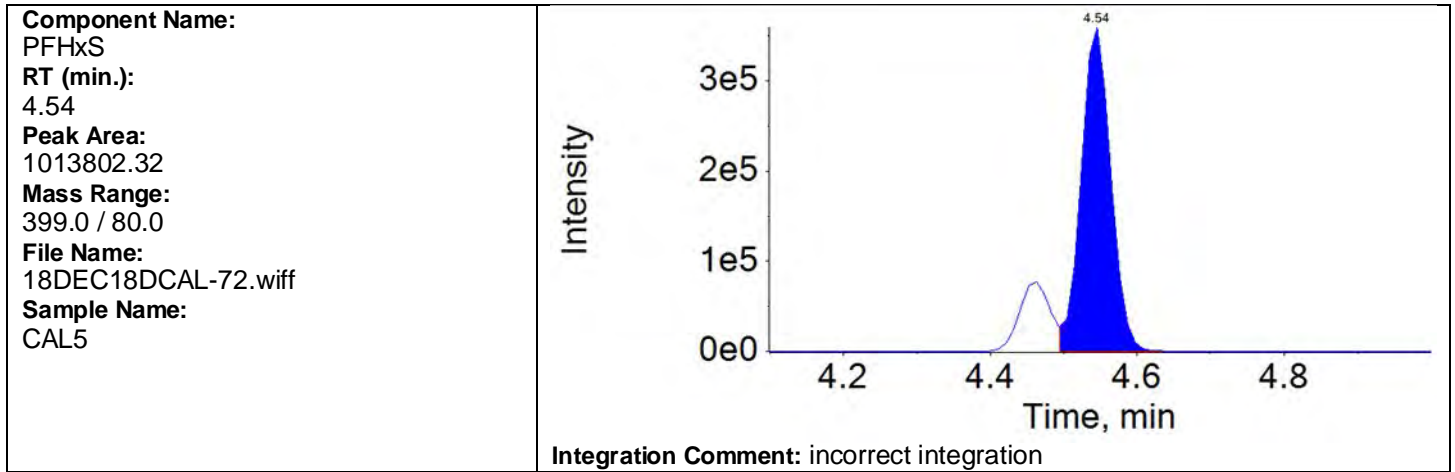
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Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

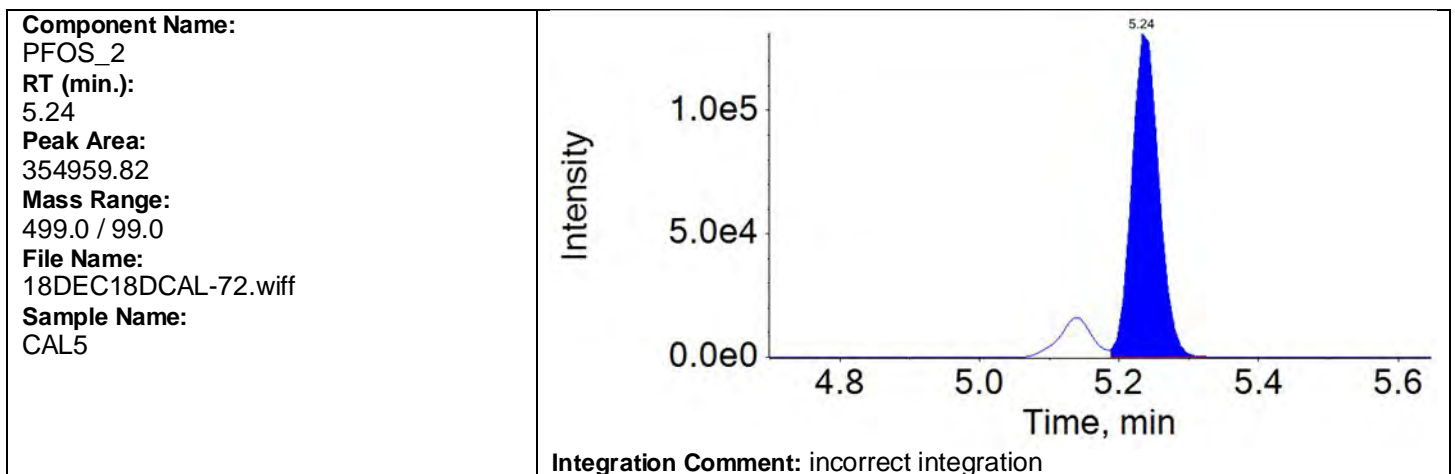
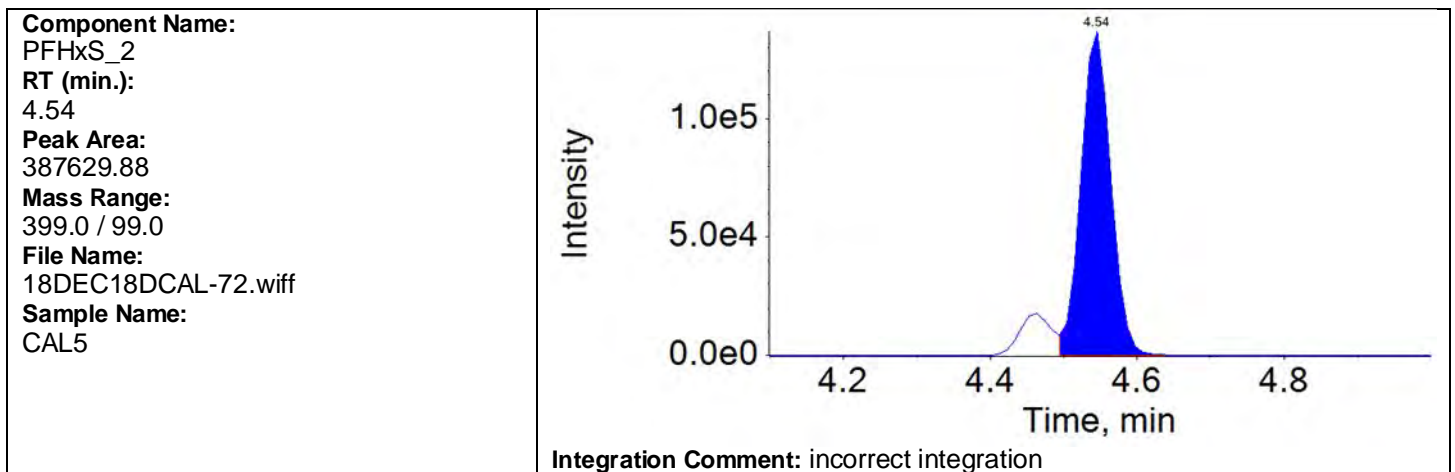
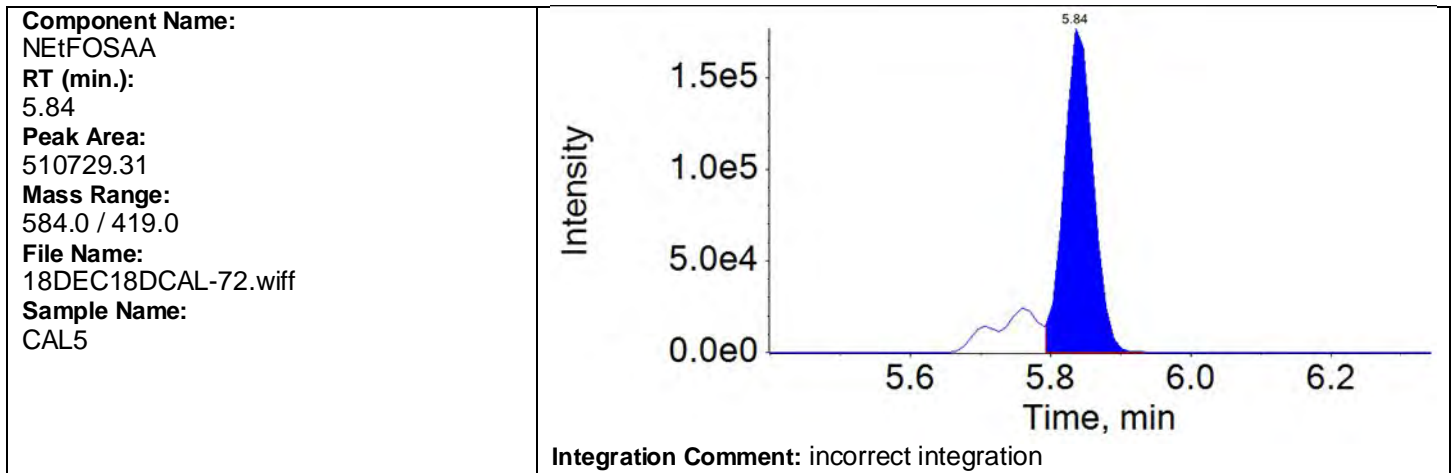
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QMethod File: 18AUG20QM





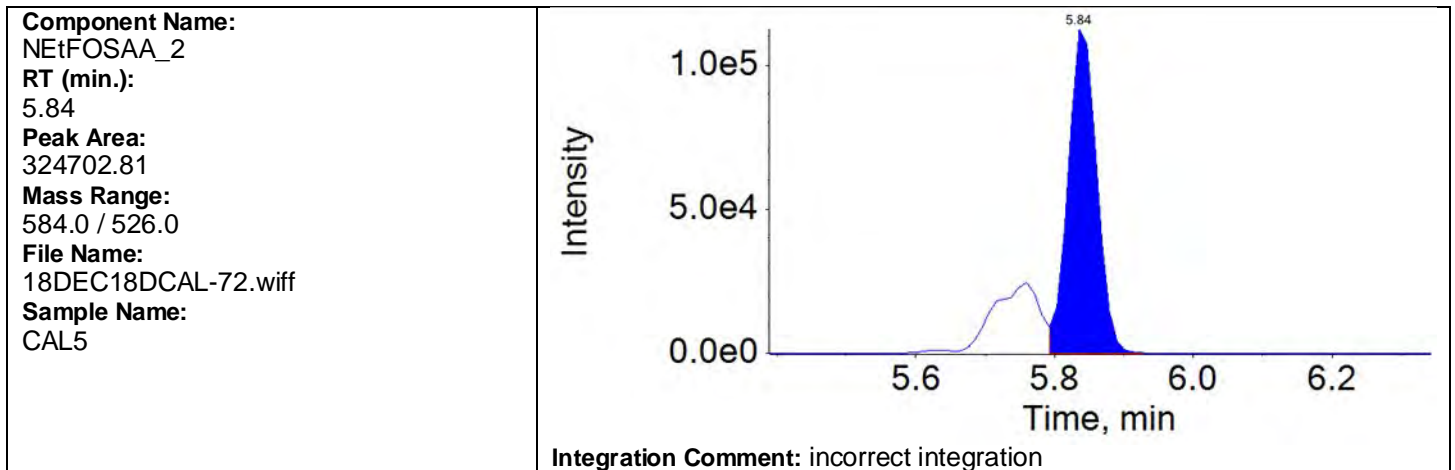
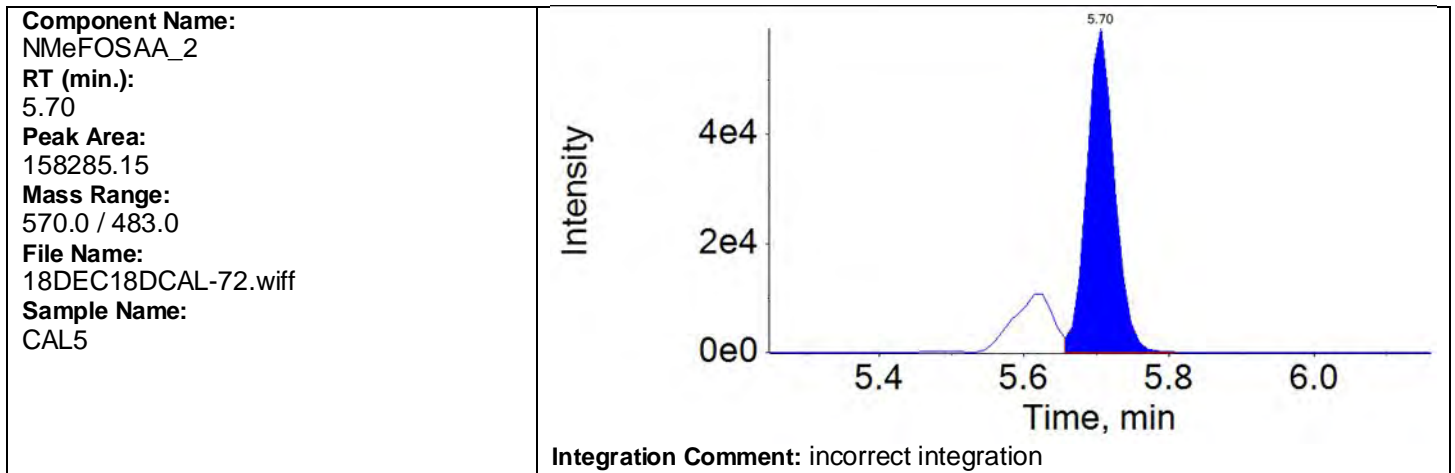
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Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



**Results Table Name:** 18DEC18DCAL  
**Results Table Date:** 12/19/2018 9:34:01 AM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

Ion Ratio Report

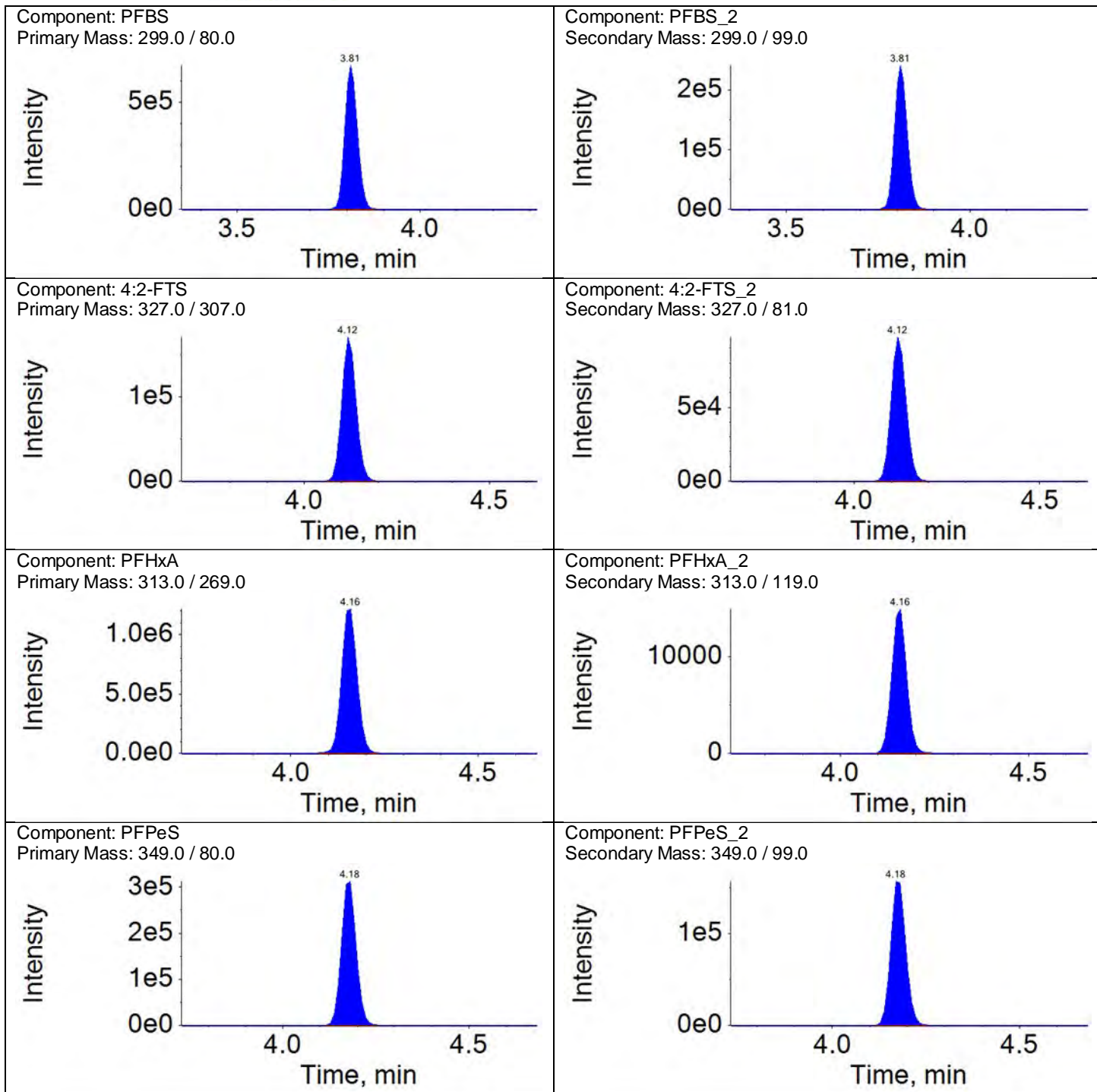
Sample Name: CAL5

Instrument Name: LM27631

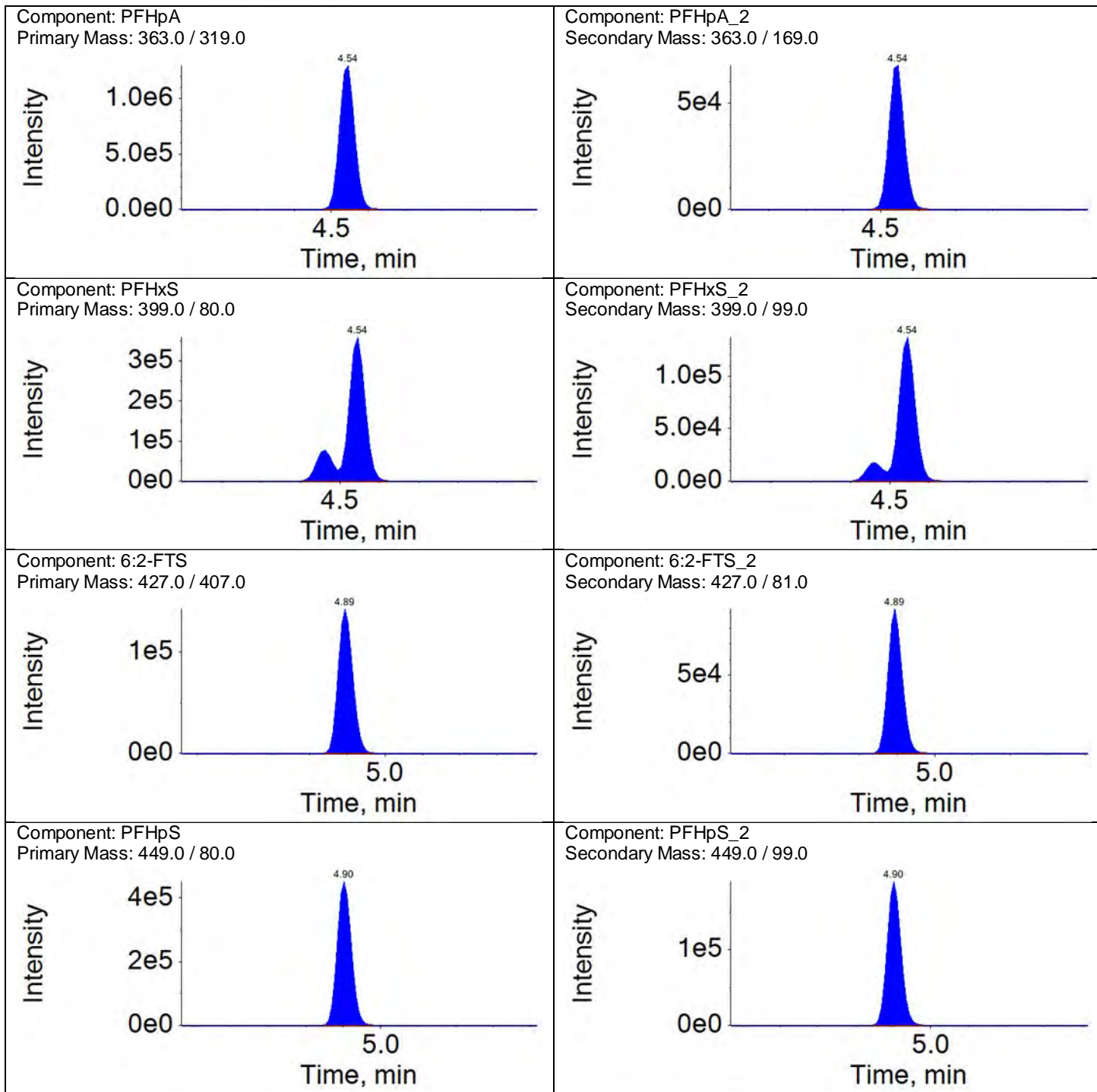
File Name: 18DEC18DCAL-72.wiff

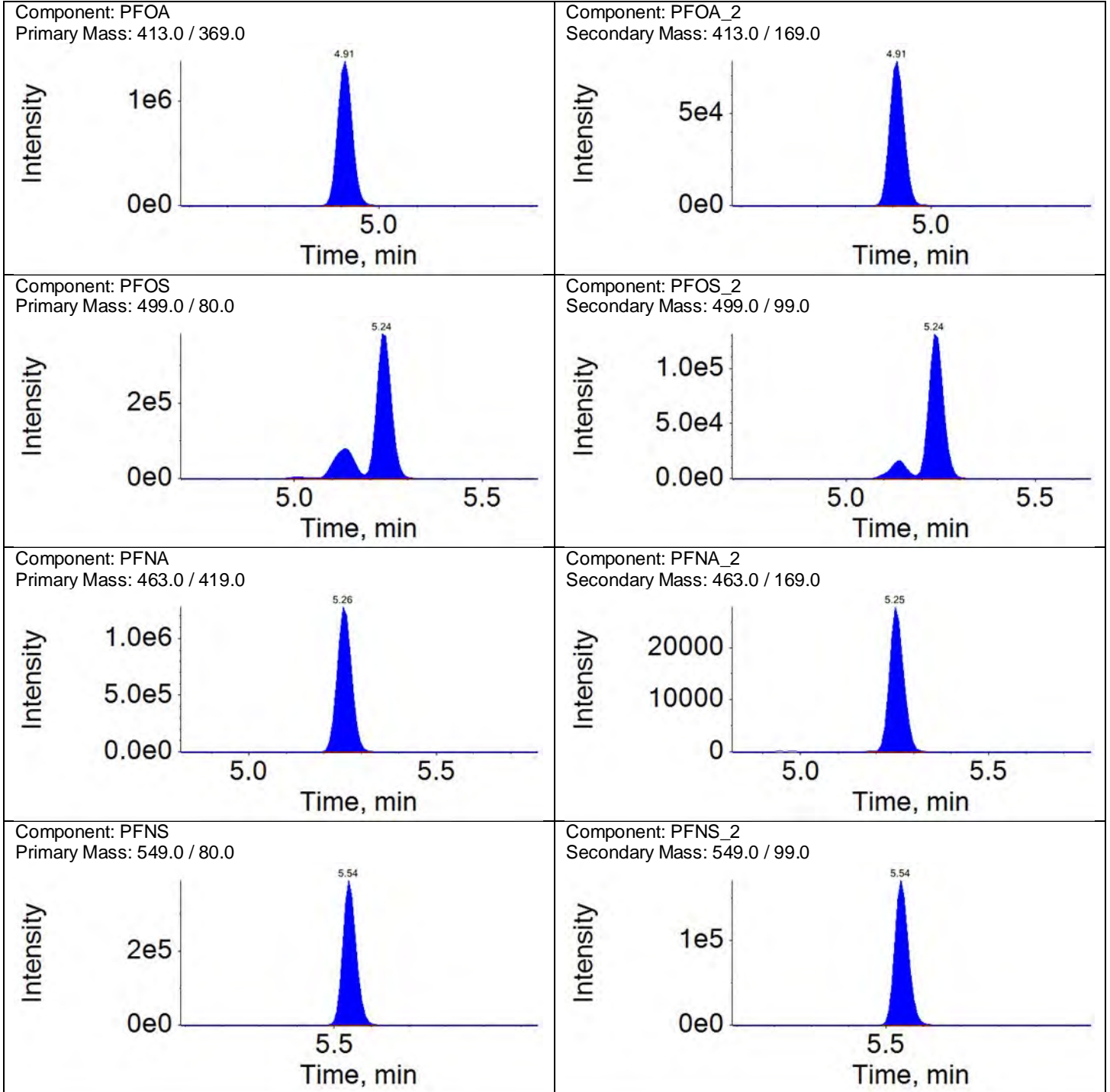
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	1598291.60	A	1.0000	1.0000			
PFBS_2	3.81	1.00	575589.76	A	0.3686	0.3601	-2	50	
4:2-FTS	4.12	1.00	457278.35	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	272172.68	A	0.6123	0.5952	-3	50	
PFHxA	4.16	1.00	3505877.05	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	40861.77	A	0.0115	0.0117	2	50	
PFPeS	4.18	1.10	858571.61	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	437909.50	A	0.5256	0.5100	-3	50	
PFHpA	4.54	1.00	3695154.88	A	1.0000	1.0000			
PFHpA_2	4.54	1.00	193179.04	A	0.0547	0.0523	-4	50	
PFHxS	4.54	1.00	1236035.62	M	1.0000	1.0000			
PFHxS_2	4.54	1.00	440072.09	M	0.3359	0.3560	6	50	
6:2-FTS	4.89	1.00	385557.32	A	1.0000	1.0000			
6:2-FTS_2	4.89	1.00	242669.64	A	0.6344	0.6294	-1	50	
PFHpS	4.90	1.08	1185259.61	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	487879.76	A	0.4110	0.4116	0	50	
PFOA	4.91	1.00	3699938.84	A	1.0000	1.0000			
PFOA_2	4.91	1.00	207838.53	A	0.0590	0.0562	-5	50	
PFOS	5.24	1.00	1358485.16	M	1.0000	1.0000			
PFOS_2	5.24	1.00	408017.58	M	0.2980	0.3003	1	50	
PFNA	5.26	1.00	3431849.27	A	1.0000	1.0000			
PFNA_2	5.25	1.00	72022.81	A	0.0214	0.0210	-2	50	
PFNS	5.54	1.06	965546.94	A	1.0000	1.0000			
PFNS_2	5.54	1.06	433085.21	A	0.4608	0.4485	-3	50	
PFDA	5.56	1.00	3202129.65	A	1.0000	1.0000			
PFDA_2	5.56	1.00	21720.79	A	0.0064	0.0068	7	50	
8:2-FTS	5.56	1.00	408286.41	A	1.0000	1.0000			
8:2-FTS_2	5.56	1.00	247366.44	A	0.5879	0.6059	3	50	
NMeFOSAA	5.71	1.00	694349.44	M	1.0000	1.0000			
NMeFOSAA_2	5.70	1.00	199581.03	M	0.2625	0.2874	10	50	
PFDS	5.80	1.11	758022.30	A	1.0000	1.0000			
PFDS_2	5.80	1.11	393562.41	A	0.4962	0.5192	5	50	
PFOA_2	5.82	1.00	3400238.12	A	1.0000	1.0000			
PFOA_2	5.82	1.00	13457.71	A	0.0035	0.0040	12	50	
NEtFOSAA	5.84	1.00	619081.11	M	1.0000	1.0000			
NEtFOSAA_2	5.84	1.00	436515.35	M	0.6883	0.7051	2	50	
PFOA_2	6.05	1.00	4286978.23	A	1.0000	1.0000			
PFOA_2	6.04	1.00	55302.04	A	0.0134	0.0129	-4	50	
10:2-FTS	6.06	1.09	413620.67	A	1.0000	1.0000			
10:2-FTS_2	6.06	1.09	291452.08	A	0.7018	0.7046	0	50	
PFOA_2	6.24	1.03	4224307.46	A	1.0000	1.0000			
PFOA_2	6.24	1.03	35867.35	A	0.0093	0.0085	-9	50	
PFOA_2	6.42	1.00	3087435.92	A	1.0000	1.0000			
PFOA_2	6.41	1.00	18534.24	A	0.0058	0.0060	3	50	
PFOA_2	6.71	1.05	1573324.99	A	1.0000	1.0000			
PFOA_2	6.71	1.05	96519.73	A	0.0656	0.0613	-7	50	
PFOA_2	6.98	1.09	1181984.36	A	1.0000	1.0000			
PFOA_2	6.97	1.09	31954.76	A	0.0273	0.0270	-1	50	

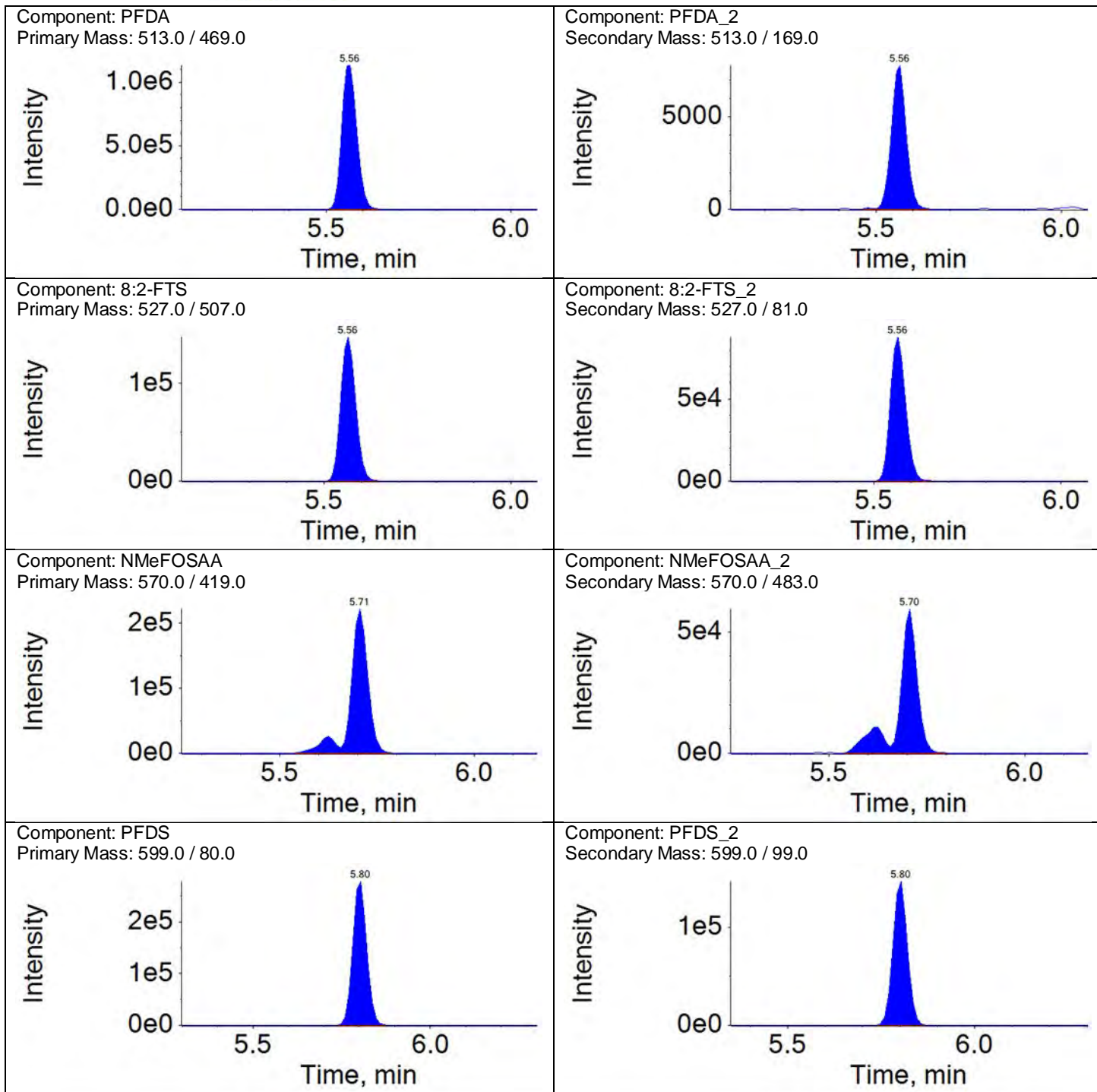


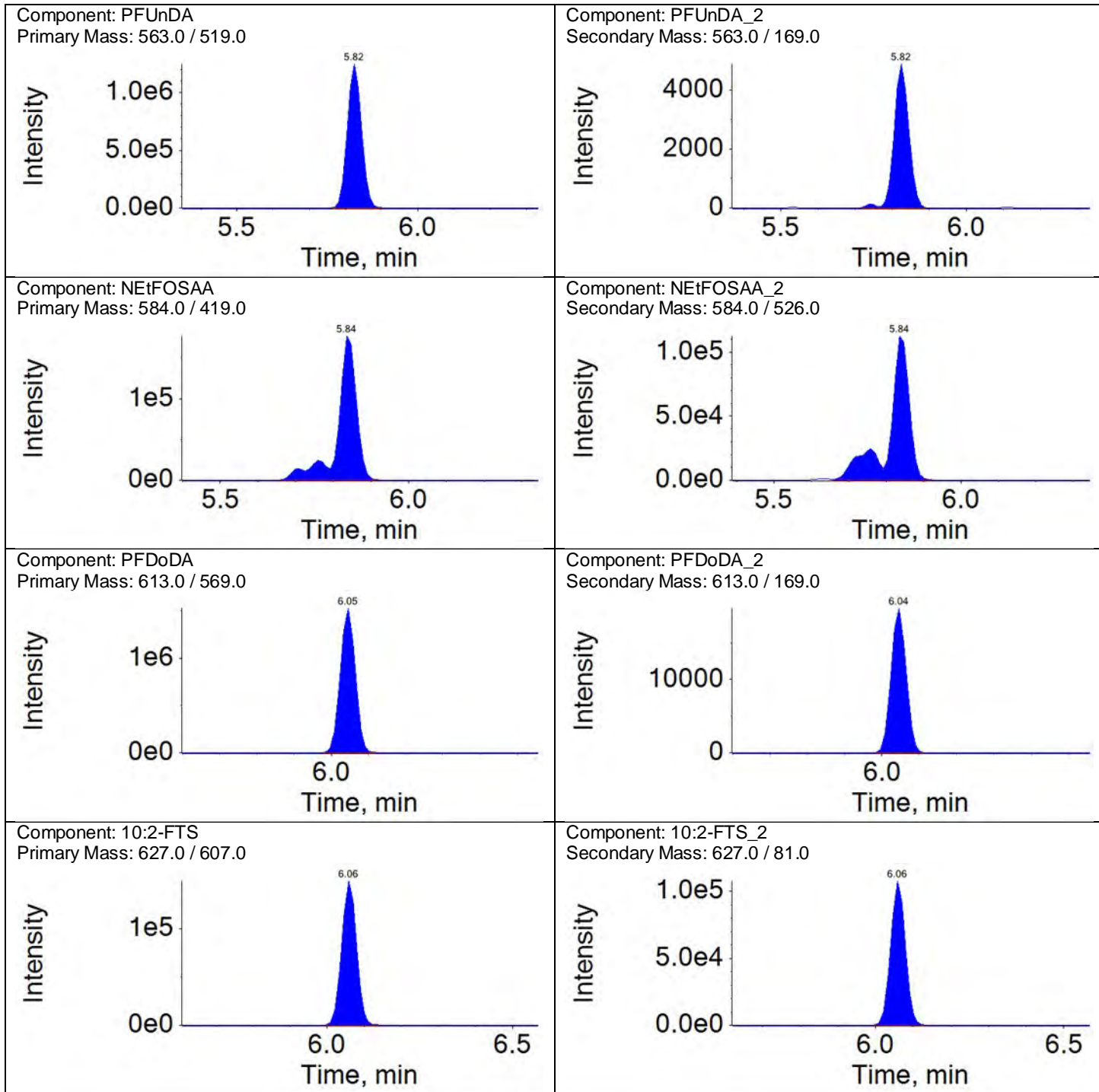




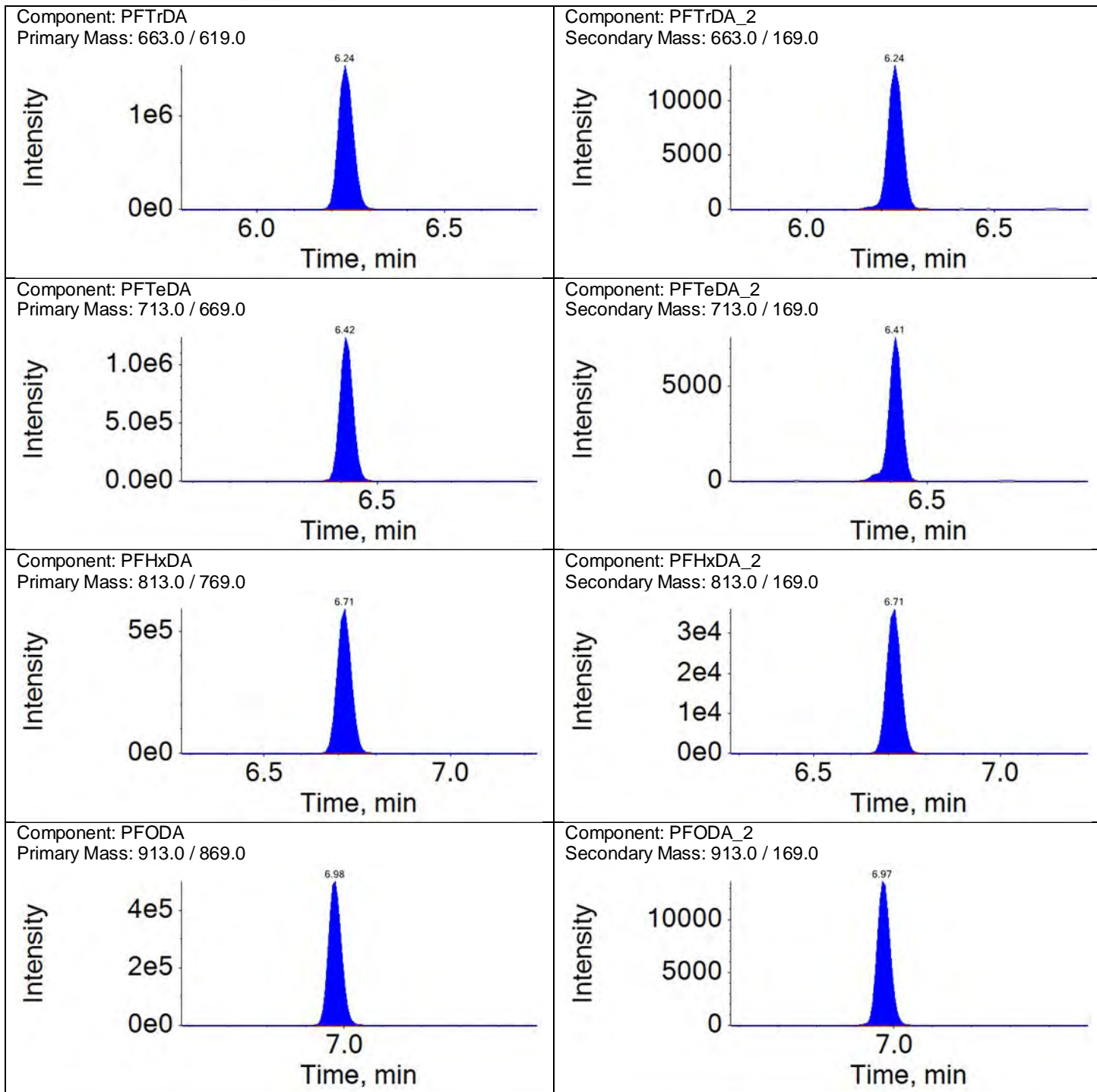














ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL6	Data File:	18DEC18DCAL-73.wiff
Sample ID:	CALBRN61833B	Acquis Date:	2018-12-19T00:19:55
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	8	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	841816.9	941251.6	-11	50	
13C2-PFOA	5.0	543818.8	485595.3	12	50	
13C4-PFOS	4.8	276479.9	292182.6	-5	50	
13C2-PFDA	5.0	448809.6	467216.0	-4	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	976240.6	13C3-PFBA	841816.9	1.160	5.000	5.135	103	70-130	
E13C5-PFPeA	931893.9	13C3-PFBA	841816.9	1.107	5.000	5.162	103	70-130	
E13C3-PFBS	422799.5	13C3-PFBA	841816.9	0.502	4.650	4.890	105	70-130	
E13C2-4:2-FTS	60811.3	13C2-PFOA	543818.8	0.112	4.670	4.247	91	70-130	
E13C5-PFHxA	702242.4	13C2-PFOA	543818.8	1.291	5.000	4.619	92	70-130	
E13C3-PFHxS	298442.3	13C2-PFOA	543818.8	0.549	4.730	4.153	88	70-130	
E13C4-PFHpA	610591.6	13C2-PFOA	543818.8	1.123	5.000	4.850	97	70-130	
E13C2-6:2-FTS	44087.7	13C2-PFOA	543818.8	0.081	4.750	4.079	86	70-130	
E13C8-PFOA	858182.7	13C2-PFOA	543818.8	1.578	5.000	4.339	87	70-130	
E13C8-PFOS	289236.3	13C4-PFOS	276479.9	1.046	4.780	4.678	98	70-130	
E13C9-PFNA	644223.4	13C4-PFOS	276479.9	2.330	5.000	5.301	106	70-130	
E13C6-PFDA	785276.6	13C2-PFDA	448809.6	1.750	5.000	4.984	100	70-130	
E13C2-8:2-FTS	41390.6	13C2-PFDA	448809.6	0.092	4.790	4.753	99	70-130	
E13C8-PFOSA	575735.3	13C2-PFDA	448809.6	1.283	5.000	4.995	100	70-130	
Ed3-NMeFOSAA	194698.3	13C2-PFDA	448809.6	0.434	5.000	4.773	95	70-130	
E13C7-PFUnDA	542196.9	13C2-PFDA	448809.6	1.208	5.000	5.057	101	70-130	
Ed5-NEtFOSAA	138273.6	13C2-PFDA	448809.6	0.308	5.000	4.539	91	70-130	
E13C2-PFDoDA	1021574.8	13C2-PFDA	448809.6	2.276	5.000	4.789	96	70-130	
Ed7-NMePFOSAE	261182.9	13C2-PFDA	448809.6	0.582	5.000	5.200	104	70-130	
Ed3-NMePFOSA	84626.8	13C2-PFDA	448809.6	0.189	5.000	5.181	104	70-130	
Ed9-NEtPFOSAE	222808.9	13C2-PFDA	448809.6	0.496	5.000	5.075	102	70-130	
Ed5-NEtPFOSA	66987.4	13C2-PFDA	448809.6	0.149	5.000	5.177	104	70-130	
E13C2-PFTeDA	805412.9	13C2-PFDA	448809.6	1.795	5.000	5.057	101	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

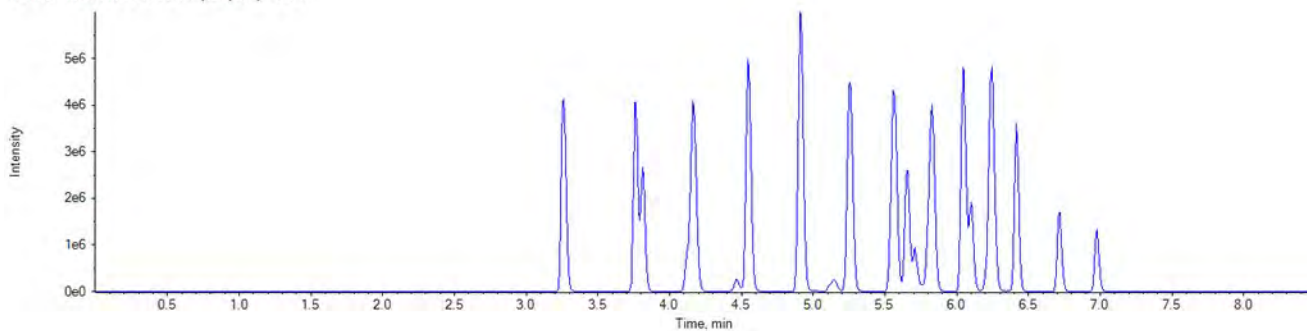
Sample Name: CAL6 Instrument Name: LM27631 File Name: 18DEC18DCAL-73.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	8351267.1		A	13C4-PFBA	3.26	976240.6	8.555	45.420
PFPeA	3.77	1.000	8138980.7		A	13C5-PFPeA	3.76	931893.9	8.734	45.083
PFBS	3.81	1.000	3747060.8		A	13C3-PFBS	3.81	422799.5	8.863	43.750
4:2-FTS	4.12	1.000	1050924.0		A	13C2-4:2-FTS	4.12	60811.3	17.282	45.341
PFHxA	4.16	1.000	7325035.5		A	13C5-PFHxA	4.16	702242.4	10.431	42.970
PFPeS	4.18	1.100	1963865.8		A	13C3-PFBS	3.81	422799.5	4.645	47.288
PFHpA	4.55	1.000	7849138.7		A	13C4-PFHpA	4.55	610591.6	12.855	42.626
PFHxS	4.55	1.000	2769777.0		M	13C3-PFHxS	4.55	298442.3	9.281	45.142
6:2-FTS	4.90	1.000	827147.2		A	13C2-6:2-FTS	4.90	44087.7	18.761	46.705
PFHpS	4.91	1.080	2676577.9		A	13C3-PFHxS	4.55	298442.3	8.968	47.444
PFOA	4.92	1.000	7895459.2		A	13C8-PFOA	4.92	858182.7	9.200	48.740
PFOS	5.24	1.000	3112288.6		M	13C8-PFOS	5.24	289236.3	10.760	47.111
PFNA	5.26	1.000	7783069.7		A	13C9-PFNA	5.26	644223.4	12.081	48.015
PFNS	5.54	1.060	2213789.6		A	13C8-PFOS	5.24	289236.3	7.654	48.669
PFDA	5.57	1.000	6722193.6		A	13C6-PFDA	5.57	785276.6	8.560	44.210
8:2-FTS	5.57	1.000	866380.5		A	13C2-8:2-FTS	5.57	41390.6	20.932	42.130
PFOSA	5.66	1.000	5641072.5		A	13C8-PFOSA	5.66	575735.3	9.798	49.002
NMeFOSAA	5.71	1.000	1522626.1		M	d3-NMeFOSAA	5.71	194698.3	7.820	48.603
PFDS	5.80	1.110	1690515.9		A	13C8-PFOS	5.24	289236.3	5.845	47.982
PFOA	5.83	1.000	6790806.9		A	13C7-PFOA	5.83	542196.9	12.525	41.480
NEtFOSAA	5.84	1.000	1393940.7		M	d5-NEtFOSAA	5.84	138273.6	10.081	51.380
PFDoDA	6.05	1.000	8862936.2		A	13C2-PFDoDA	6.05	1021574.8	8.676	43.704
10:2-FTS	6.06	1.090	875761.6		A	13C2-8:2-FTS	5.57	41390.6	21.158	43.093
NMePFOSAE	6.10	1.000	3042548.6		A	d7-NMePFOSAE	6.09	261182.9	11.649	51.399
NMePFOSA	6.11	1.000	841191.1		A	d3-NMePFOSA	6.11	84626.8	9.940	50.180
PFDoS	6.21	1.180	959645.7		A	13C8-PFOS	5.24	289236.3	3.318	50.267
NEtPFOSAE	6.25	1.000	3257504.3		A	d9-NEtPFOSAE	6.24	222808.9	14.620	47.763
NEtPFOSA	6.27	1.000	703179.0		A	d5-NEtPFOSA	6.26	66987.4	10.497	49.101
PFTeDA	6.24	1.030	8498735.5		A	13C2-PFDoDA	6.05	1021574.8	8.319	42.680
PFTeDA	6.42	1.000	6745639.5		A	13C2-PFTeDA	6.42	805412.9	8.375	45.100
PFHxDA	6.72	1.050	3527192.4		A	13C2-PFTeDA	6.42	805412.9	4.379	48.092
PFOA	6.98	1.090	2737389.5		A	13C2-PFTeDA	6.42	805412.9	3.399	48.836

**Total Ion Chromatogram**

TIC from 18DEC18DCAL-73.wiff (sample 1) - CAL6

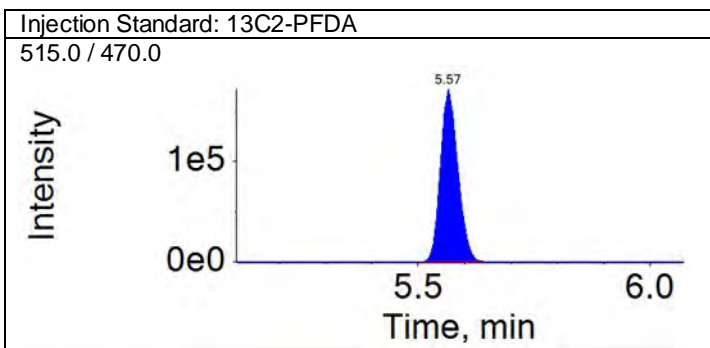
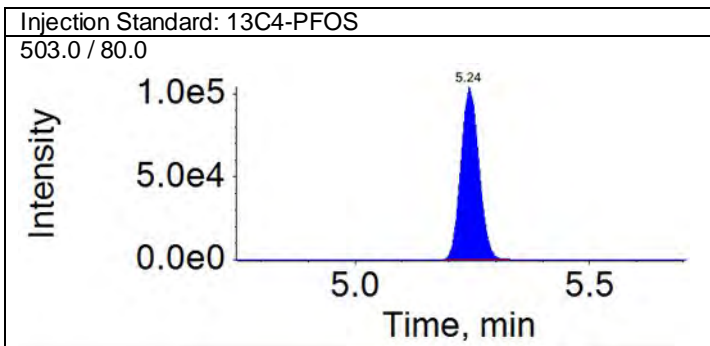
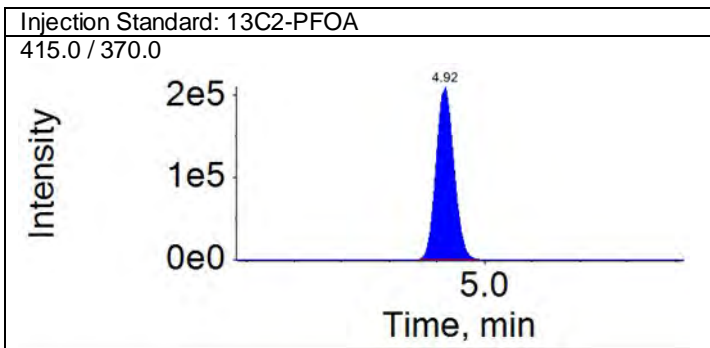
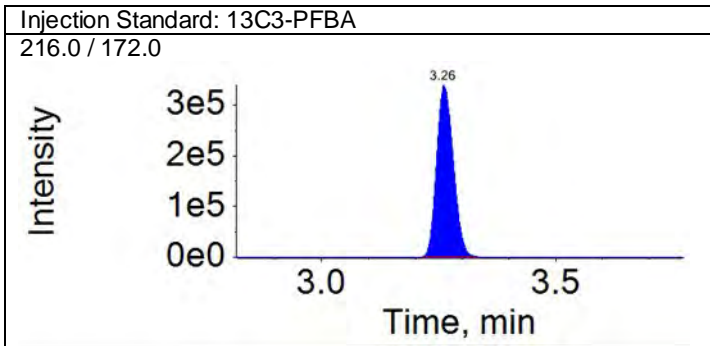


**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

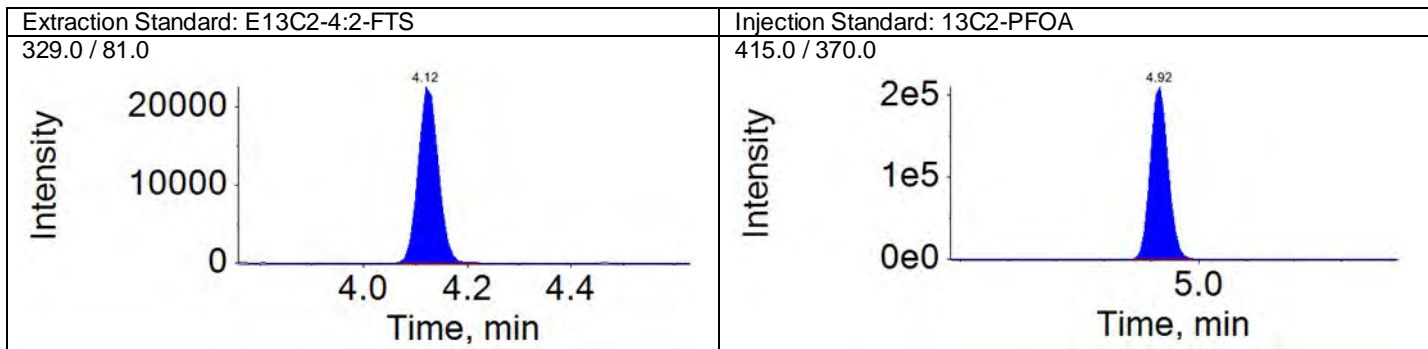
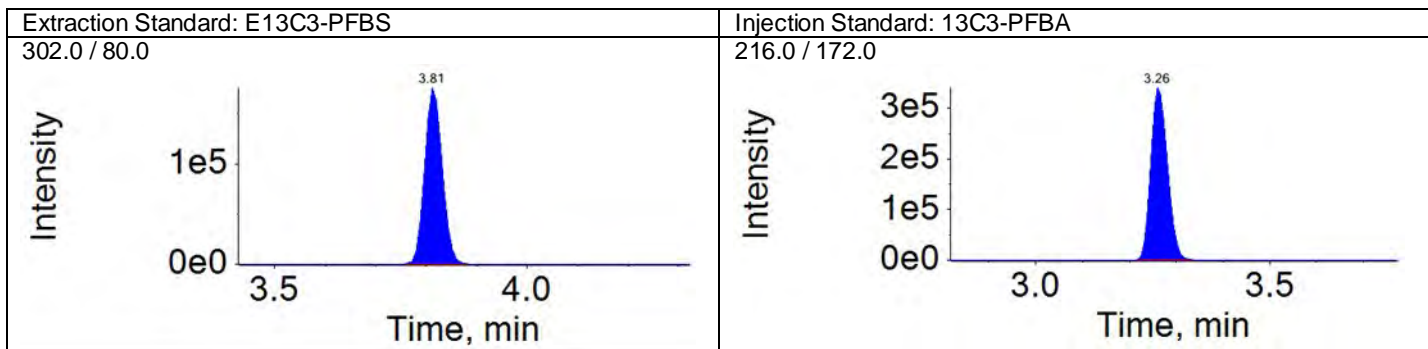
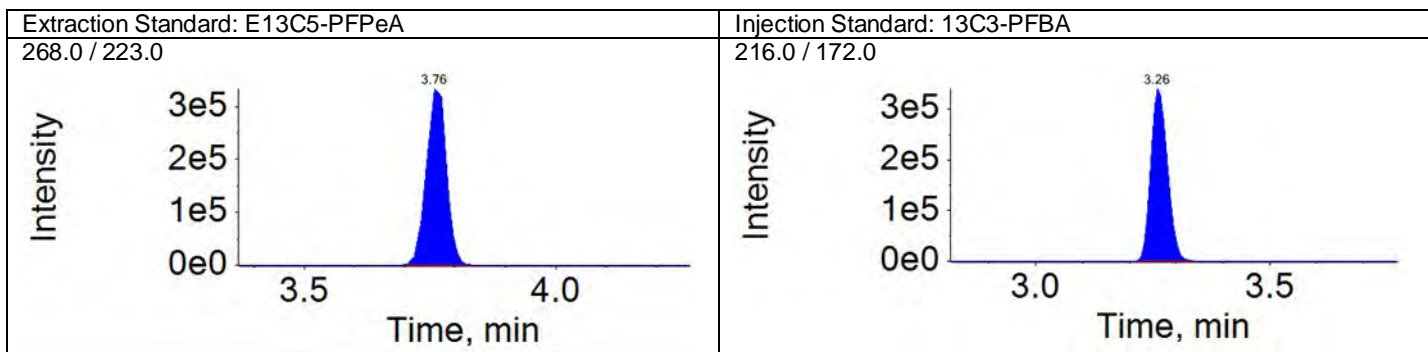
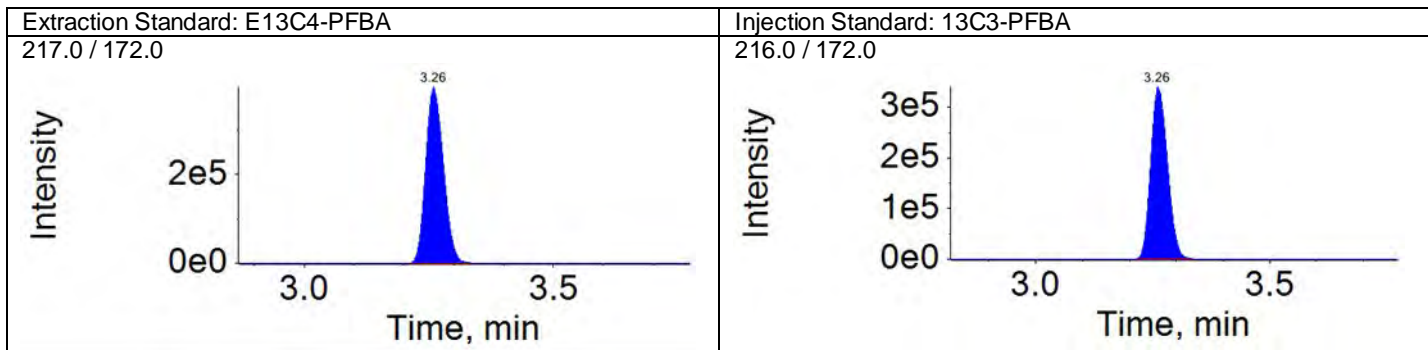
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



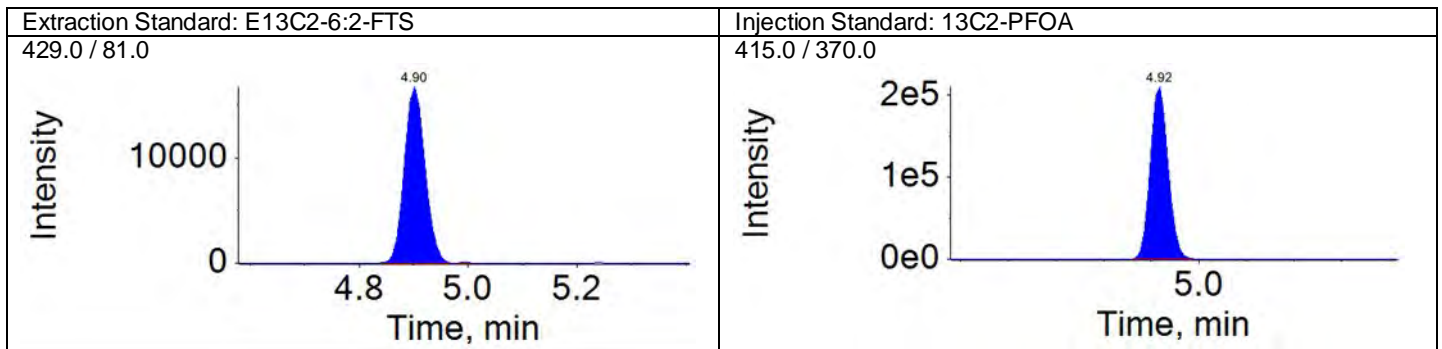
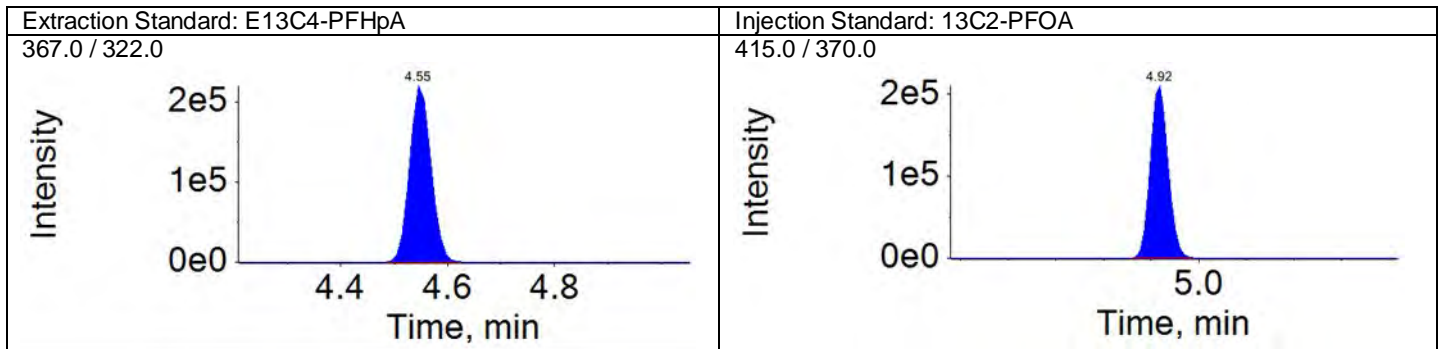
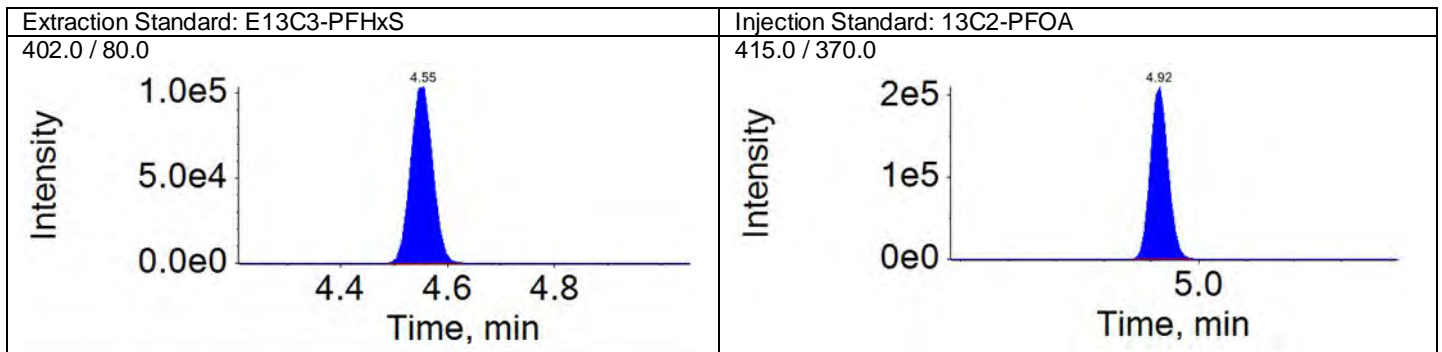
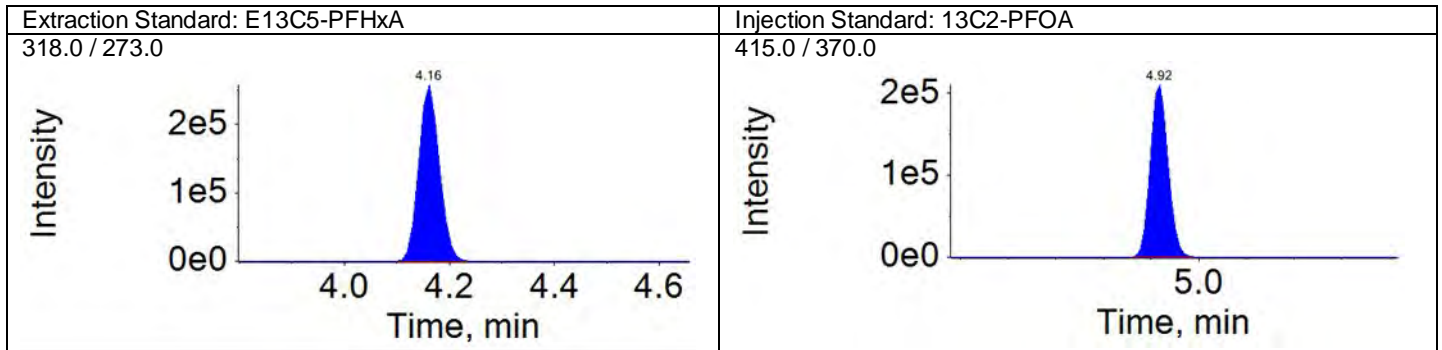
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

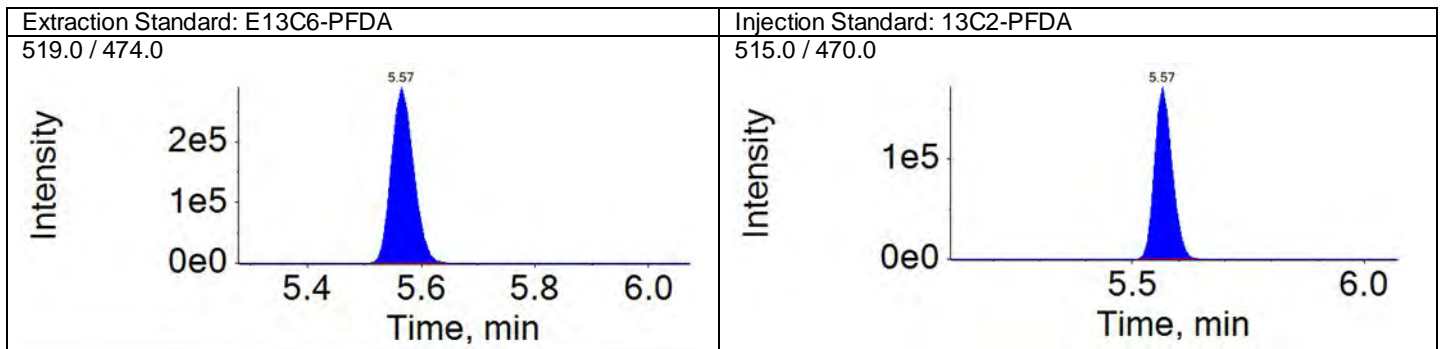
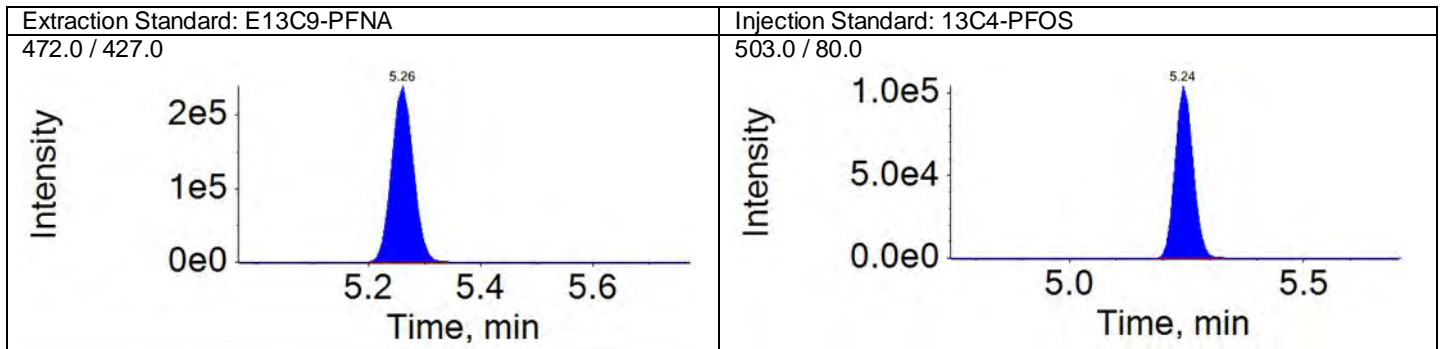
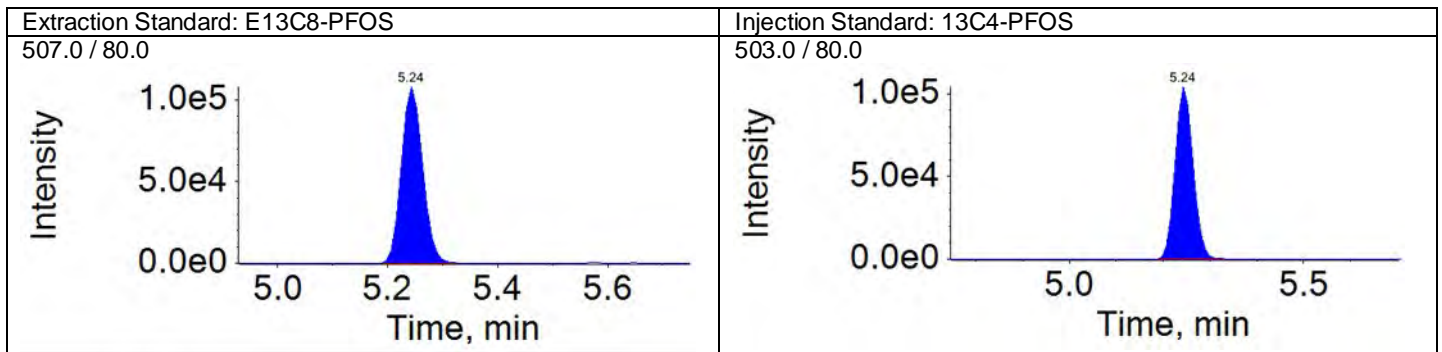
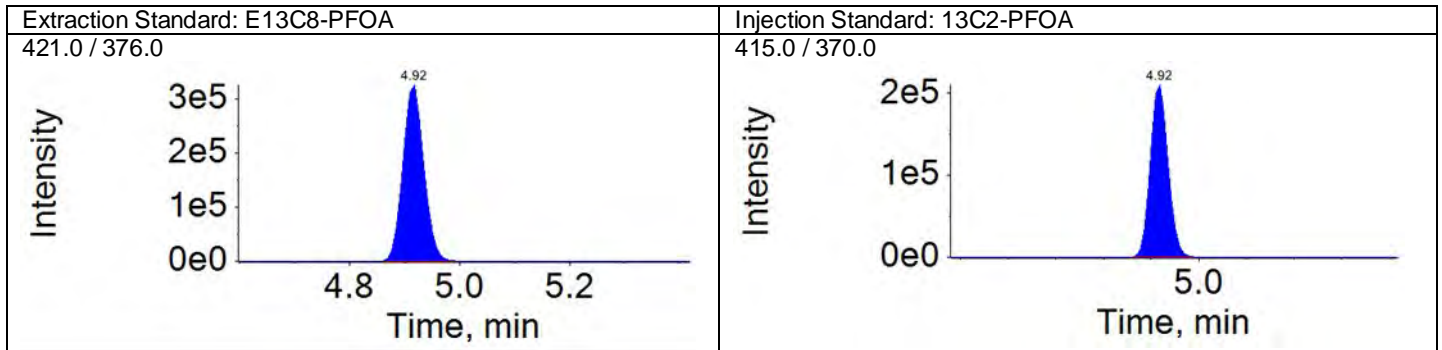
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Acquisition Method: 18AUG13\_3uL.dam





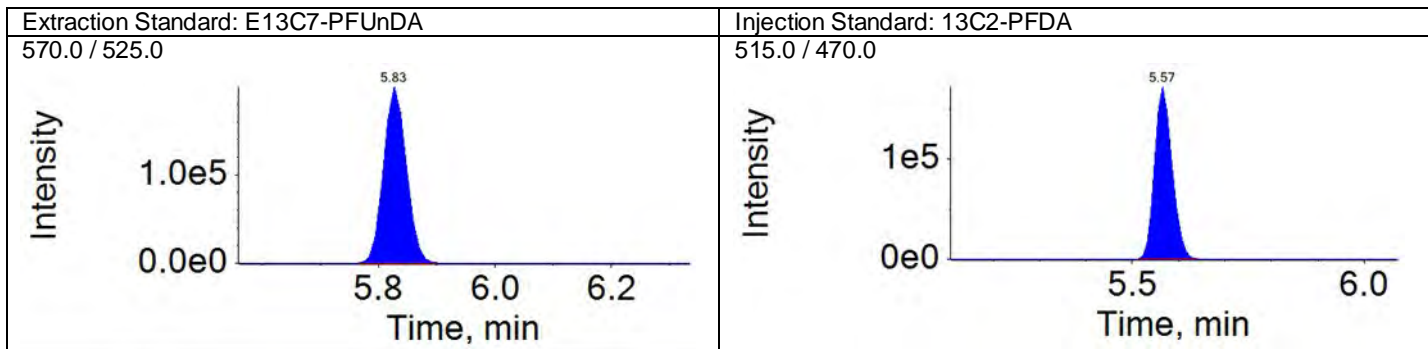
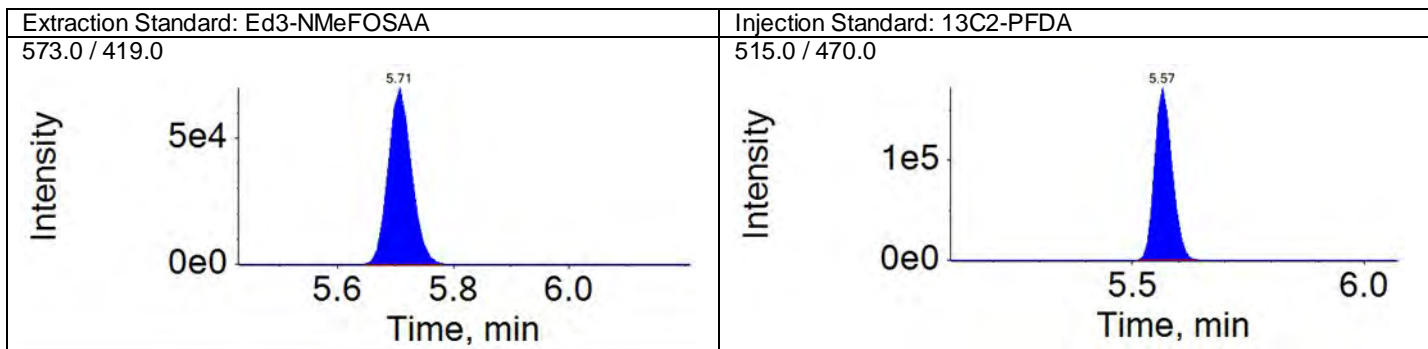
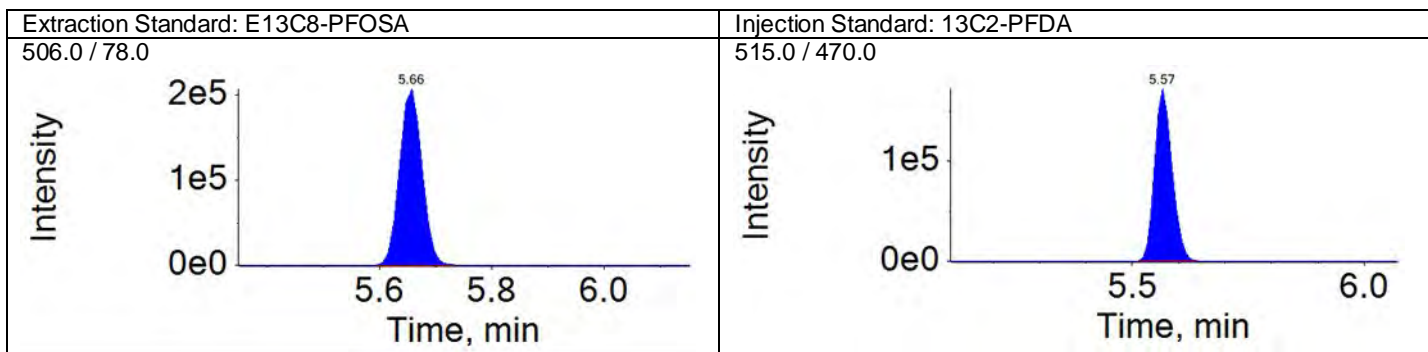
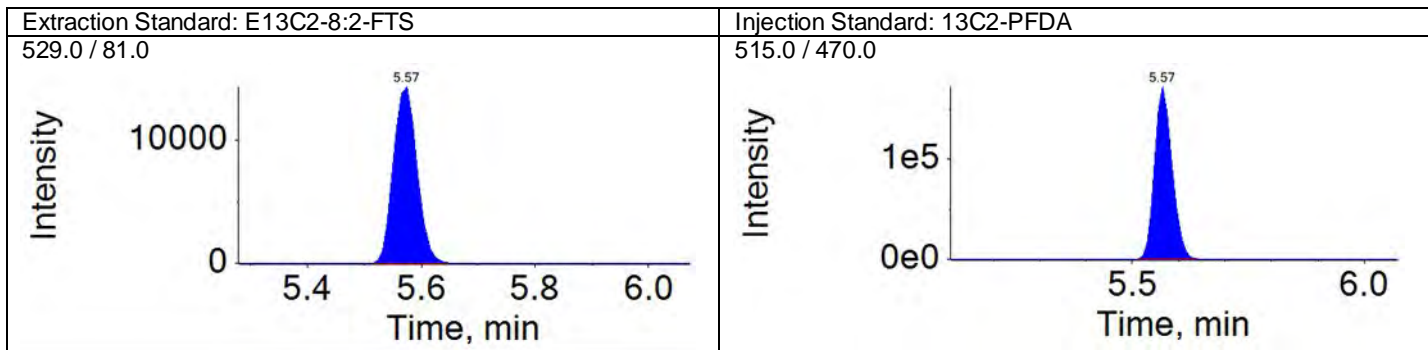
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



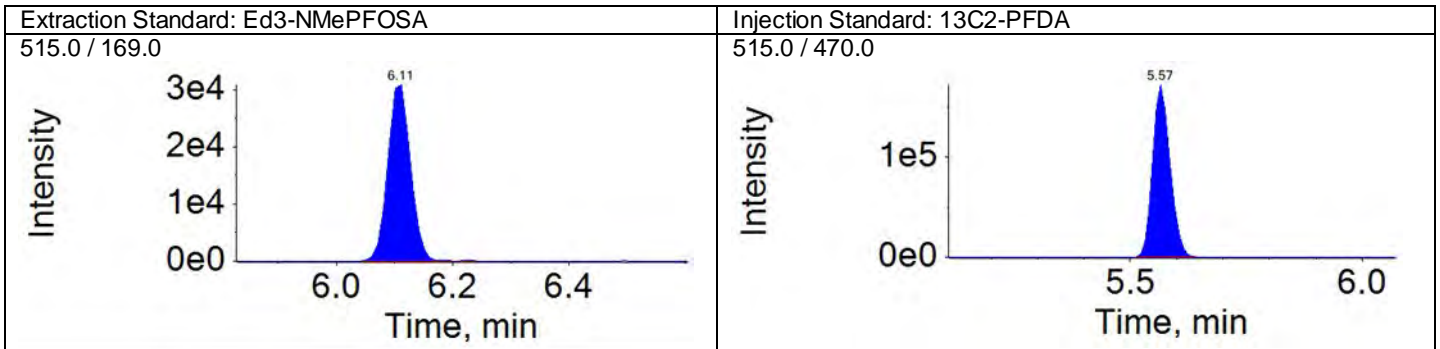
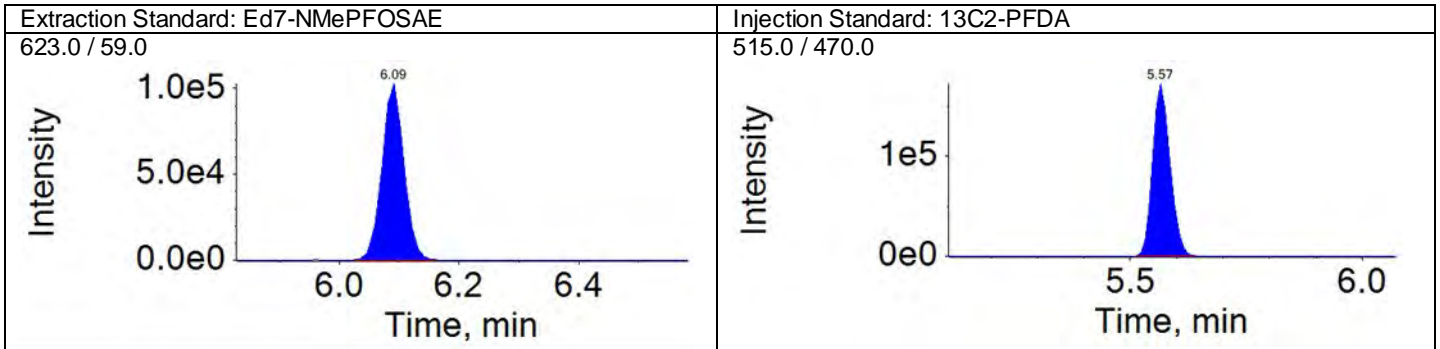
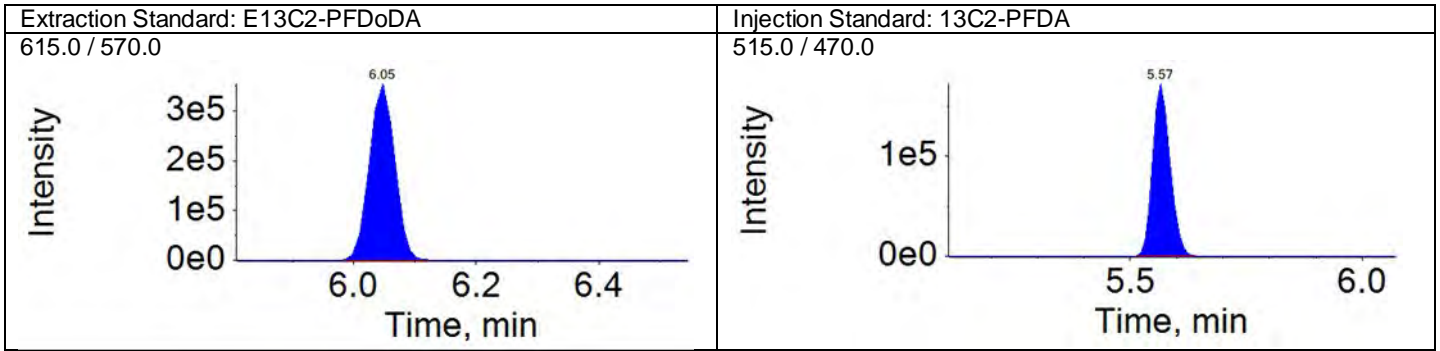
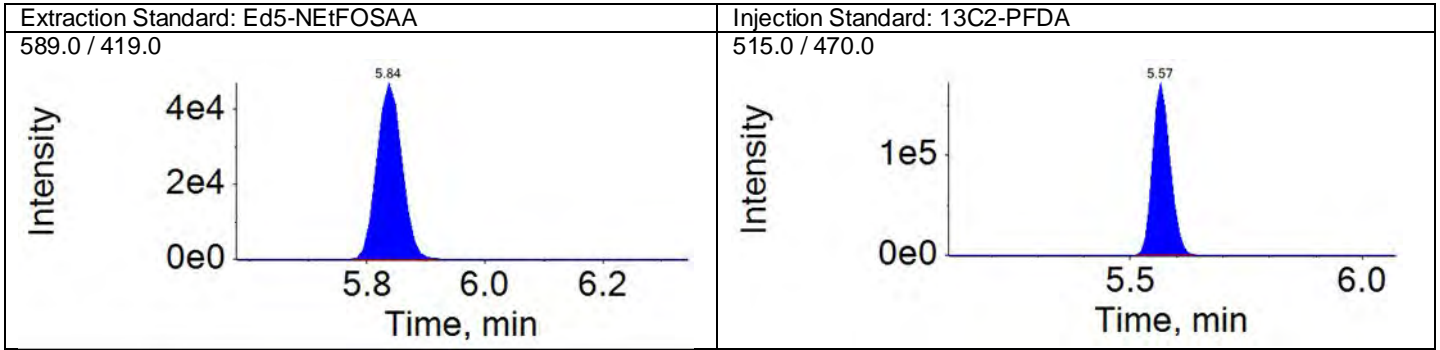
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



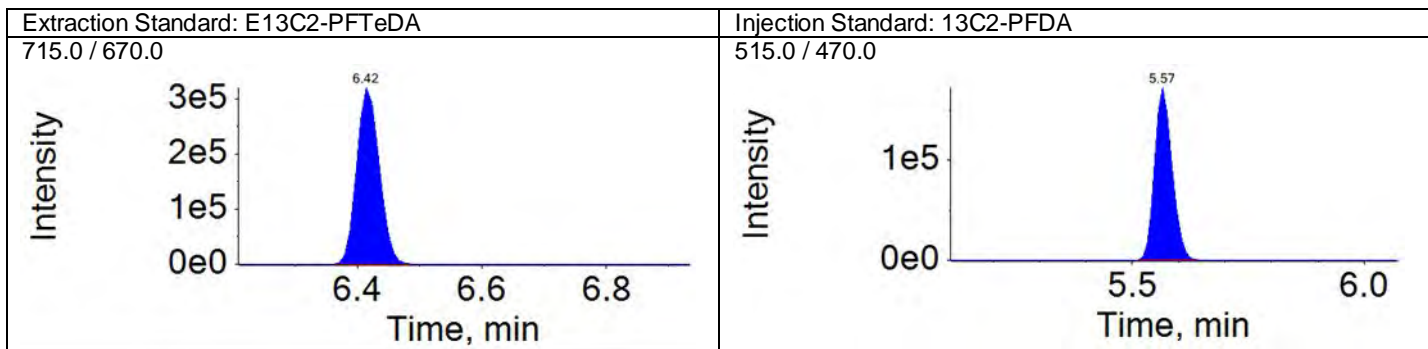
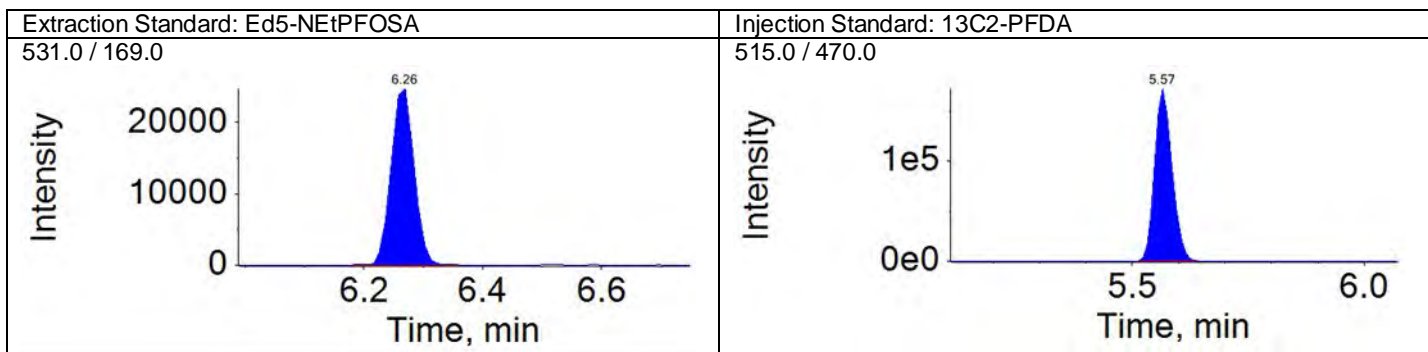
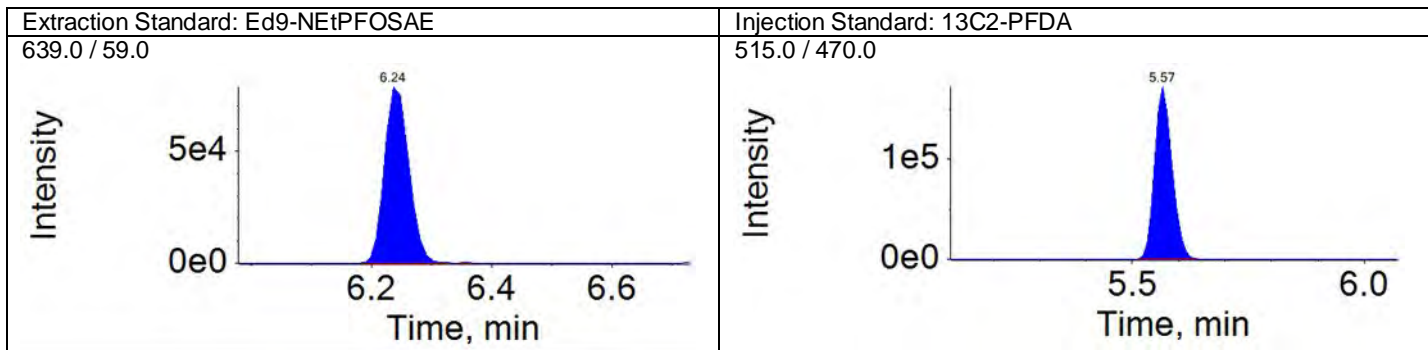
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

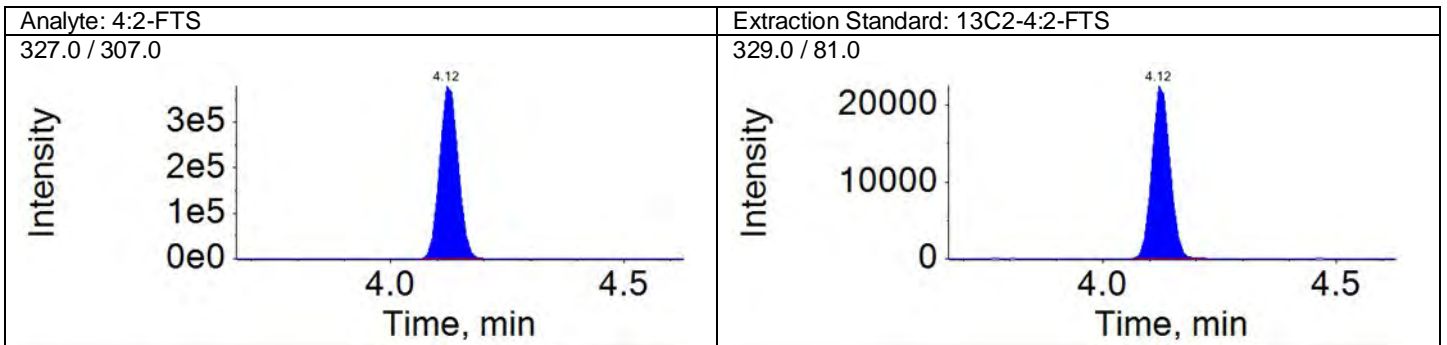
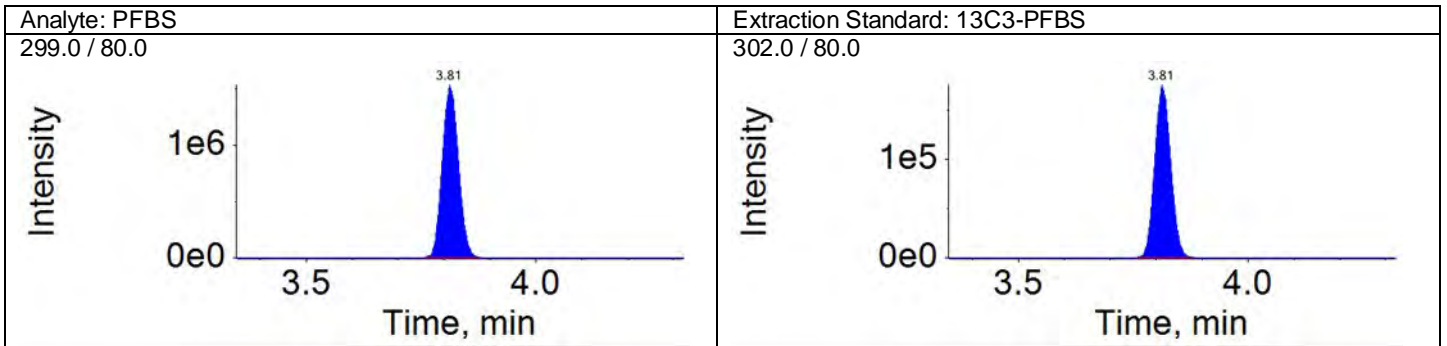
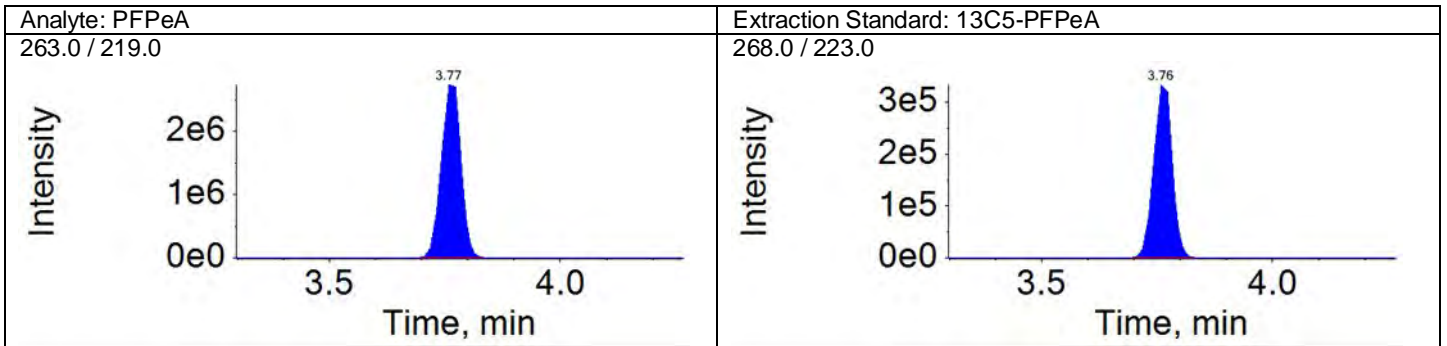
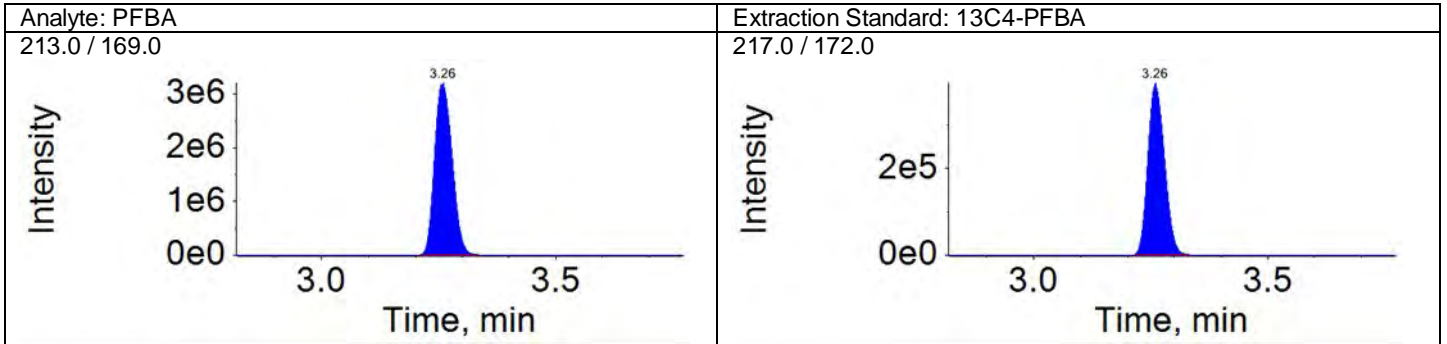
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

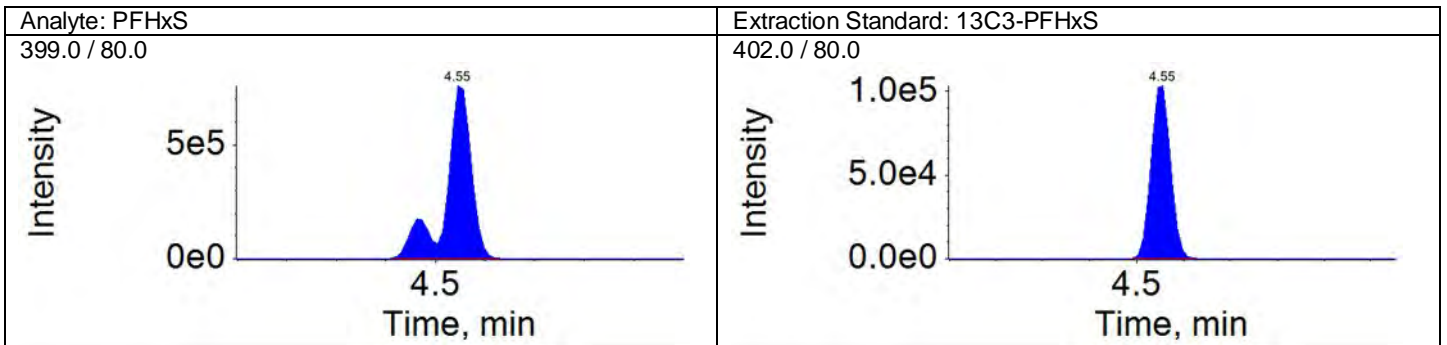
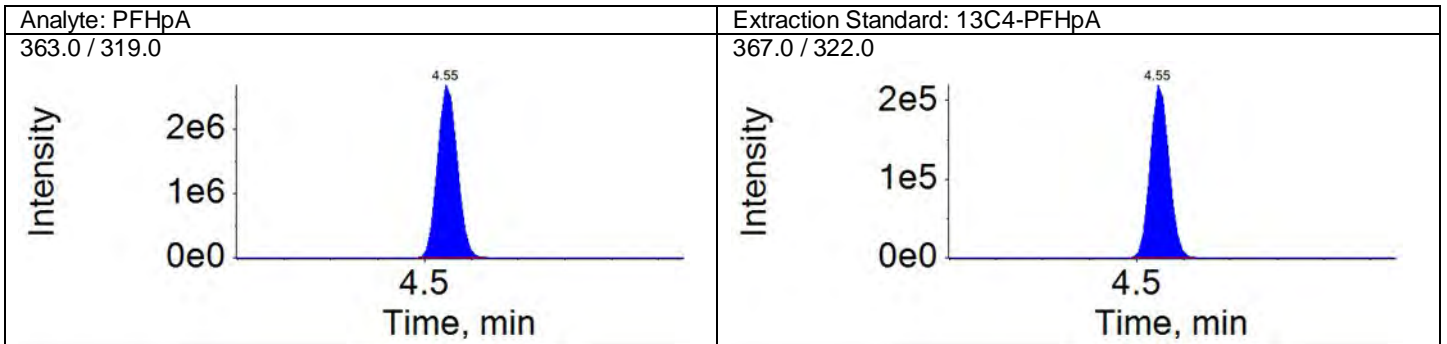
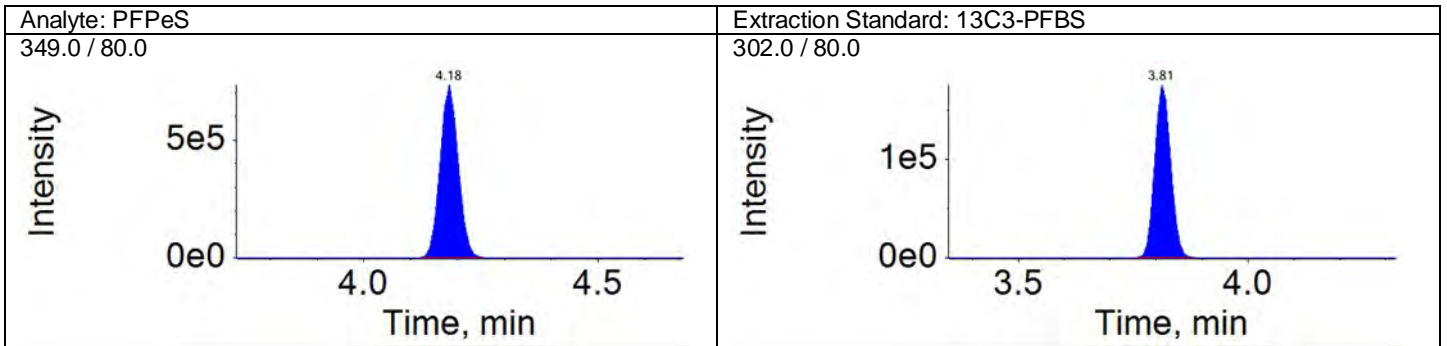
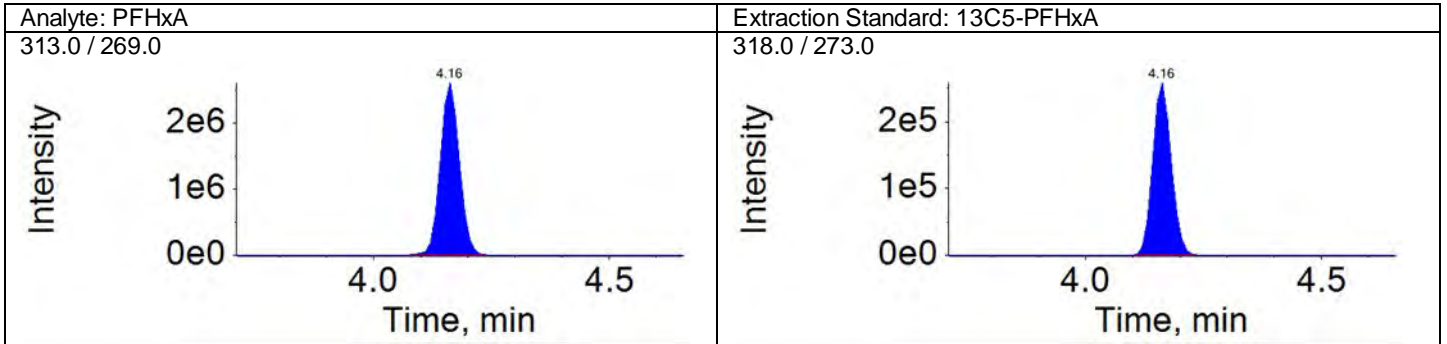
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Acquisition Method: 18AUG13\_3uL.dam





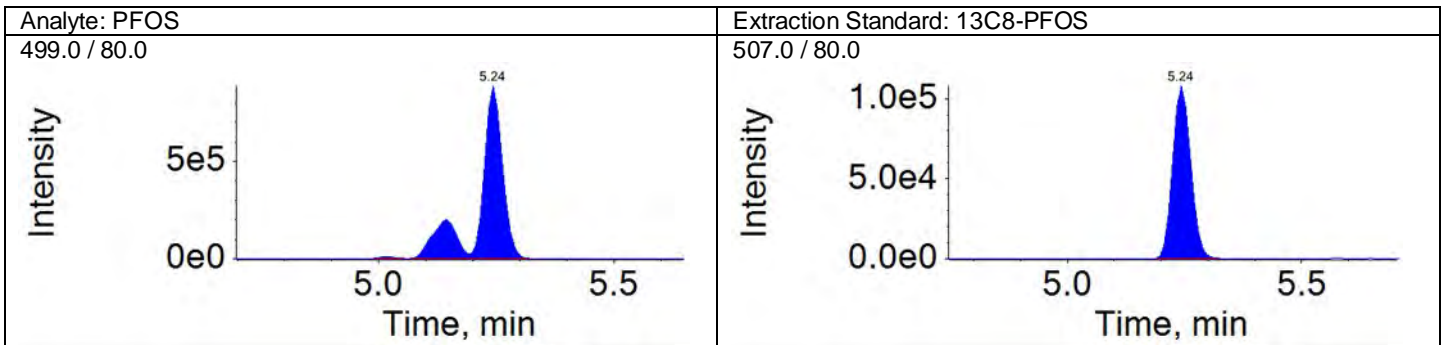
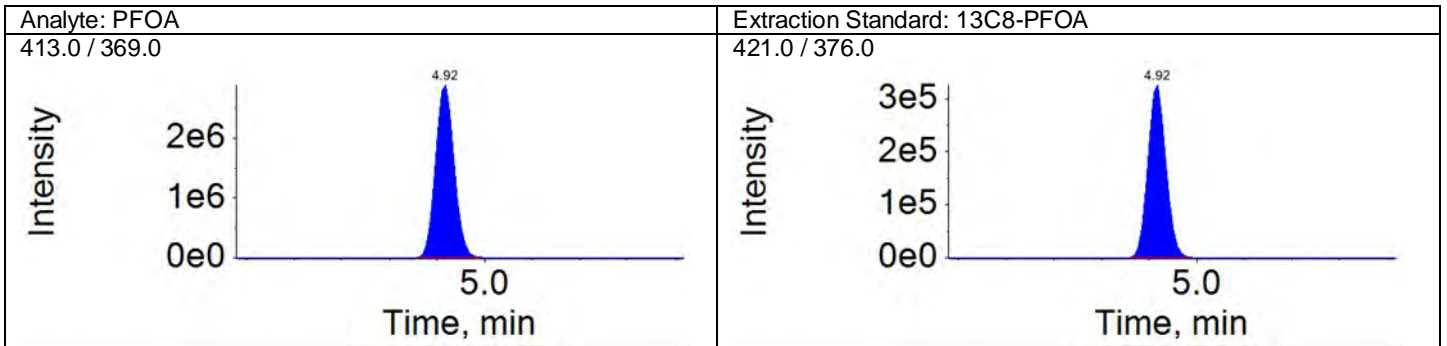
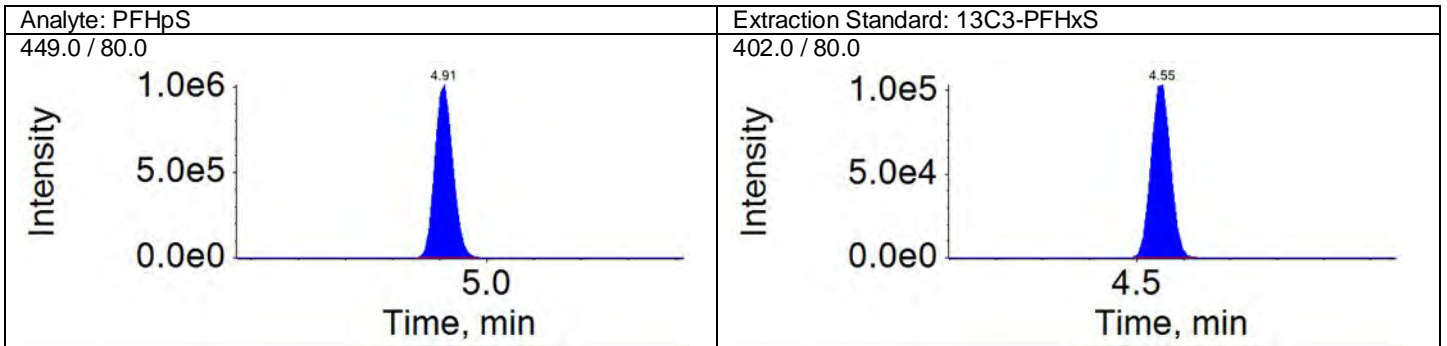
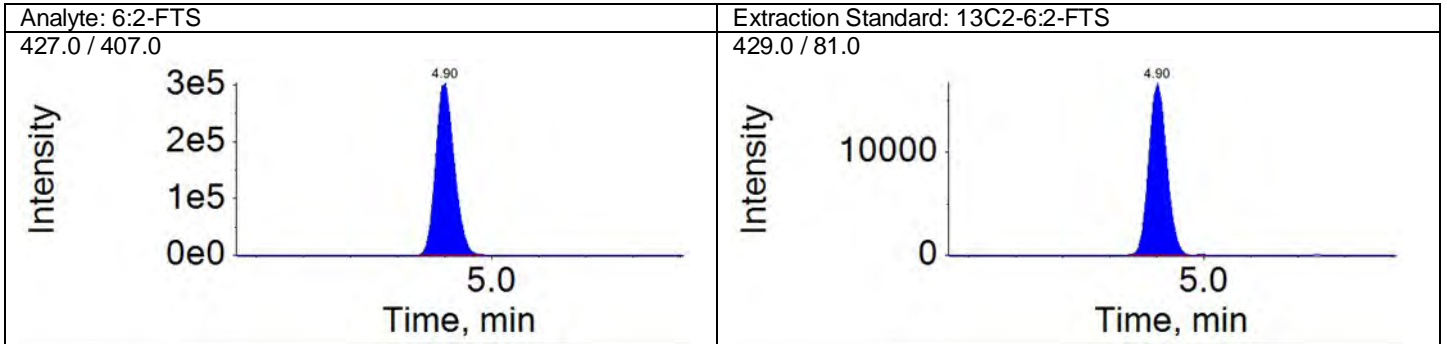
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



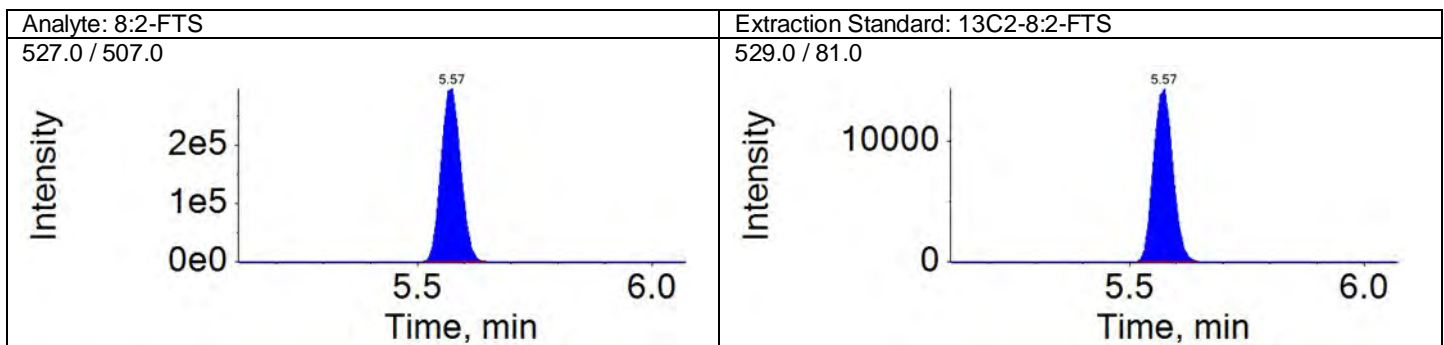
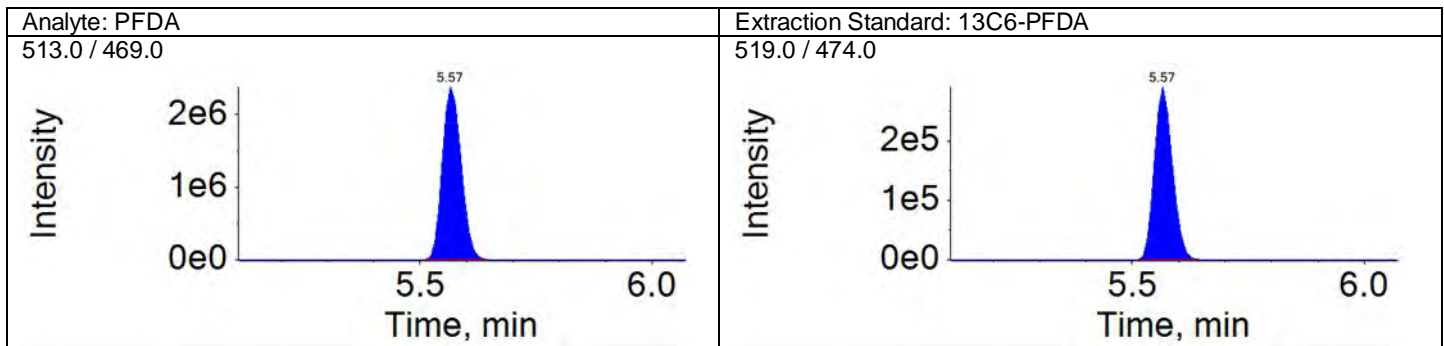
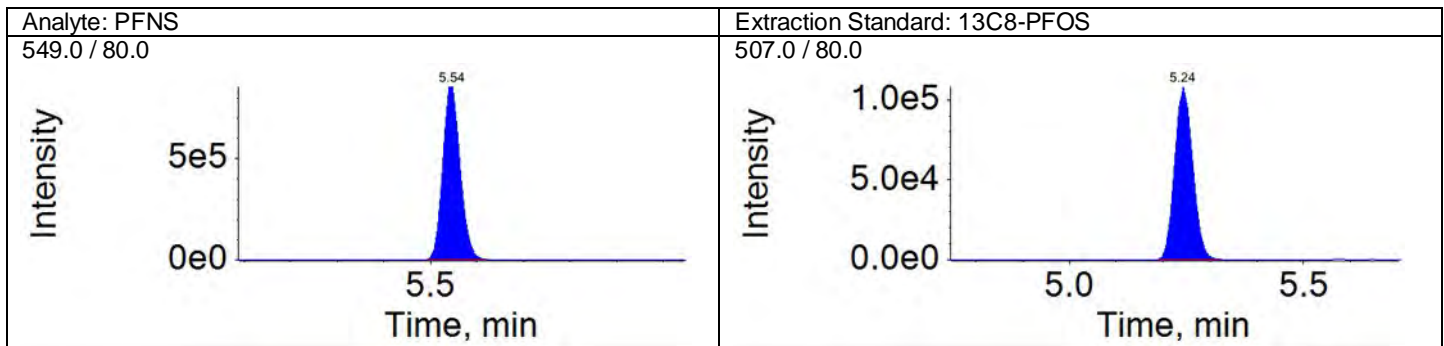
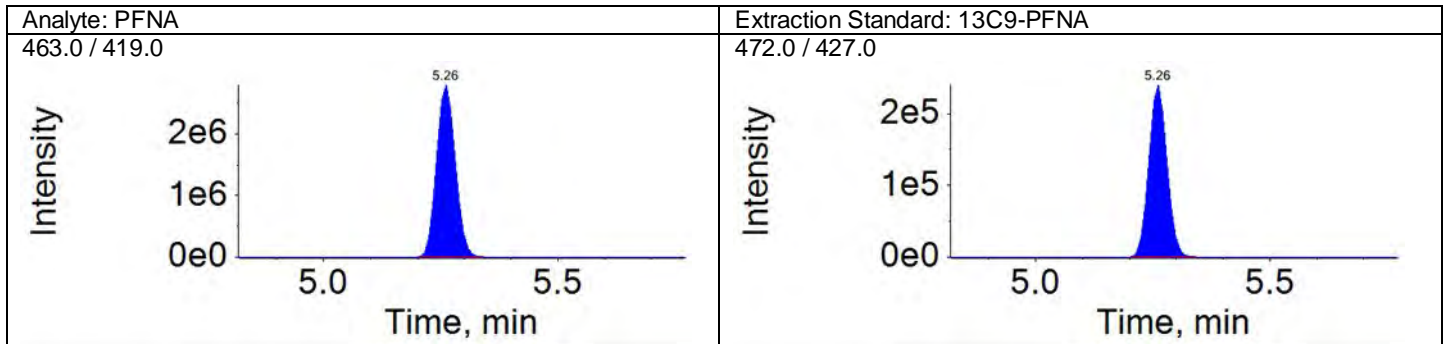
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Acquisition Method: 18AUG13\_3uL.dam



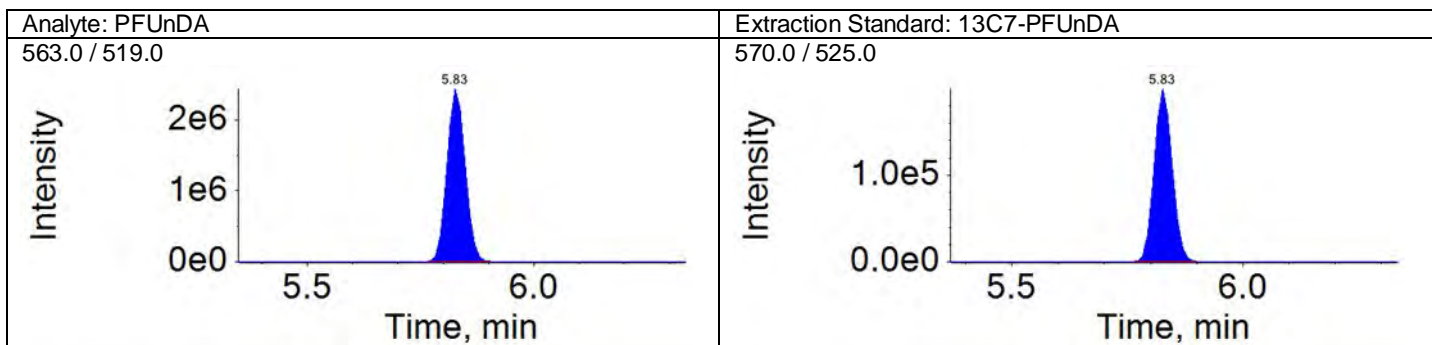
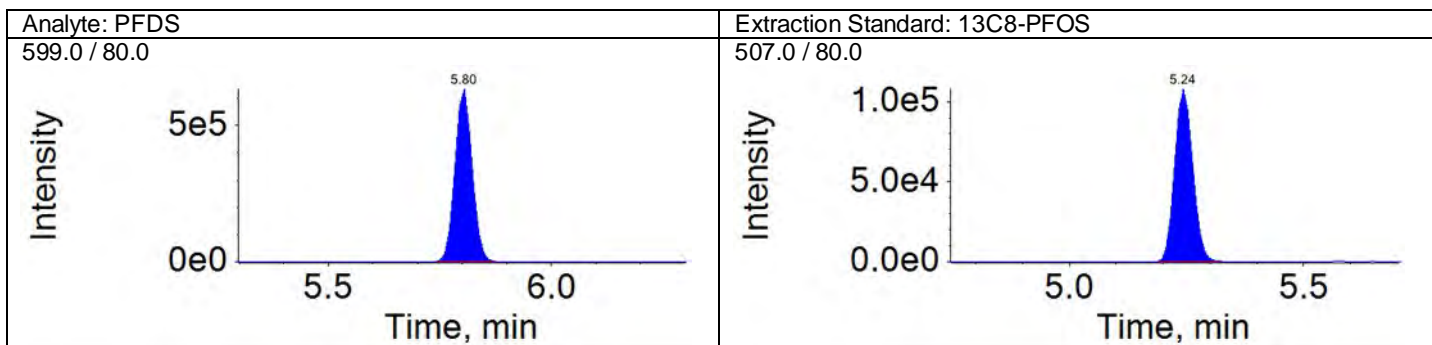
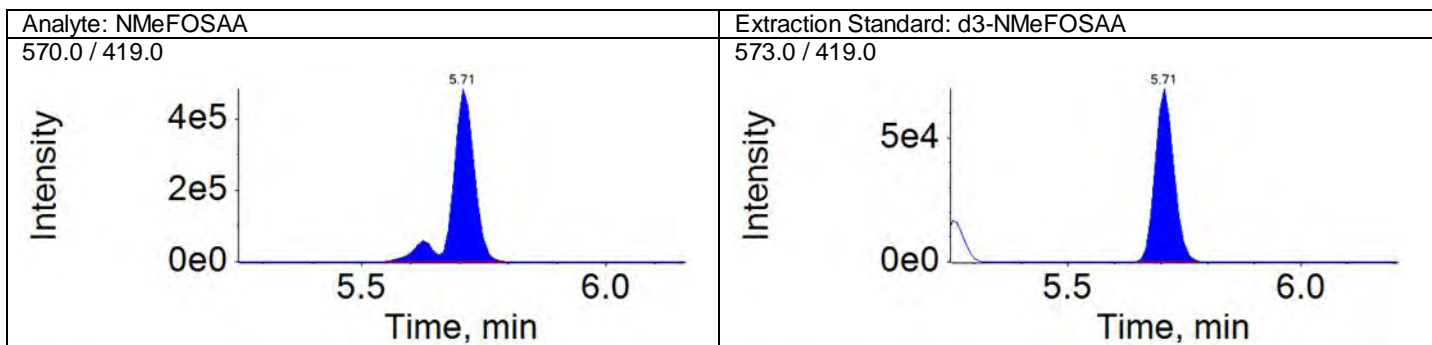
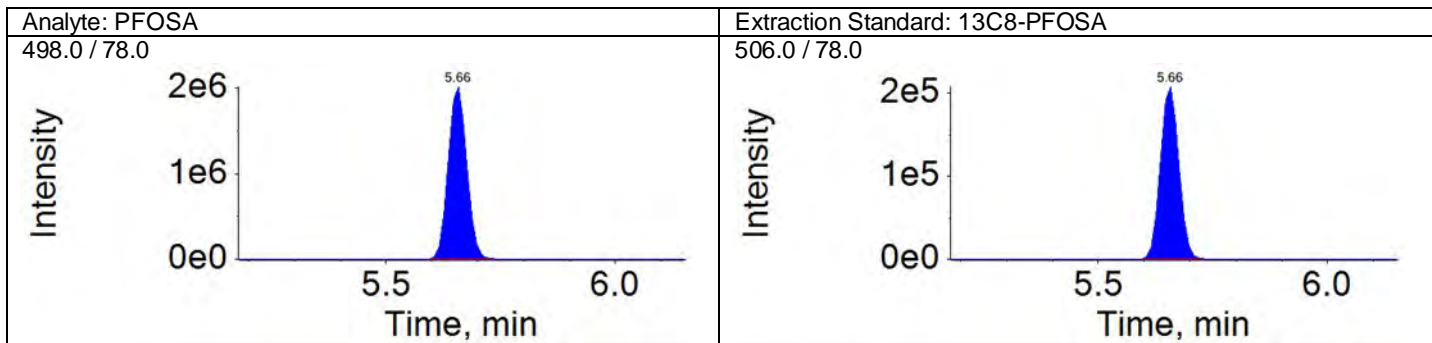
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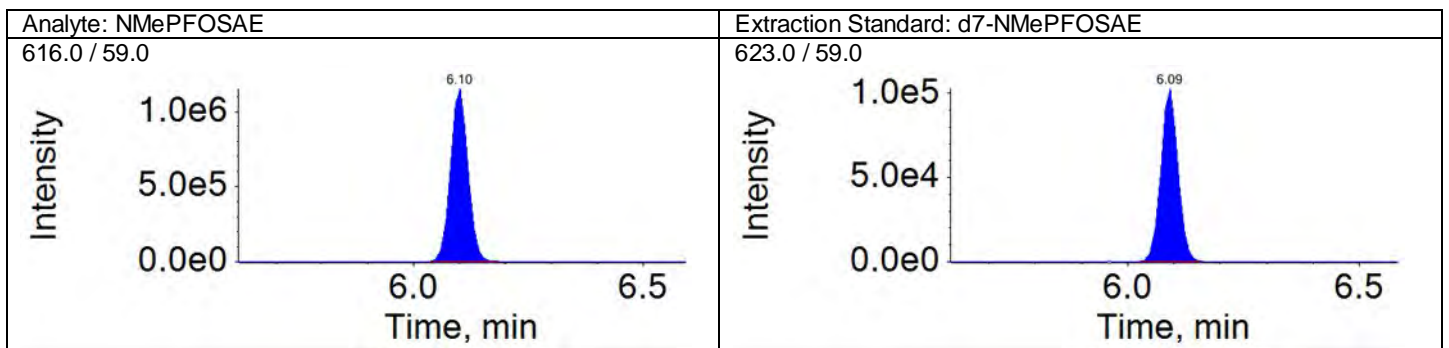
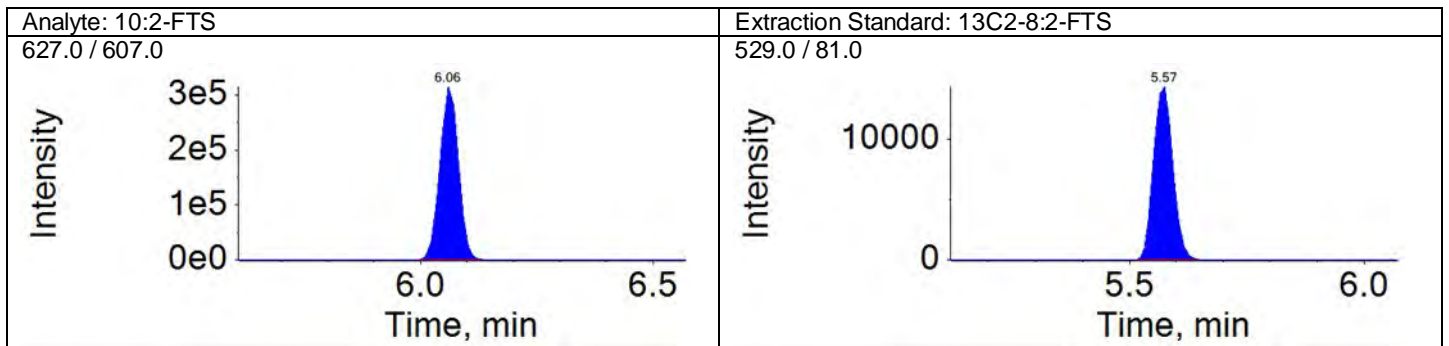
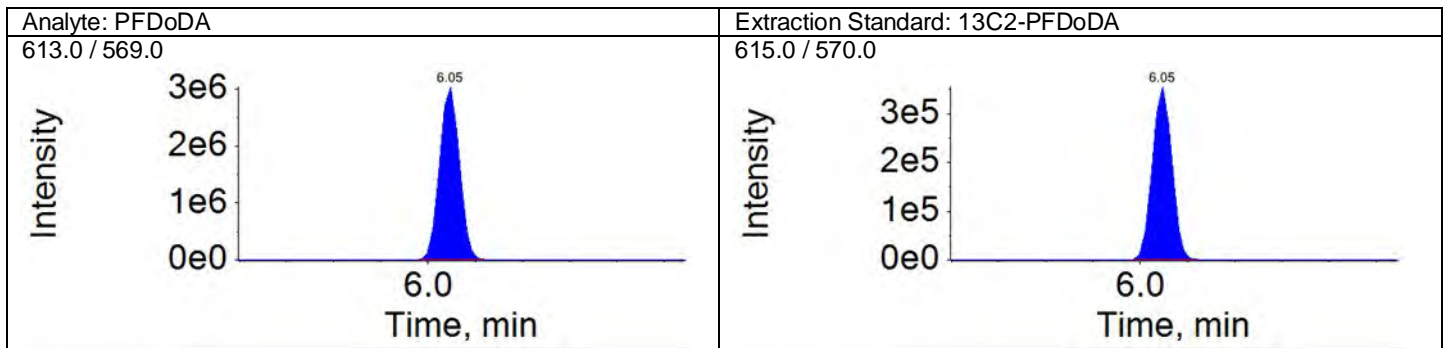
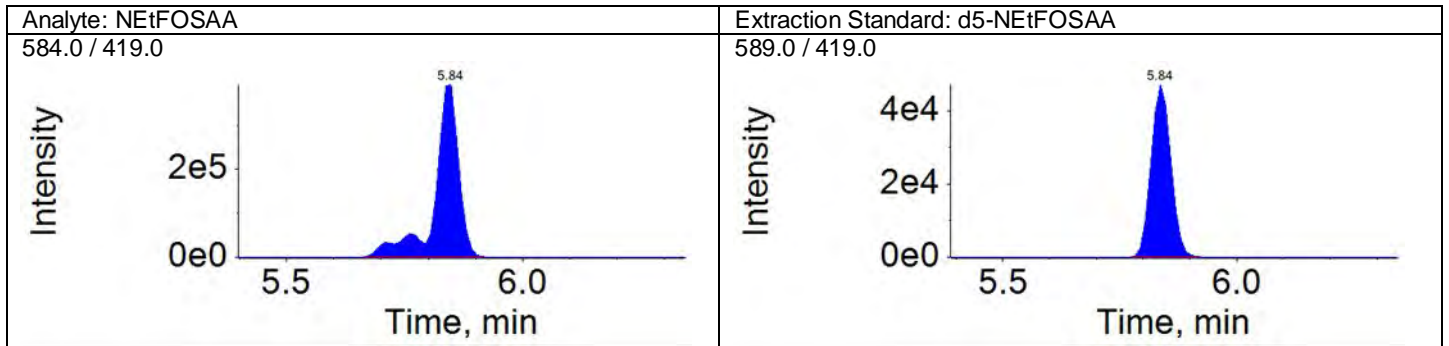
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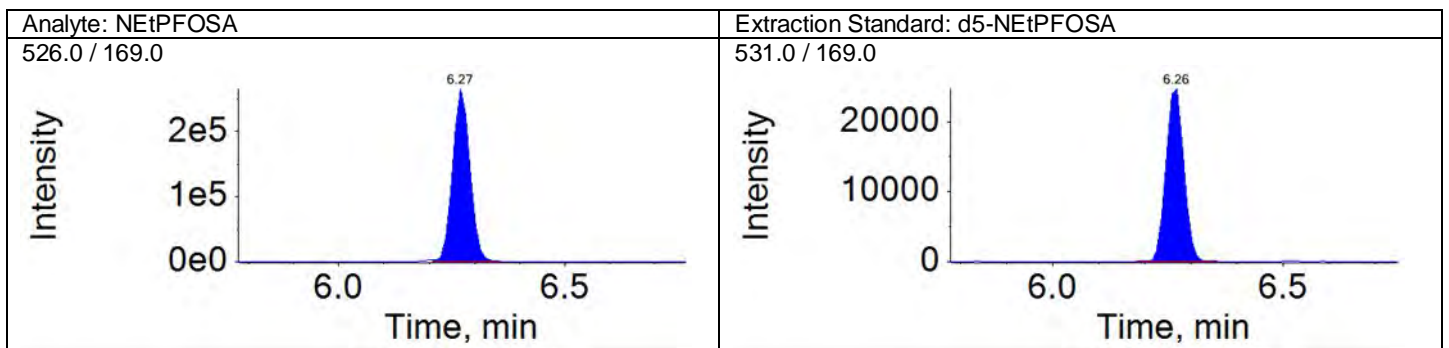
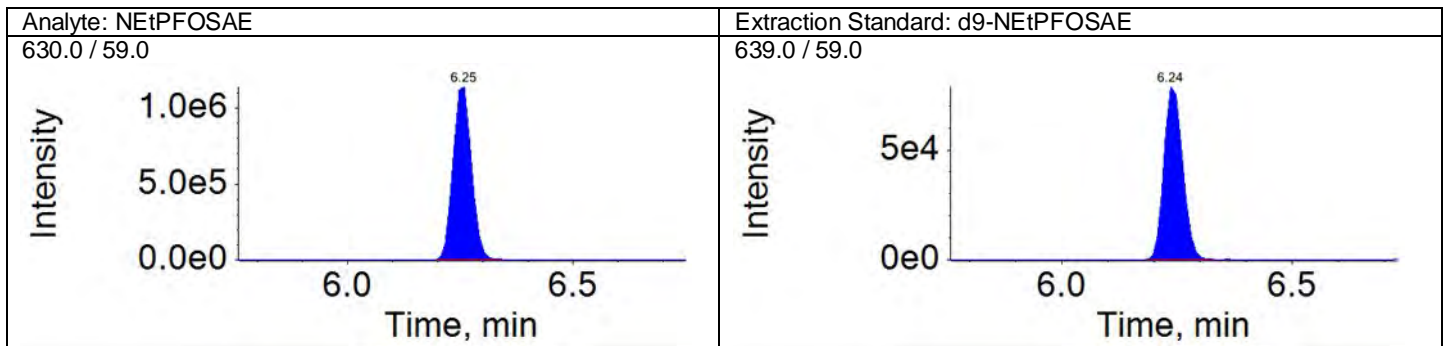
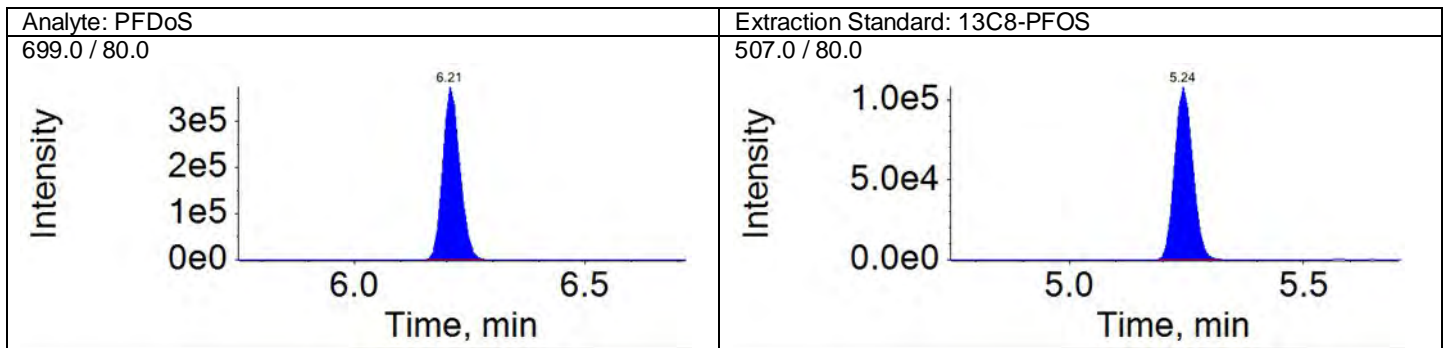
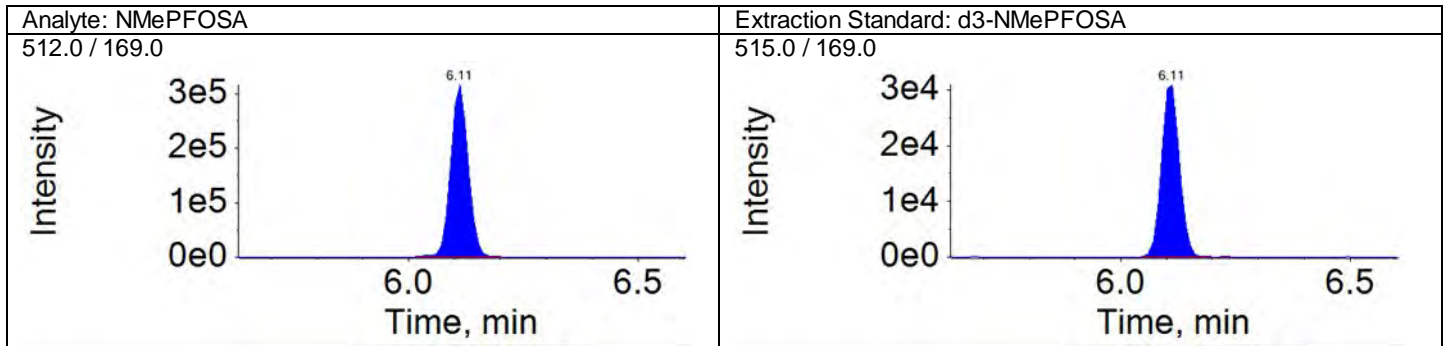
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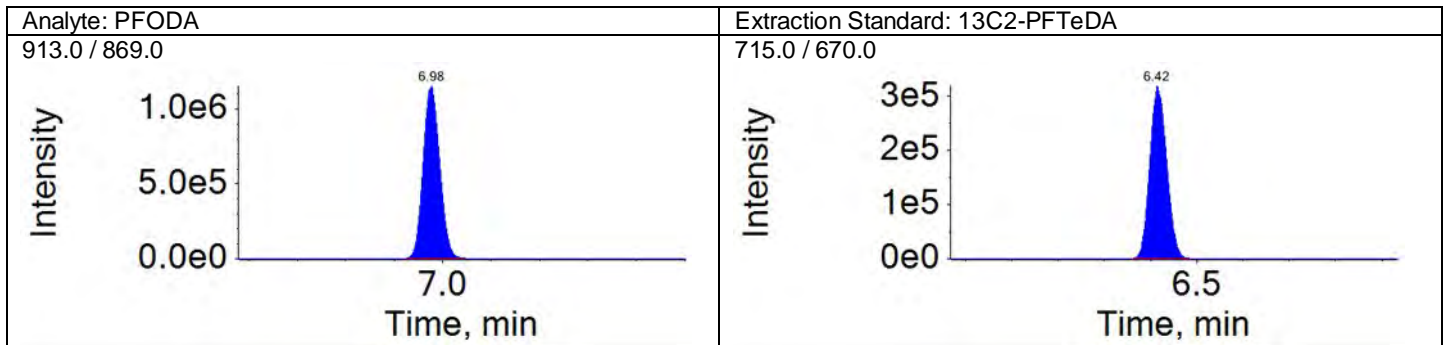
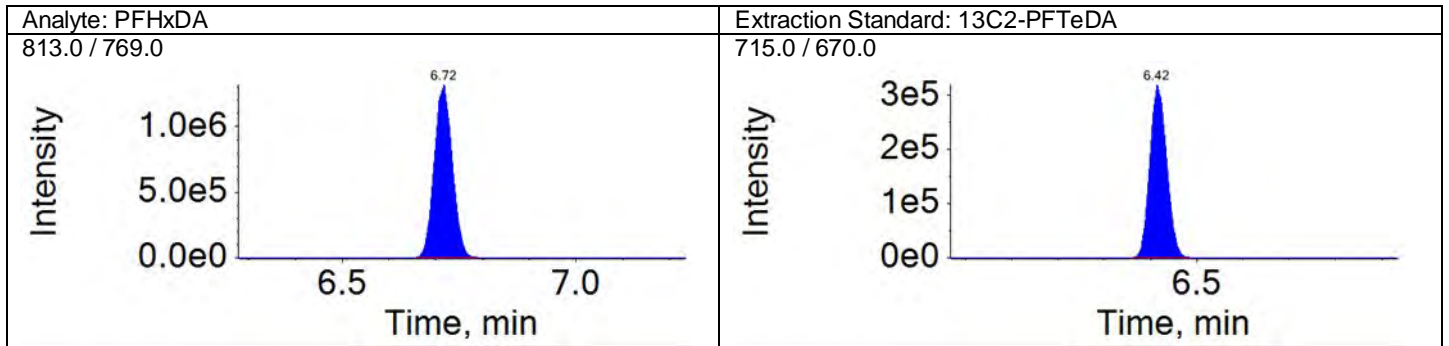
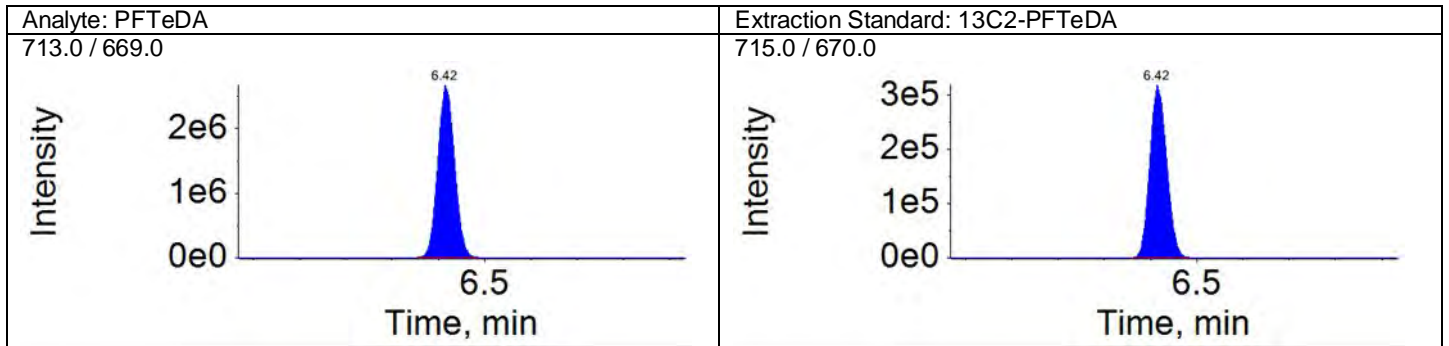
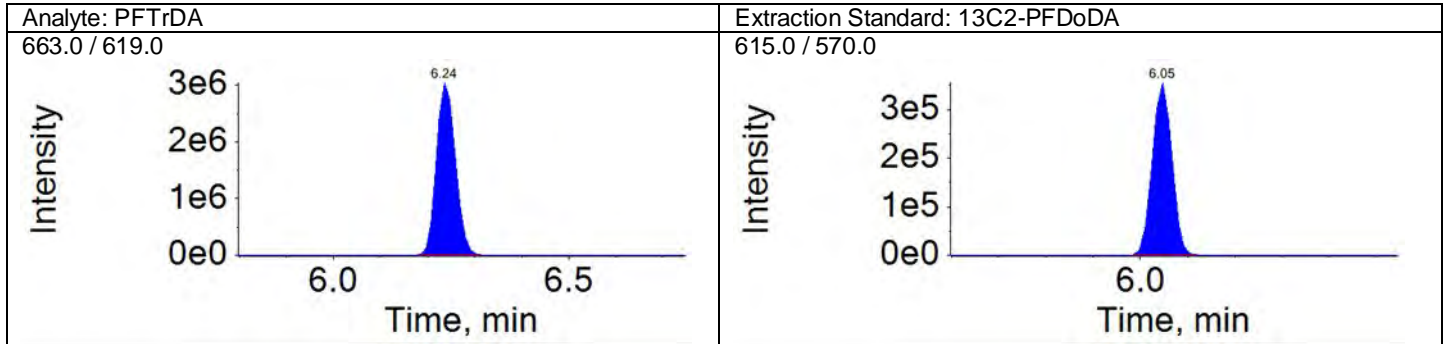
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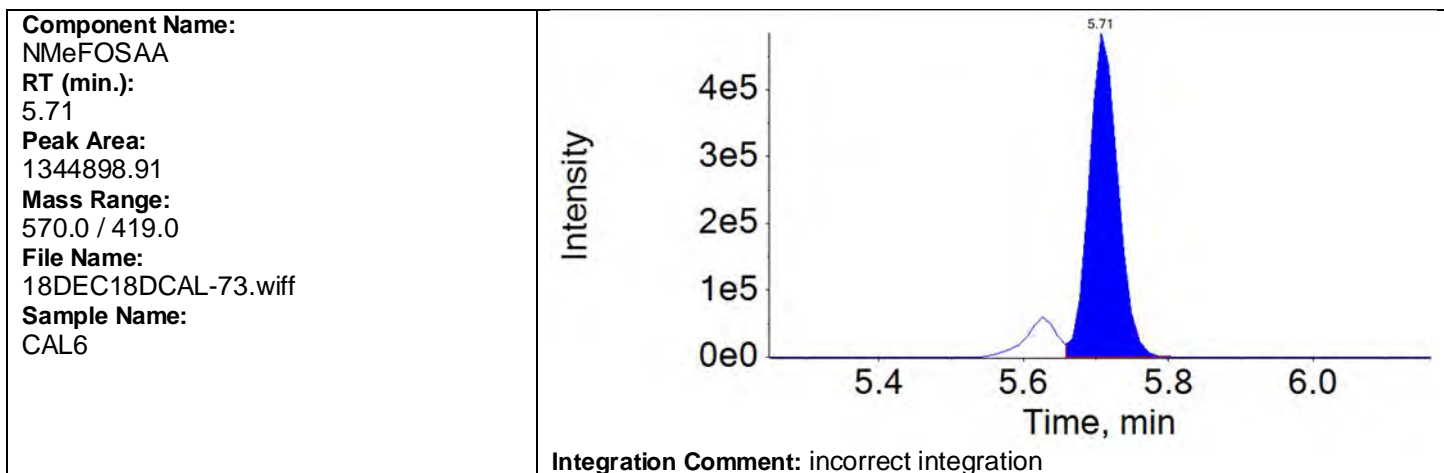
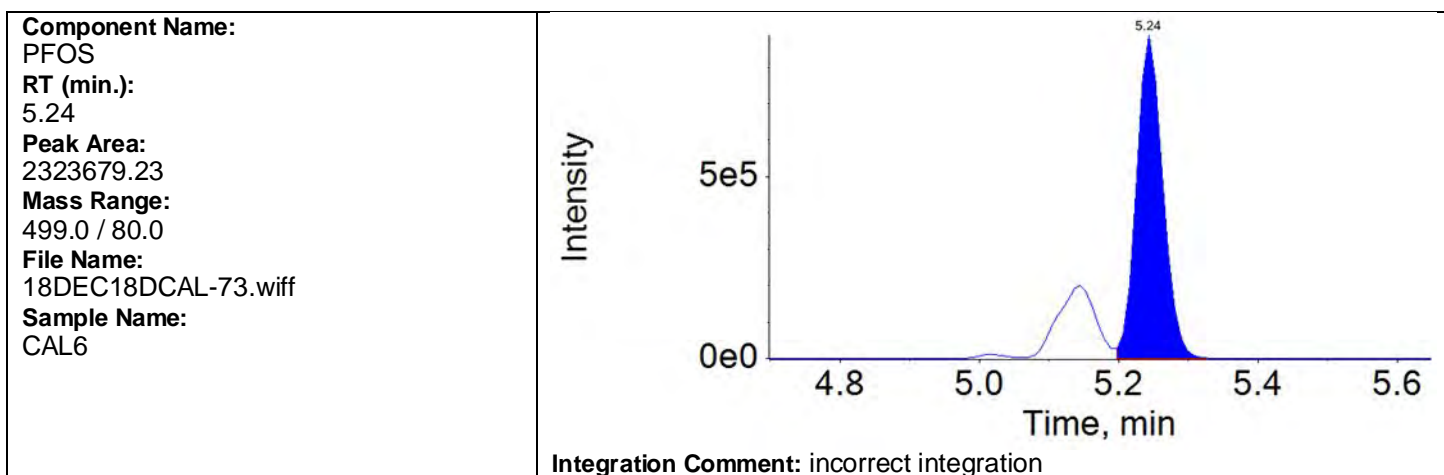
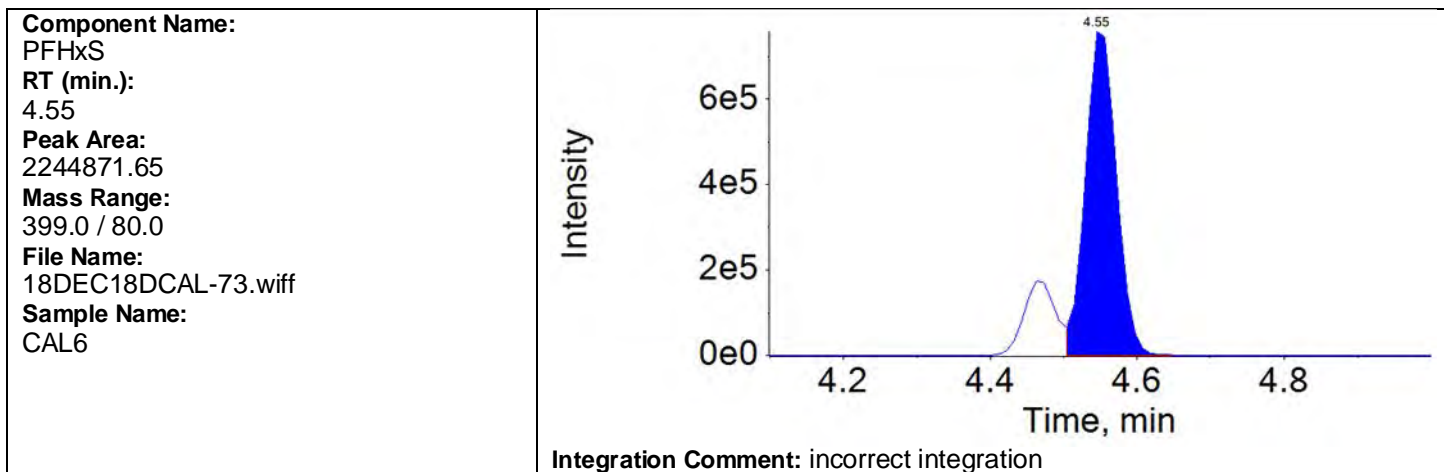
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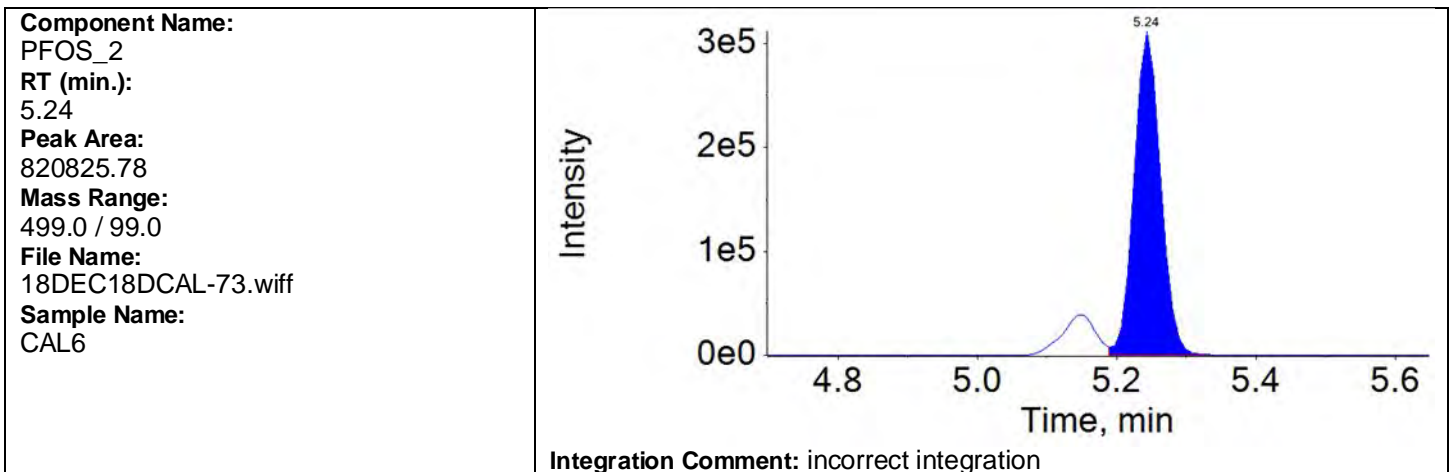
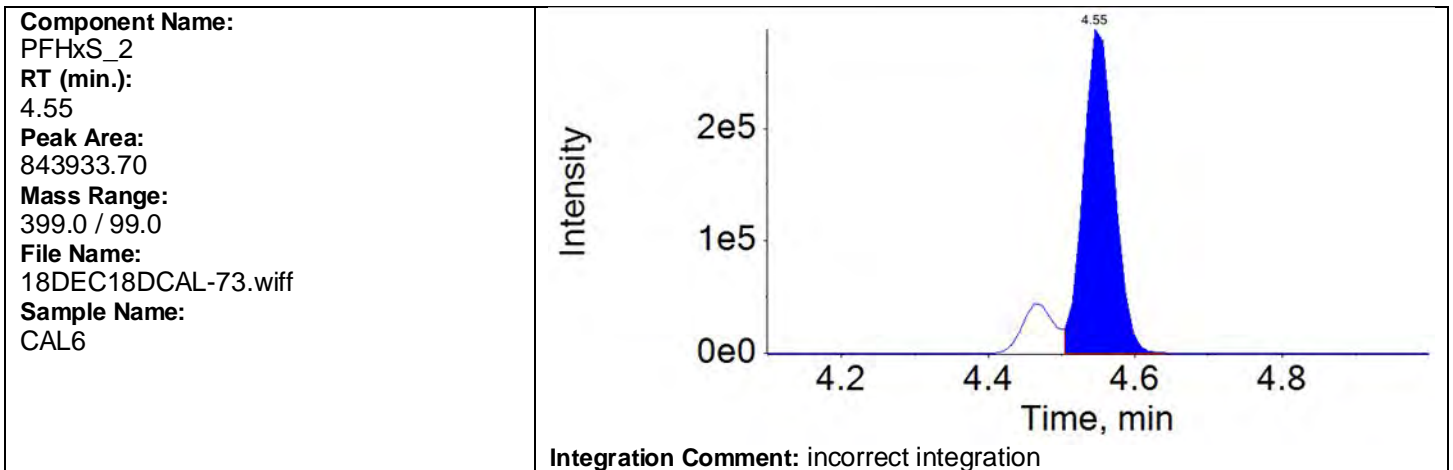
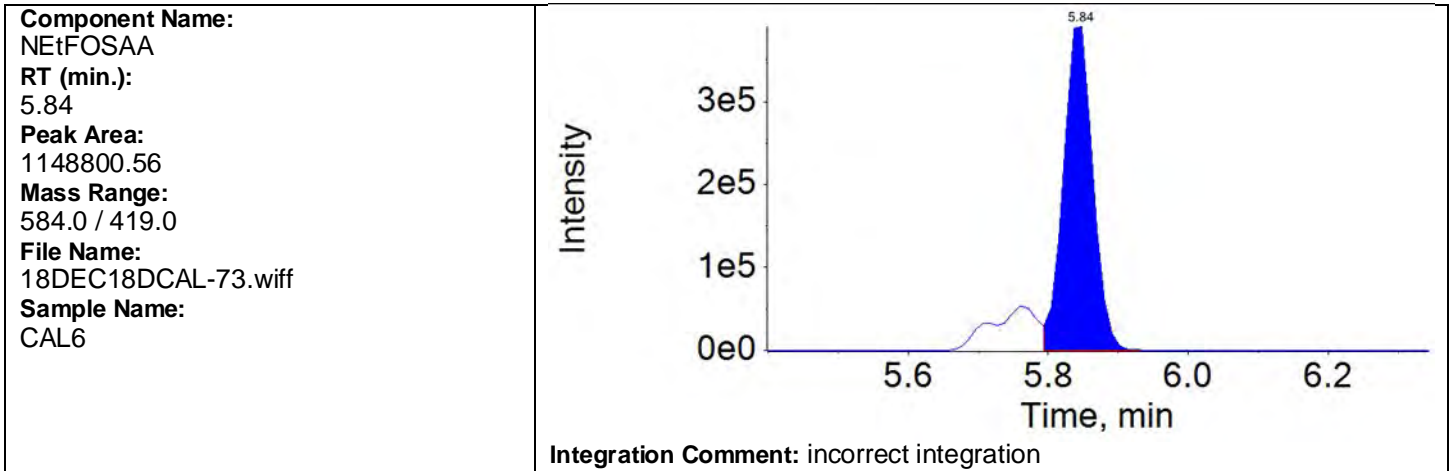
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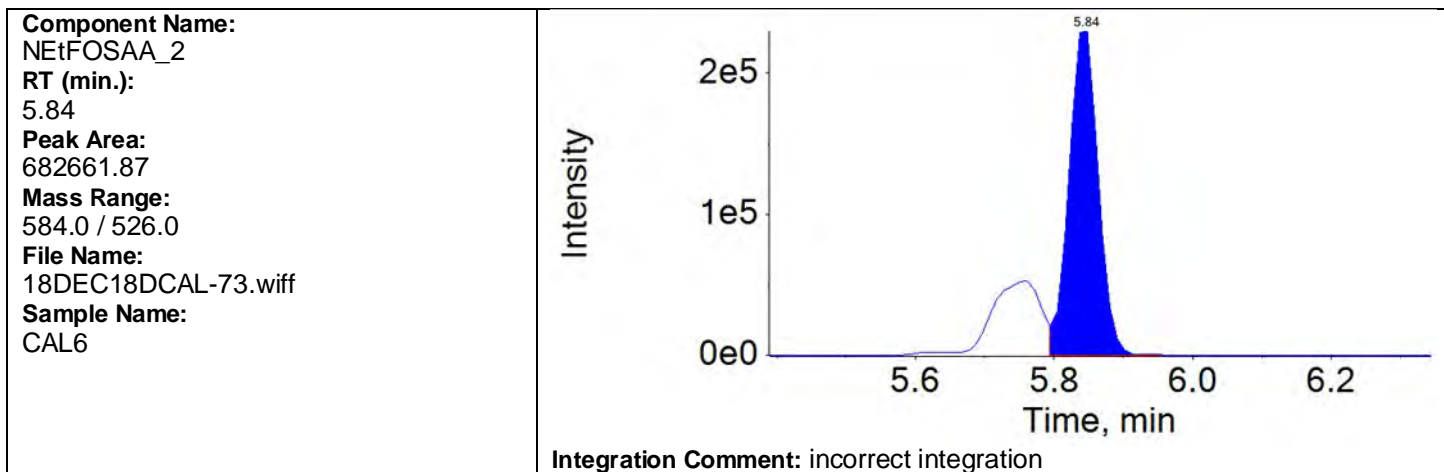
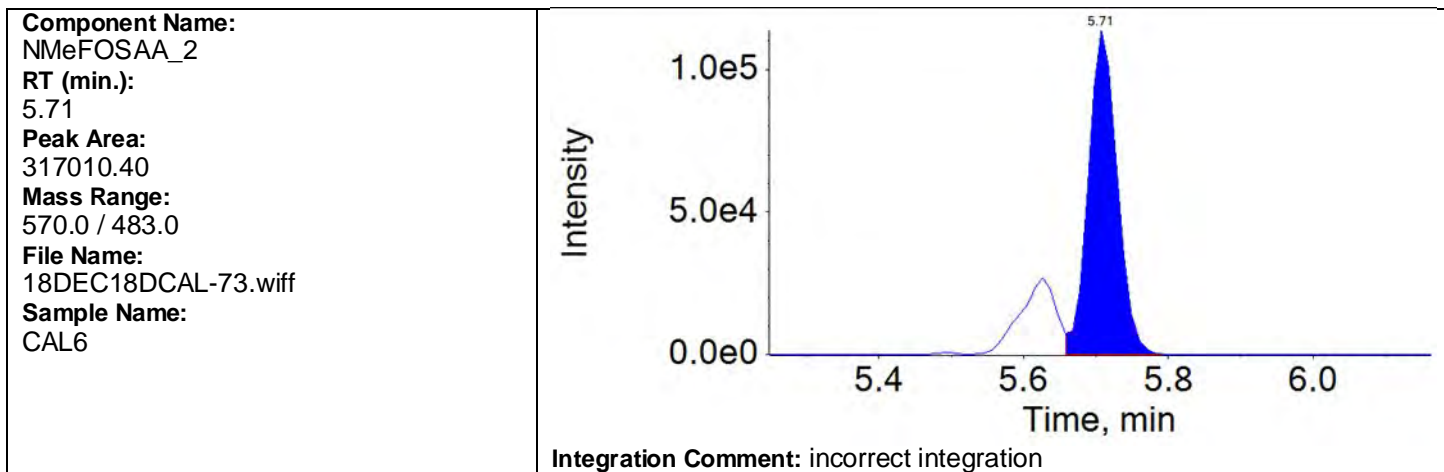
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QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM





Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

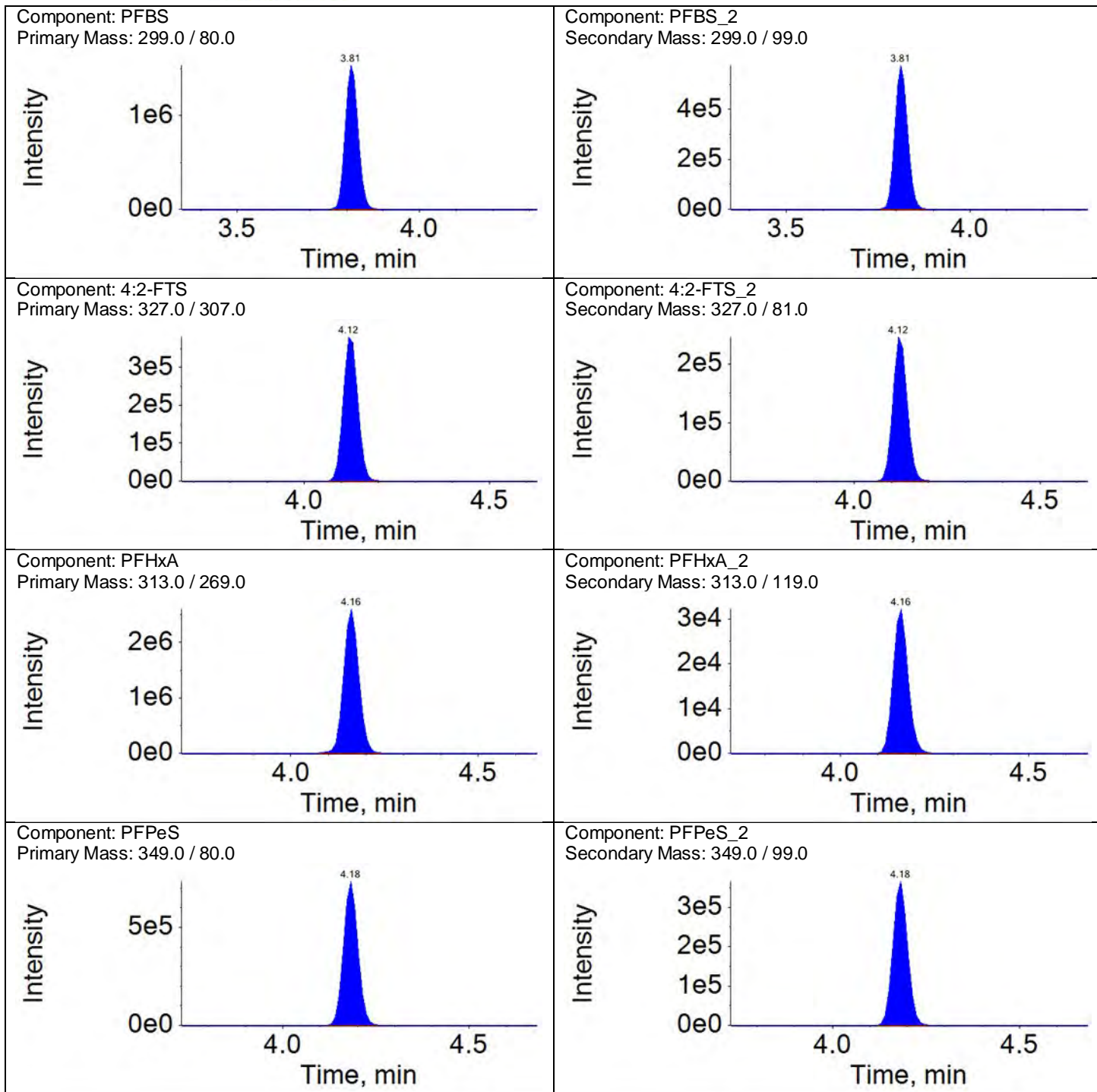
Ion Ratio Report

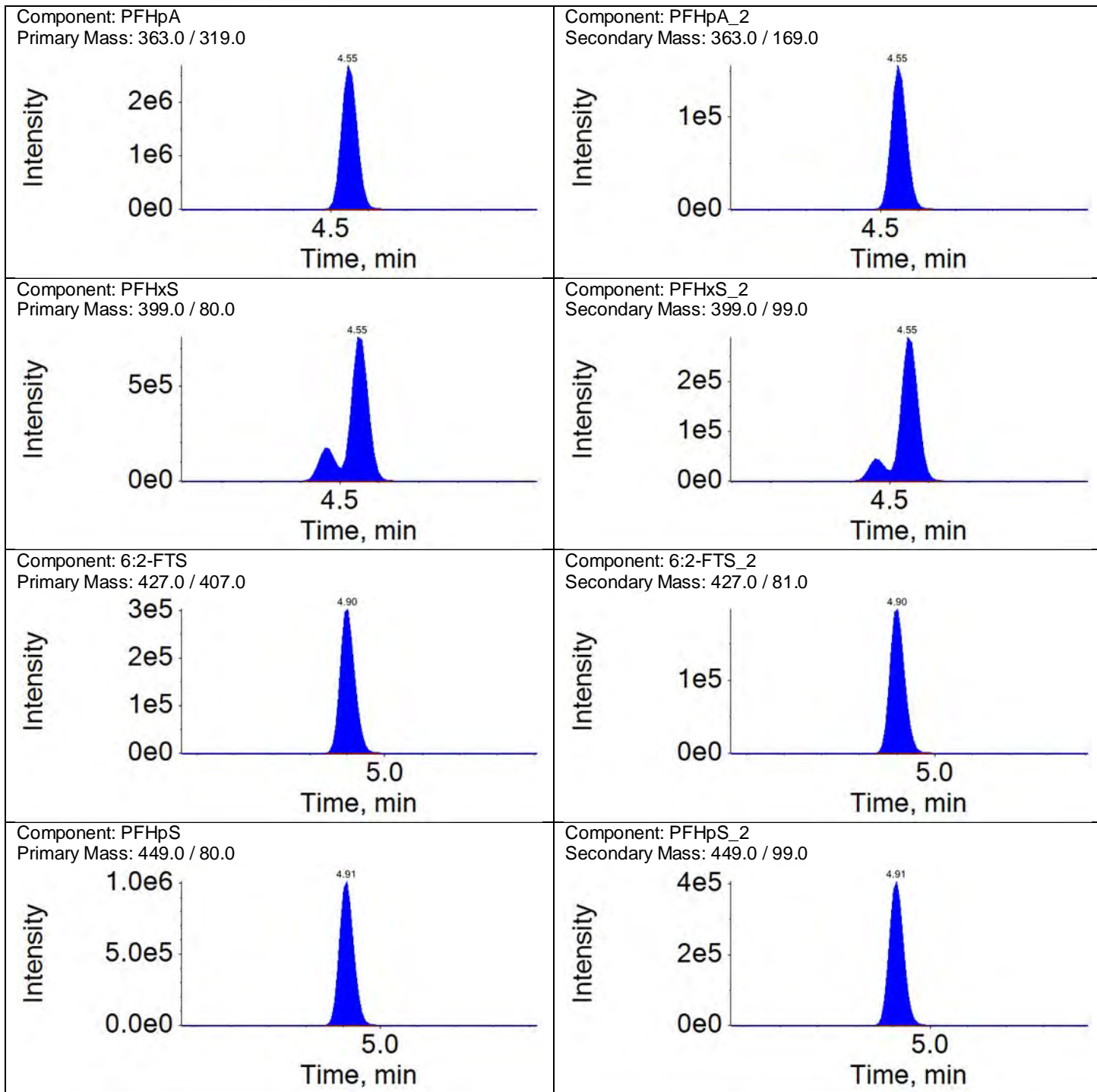
Sample Name: CAL6

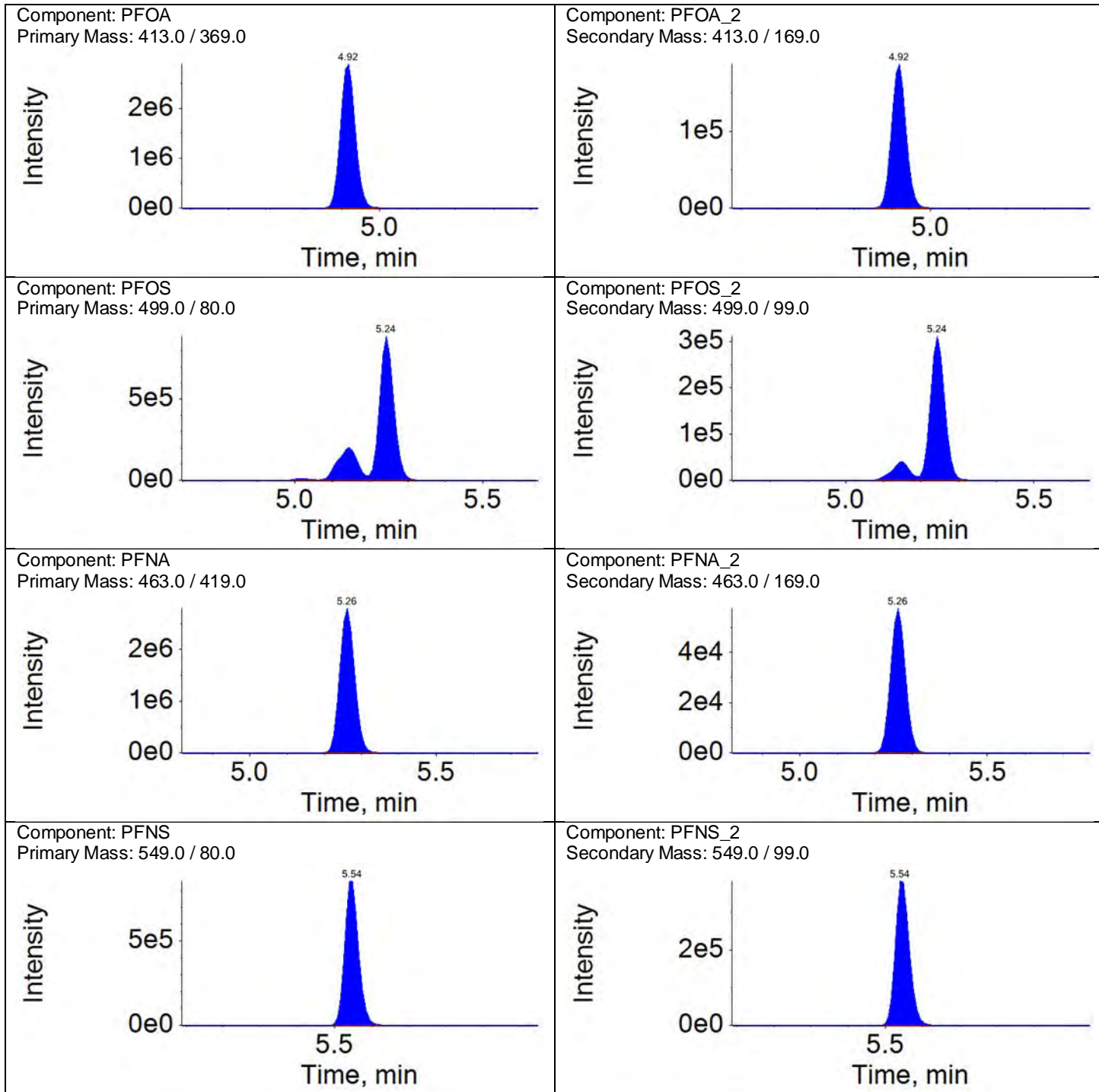
Instrument Name: LM27631

File Name: 18DEC18DCAL-73.wiff

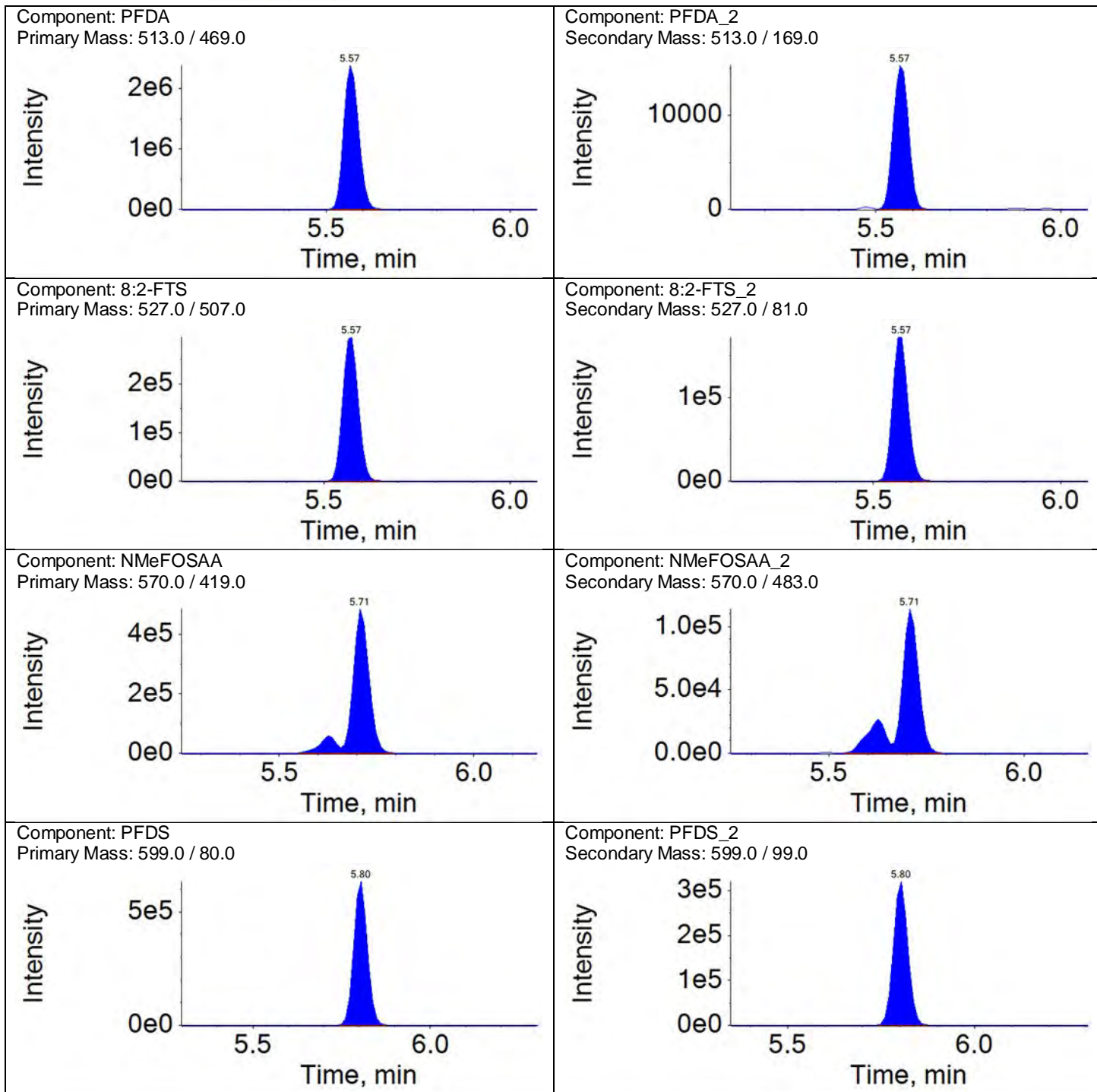
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PFBS_2	3.81	1.00	1388451.30	A	0.3686	0.3705	1	50	
4:2-FTS	4.12	1.00	1050923.97	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	659127.30	A	0.6123	0.6272	2	50	
PFHxA	4.16	1.00	7325035.52	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	88785.13	A	0.0115	0.0121	6	50	
PFPeS	4.18	1.10	1963865.79	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	994277.05	A	0.5256	0.5063	-4	50	
PFHpA	4.55	1.00	7849138.67	A	1.0000	1.0000			
PFHpA_2	4.55	1.00	445142.17	A	0.0547	0.0567	4	50	
PFHxS	4.55	1.00	2769777.02	M	1.0000	1.0000			
PFHxS_2	4.55	1.00	977028.86	M	0.3359	0.3527	5	50	
6:2-FTS	4.90	1.00	827147.20	A	1.0000	1.0000			
6:2-FTS_2	4.90	1.00	537976.87	A	0.6344	0.6504	3	50	
PFHpS	4.91	1.08	2676577.94	A	1.0000	1.0000			
PFHpS_2	4.91	1.08	1086003.30	A	0.4110	0.4057	-1	50	
PFOA	4.92	1.00	7895459.16	A	1.0000	1.0000			
PFOA_2	4.92	1.00	499363.03	A	0.0590	0.0632	7	50	
PFOS	5.24	1.00	3112288.56	M	1.0000	1.0000			
PFOS_2	5.24	1.00	951657.61	M	0.2980	0.3058	3	50	
PFNA	5.26	1.00	7783069.71	A	1.0000	1.0000			
PFNA_2	5.26	1.00	158739.24	A	0.0214	0.0204	-5	50	
PFNS	5.54	1.06	2213789.57	A	1.0000	1.0000			
PFNS_2	5.54	1.06	1005975.46	A	0.4608	0.4544	-1	50	
PFDA	5.57	1.00	6722193.64	A	1.0000	1.0000			
PFDA_2	5.57	1.00	44391.48	A	0.0064	0.0066	4	50	
8:2-FTS	5.57	1.00	866380.45	A	1.0000	1.0000			
8:2-FTS_2	5.57	1.00	492719.47	A	0.5879	0.5687	-3	50	
NMeFOSAA	5.71	1.00	1522626.11	M	1.0000	1.0000			
NMeFOSAA_2	5.71	1.00	408610.29	M	0.2625	0.2684	2	50	
PFDS	5.80	1.11	1690515.86	A	1.0000	1.0000			
PFDS_2	5.80	1.11	859476.06	A	0.4962	0.5084	2	50	
PUnDA	5.83	1.00	6790806.92	A	1.0000	1.0000			
PUnDA_2	5.83	1.00	30040.77	A	0.0035	0.0044	25	50	
NEtFOSAA	5.84	1.00	1393940.73	M	1.0000	1.0000			
NEtFOSAA_2	5.84	1.00	932797.05	M	0.6883	0.6692	-3	50	
PFDODA	6.05	1.00	8862936.24	A	1.0000	1.0000			
PFDODA_2	6.05	1.00	129605.08	A	0.0134	0.0146	9	50	
10:2-FTS	6.06	1.09	875761.61	A	1.0000	1.0000			
10:2-FTS_2	6.06	1.09	637935.34	A	0.7018	0.7284	4	50	
PFTrDA	6.24	1.03	8498735.48	A	1.0000	1.0000			
PFTrDA_2	6.24	1.03	81172.80	A	0.0093	0.0096	2	50	
PFTeDA	6.42	1.00	6745639.52	A	1.0000	1.0000			
PFTeDA_2	6.42	1.00	41861.10	A	0.0058	0.0062	7	50	
PFHxDA	6.72	1.05	3527192.44	A	1.0000	1.0000			
PFHxDA_2	6.71	1.05	220464.09	A	0.0656	0.0625	-5	50	
PFOA	6.98	1.09	2737389.49	A	1.0000	1.0000			
PFOA_2	6.97	1.09	73331.48	A	0.0273	0.0268	-2	50	

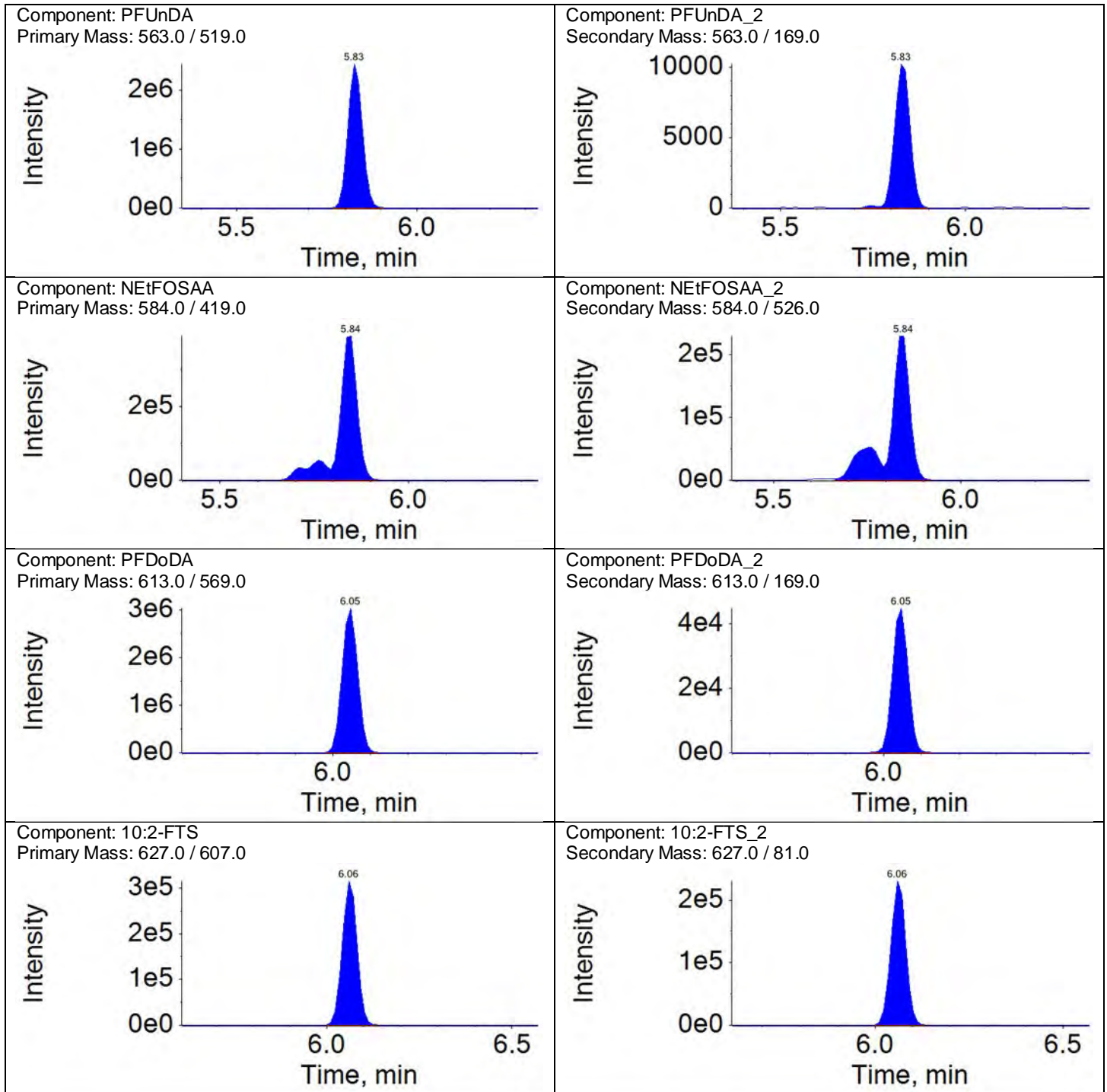


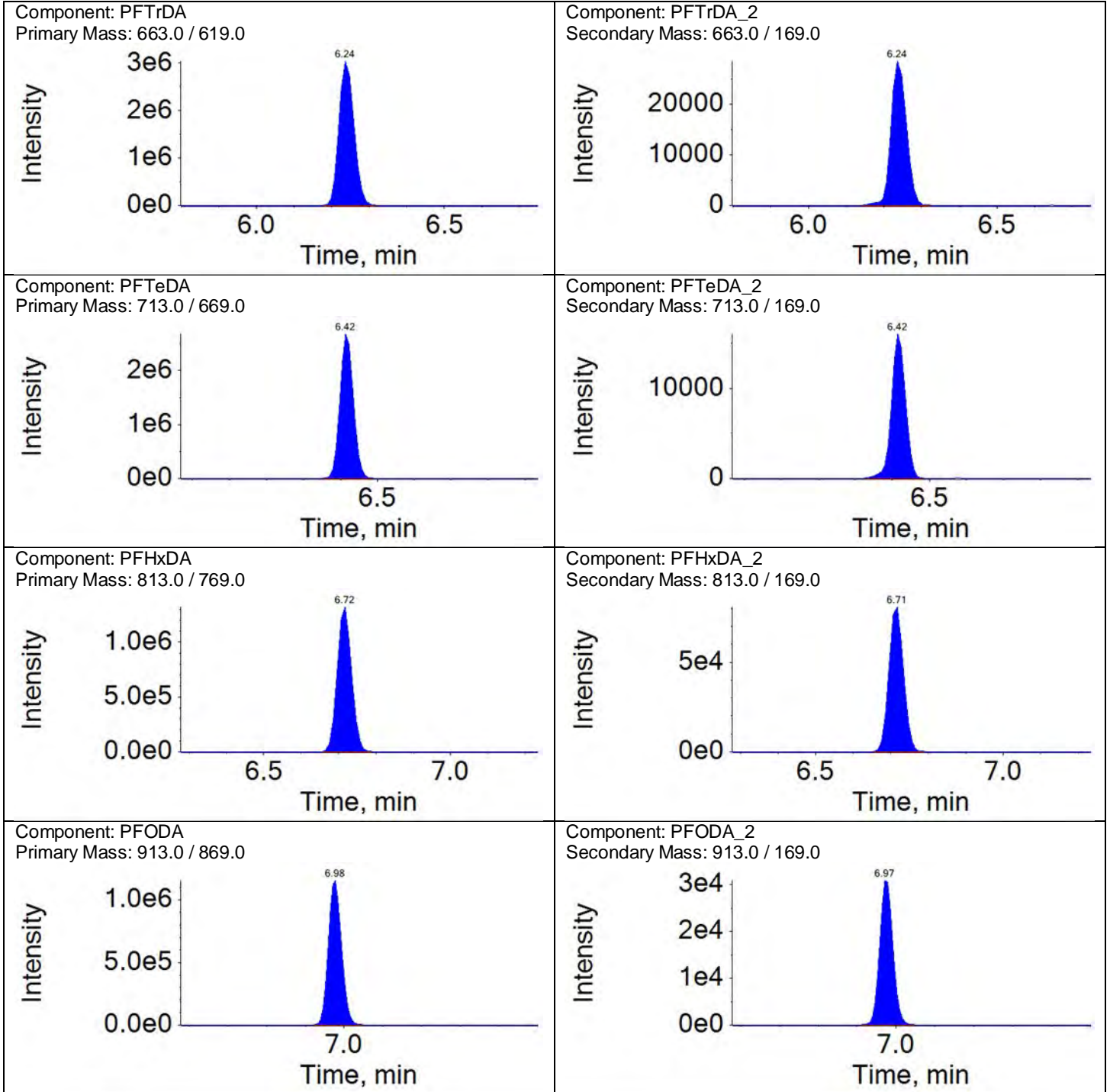












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CAL7	Data File:	18DEC18DCAL-74.wiff
Sample ID:	CALBRN71833B	Acquis Date:	2018-12-19T00:28:56
Sample Type:	Standard	Instrument:	LM27631
Vial Position:	9	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	763214.5	941251.6	-19	50	
13C2-PFOA	5.0	484733.4	485595.3	0	50	
13C4-PFOS	4.8	246274.5	292182.6	-16	50	
13C2-PFDA	5.0	459096.6	467216.0	-2	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	849248.2	13C3-PFBA	763214.5	1.113	5.000	4.927	99	70-130	
E13C5-PFPeA	811189.0	13C3-PFBA	763214.5	1.063	5.000	4.956	99	70-130	
E13C3-PFBS	371468.6	13C3-PFBA	763214.5	0.487	4.650	4.739	102	70-130	
E13C2-4:2-FTS	60332.0	13C2-PFOA	484733.4	0.124	4.670	4.727	101	70-130	
E13C5-PFHxA	642893.1	13C2-PFOA	484733.4	1.326	5.000	4.744	95	70-130	
E13C3-PFHxS	250261.1	13C2-PFOA	484733.4	0.516	4.730	3.907	83	70-130	
E13C4-PFHpA	546291.6	13C2-PFOA	484733.4	1.127	5.000	4.868	97	70-130	
E13C2-6:2-FTS	39094.5	13C2-PFOA	484733.4	0.081	4.750	4.058	85	70-130	
E13C8-PFOA	753729.0	13C2-PFOA	484733.4	1.555	5.000	4.276	86	70-130	
E13C8-PFOS	268338.2	13C4-PFOS	246274.5	1.090	4.780	4.873	102	70-130	
E13C9-PFNA	597020.8	13C4-PFOS	246274.5	2.424	5.000	5.515	110	70-130	
E13C6-PFDA	716919.5	13C2-PFDA	459096.6	1.562	5.000	4.448	89	70-130	
E13C2-8:2-FTS	35654.3	13C2-PFDA	459096.6	0.078	4.790	4.003	84	70-130	
E13C8-PFOSA	529267.8	13C2-PFDA	459096.6	1.153	5.000	4.489	90	70-130	
Ed3-NMeFOSAA	187926.1	13C2-PFDA	459096.6	0.409	5.000	4.503	90	70-130	
E13C7-PFUnDA	466944.4	13C2-PFDA	459096.6	1.017	5.000	4.257	85	70-130	
Ed5-NEtFOSAA	126195.3	13C2-PFDA	459096.6	0.275	5.000	4.050	81	70-130	
E13C2-PFDoDA	896268.1	13C2-PFDA	459096.6	1.952	5.000	4.107	82	70-130	
Ed7-NMePFOSAE	258278.1	13C2-PFDA	459096.6	0.563	5.000	5.027	101	70-130	
Ed3-NMePFOSA	82766.7	13C2-PFDA	459096.6	0.180	5.000	4.954	99	70-130	
Ed9-NEtPFOSAE	238594.6	13C2-PFDA	459096.6	0.520	5.000	5.313	106	70-130	
Ed5-NEtPFOSA	61214.0	13C2-PFDA	459096.6	0.133	5.000	4.625	92	70-130	
E13C2-PFTeDA	739019.1	13C2-PFDA	459096.6	1.610	5.000	4.536	91	70-130	



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

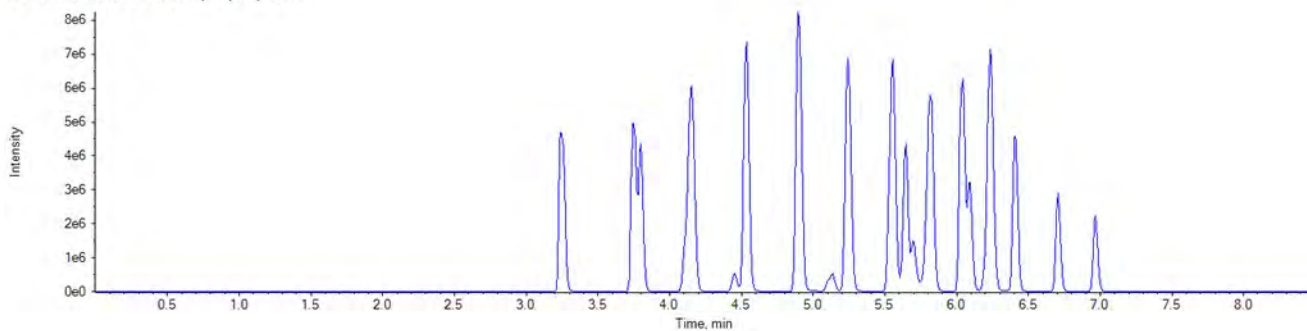
Sample Name: CAL7 Instrument Name: LM27631 File Name: 18DEC18DCAL-74.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.25	1.000	12069469.9		A	13C4-PFBA	3.25	849248.2	14.212	75.458
PFPeA	3.75	1.000	12267933.1		A	13C5-PFPeA	3.75	811189.0	15.123	78.065
PFBS	3.80	1.000	6651233.8		A	13C3-PFBS	3.80	371468.6	17.905	88.391
4:2-FTS	4.11	1.000	1978052.5		A	13C2-4:2-FTS	4.11	60332.0	32.786	86.019
PFHxA	4.15	1.000	12199404.1		A	13C5-PFHxA	4.15	642893.1	18.976	78.171
PFPeS	4.17	1.100	3356554.2		A	13C3-PFBS	3.80	371468.6	9.036	91.992
PFHpA	4.53	1.000	12613152.1		A	13C4-PFHpA	4.53	546291.6	23.089	76.560
PFHxS	4.54	1.000	5016409.1		M	13C3-PFHxS	4.54	250261.1	20.045	97.498
6:2-FTS	4.89	1.000	1375932.6		A	13C2-6:2-FTS	4.89	39094.5	35.195	87.615
PFHpS	4.89	1.080	4467941.4		A	13C3-PFHxS	4.54	250261.1	17.853	94.443
PFOA	4.90	1.000	12588128.0		A	13C8-PFOA	4.90	753729.0	16.701	88.477
PFOS	5.23	1.000	5671288.5		M	13C8-PFOS	5.23	268338.2	21.135	92.533
PFNA	5.25	1.000	12632479.1		A	13C9-PFNA	5.25	597020.8	21.159	84.094
PFNS	5.53	1.060	3731780.6		A	13C8-PFOS	5.23	268338.2	13.907	88.431
PFDA	5.56	1.000	11290182.1		A	13C6-PFDA	5.56	716919.5	15.748	81.331
8:2-FTS	5.56	1.000	1403687.6		A	13C2-8:2-FTS	5.56	35654.3	39.369	79.240
PFOSA	5.65	1.000	9756585.7		A	13C8-PFOSA	5.65	529267.8	18.434	92.193
NMeFOSAA	5.70	1.000	2804936.3		M	d3-NMeFOSAA	5.70	187926.1	14.926	92.762
PFDS	5.79	1.110	3153807.5		A	13C8-PFOS	5.23	268338.2	11.753	96.485
PFOA	5.82	1.000	10906838.8		A	13C7-PFOA	5.82	466944.4	23.358	77.359
NEtFOSAA	5.83	1.000	2419106.3		A	d5-NEtFOSAA	5.83	126195.3	19.170	97.702
PFDoDA	6.04	1.000	13735940.7		A	13C2-PFDoDA	6.04	896268.1	15.326	77.202
10:2-FTS	6.05	1.090	1572726.7		A	13C2-8:2-FTS	5.56	35654.3	44.110	89.839
NMePFOSAE	6.09	1.000	5672407.3		A	d7-NMePFOSAE	6.08	258278.1	21.962	96.903
NMePFOSA	6.10	1.000	1519310.6		A	d3-NMePFOSA	6.10	82766.7	18.357	92.669
PFDoS	6.20	1.190	1693764.8		A	13C8-PFOS	5.23	268338.2	6.312	95.631
NEtPFOSAE	6.24	1.000	5932510.4		A	d9-NEtPFOSAE	6.23	238594.6	24.864	81.230
NEtPFOSA	6.26	1.000	1312776.8		A	d5-NEtPFOSA	6.26	61214.0	21.446	100.313
PFTeDA	6.23	1.030	12403653.2		A	13C2-PFDoDA	6.04	896268.1	13.839	70.998
PFTeDA	6.41	1.000	10584696.4		A	13C2-PFTeDA	6.41	739019.1	14.323	77.125
PFHxDA	6.71	1.050	6096568.0		A	13C2-PFTeDA	6.41	739019.1	8.250	90.592
PFOA	6.97	1.090	4781425.1		A	13C2-PFTeDA	6.41	739019.1	6.470	92.966

**Total Ion Chromatogram**

TIC from 18DEC18DCAL-74.wiff (sample 1) - CAL7



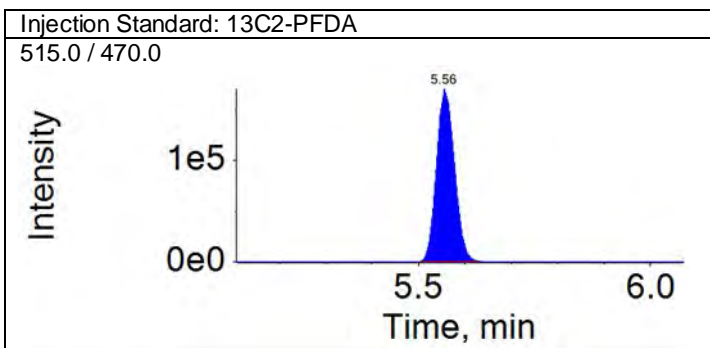
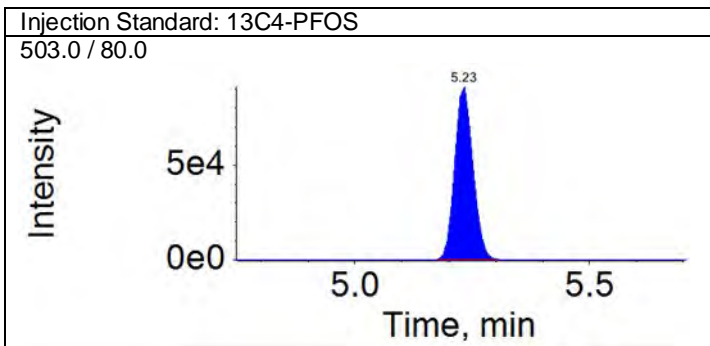
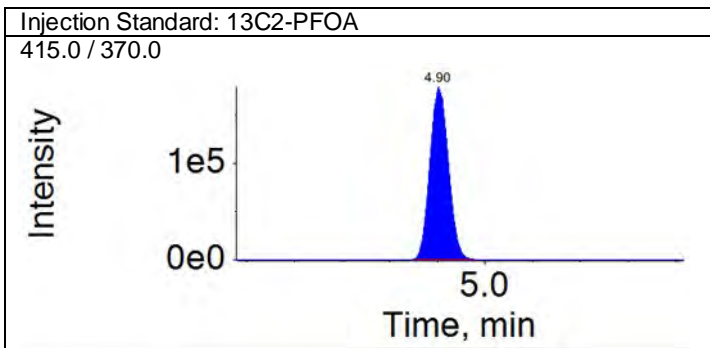
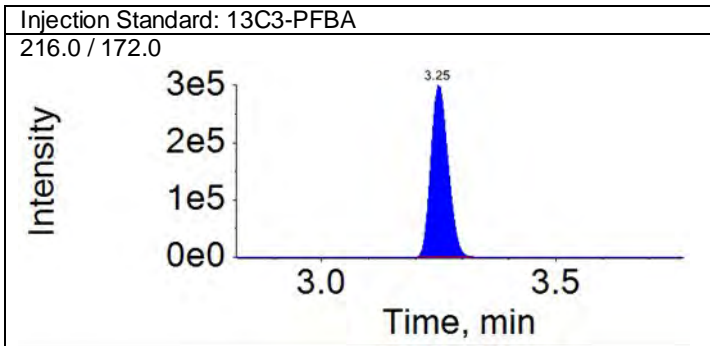
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By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18



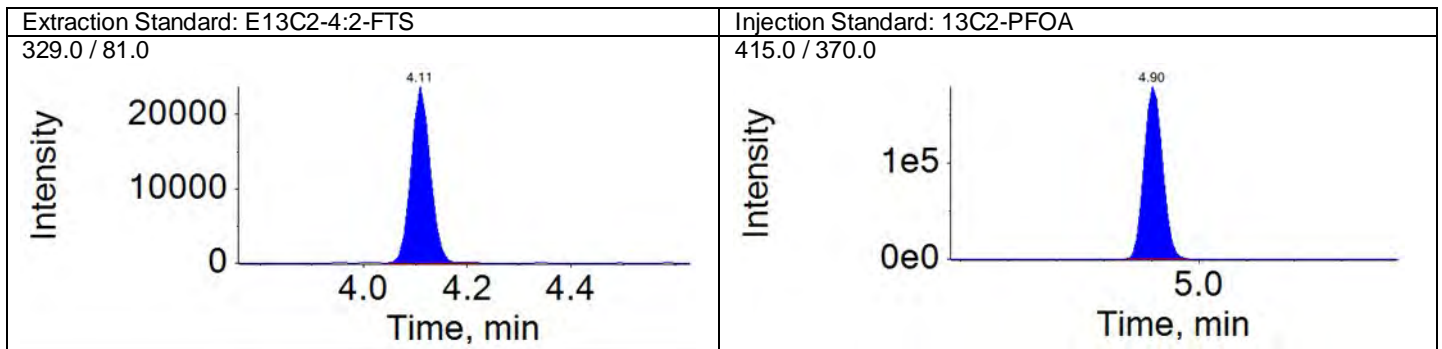
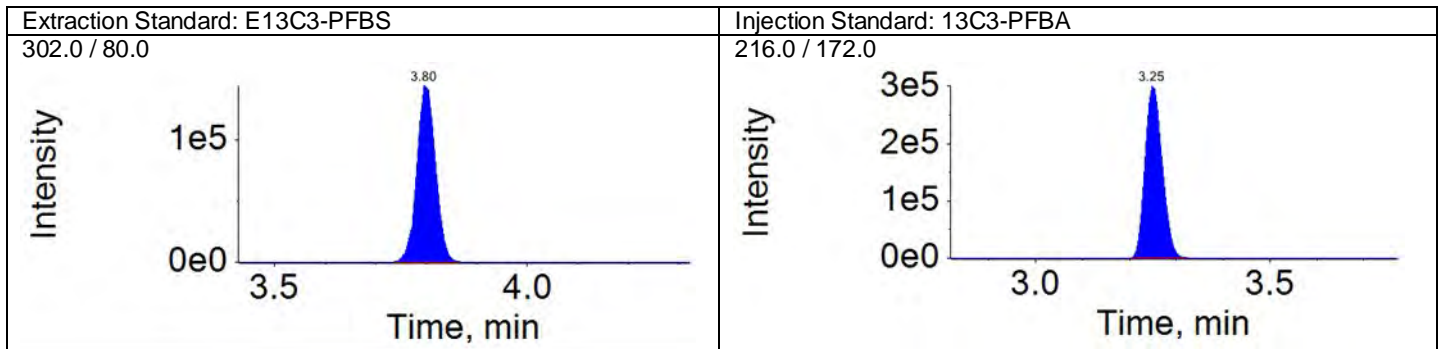
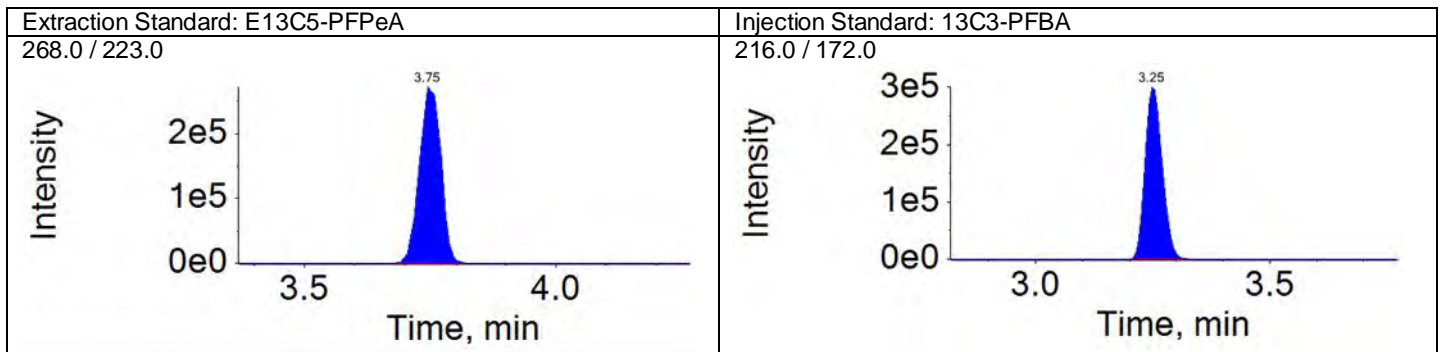
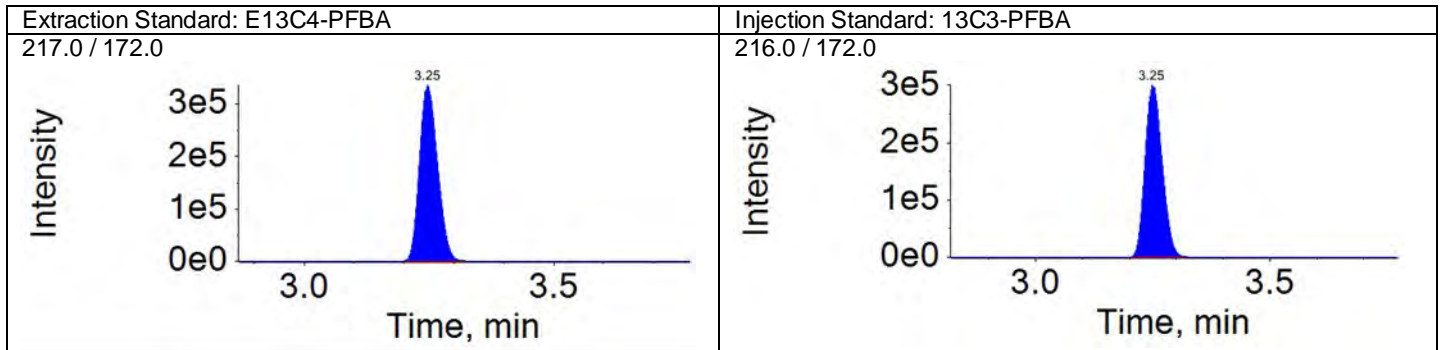
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



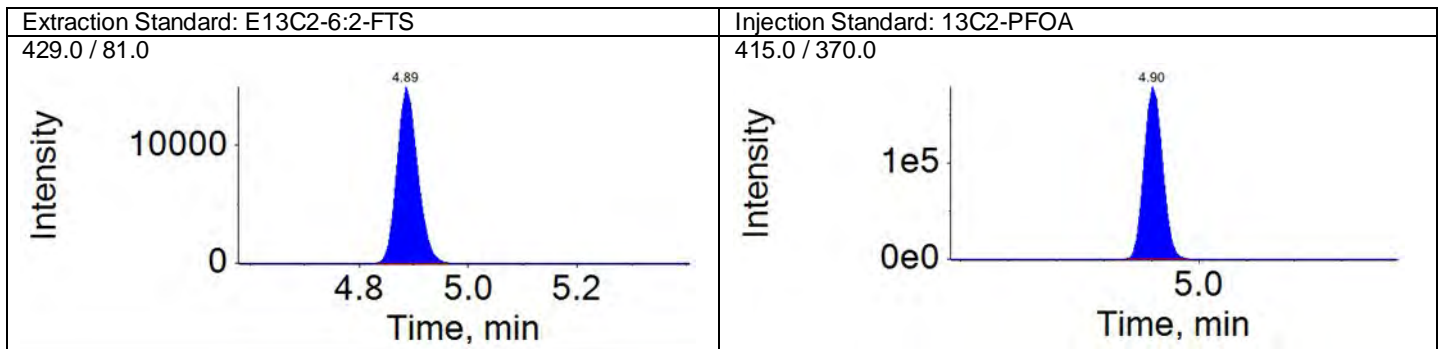
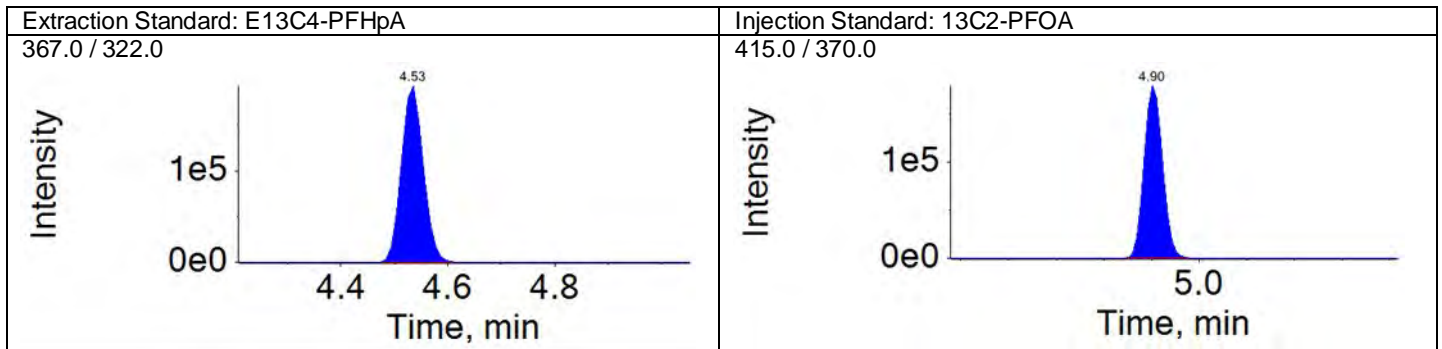
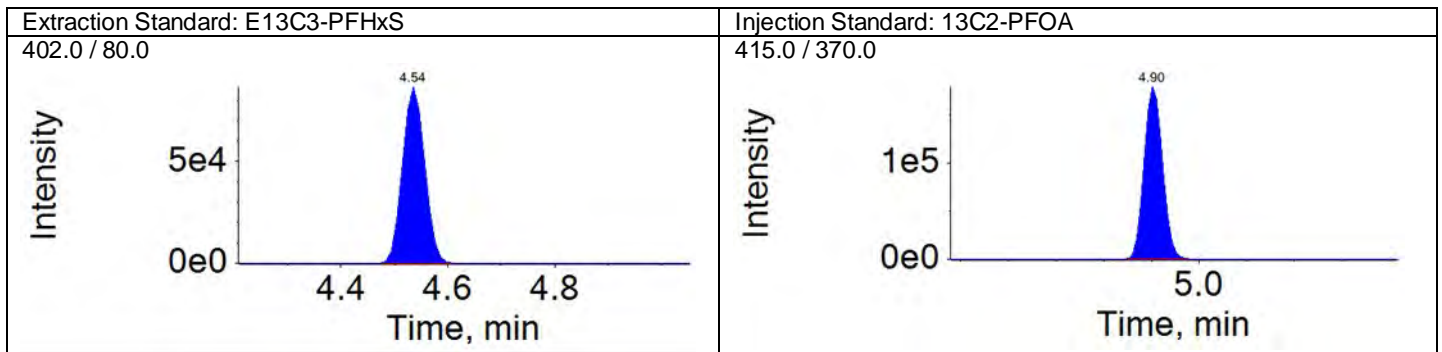
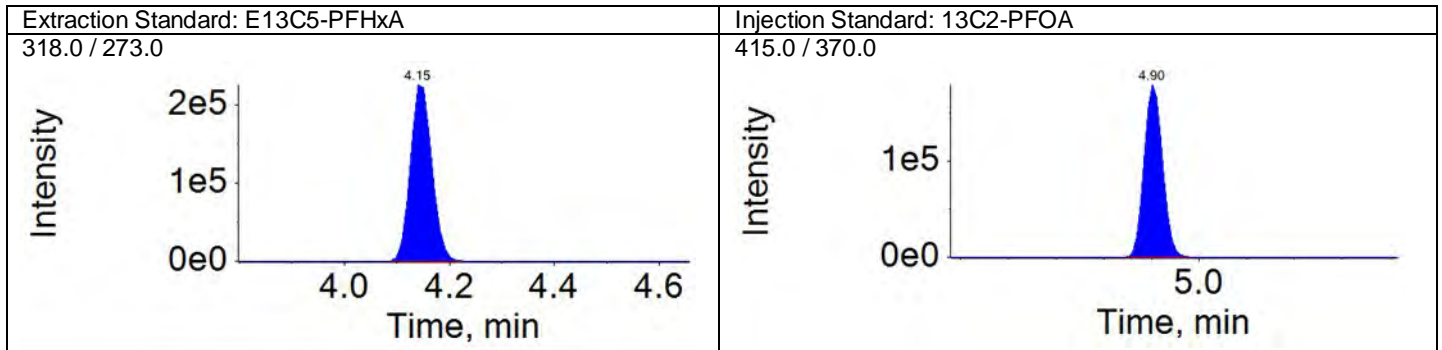
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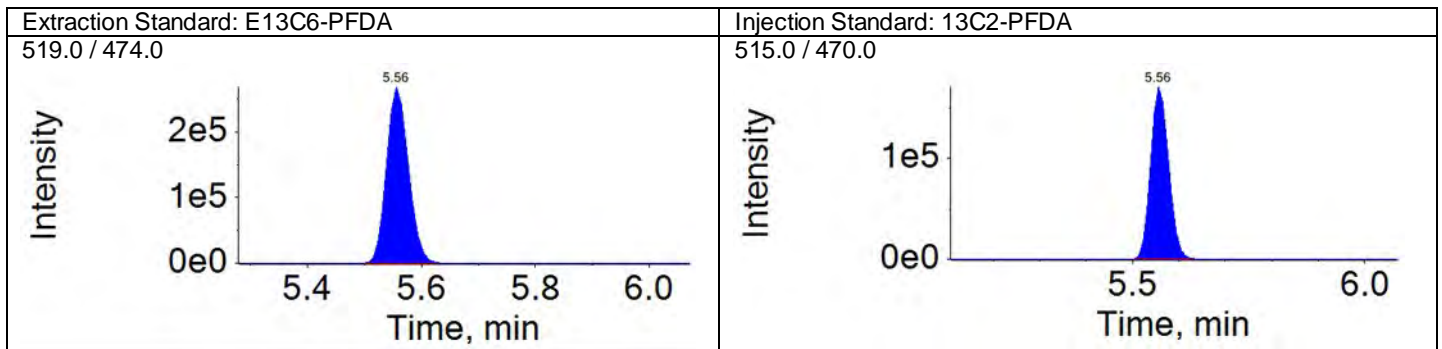
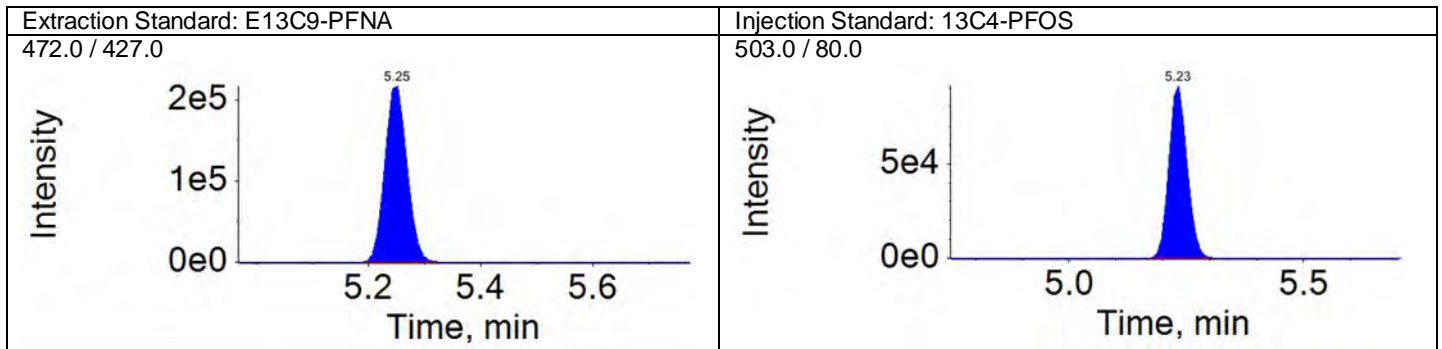
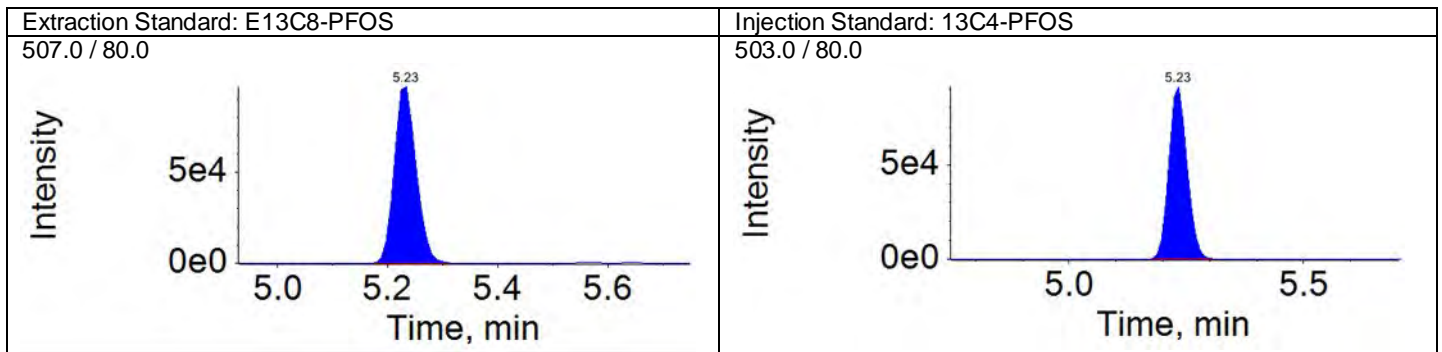
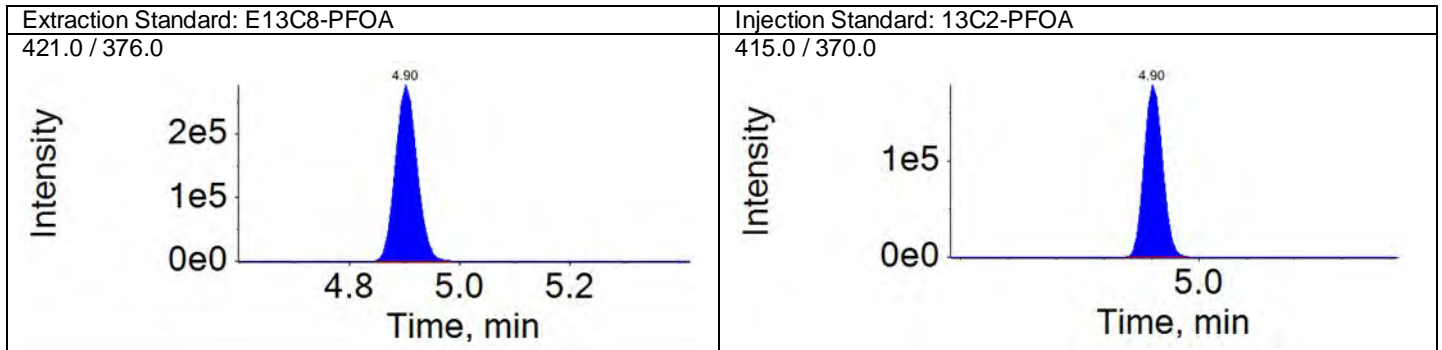
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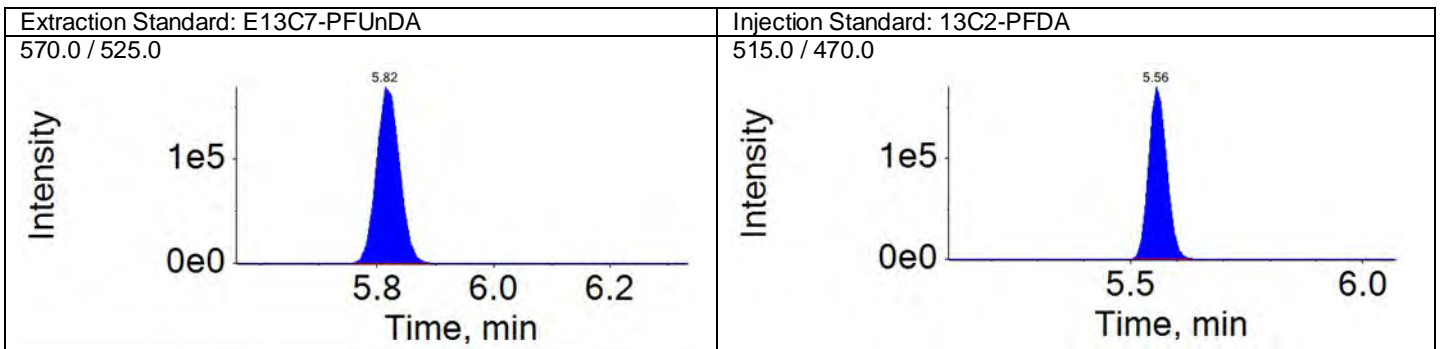
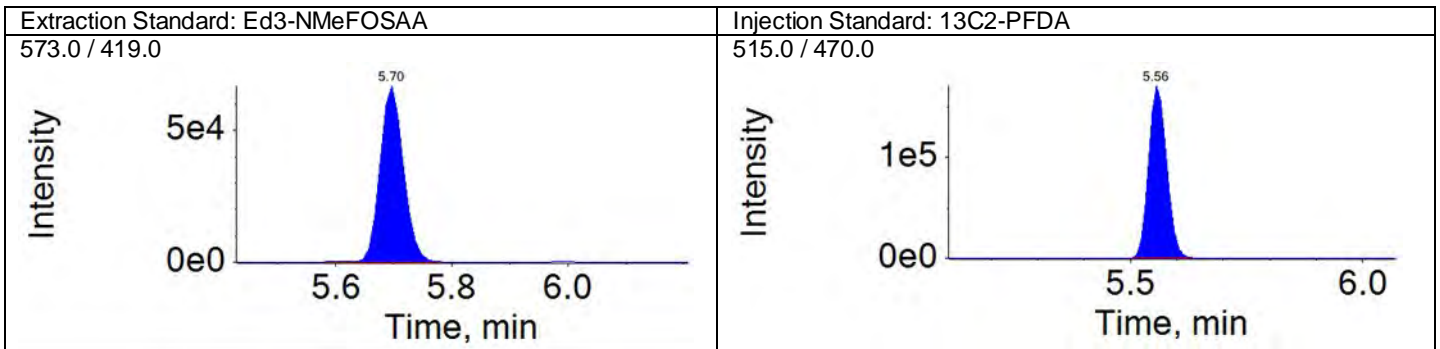
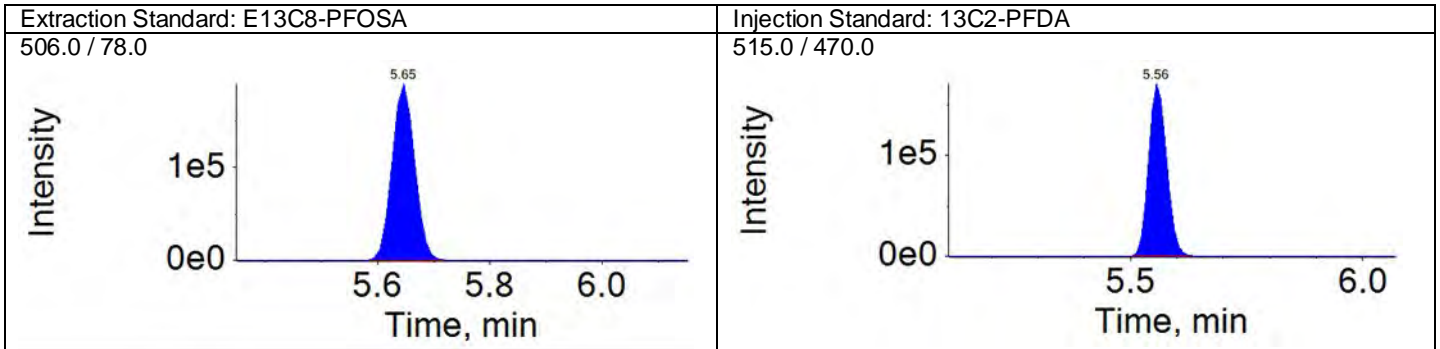
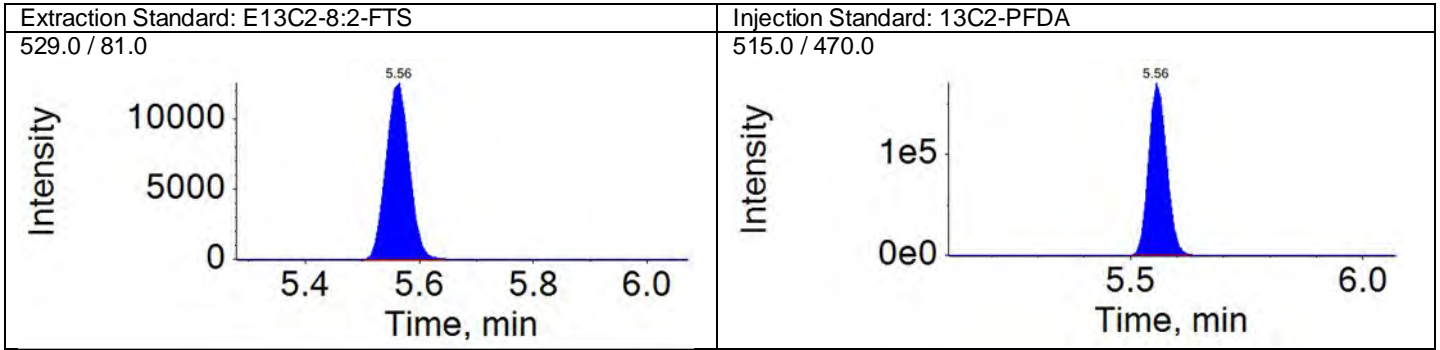
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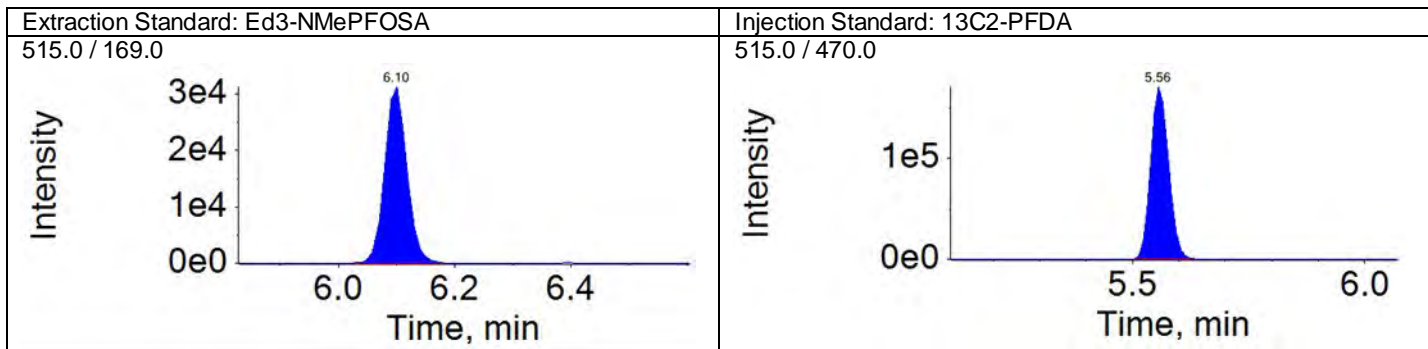
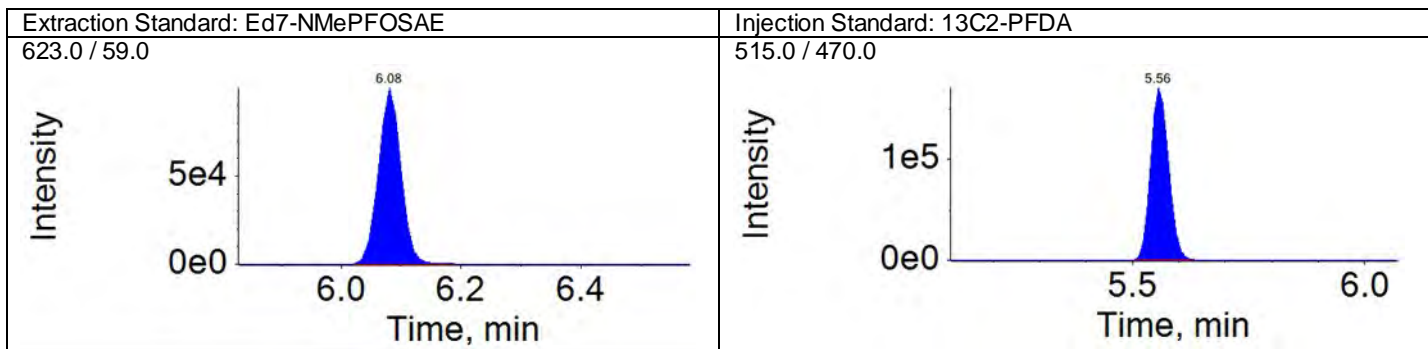
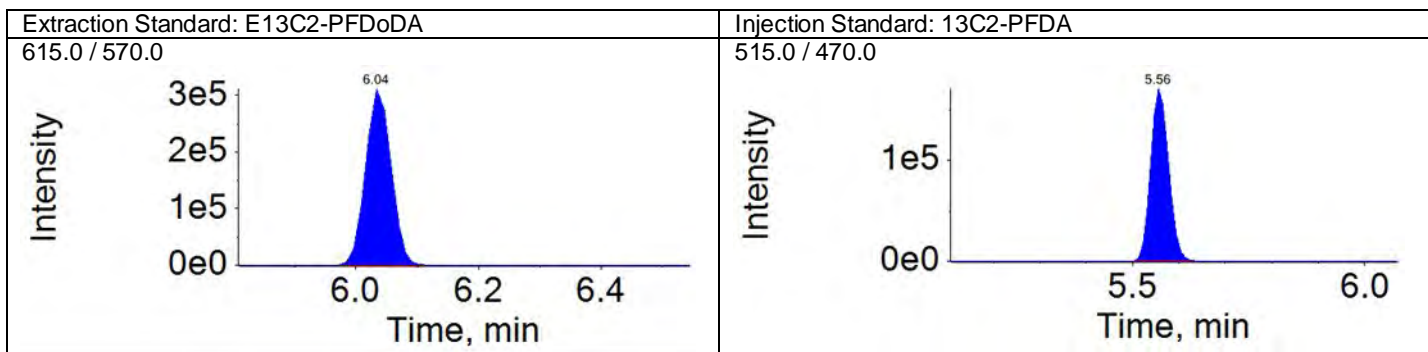
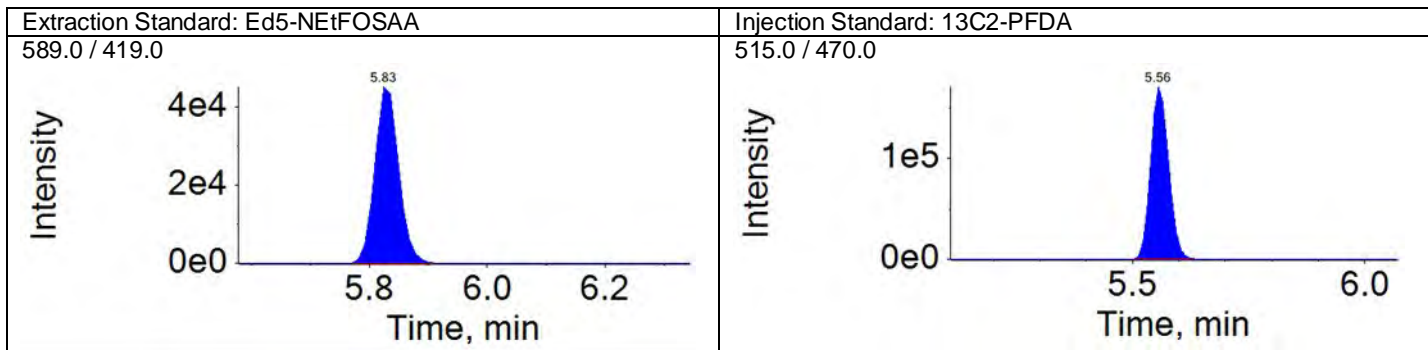
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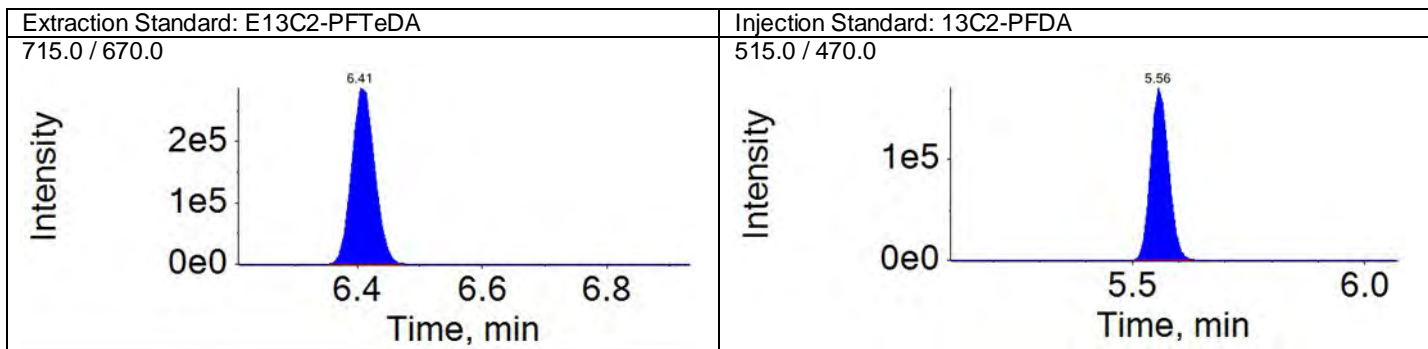
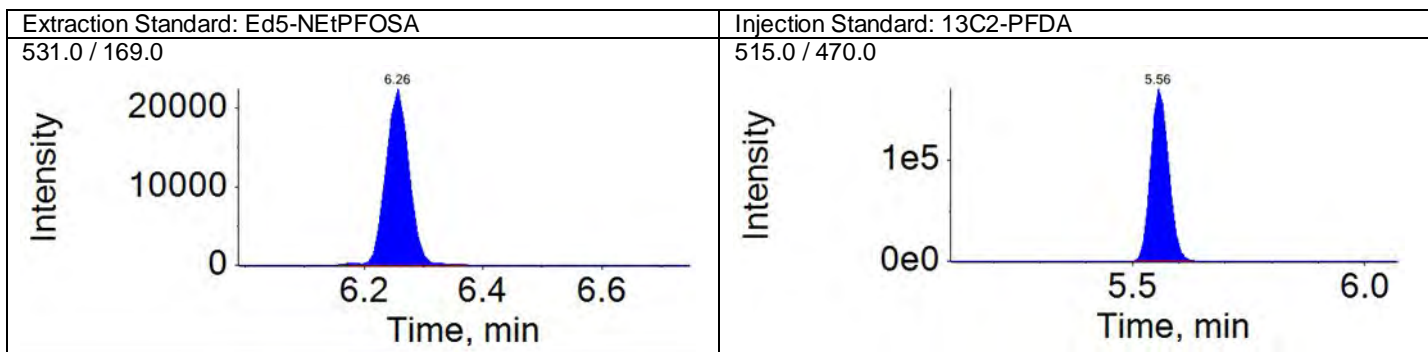
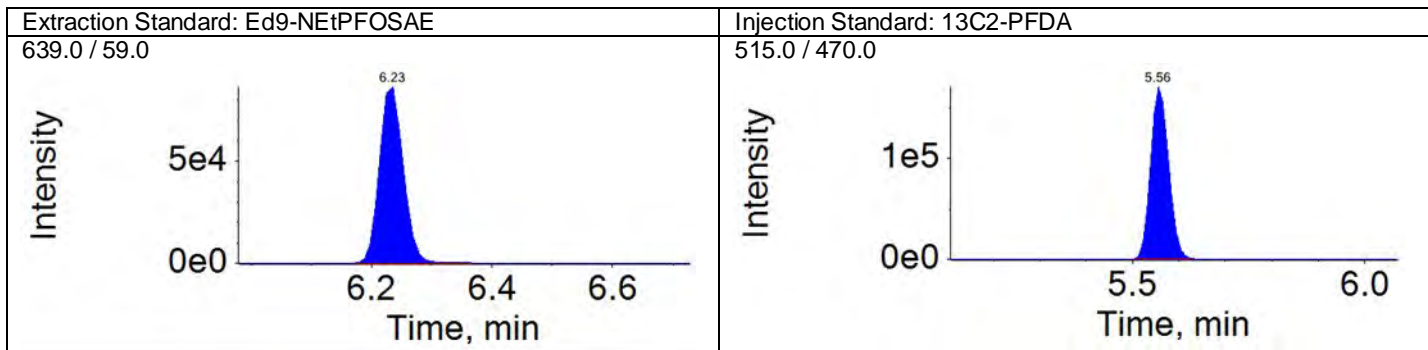
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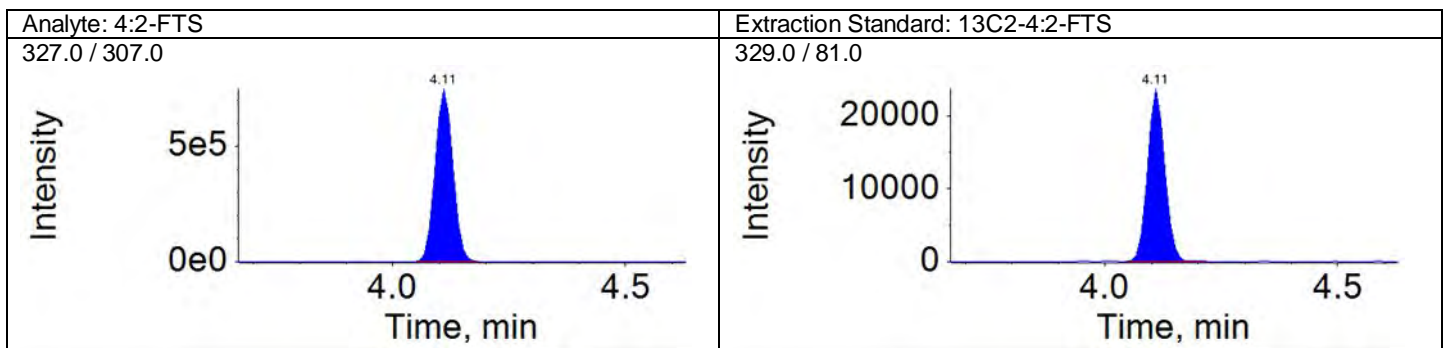
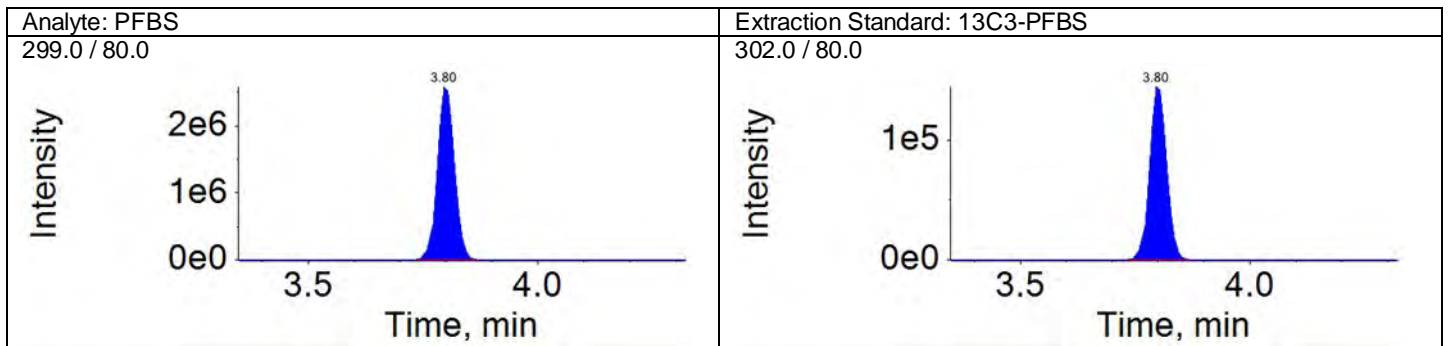
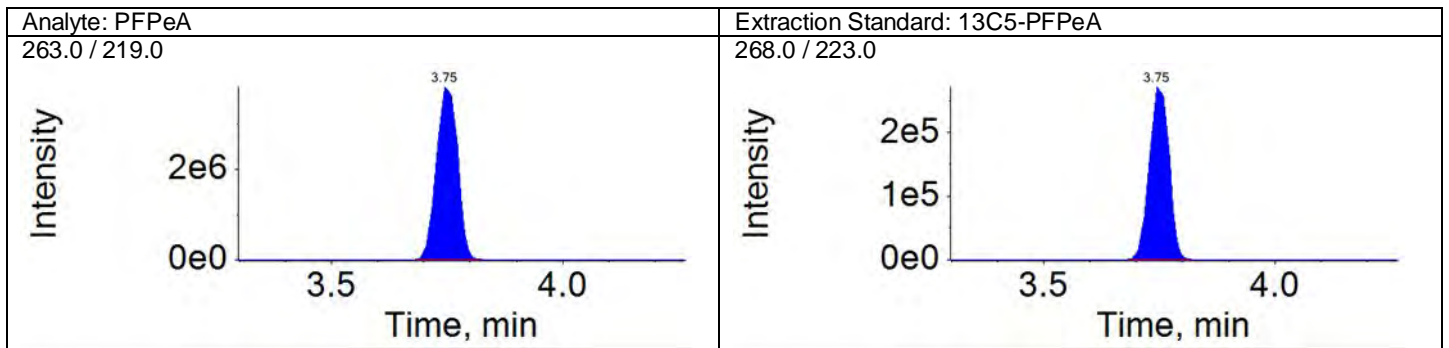
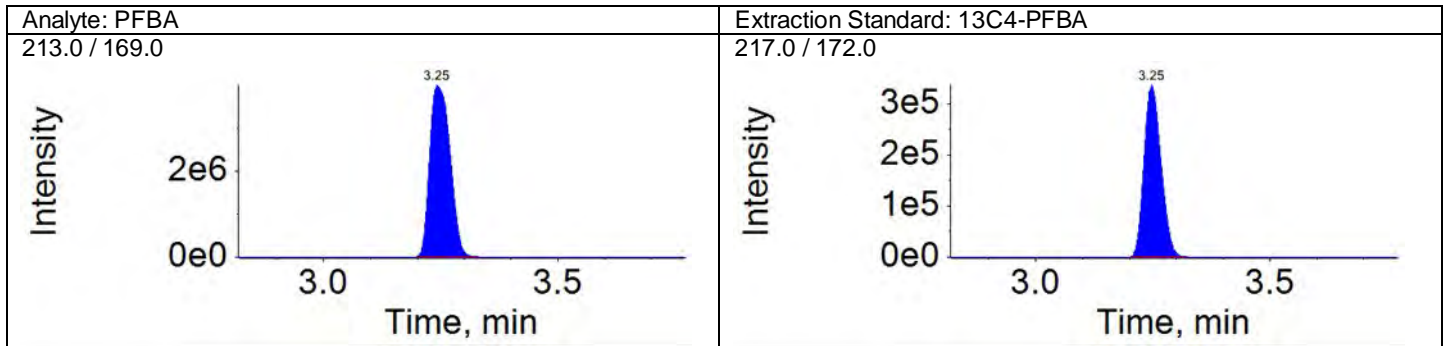
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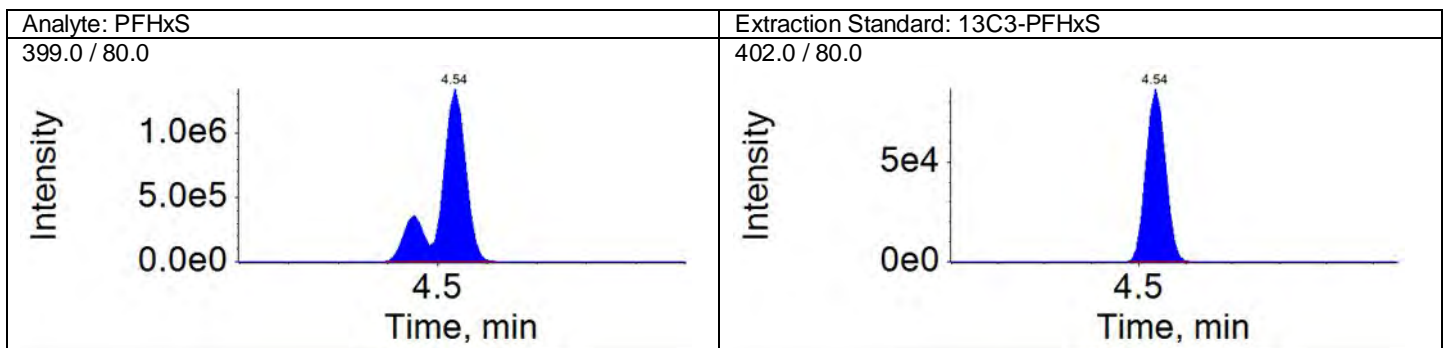
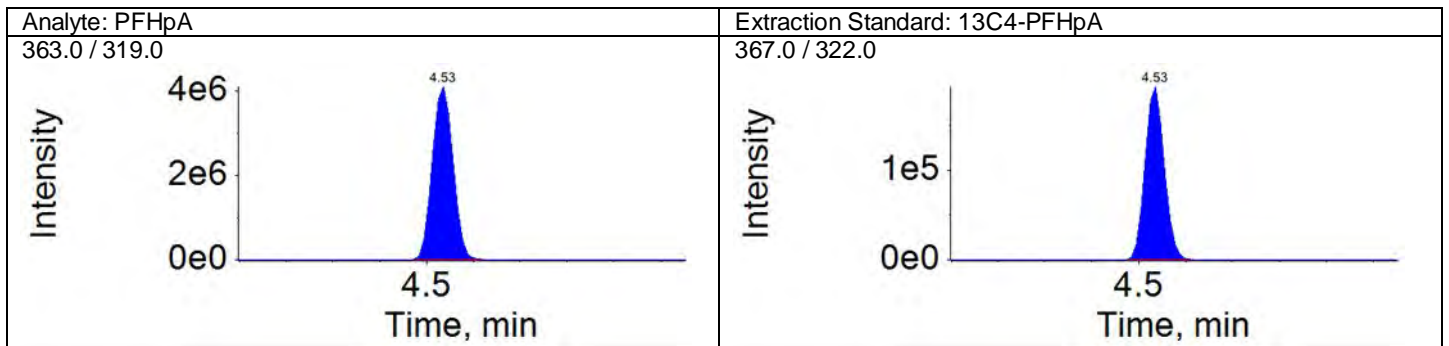
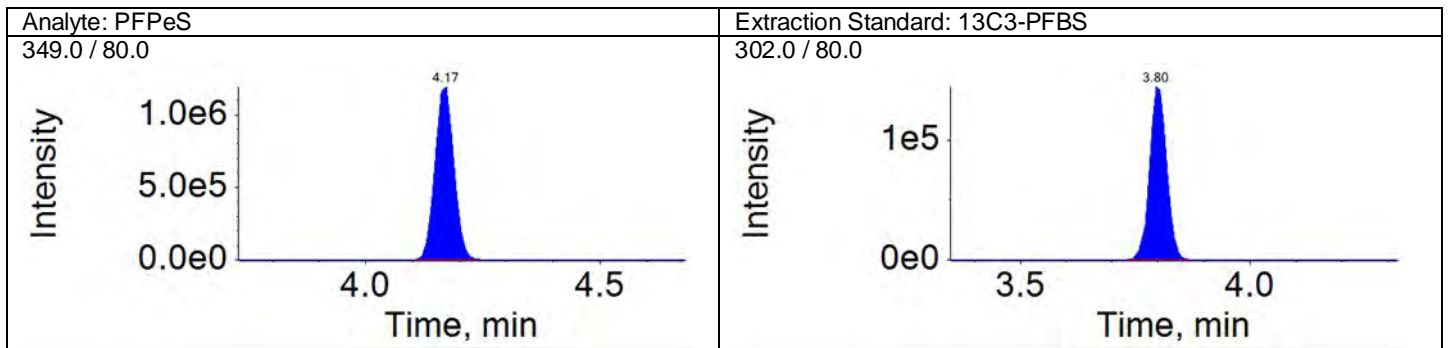
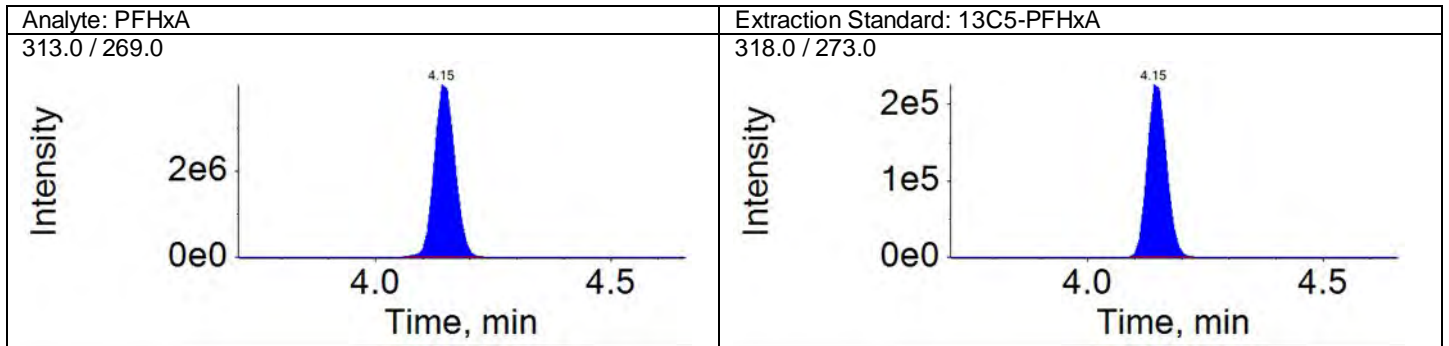
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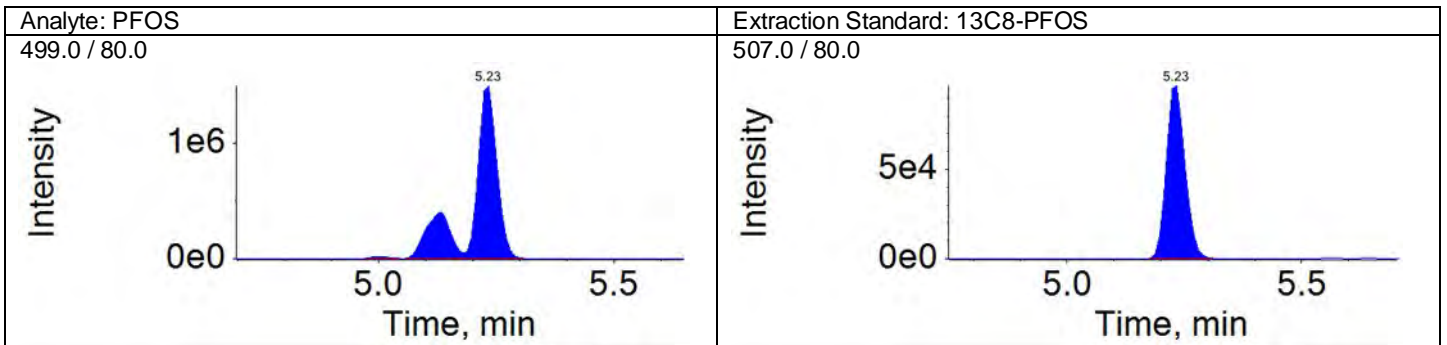
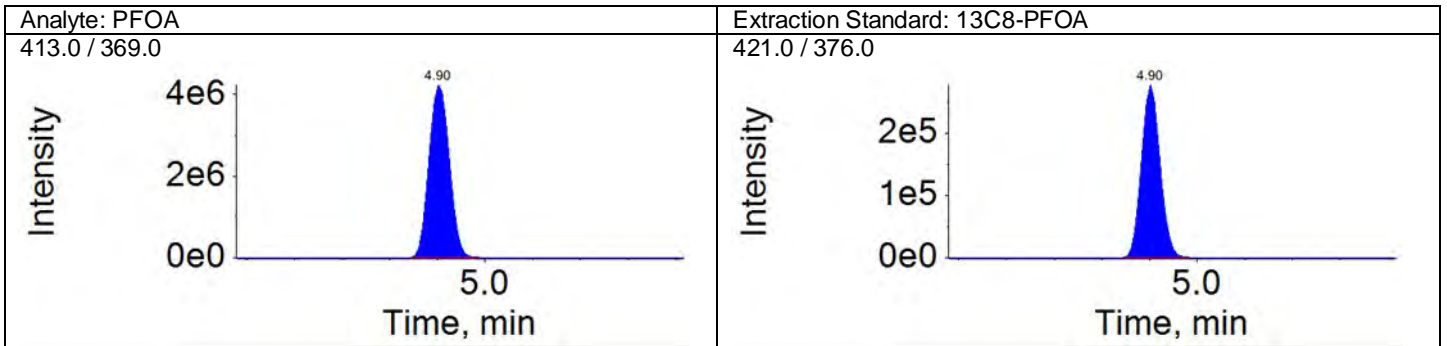
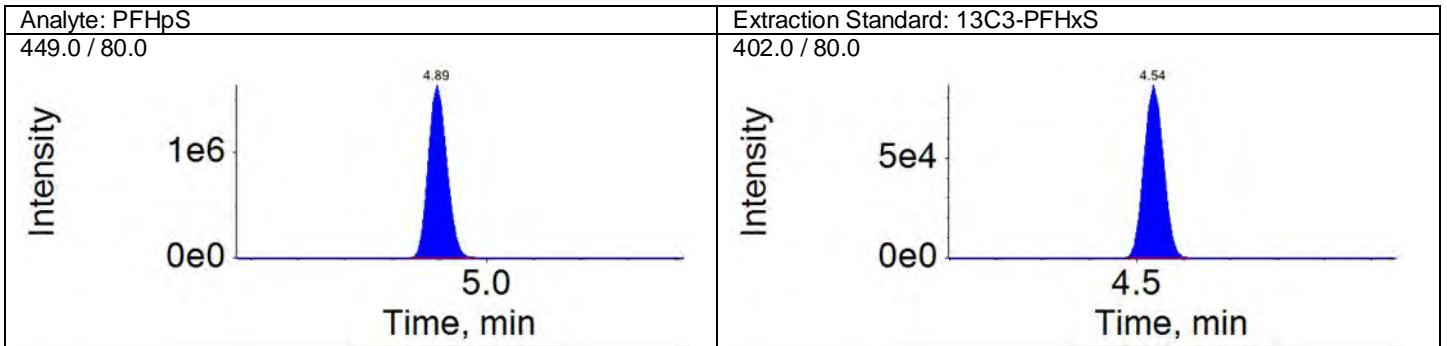
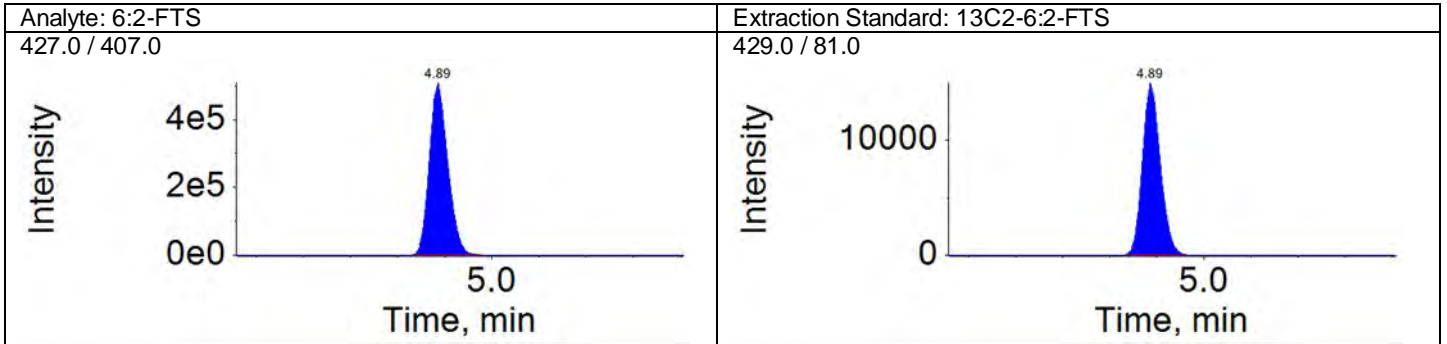
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

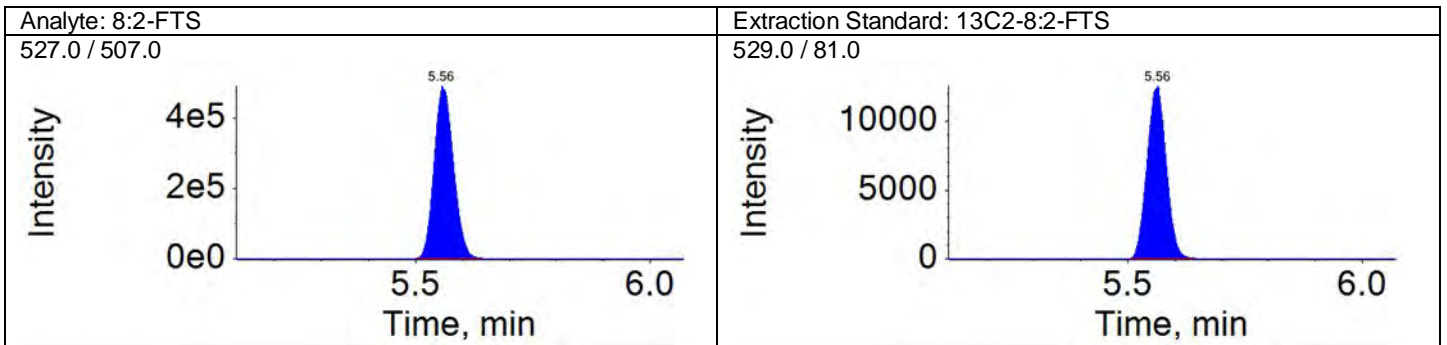
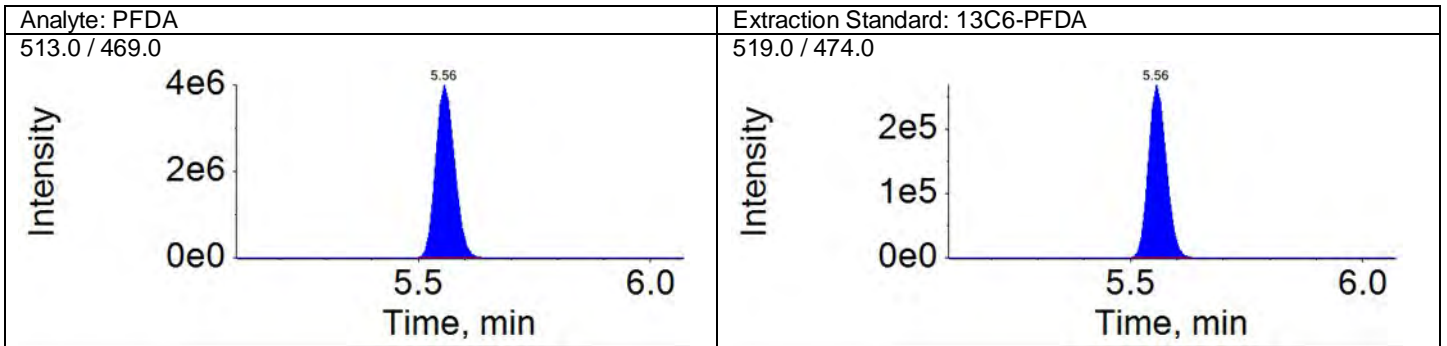
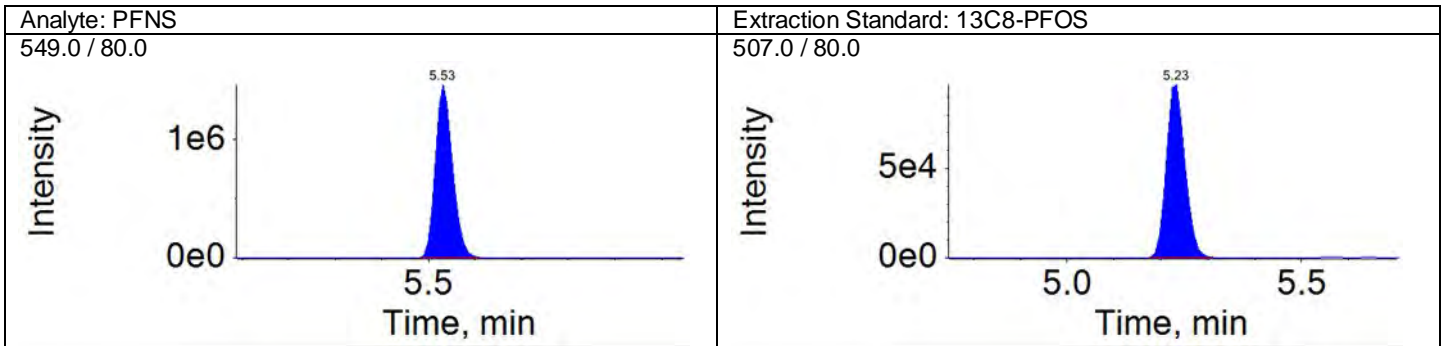
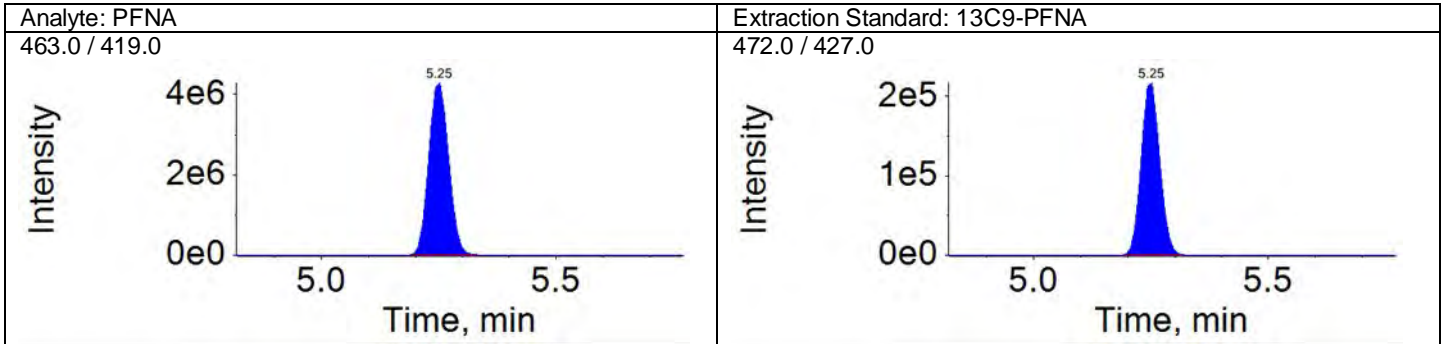
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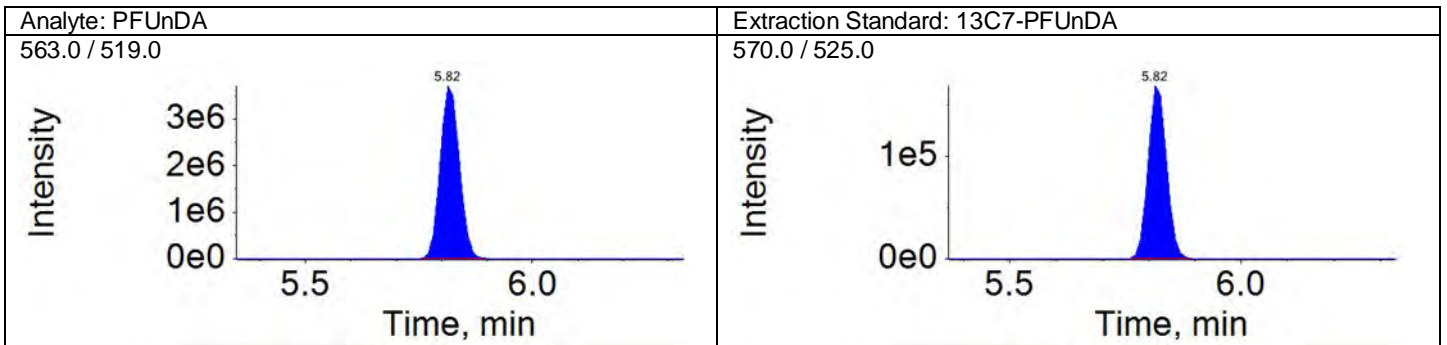
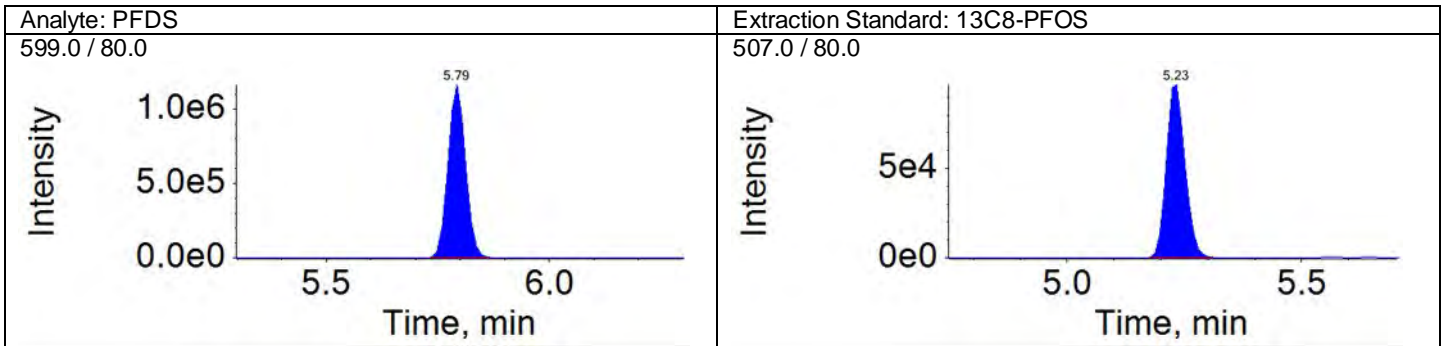
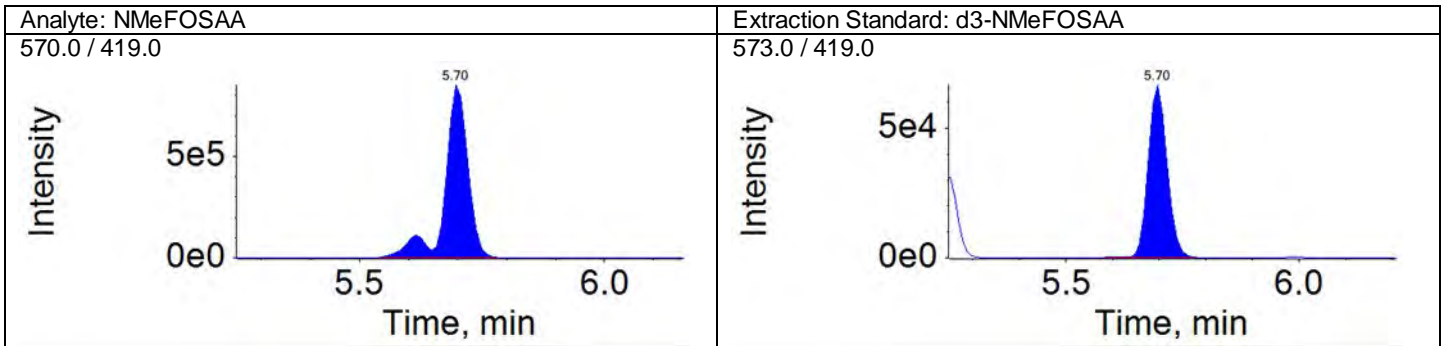
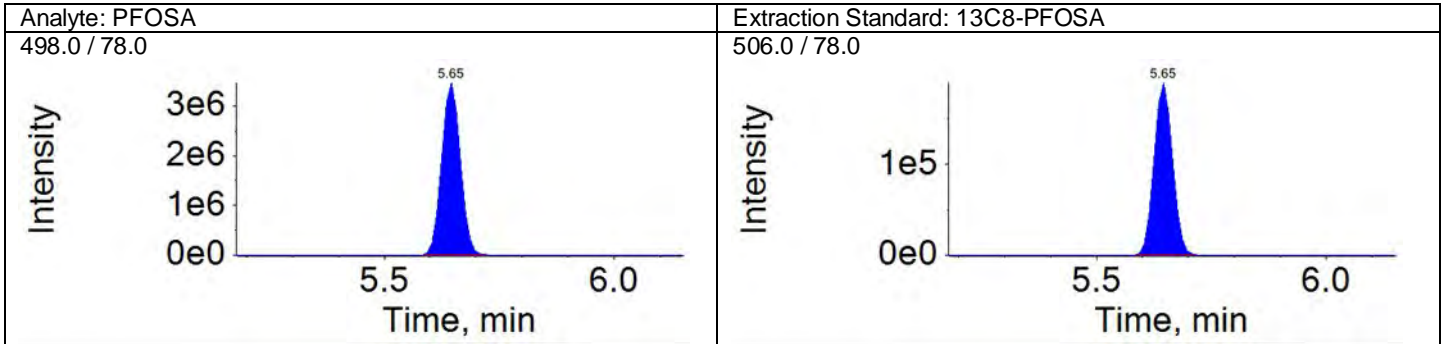
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



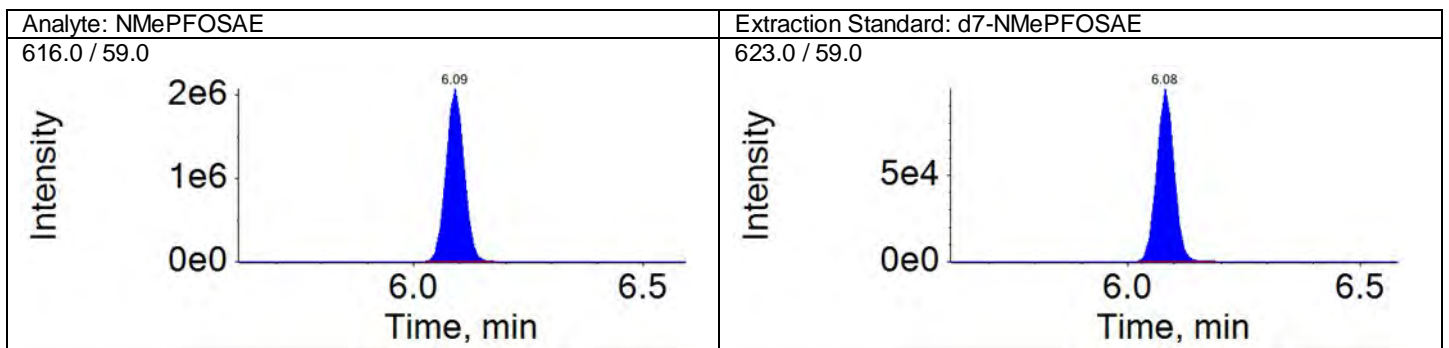
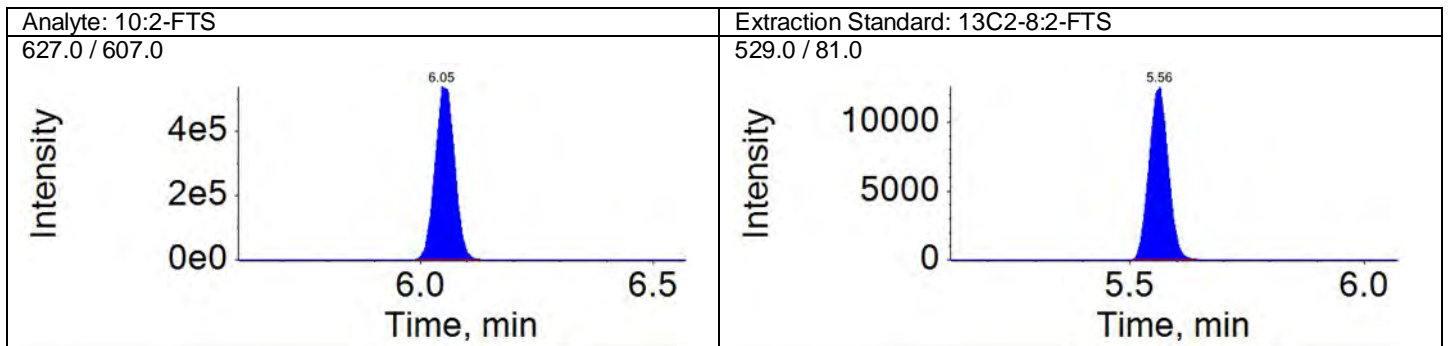
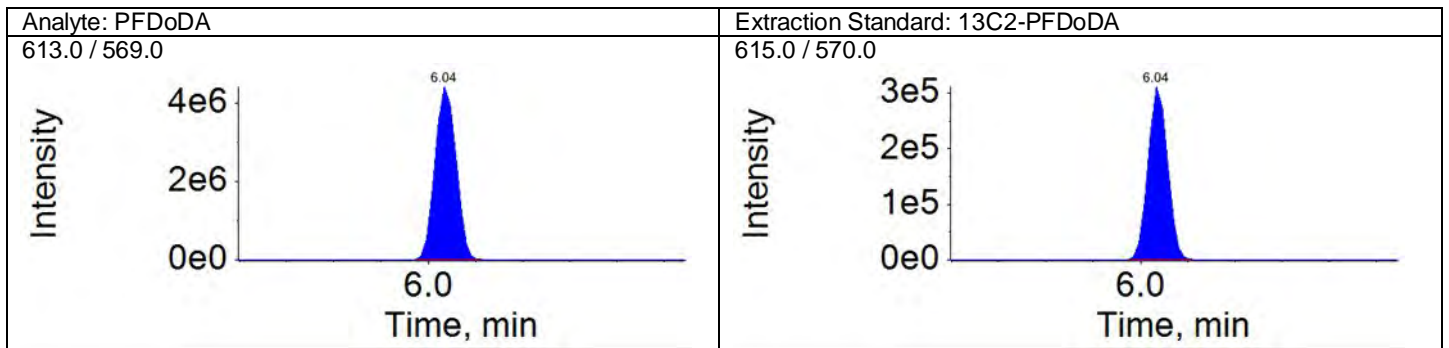
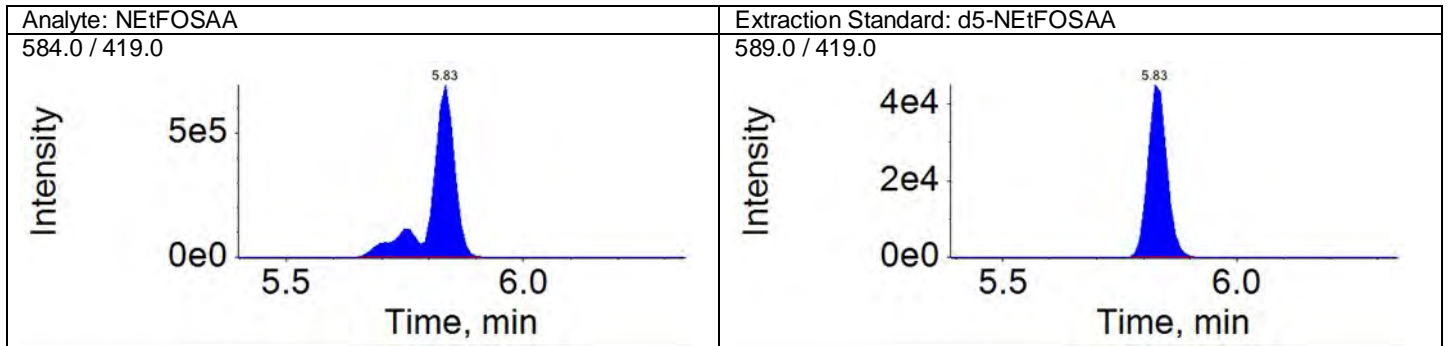
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



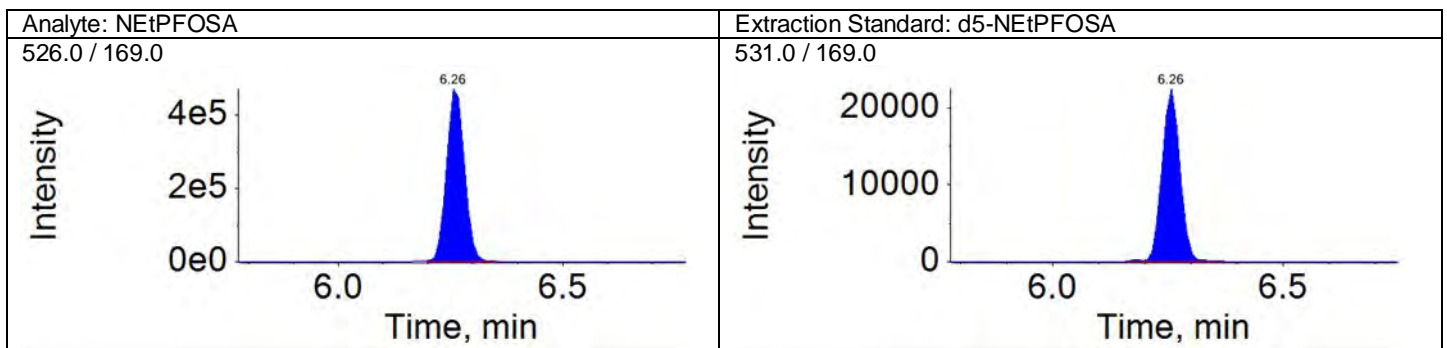
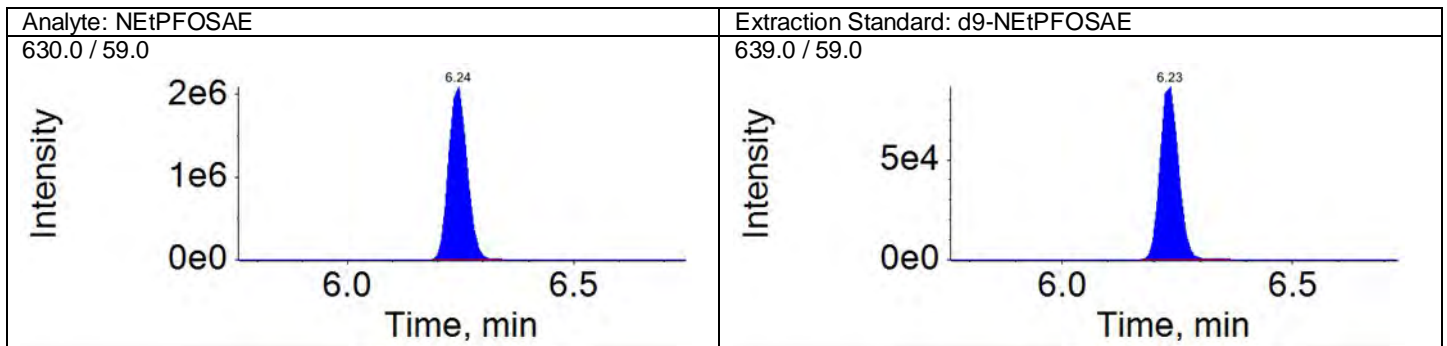
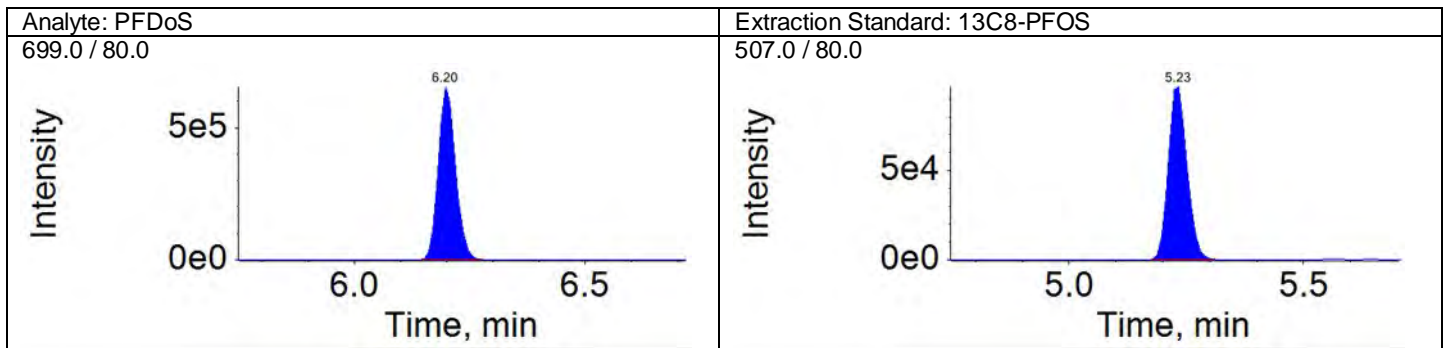
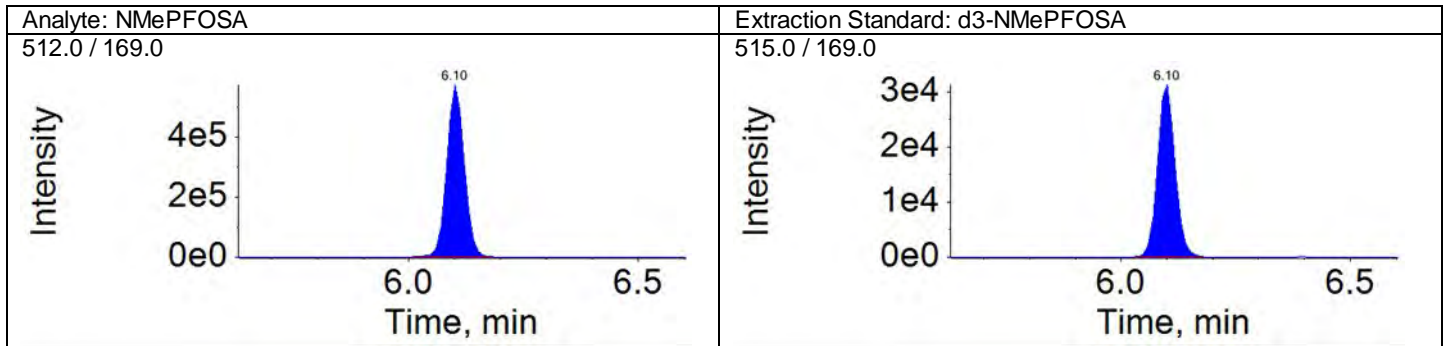
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

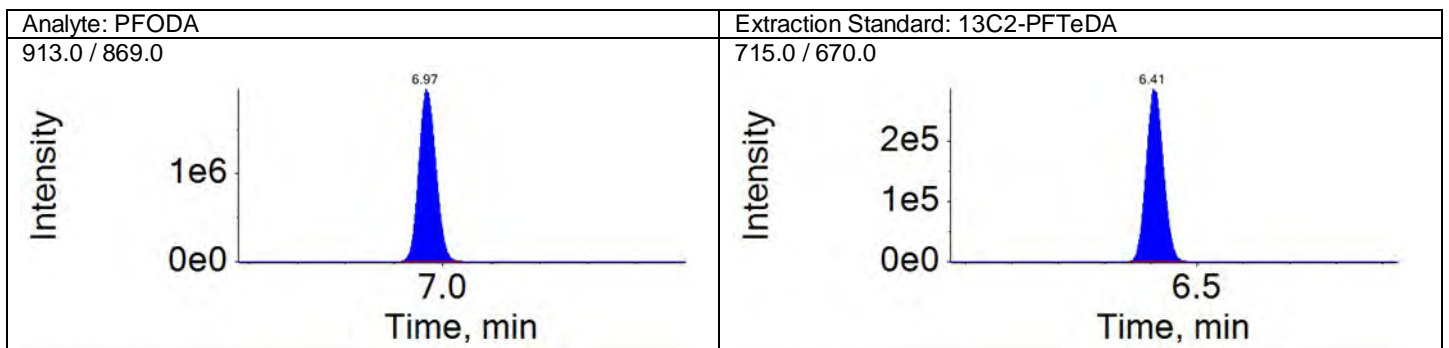
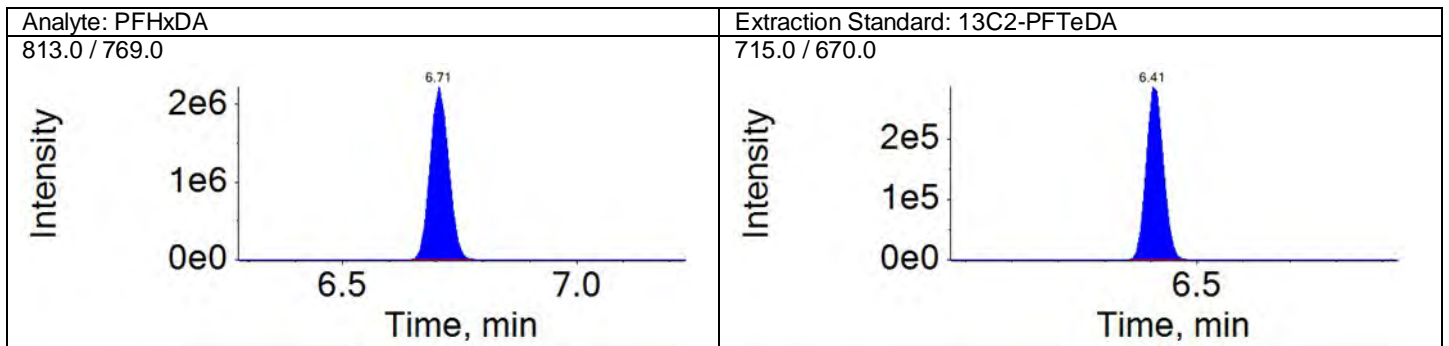
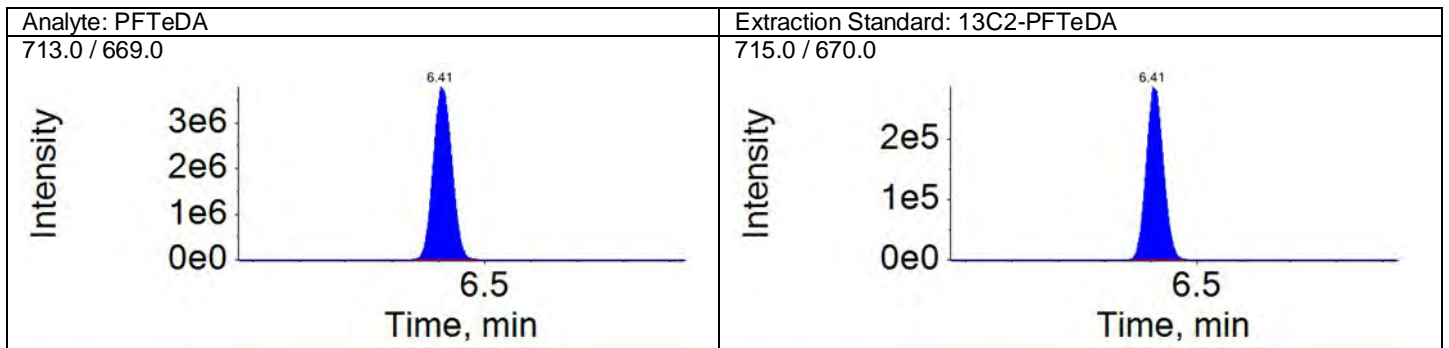
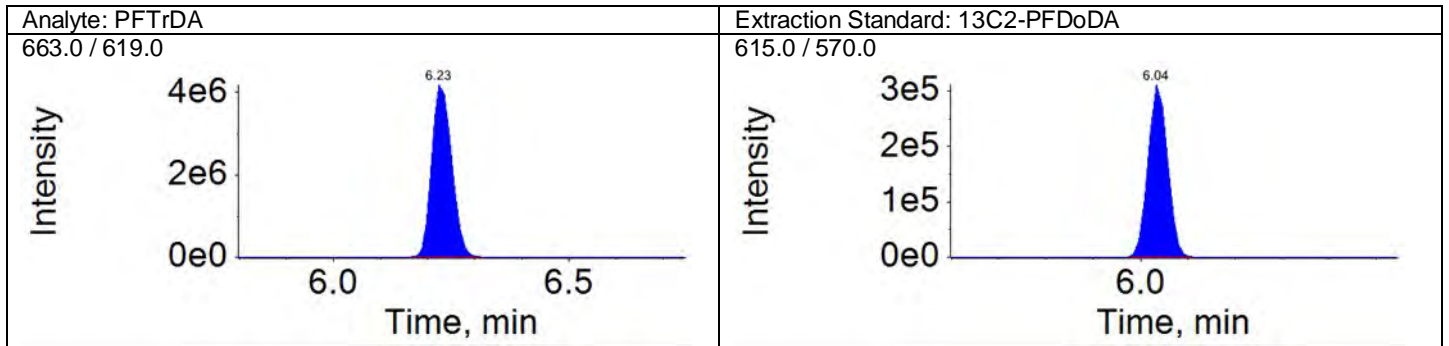
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

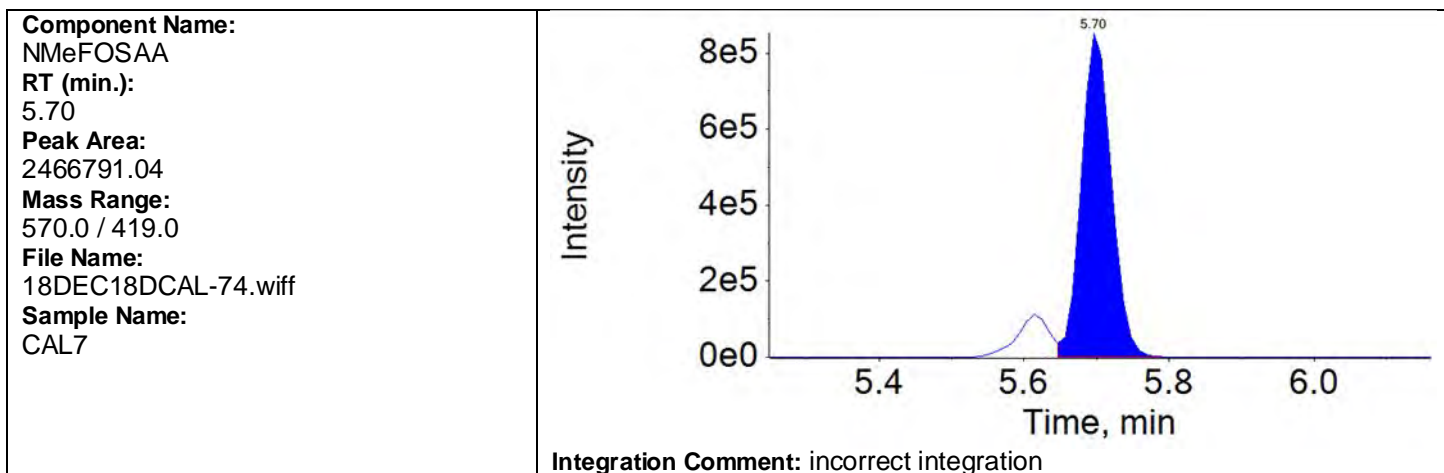
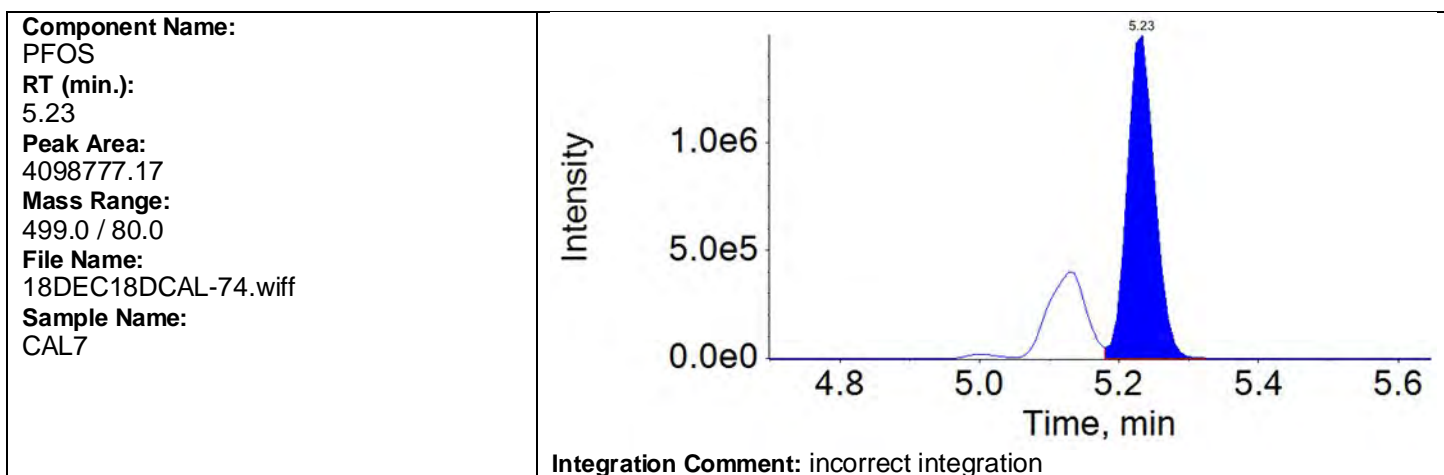
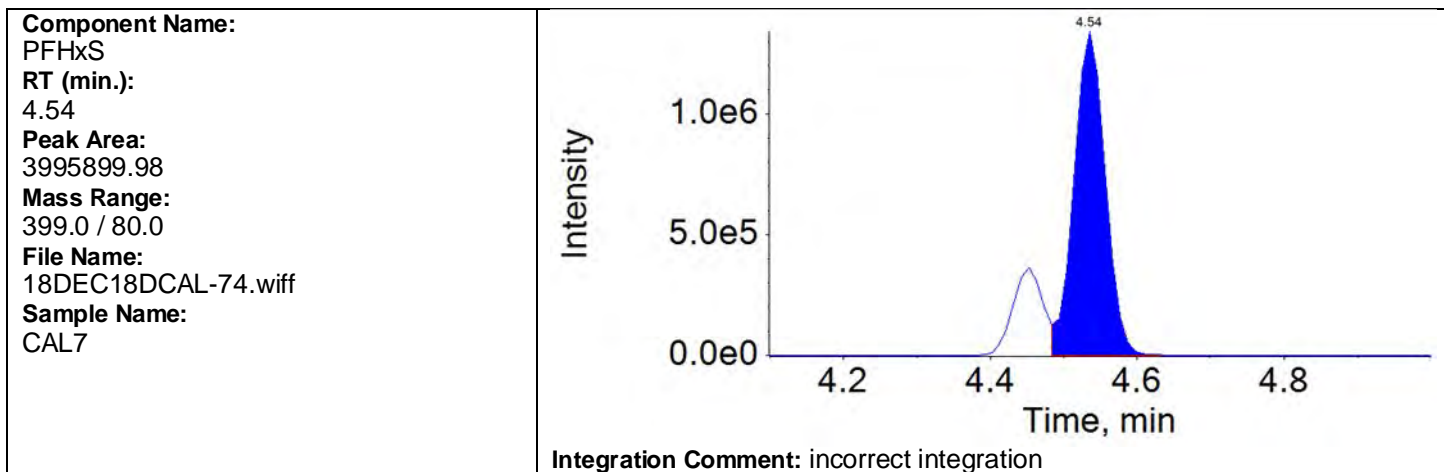
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Acquisition Method: 18AUG13\_3uL.dam





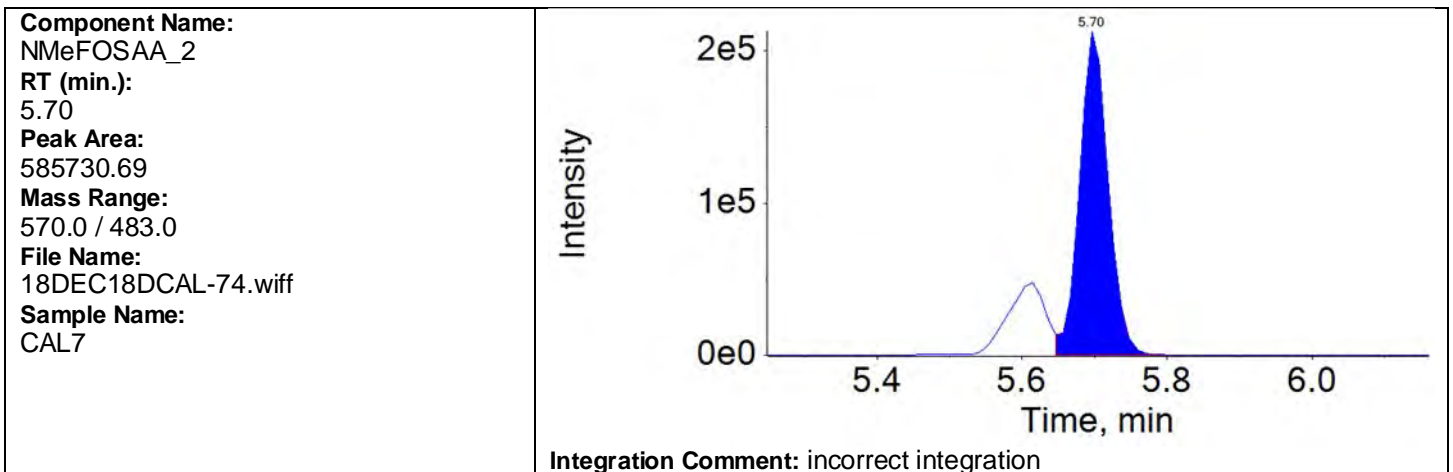
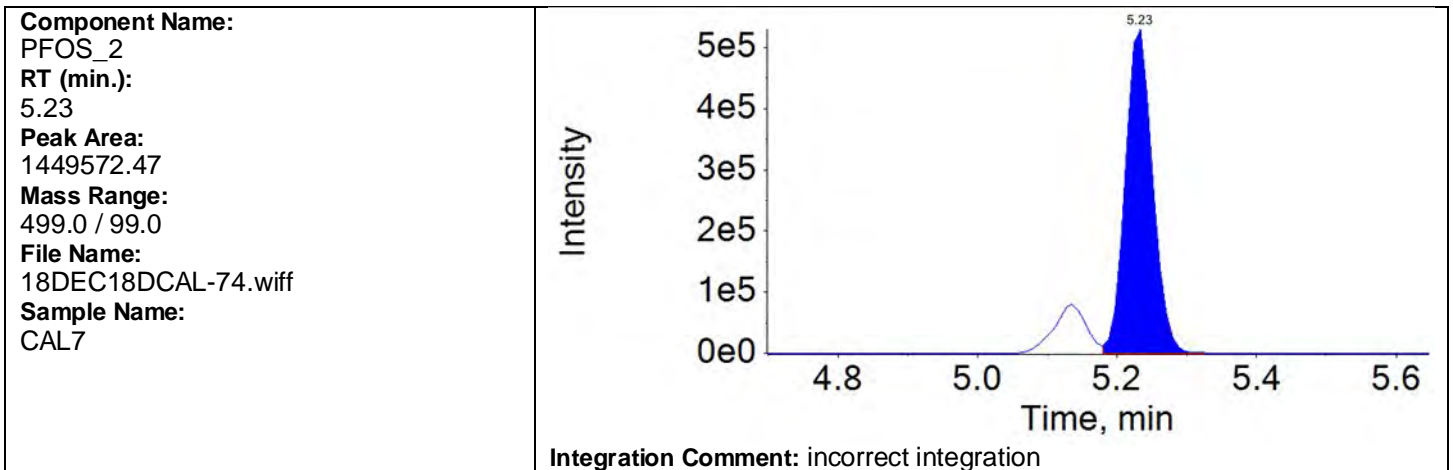
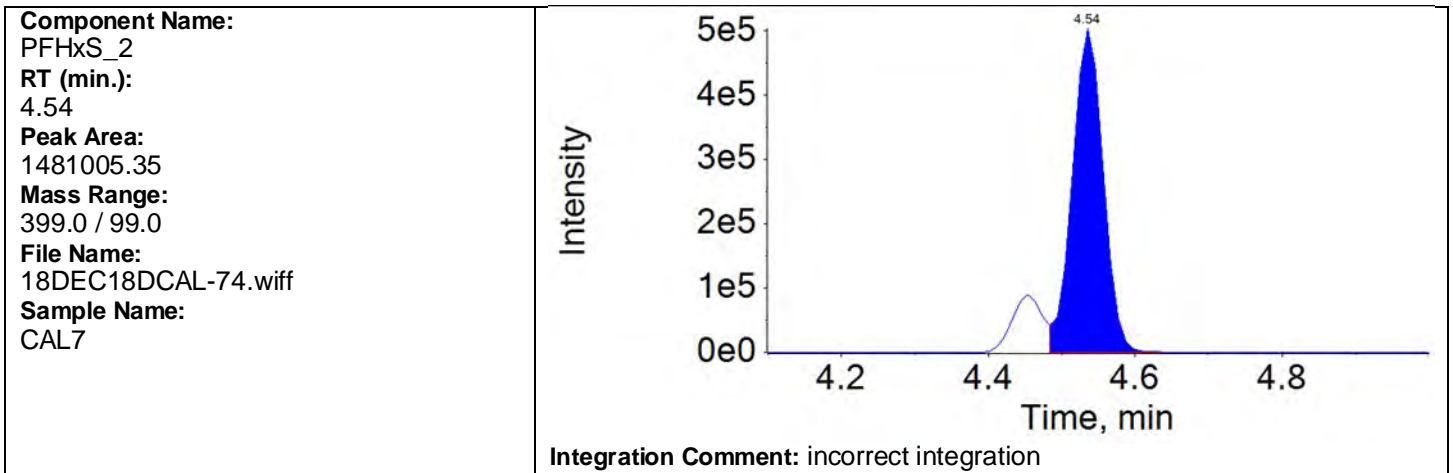
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Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

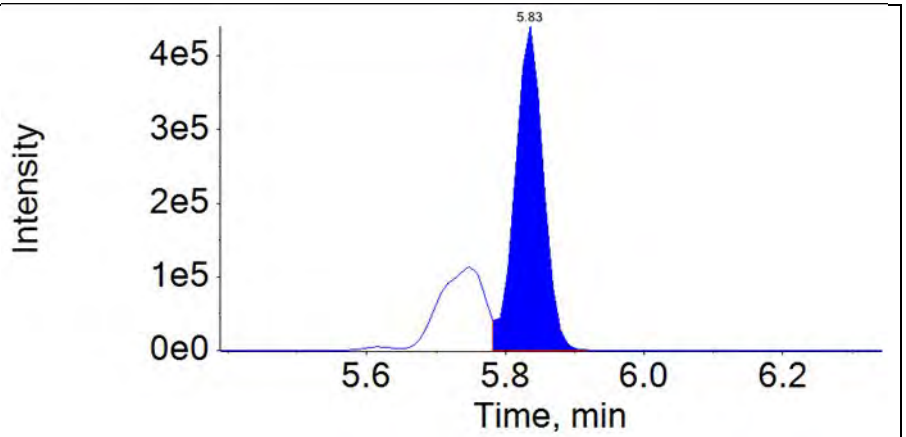
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QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
NEtFOSAA\_2  
RT (min.):  
5.83  
Peak Area:  
1245306.55  
Mass Range:  
584.0 / 526.0  
File Name:  
18DEC18DCAL-74.wiff  
Sample Name:  
CAL7



Integration Comment: incorrect integration

**Results Table Name:** 18DEC18DCAL  
**Results Table Date:** 12/19/2018 9:34:01 AM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

Ion Ratio Report

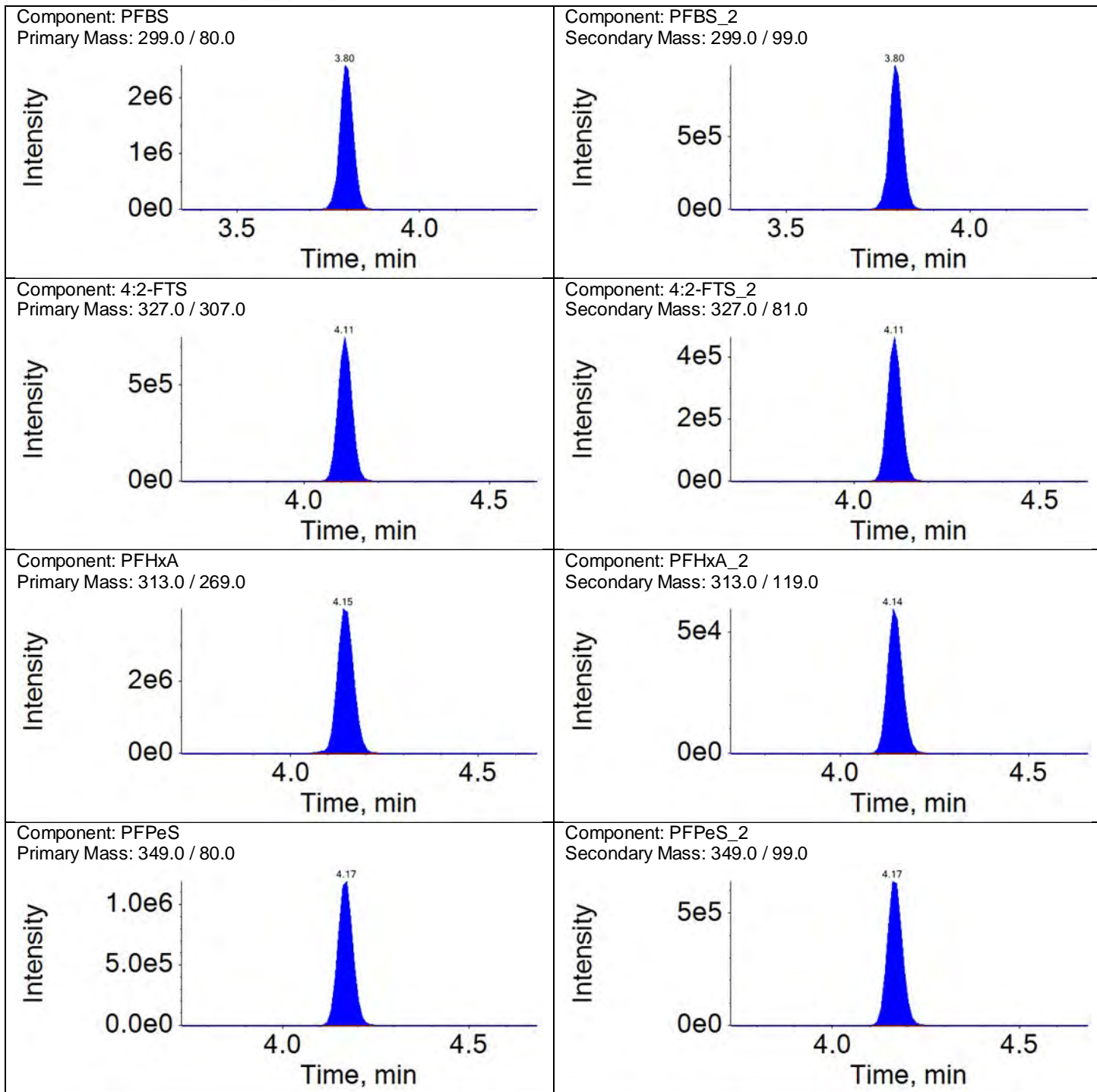
Sample Name: CAL7

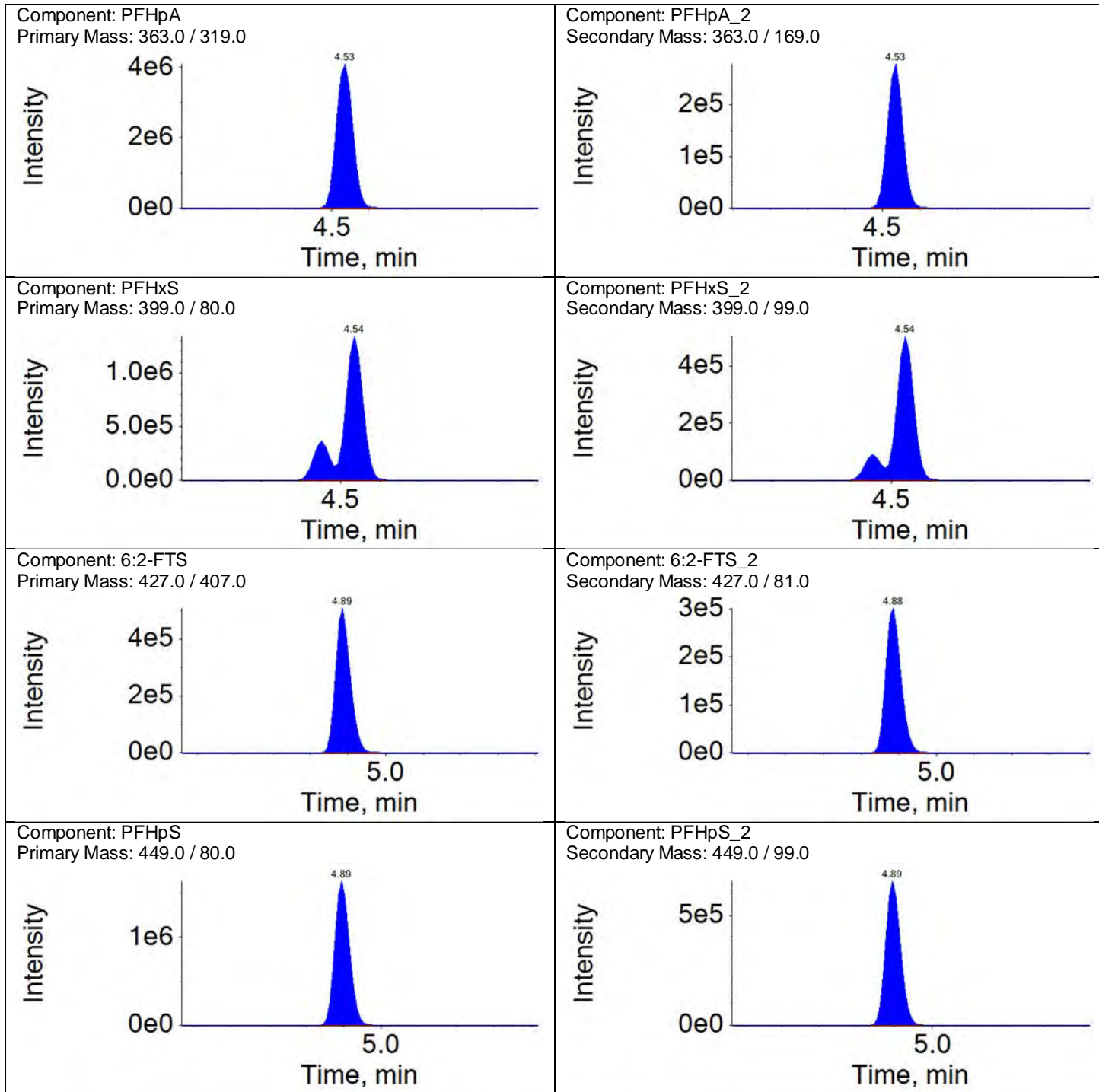
Instrument Name: LM27631

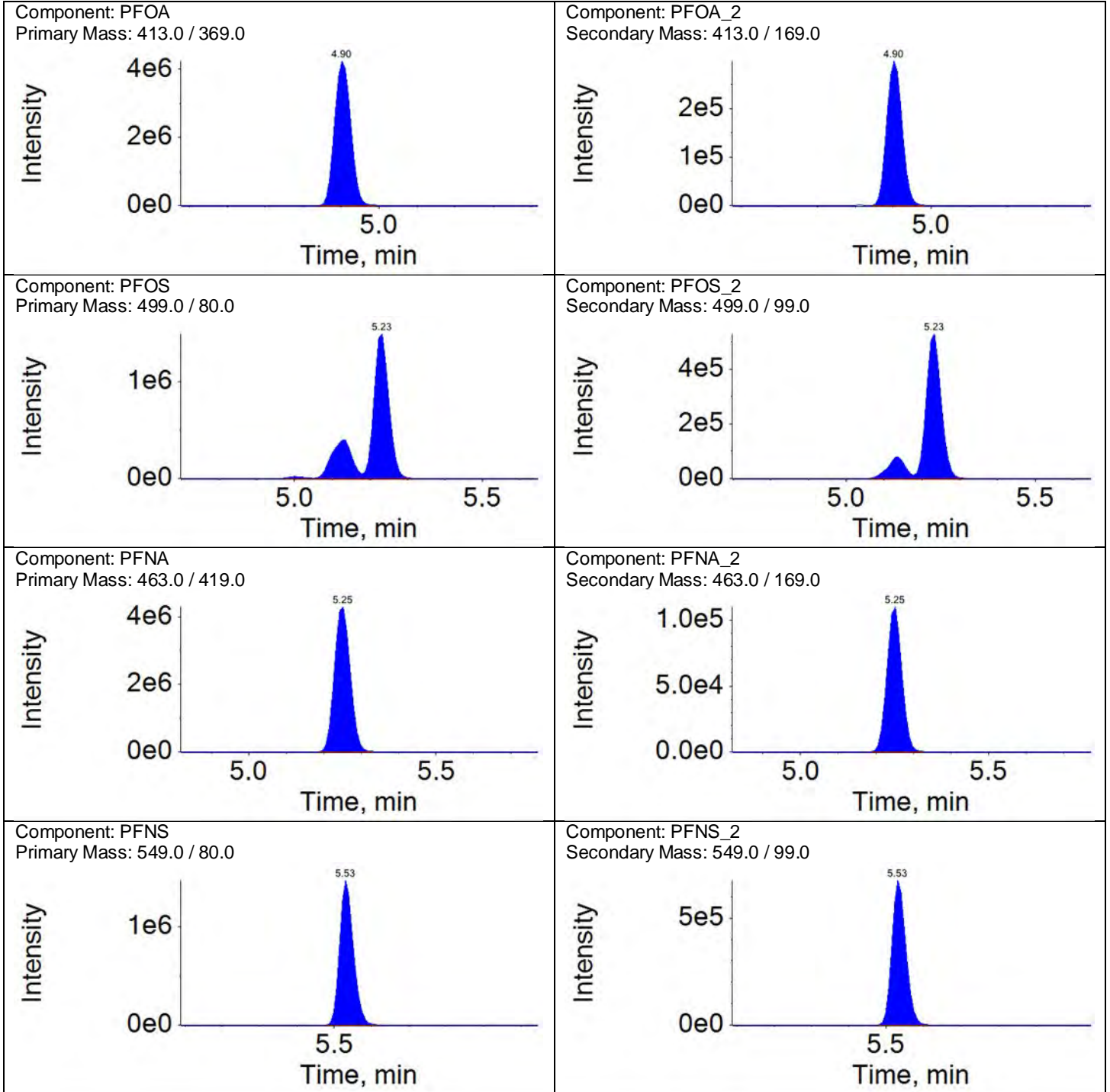
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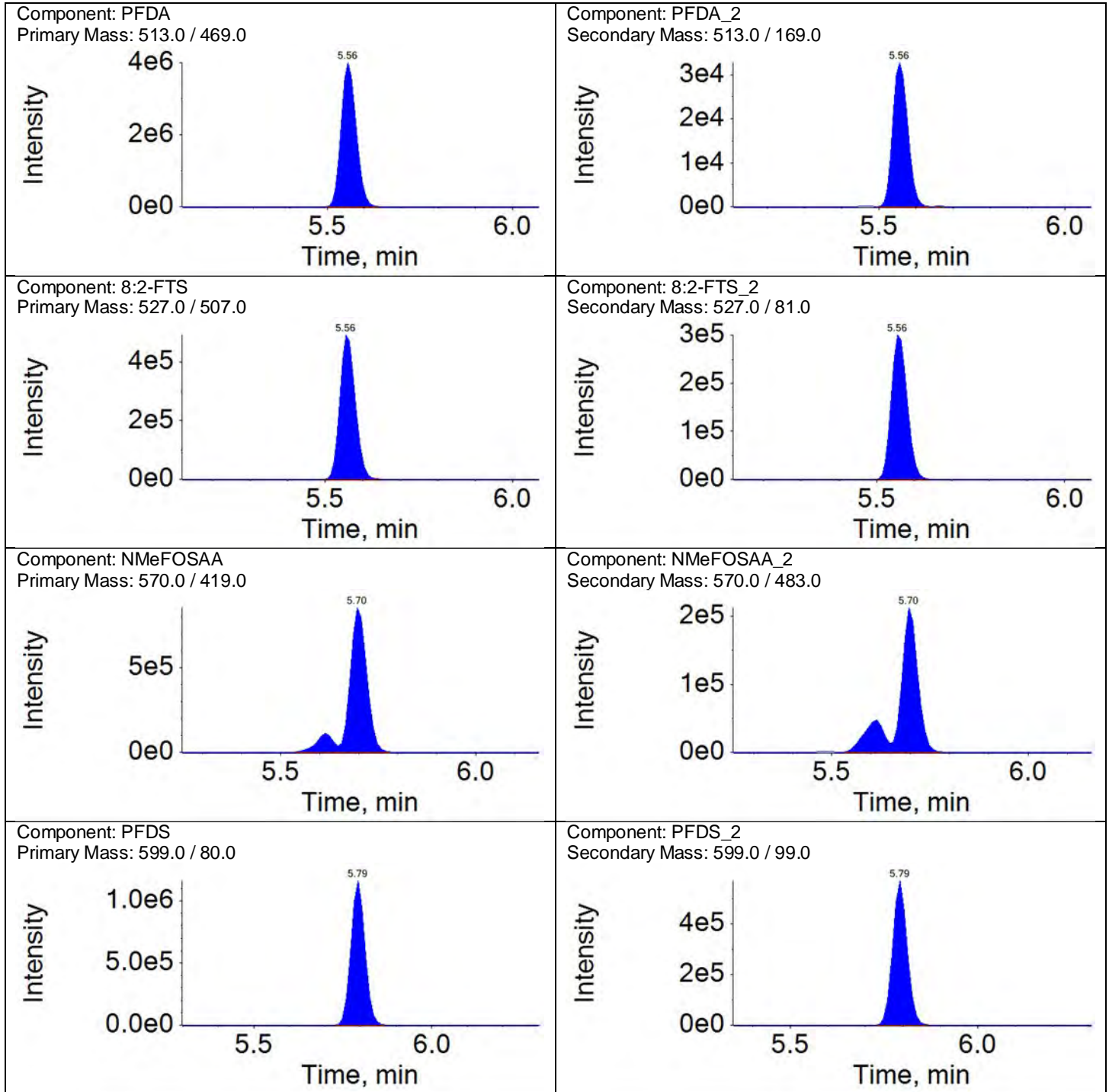
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.80	1.00	6651233.80	A	1.0000	1.0000			
PFBS_2	3.80	1.00	2518541.57	A	0.3686	0.3787	3	50	
4:2-FTS	4.11	1.00	1978052.53	A	1.0000	1.0000			
4:2-FTS_2	4.11	1.00	1224620.02	A	0.6123	0.6191	1	50	
PFHxA	4.15	1.00	12199404.08	A	1.0000	1.0000			
PFHxA_2	4.14	1.00	165678.06	A	0.0115	0.0136	18	50	
PFPeS	4.17	1.10	3356554.18	A	1.0000	1.0000			
PFPeS_2	4.17	1.10	1811682.64	A	0.5256	0.5397	3	50	
PFHpA	4.53	1.00	12613152.06	A	1.0000	1.0000			
PFHpA_2	4.53	1.00	806852.01	A	0.0547	0.0640	17	50	
PFHxS	4.54	1.00	5016409.07	M	1.0000	1.0000			
PFHxS_2	4.54	1.00	1735223.71	M	0.3359	0.3459	3	50	
6:2-FTS	4.89	1.00	1375932.55	A	1.0000	1.0000			
6:2-FTS_2	4.88	1.00	847203.59	A	0.6344	0.6157	-3	50	
PFHpS	4.89	1.08	4467941.35	A	1.0000	1.0000			
PFHpS_2	4.89	1.08	1808971.65	A	0.4110	0.4049	-1	50	
PFOA	4.90	1.00	12588127.97	A	1.0000	1.0000			
PFOA_2	4.90	1.00	841028.94	A	0.0590	0.0668	13	50	
PFOS	5.23	1.00	5671288.52	M	1.0000	1.0000			
PFOS_2	5.23	1.00	1707824.91	M	0.2980	0.3011	1	50	
PFNA	5.25	1.00	12632479.09	A	1.0000	1.0000			
PFNA_2	5.25	1.00	303911.11	A	0.0214	0.0241	12	50	
PFNS	5.53	1.06	3731780.57	A	1.0000	1.0000			
PFNS_2	5.53	1.06	1741744.42	A	0.4608	0.4667	1	50	
PFDA	5.56	1.00	11290182.13	A	1.0000	1.0000			
PFDA_2	5.56	1.00	92490.71	A	0.0064	0.0082	29	50	
8:2-FTS	5.56	1.00	1403687.59	A	1.0000	1.0000			
8:2-FTS_2	5.56	1.00	883642.79	A	0.5879	0.6295	7	50	
NMeFOSAA	5.70	1.00	2804936.29	M	1.0000	1.0000			
NMeFOSAA_2	5.70	1.00	757224.32	M	0.2625	0.2700	3	50	
PFDS	5.79	1.11	3153807.53	A	1.0000	1.0000			
PFDS_2	5.79	1.11	1524364.02	A	0.4962	0.4833	-3	50	
PFUnDA	5.82	1.00	10906838.78	A	1.0000	1.0000			
PFUnDA_2	5.82	1.00	48757.14	A	0.0035	0.0045	26	50	
NEtFOSAA	5.83	1.00	2419106.27	A	1.0000	1.0000			
NEtFOSAA_2	5.83	1.00	1752348.59	M	0.6883	0.7244	5	50	
PFDODA	6.04	1.00	13735940.73	A	1.0000	1.0000			
PFDODA_2	6.03	1.00	233150.50	A	0.0134	0.0170	26	50	
10:2-FTS	6.05	1.09	1572726.66	A	1.0000	1.0000			
10:2-FTS_2	6.05	1.09	1084682.46	A	0.7018	0.6897	-2	50	
PFTrDA	6.23	1.03	12403653.15	A	1.0000	1.0000			
PFTrDA_2	6.23	1.03	144958.87	A	0.0093	0.0117	25	50	
PFTeDA	6.41	1.00	10584696.41	A	1.0000	1.0000			
PFTeDA_2	6.41	1.00	78637.32	A	0.0058	0.0074	28	50	
PFHxDA	6.71	1.05	6096567.97	A	1.0000	1.0000			
PFHxDA_2	6.71	1.05	415709.72	A	0.0656	0.0682	4	50	
PFODA	6.97	1.09	4781425.10	A	1.0000	1.0000			
PFODA_2	6.97	1.09	131731.12	A	0.0273	0.0276	1	50	



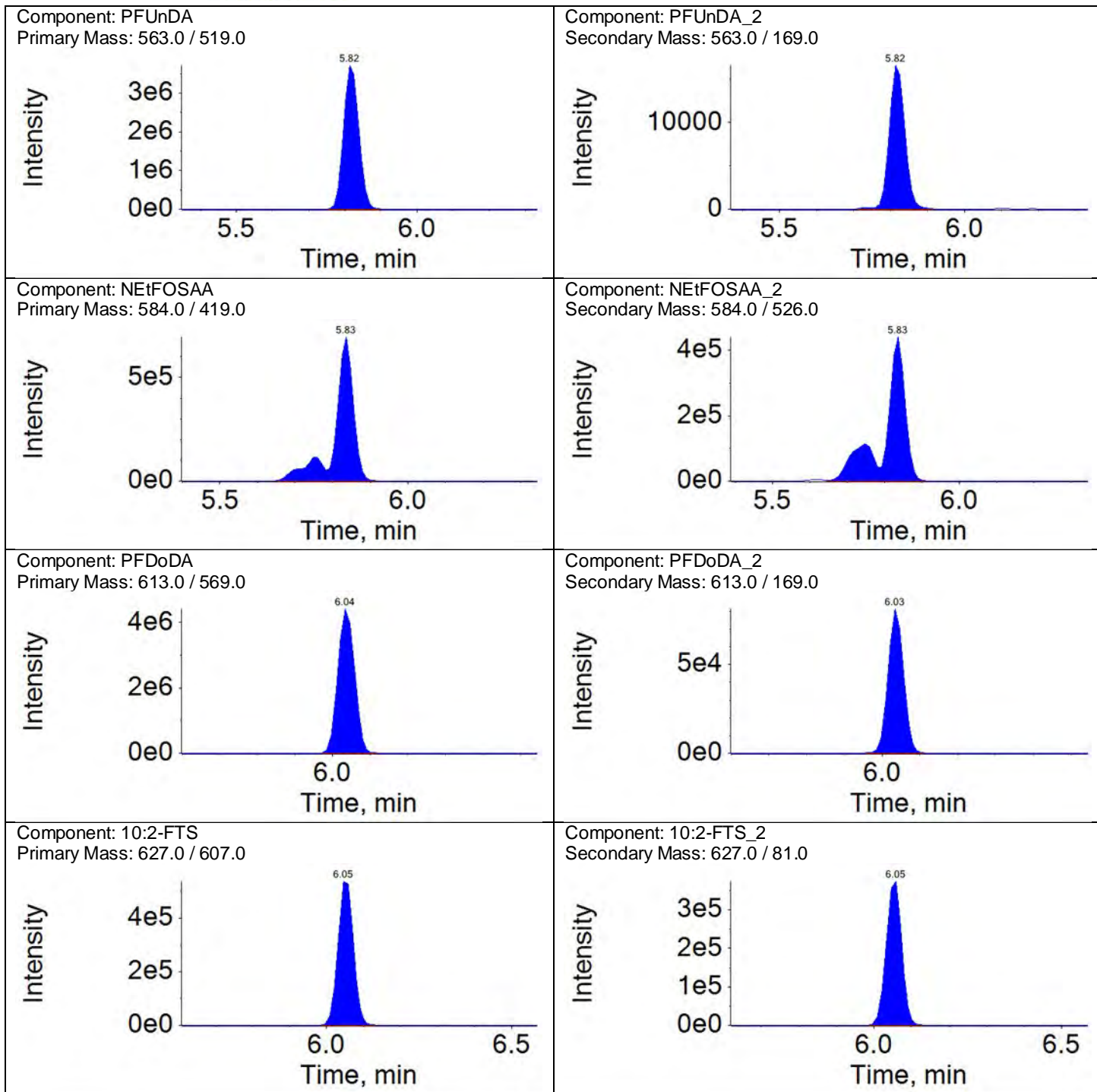




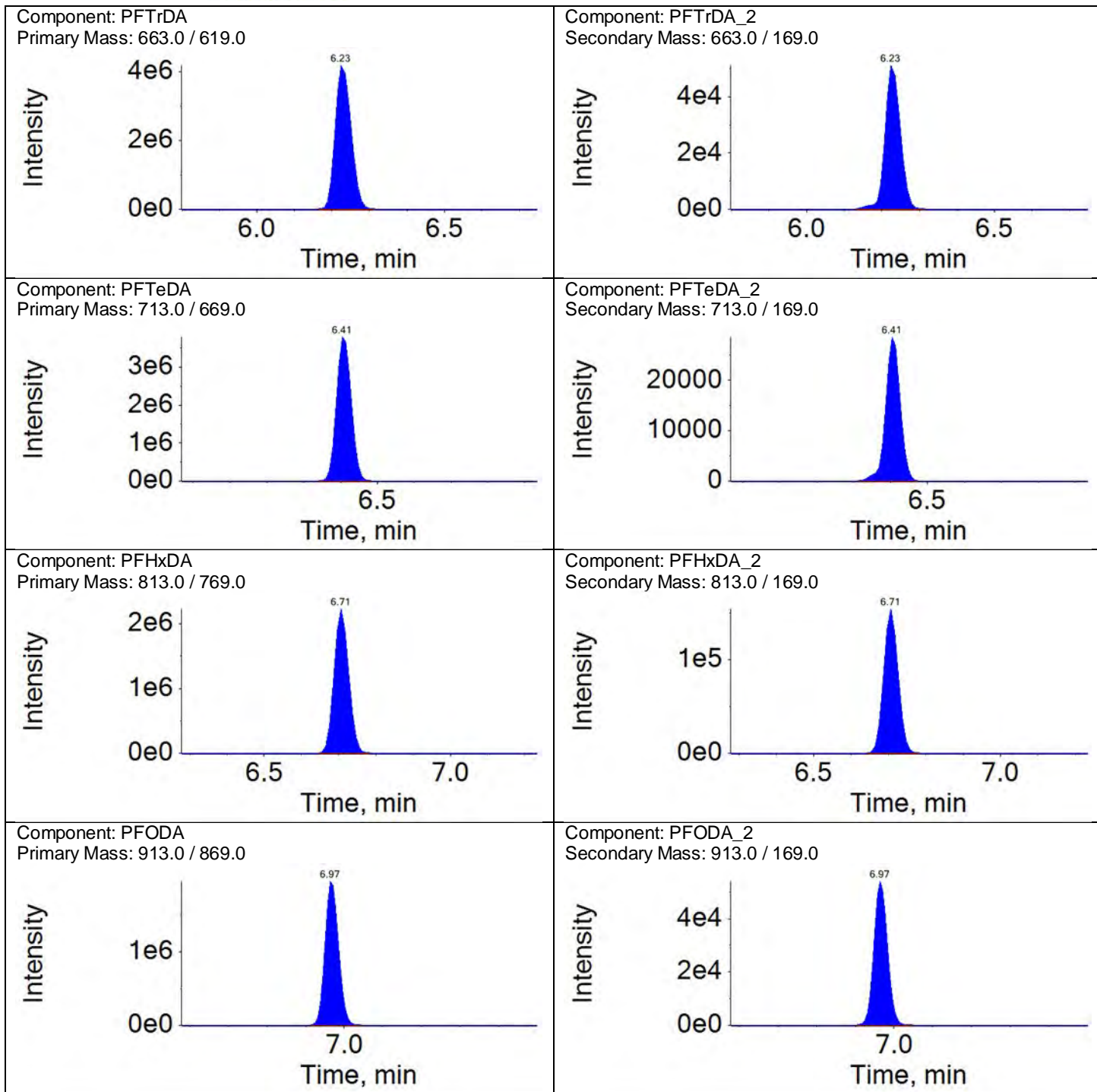












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	MDL	Data File:	18DEC18DCAL-67.wiff
Sample ID:	MDLMODX1833F	Acquis Date:	2018-12-18T23:25:52
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	2	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	988372.7	941251.6	5	50	
13C2-PFOA	5.0	542685.1	485595.3	12	50	
13C4-PFOS	4.8	316191.9	292182.6	8	50	
13C2-PFDA	5.0	494658.7	467216.0	6	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1088801.6	13C3-PFBA	988372.7	1.102	5.000	4.878	98	70-130	
E13C5-PFPeA	1028850.2	13C3-PFBA	988372.7	1.041	5.000	4.854	97	70-130	
E13C3-PFBS	462763.7	13C3-PFBA	988372.7	0.468	4.650	4.559	98	70-130	
E13C2-4:2-FTS	63790.3	13C2-PFOA	542685.1	0.118	4.670	4.464	96	70-130	
E13C5-PFHxA	759068.5	13C2-PFOA	542685.1	1.399	5.000	5.003	100	70-130	
E13C3-PFHxS	353739.7	13C2-PFOA	542685.1	0.652	4.730	4.932	104	70-130	
E13C4-PFHpA	599028.3	13C2-PFOA	542685.1	1.104	5.000	4.768	95	70-130	
E13C2-6:2-FTS	52379.9	13C2-PFOA	542685.1	0.097	4.750	4.856	102	70-130	
E13C8-PFOA	1038332.8	13C2-PFOA	542685.1	1.913	5.000	5.261	105	70-130	
E13C8-PFOS	330787.6	13C4-PFOS	316191.9	1.046	4.780	4.678	98	70-130	
E13C9-PFNA	699619.2	13C4-PFOS	316191.9	2.213	5.000	5.034	101	70-130	
E13C6-PFDA	887422.7	13C2-PFDA	494658.7	1.794	5.000	5.110	102	70-130	
E13C2-8:2-FTS	45693.1	13C2-PFDA	494658.7	0.092	4.790	4.761	99	70-130	
E13C8-PFOA	593211.5	13C2-PFDA	494658.7	1.199	5.000	4.670	93	70-130	
Ed3-NMeFOSAA	203569.7	13C2-PFDA	494658.7	0.412	5.000	4.528	91	70-130	
E13C7-PFUnDA	589619.4	13C2-PFDA	494658.7	1.192	5.000	4.989	100	70-130	
Ed5-NEtFOSAA	181825.6	13C2-PFDA	494658.7	0.368	5.000	5.415	108	70-130	
E13C2-PFDoDA	1209881.5	13C2-PFDA	494658.7	2.446	5.000	5.146	103	70-130	
Ed7-NMePFOSAE	251101.2	13C2-PFDA	494658.7	0.508	5.000	4.536	91	70-130	
Ed3-NMePFOSA	79469.7	13C2-PFDA	494658.7	0.161	5.000	4.414	88	70-130	
Ed9-NEtPFOSAE	222205.9	13C2-PFDA	494658.7	0.449	5.000	4.593	92	70-130	
Ed5-NEtPFOSA	68092.7	13C2-PFDA	494658.7	0.138	5.000	4.775	95	70-130	
E13C2-PFTeDA	922819.9	13C2-PFDA	494658.7	1.866	5.000	5.257	105	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

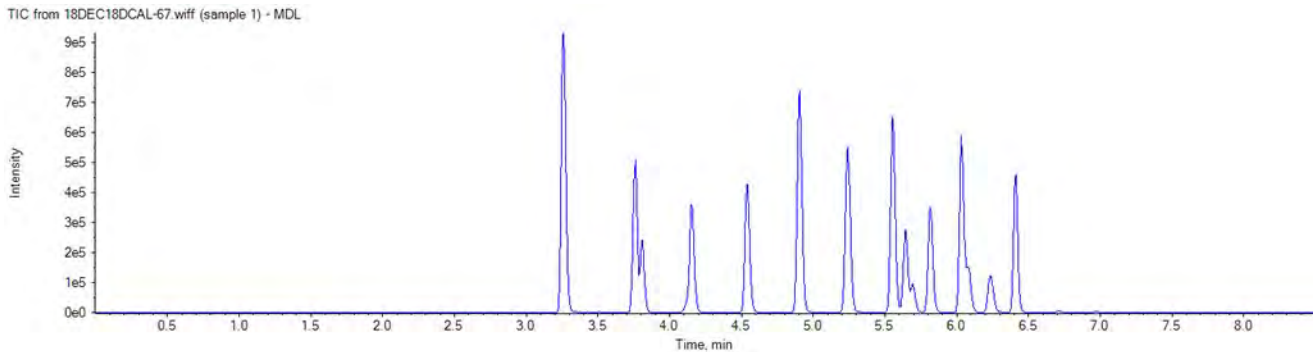
**Analyte Quantitation Peak Table**

Sample Name: MDL Instrument Name: LM27631 File Name: 18DEC18DCAL-67.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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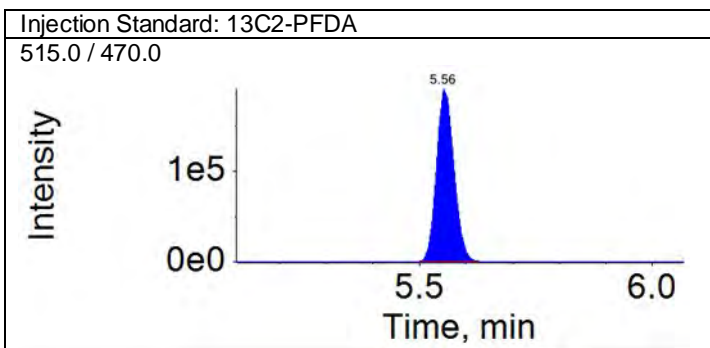
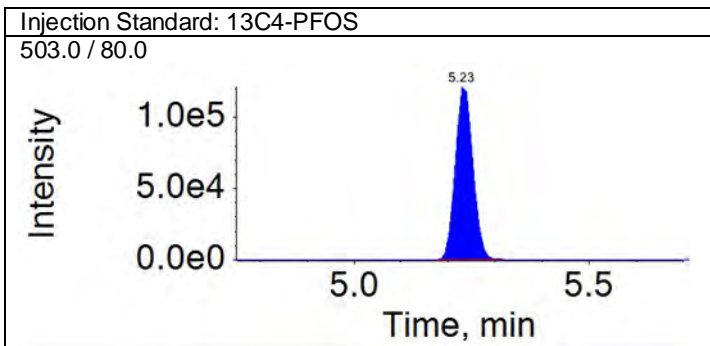
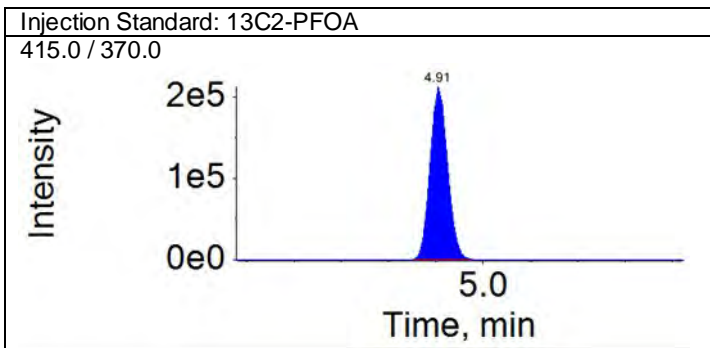
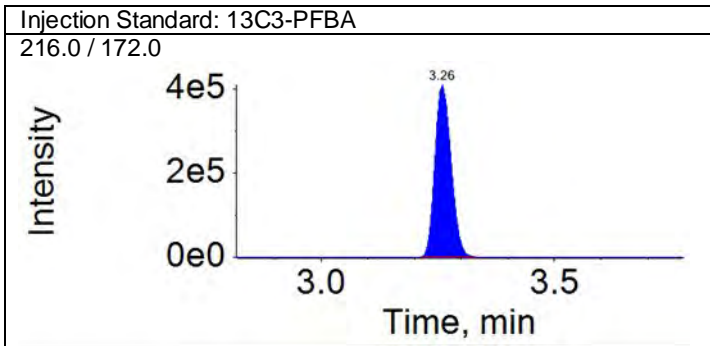
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	35692.7		A	13C4-PFBA	3.26	1088801.6	0.033	0.174
PFPeA	3.76	1.000	26762.8		A	13C5-PFPeA	3.76	1028850.2	0.026	0.134
PFBS	3.81	1.000	10927.5		A	13C3-PFBS	3.81	462763.7	0.024	0.117
4:2-FTS	4.12	1.000	2760.1		A	13C2-4:2-FTS	4.12	63790.3	0.043	0.114
PFHxA	4.15	1.000	24366.5		A	13C5-PFHxA	4.15	759068.5	0.032	0.132
PFPeS	4.17	1.090	4603.3		A	13C3-PFBS	3.81	462763.7	0.010	0.101
PFHpA	4.54	1.000	28052.4		A	13C4-PFHpA	4.54	599028.3	0.047	0.155
PFHxS	4.54	1.000	9137.7		A	13C3-PFHxS	4.54	353739.7	0.026	0.126
6:2-FTS	4.89	1.000	3271.1		A	13C2-6:2-FTS	4.89	52379.9	0.062	0.155
PFHpS	4.90	1.080	8306.5		A	13C3-PFHxS	4.54	353739.7	0.023	0.124
PFOA	4.90	1.000	29367.5		A	13C8-PFOA	4.91	1038332.8	0.028	0.150
PFOS	5.23	1.000	7700.8		A	13C8-PFOS	5.23	330787.6	0.023	0.102
PFNA	5.25	1.000	25516.5		A	13C9-PFNA	5.25	699619.2	0.036	0.145
PFNS	5.53	1.060	4755.2		A	13C8-PFOS	5.23	330787.6	0.014	0.091
PFDA	5.55	1.000	20958.7		A	13C6-PFDA	5.55	887422.7	0.024	0.122
8:2-FTS	5.55	1.000	2279.7		A	13C2-8:2-FTS	5.56	45693.1	0.050	0.100
PFOSA	5.64	1.000	14607.5		A	13C8-PFOSA	5.64	593211.5	0.025	0.123
NMeFOSAA	5.70	1.000	5302.8		A	d3-NMeFOSAA	5.69	203569.7	0.026	0.162
PFDS	5.79	1.110	5575.3		A	13C8-PFOS	5.23	330787.6	0.017	0.138
PfUnDA	5.82	1.000	23975.0		A	13C7-PfUnDA	5.82	589619.4	0.041	0.135
NEtFOSAA	5.83	1.000	3750.4		A	d5-NEtFOSAA	5.82	181825.6	0.021	0.105
PFDaDA	6.03	1.000	33130.1		A	13C2-PFDaDA	6.03	1209881.5	0.027	0.138
10:2-FTS	6.05	1.090	2591.9		A	13C2-8:2-FTS	5.56	45693.1	0.057	0.116
NMePFOSAE	6.09	1.000	7863.6		A	d7-NMePFOSAE	6.08	251101.2	0.031	0.138
NMePFOSA	6.10	1.000	1847.4		A	d3-NMePFOSA	6.10	79469.7	0.023	0.117
PFDoS	6.20	1.190	2143.2		A	13C8-PFOS	5.23	330787.6	0.006	0.098
NEtPFOSAE	6.24	1.000	5789.7		A	d9-NEtPFOSAE	6.23	222205.9	0.026	0.085
NEtPFOSA	6.26	1.000	1597.4		A	d5-NEtPFOSA	6.26	68092.7	0.023	0.110
PFTTrDA	6.23	1.030	31273.8		A	13C2-PFDaDA	6.03	1209881.5	0.026	0.133
PFTeDA	6.41	1.000	22403.0		A	13C2-PFTeDA	6.41	922819.9	0.024	0.131
PFHxDA	6.71	1.050	11075.7		A	13C2-PFTeDA	6.41	922819.9	0.012	0.132
PFOA	6.97	1.090	6612.2		A	13C2-PFTeDA	6.41	922819.9	0.007	0.103

**Total Ion Chromatogram**



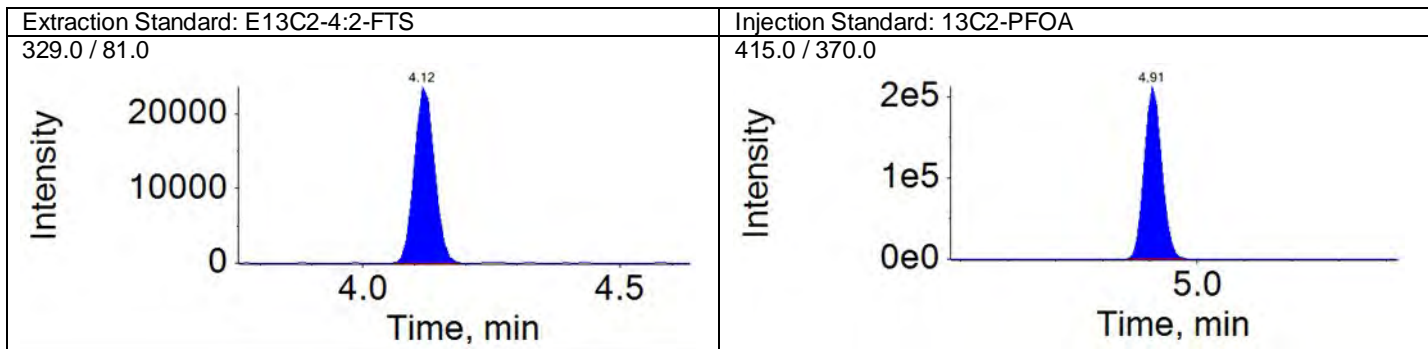
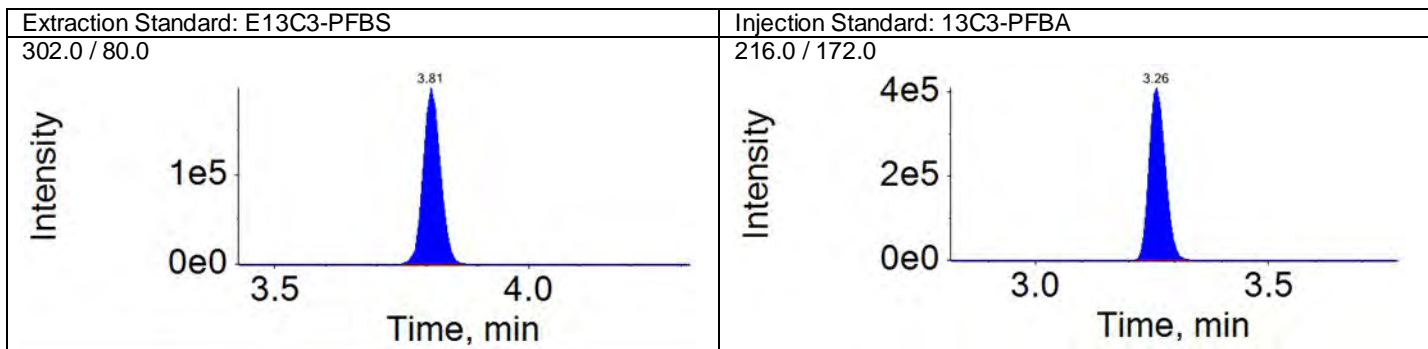
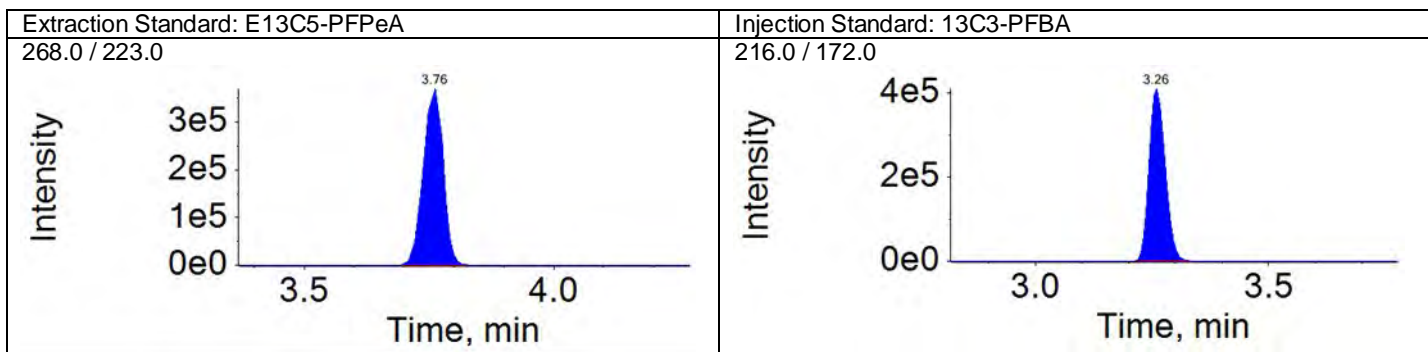
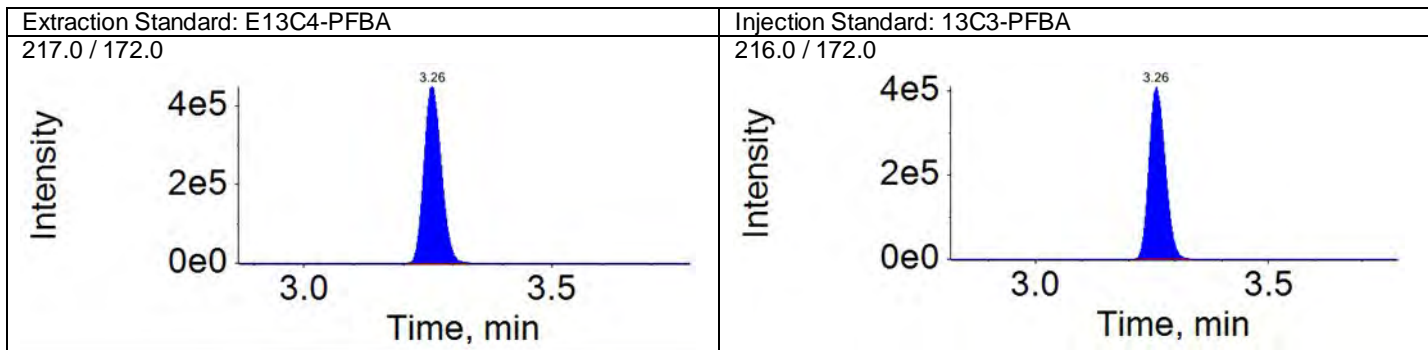
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
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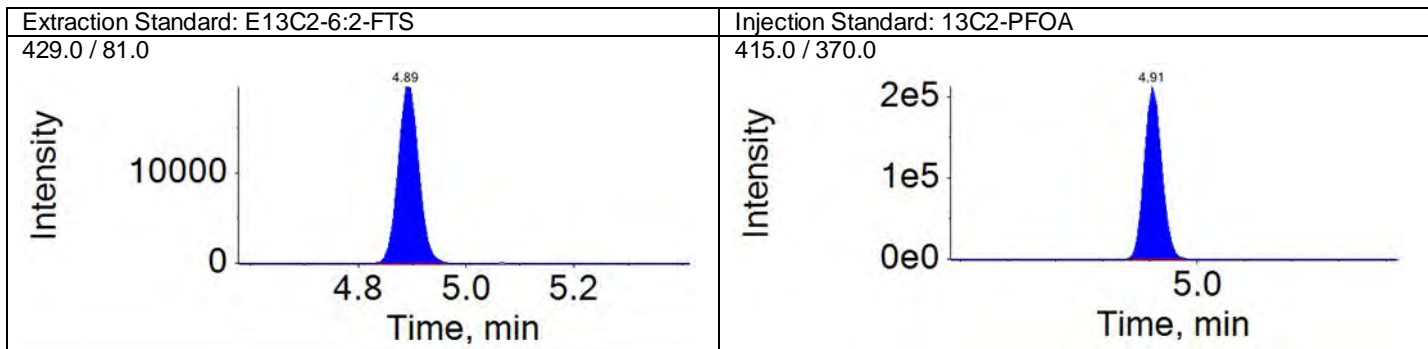
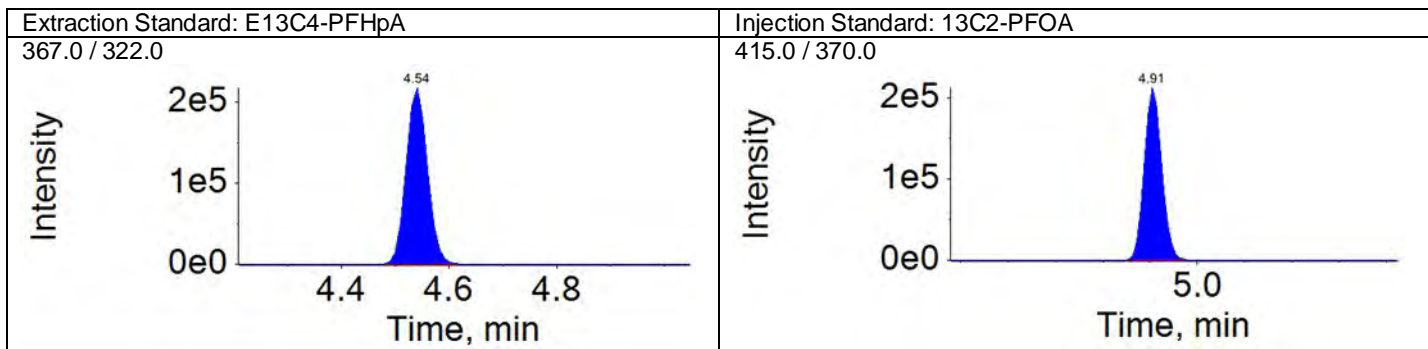
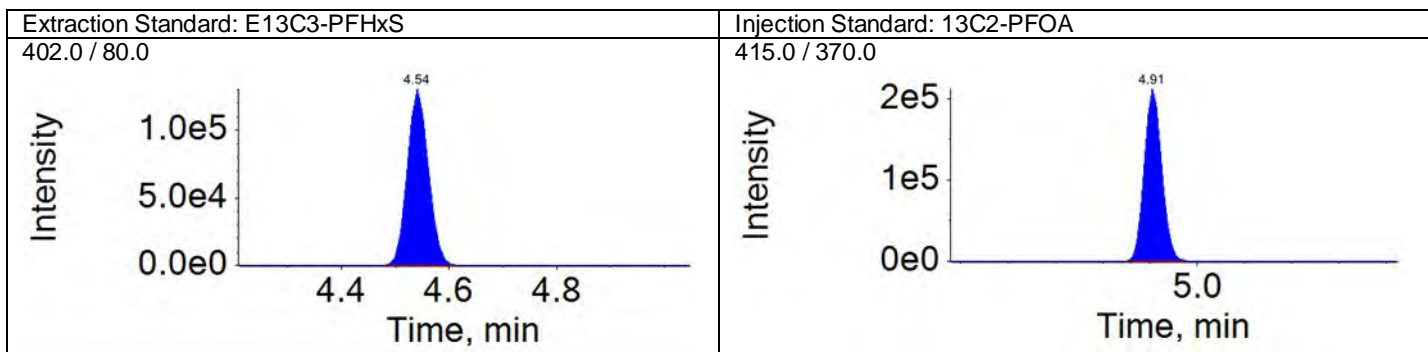
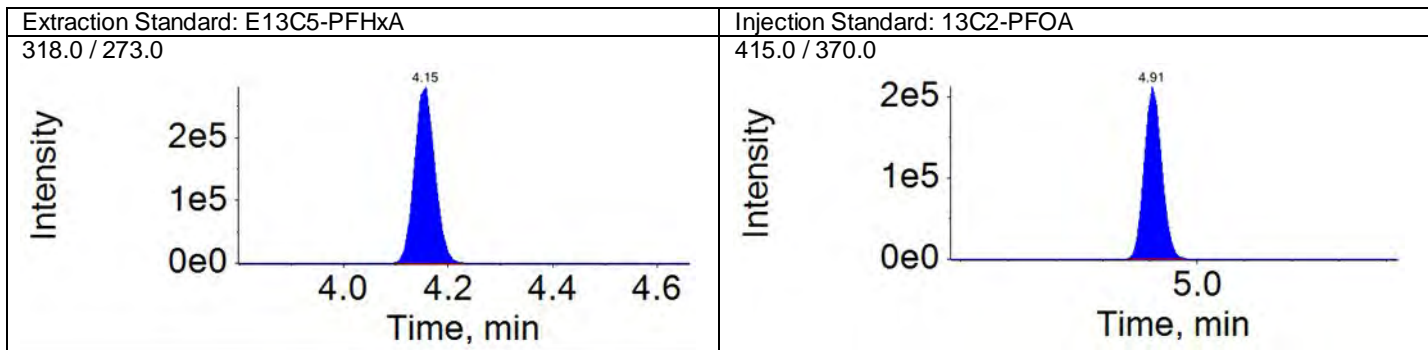
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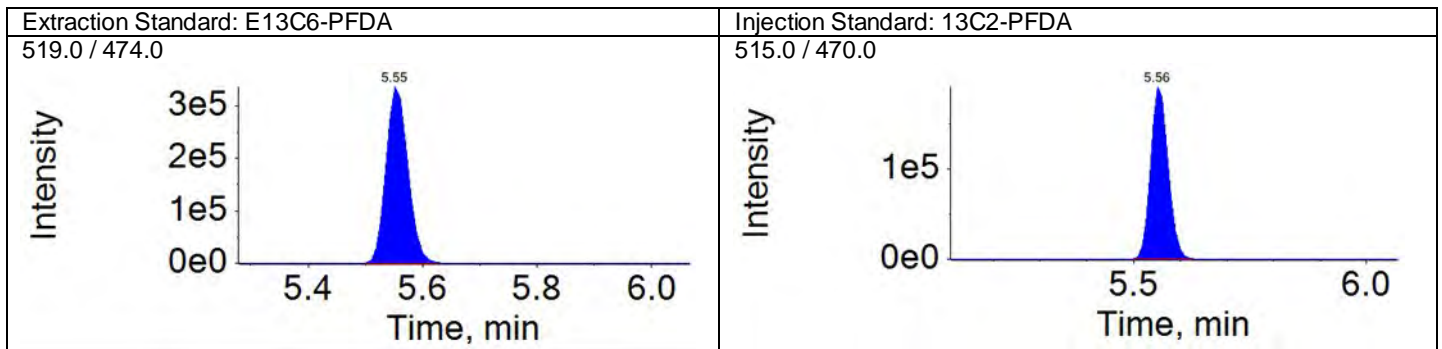
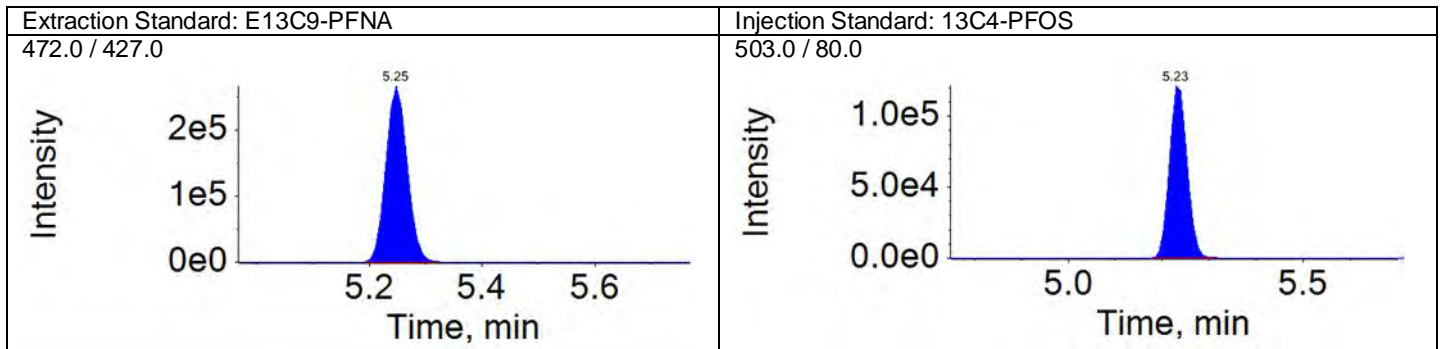
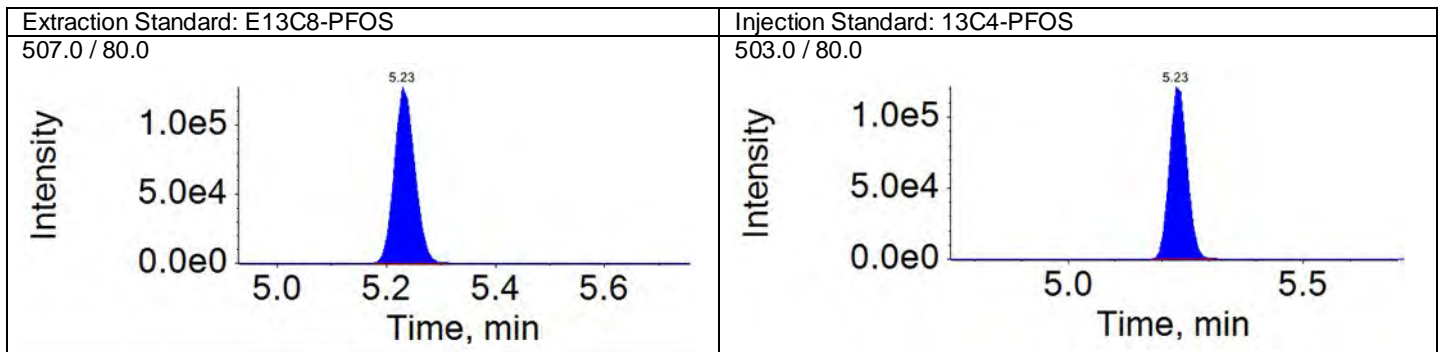
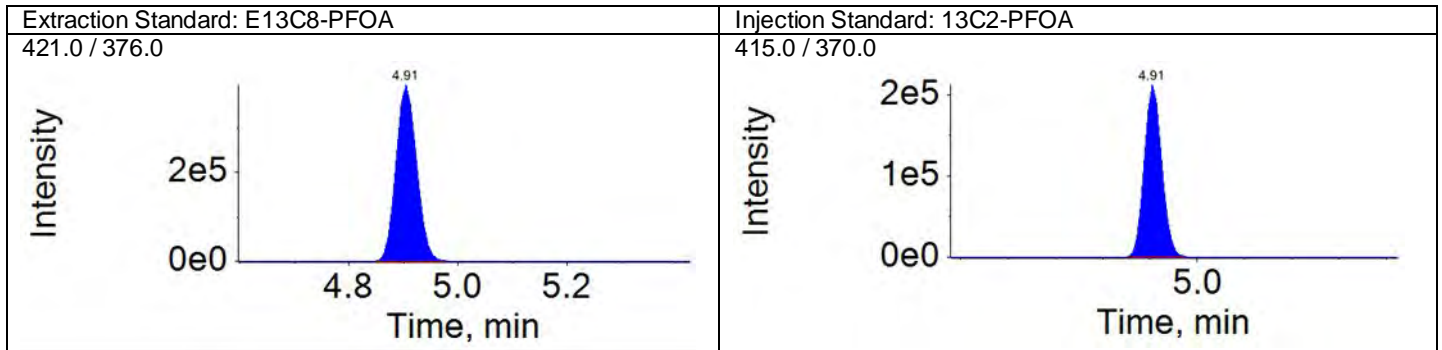
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



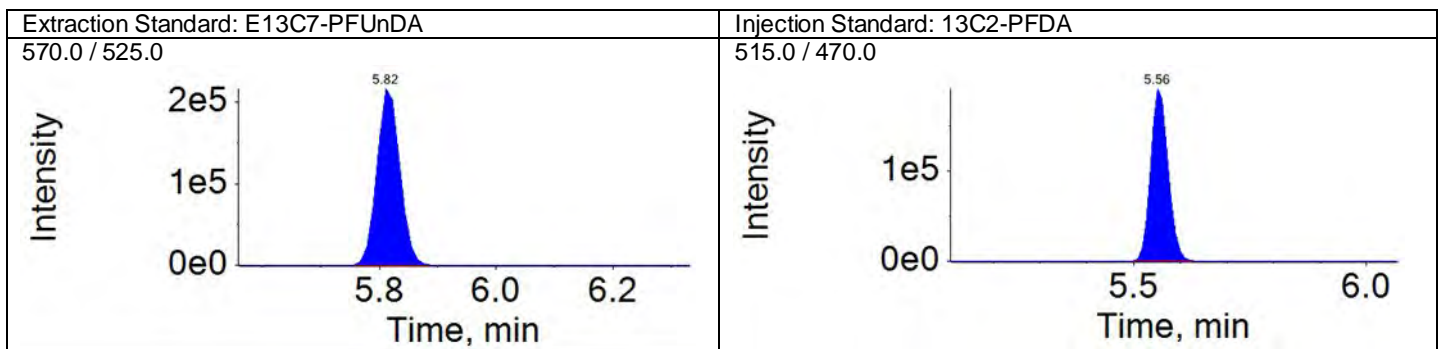
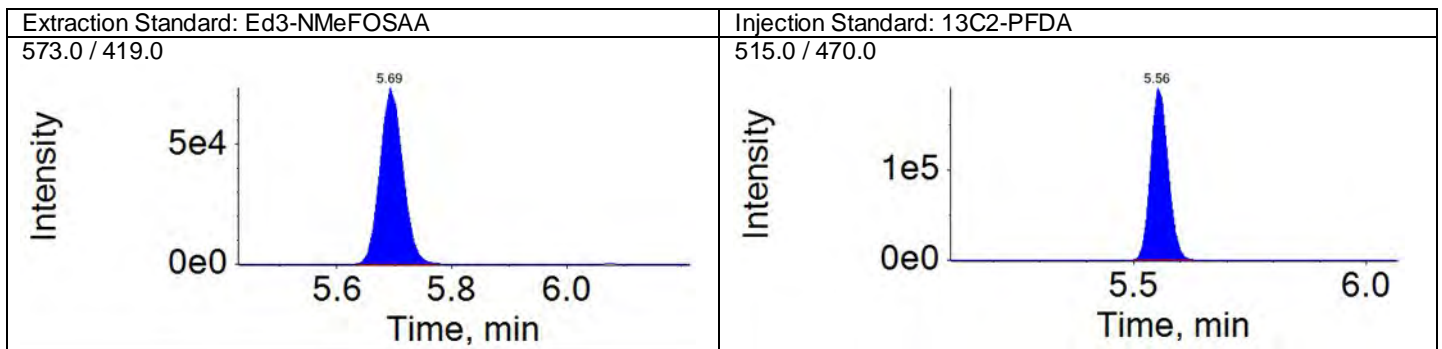
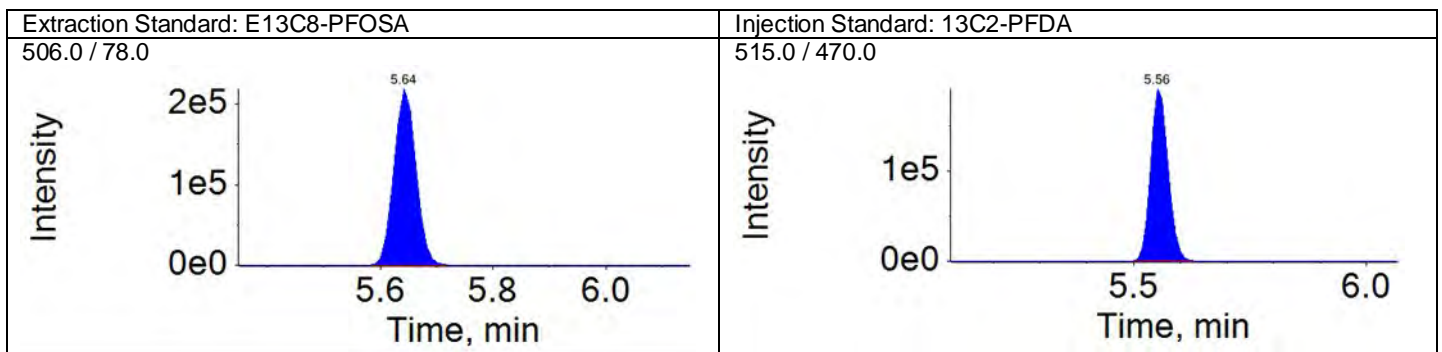
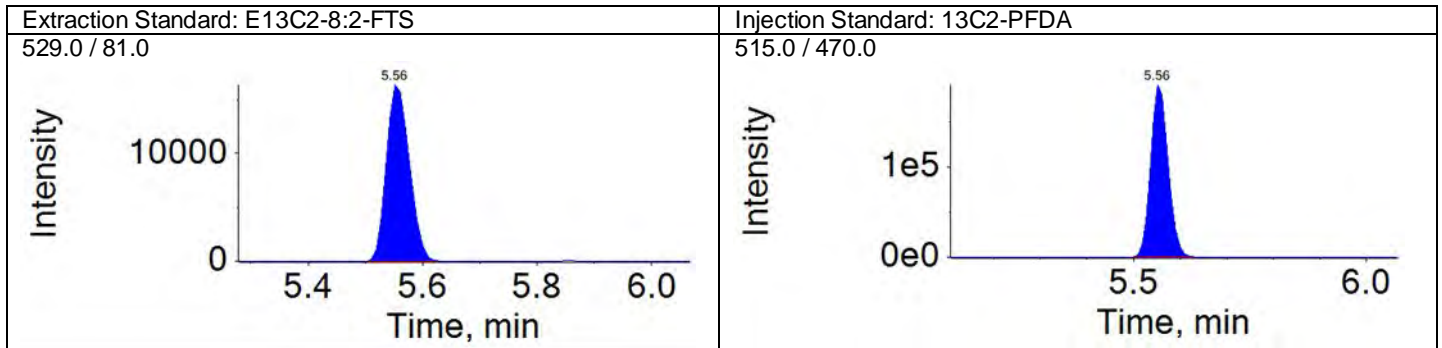
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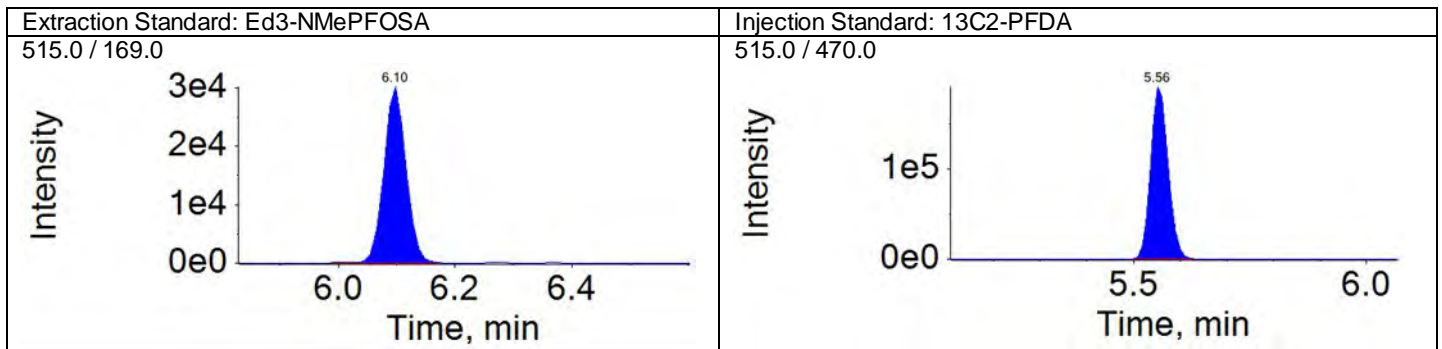
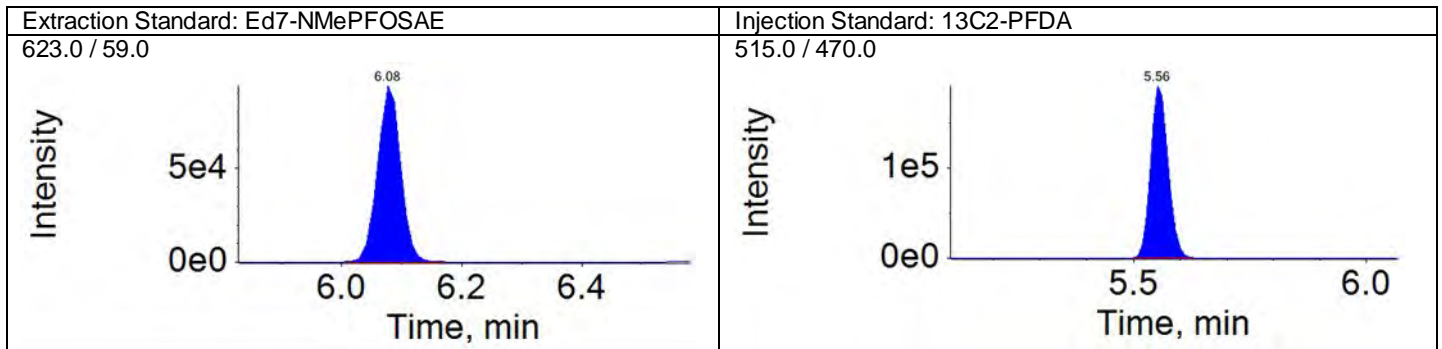
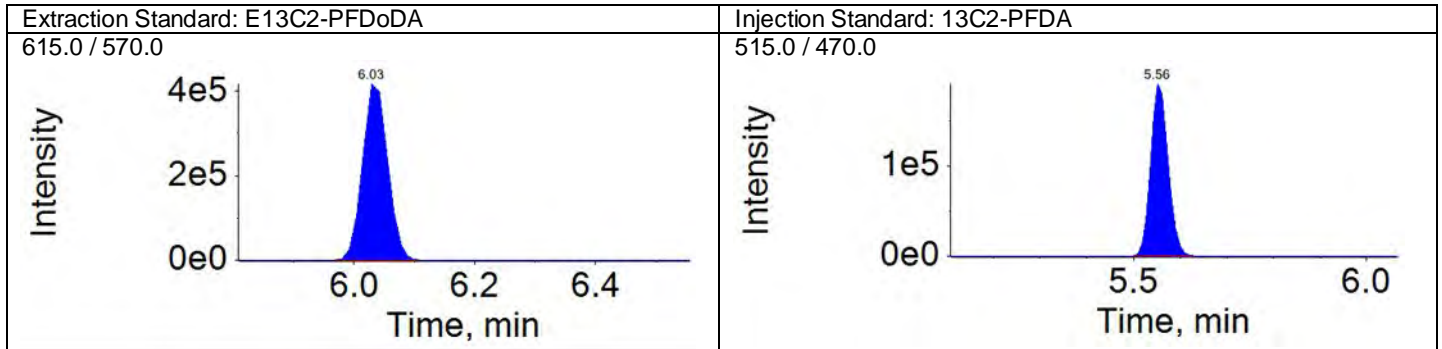
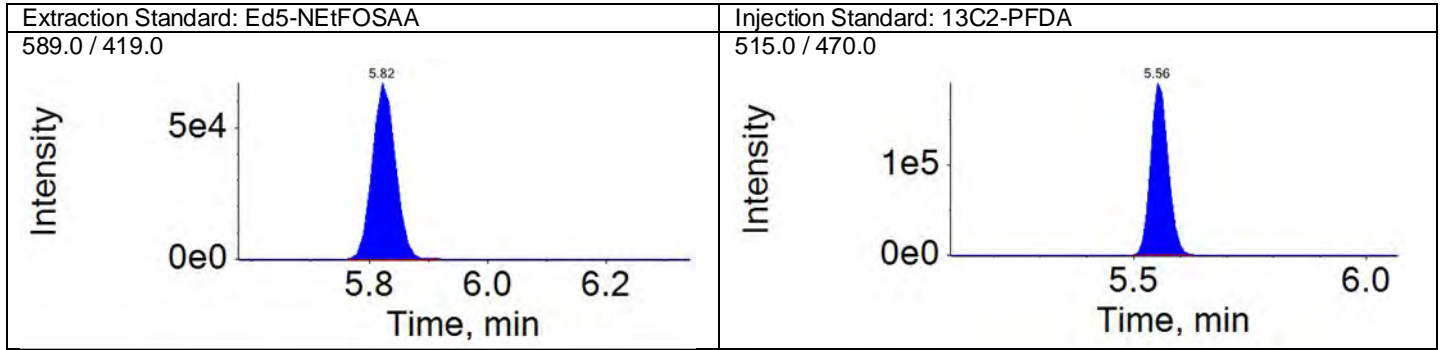
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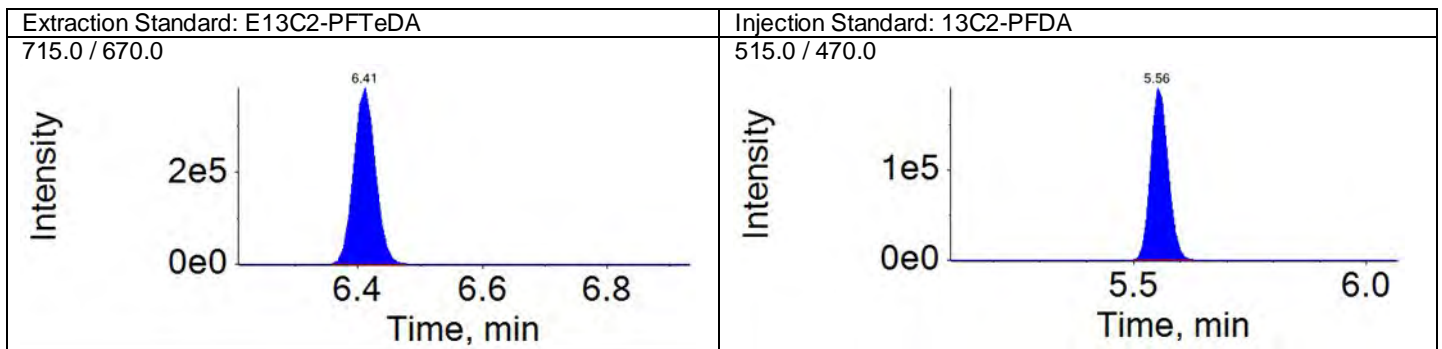
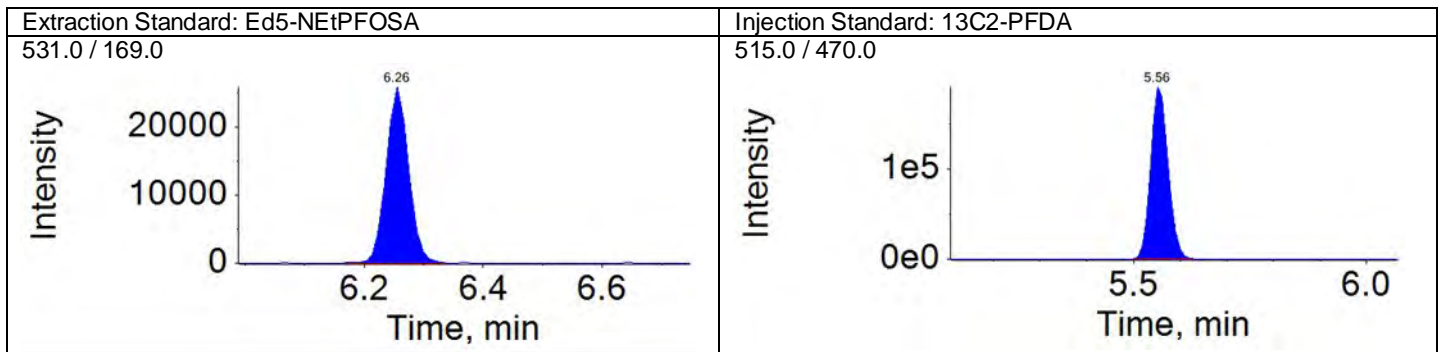
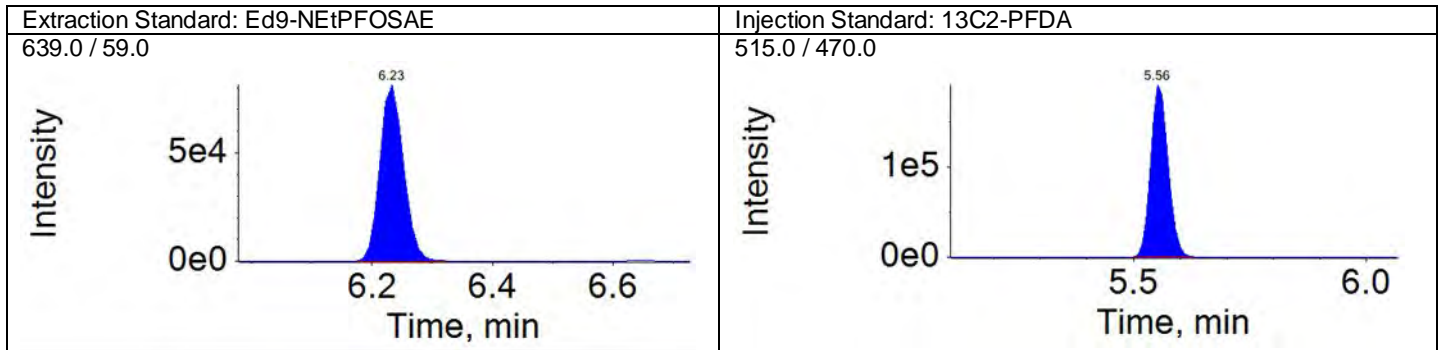
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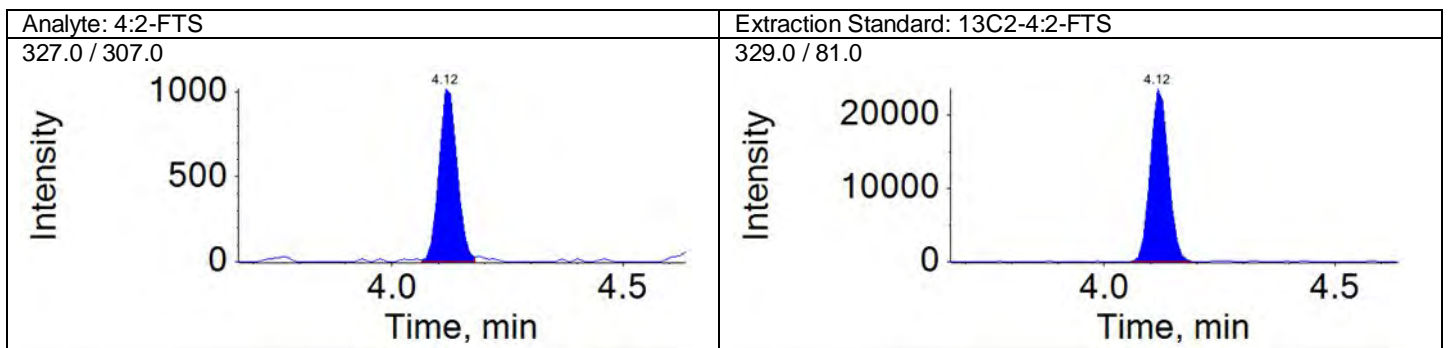
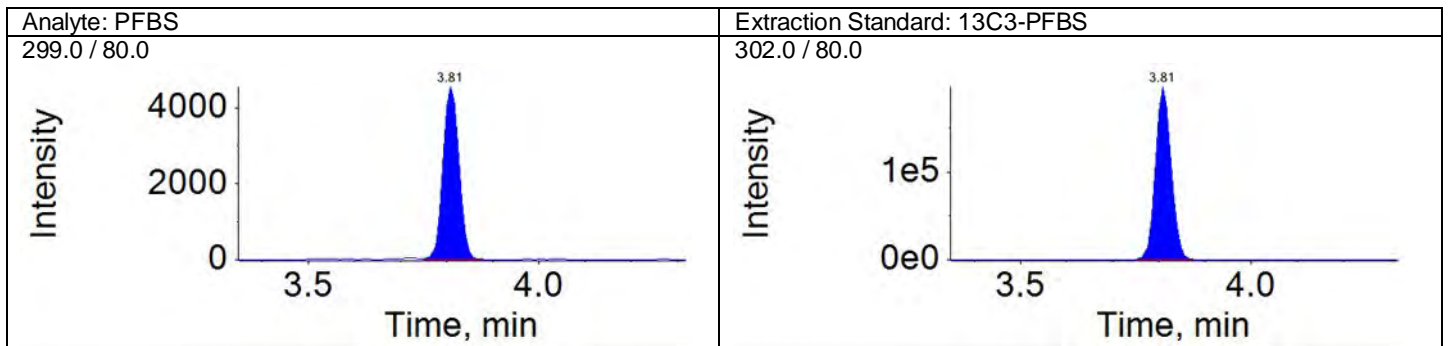
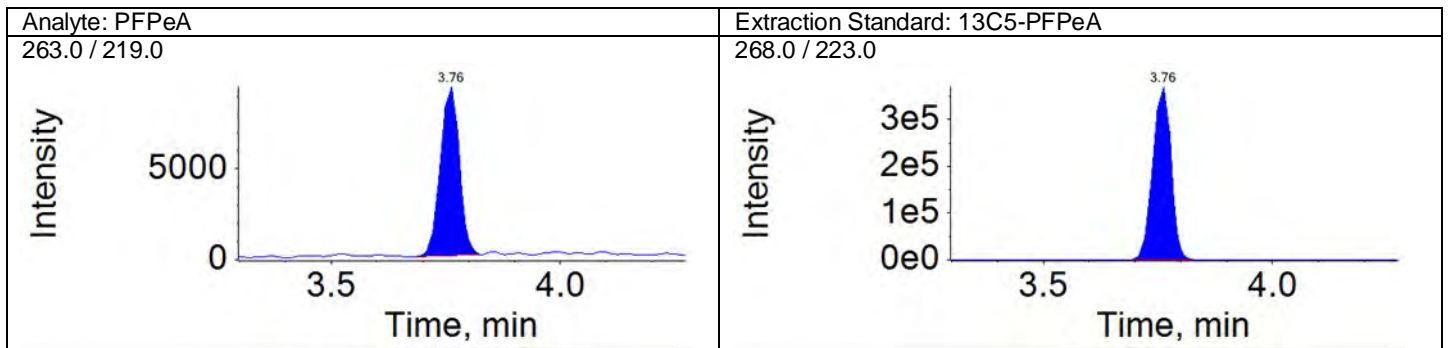
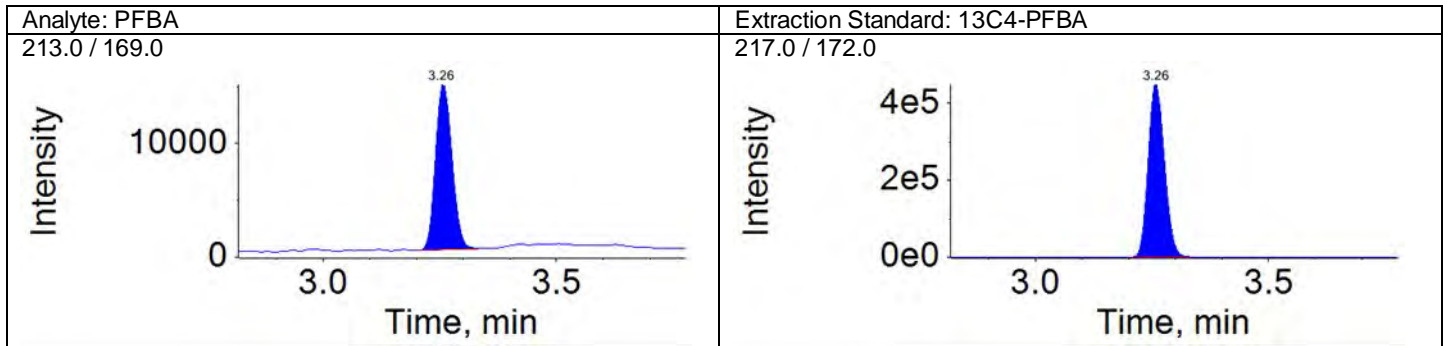
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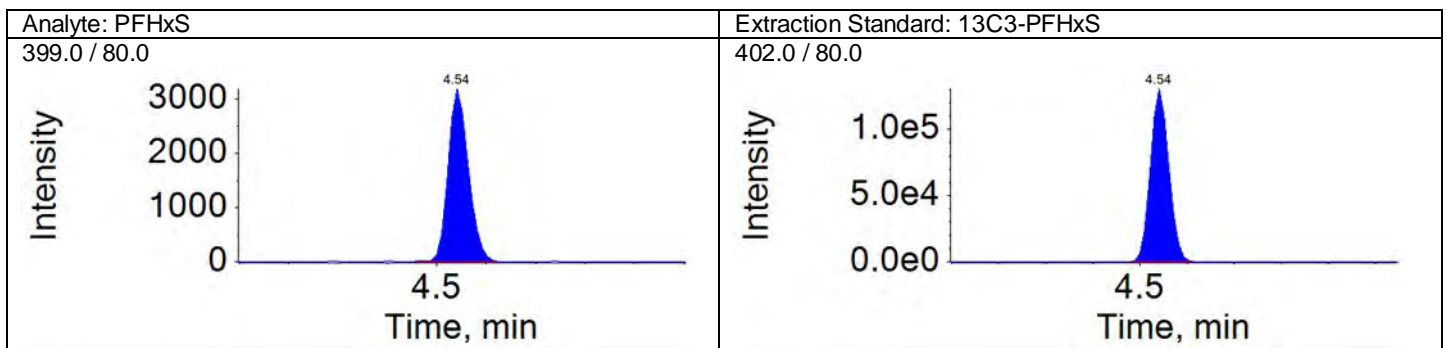
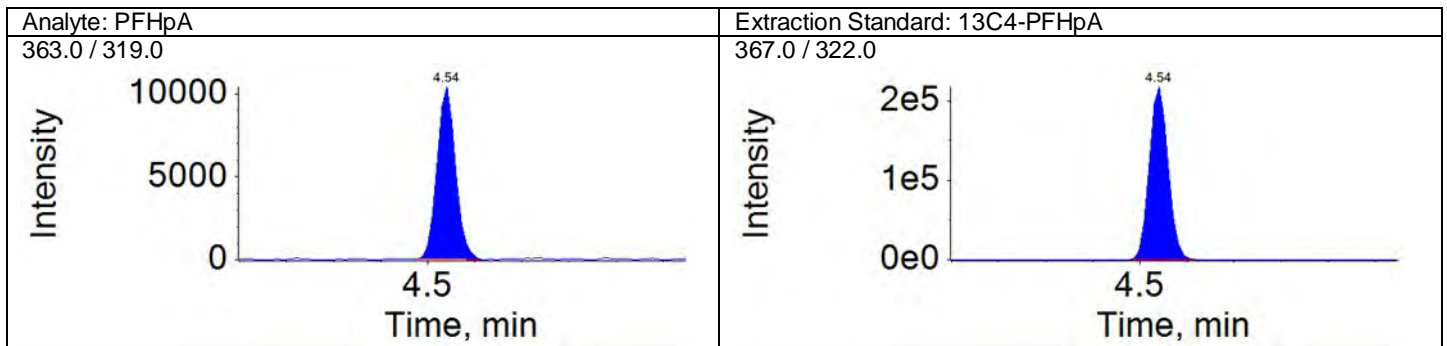
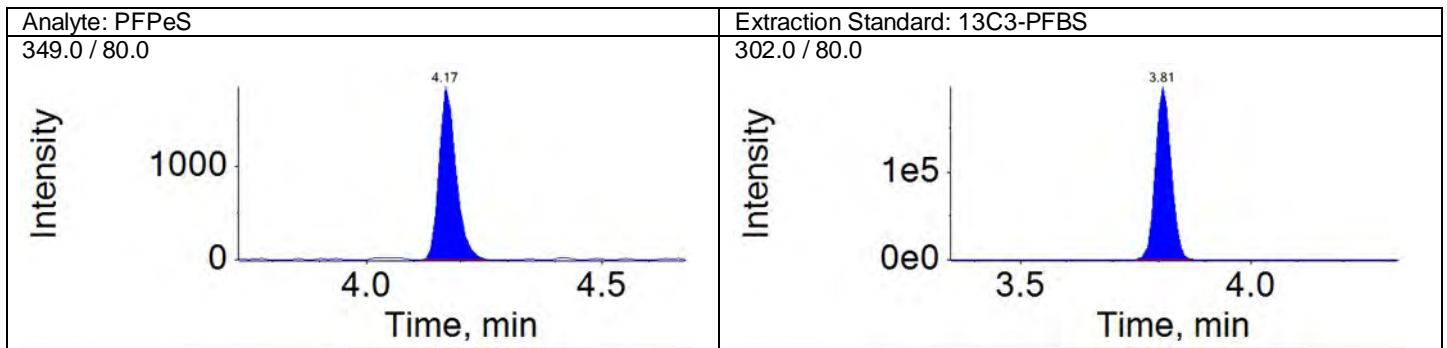
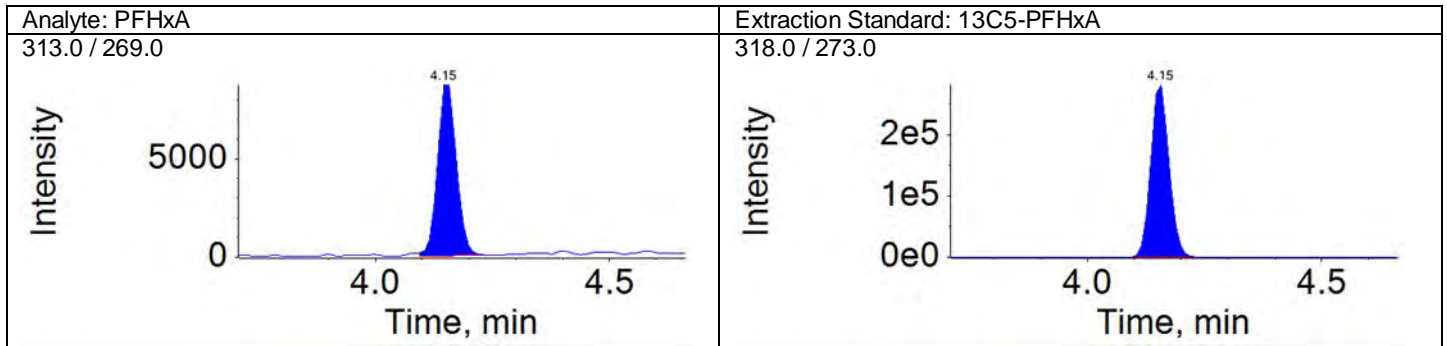
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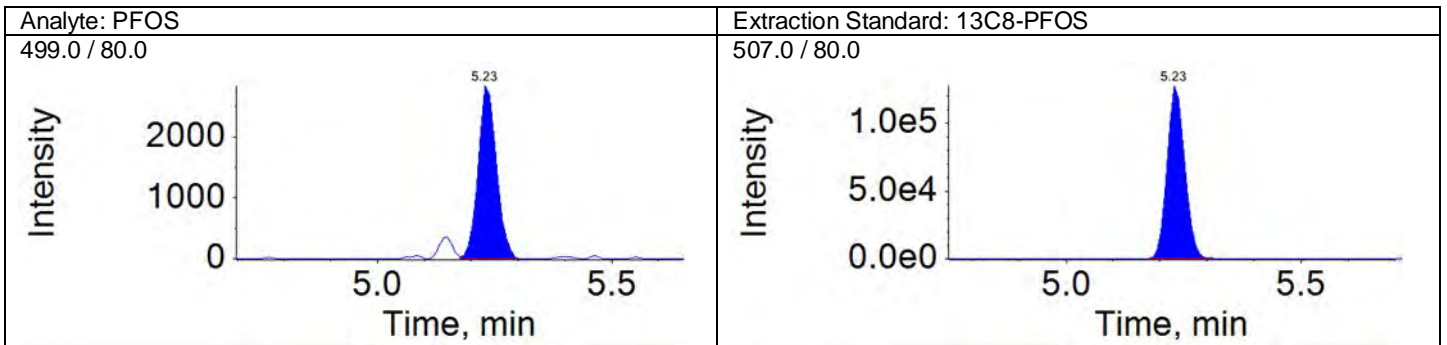
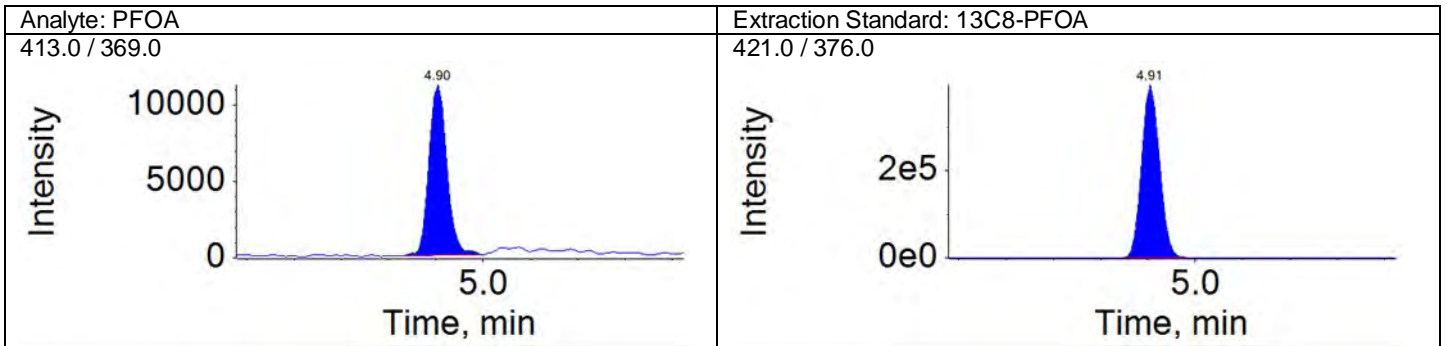
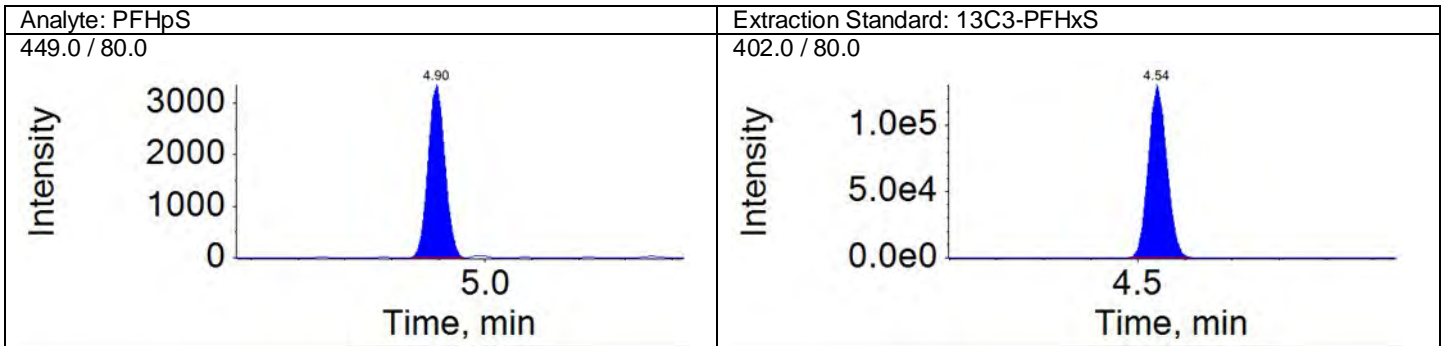
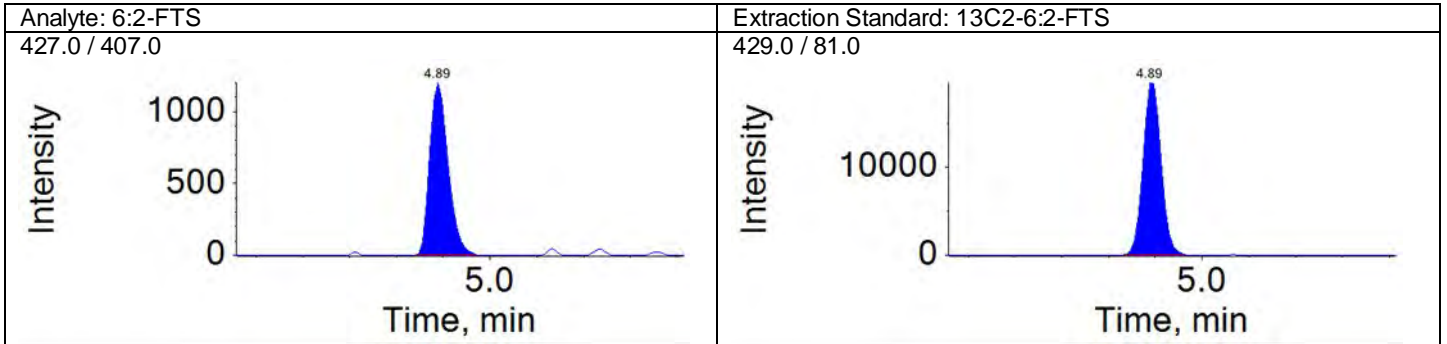
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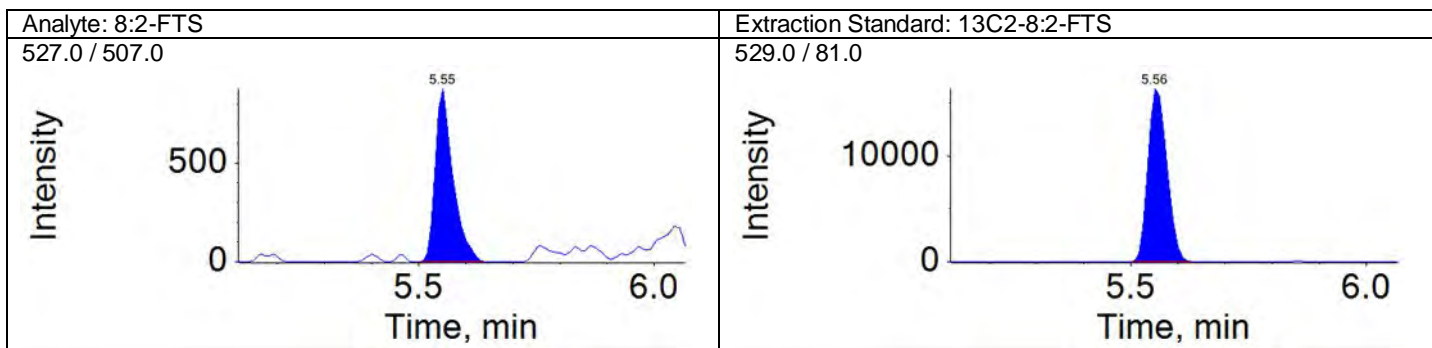
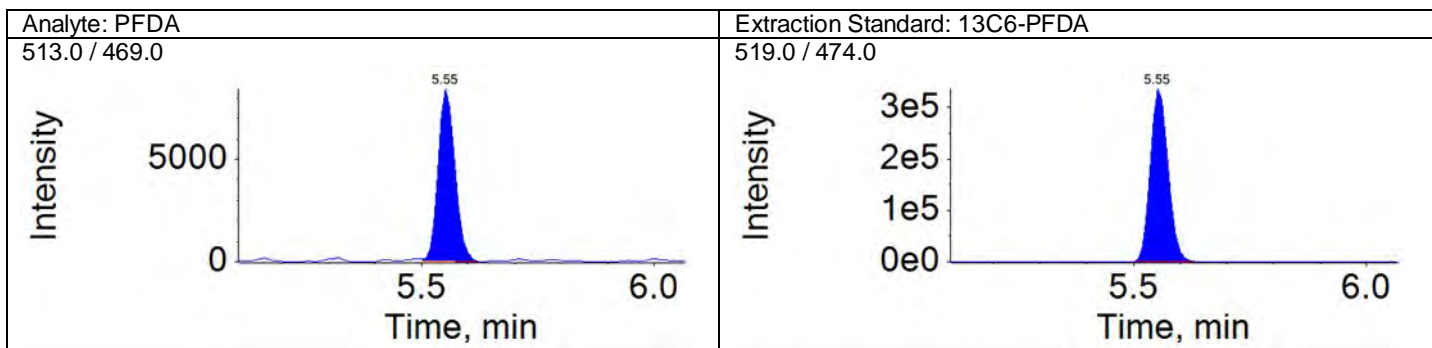
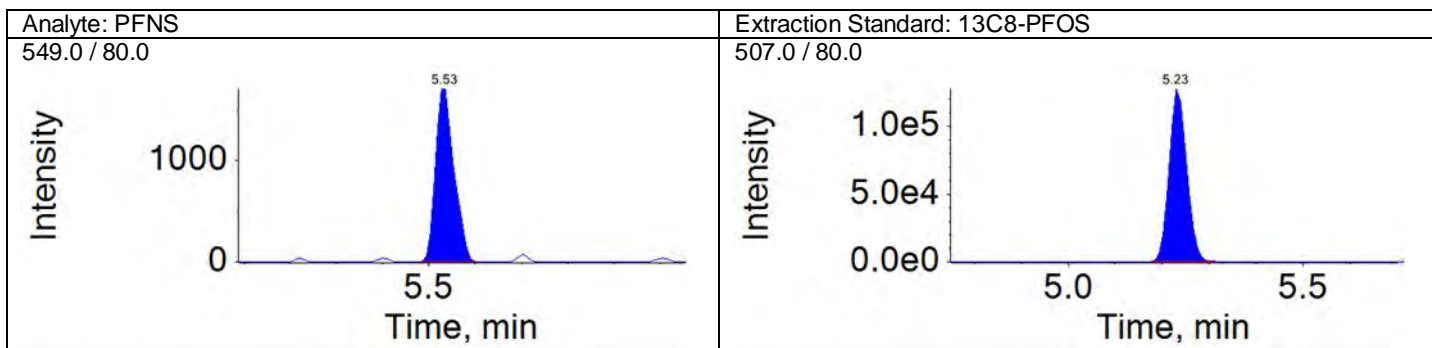
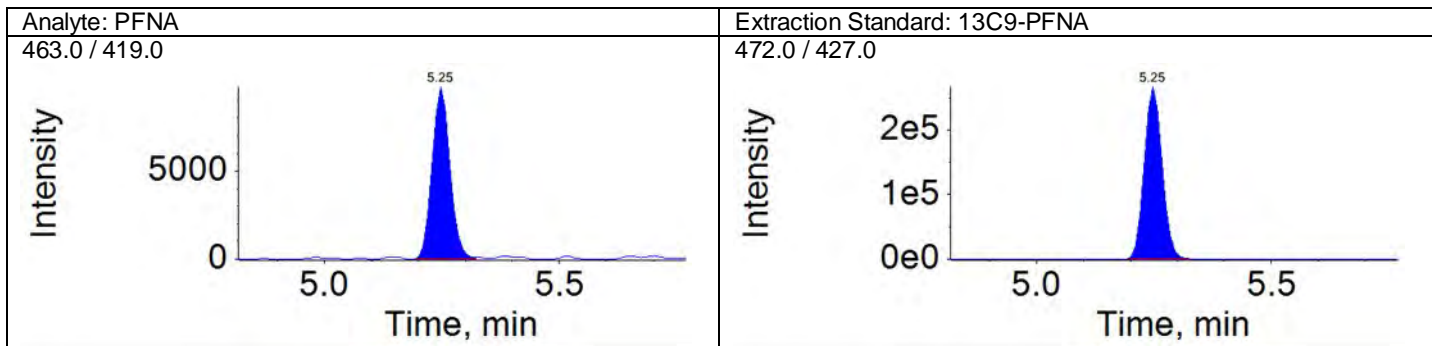
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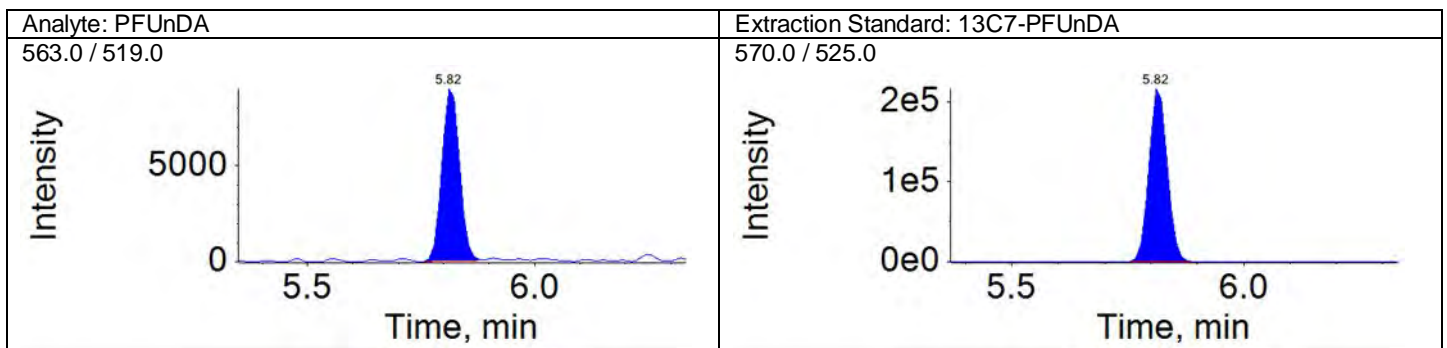
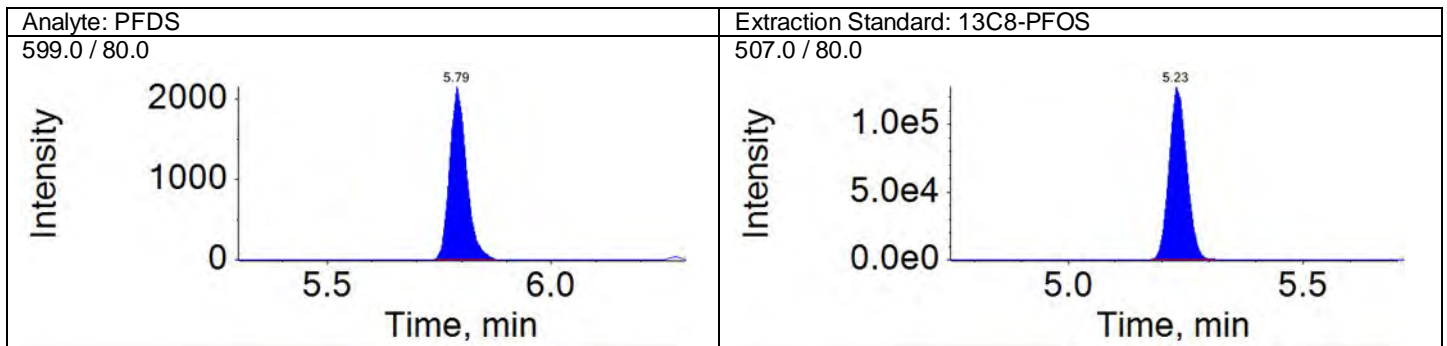
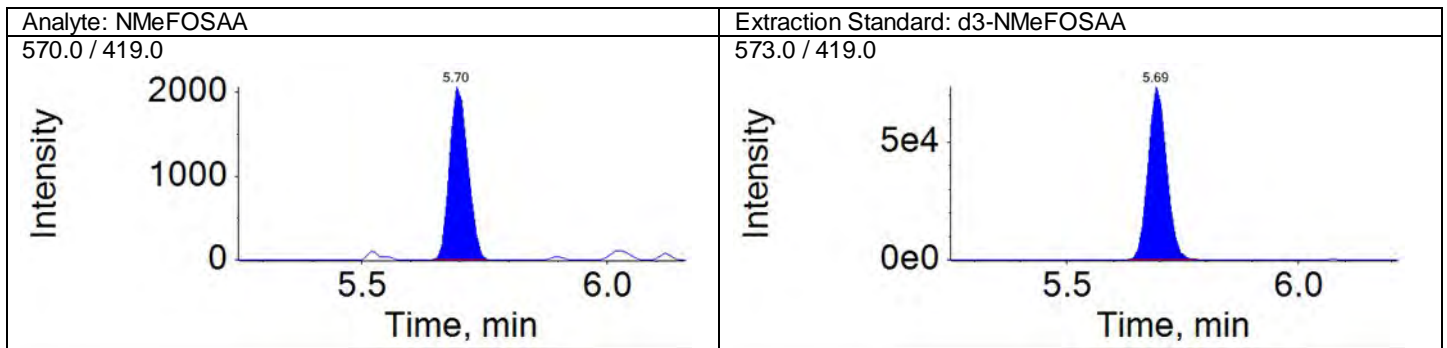
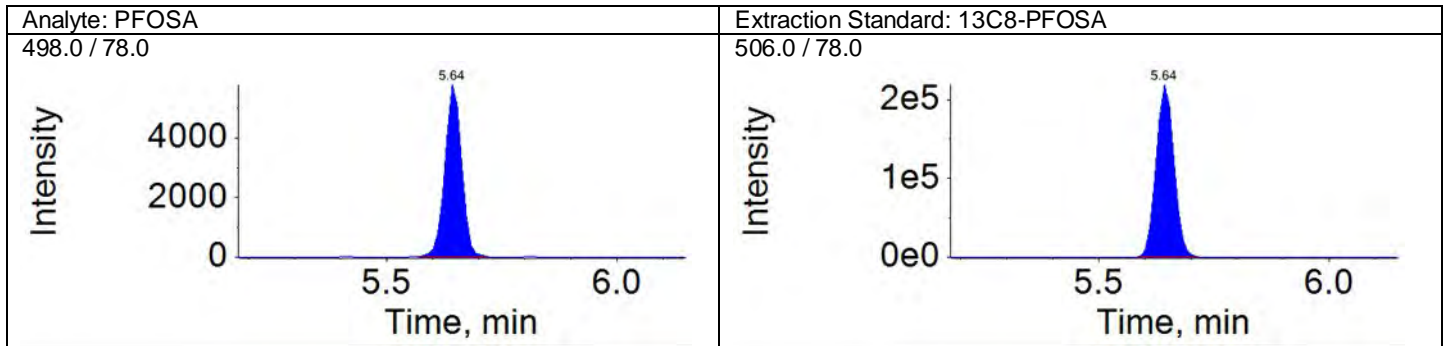
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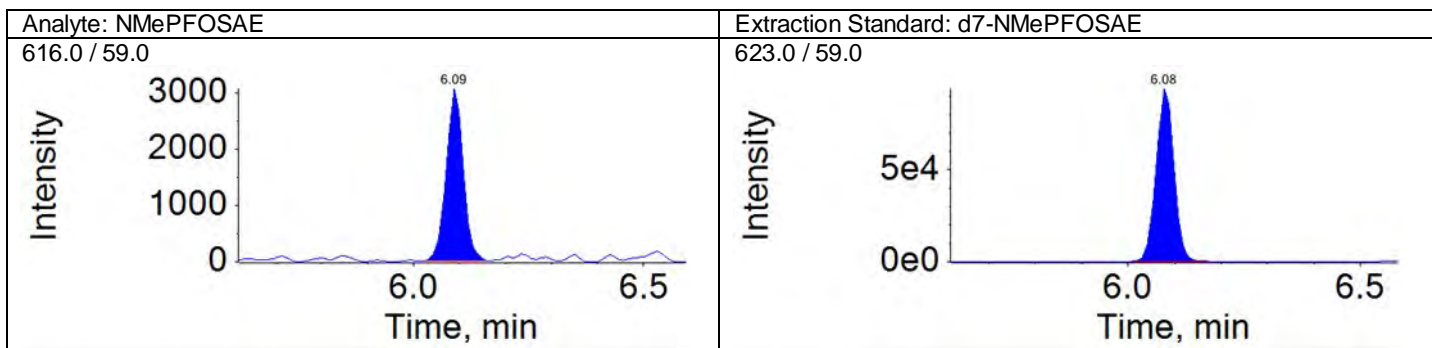
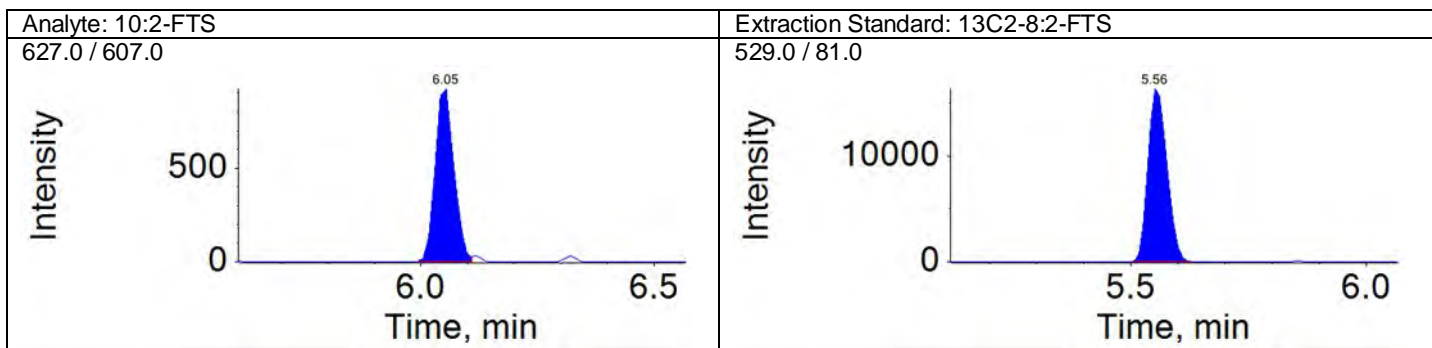
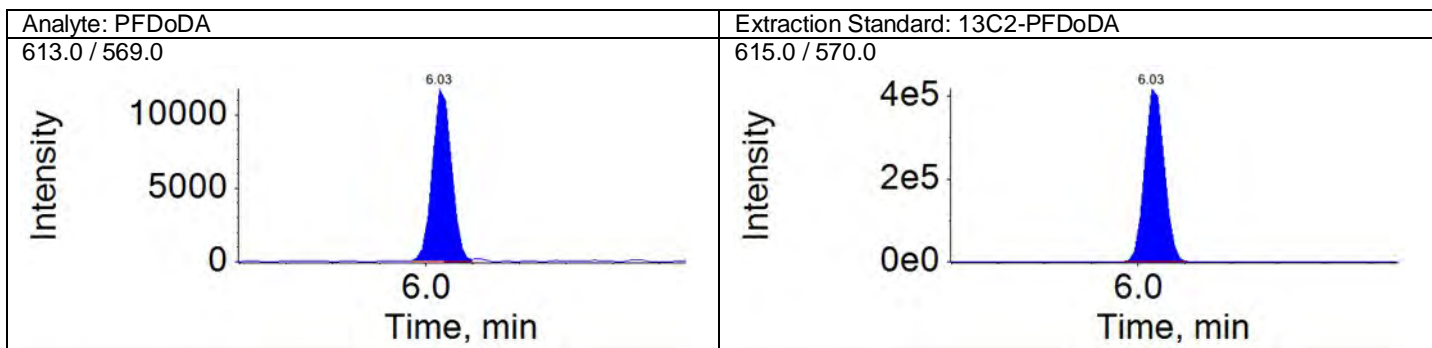
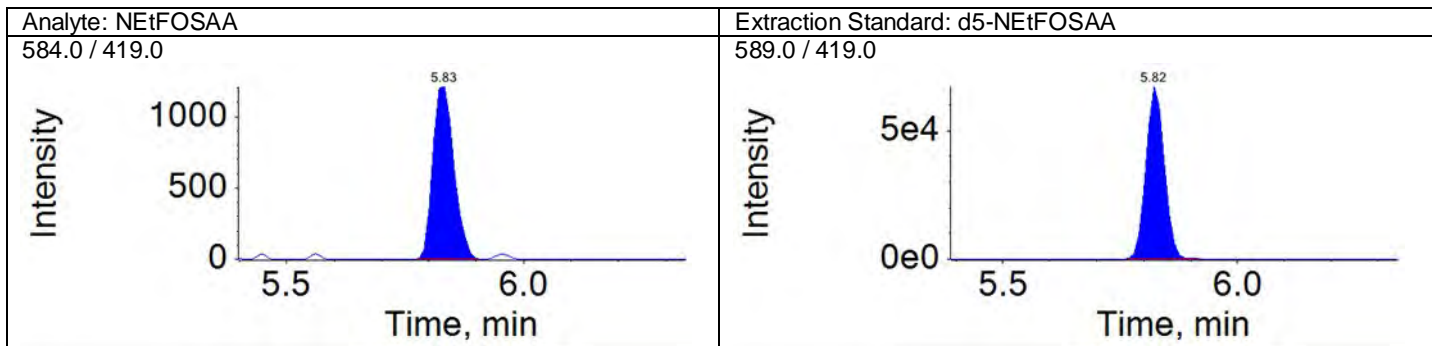
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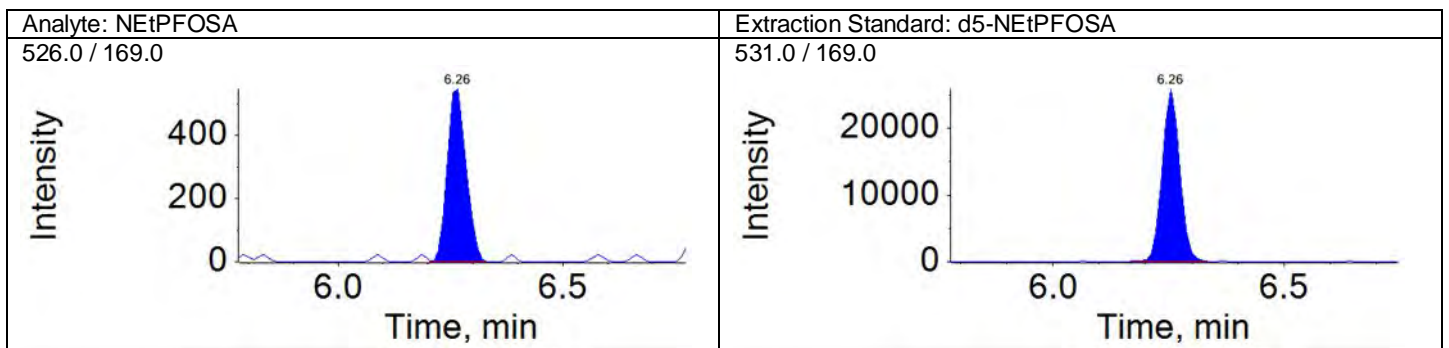
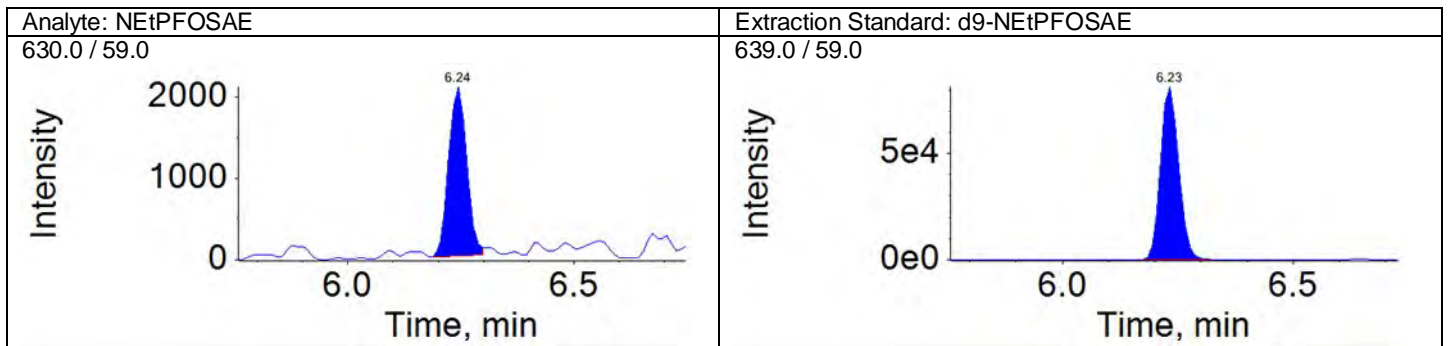
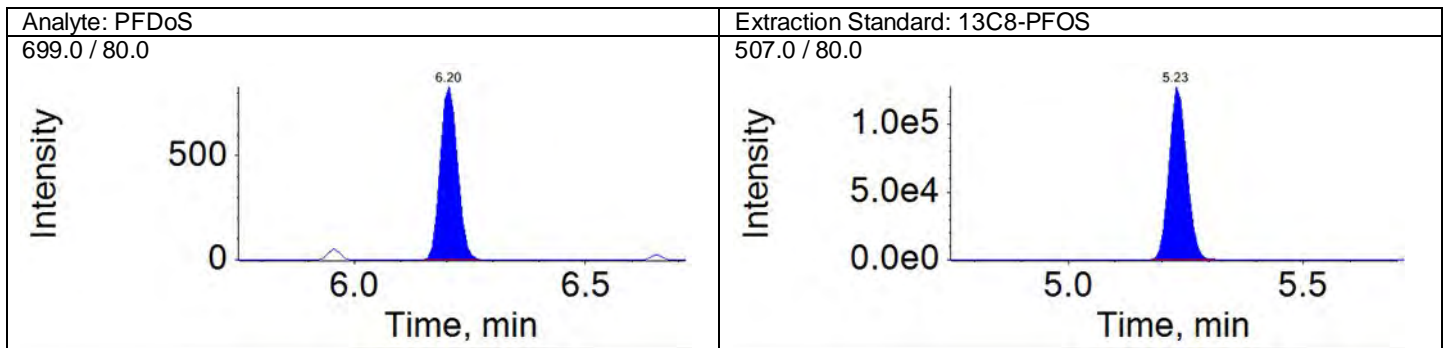
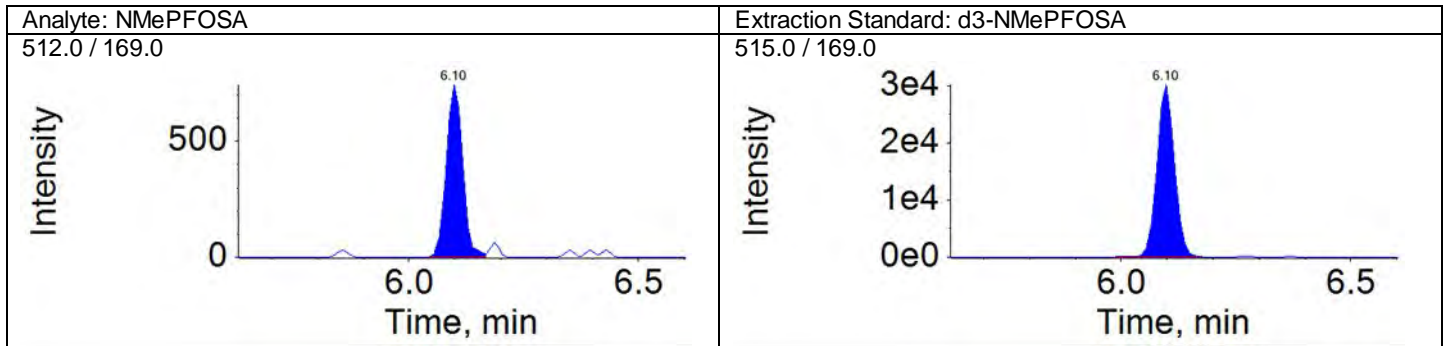
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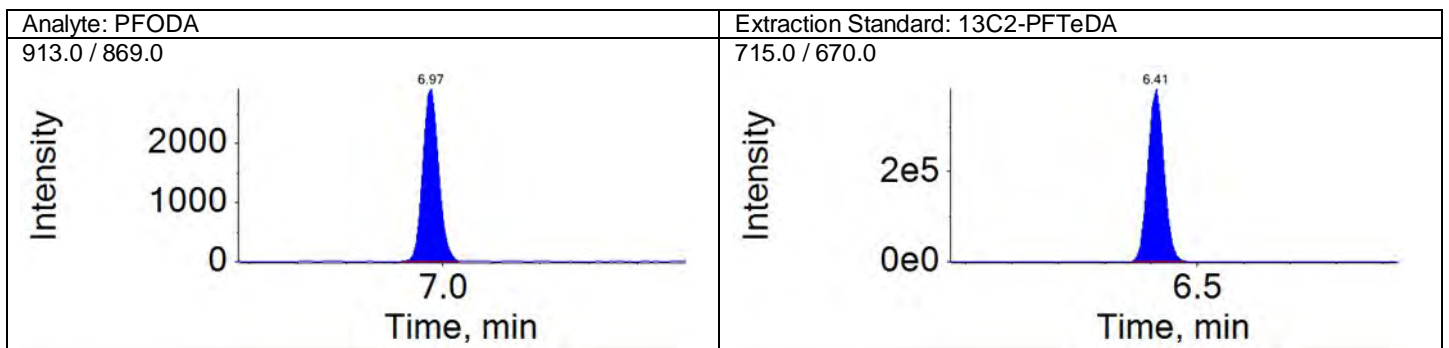
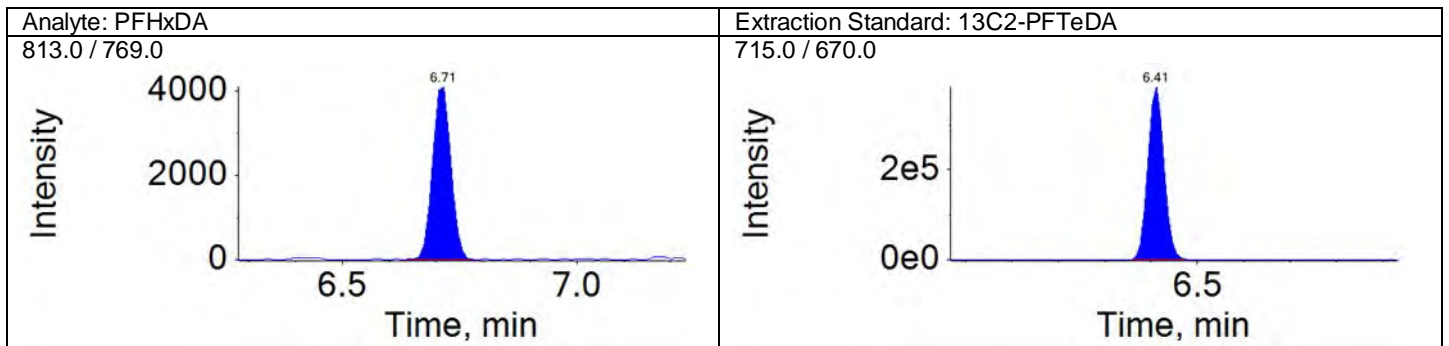
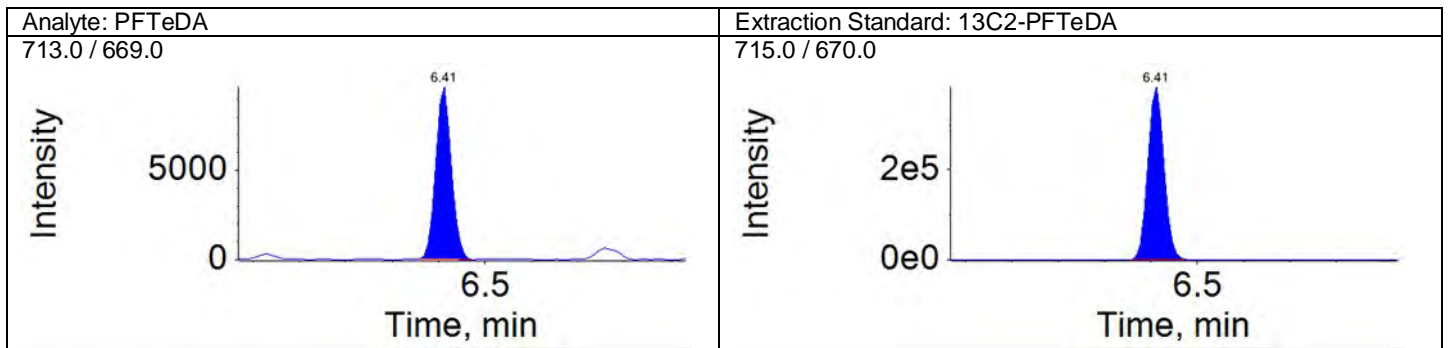
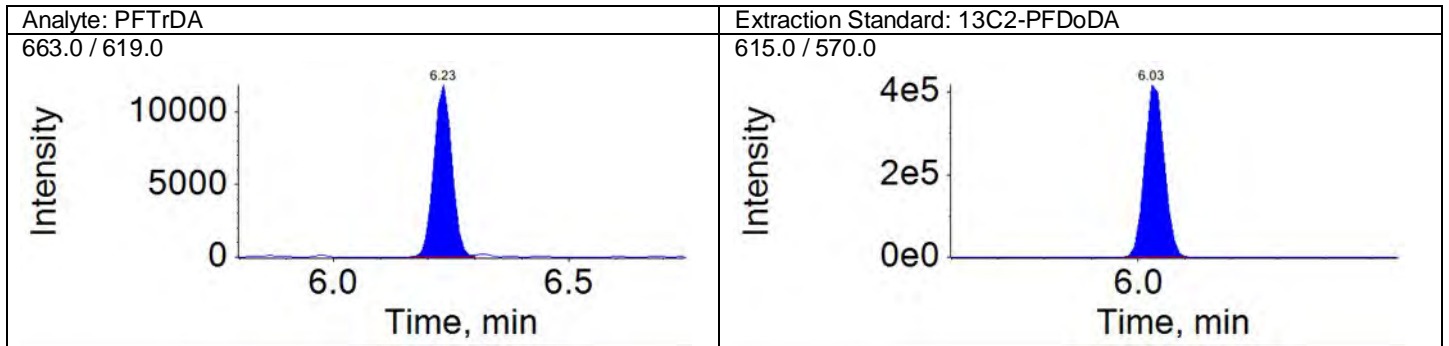
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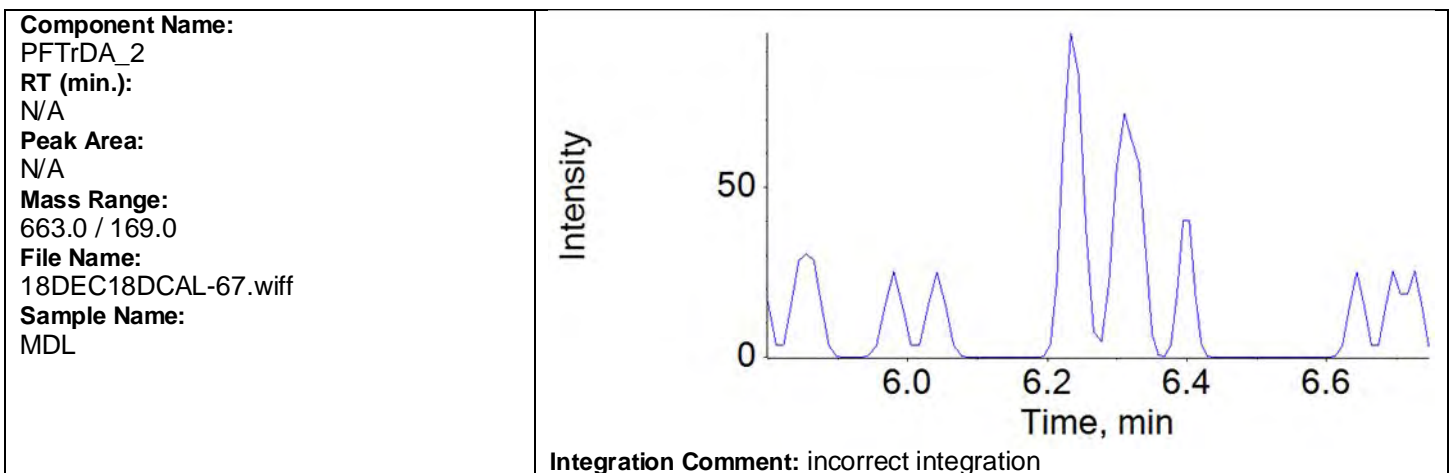
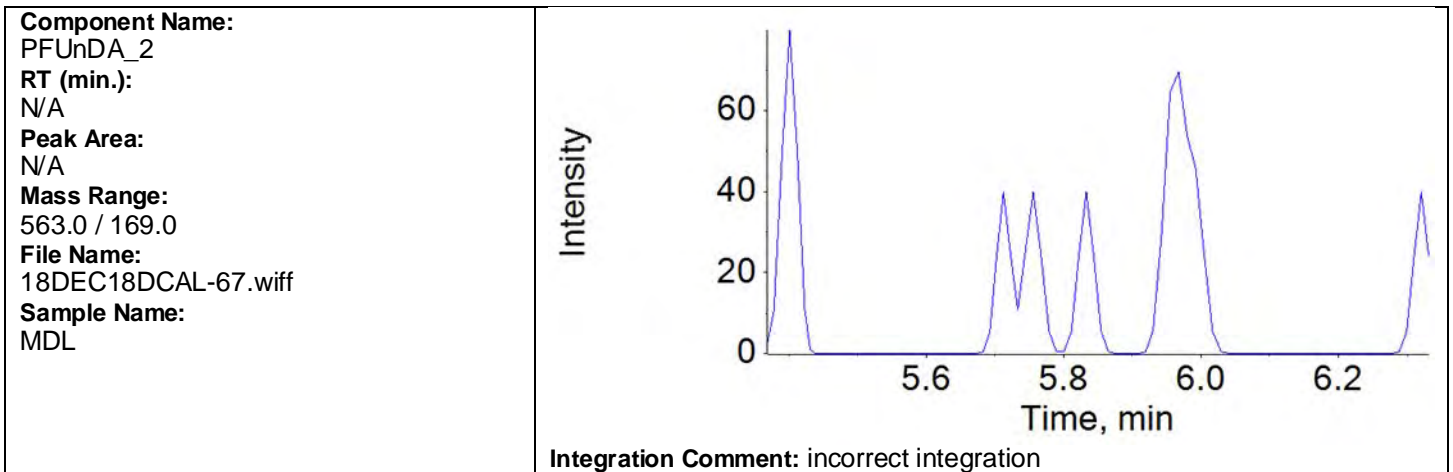
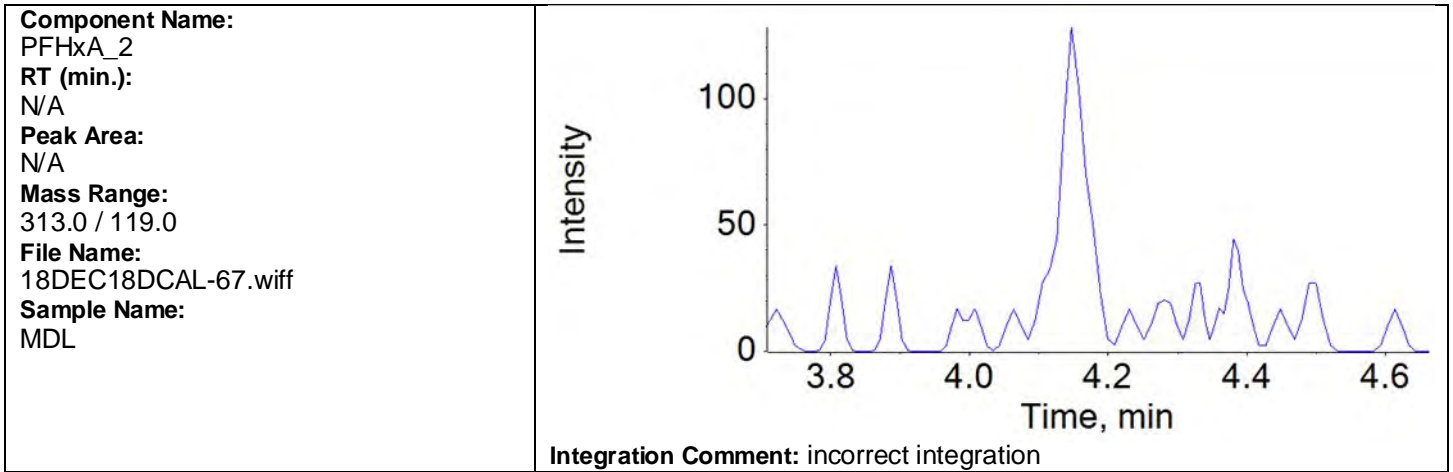
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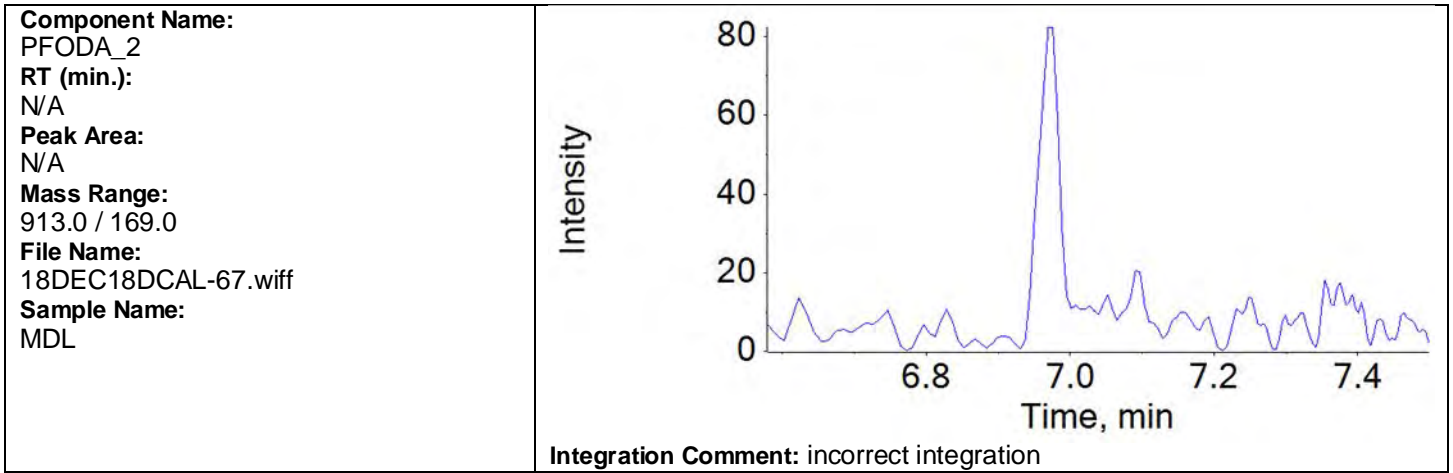
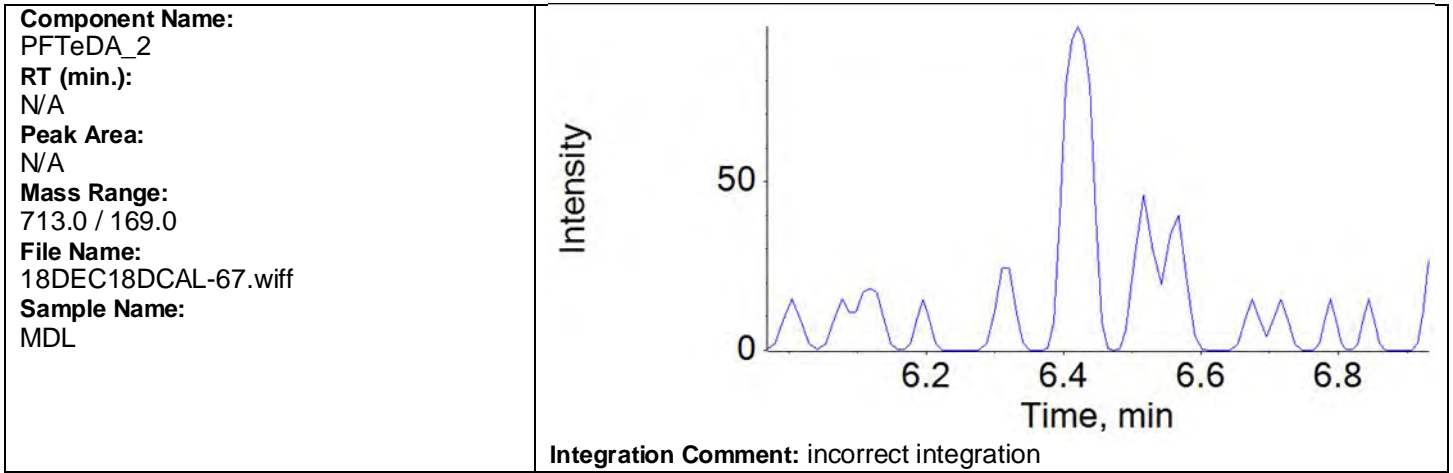
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Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

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QMethod File: 18AUG20QM





**Results Table Name:** 18DEC18DCAL  
**Results Table Date:** 12/19/2018 9:34:01 AM

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**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

Ion Ratio Report

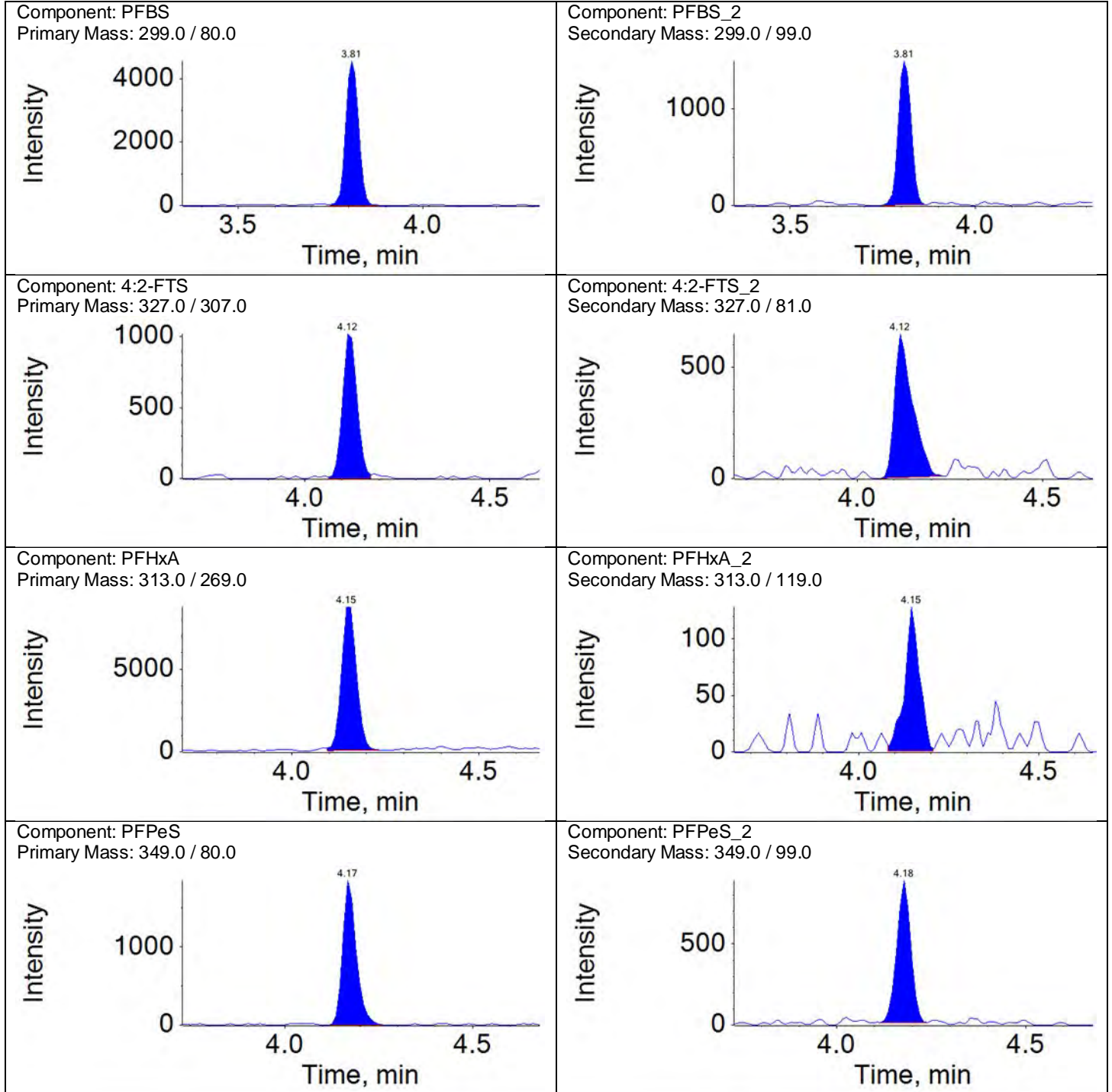
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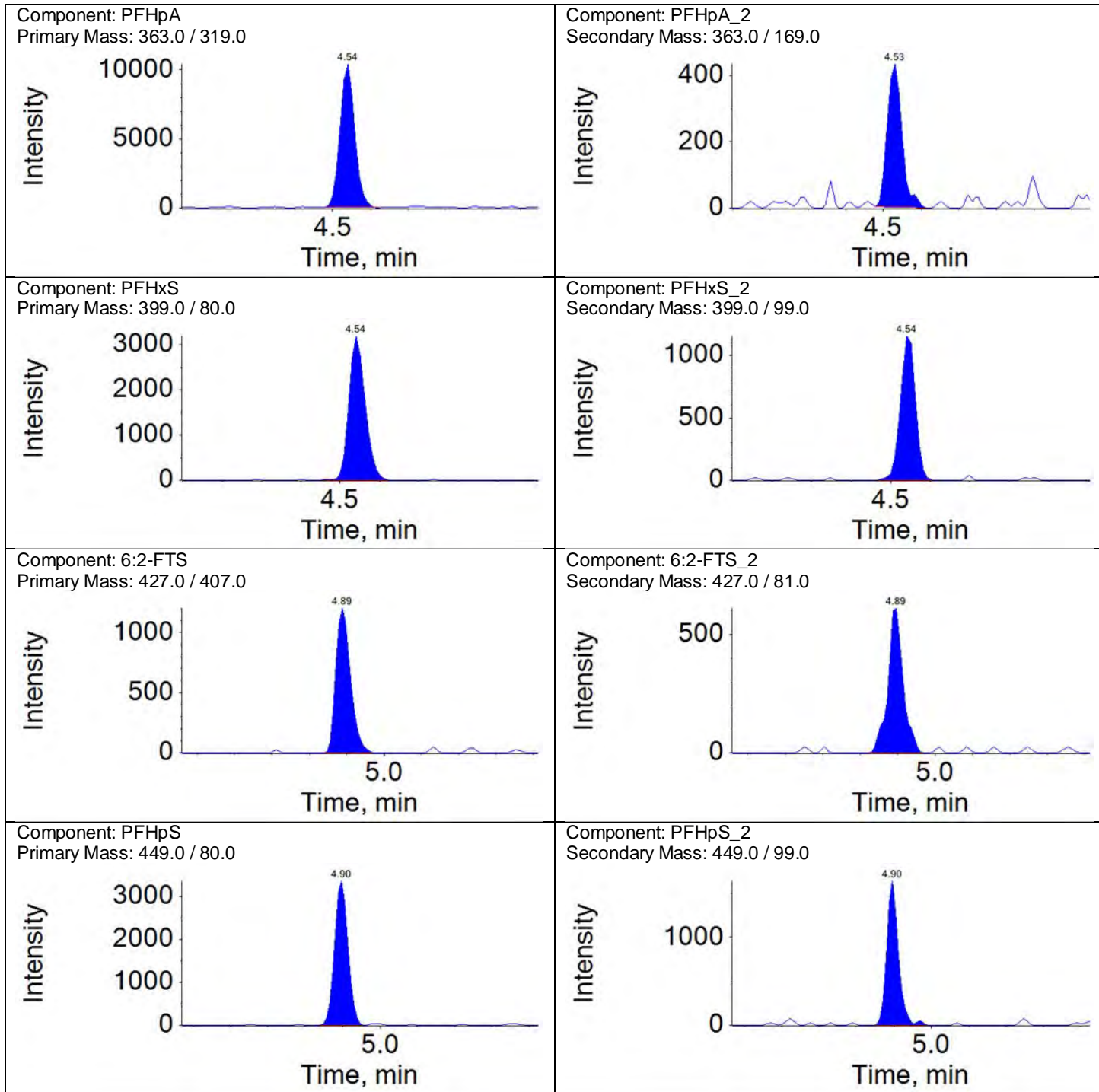
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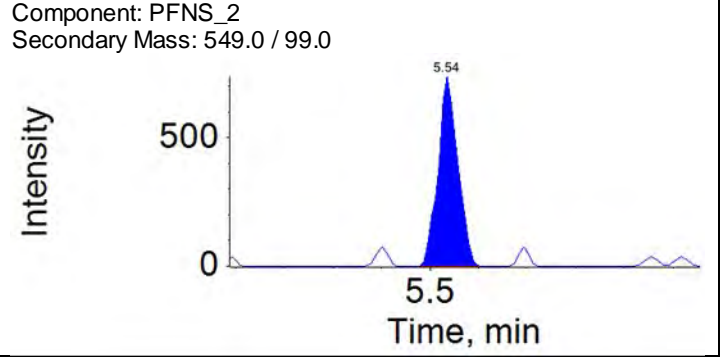
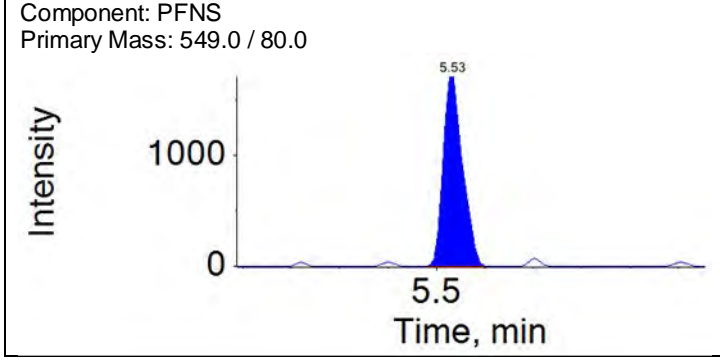
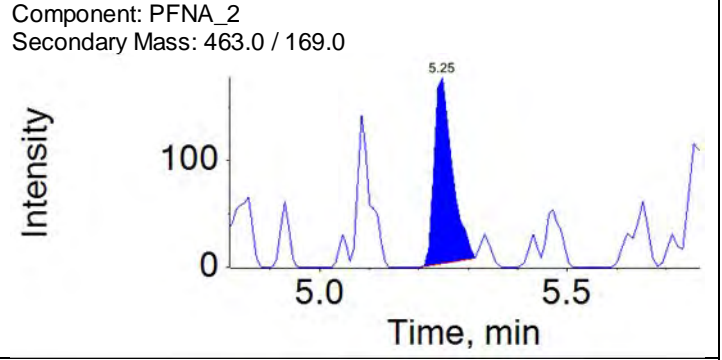
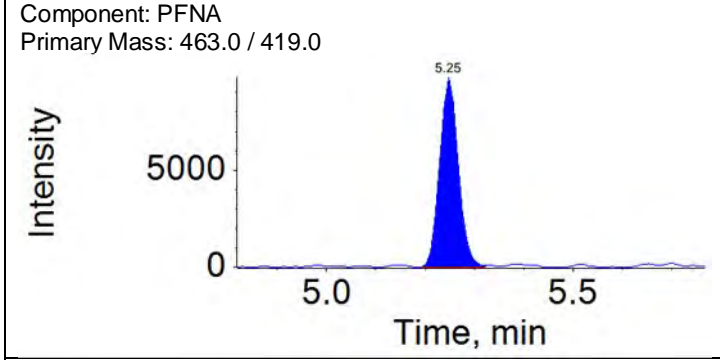
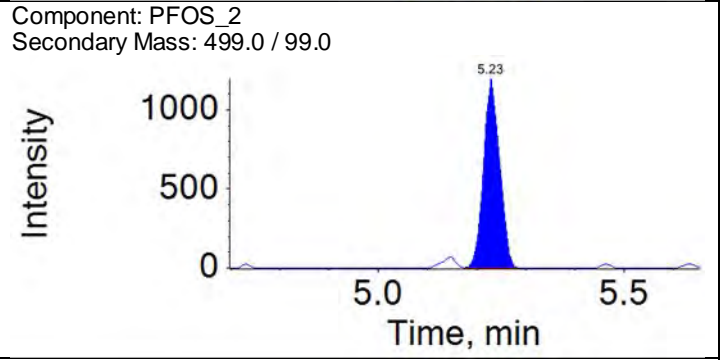
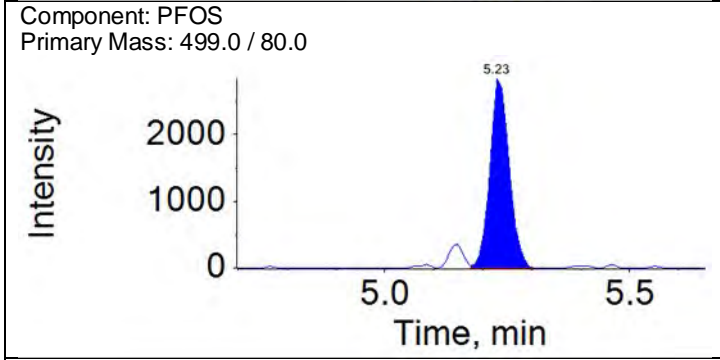
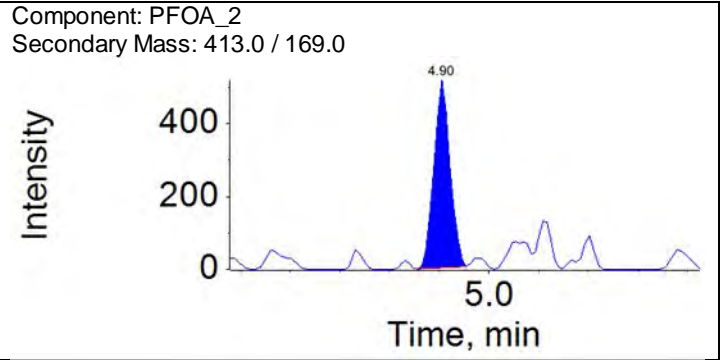
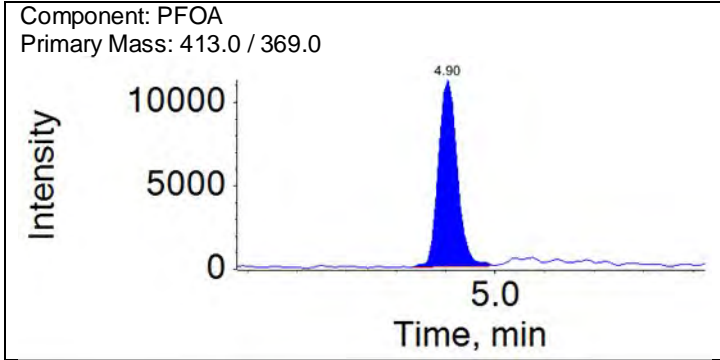
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PFBS_2	3.81	1.00	3560.79	A	0.3686	0.3259	-12	50	
4:2-FTS	4.12	1.00	2760.06	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	2174.60	A	0.6123	0.7879	29	50	
PFHxA	4.15	1.00	24366.47	A	1.0000	1.0000			
PFHxA_2	4.15	1.00	368.45	M	0.0115	0.0151	32	50	
PFPeS	4.17	1.09	4603.26	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	2233.64	A	0.5256	0.4852	-8	50	
PFHpA	4.54	1.00	28052.37	A	1.0000	1.0000			
PFHpA_2	4.53	1.00	1174.66	A	0.0547	0.0419	-23	50	
PFHxS	4.54	1.00	9137.72	A	1.0000	1.0000			
PFHxS_2	4.54	1.00	3045.86	A	0.3359	0.3333	-1	50	
6:2-FTS	4.89	1.00	3271.12	A	1.0000	1.0000			
6:2-FTS_2	4.89	1.00	1727.71	A	0.6344	0.5282	-17	50	
PFHpS	4.90	1.08	8306.46	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	3528.56	A	0.4110	0.4248	3	50	
PFOA	4.90	1.00	29367.46	A	1.0000	1.0000			
PFOA_2	4.90	1.00	1160.61	A	0.0590	0.0395	-33	50	
PFOS	5.23	1.00	7700.79	A	1.0000	1.0000			
PFOS_2	5.23	1.00	2691.79	A	0.2980	0.3495	17	50	
PFNA	5.25	1.00	25516.53	A	1.0000	1.0000			
PFNA_2	5.25	1.00	438.69	A	0.0214	0.0172	-20	50	
PFNS	5.53	1.06	4755.19	A	1.0000	1.0000			
PFNS_2	5.54	1.06	2078.88	A	0.4608	0.4372	-5	50	
PFDA	5.55	1.00	20958.74	A	1.0000	1.0000			
PFDA_2	5.54	1.00	258.85	A	0.0064	0.0124	94	50	OOS
8:2-FTS	5.55	1.00	2279.69	A	1.0000	1.0000			
8:2-FTS_2	5.55	1.00	1699.17	A	0.5879	0.7454	27	50	
NMeFOSAA	5.70	1.00	5302.77	A	1.0000	1.0000			
NMeFOSAA_2	5.69	1.00	1096.87	A	0.2625	0.2068	-21	50	
PFDS	5.79	1.11	5575.33	A	1.0000	1.0000			
PFDS_2	5.79	1.11	3131.27	A	0.4962	0.5616	13	50	
PUnDA	5.82	1.00	23974.95	A	1.0000	1.0000			
PUnDA_2	5.83	1.00	64.17	M	0.0035	0.0027	-24	50	
NEtFOSAA	5.83	1.00	3750.38	A	1.0000	1.0000			
NEtFOSAA_2	5.83	1.00	3104.55	A	0.6883	0.8278	20	50	
PfDoDA	6.03	1.00	33130.12	A	1.0000	1.0000			
PfDoDA_2	6.03	1.00	557.62	A	0.0134	0.0168	25	50	
10:2-FTS	6.05	1.09	2591.93	A	1.0000	1.0000			
10:2-FTS_2	6.05	1.09	1149.68	A	0.7018	0.4436	-37	50	
PFTrDA	6.23	1.03	31273.81	A	1.0000	1.0000			
PFTrDA_2	6.24	1.03	199.71	M	0.0093	0.0064	-32	50	
PFTeDA	6.41	1.00	22403.03	A	1.0000	1.0000			
PFTeDA_2	6.42	1.00	280.09	M	0.0058	0.0125	115	50	OOS
PFHxDA	6.71	1.05	11075.72	A	1.0000	1.0000			
PFHxDA_2	6.71	1.05	673.97	A	0.0656	0.0609	-7	50	
PFODA	6.97	1.09	6612.20	A	1.0000	1.0000			
PFODA_2	6.97	1.09	168.85	M	0.0273	0.0255	-6	50	

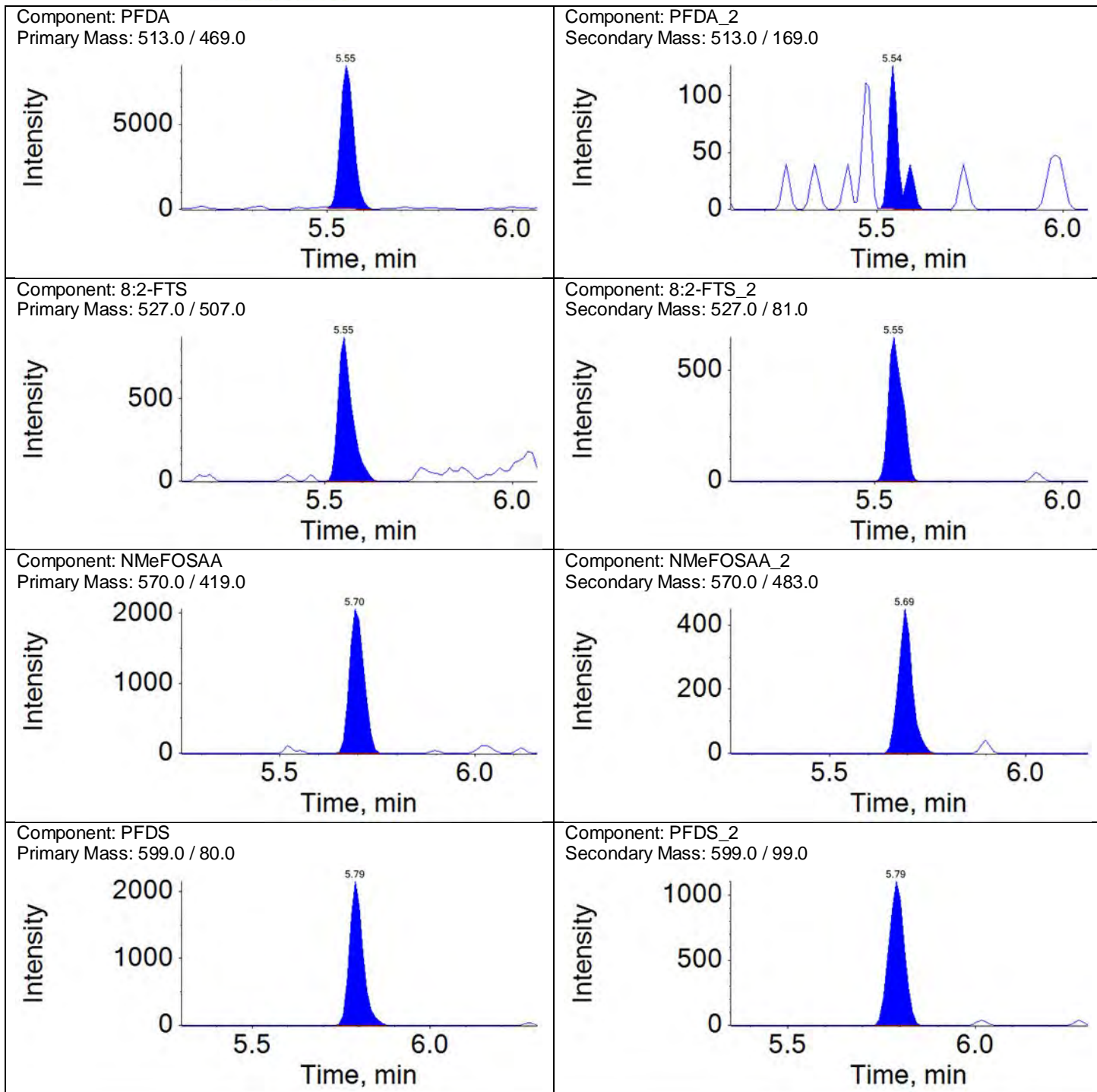


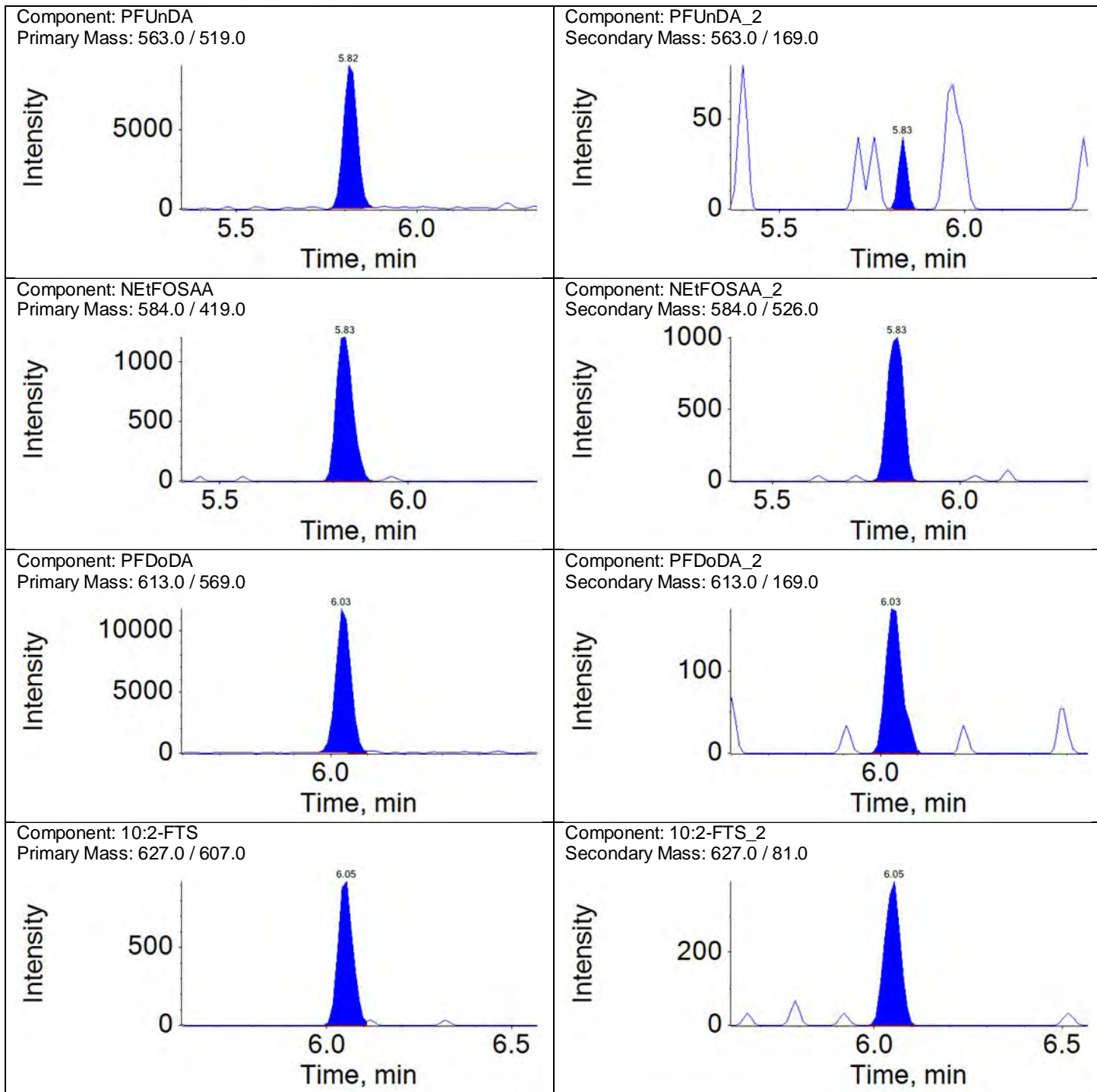


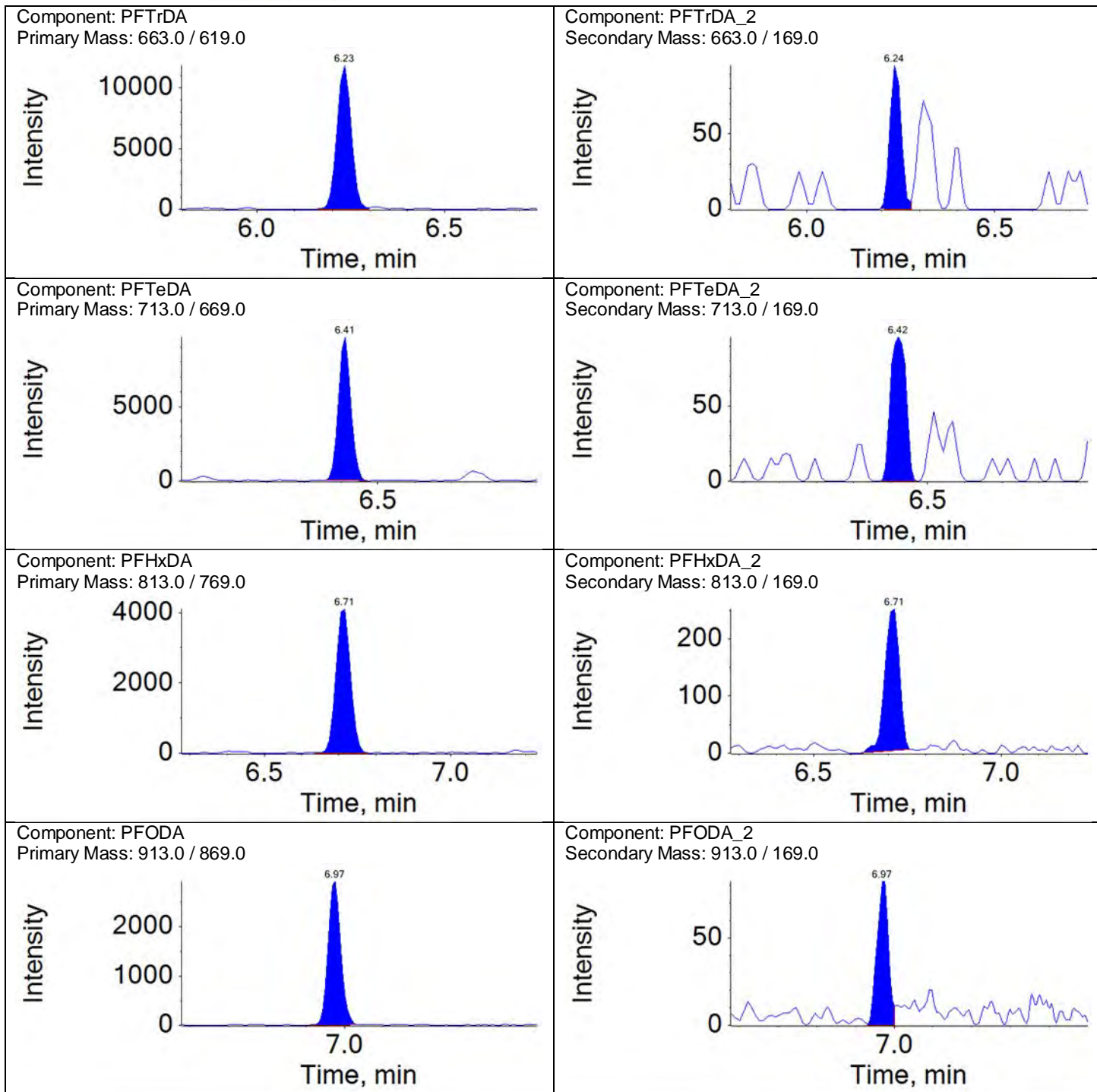












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	ICV	Data File:	18DEC18DCAL-76.wiff
Sample ID:	ICVMODX1833G	Acquis Date:	2018-12-19T00:46:59
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	10	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	1001581.5	941251.6	6	50	
13C2-PFOA	5.0	545957.8	485595.3	12	50	
13C4-PFOS	4.8	314888.7	292182.6	8	50	
13C2-PFDA	5.0	489223.2	467216.0	5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1094642.4	13C3-PFBA	1001581.5	1.093	5.000	4.840	97	70-130	
E13C5-PFPeA	1008730.1	13C3-PFBA	1001581.5	1.007	5.000	4.696	94	70-130	
E13C3-PFBS	449153.4	13C3-PFBA	1001581.5	0.448	4.650	4.367	94	70-130	
E13C2-4:2-FTS	61415.7	13C2-PFOA	545957.8	0.112	4.670	4.272	91	70-130	
E13C5-PFHxA	791701.0	13C2-PFOA	545957.8	1.450	5.000	5.187	104	70-130	
E13C3-PFHxS	346627.1	13C2-PFOA	545957.8	0.635	4.730	4.804	102	70-130	
E13C4-PFHpA	592782.0	13C2-PFOA	545957.8	1.086	5.000	4.690	94	70-130	
E13C2-6:2-FTS	51799.6	13C2-PFOA	545957.8	0.095	4.750	4.774	100	70-130	
E13C8-PFOA	993017.0	13C2-PFOA	545957.8	1.819	5.000	5.001	100	70-130	
E13C8-PFOS	334311.5	13C4-PFOS	314888.7	1.062	4.780	4.748	99	70-130	
E13C9-PFNA	671215.9	13C4-PFOS	314888.7	2.132	5.000	4.849	97	70-130	
E13C6-PFDA	872771.8	13C2-PFDA	489223.2	1.784	5.000	5.082	102	70-130	
E13C2-8:2-FTS	45316.1	13C2-PFDA	489223.2	0.093	4.790	4.774	100	70-130	
E13C8-PFOA	654848.9	13C2-PFDA	489223.2	1.339	5.000	5.212	104	70-130	
Ed3-NMeFOSAA	223608.7	13C2-PFDA	489223.2	0.457	5.000	5.029	101	70-130	
E13C7-PFUnDA	587076.9	13C2-PFDA	489223.2	1.200	5.000	5.023	100	70-130	
Ed5-NEtFOSAA	178505.1	13C2-PFDA	489223.2	0.365	5.000	5.375	108	70-130	
E13C2-PFDoDA	1224073.9	13C2-PFDA	489223.2	2.502	5.000	5.264	105	70-130	
Ed7-NMePFOSAE	269917.7	13C2-PFDA	489223.2	0.552	5.000	4.930	99	70-130	
Ed3-NMePFOSA	88738.2	13C2-PFDA	489223.2	0.181	5.000	4.984	100	70-130	
Ed9-NEtPFOSAE	231171.4	13C2-PFDA	489223.2	0.473	5.000	4.831	97	70-130	
Ed5-NEtPFOSA	70087.4	13C2-PFDA	489223.2	0.143	5.000	4.969	99	70-130	
E13C2-PFTeDA	902755.3	13C2-PFDA	489223.2	1.845	5.000	5.200	104	70-130	



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

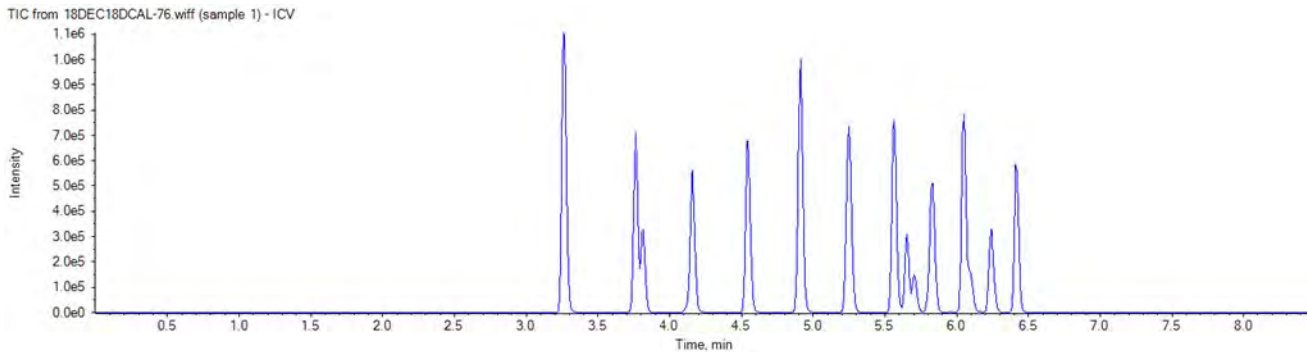
**Analyte Quantitation Peak Table**

Sample Name: ICV Instrument Name: LM27631 File Name: 18DEC18DCAL-76.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	412745.7		A	13C4-PFBA	3.26	1094642.4	0.377	2.002
PFPeA	3.77	1.000	395897.4		A	13C5-PFPeA	3.76	1008730.1	0.392	2.026
PFBS	3.81	1.000	169697.0		A	13C3-PFBS	3.81	449153.4	0.378	1.865
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.12	61415.7	N/A	
PFHxA	4.16	1.000	384443.4		A	13C5-PFHxA	4.16	791701.0	0.486	2.000
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.81	449153.4	N/A	
PFHpA	4.55	1.000	403375.9		A	13C4-PFHpA	4.54	592782.0	0.680	2.256
PFHxS	4.55	1.000	130829.5		A	13C3-PFHxS	4.55	346627.1	0.377	1.836
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.90	51799.6	N/A	
PFHpS	4.90	1.080	129646.8		A	13C3-PFHxS	4.55	346627.1	0.374	1.979
PFOA	4.91	1.000	398236.1		A	13C8-PFOA	4.91	993017.0	0.401	2.125
PFOS	5.24	1.000	133872.0		A	13C8-PFOS	5.24	334311.5	0.400	1.753
PFNA	5.26	1.000	367059.5		A	13C9-PFNA	5.26	671215.9	0.547	2.173
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.24	334311.5	N/A	
PFDA	5.56	1.000	331197.9		A	13C6-PFDA	5.56	872771.8	0.379	1.960
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	45316.1	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.65	654848.9	N/A	
NMeFOSAA	5.71	1.000	83098.3		A	d3-NMeFOSAA	5.71	223608.7	0.372	2.310
PFDS	5.80	1.110	81048.4		A	13C8-PFOS	5.24	334311.5	0.242	1.990
PfUnDA	5.83	1.000	328698.4		A	13C7-PfUnDA	5.83	587076.9	0.560	1.854
NEtFOSAA	5.84	1.000	73599.0		A	d5-NEtFOSAA	5.84	178505.1	0.412	2.101
PFDoDA	6.05	1.000	471885.2		A	13C2-PFDoDA	6.05	1224073.9	0.386	1.942
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	45316.1	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.09	269917.7	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.11	88738.2	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.24	334311.5	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.24	231171.4	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.26	70087.4	N/A	
PFTeDA	6.24	1.030	463980.1		A	13C2-PFDoDA	6.05	1224073.9	0.379	1.945
PFTeDA	6.42	1.000	335133.7		A	13C2-PFTeDA	6.42	902755.3	0.371	1.999
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	902755.3	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	902755.3	N/A	

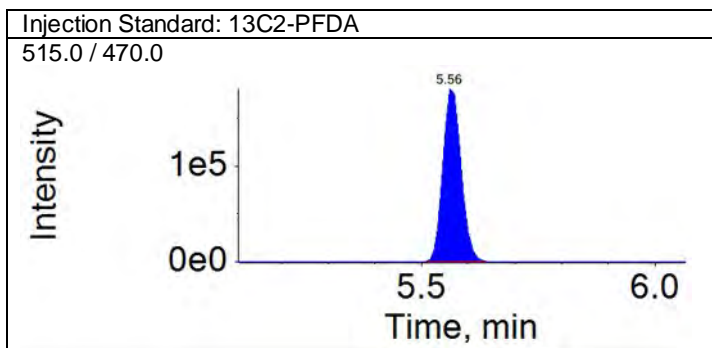
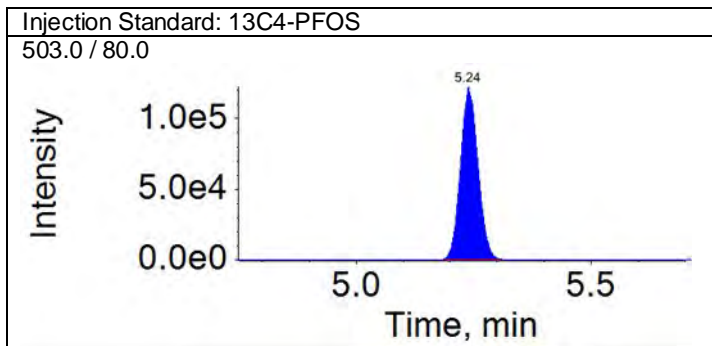
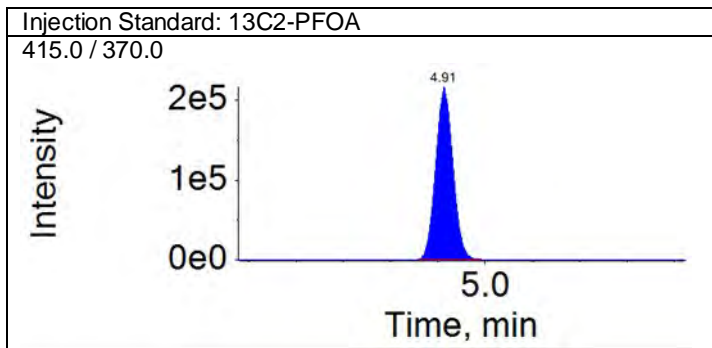
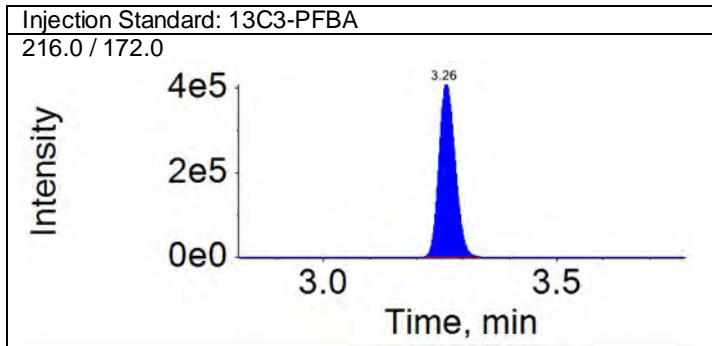
**Total Ion Chromatogram**





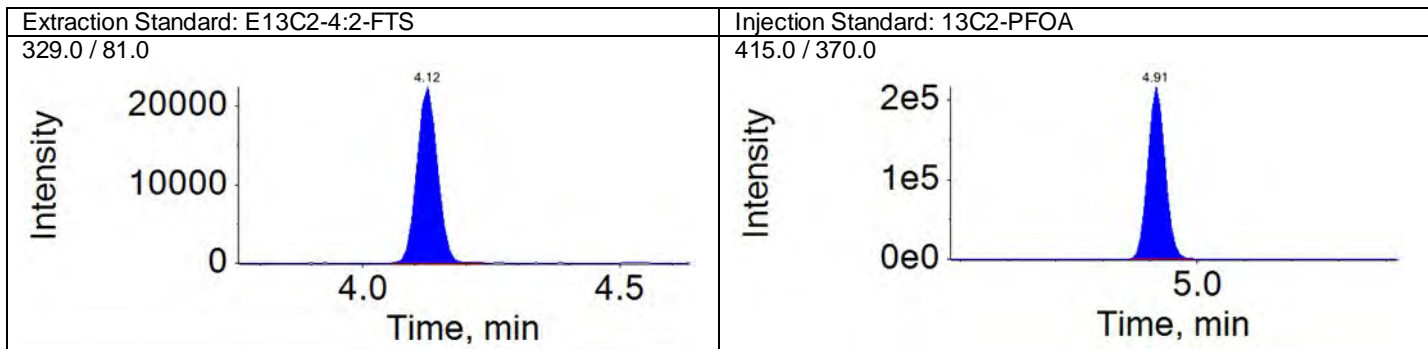
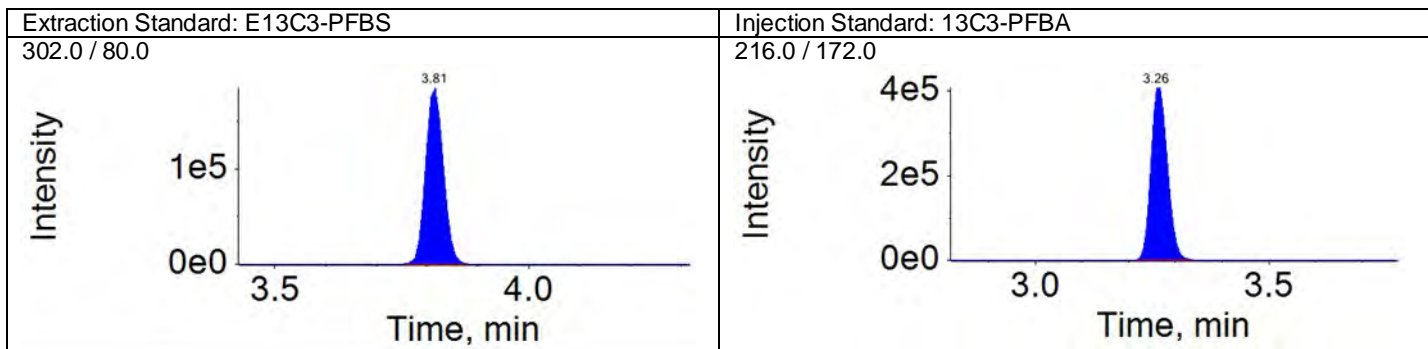
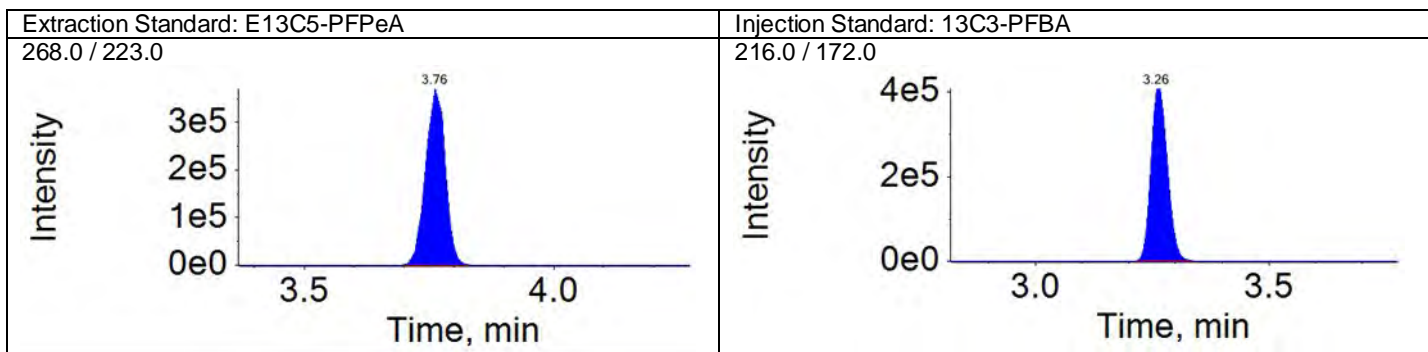
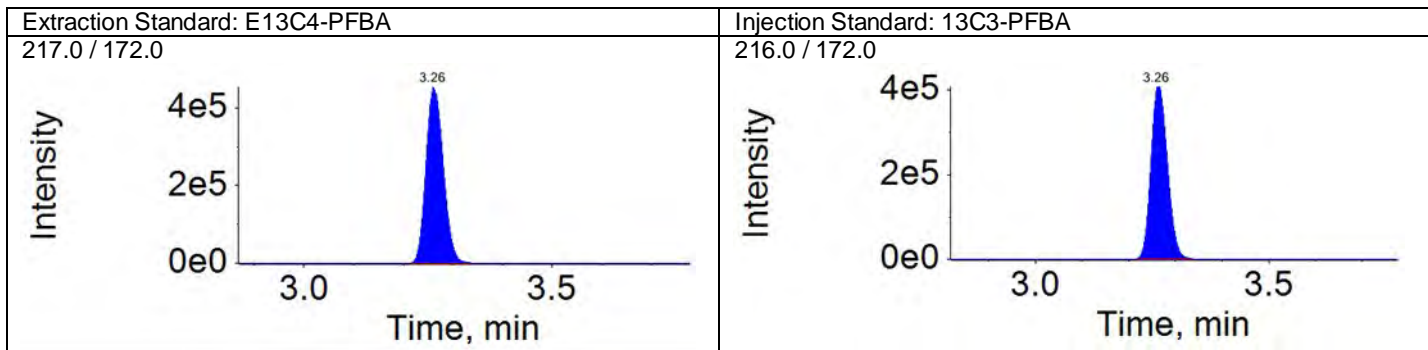
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



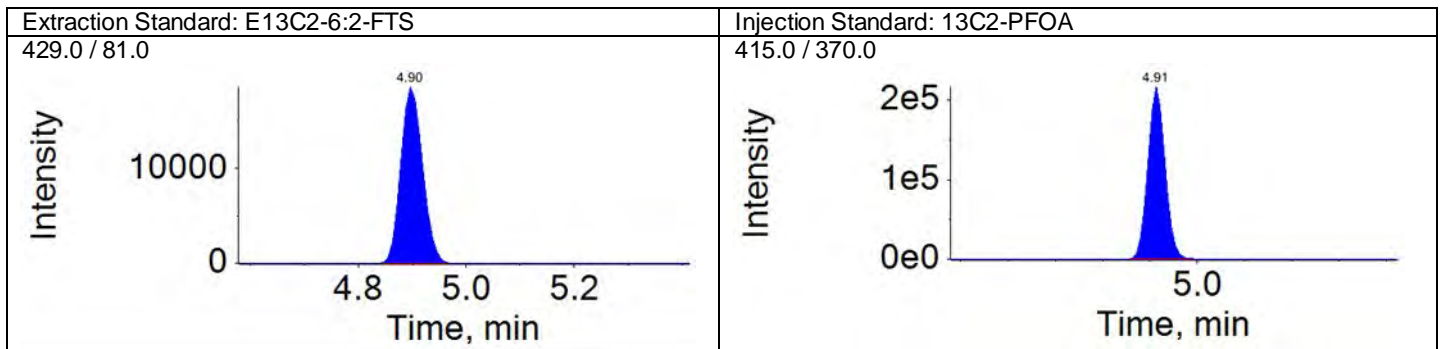
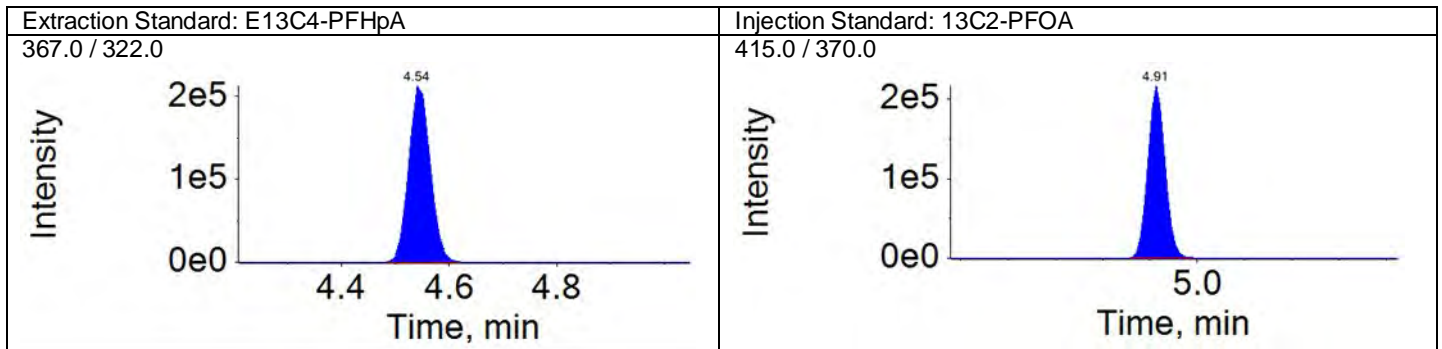
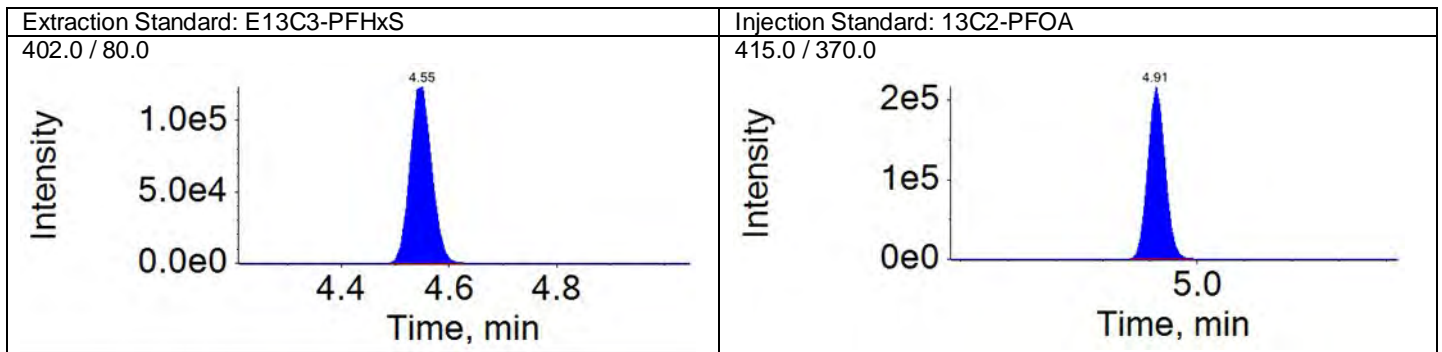
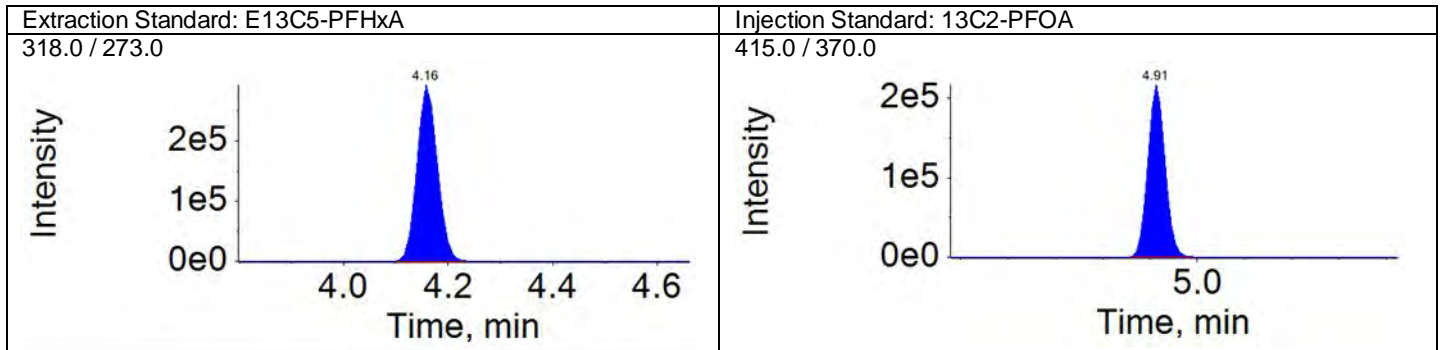
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
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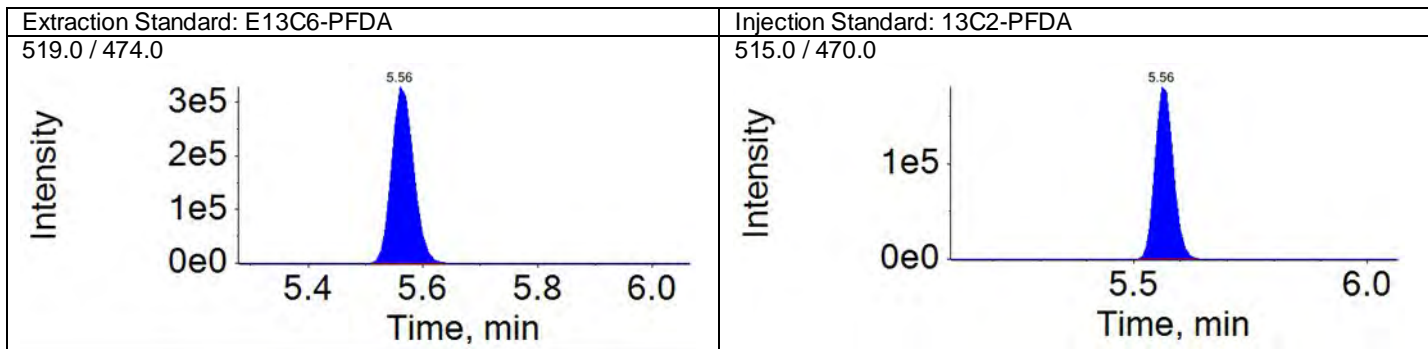
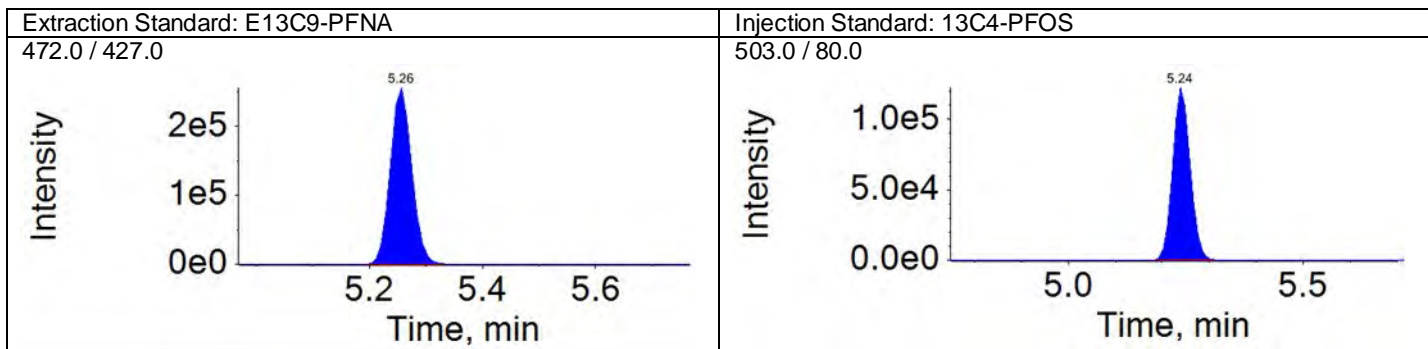
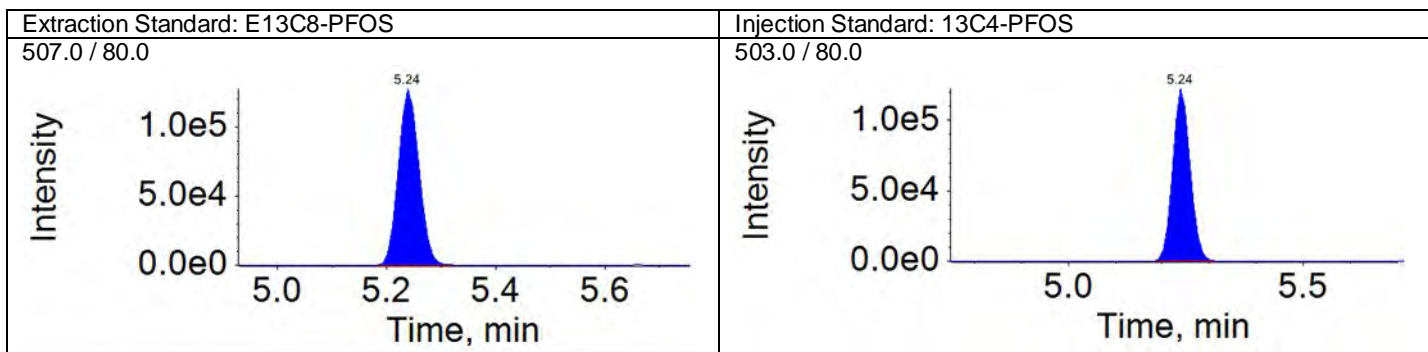
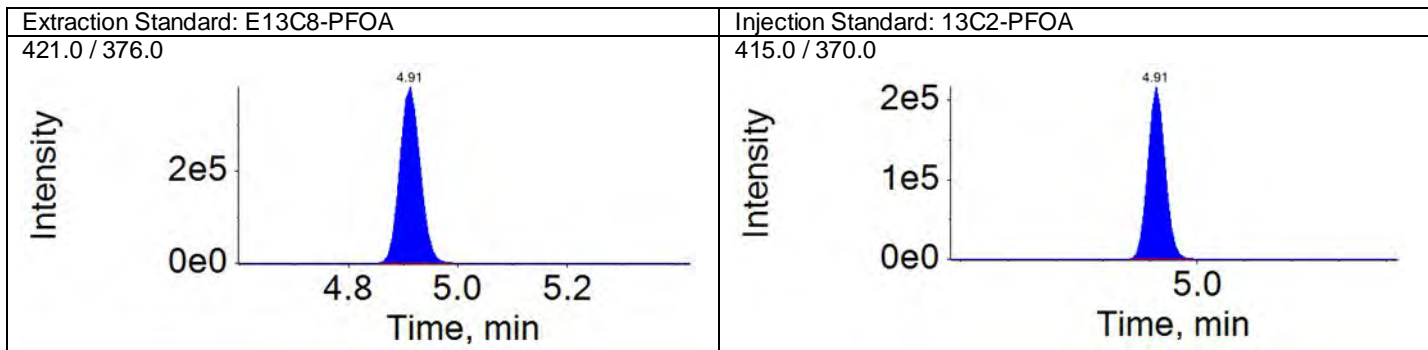
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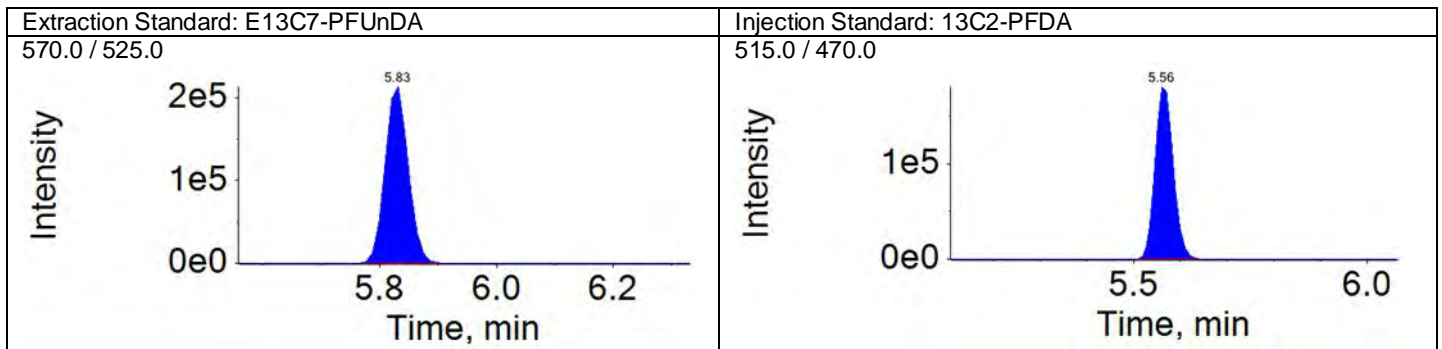
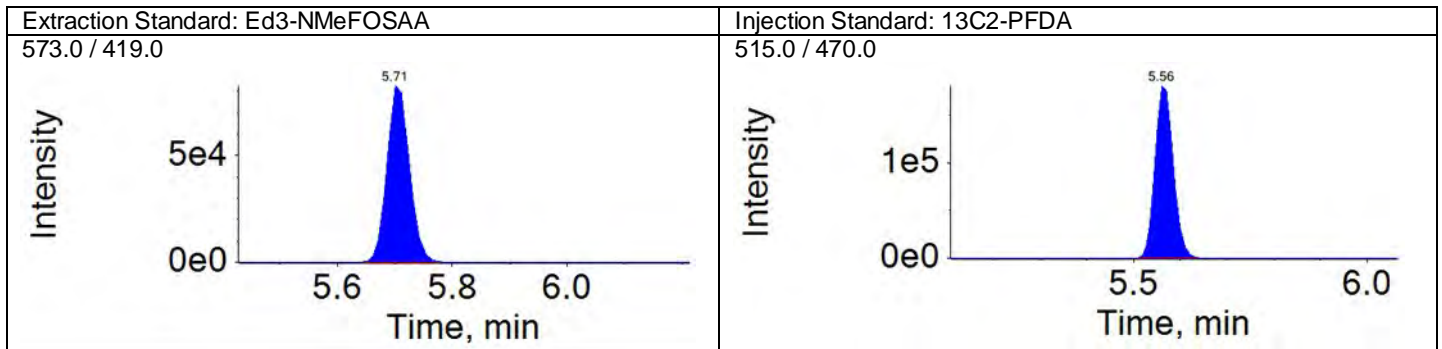
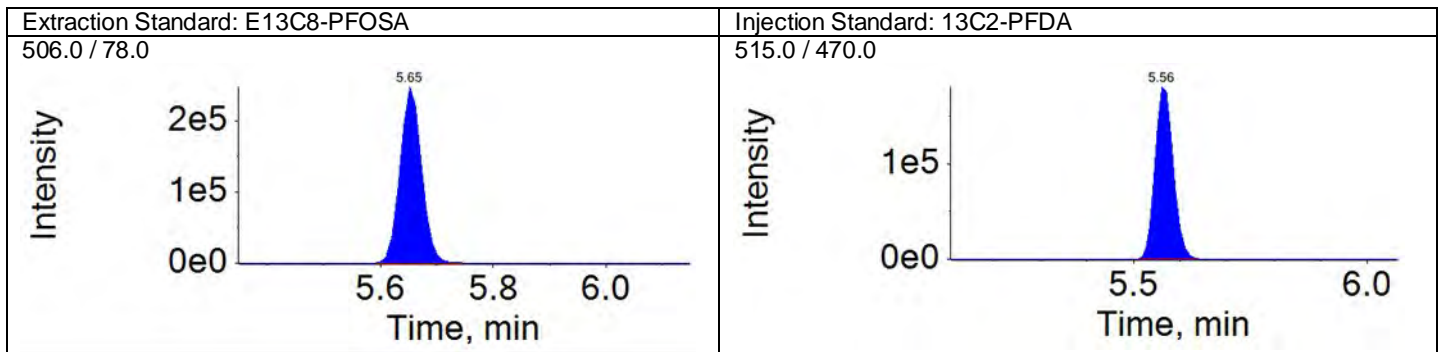
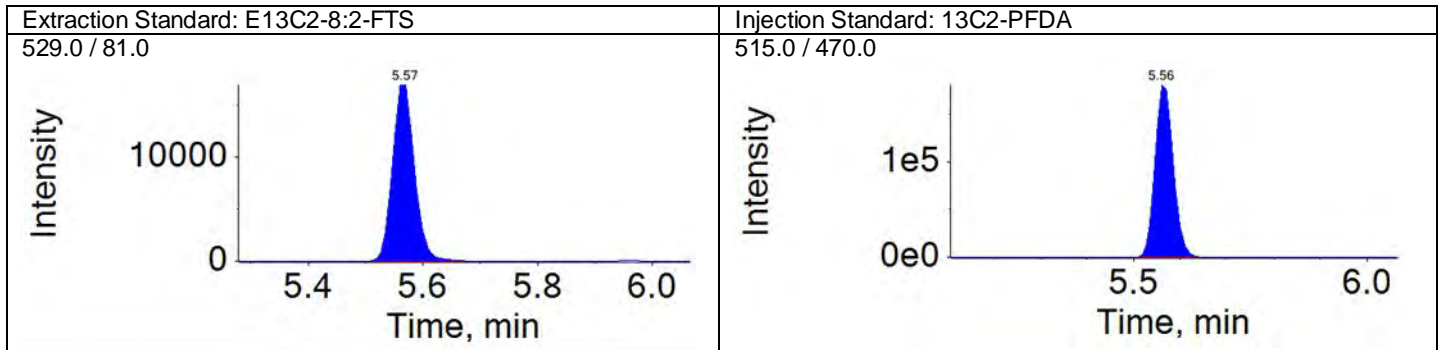
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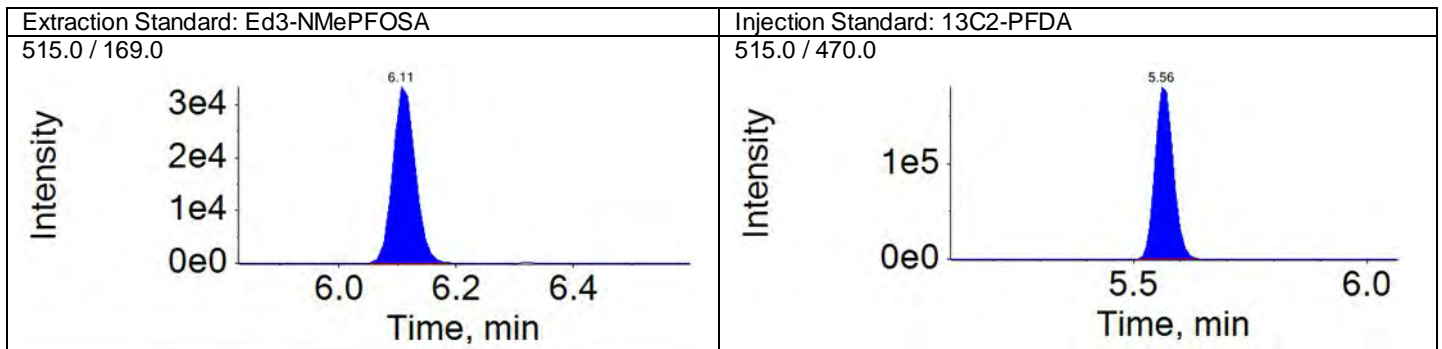
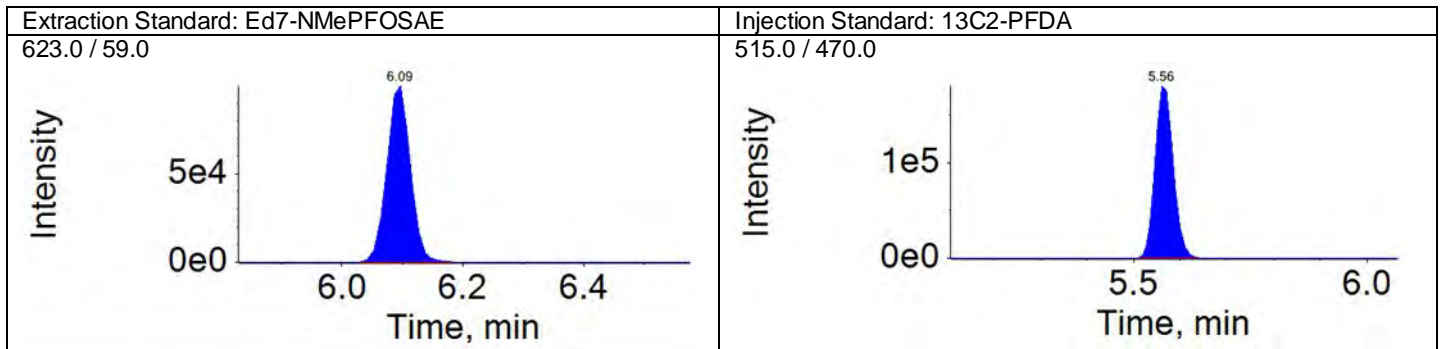
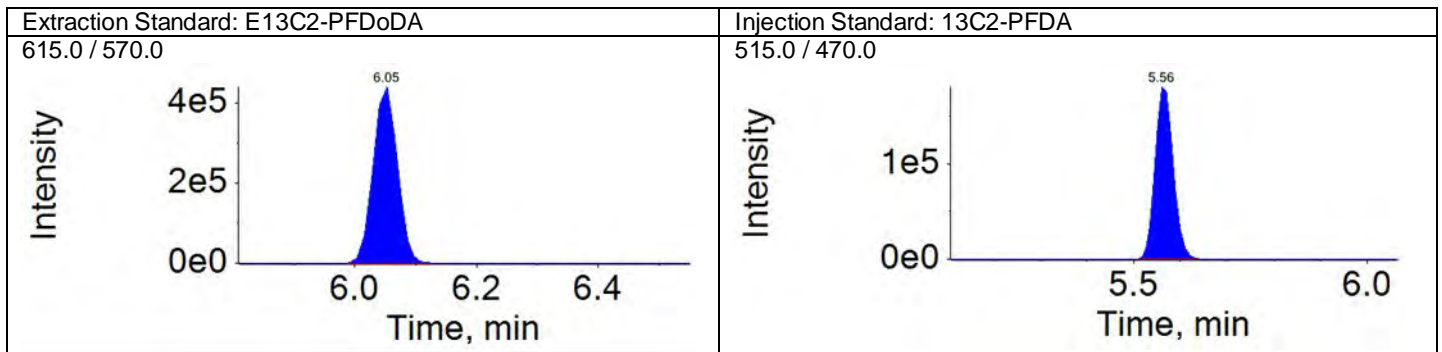
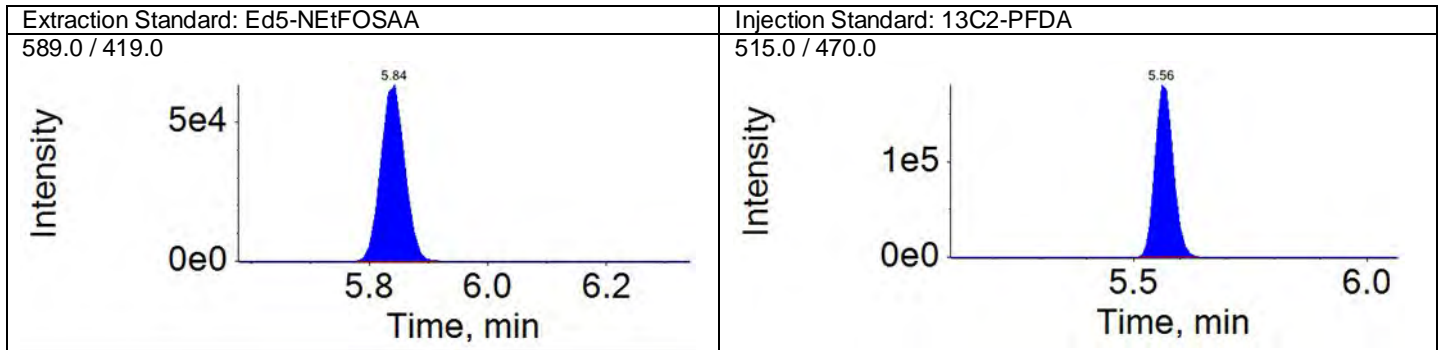
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Acquisition Method: 18AUG13\_3uL.dam





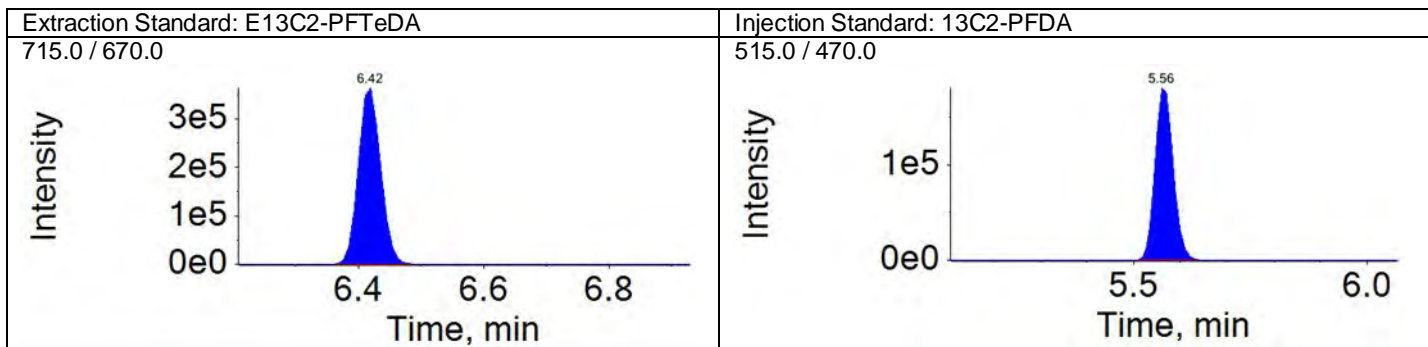
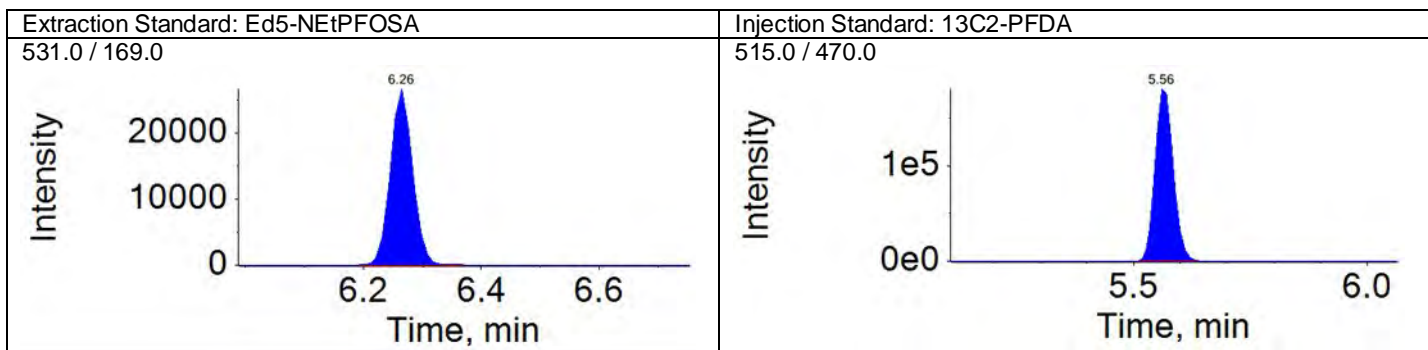
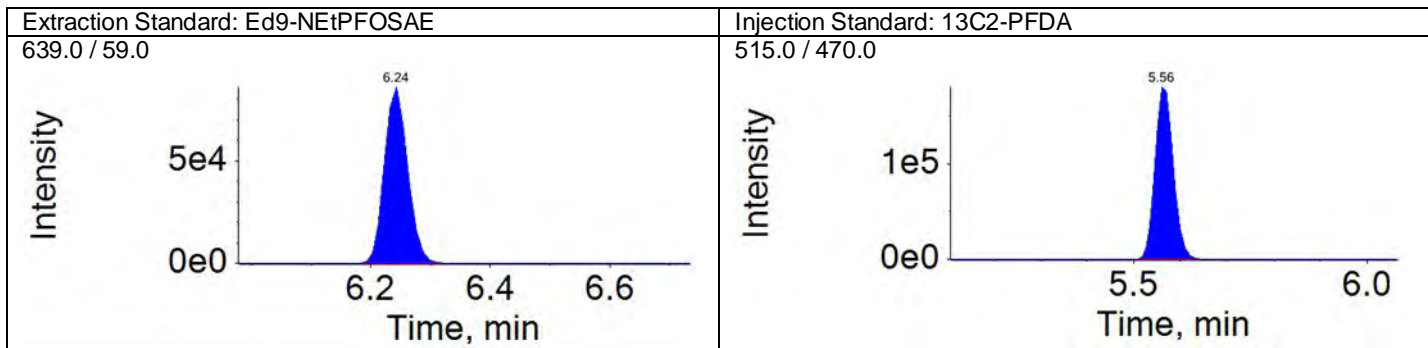
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
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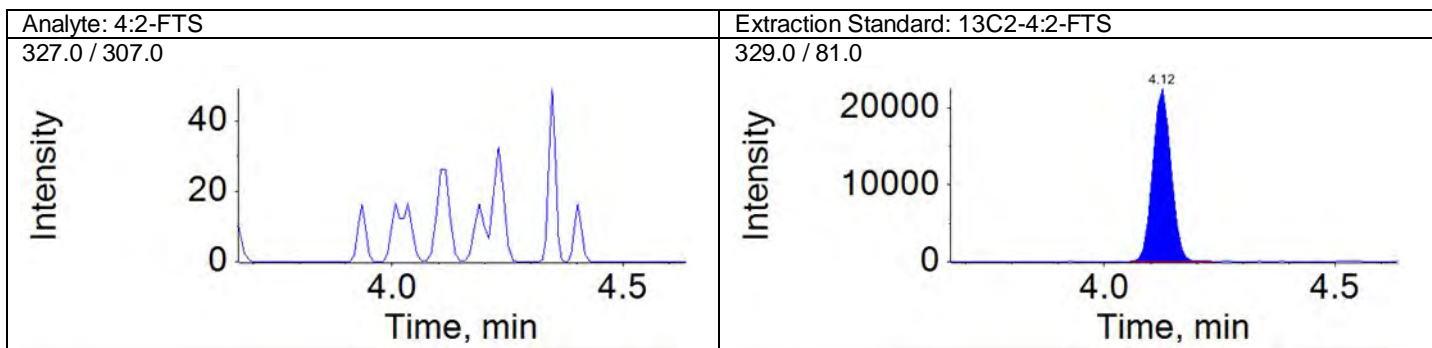
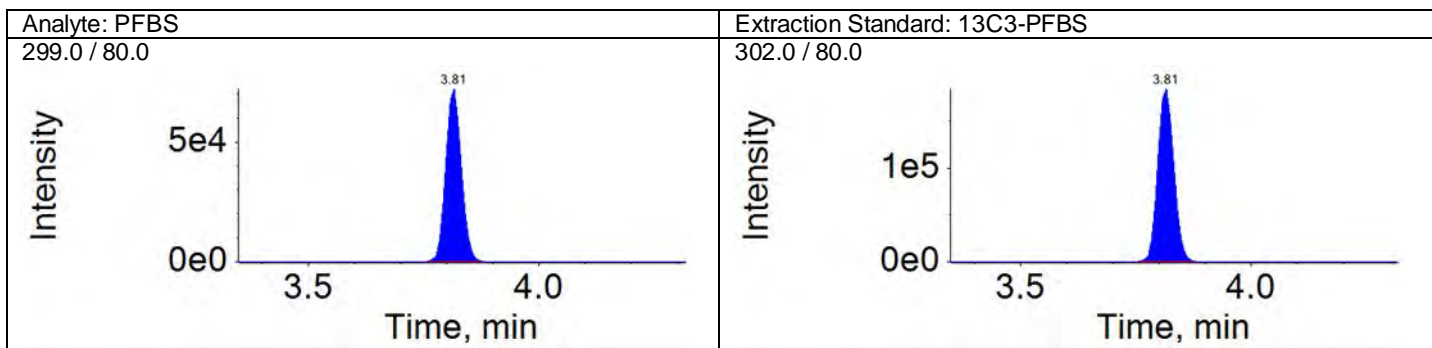
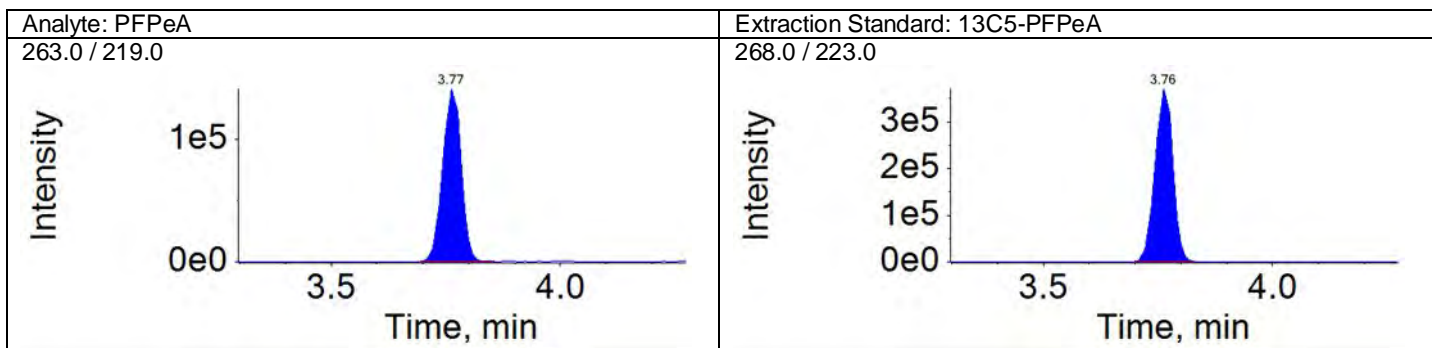
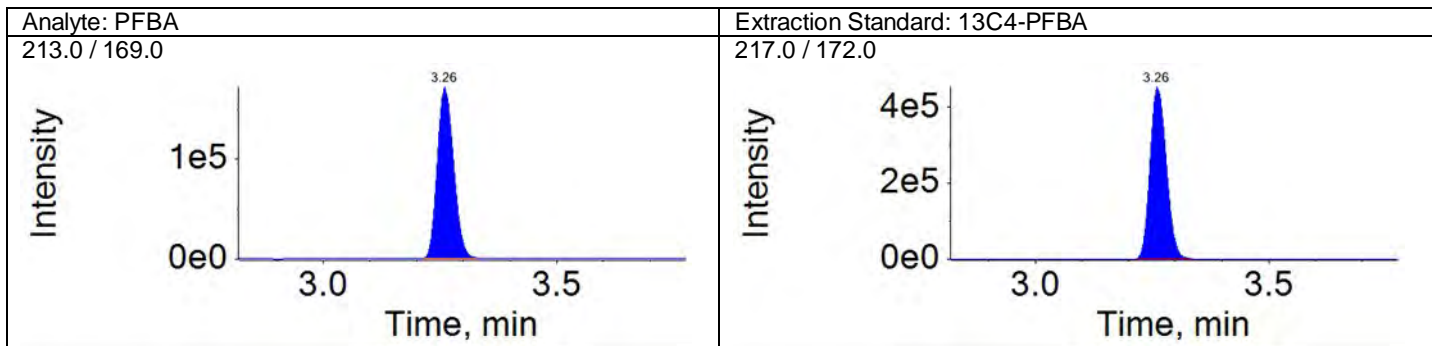
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QMethod Name: 18AUG20QM

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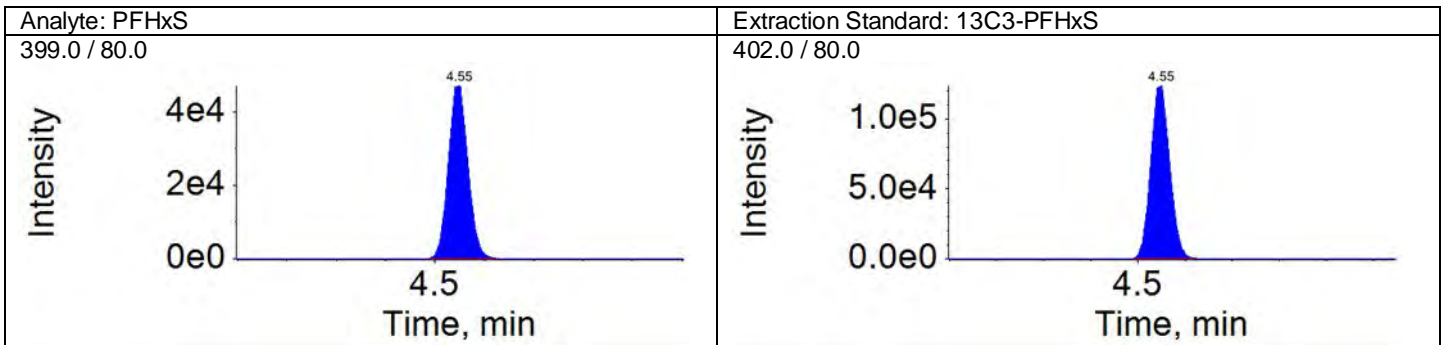
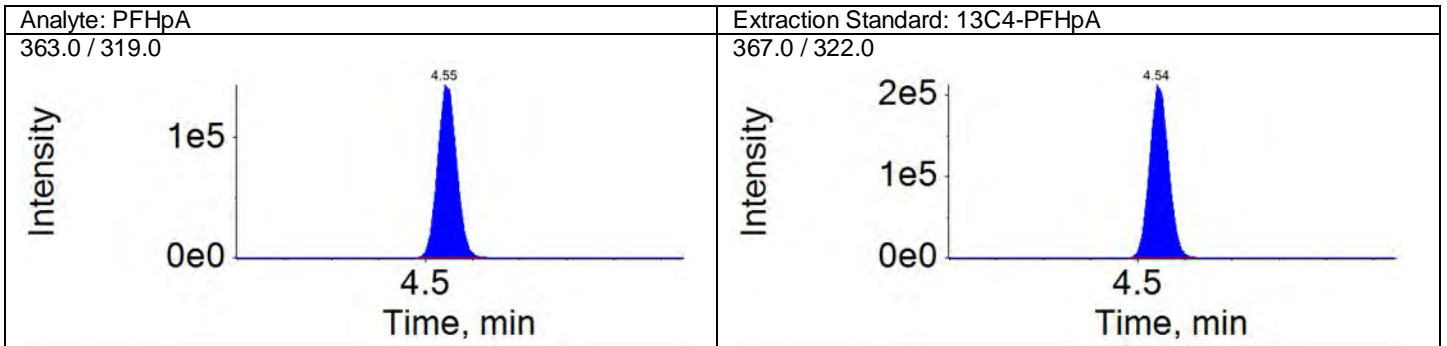
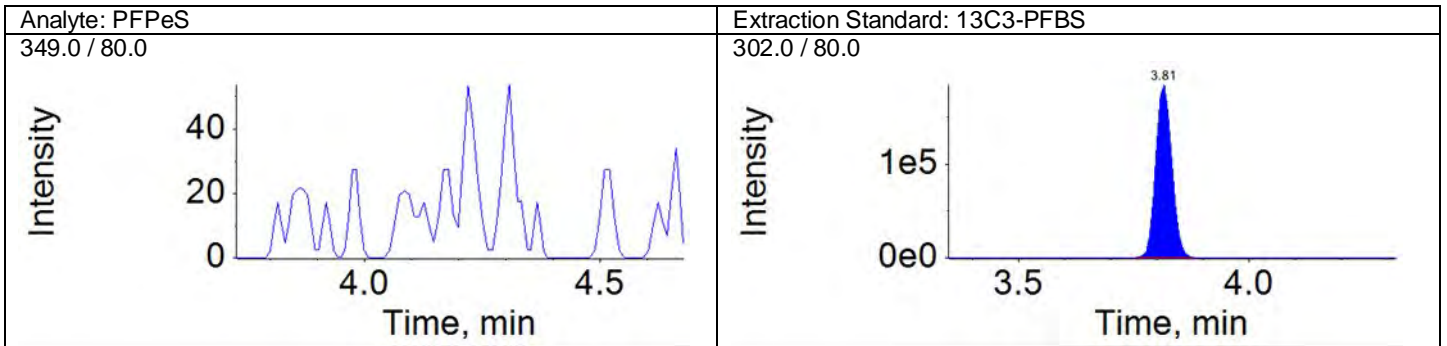
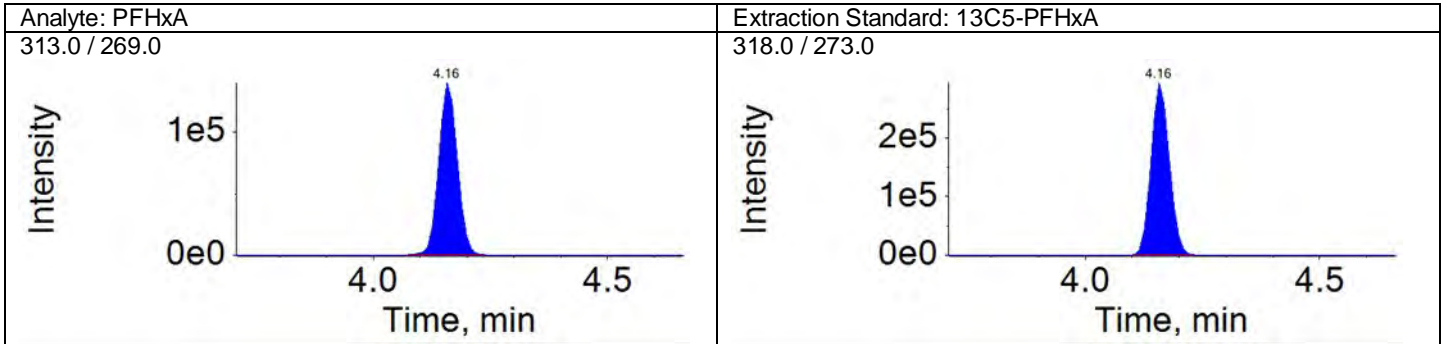
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

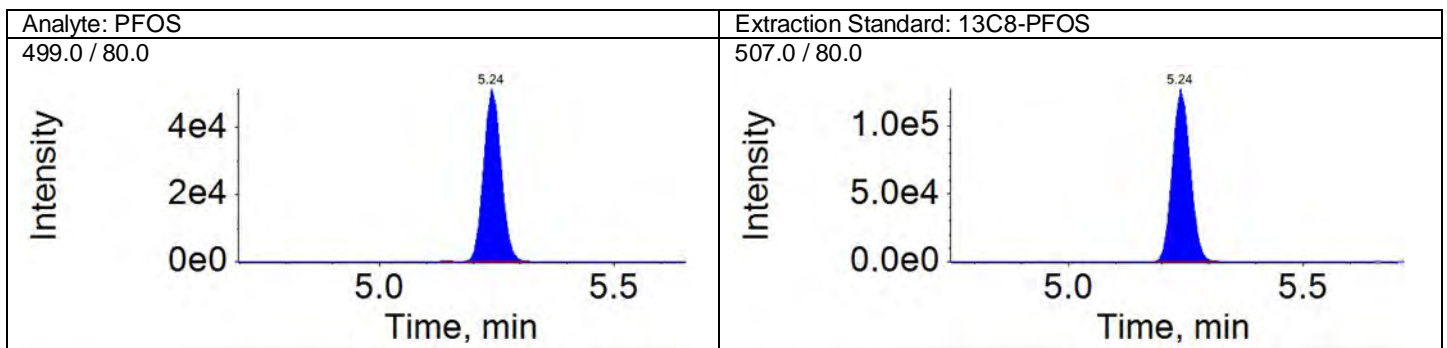
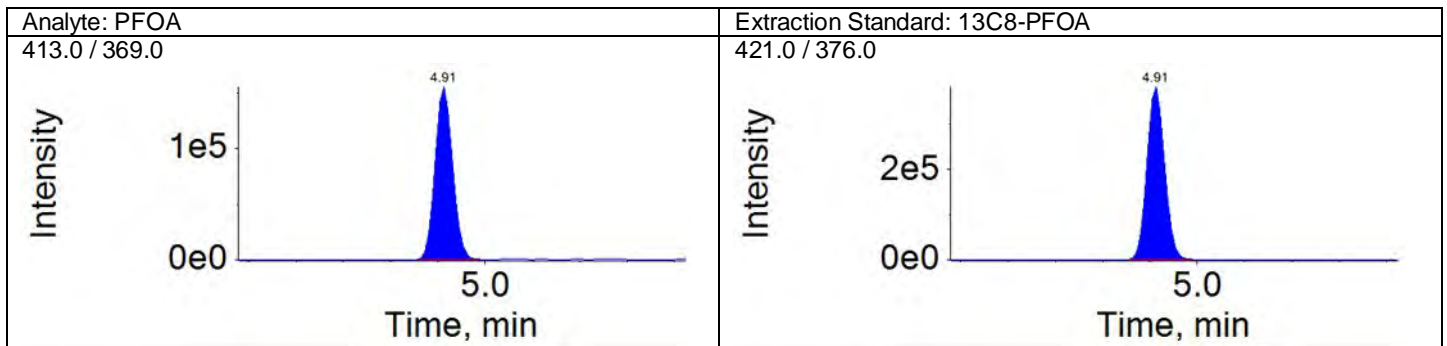
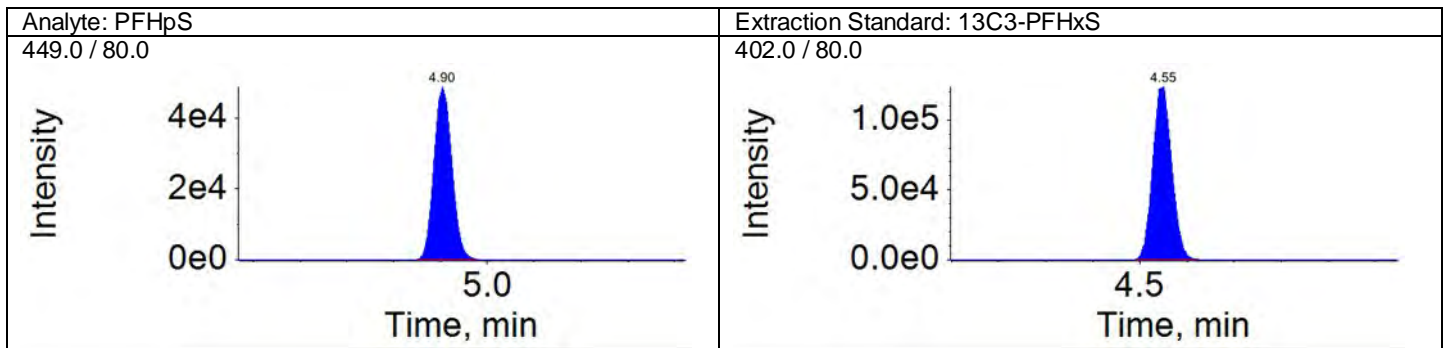
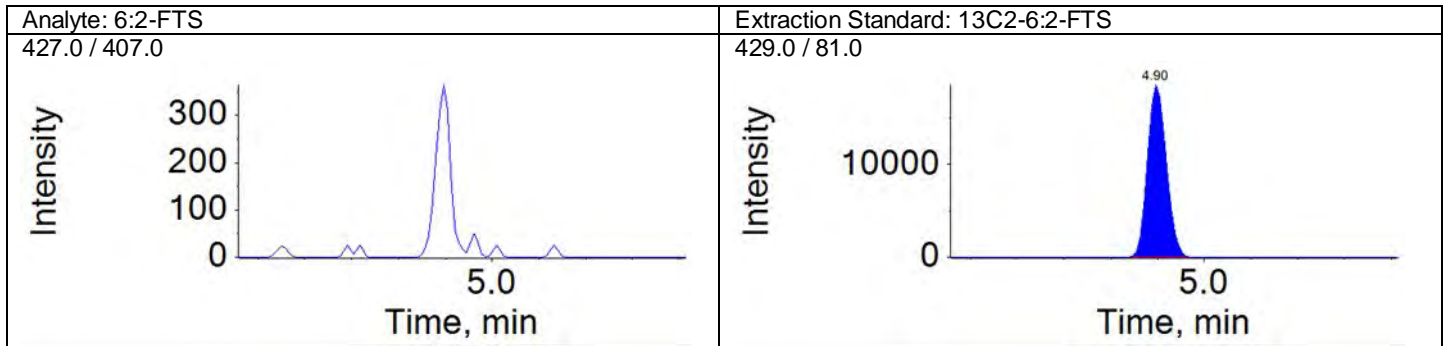
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

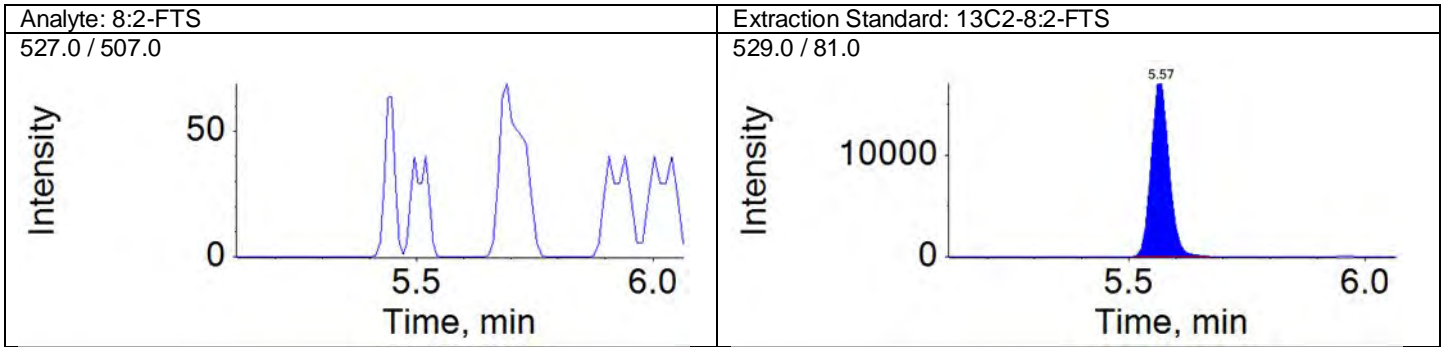
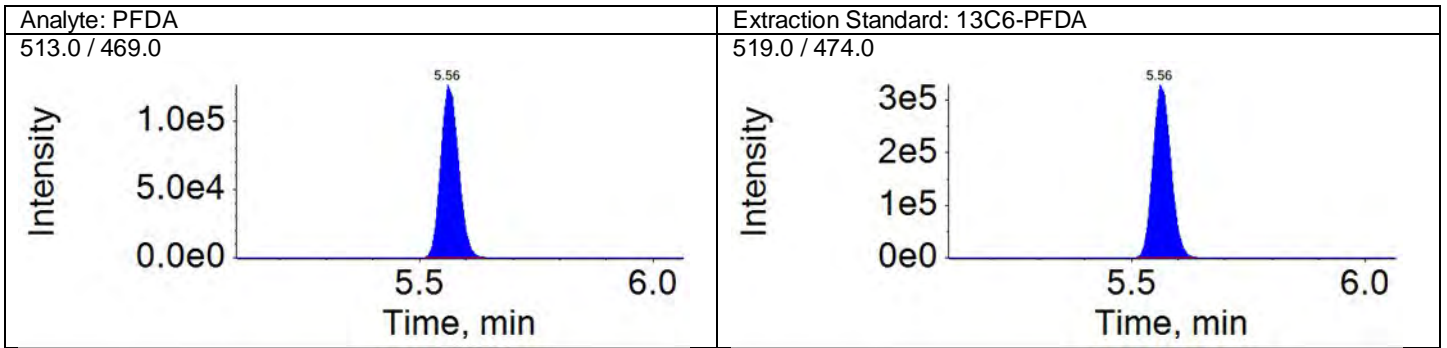
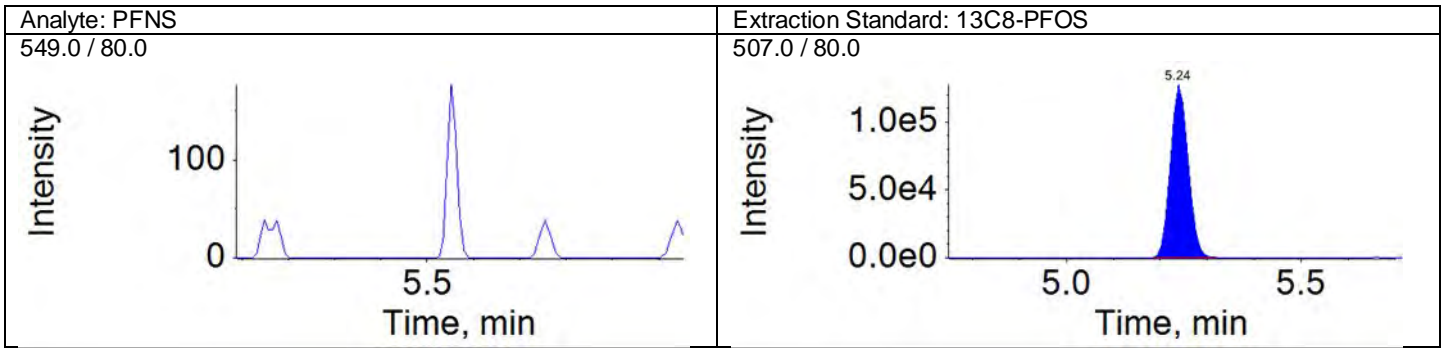
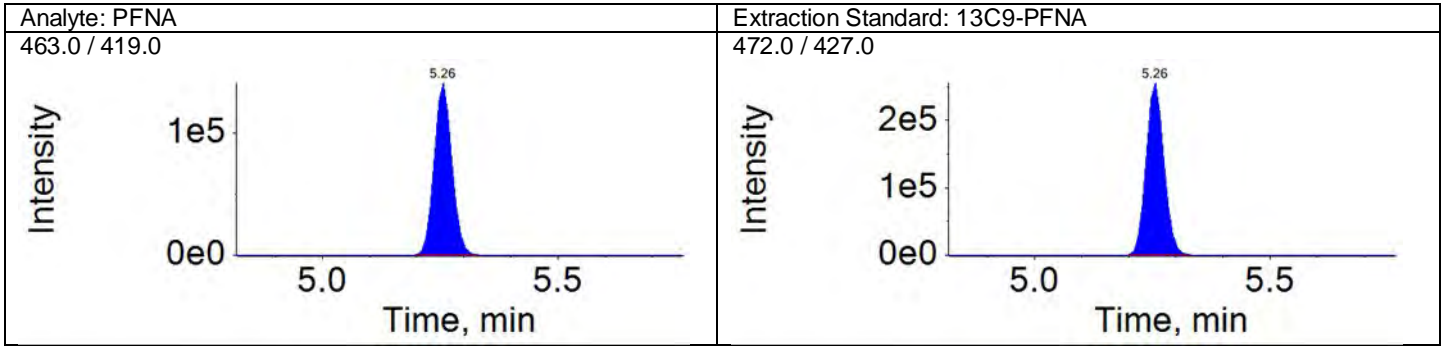
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Acquisition Method: 18AUG13\_3uL.dam





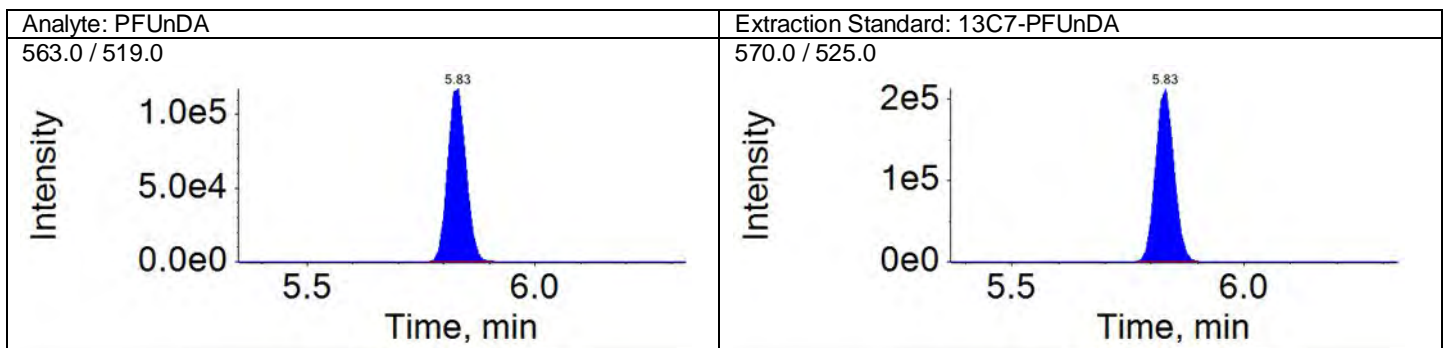
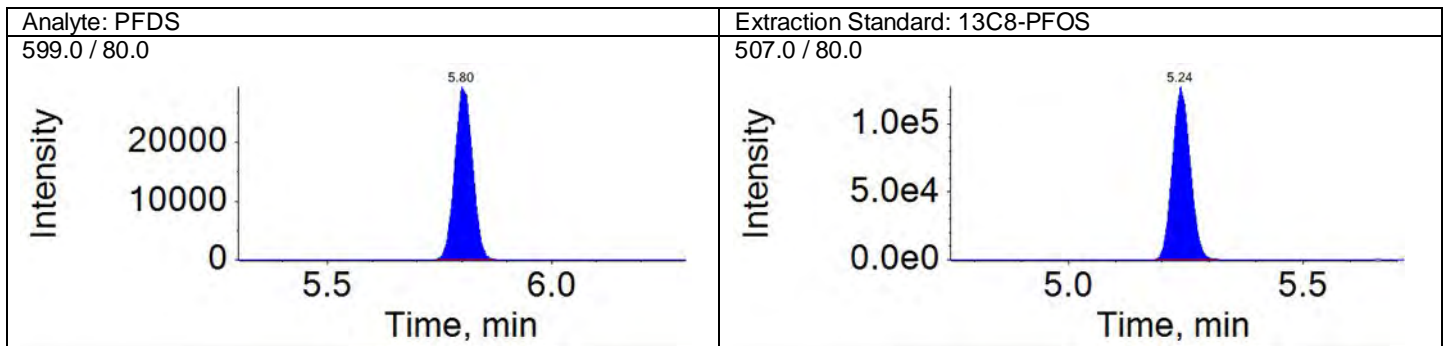
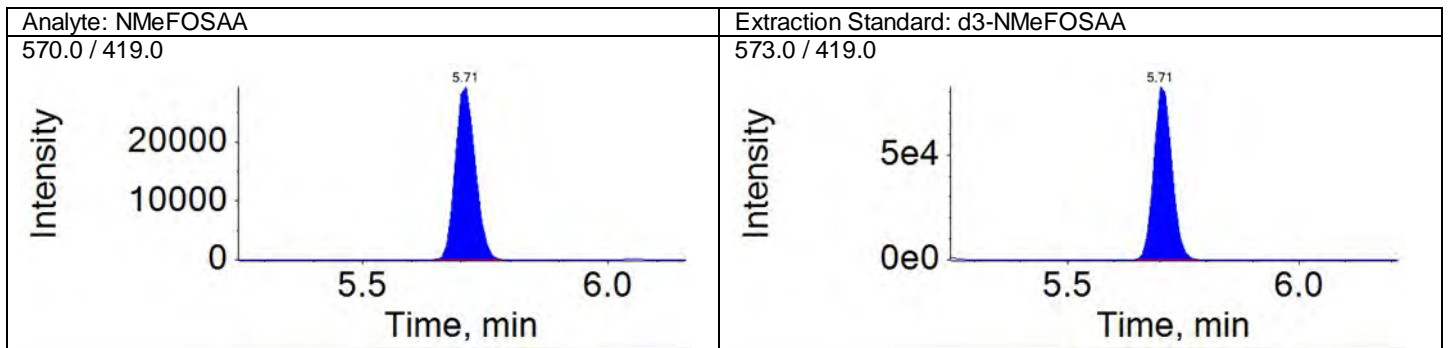
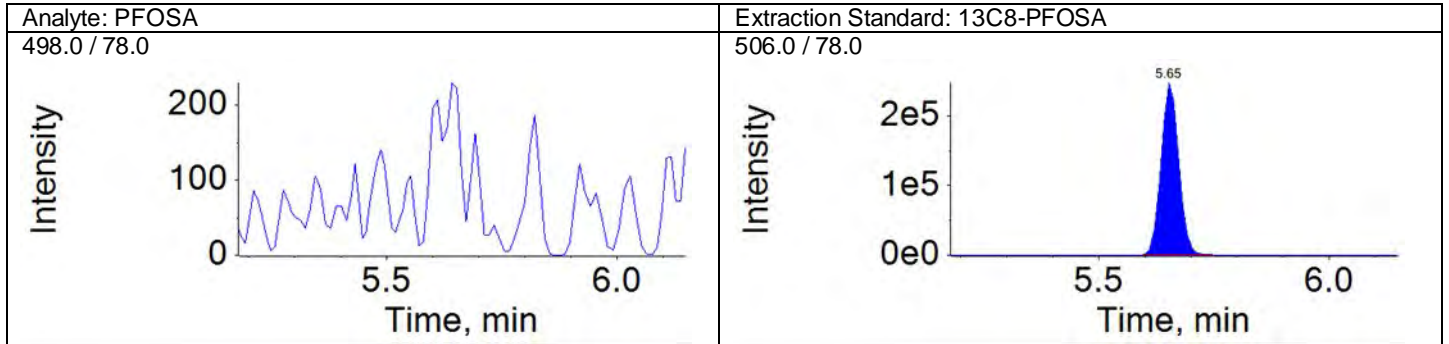
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



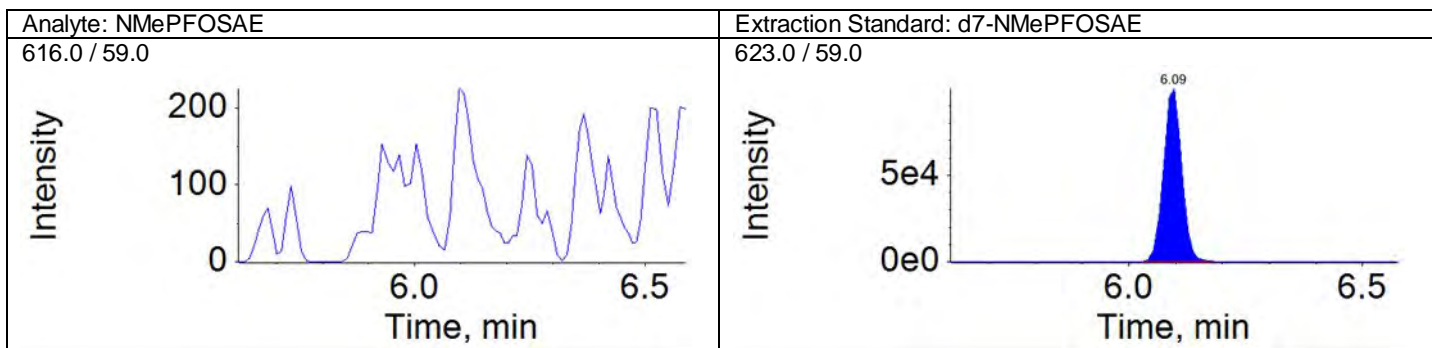
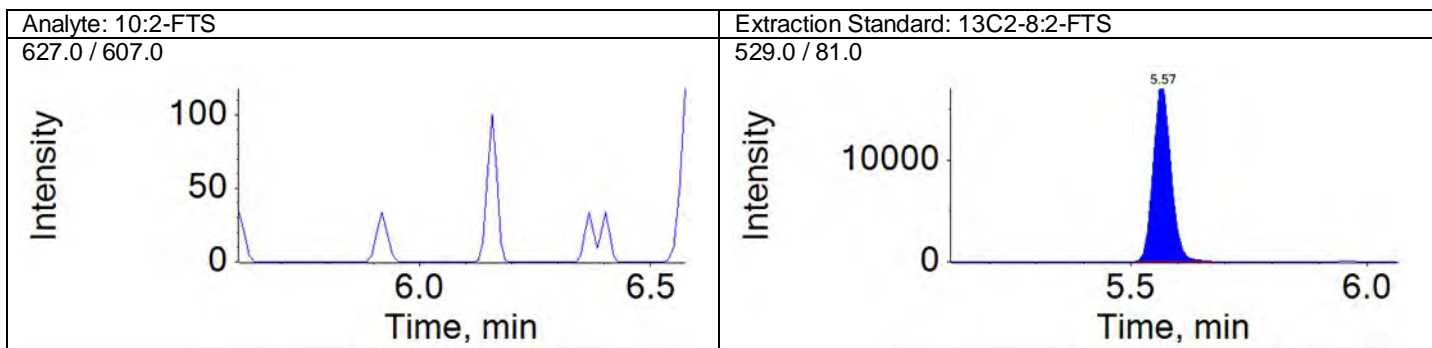
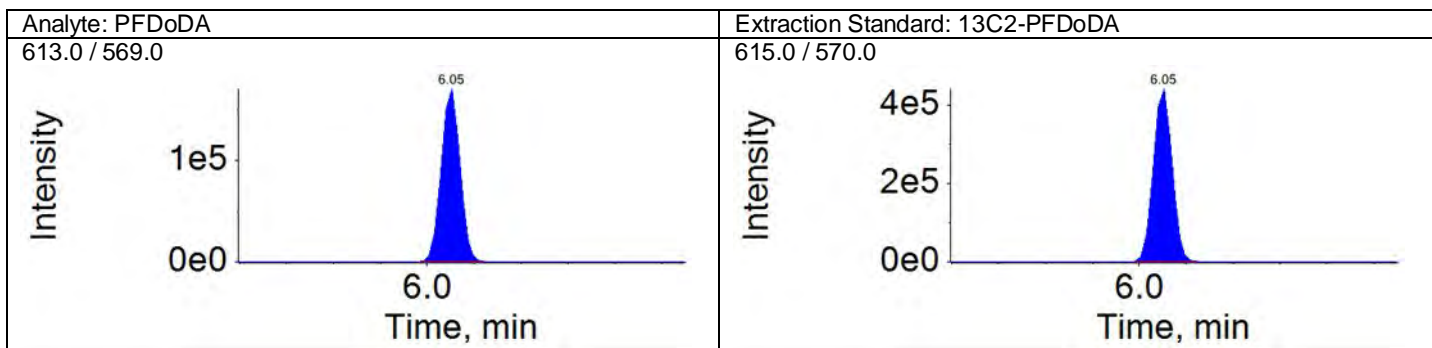
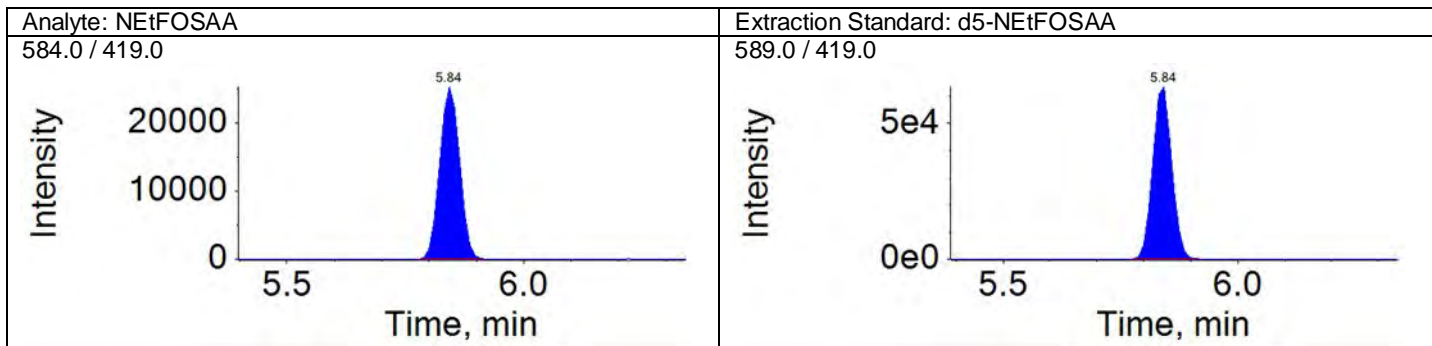
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



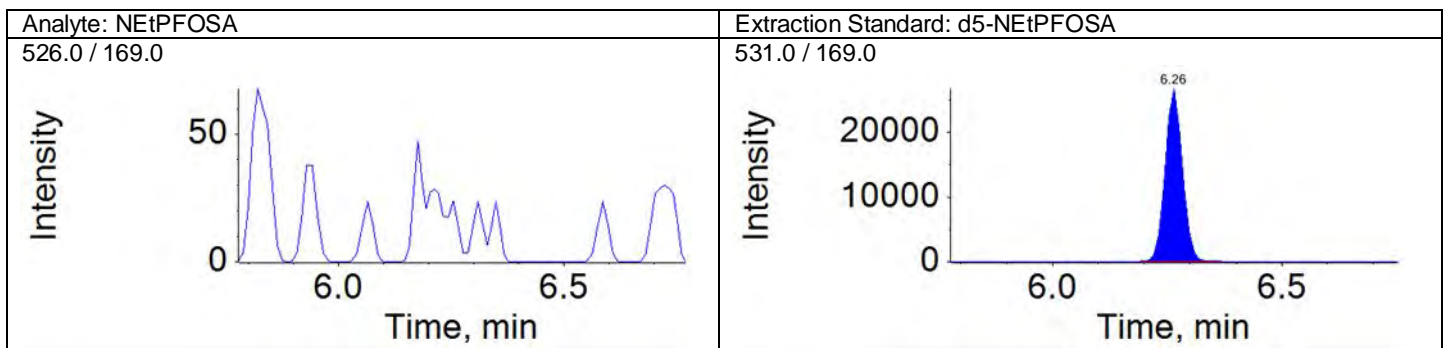
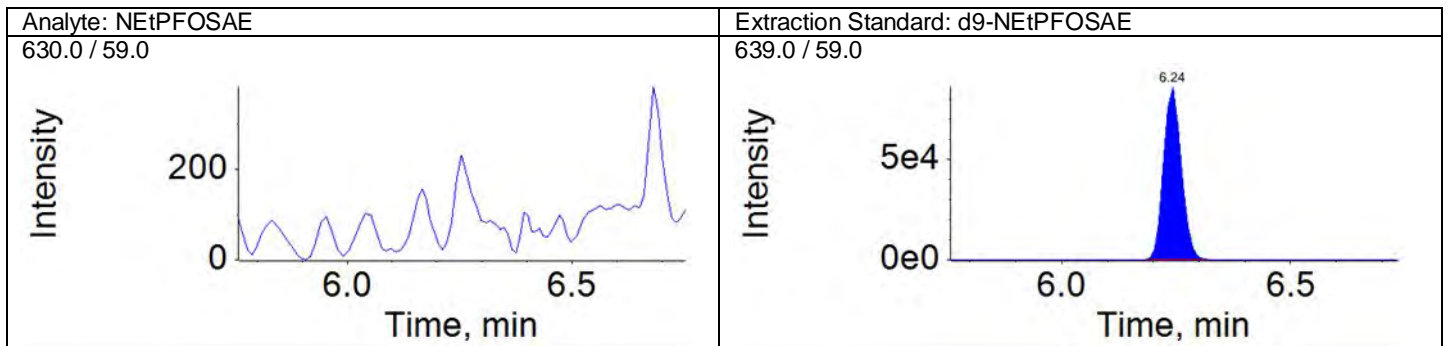
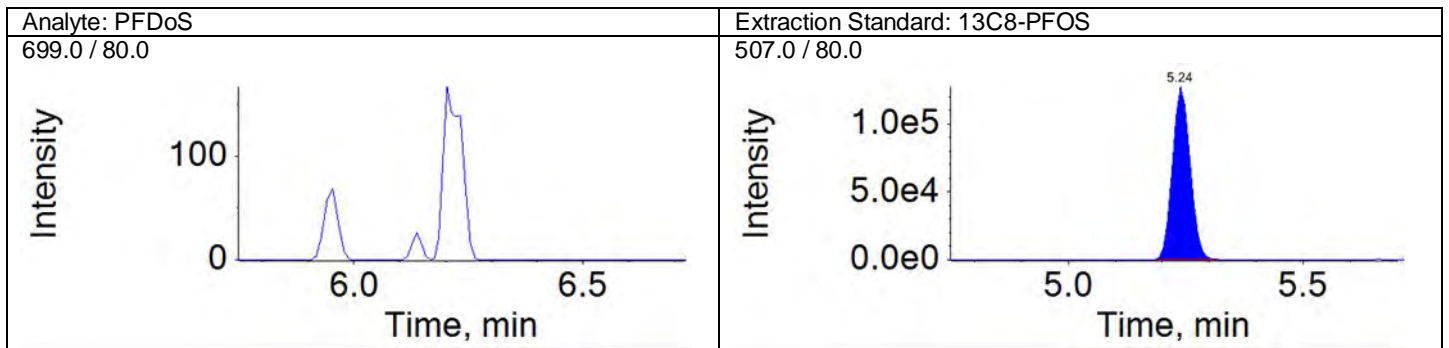
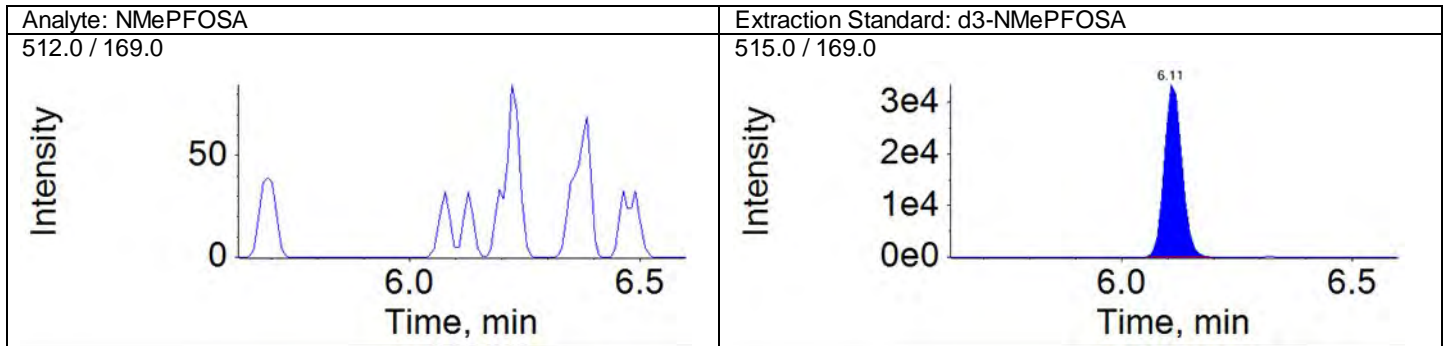
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

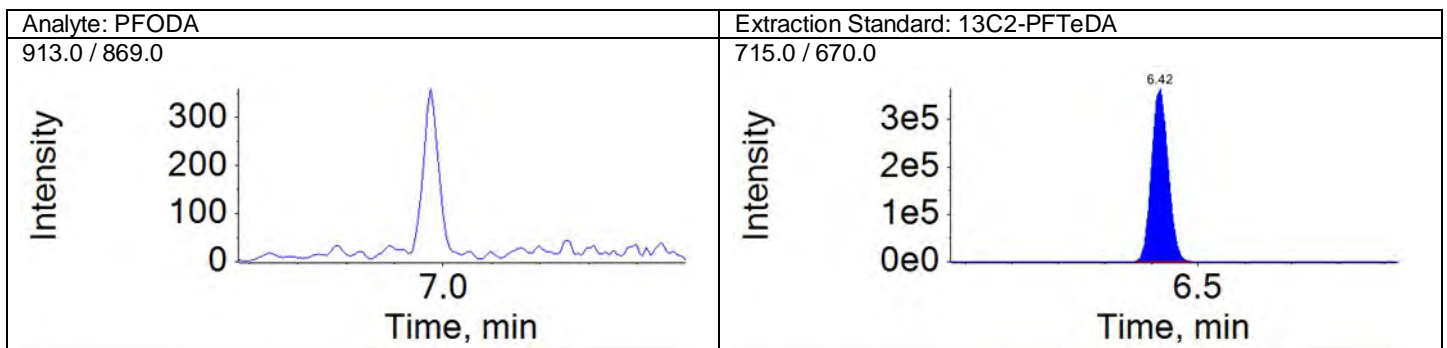
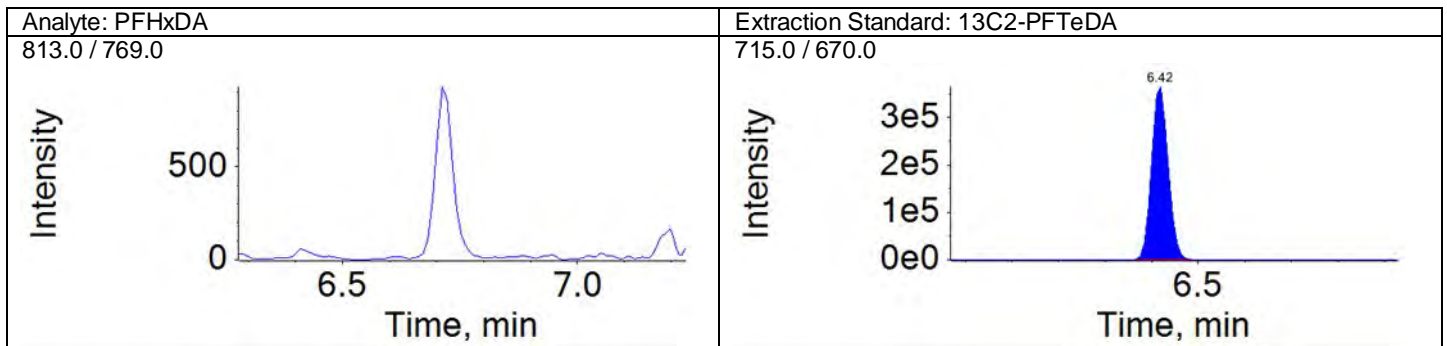
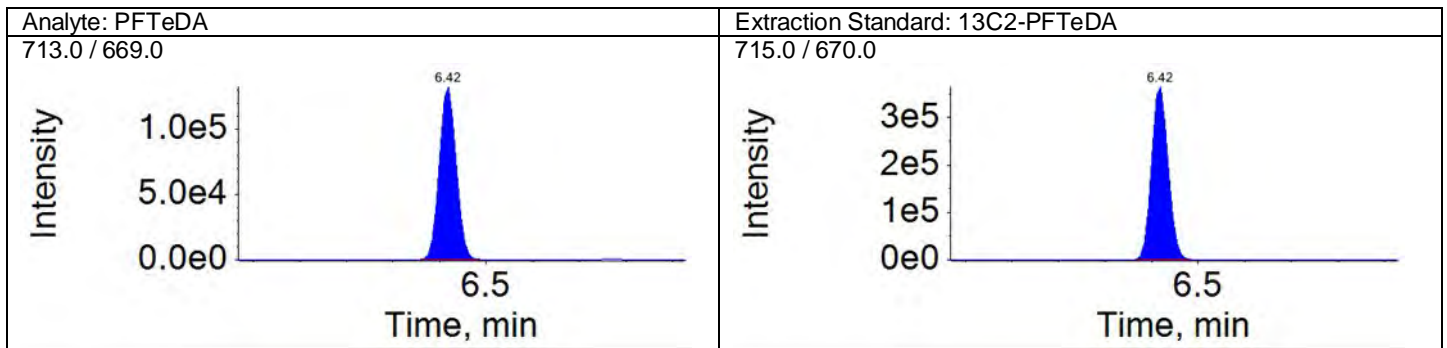
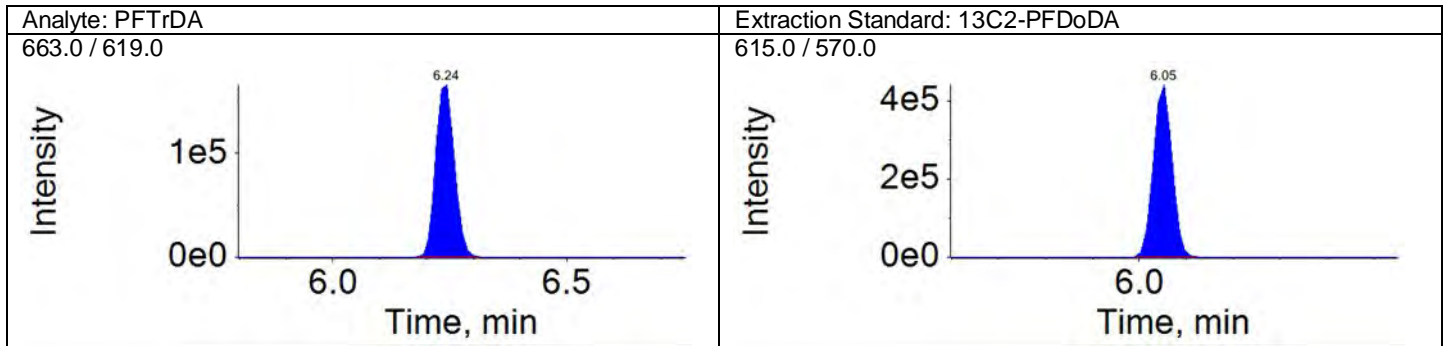
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam





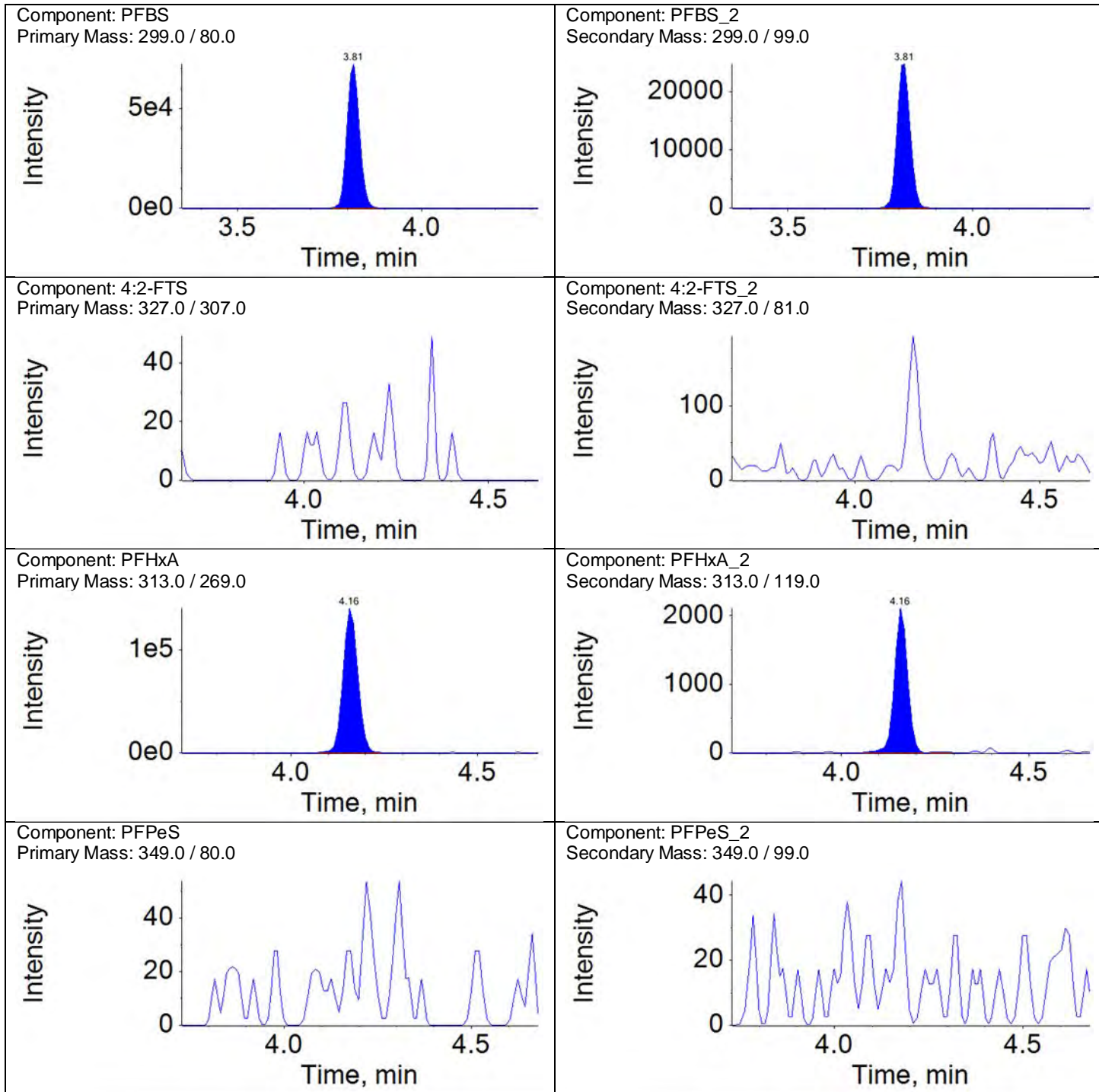
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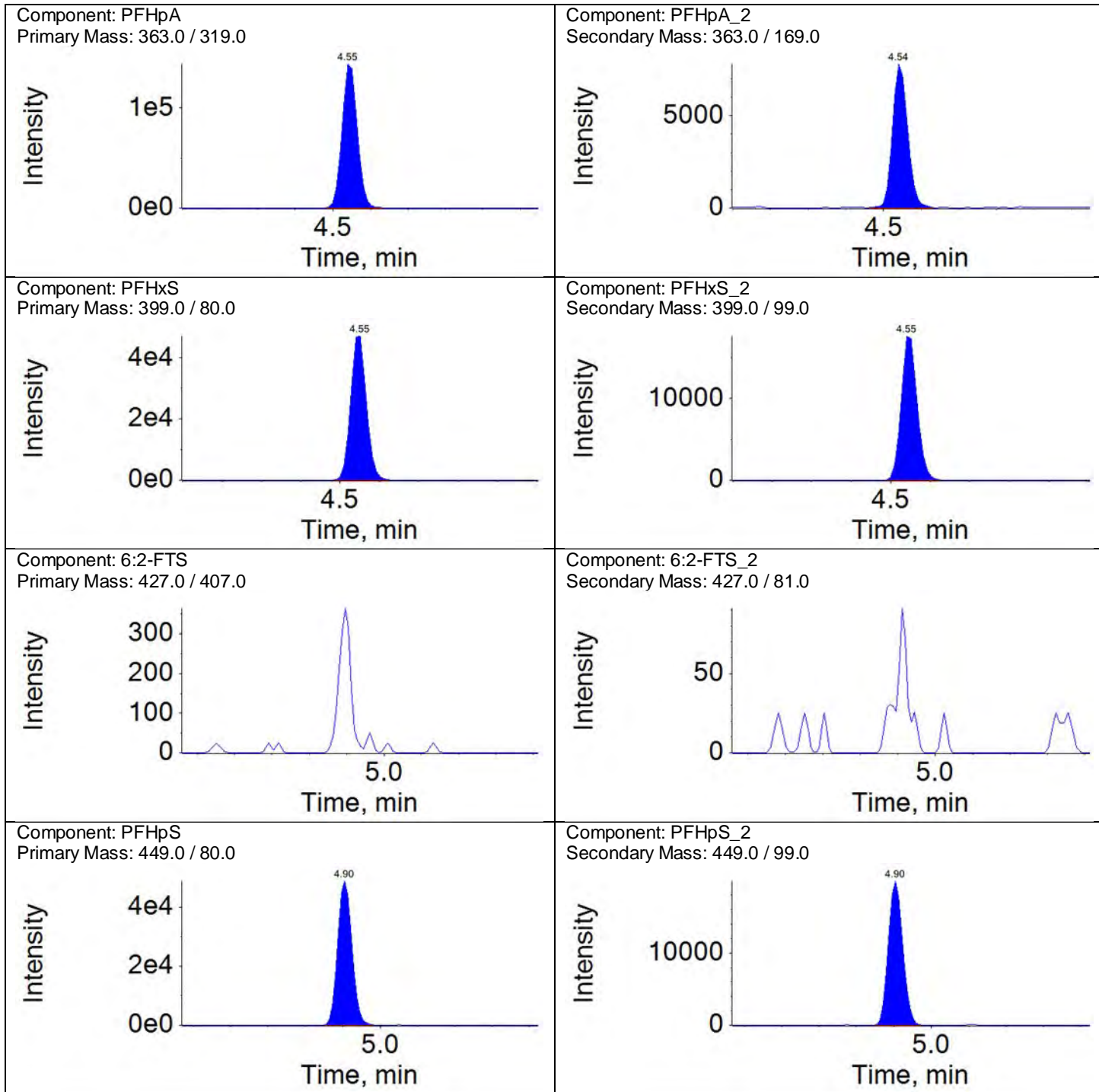
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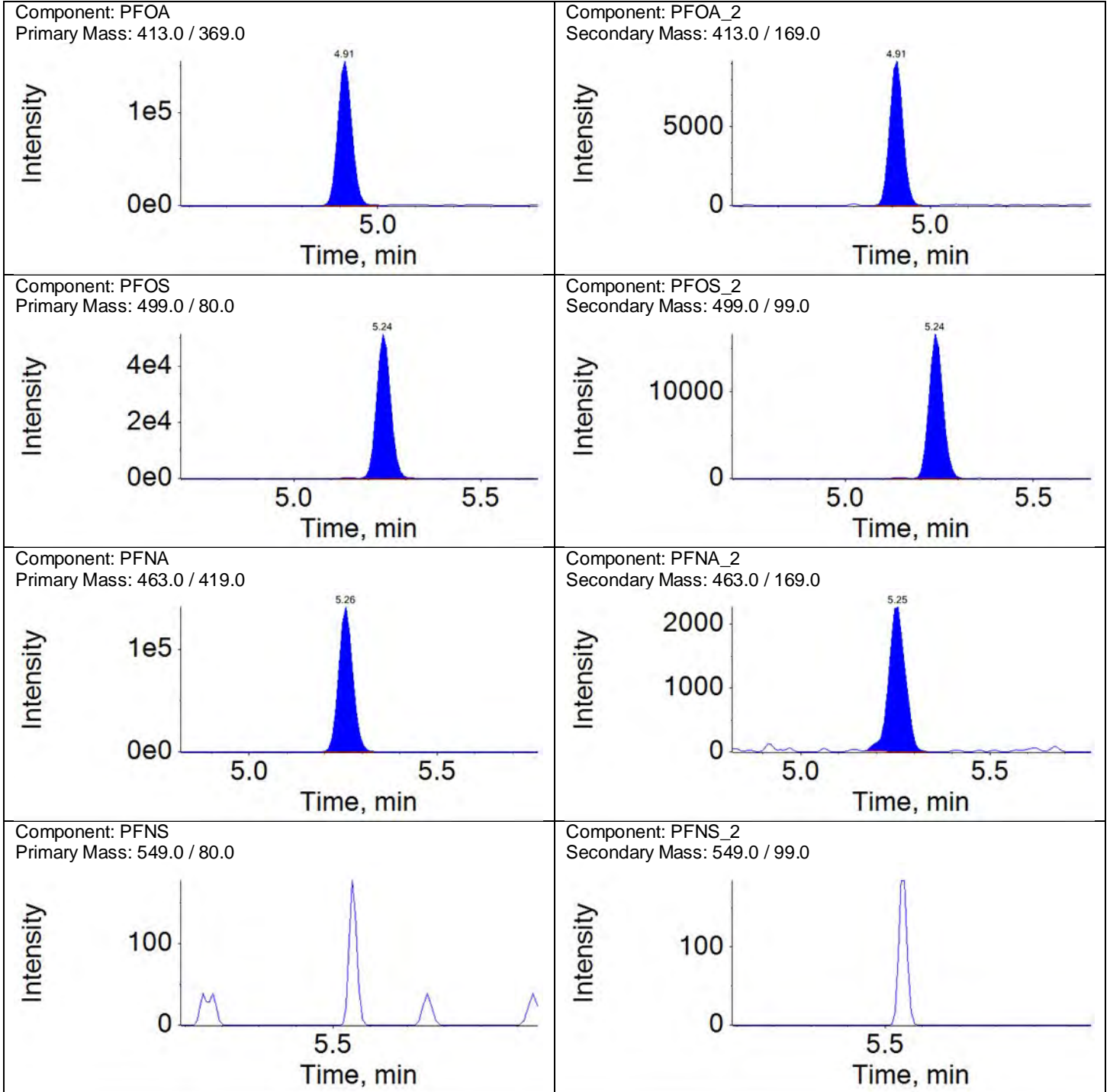
Instrument Name: LM27631

File Name: 18DEC18DCAL-76.wiff

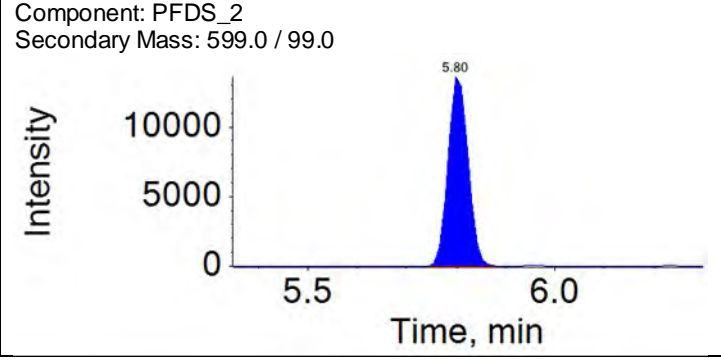
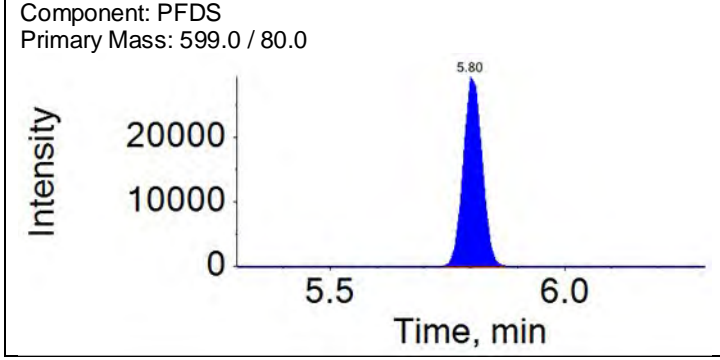
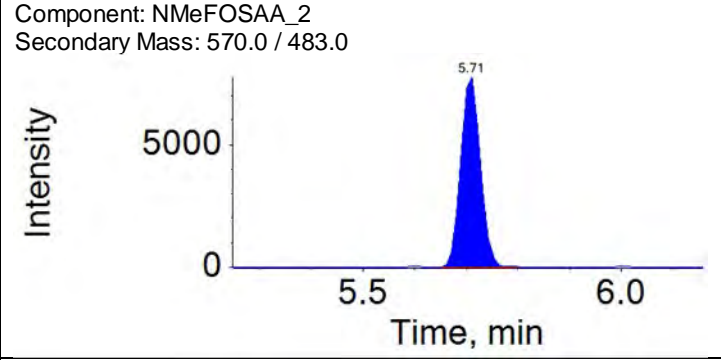
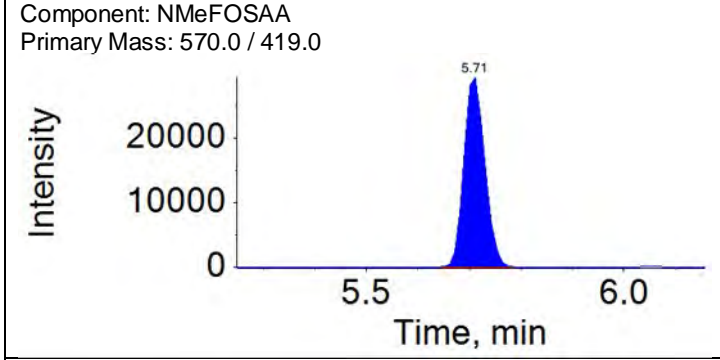
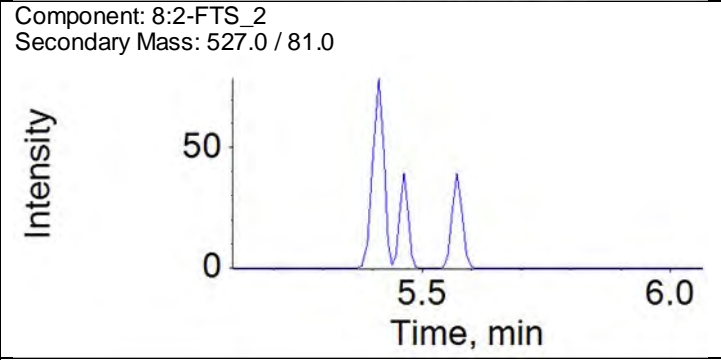
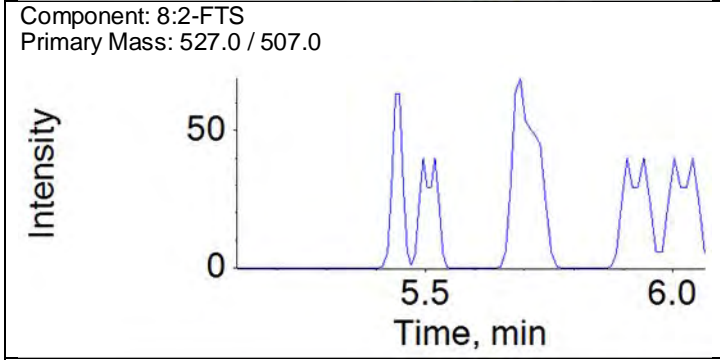
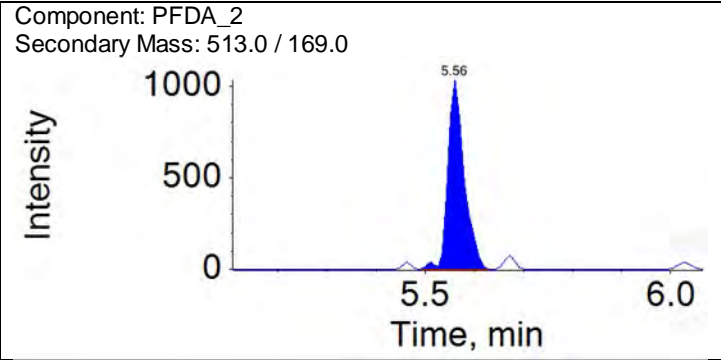
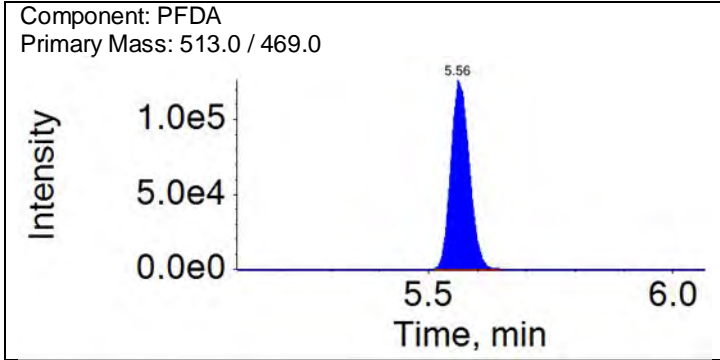
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	169696.97	A	1.0000	1.0000			
PFBS_2	3.81	1.00	61117.32	A	0.3686	0.3602	-2	50	
4:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	0.6123	N/A		50	
PFHxA	4.16	1.00	384443.42	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	5173.00	A	0.0115	0.0135	17	50	
PFPeS	N/A	N/A	N/A	A	1.0000	N/A			
PFPeS_2	N/A	N/A	N/A	A	0.5256	N/A		50	
PFHpA	4.55	1.00	403375.85	A	1.0000	1.0000			
PFHpA_2	4.54	1.00	21660.35	A	0.0547	0.0537	-2	50	
PFHxS	4.55	1.00	130829.50	A	1.0000	1.0000			
PFHxS_2	4.55	1.00	49033.05	A	0.3359	0.3748	12	50	
6:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	0.6344	N/A		50	
PFHpS	4.90	1.08	129646.75	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	53369.58	A	0.4110	0.4117	0	50	
PFOA	4.91	1.00	398236.05	A	1.0000	1.0000			
PFOA_2	4.91	1.00	22624.63	A	0.0590	0.0568	-4	50	
PFOS	5.24	1.00	133872.01	A	1.0000	1.0000			
PFOS_2	5.24	1.00	43180.79	A	0.2980	0.3226	8	50	
PFNA	5.26	1.00	367059.53	A	1.0000	1.0000			
PFNA_2	5.25	1.00	6937.38	A	0.0214	0.0189	-12	50	
PFNS	N/A	N/A	N/A	A	1.0000	N/A			
PFNS_2	N/A	N/A	N/A	A	0.4608	N/A		50	
PFDA	5.56	1.00	331197.86	A	1.0000	1.0000			
PFDA_2	5.56	1.00	2397.14	A	0.0064	0.0072	14	50	
8:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	0.5879	N/A		50	
NMeFOSAA	5.71	1.00	83098.34	A	1.0000	1.0000			
NMeFOSAA_2	5.71	1.00	20485.00	A	0.2625	0.2465	-6	50	
PFDS	5.80	1.11	81048.38	A	1.0000	1.0000			
PFDS_2	5.80	1.11	38322.11	A	0.4962	0.4728	-5	50	
PFUnDA	5.83	1.00	328698.42	A	1.0000	1.0000			
PFUnDA_2	5.82	1.00	1234.50	A	0.0035	0.0038	6	50	
NEtFOSAA	5.84	1.00	73598.96	A	1.0000	1.0000			
NEtFOSAA_2	5.84	1.00	46245.31	A	0.6883	0.6283	-9	50	
PFDODA	6.05	1.00	471885.24	A	1.0000	1.0000			
PFDODA_2	6.05	1.00	5740.41	A	0.0134	0.0122	-9	50	
10:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	0.7018	N/A		50	
PFTTrDA	6.24	1.03	463980.11	A	1.0000	1.0000			
PFTTrDA_2	6.24	1.03	4160.01	A	0.0093	0.0090	-4	50	
PFTeDA	6.42	1.00	335133.74	A	1.0000	1.0000			
PFTeDA_2	6.42	1.00	2337.37	A	0.0058	0.0070	20	50	
PFHxDA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxDA_2	N/A	N/A	N/A	A	0.0656	N/A		50	
PFODA	N/A	N/A	N/A	A	1.0000	N/A			
PFODA_2	N/A	N/A	N/A	A	0.0273	N/A		50	



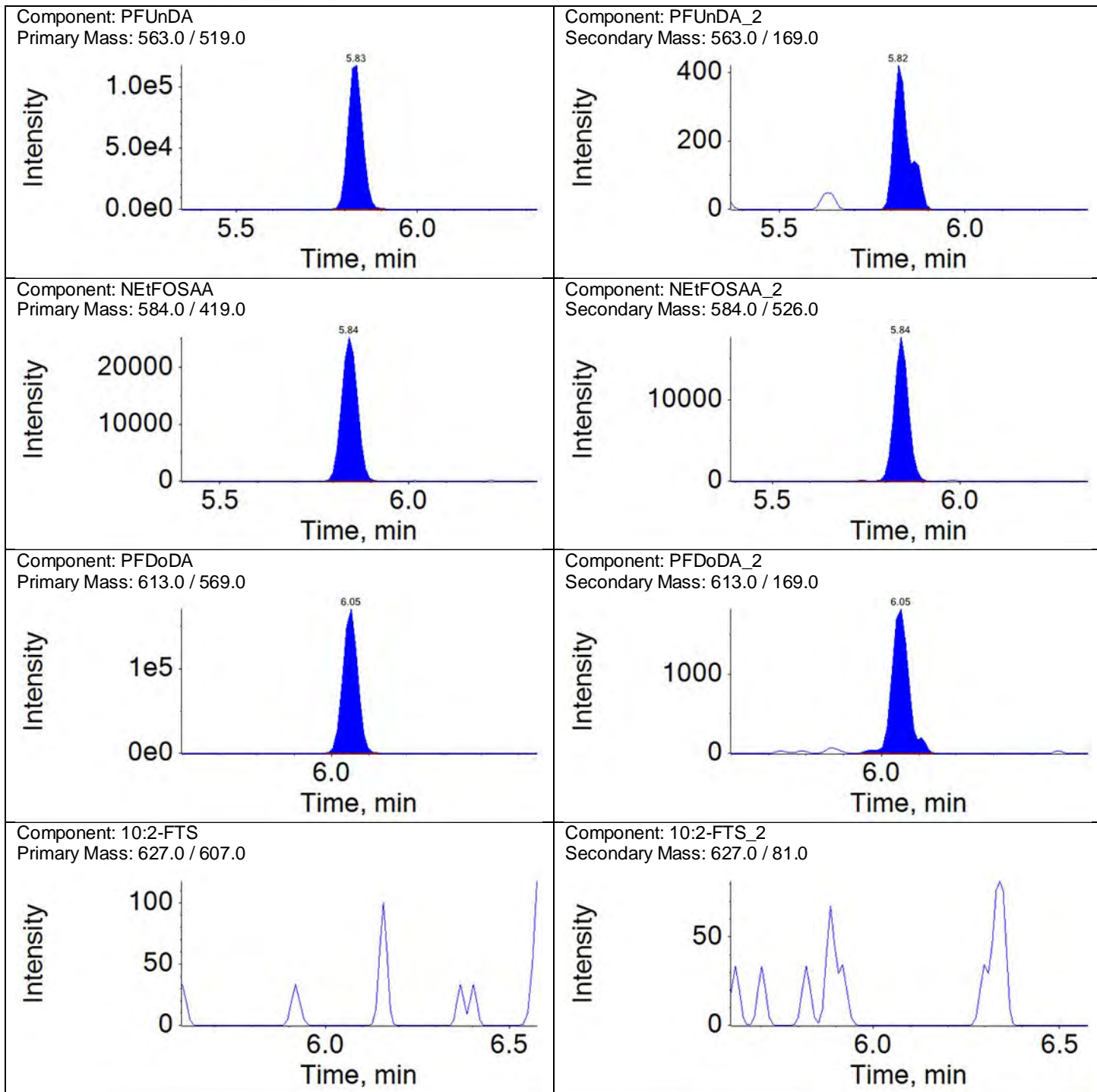


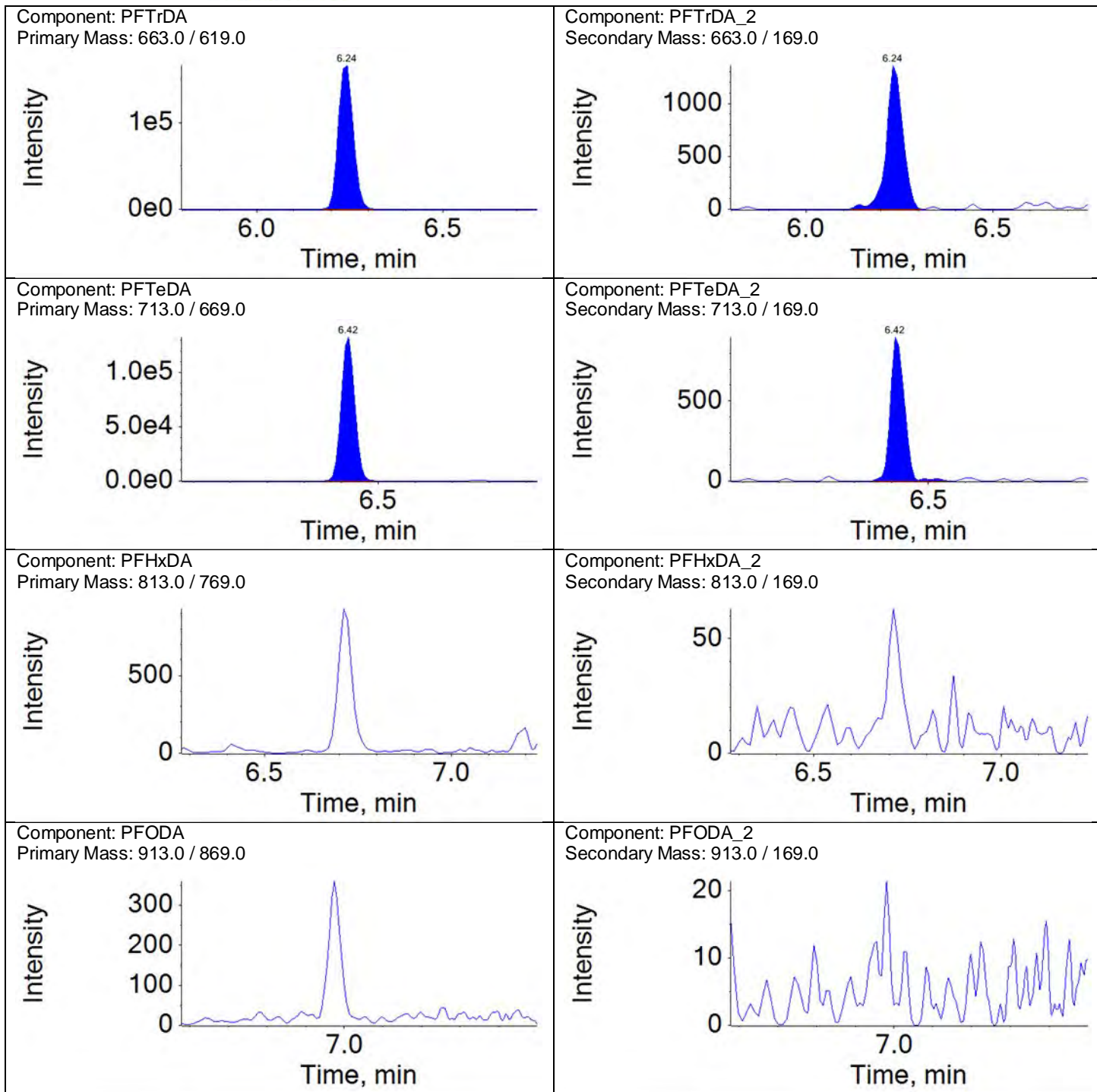












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	Instrument Blank	Data File:	18DEC18DCAL-75.wiff
Sample ID:	methanol + labels	Acquis Date:	2018-12-19T00:37:59
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	1	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	1079925.6	941251.6	15	50	
13C2-PFOA	5.0	585825.1	485595.3	21	50	
13C4-PFOS	4.8	352673.4	292182.6	21	50	
13C2-PFDA	5.0	521096.3	467216.0	12	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1189185.9	13C3-PFBA	1079925.6	1.101	5.000	4.876	98	70-130	
E13C5-PFPeA	1124499.8	13C3-PFBA	1079925.6	1.041	5.000	4.856	97	70-130	
E13C3-PFBS	473112.4	13C3-PFBA	1079925.6	0.438	4.650	4.266	92	70-130	
E13C2-4:2-FTS	66978.2	13C2-PFOA	585825.1	0.114	4.670	4.342	93	70-130	
E13C5-PFHxA	794824.1	13C2-PFOA	585825.1	1.357	5.000	4.853	97	70-130	
E13C3-PFHxS	359058.3	13C2-PFOA	585825.1	0.613	4.730	4.638	98	70-130	
E13C4-PFHpA	632358.9	13C2-PFOA	585825.1	1.079	5.000	4.663	93	70-130	
E13C2-6:2-FTS	56500.3	13C2-PFOA	585825.1	0.096	4.750	4.852	102	70-130	
E13C8-PFOA	1094219.8	13C2-PFOA	585825.1	1.868	5.000	5.136	103	70-130	
E13C8-PFOS	368522.4	13C4-PFOS	352673.4	1.045	4.780	4.673	98	70-130	
E13C9-PFNA	748034.0	13C4-PFOS	352673.4	2.121	5.000	4.825	97	70-130	
E13C6-PFDA	956008.8	13C2-PFDA	521096.3	1.835	5.000	5.226	105	70-130	
E13C2-8:2-FTS	52536.4	13C2-PFDA	521096.3	0.101	4.790	5.196	108	70-130	
E13C8-PFOSA	749437.5	13C2-PFDA	521096.3	1.438	5.000	5.600	112	70-130	
Ed3-NMeFOSAA	262204.7	13C2-PFDA	521096.3	0.503	5.000	5.536	111	70-130	
E13C7-PFUnDA	640896.0	13C2-PFDA	521096.3	1.230	5.000	5.148	103	70-130	
Ed5-NEtFOSAA	178339.9	13C2-PFDA	521096.3	0.342	5.000	5.042	101	70-130	
E13C2-PFDoDA	1305861.6	13C2-PFDA	521096.3	2.506	5.000	5.272	105	70-130	
Ed7-NMePFOSAE	289876.6	13C2-PFDA	521096.3	0.556	5.000	4.970	99	70-130	
Ed3-NMePFOSA	98770.3	13C2-PFDA	521096.3	0.190	5.000	5.208	104	70-130	
Ed9-NEtPFOSAE	256271.5	13C2-PFDA	521096.3	0.492	5.000	5.028	101	70-130	
Ed5-NEtPFOSA	76760.2	13C2-PFDA	521096.3	0.147	5.000	5.109	102	70-130	
E13C2-PFTeDA	907626.5	13C2-PFDA	521096.3	1.742	5.000	4.908	98	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

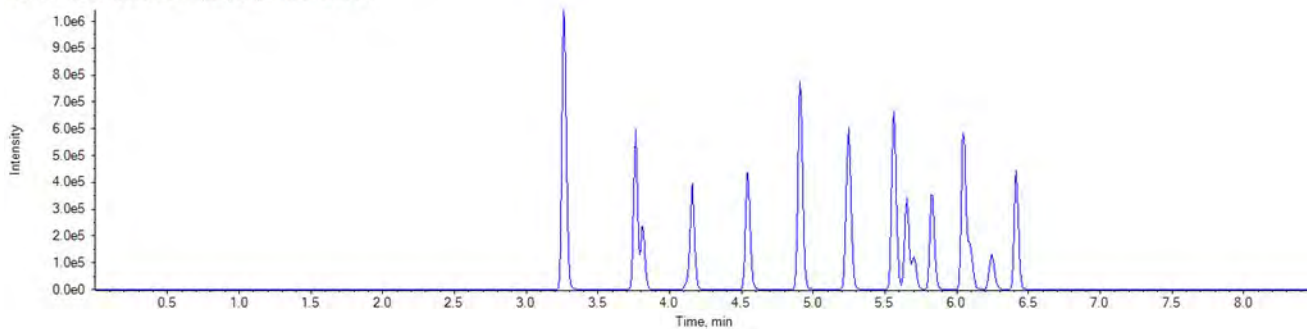
Sample Name: Instrument Blank      Instrument Name: LM27631      File Name: 18DEC18DCAL-75.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	N/A	N/A	N/A		A	13C4-PFBA	3.26	1189185.9	N/A	
PFPeA	N/A	N/A	N/A		A	13C5-PFPeA	3.76	1124499.8	N/A	
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.81	473112.4	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.12	66978.2	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	794824.1	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.81	473112.4	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.54	632358.9	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	359058.3	N/A	
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.90	56500.3	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	359058.3	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	1094219.8	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	368522.4	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.25	748034.0	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.24	368522.4	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.56	956008.8	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	52536.4	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.65	749437.5	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.70	262204.7	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.24	368522.4	N/A	
PfUnDA	N/A	N/A	N/A		A	13C7-PfUnDA	5.83	640896.0	N/A	
NEtFOSAA	5.84	1.000	1882.8		A	d5-NEtFOSAA	5.84	178339.9	0.011	0.054
PFDaDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.05	1305861.6	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	52536.4	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.09	289876.6	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.11	98770.3	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.24	368522.4	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.24	256271.5	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.26	76760.2	N/A	
PFTrDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.05	1305861.6	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	907626.5	N/A	
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	907626.5	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	907626.5	N/A	

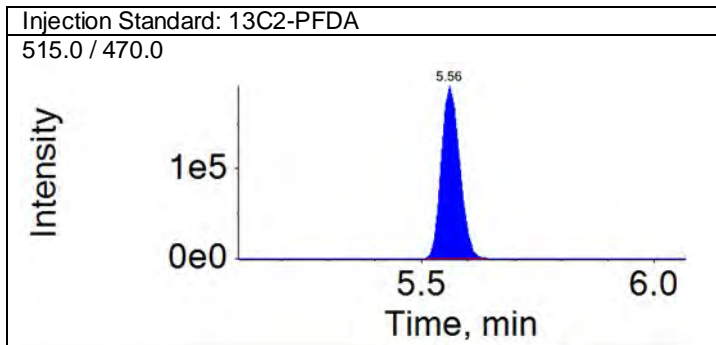
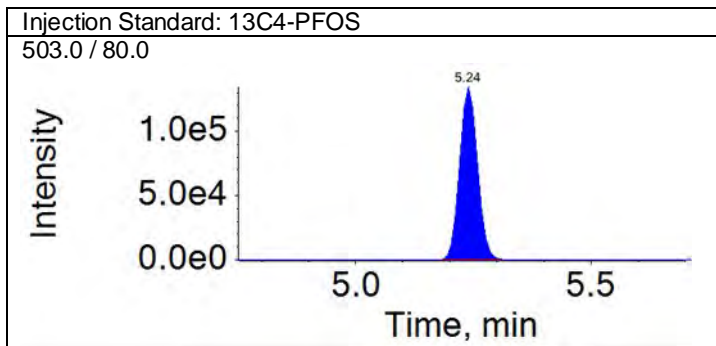
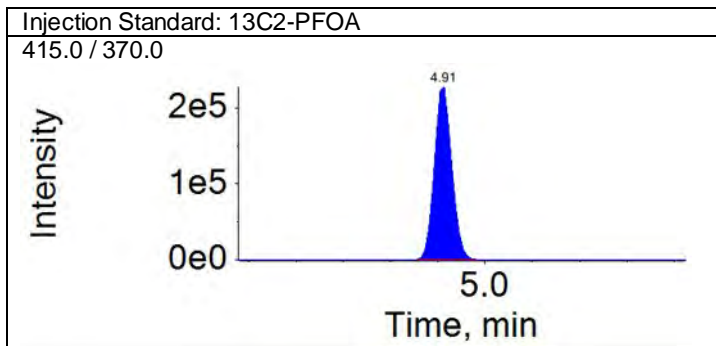
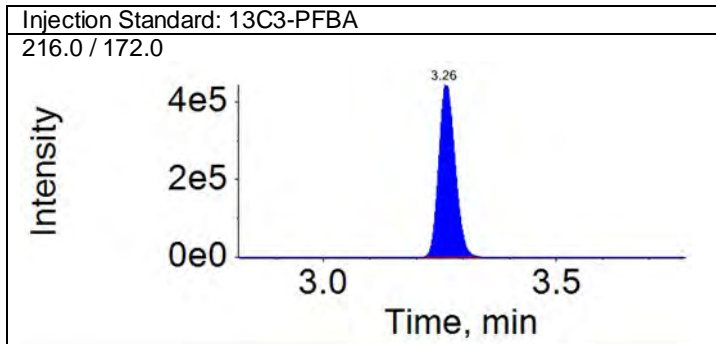
**Total Ion Chromatogram**

TIC from 18DEC18DCAL-75.wiff (sample 1) - Instrument Blank



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

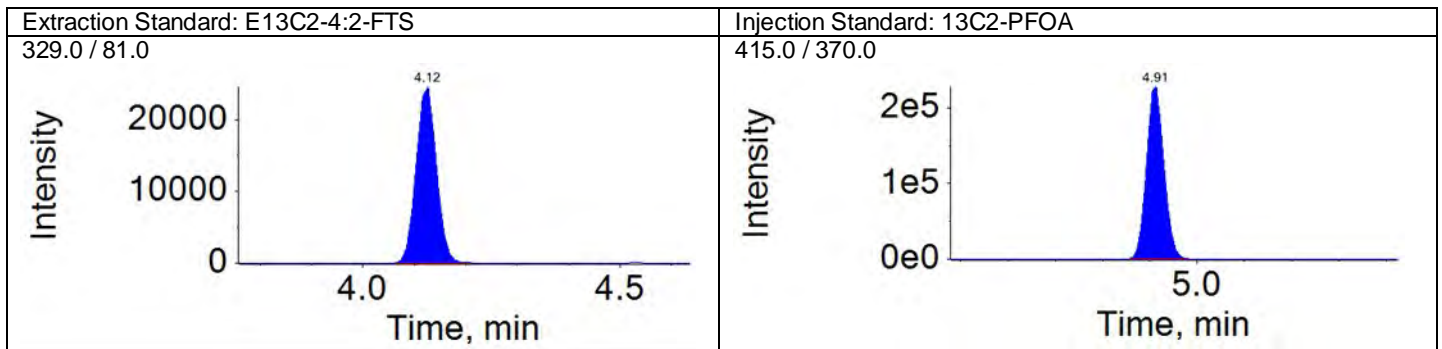
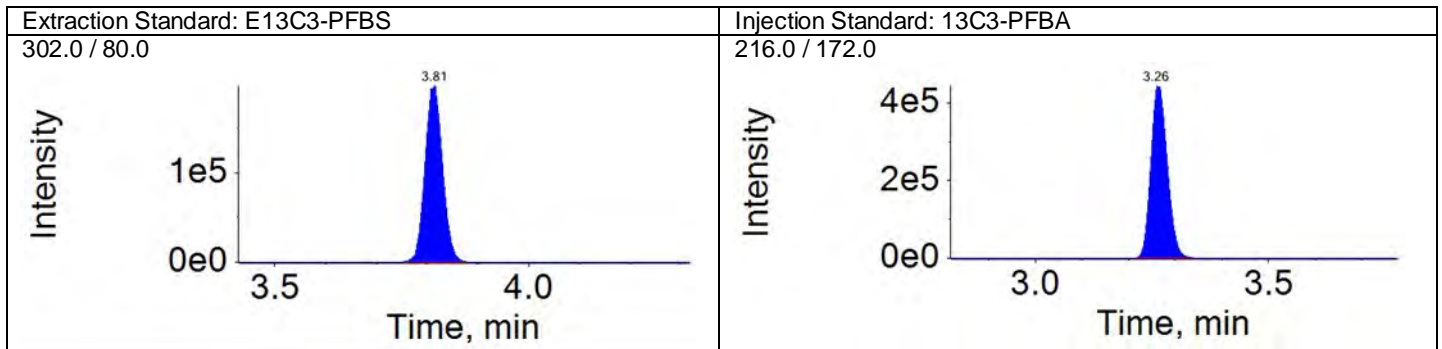
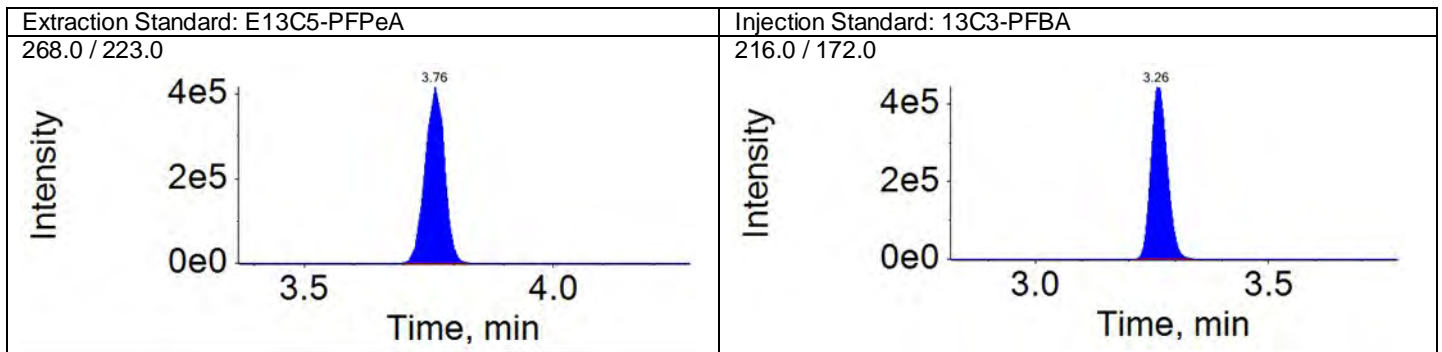
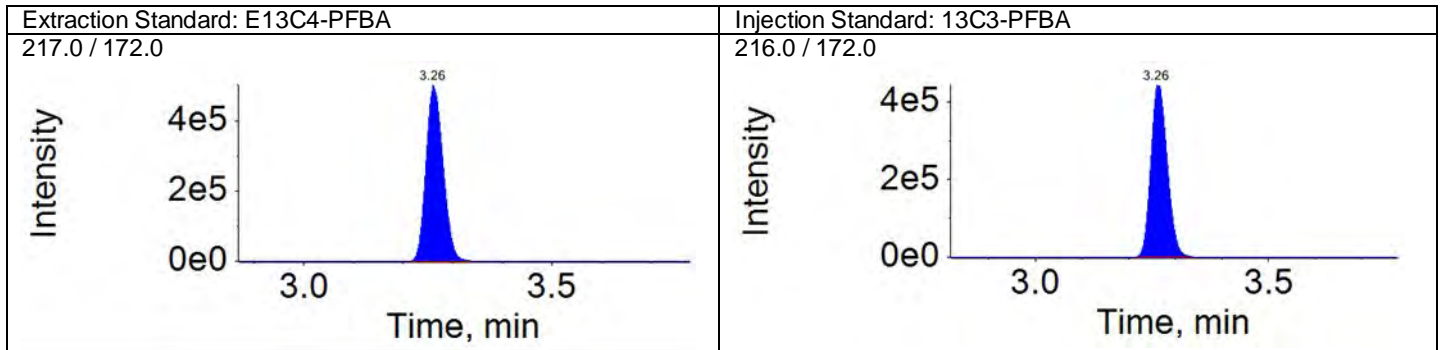
Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam





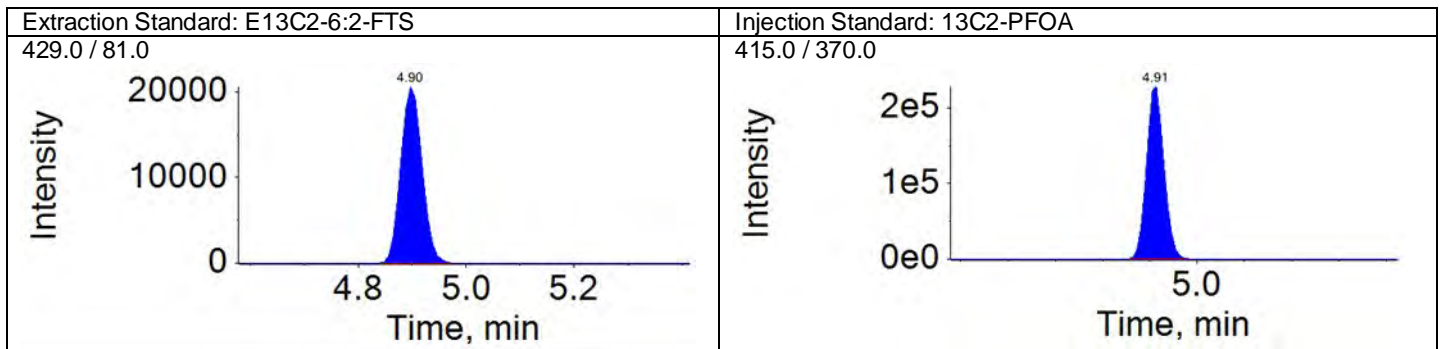
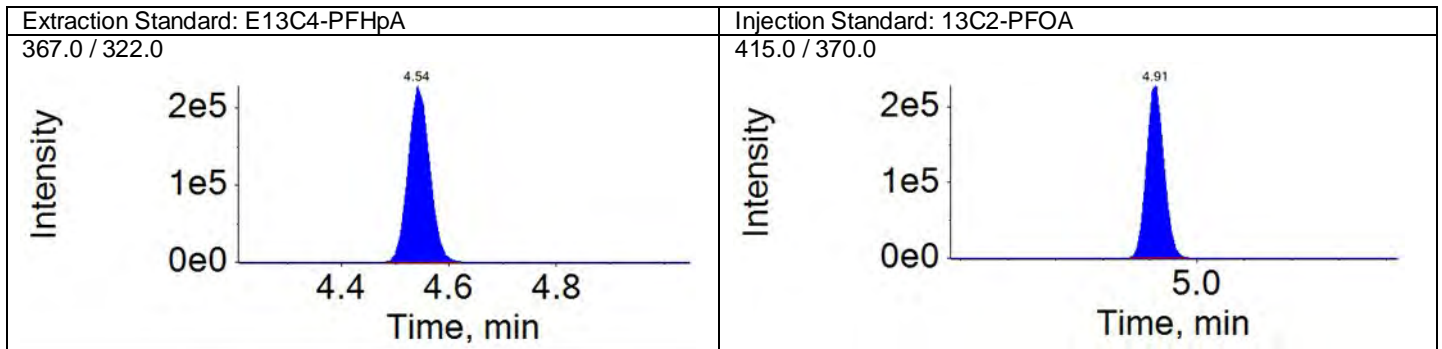
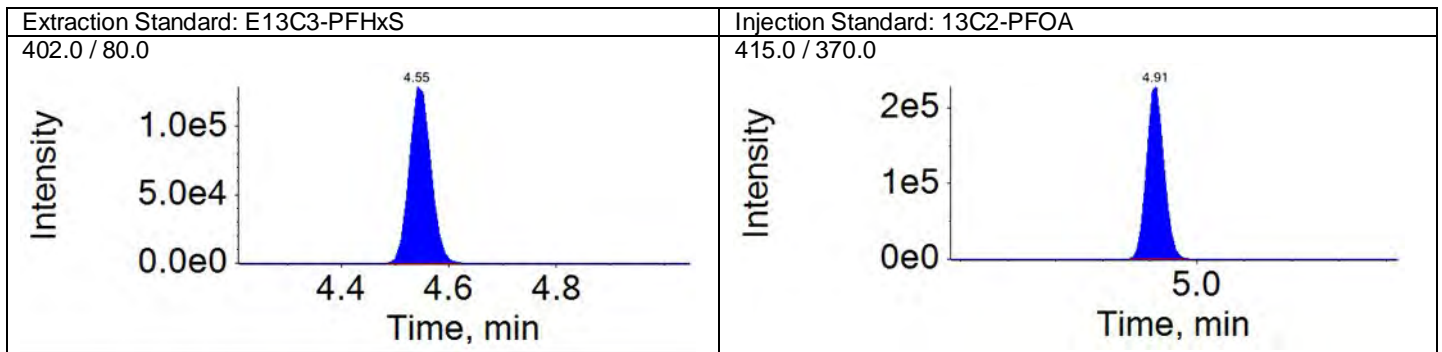
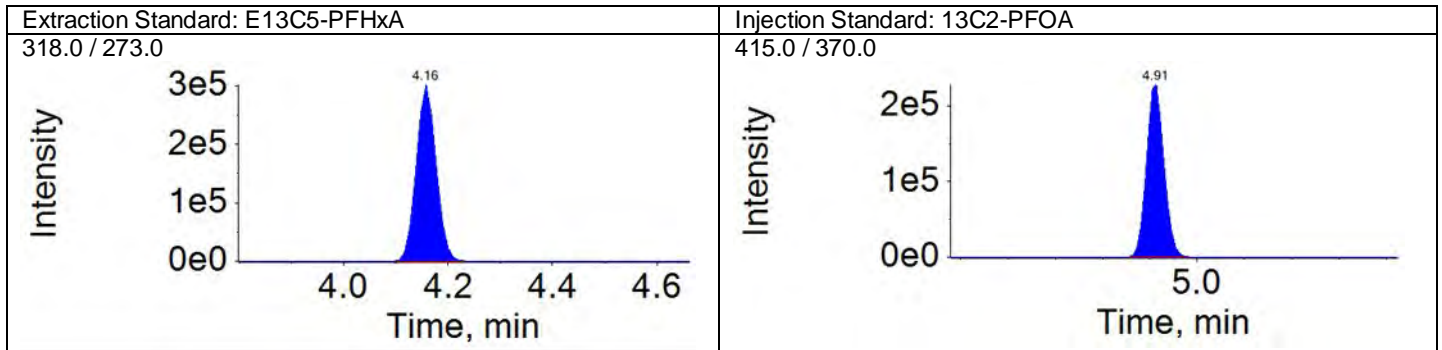
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



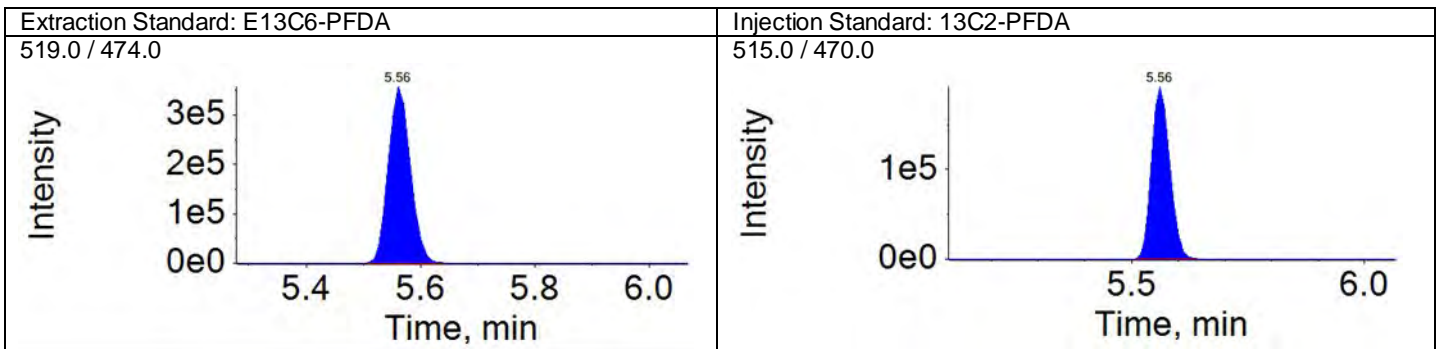
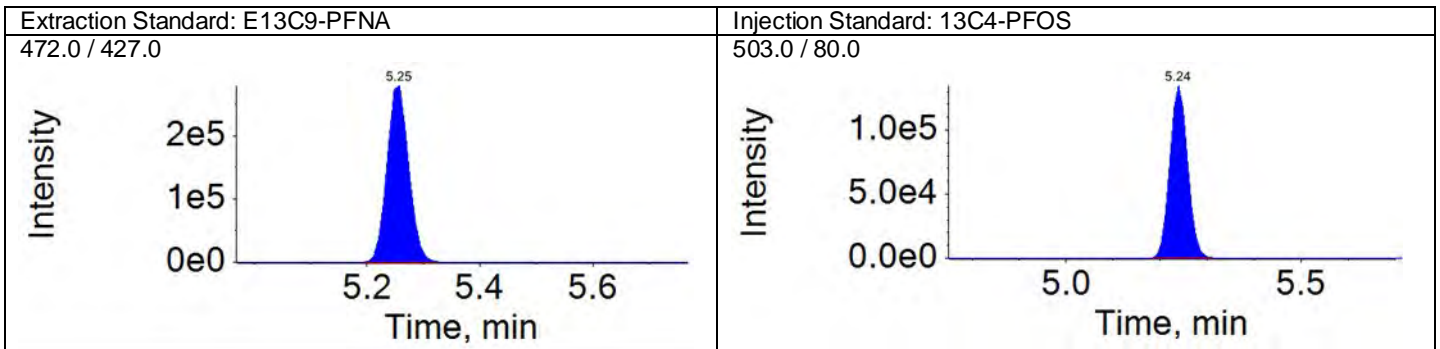
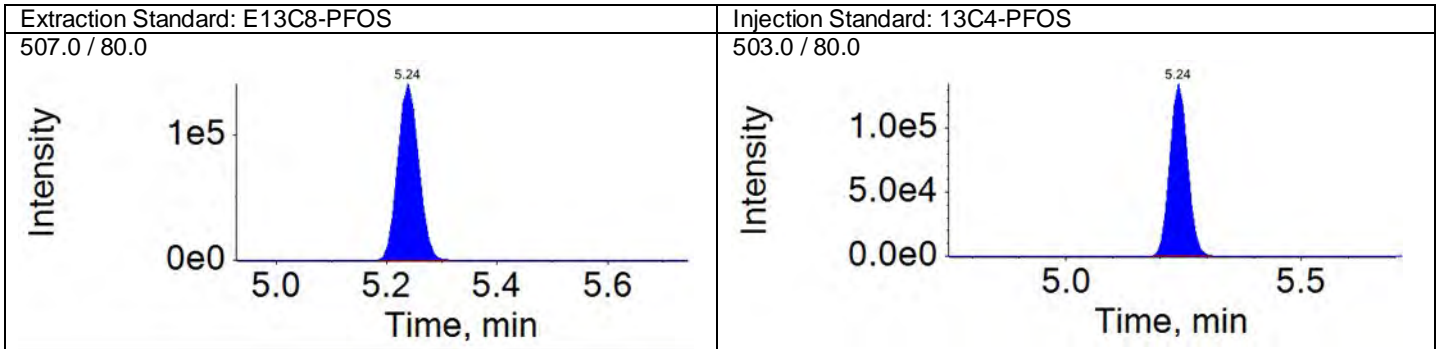
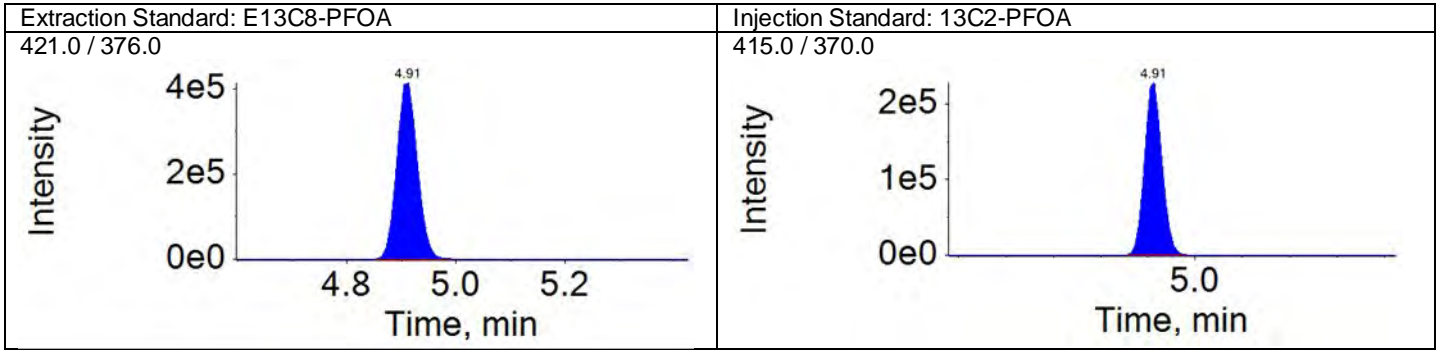
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



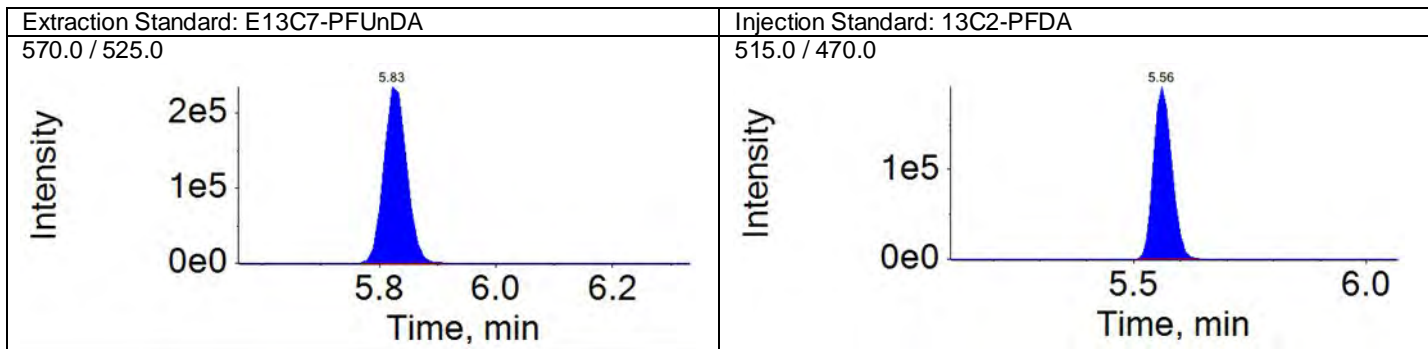
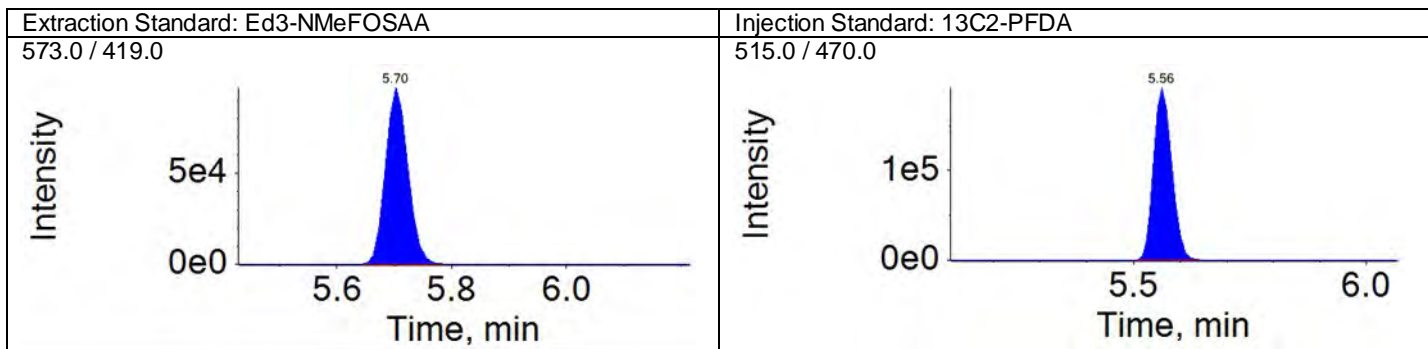
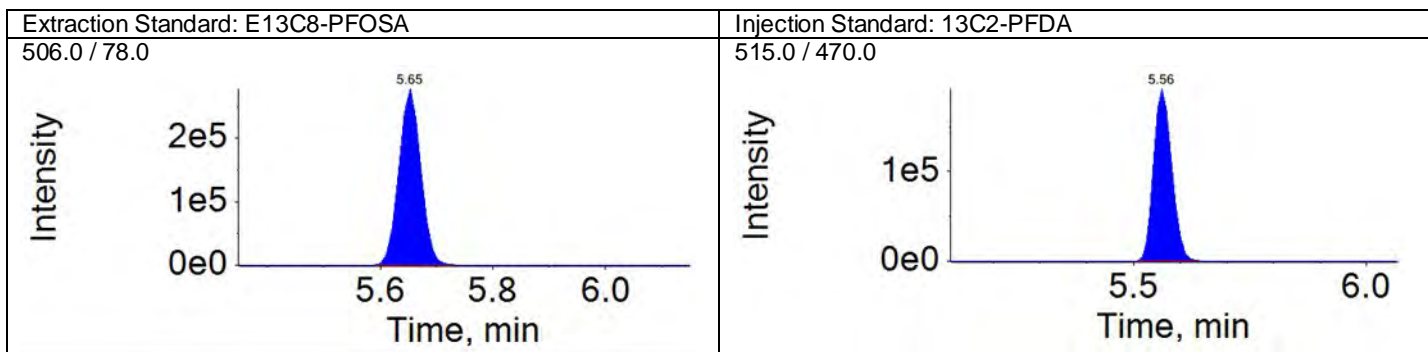
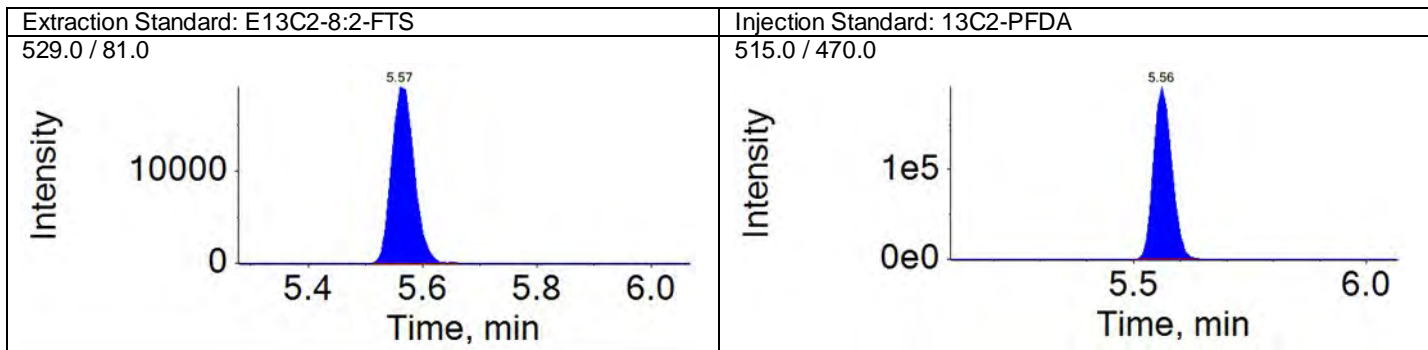
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

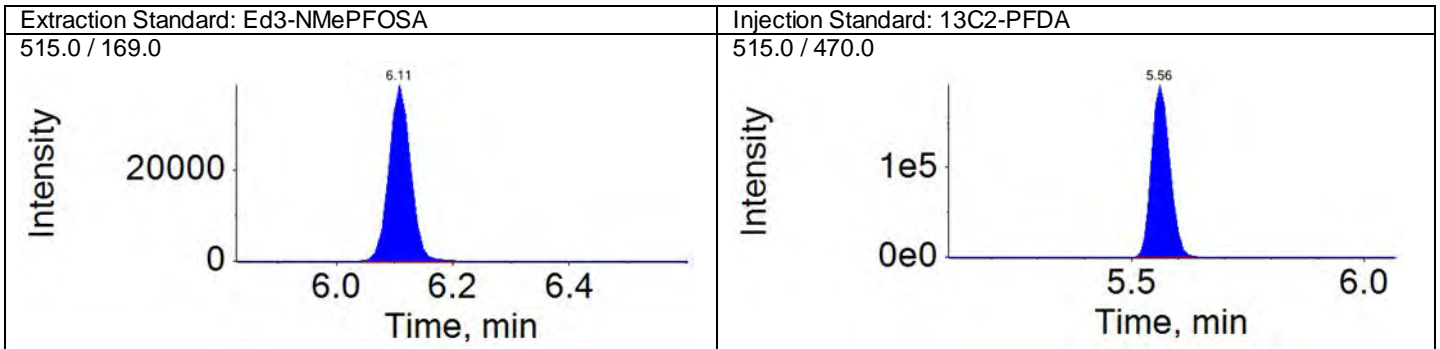
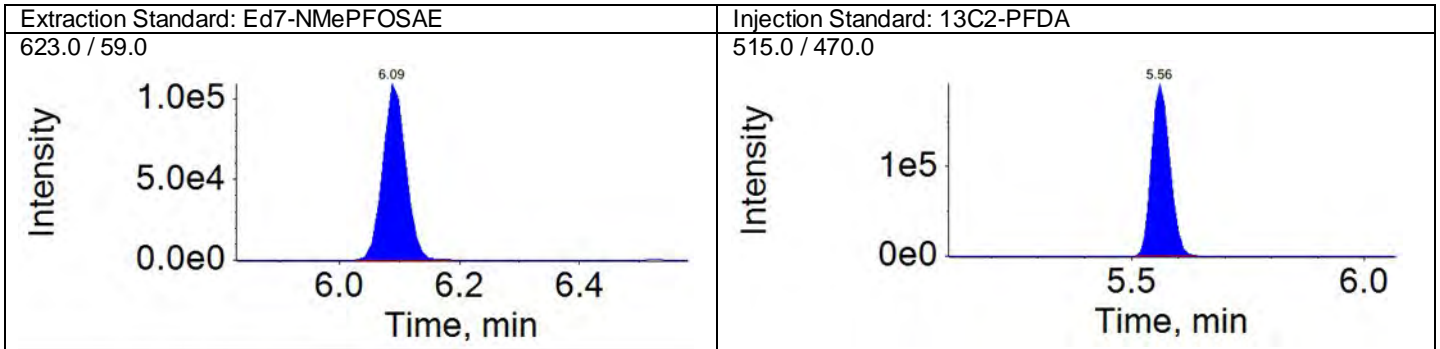
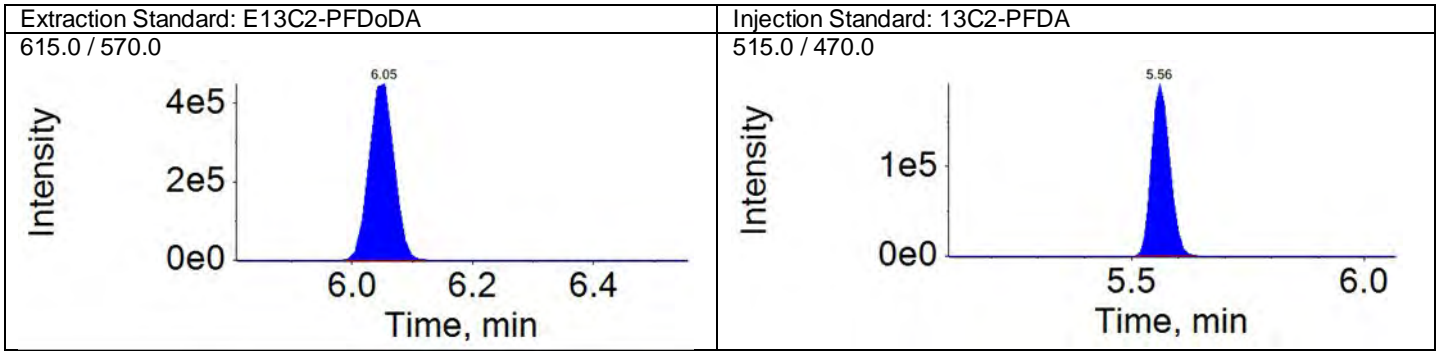
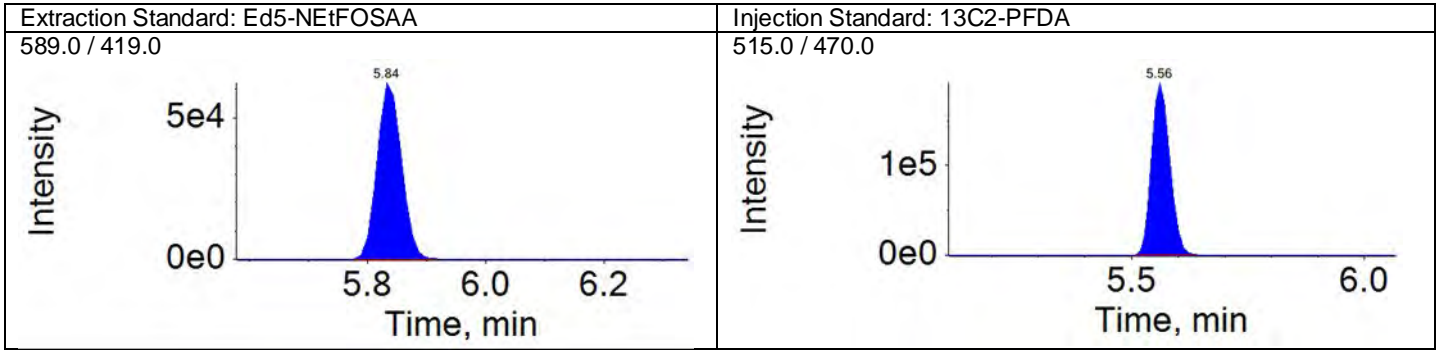
Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

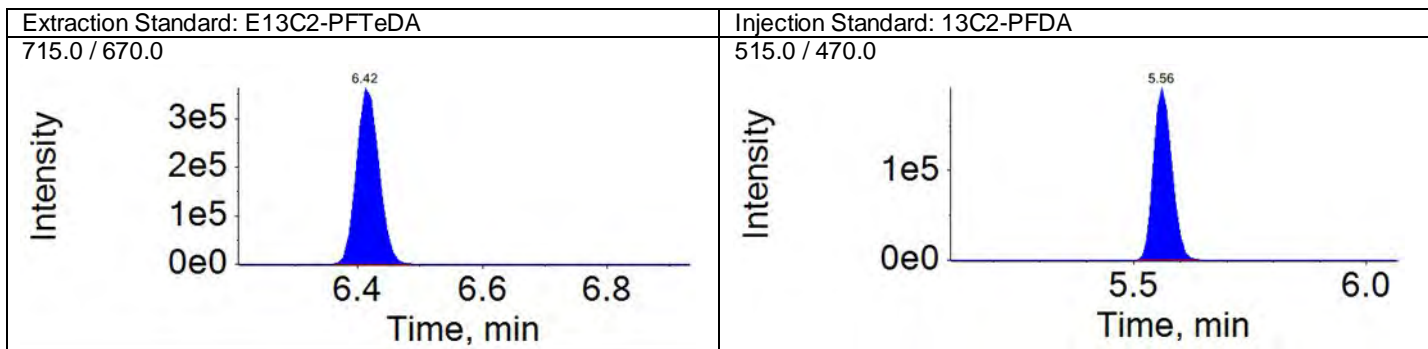
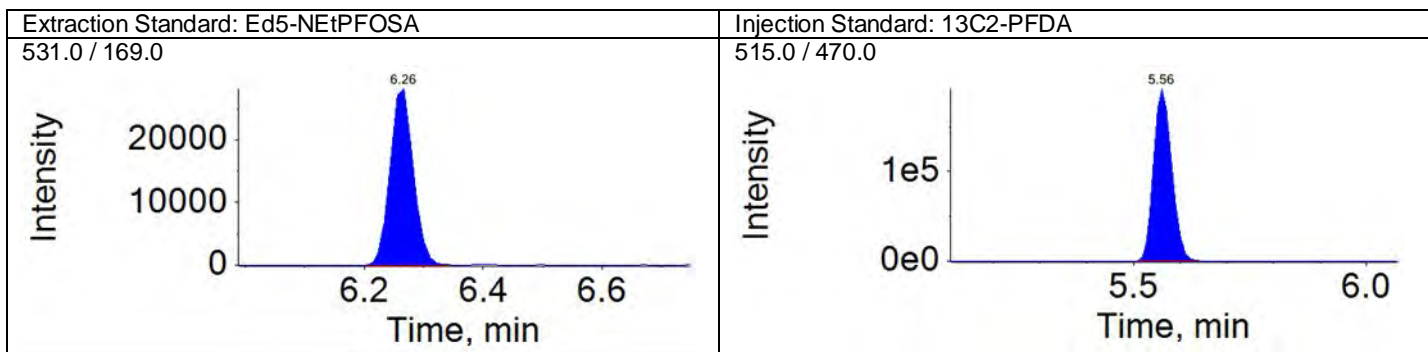
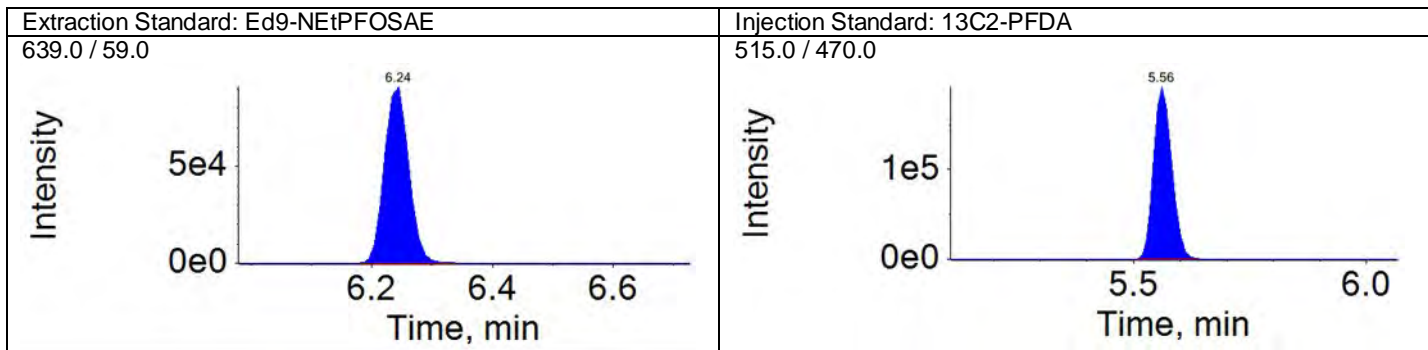
Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam





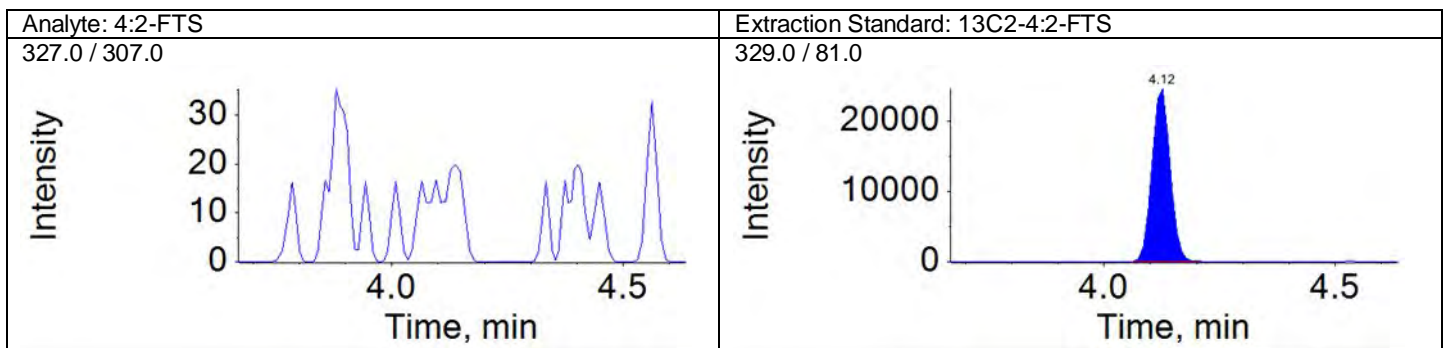
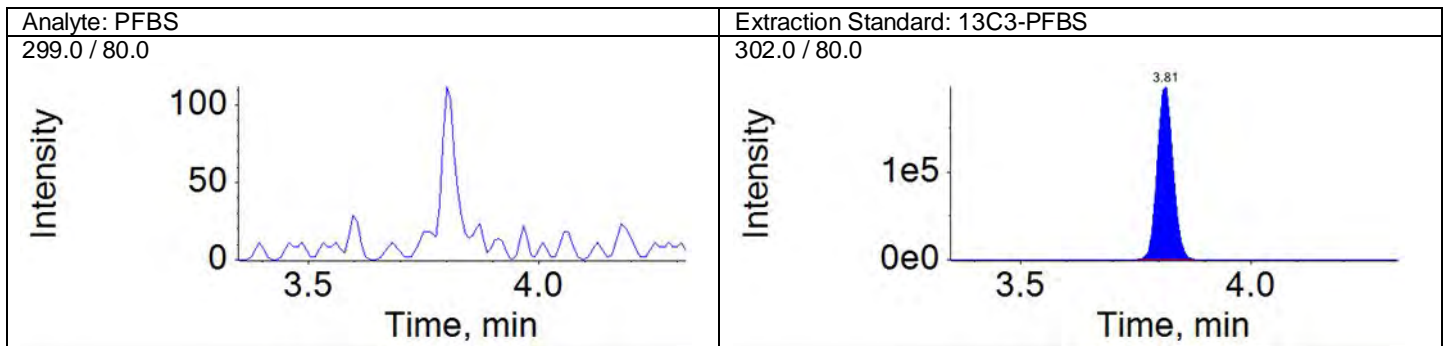
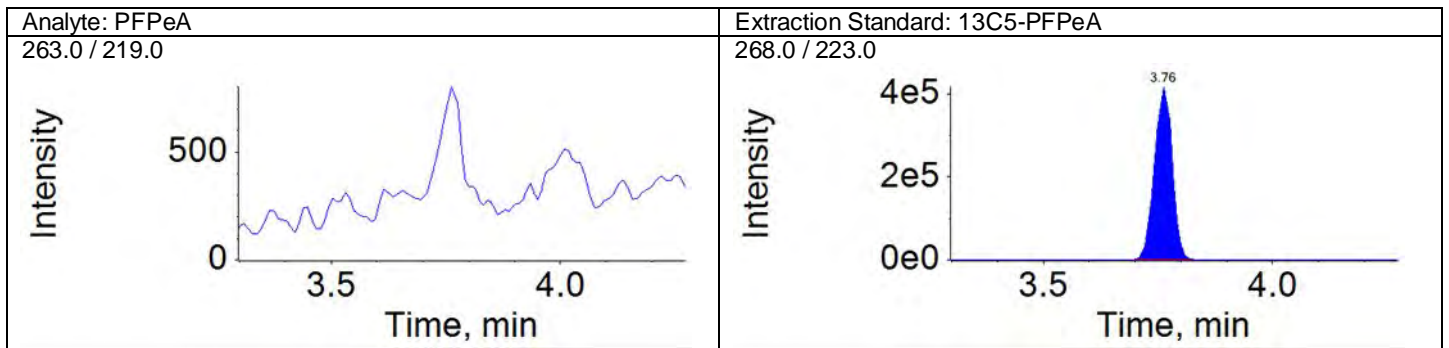
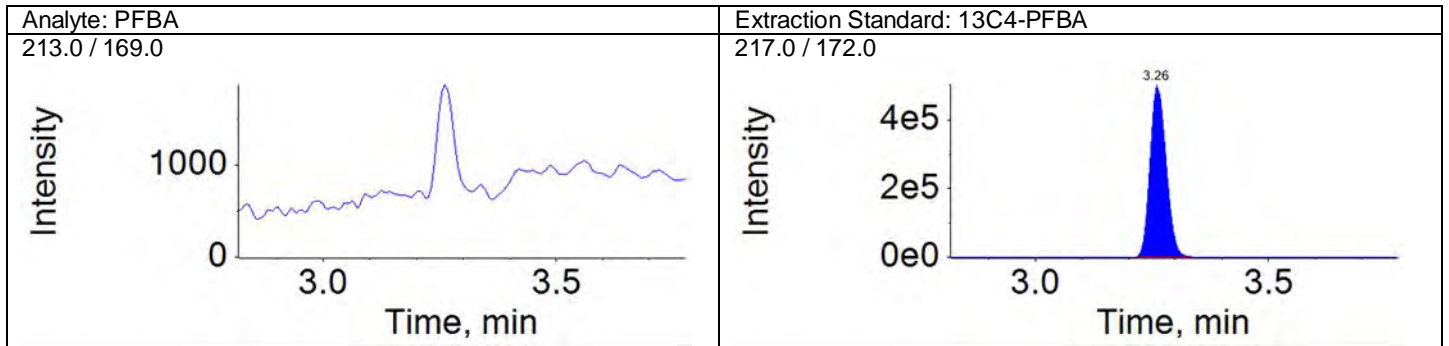
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



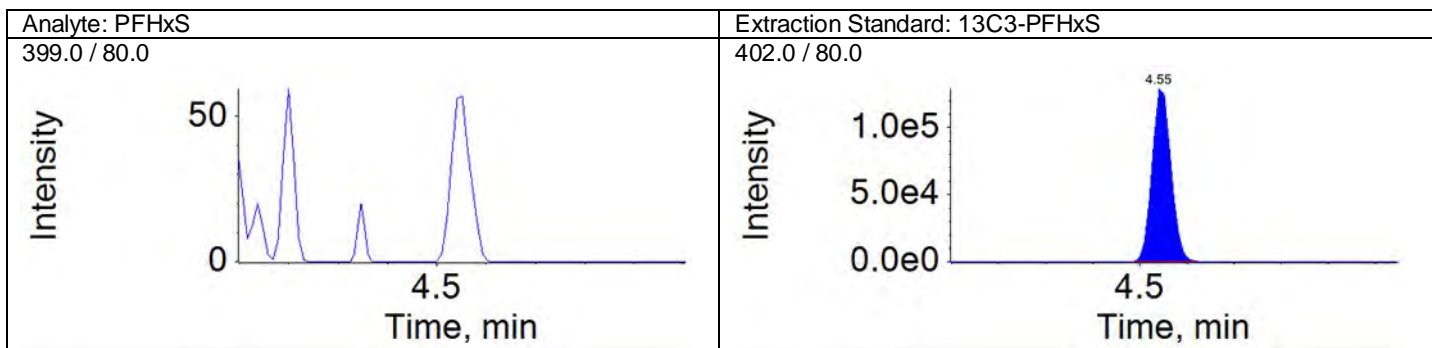
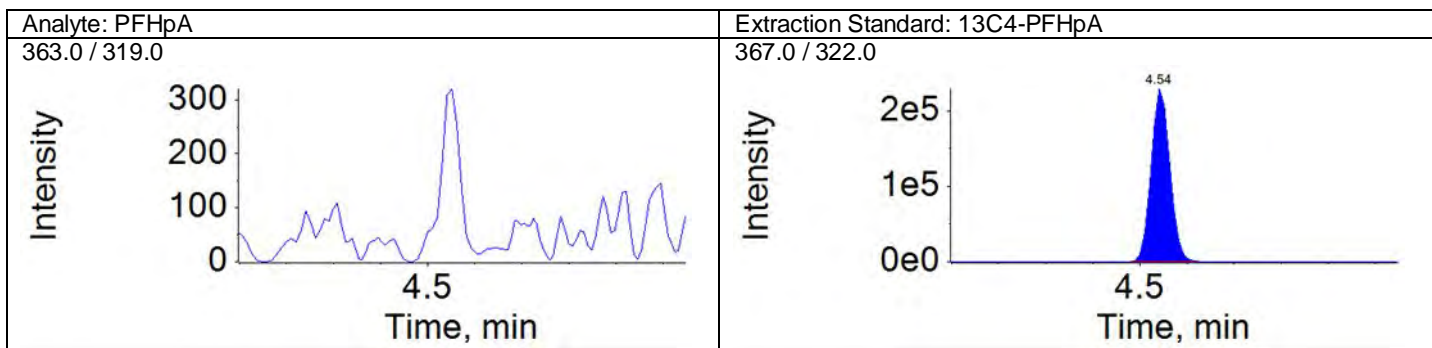
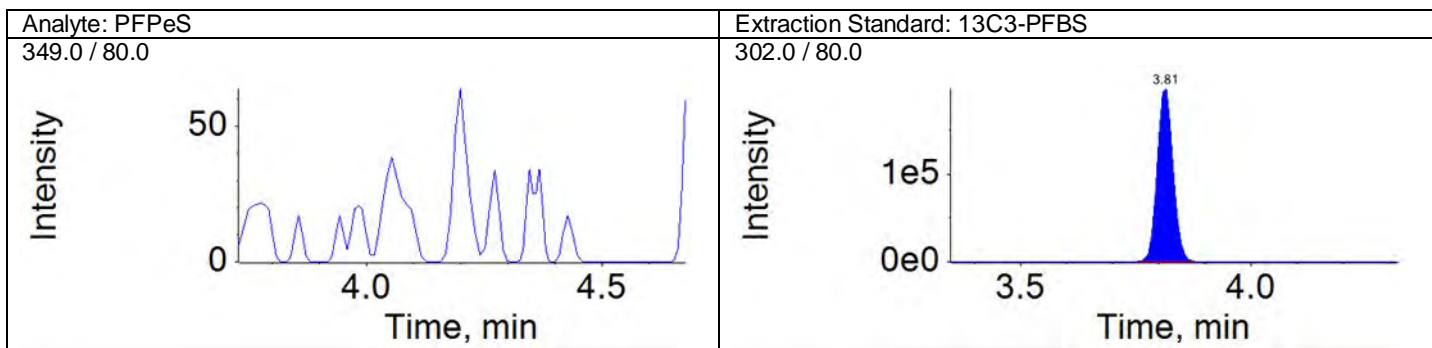
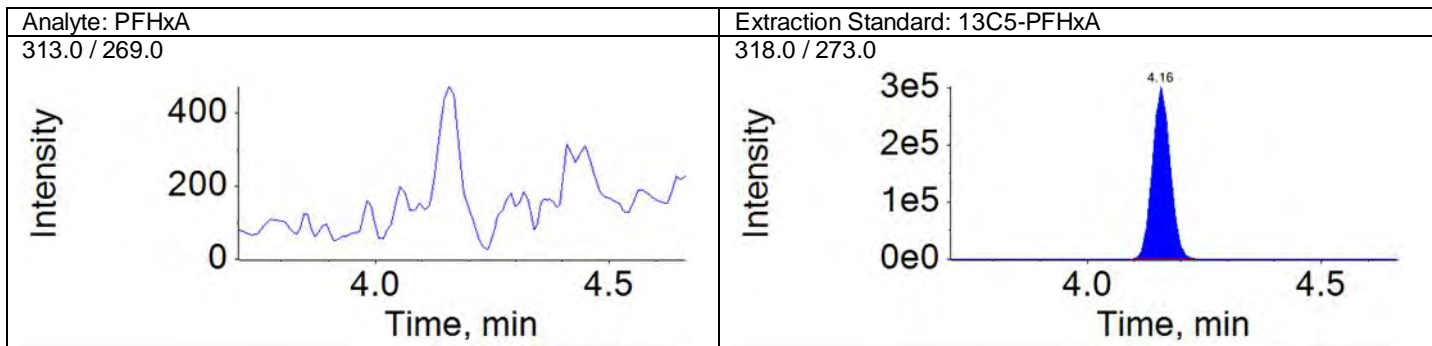
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



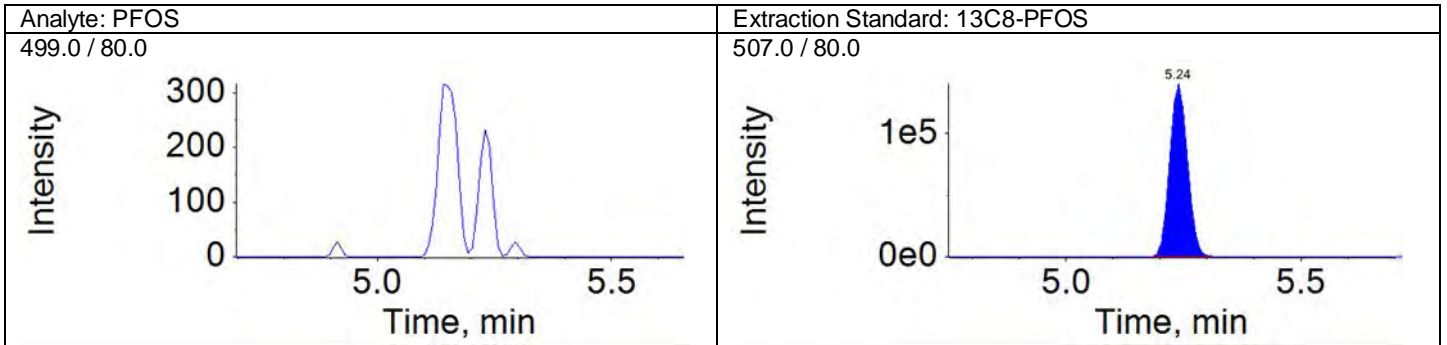
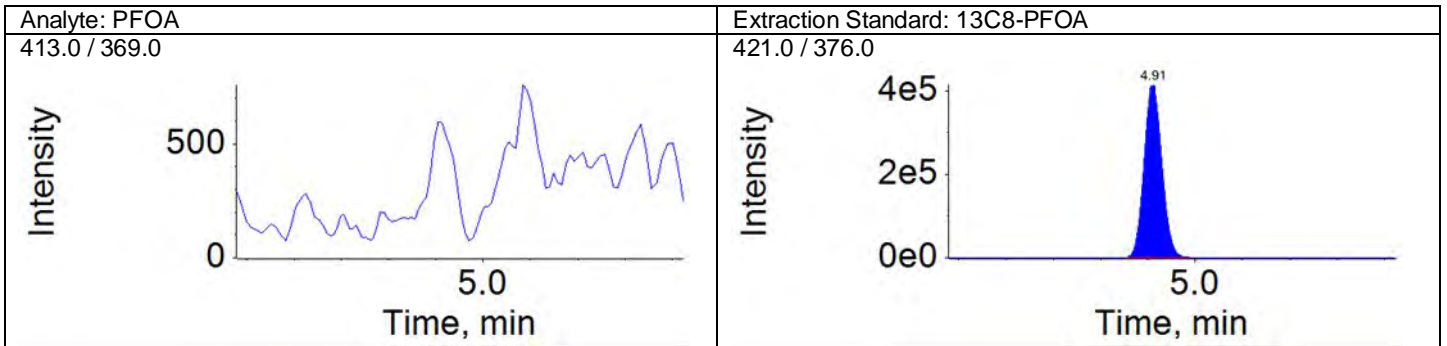
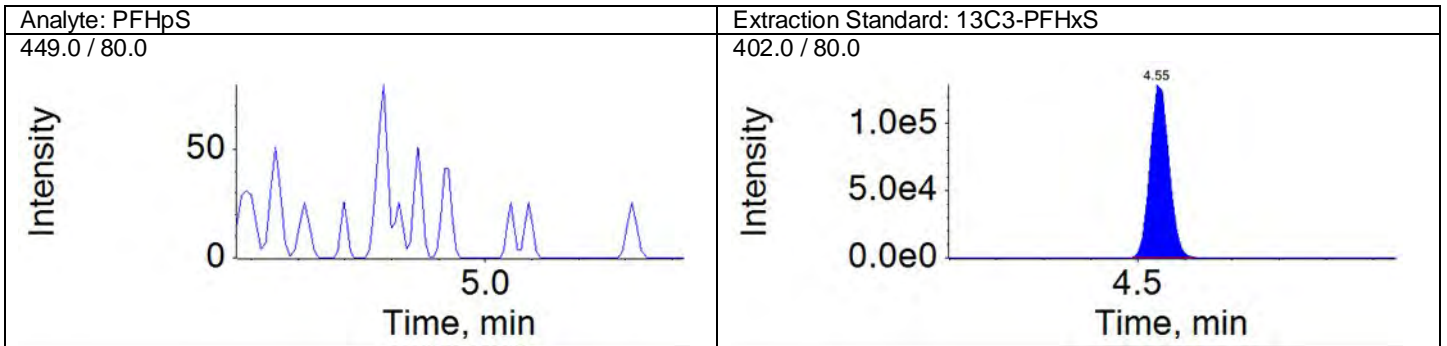
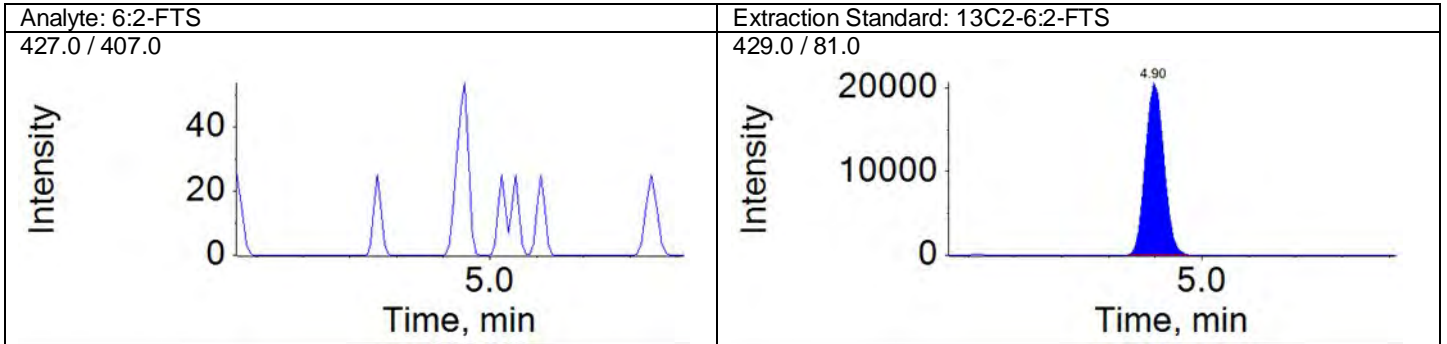
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

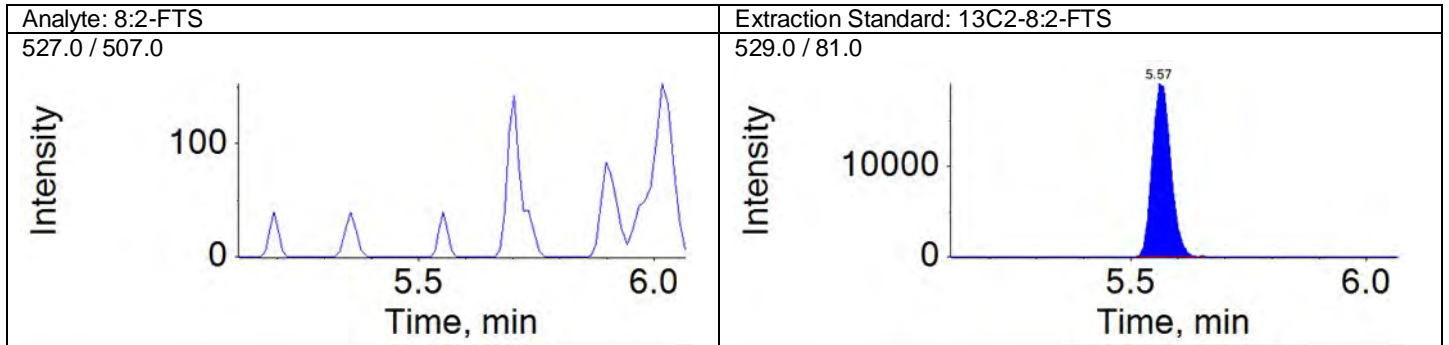
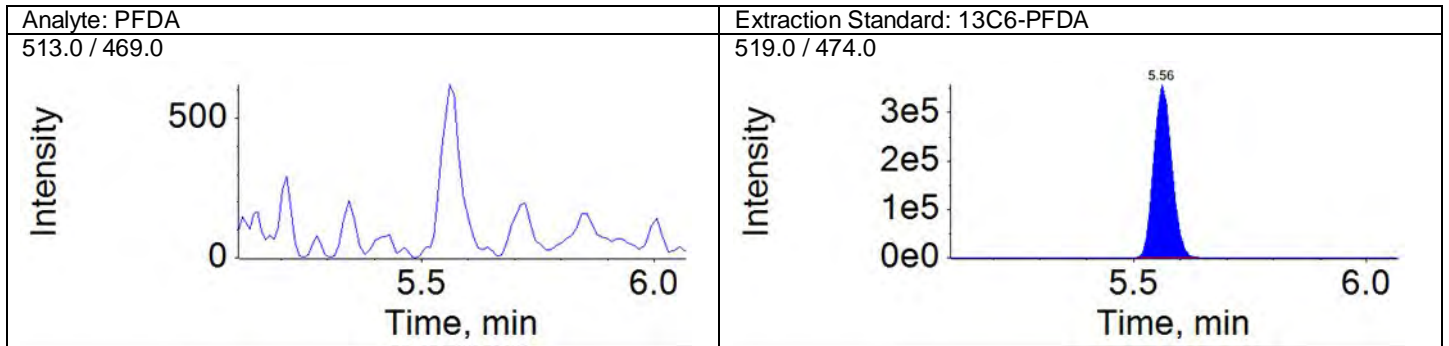
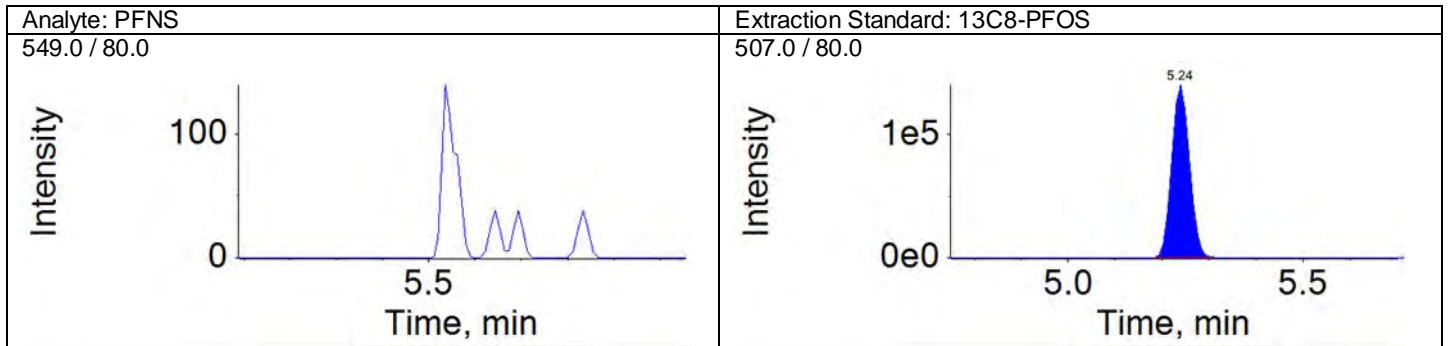
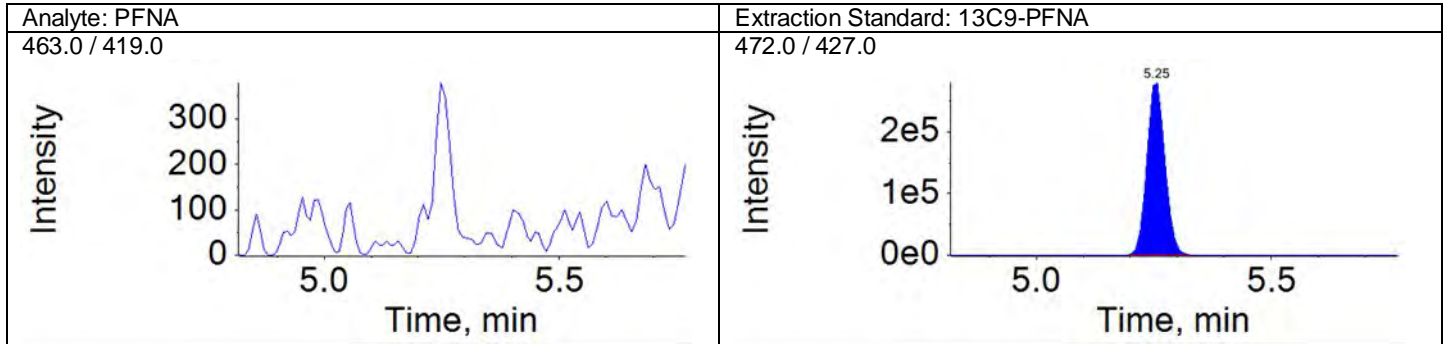
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
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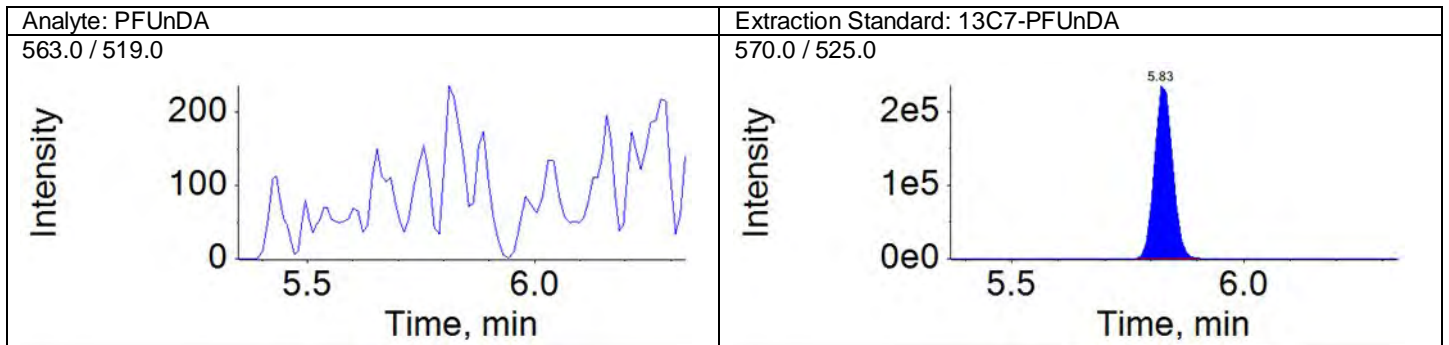
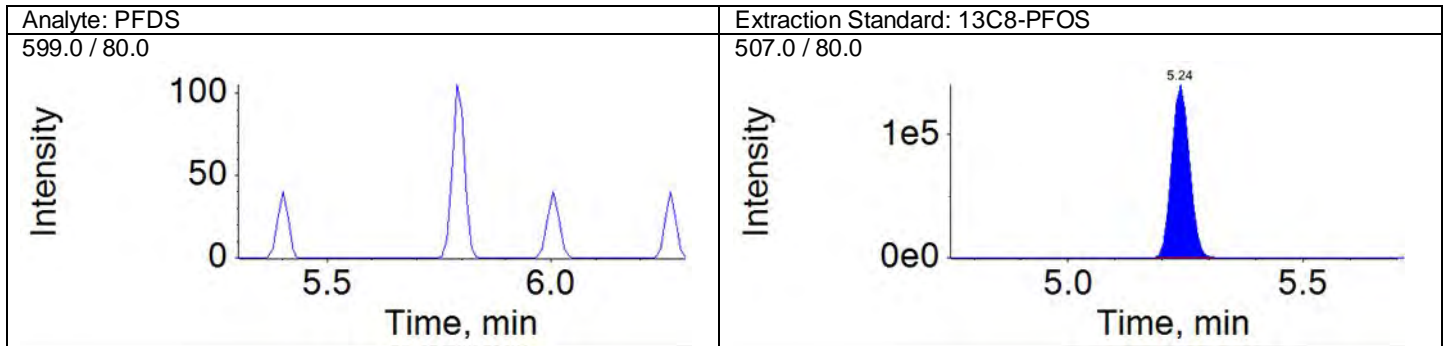
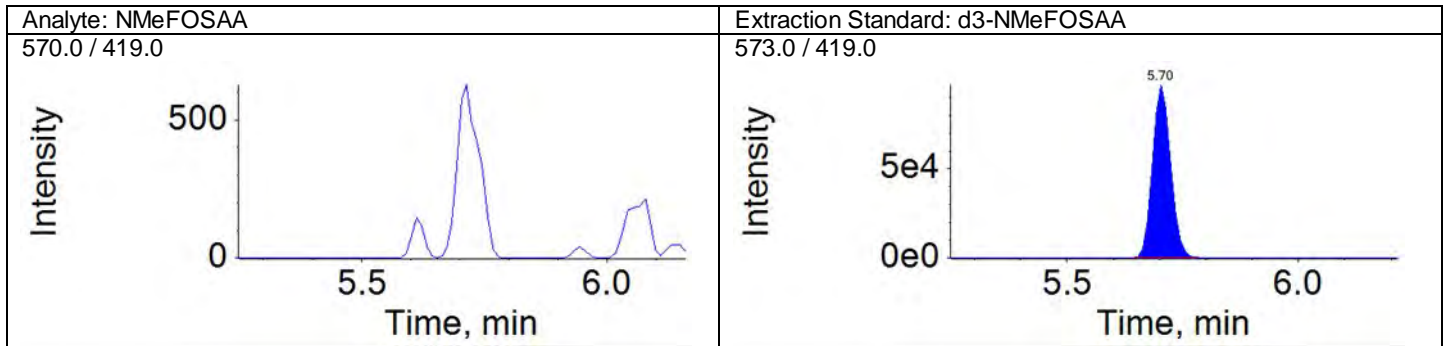
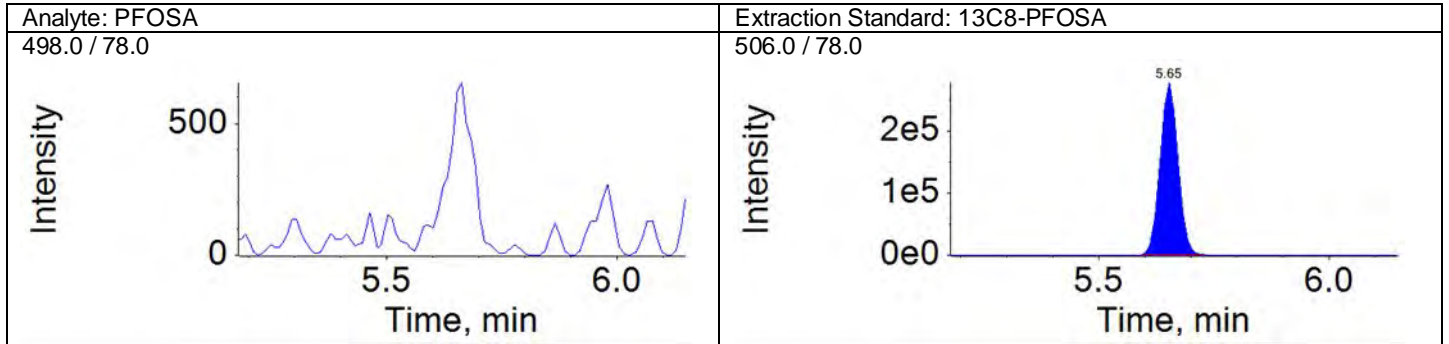
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Acquisition Method: 18AUG13\_3uL.dam





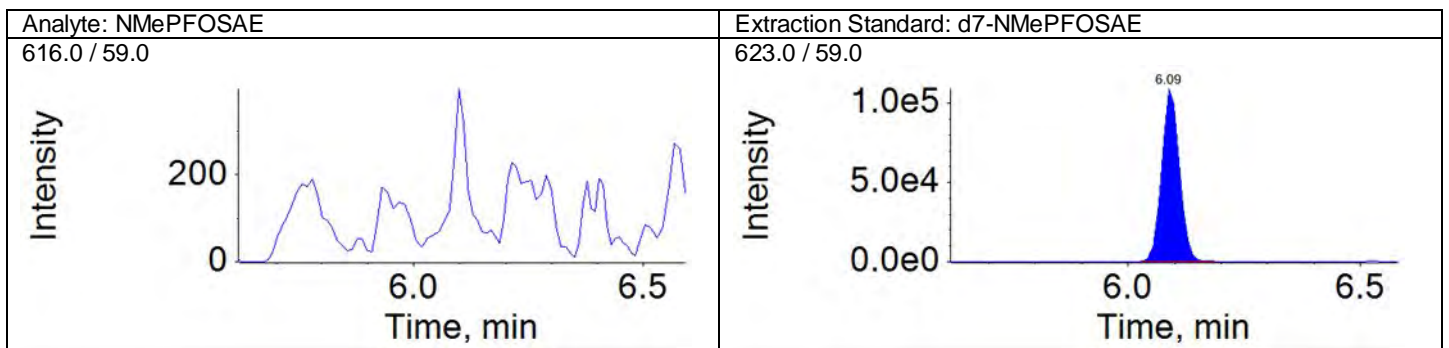
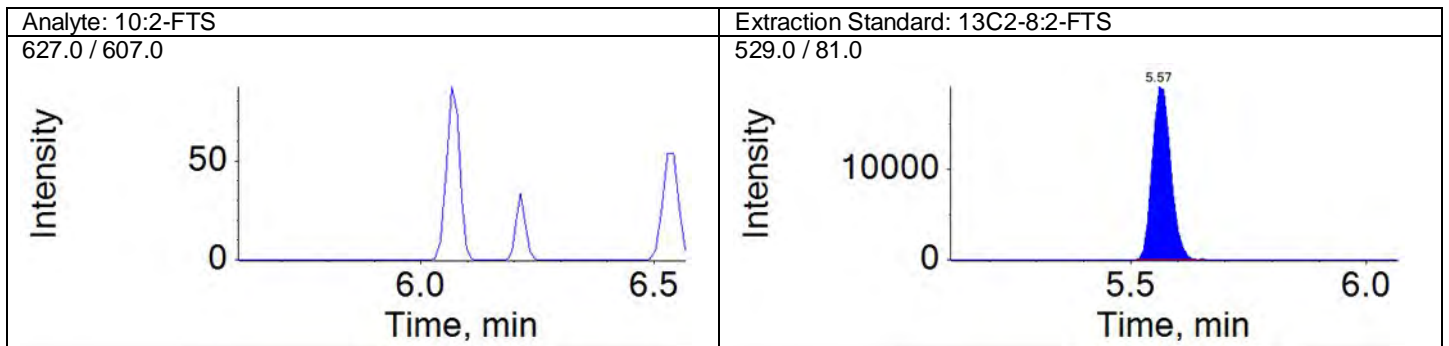
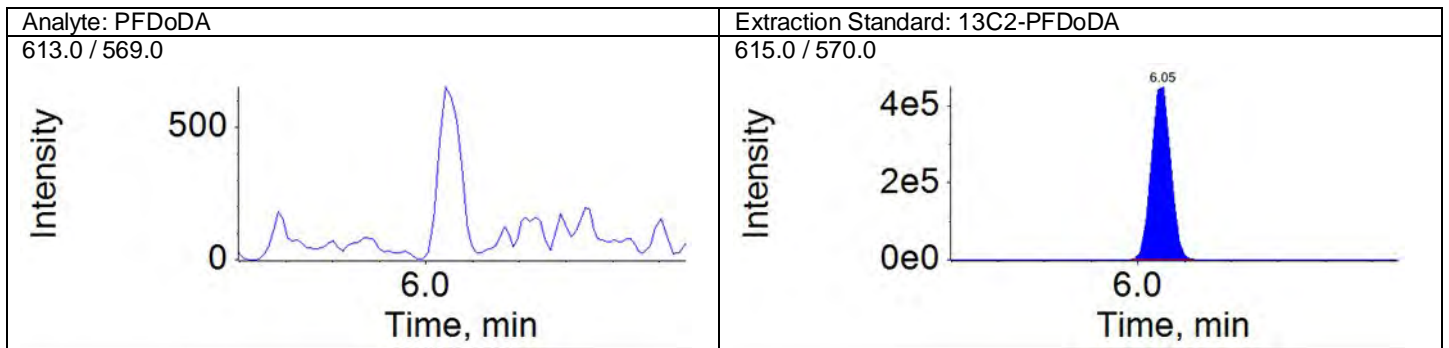
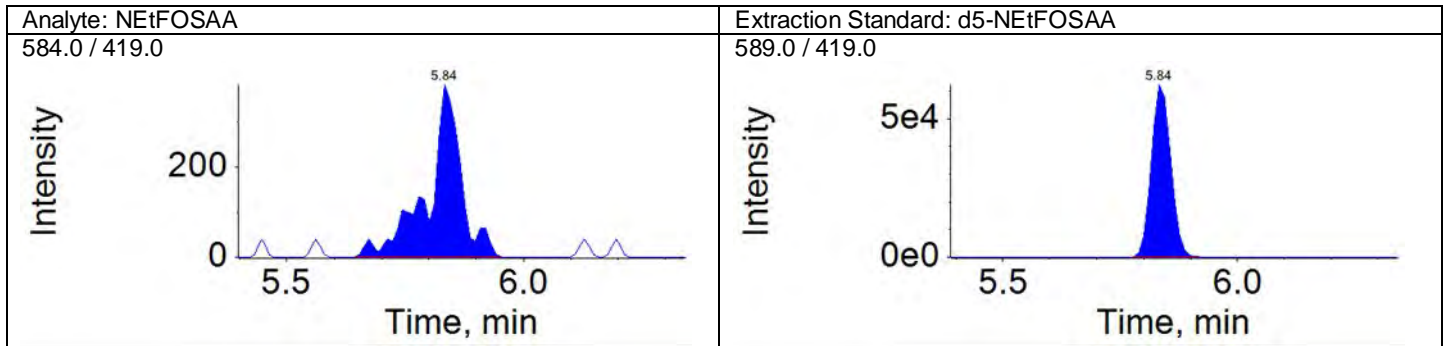
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



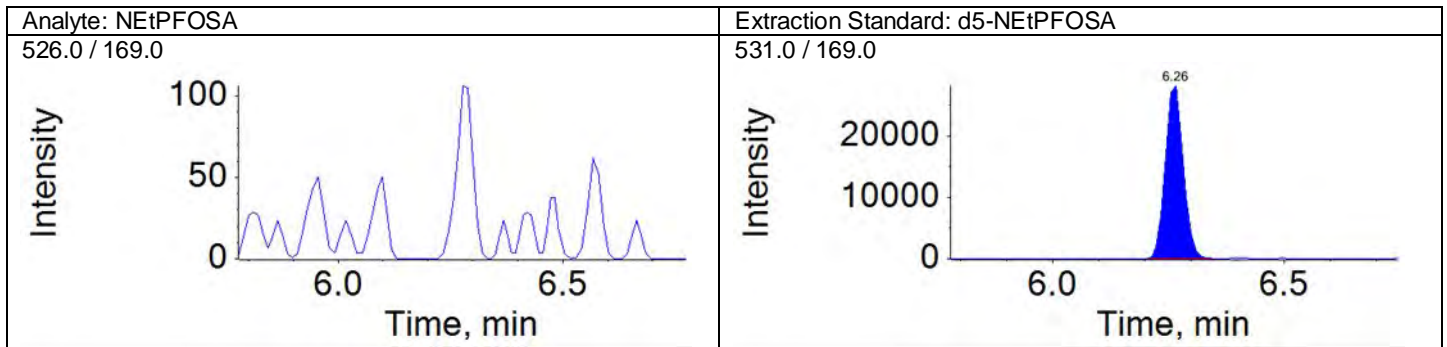
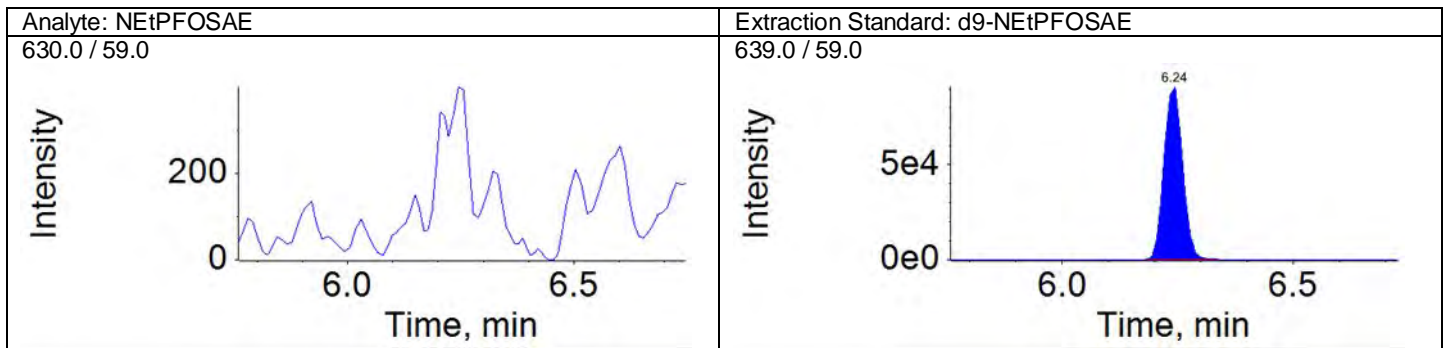
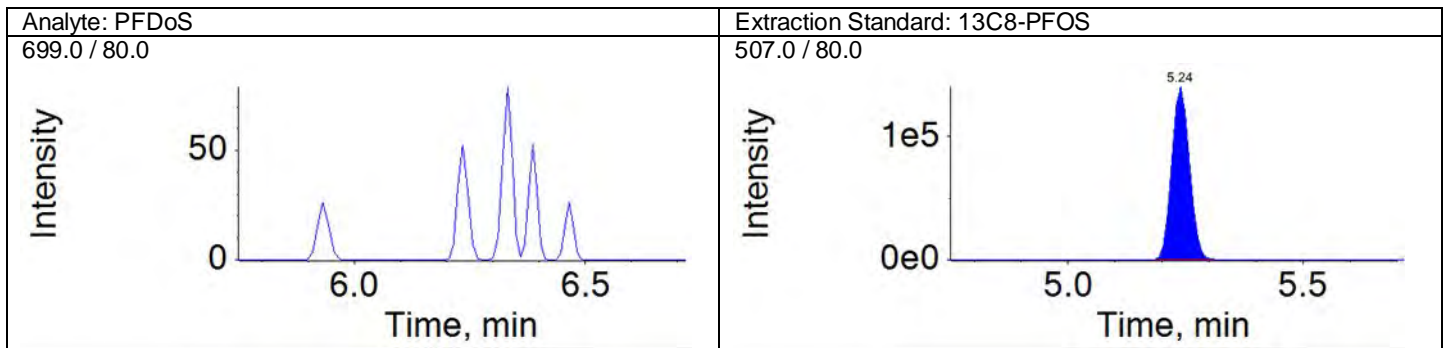
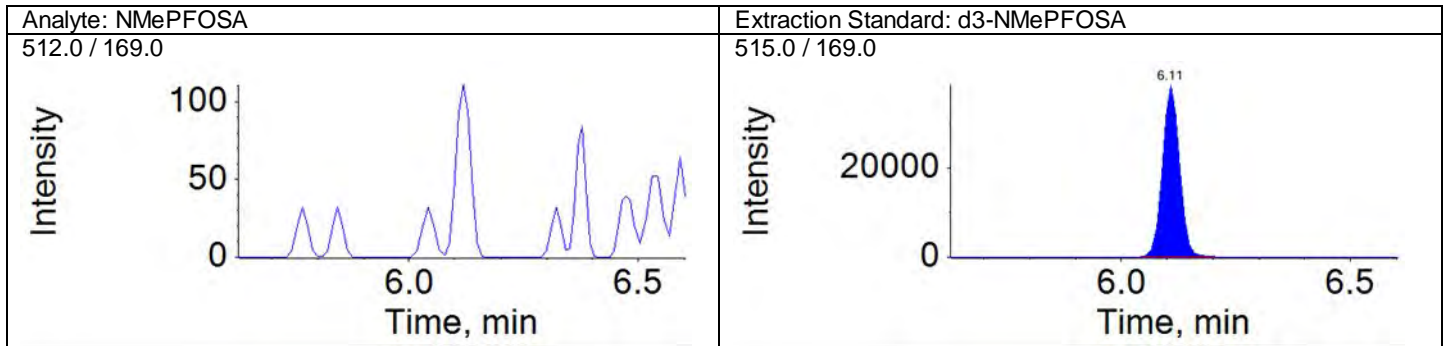
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Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



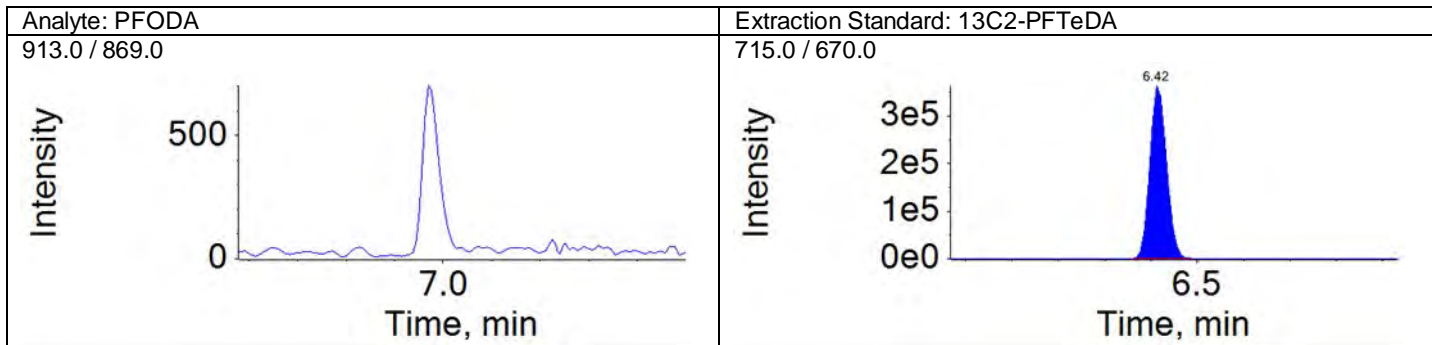
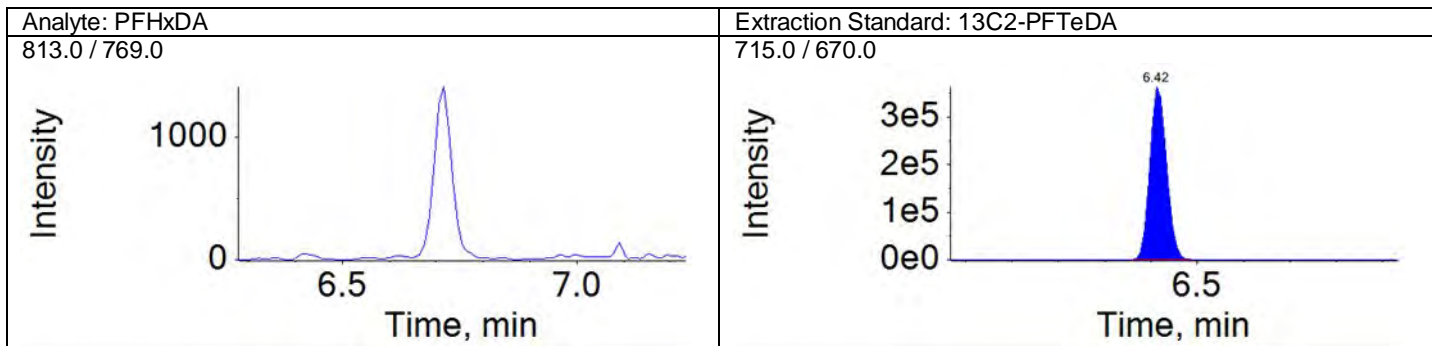
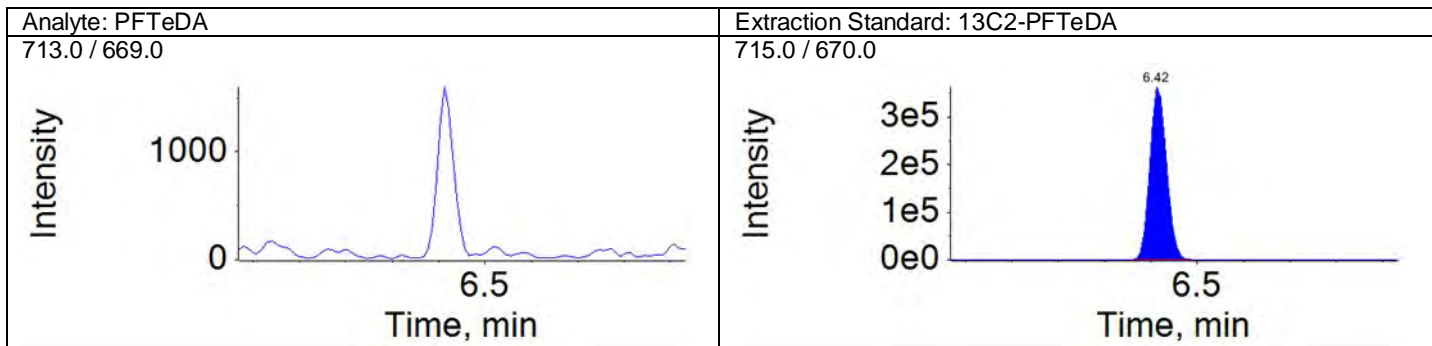
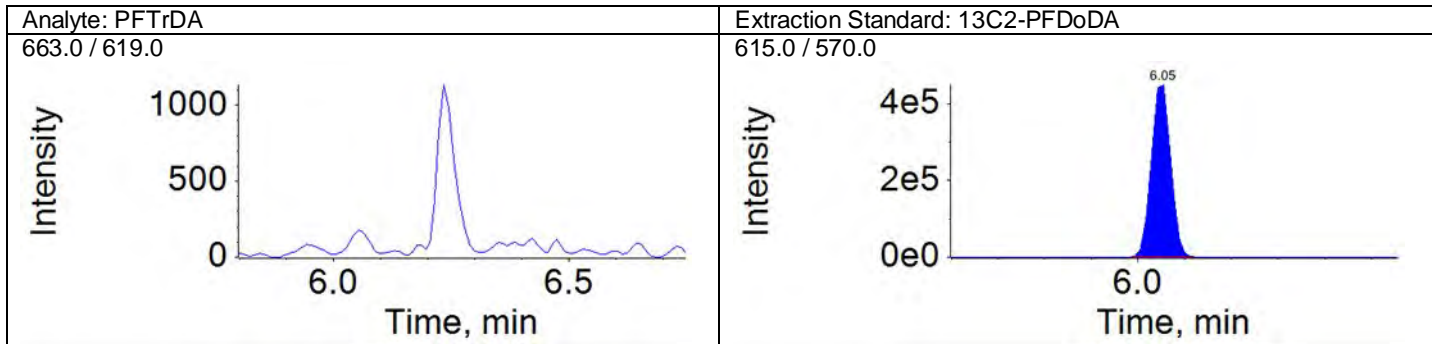
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

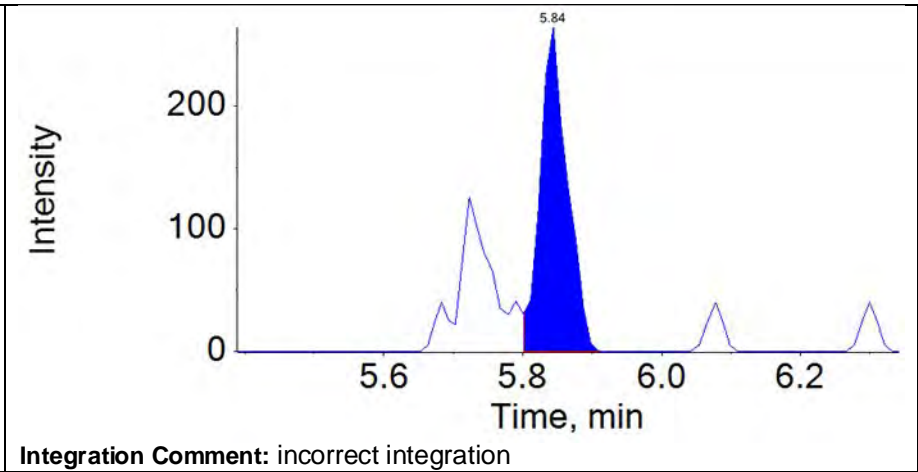




Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**Component Name:**  
NEtFOSAA\_2  
**RT (min.):**  
5.84  
**Peak Area:**  
720.34  
**Mass Range:**  
584.0 / 526.0  
**File Name:**  
18DEC18DCAL-75.wiff  
**Sample Name:**  
Instrument Blank





**Results Table Name:** 18DEC18DCAL  
**Results Table Date:** 12/19/2018 9:34:01 AM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

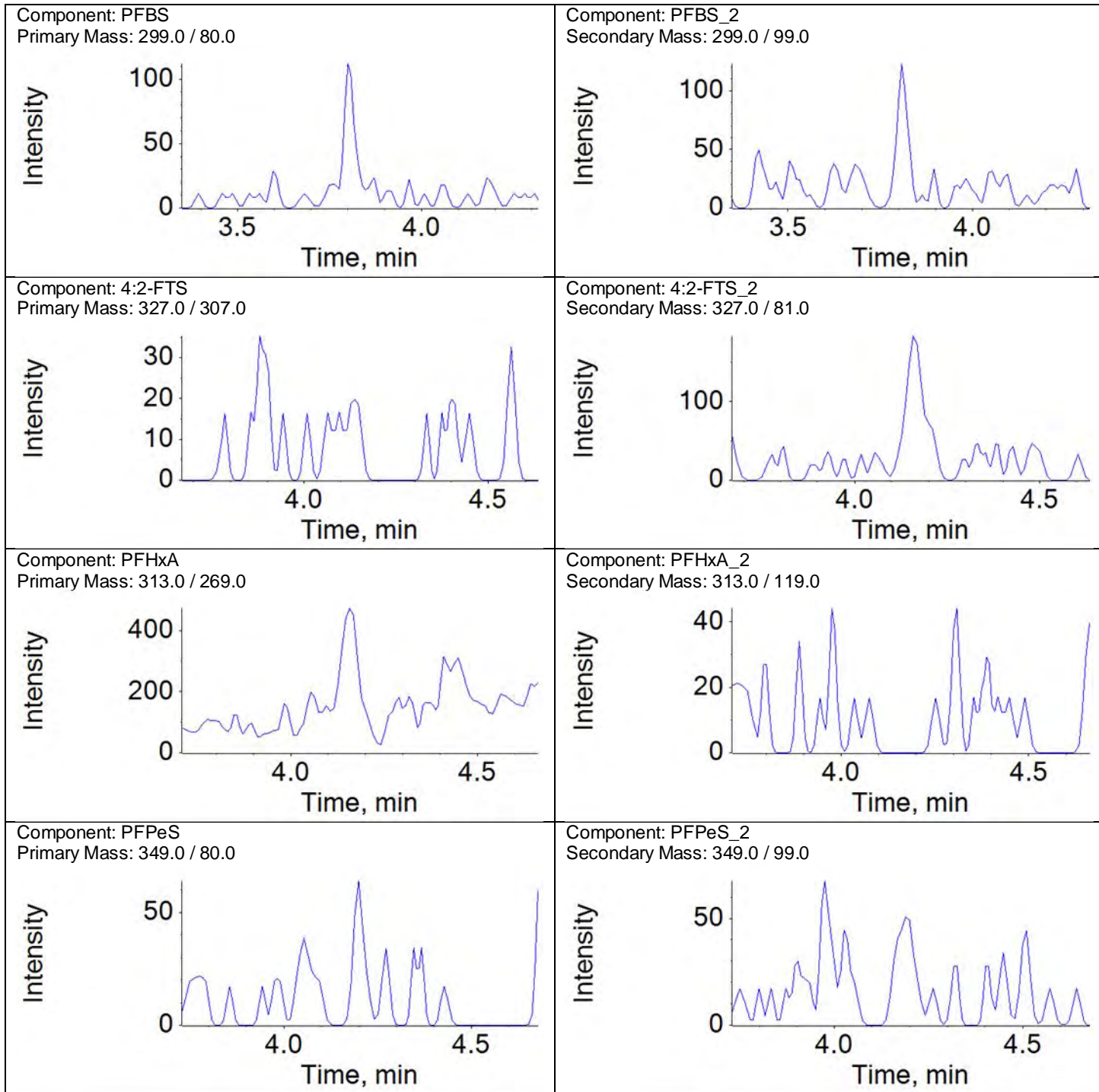
**REVIEWED**  
By HMK at 11:53 am, 12/21/18

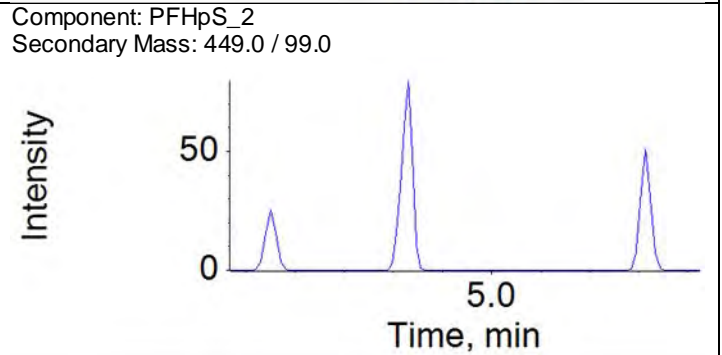
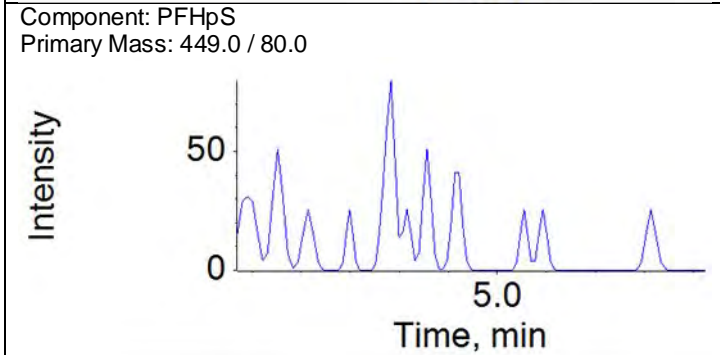
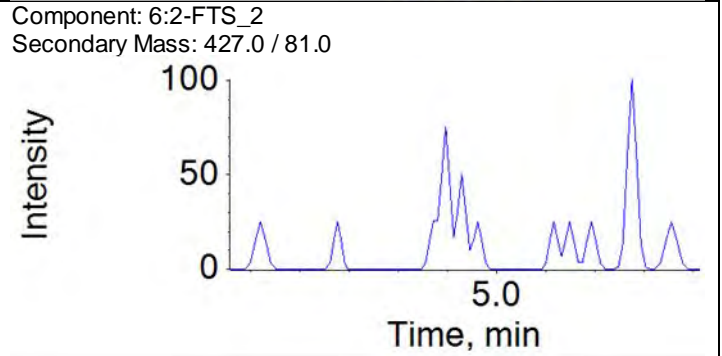
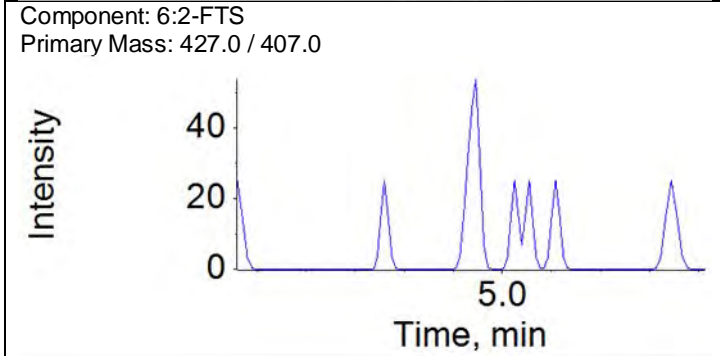
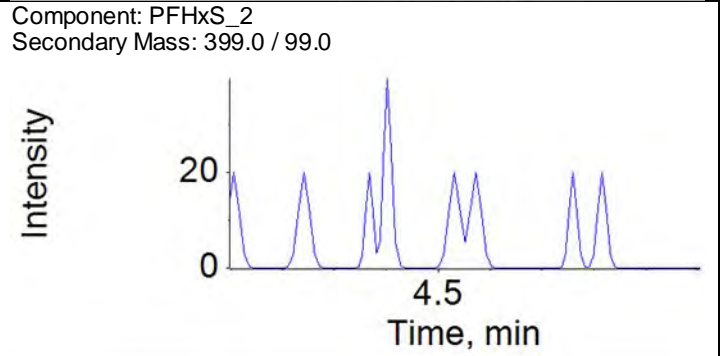
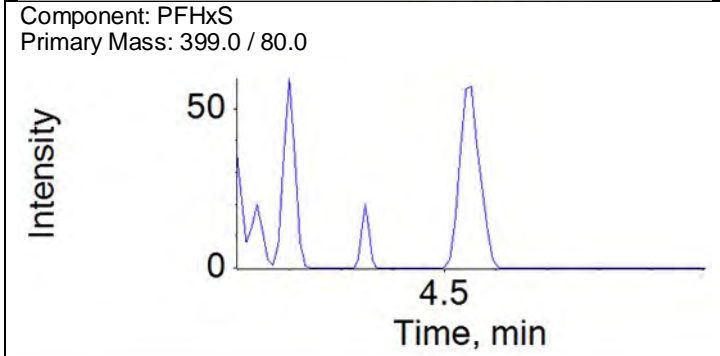
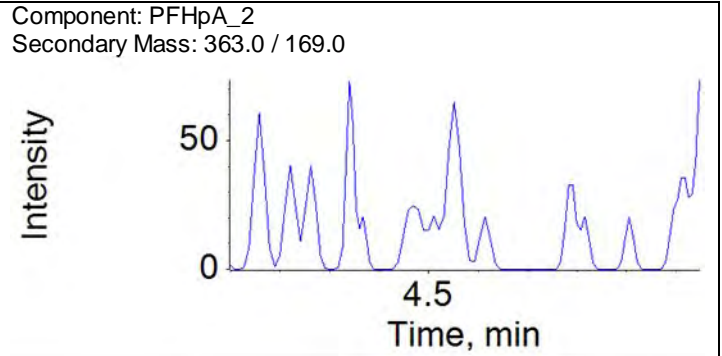
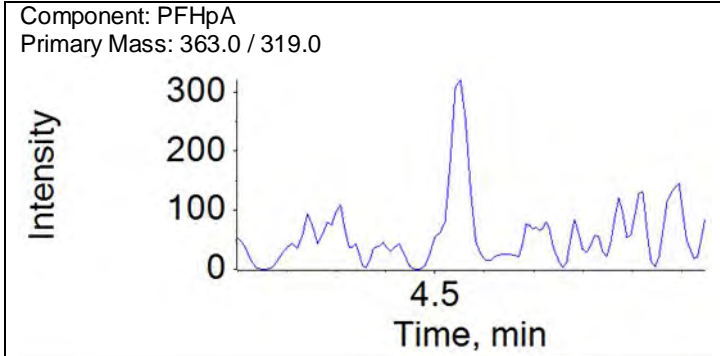
Ion Ratio Report

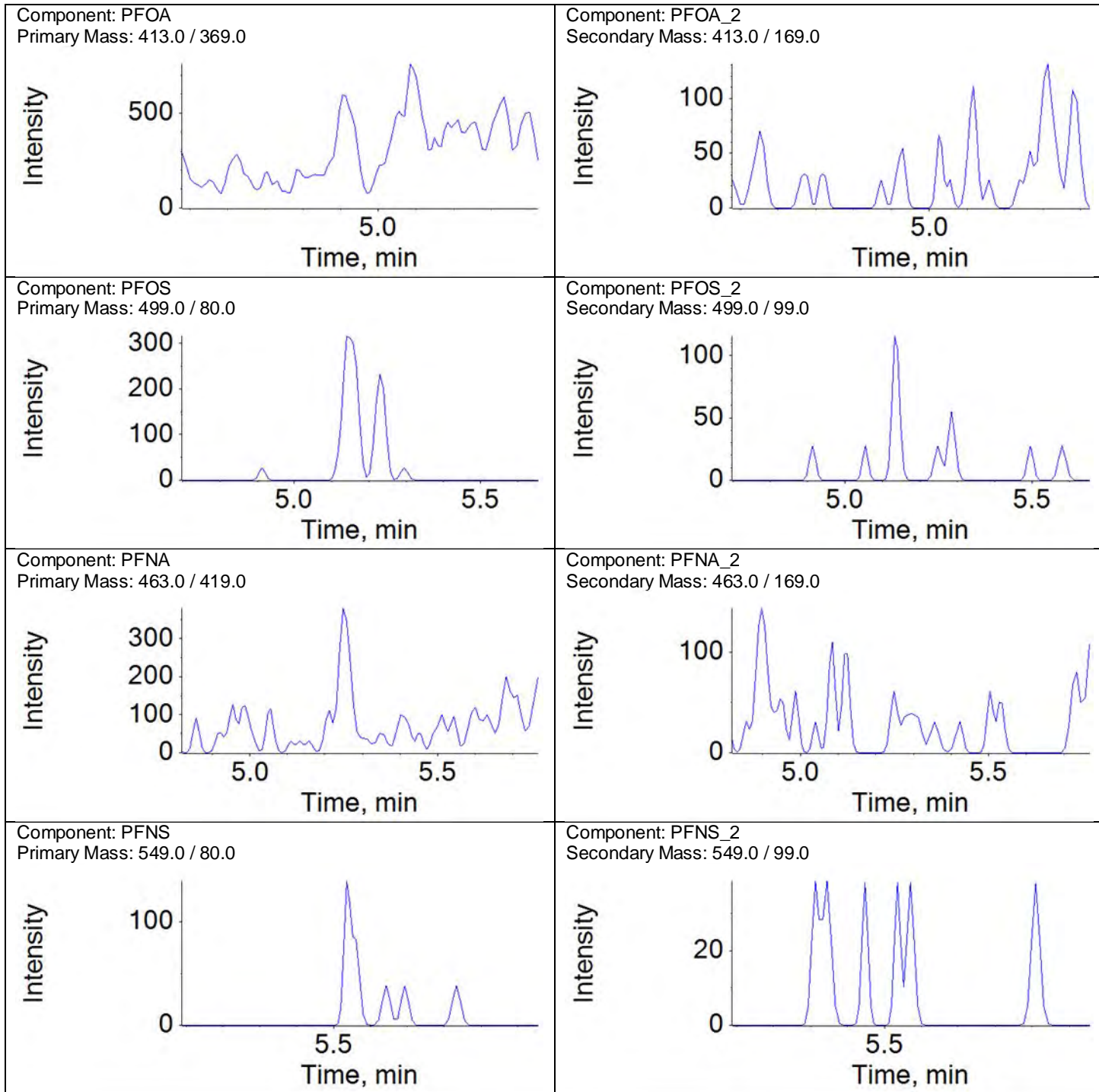
Sample Name: Instrument Blank Instrument Name: LM27631 File Name: 18DEC18DCAL-75.wiff

Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	1.0000	N/A			
PFBS_2	N/A	N/A	N/A	A	0.3686	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	0.6123	N/A		50	
PFHxA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxA_2	N/A	N/A	N/A	A	0.0115	N/A		50	
PFPeS	N/A	N/A	N/A	A	1.0000	N/A			
PFPeS_2	N/A	N/A	N/A	A	0.5256	N/A		50	
PFHpA	N/A	N/A	N/A	A	1.0000	N/A			
PFHpA_2	N/A	N/A	N/A	A	0.0547	N/A		50	
PFHxS	N/A	N/A	N/A	A	1.0000	N/A			
PFHxS_2	N/A	N/A	N/A	A	0.3359	N/A		50	
6:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	0.6344	N/A		50	
PFHpS	N/A	N/A	N/A	A	1.0000	N/A			
PFHpS_2	N/A	N/A	N/A	A	0.4110	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0590	N/A		50	
PFOS	N/A	N/A	N/A	A	1.0000	N/A			
PFOS_2	N/A	N/A	N/A	A	0.2980	N/A		50	
PFNA	N/A	N/A	N/A	A	1.0000	N/A			
PFNA_2	N/A	N/A	N/A	A	0.0214	N/A		50	
PFNS	N/A	N/A	N/A	A	1.0000	N/A			
PFNS_2	N/A	N/A	N/A	A	0.4608	N/A		50	
PFDA	N/A	N/A	N/A	A	1.0000	N/A			
PFDA_2	N/A	N/A	N/A	A	0.0064	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	0.5879	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	1.0000	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	0.2625	N/A		50	
PFDS	N/A	N/A	N/A	A	1.0000	N/A			
PFDS_2	N/A	N/A	N/A	A	0.4962	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	1.0000	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	0.0035	N/A		50	
NEtFOSAA	5.84	1.00	1882.80	A	1.0000	1.0000			
NEtFOSAA_2	5.84	1.00	1145.72	M	0.6883	0.6085	-12	50	
PFADoDA	N/A	N/A	N/A	A	1.0000	N/A			
PFADoDA_2	N/A	N/A	N/A	A	0.0134	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	0.7018	N/A		50	
PFATrDA	N/A	N/A	N/A	A	1.0000	N/A			
PFATrDA_2	N/A	N/A	N/A	A	0.0093	N/A		50	
PFArTeDA	N/A	N/A	N/A	A	1.0000	N/A			
PFArTeDA_2	N/A	N/A	N/A	A	0.0058	N/A		50	
PFHxDA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxDA_2	N/A	N/A	N/A	A	0.0656	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0273	N/A		50	

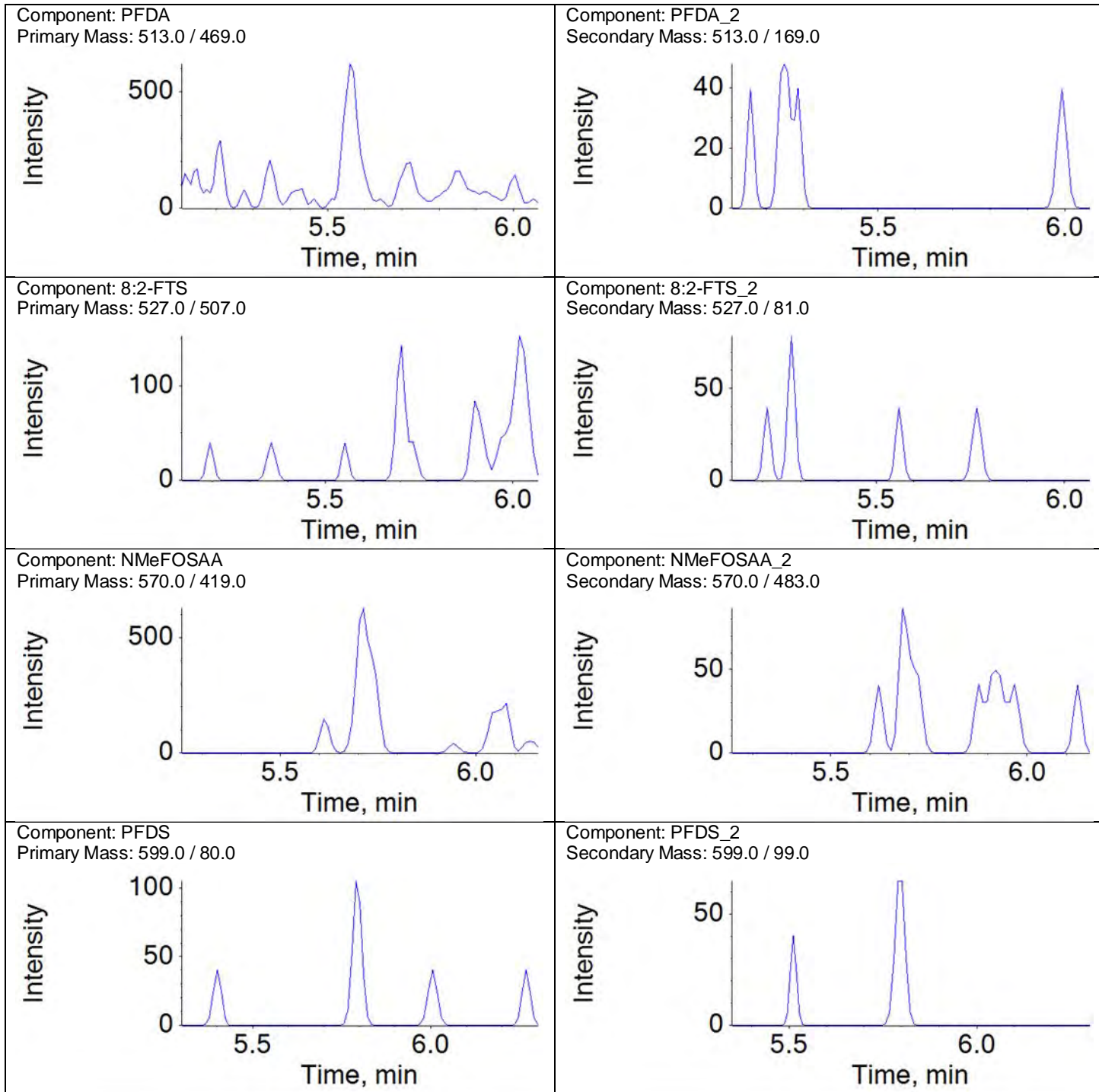


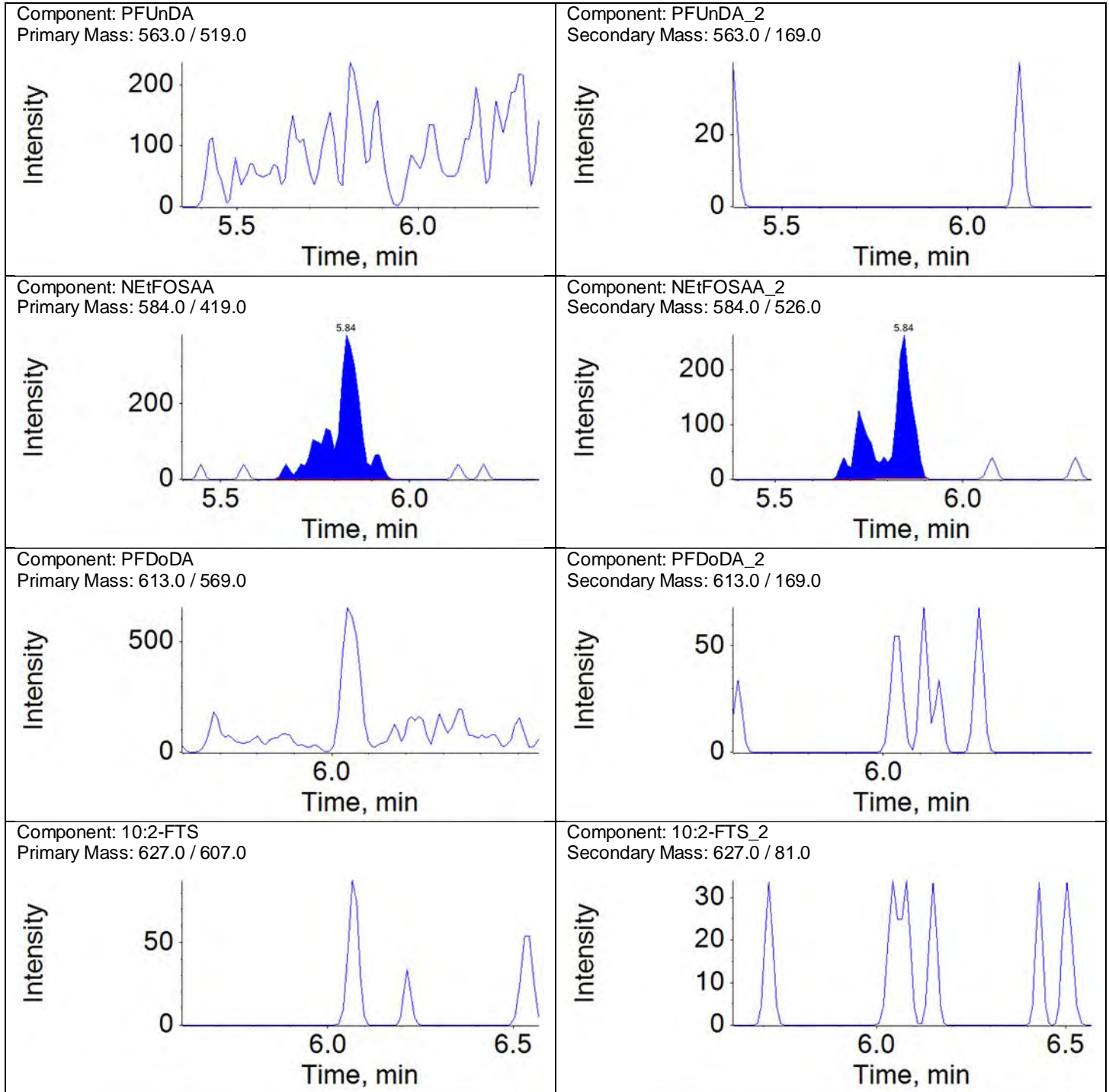


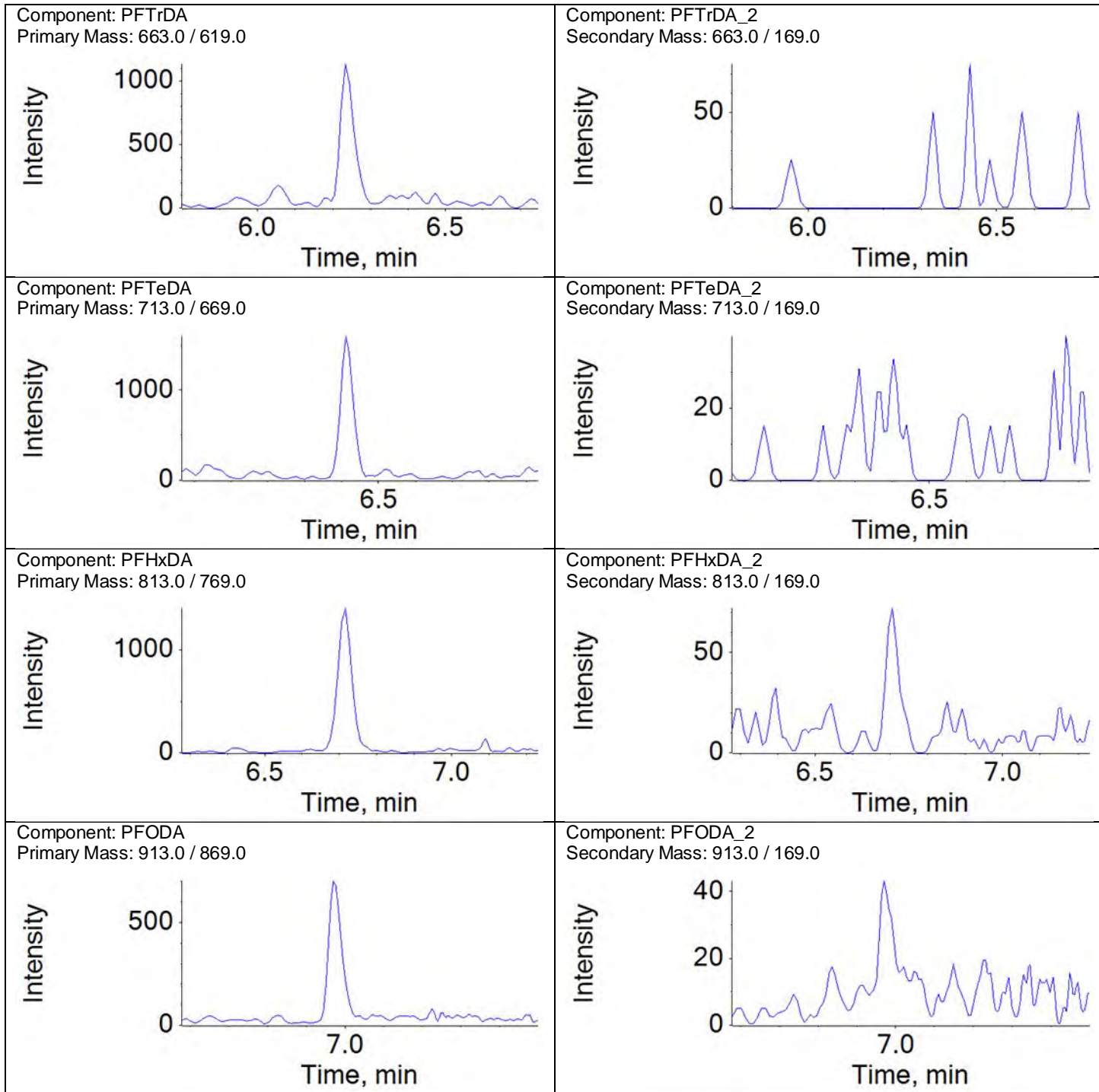












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	L+B CAL3	Data File:	18DEC18DCAL-77.wiff
Sample ID:	LBMODX1833D	Acquis Date:	2018-12-19T00:56:02
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	11	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	1007629.8	941251.6	7	50	
13C2-PFOA	5.0	505665.7	485595.3	4	50	
13C4-PFOS	4.8	308937.2	292182.6	6	50	
13C2-PFDA	5.0	510147.6	467216.0	9	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1087535.4	13C3-PFBA	1007629.8	1.079	5.000	4.779	96	70-130	
E13C5-PFPeA	995098.6	13C3-PFBA	1007629.8	0.988	5.000	4.605	92	70-130	
E13C3-PFBS	445506.3	13C3-PFBA	1007629.8	0.442	4.650	4.305	93	70-130	
E13C2-4:2-FTS	66060.1	13C2-PFOA	505665.7	0.131	4.670	4.962	106	70-130	
E13C5-PFHxA	731668.3	13C2-PFOA	505665.7	1.447	5.000	5.176	104	70-130	
E13C3-PFHxS	332926.8	13C2-PFOA	505665.7	0.658	4.730	4.982	105	70-130	
E13C4-PFHpA	577179.7	13C2-PFOA	505665.7	1.141	5.000	4.930	99	70-130	
E13C2-6:2-FTS	51479.1	13C2-PFOA	505665.7	0.102	4.750	5.122	108	70-130	
E13C8-PFOA	994370.4	13C2-PFOA	505665.7	1.966	5.000	5.407	108	70-130	
E13C8-PFOS	330509.6	13C4-PFOS	308937.2	1.070	4.780	4.784	100	70-130	
E13C9-PFNA	662382.4	13C4-PFOS	308937.2	2.144	5.000	4.878	98	70-130	
E13C6-PFDA	864506.9	13C2-PFDA	510147.6	1.695	5.000	4.827	97	70-130	
E13C2-8:2-FTS	50115.1	13C2-PFDA	510147.6	0.098	4.790	5.063	106	70-130	
E13C8-PFOSA	645146.7	13C2-PFDA	510147.6	1.265	5.000	4.925	98	70-130	
Ed3-NMeFOSAA	206813.4	13C2-PFDA	510147.6	0.405	5.000	4.460	89	70-130	
E13C7-PFUnDA	587710.7	13C2-PFDA	510147.6	1.152	5.000	4.822	96	70-130	
Ed5-NEtFOSAA	191977.3	13C2-PFDA	510147.6	0.376	5.000	5.544	111	70-130	
E13C2-PFDoDA	1227072.7	13C2-PFDA	510147.6	2.405	5.000	5.060	101	70-130	
Ed7-NMePFOSAE	272862.3	13C2-PFDA	510147.6	0.535	5.000	4.779	96	70-130	
Ed3-NMePFOSA	92526.3	13C2-PFDA	510147.6	0.181	5.000	4.984	100	70-130	
Ed9-NEtPFOSAE	240336.0	13C2-PFDA	510147.6	0.471	5.000	4.816	96	70-130	
Ed5-NEtPFOSA	72583.0	13C2-PFDA	510147.6	0.142	5.000	4.935	99	70-130	
E13C2-PFTeDA	832234.3	13C2-PFDA	510147.6	1.631	5.000	4.597	92	70-130	



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

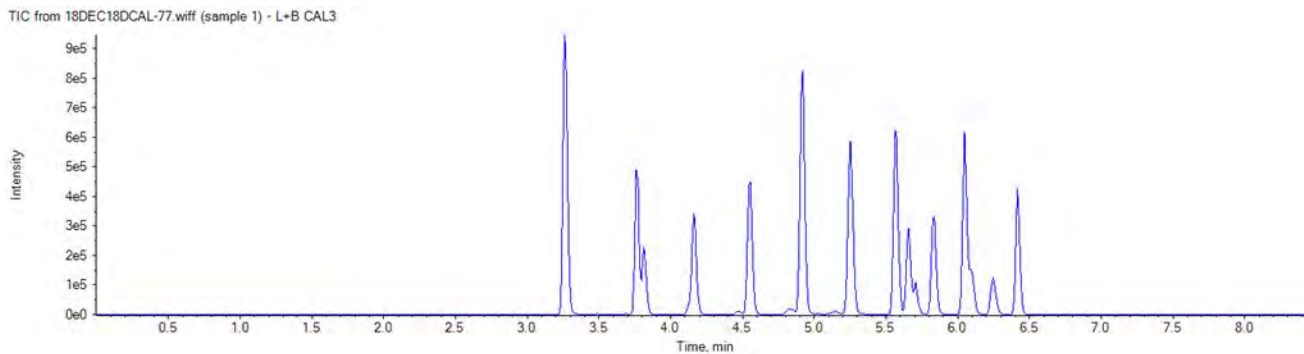
**Analyte Quantitation Peak Table**

Sample Name: L+B CAL3 Instrument Name: LM27631 File Name: 18DEC18DCAL-77.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	N/A	N/A	N/A		A	13C4-PFBA	3.26	1087535.4	N/A	
PFPeA	N/A	N/A	N/A		A	13C5-PFPeA	3.77	995098.6	N/A	
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.82	445506.3	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.13	66060.1	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	731668.3	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.82	445506.3	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.55	577179.7	N/A	
PFHxS	4.55	1.000	135519.1		M	13C3-PFHxS	4.55	332926.8	0.407	1.980
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.90	51479.1	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	332926.8	N/A	
PFOA	4.92	1.000	376989.8		M	13C8-PFOA	4.92	994370.4	0.379	2.008
PFOS	5.25	1.000	122501.9		M	13C8-PFOS	5.25	330509.6	0.371	1.623
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	662382.4	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.25	330509.6	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	864506.9	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	50115.1	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.66	645146.7	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	206813.4	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.25	330509.6	N/A	
PUnDA	N/A	N/A	N/A		A	13C7-PUnDA	5.83	587710.7	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.84	191977.3	N/A	
PFDaDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.05	1227072.7	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	50115.1	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.09	272862.3	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.11	92526.3	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.25	330509.6	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.24	240336.0	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.27	72583.0	N/A	
PFTrDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.05	1227072.7	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	832234.3	N/A	
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	832234.3	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	832234.3	N/A	

**Total Ion Chromatogram**



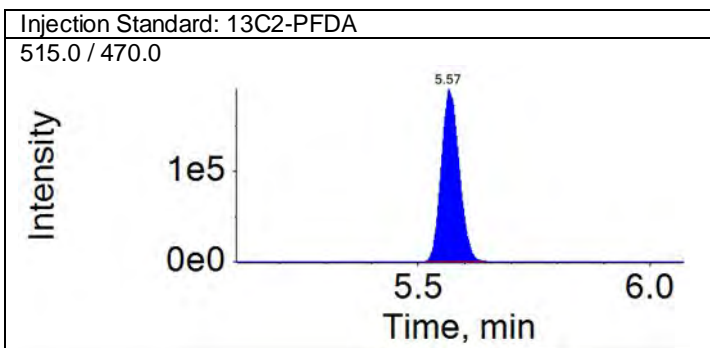
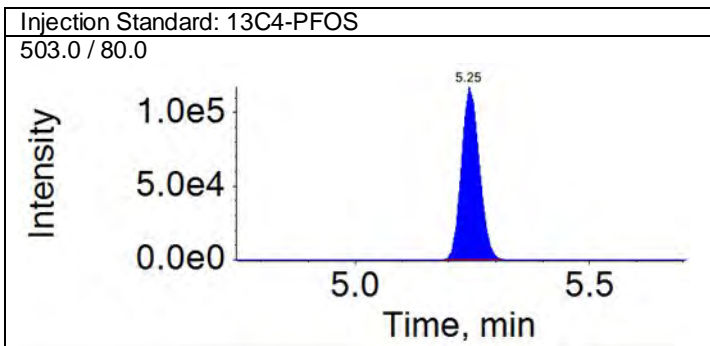
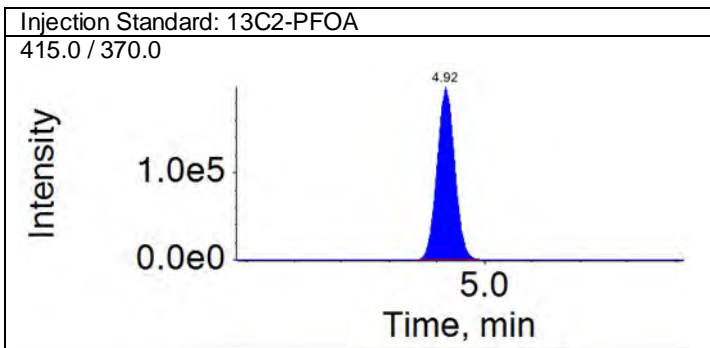
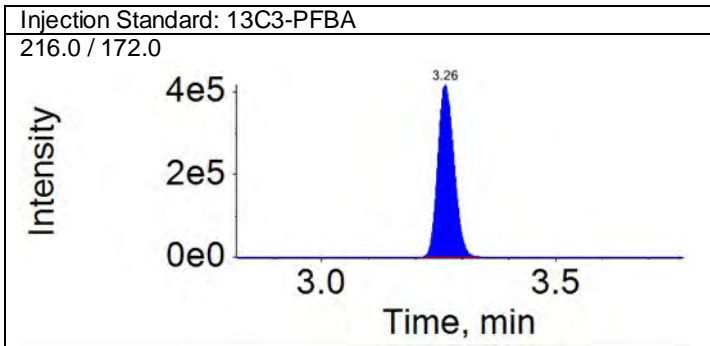
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By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18



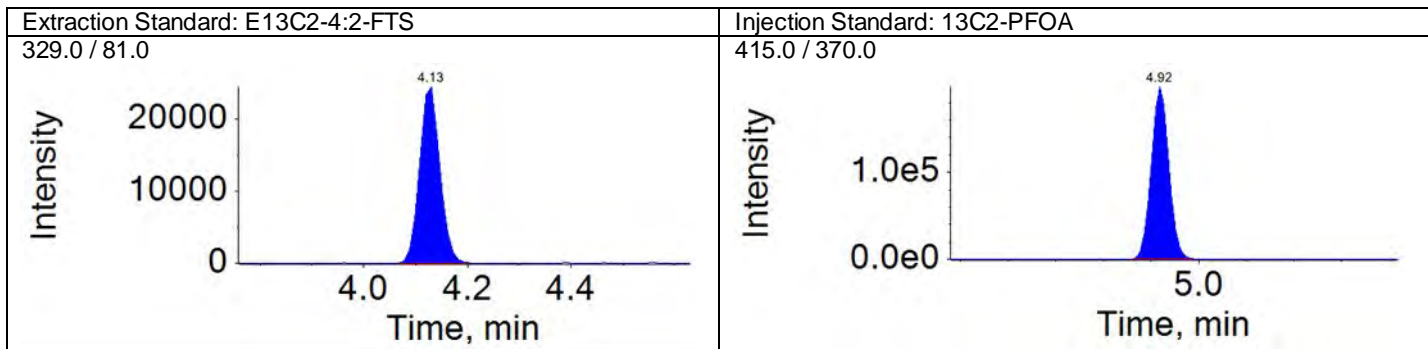
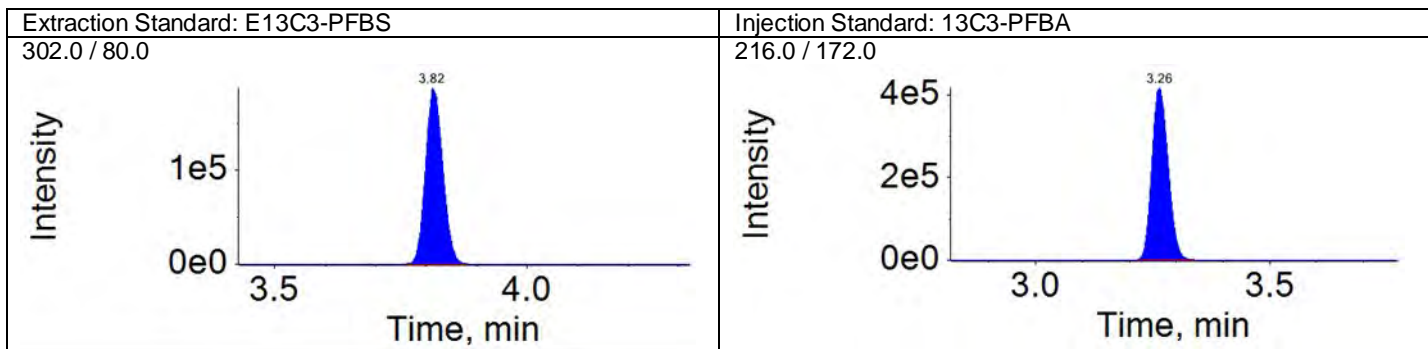
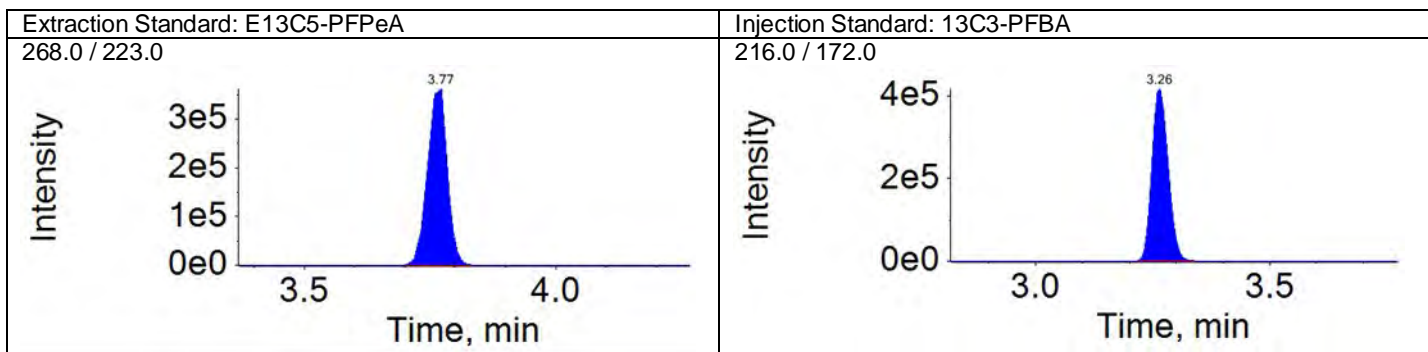
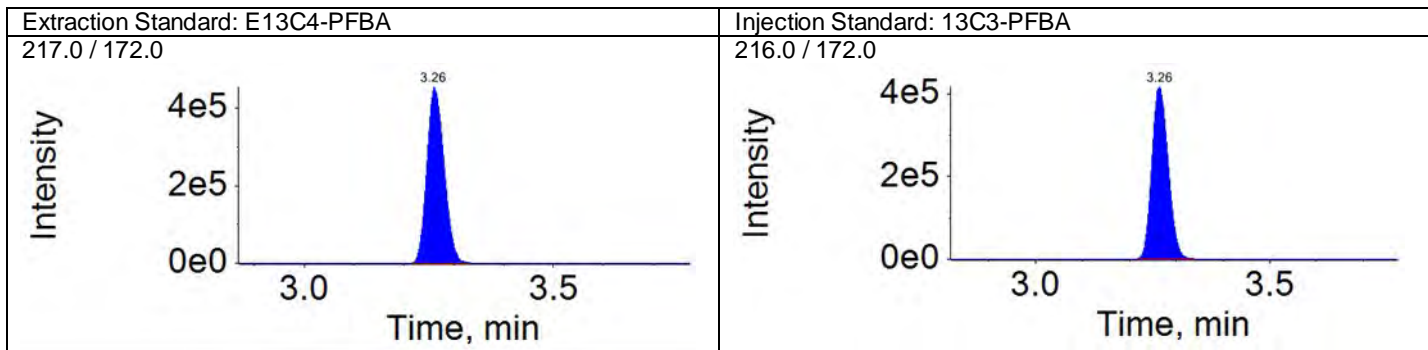
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



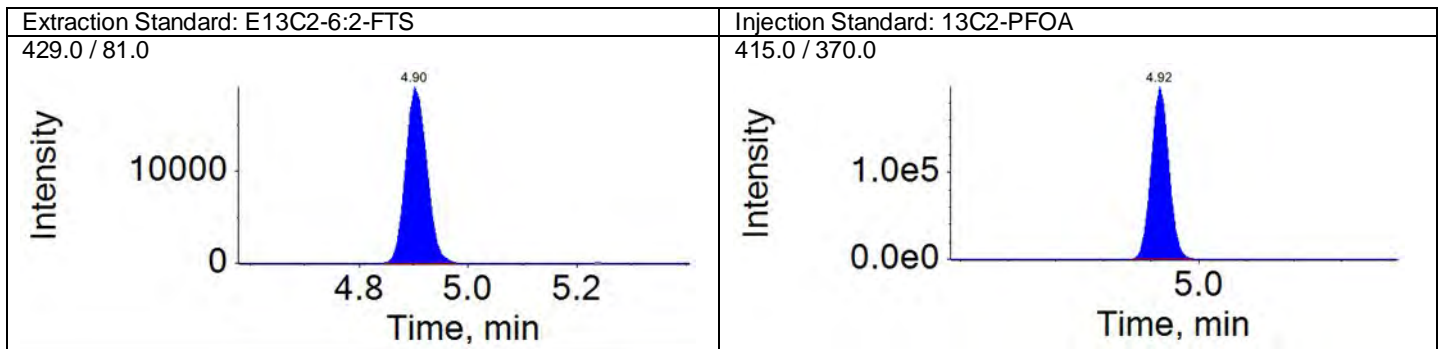
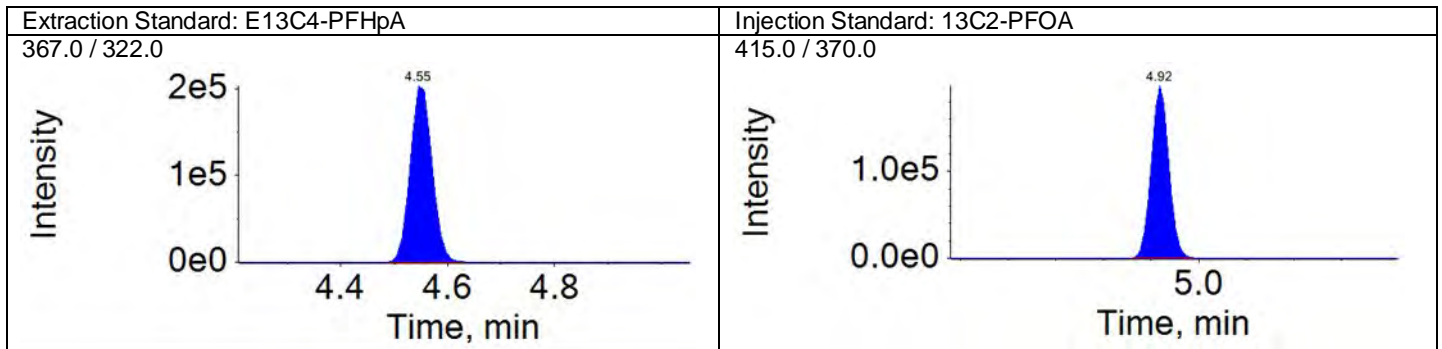
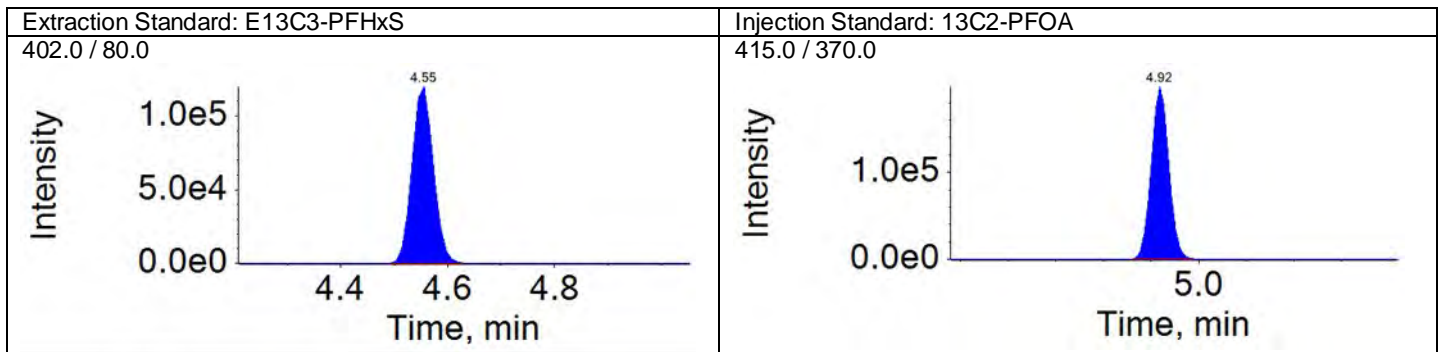
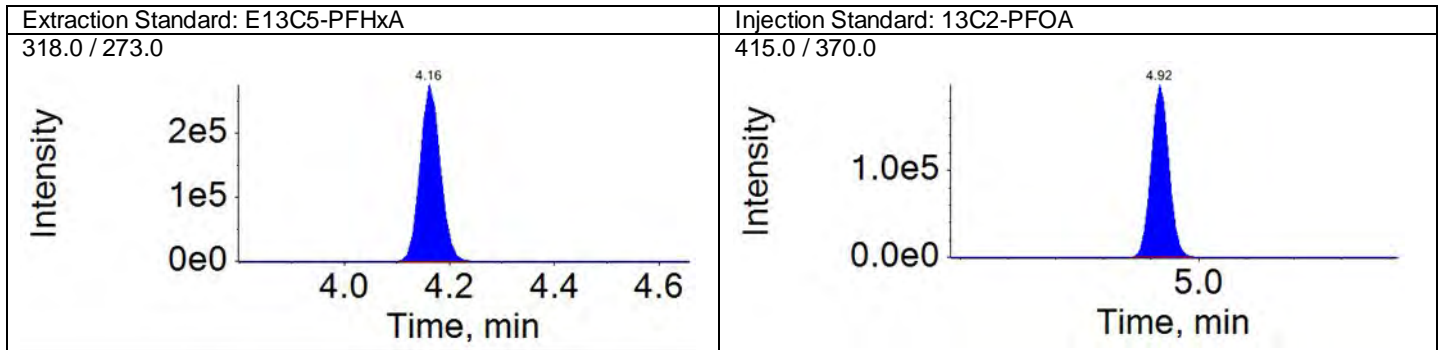
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



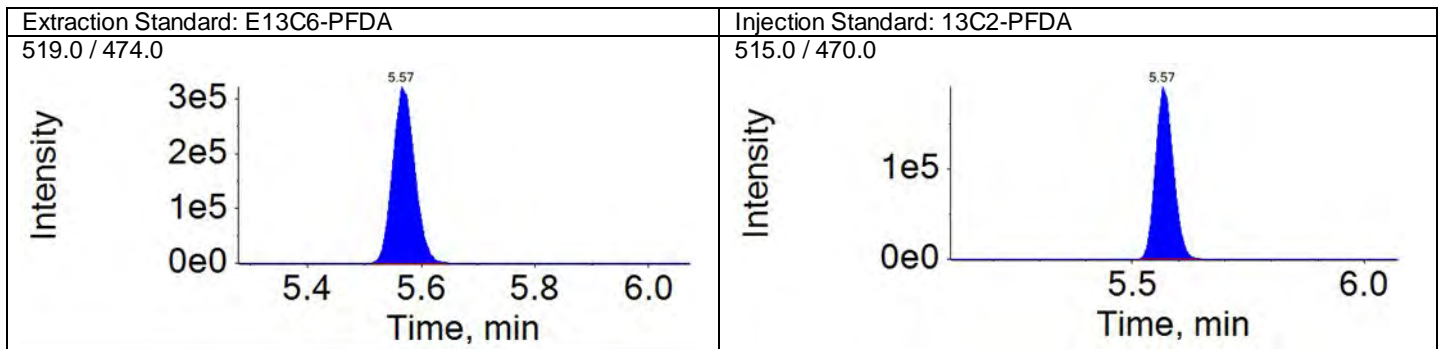
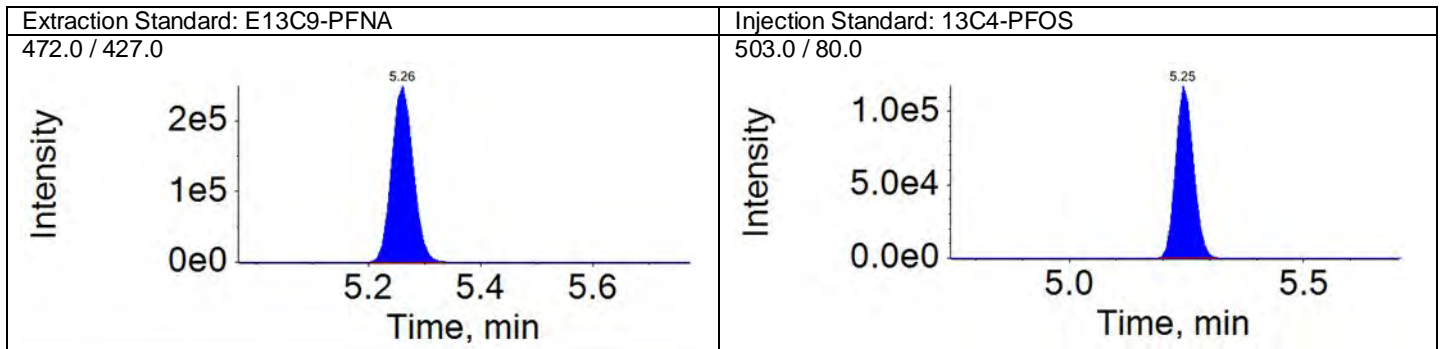
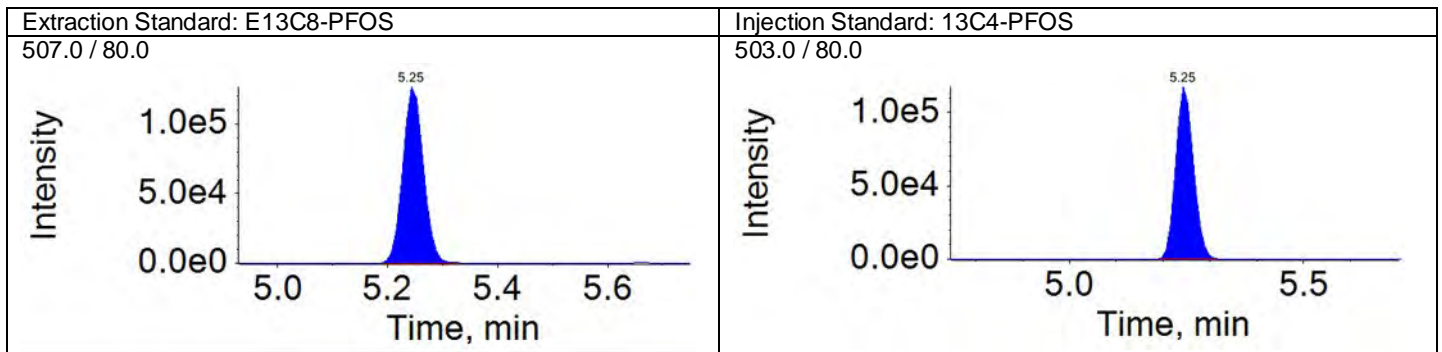
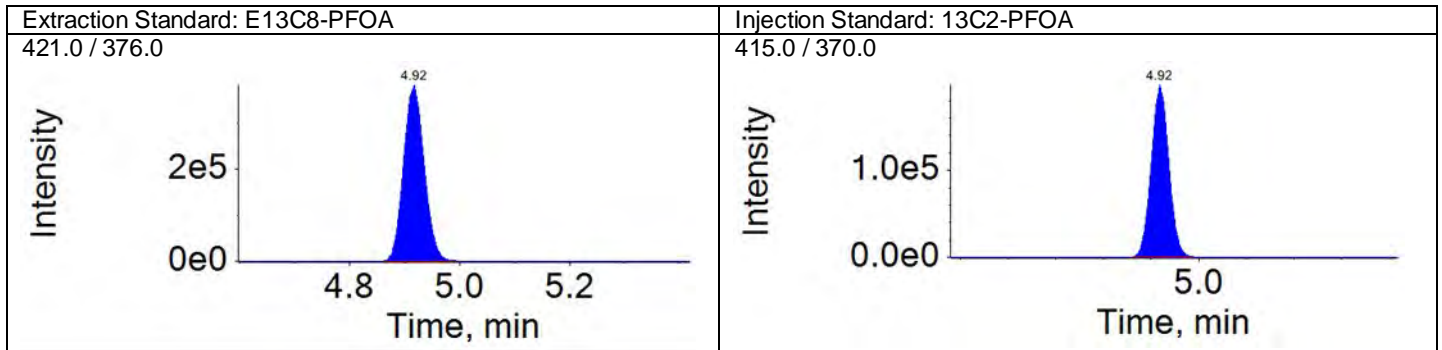
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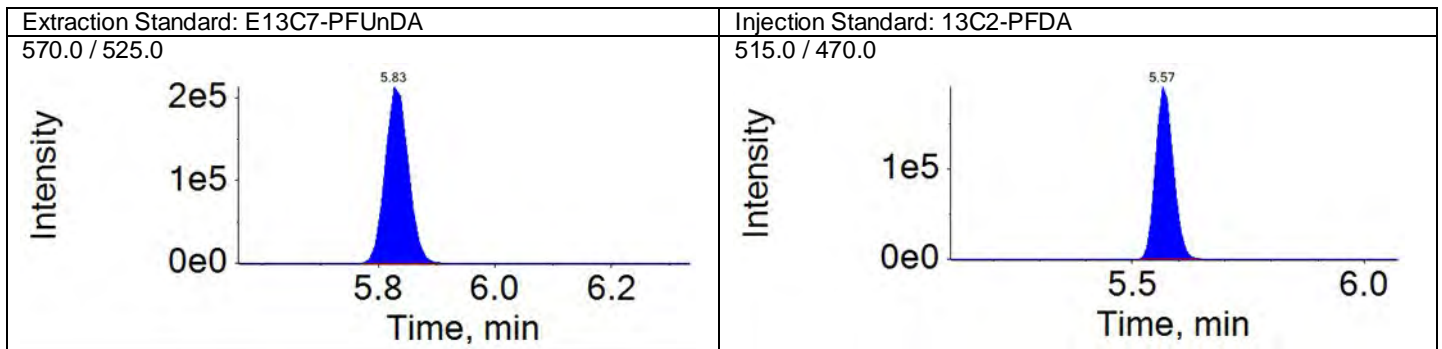
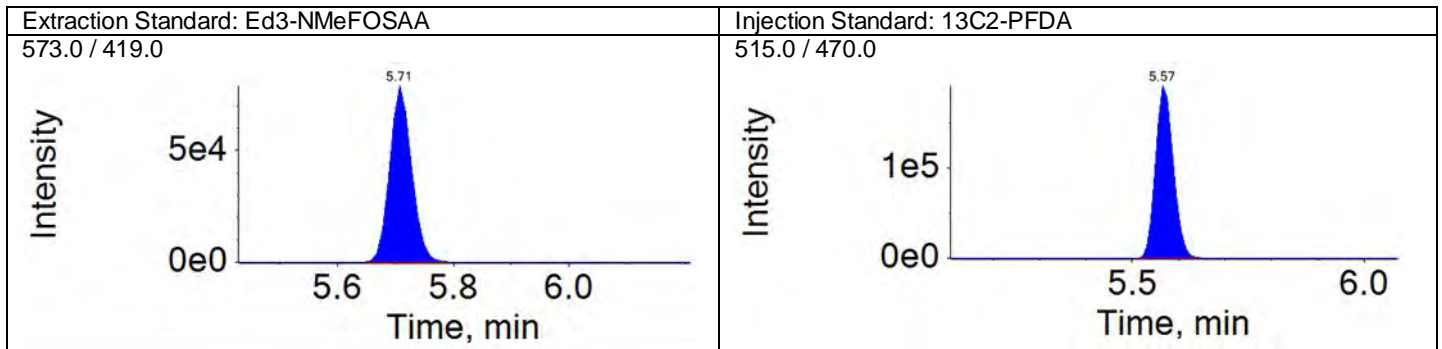
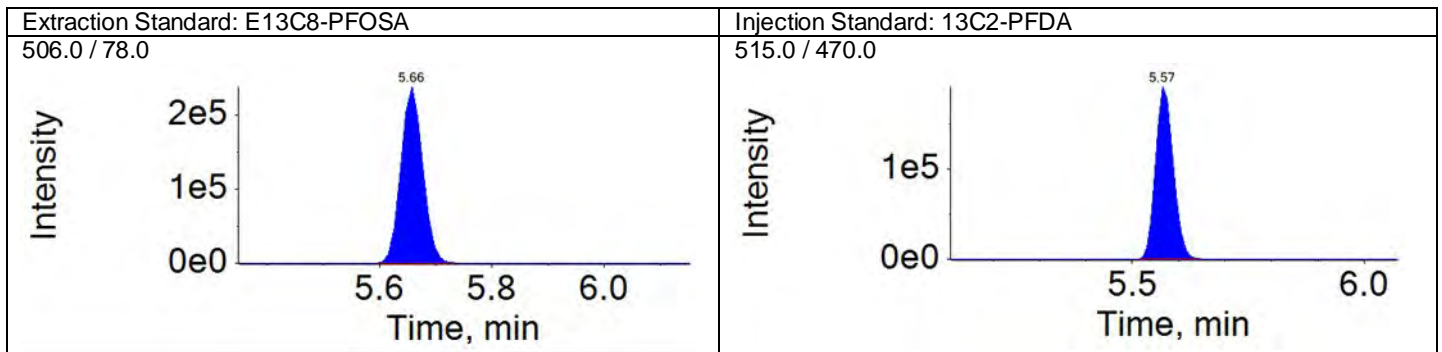
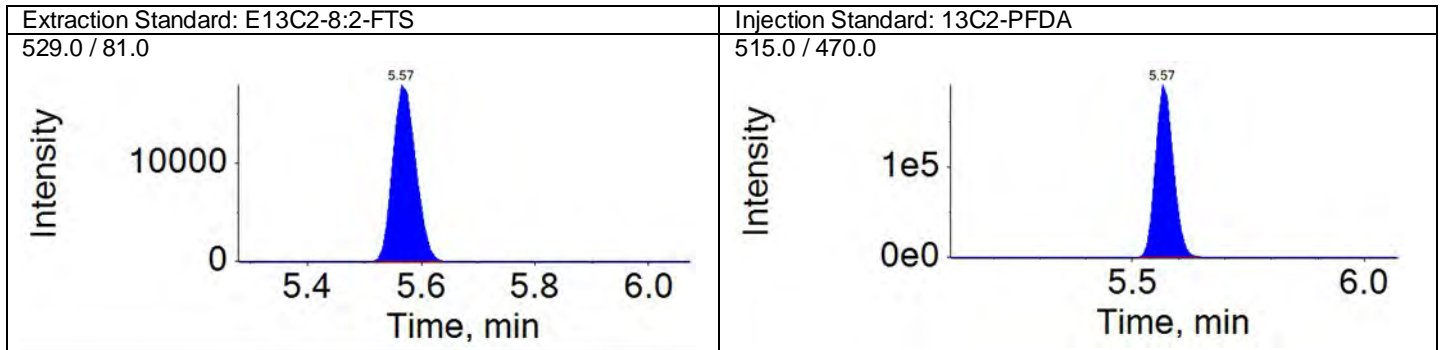
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ICAL Name: 18DEC18DCAL  
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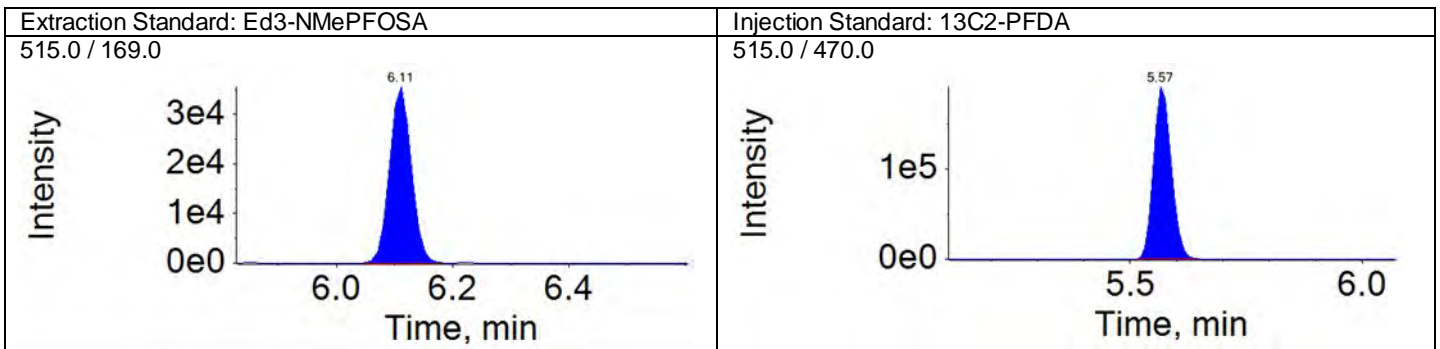
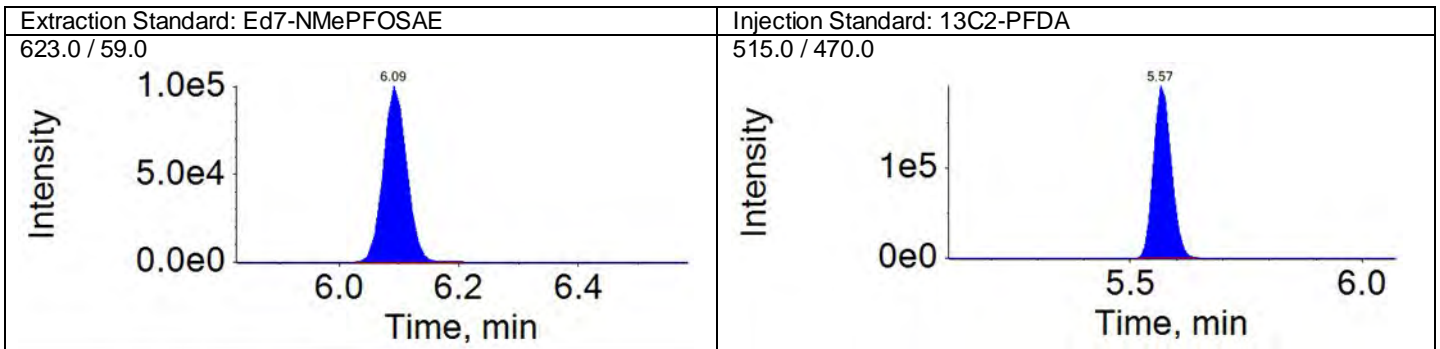
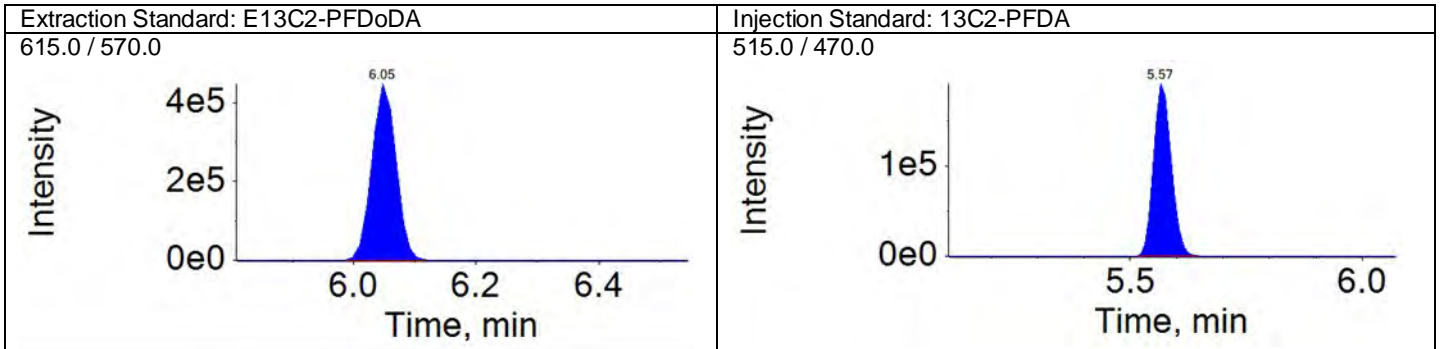
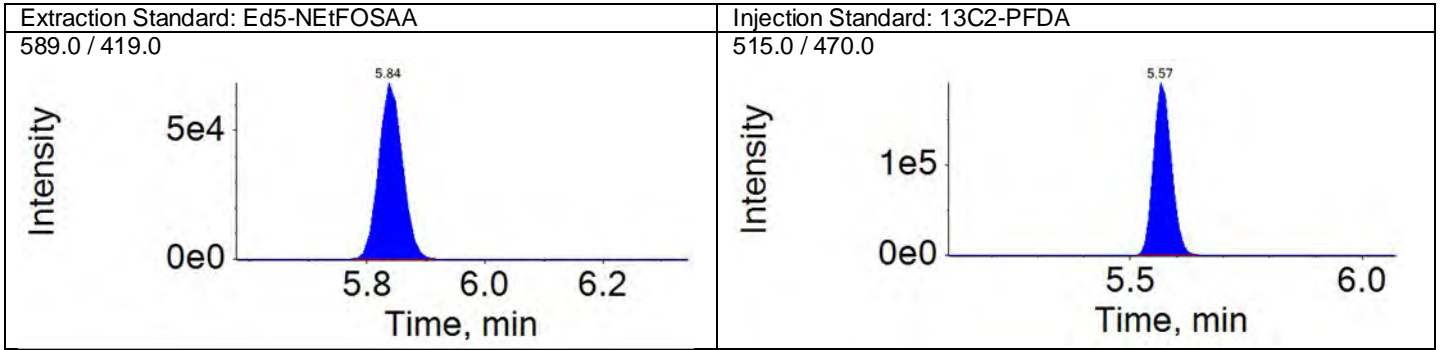
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Acquisition Method: 18AUG13\_3uL.dam





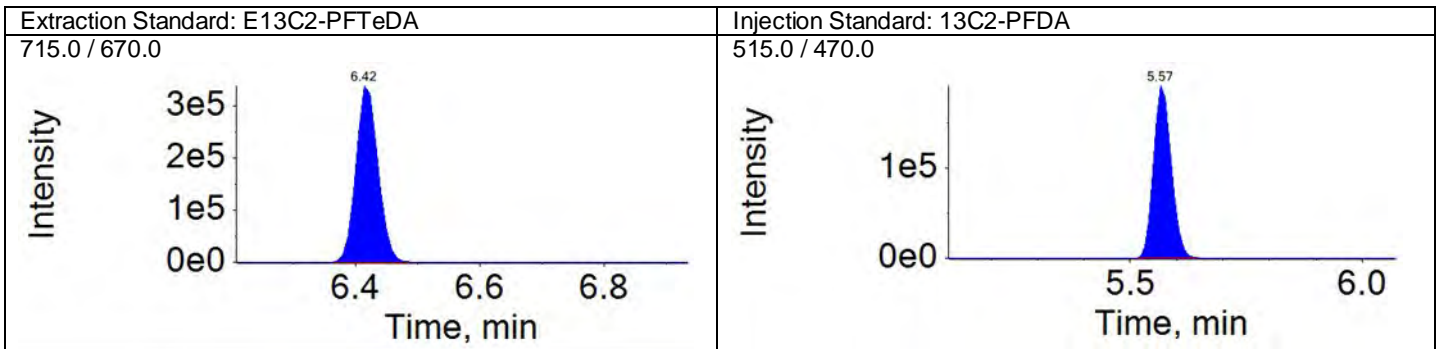
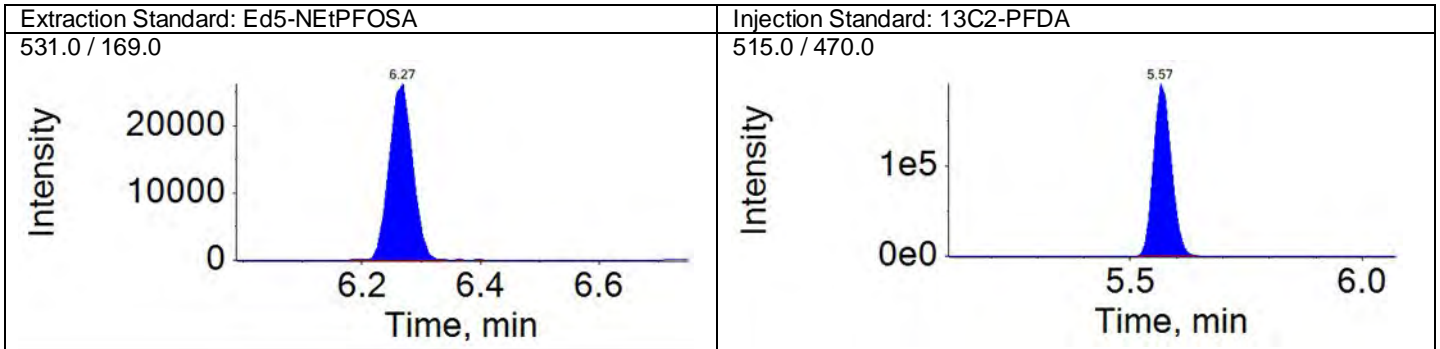
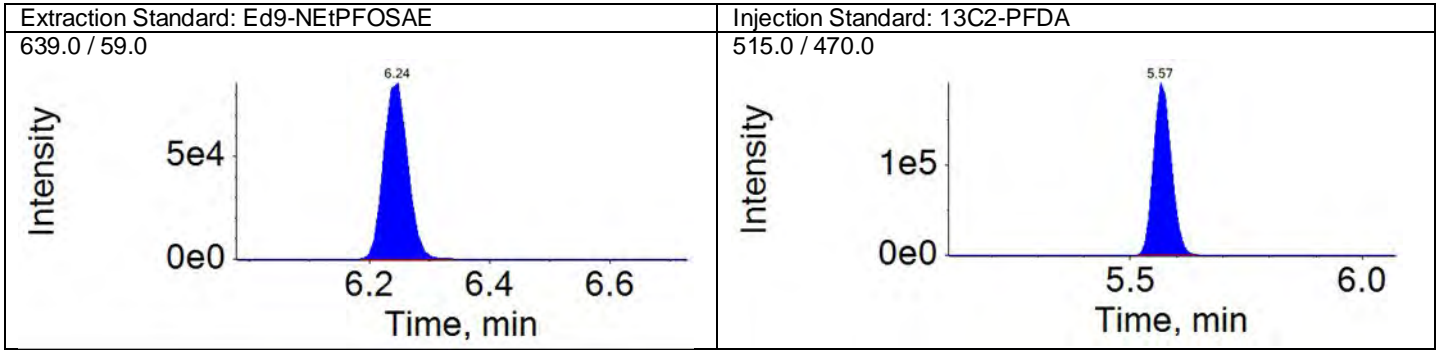
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



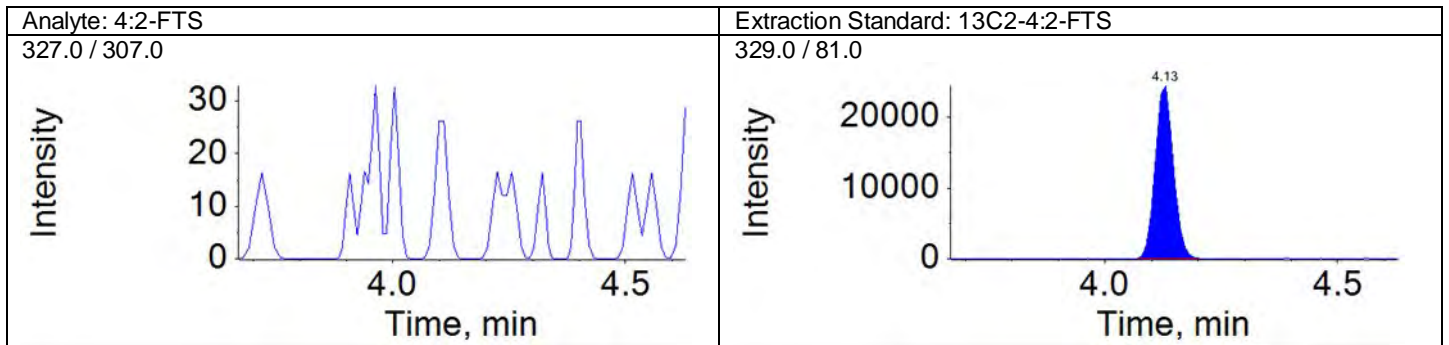
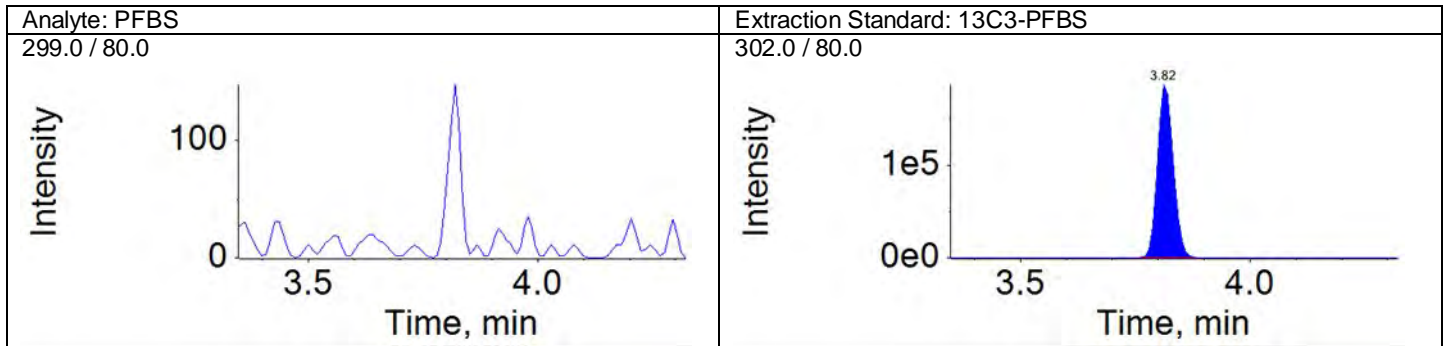
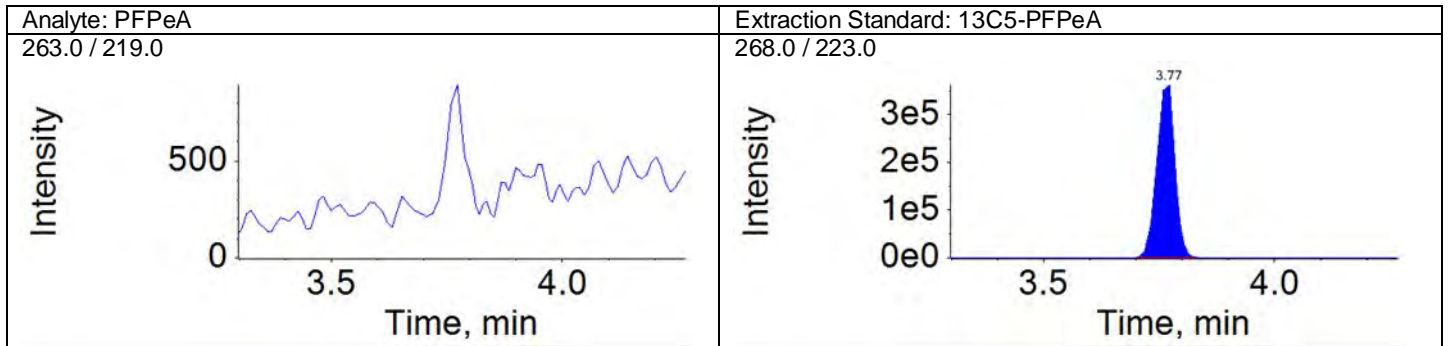
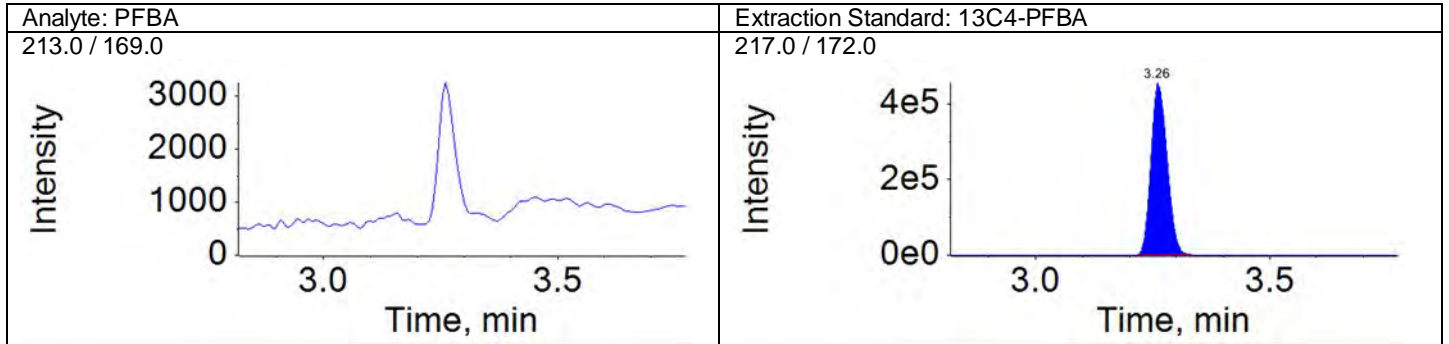
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QMethod Name: 18AUG20QM

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Acquisition Method: 18AUG13\_3uL.dam



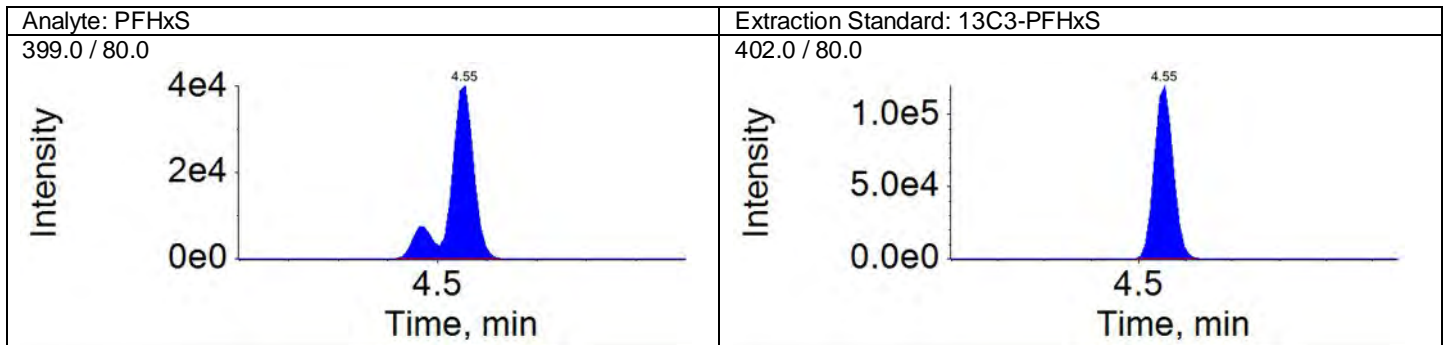
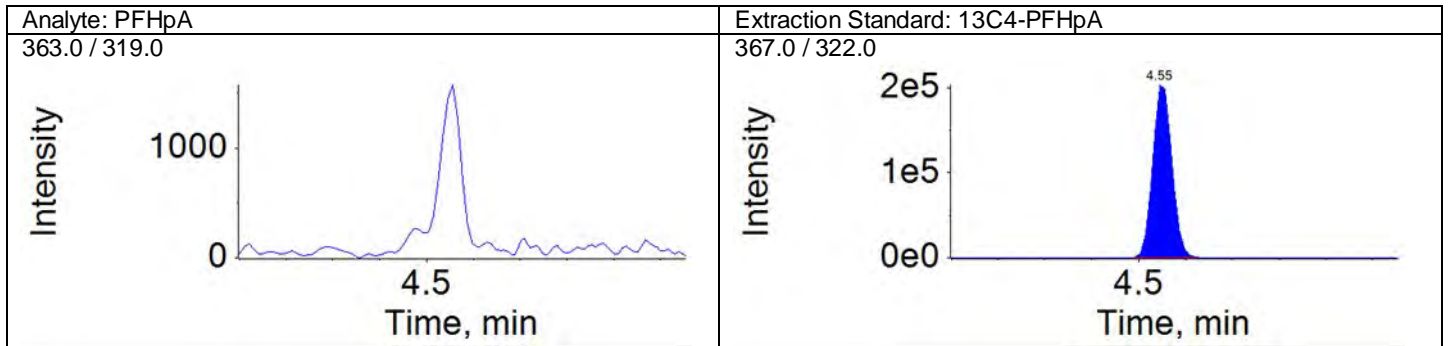
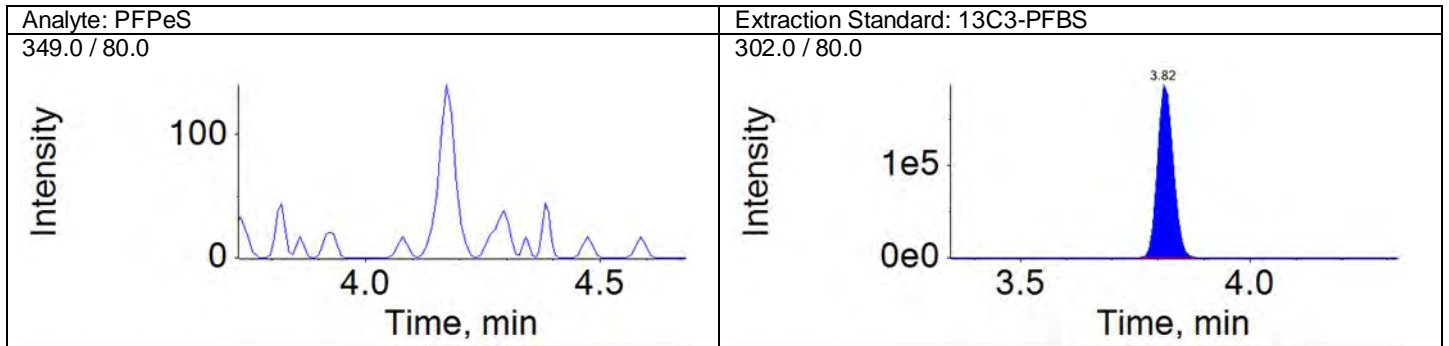
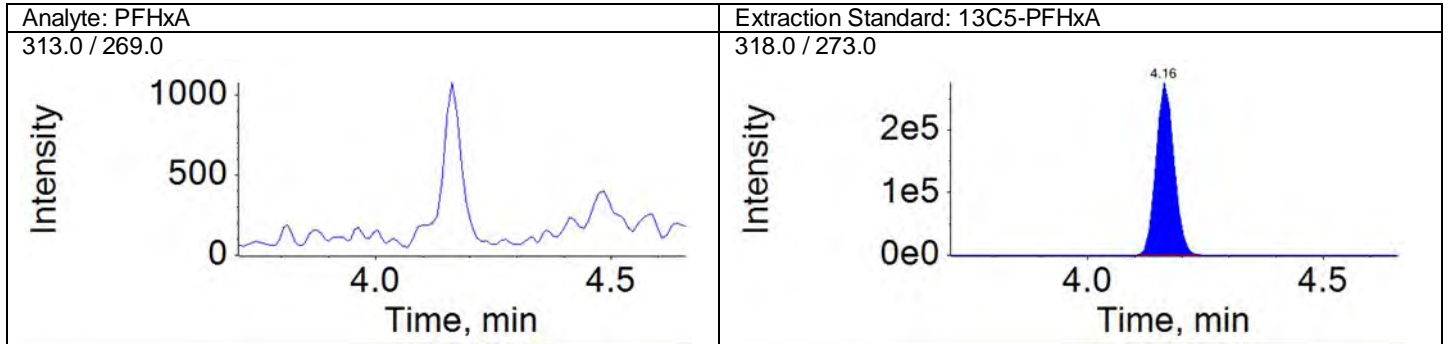
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

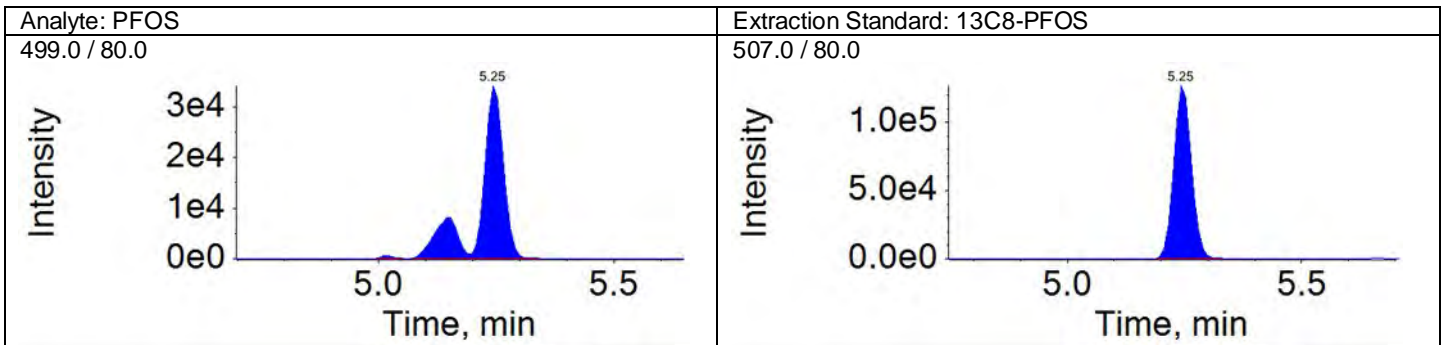
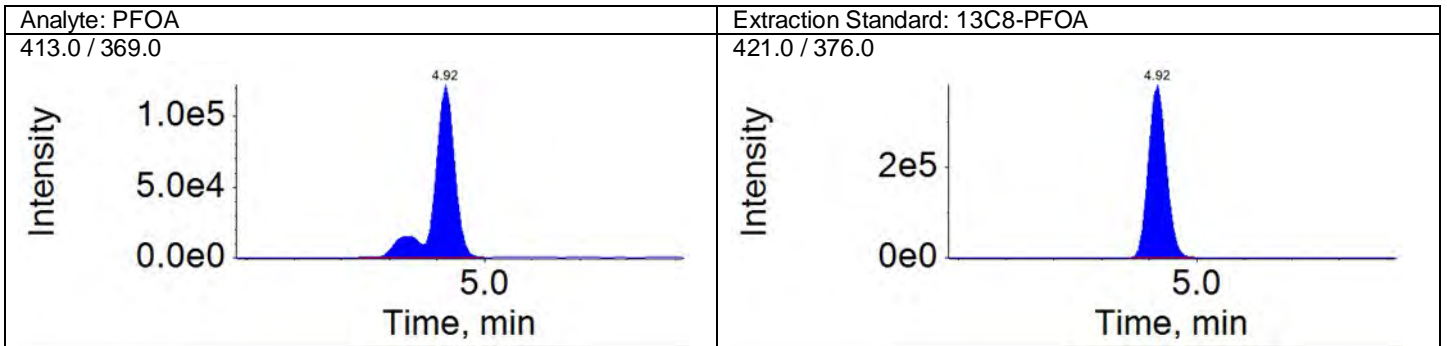
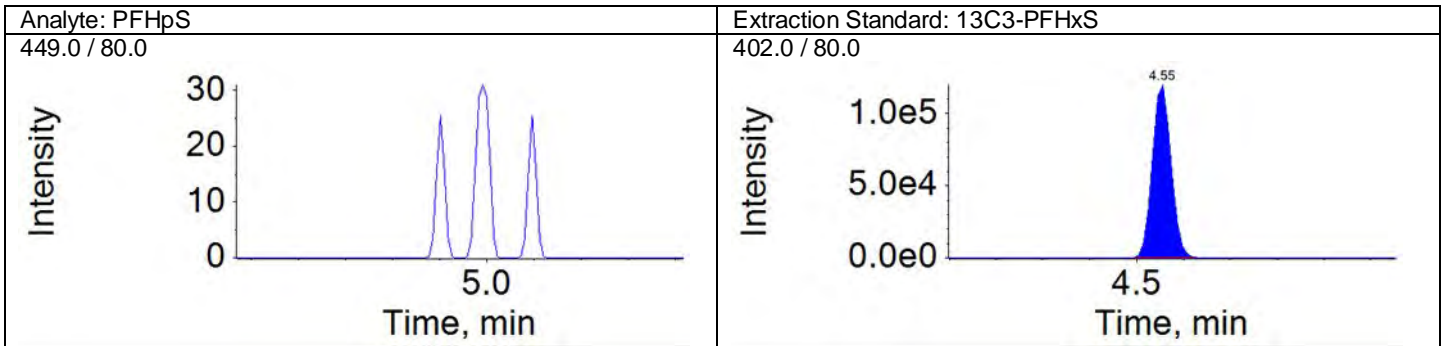
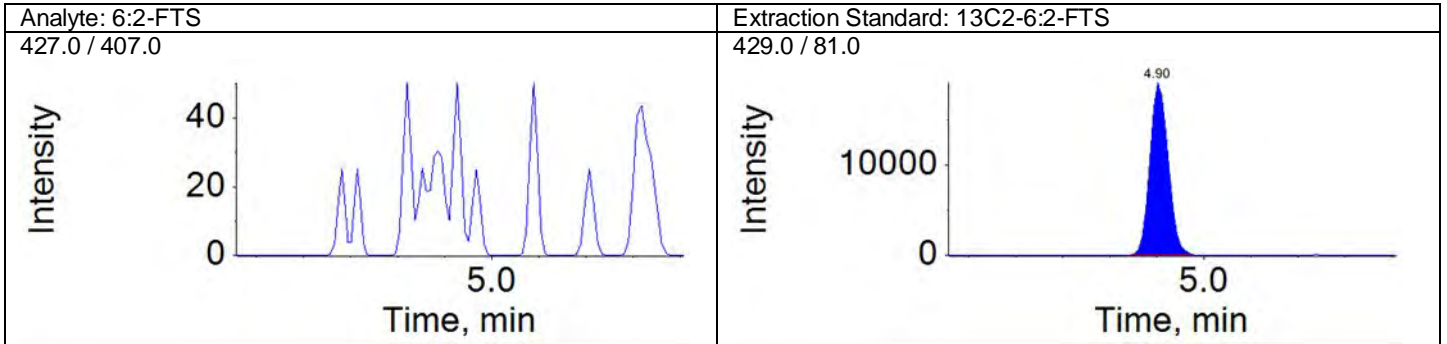
Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

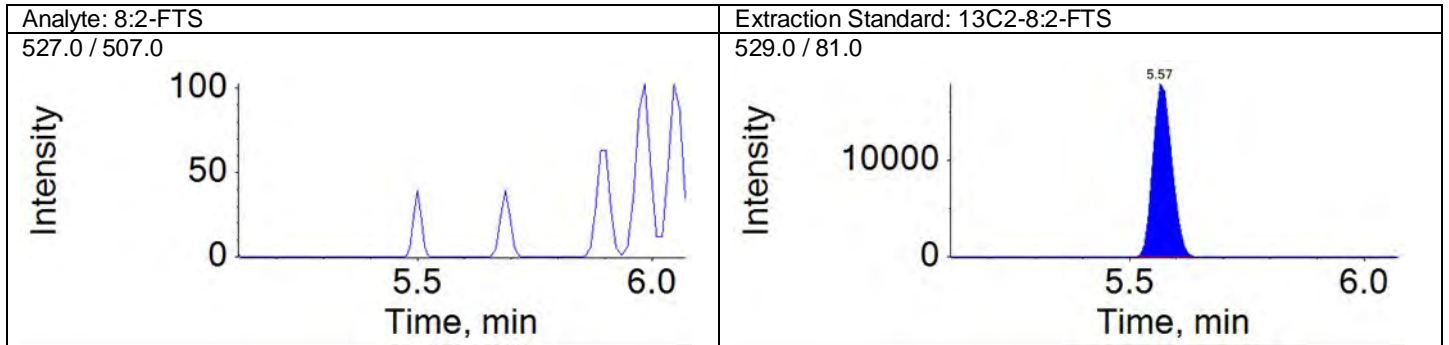
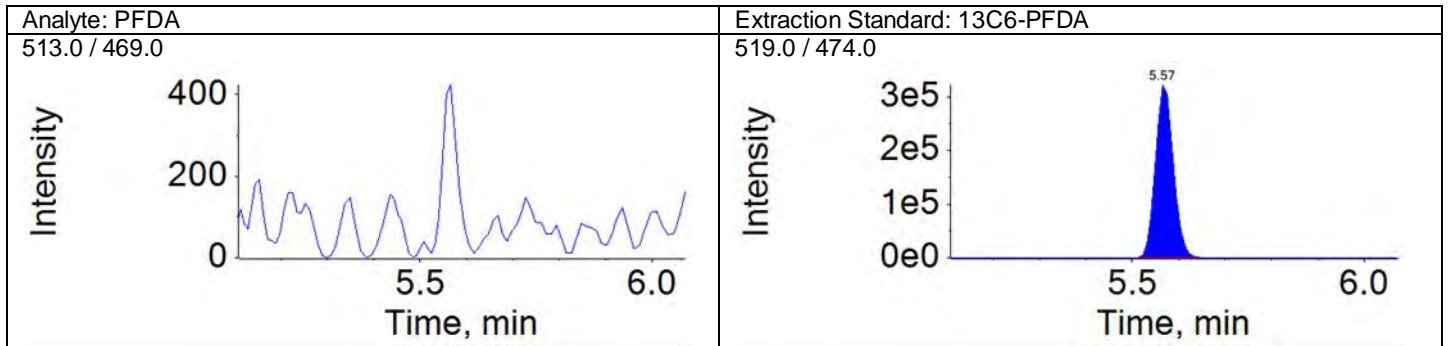
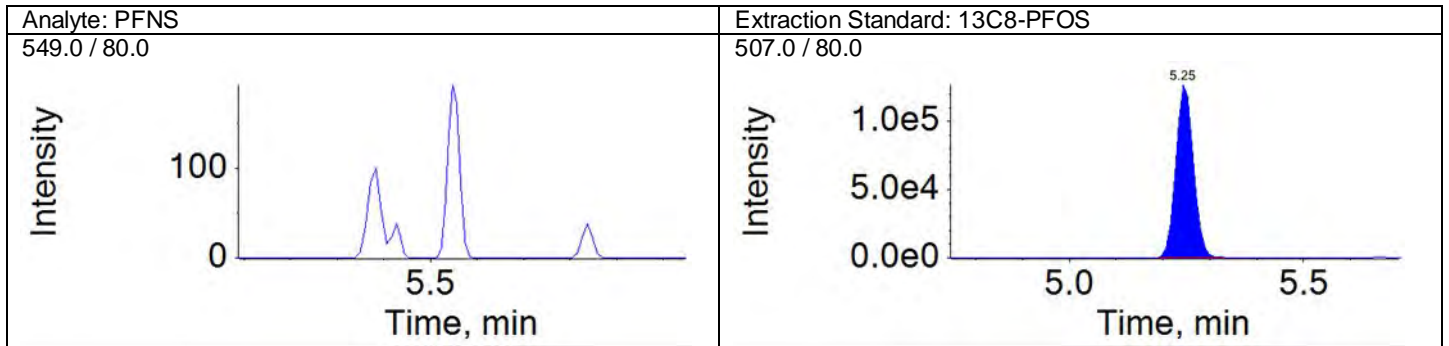
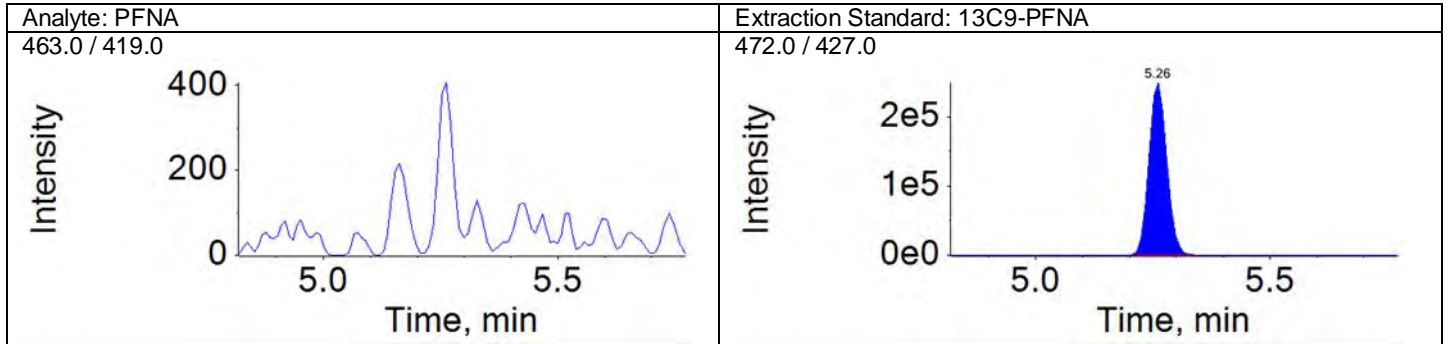
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Acquisition Method: 18AUG13\_3uL.dam





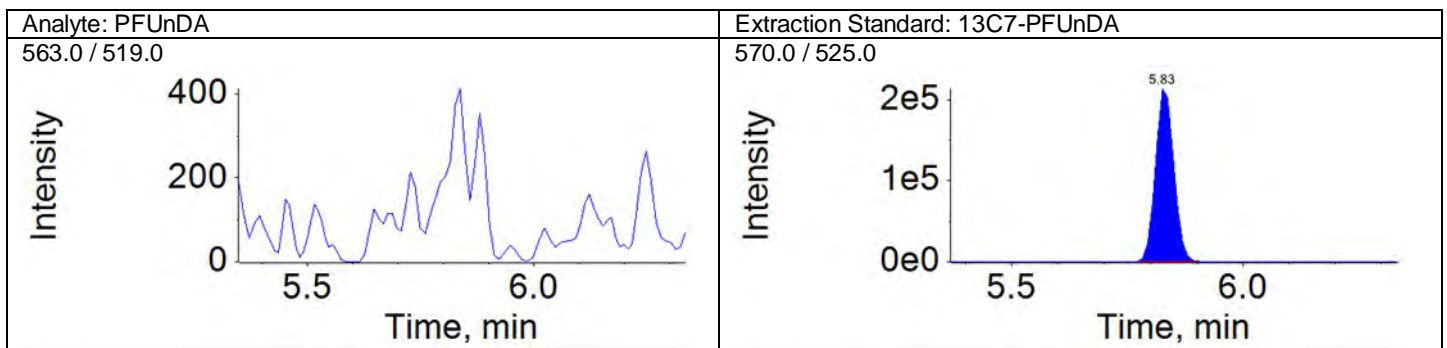
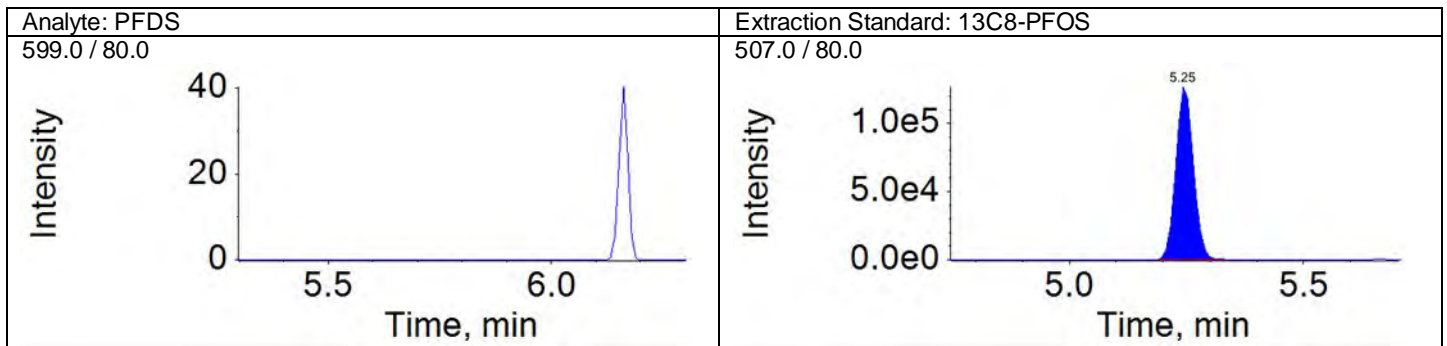
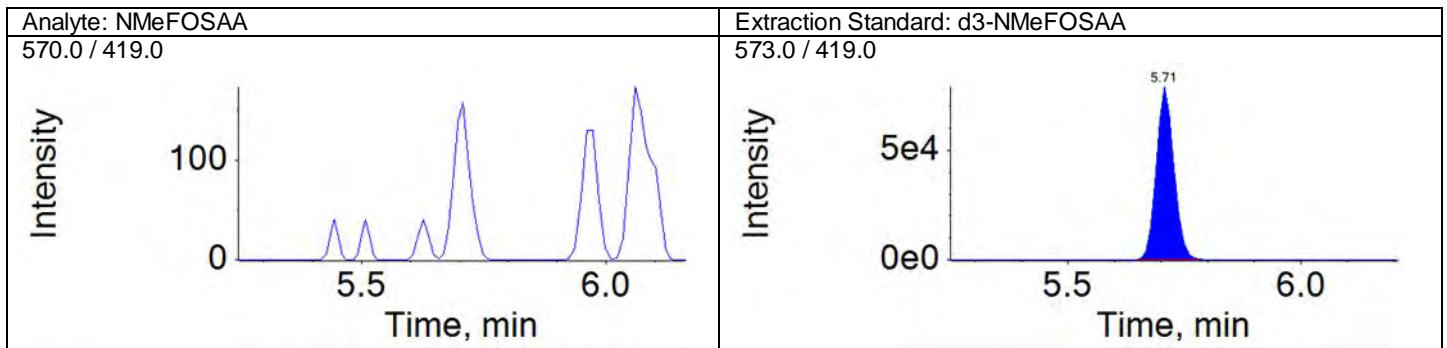
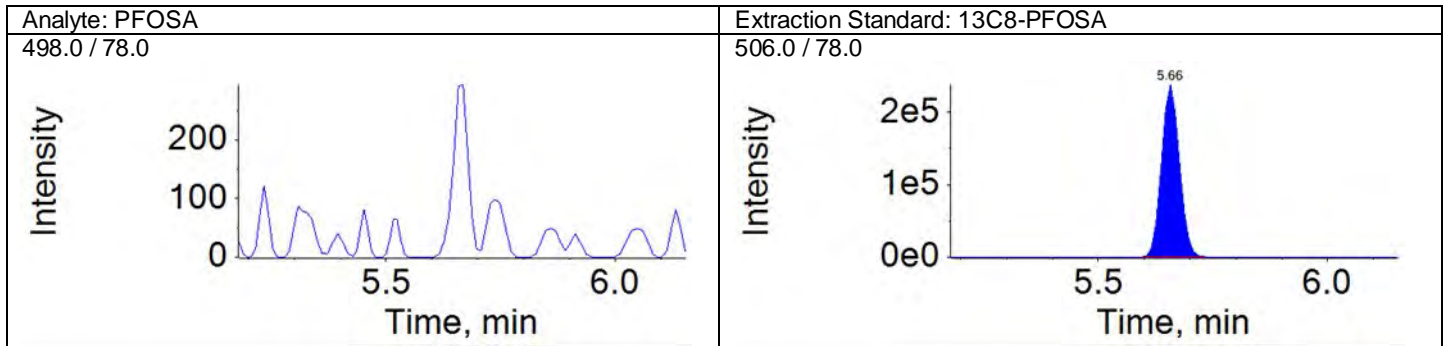
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



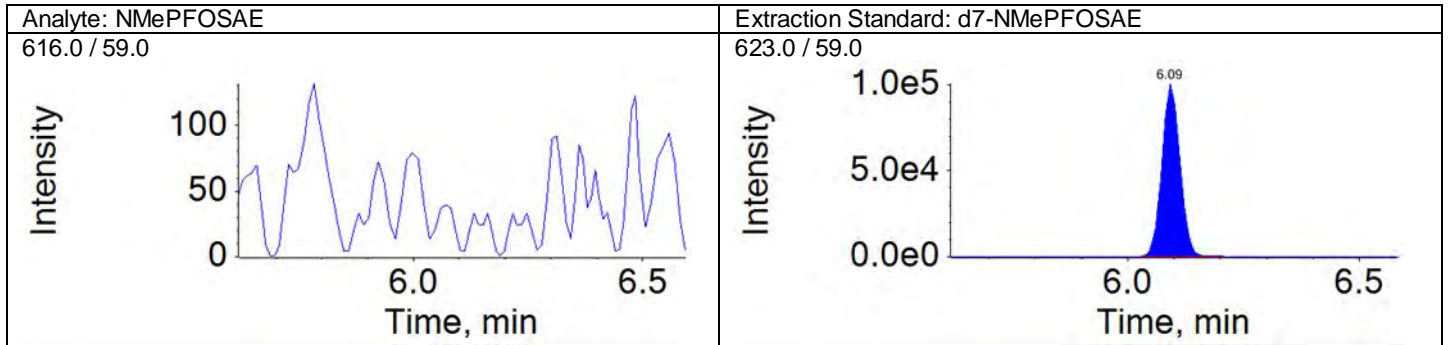
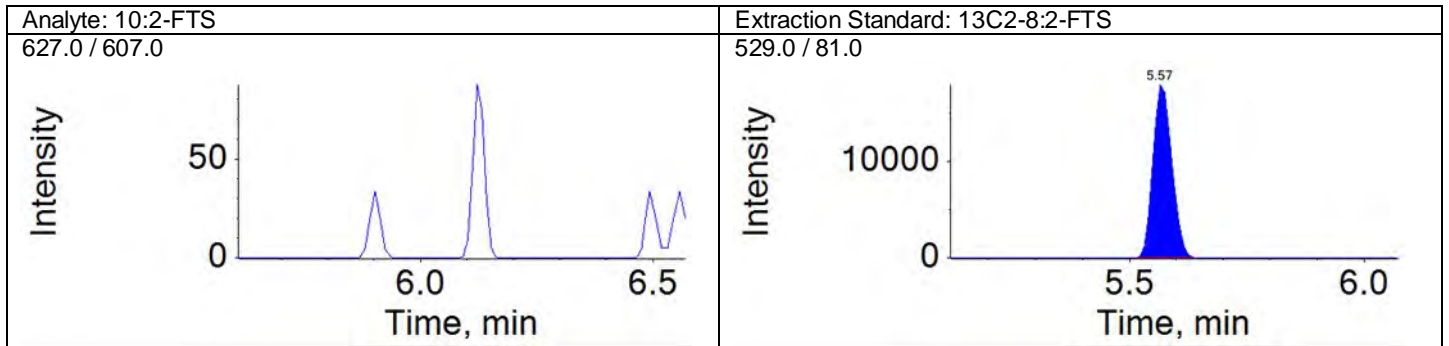
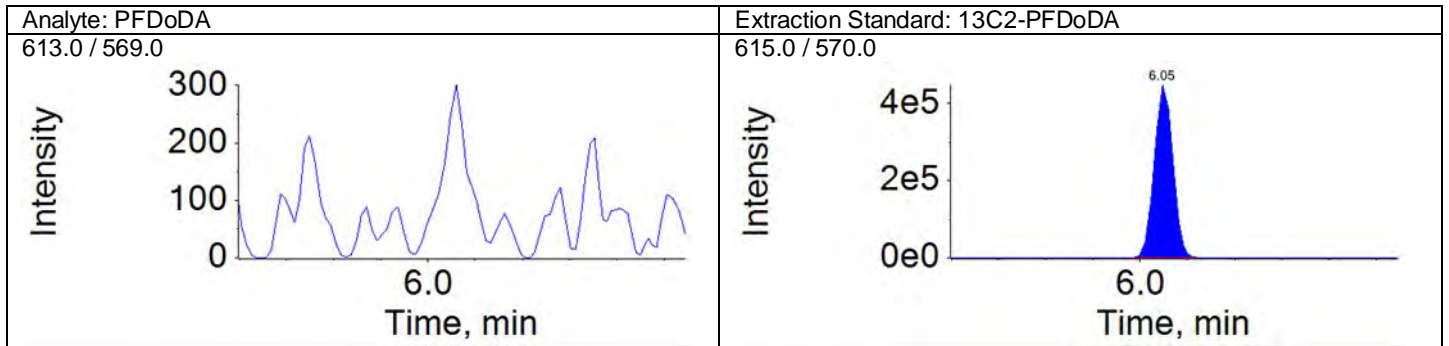
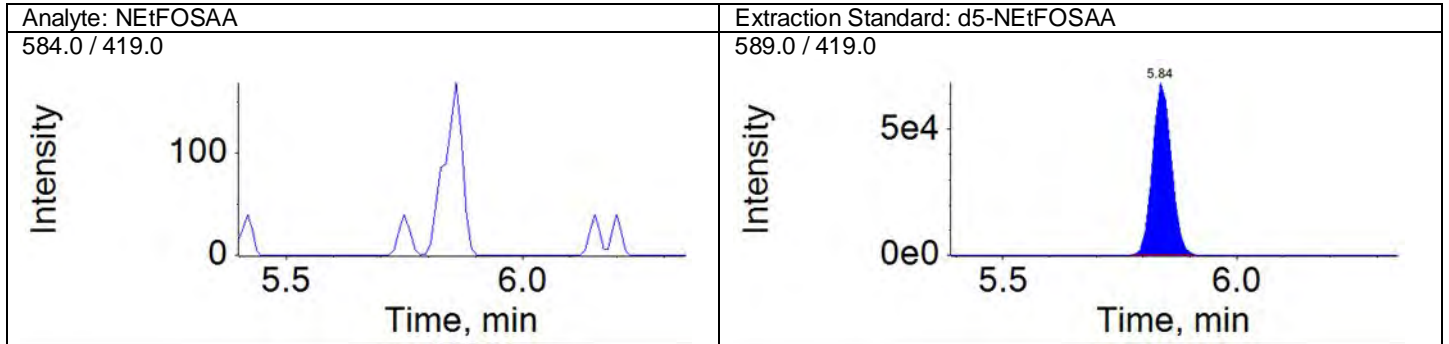
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



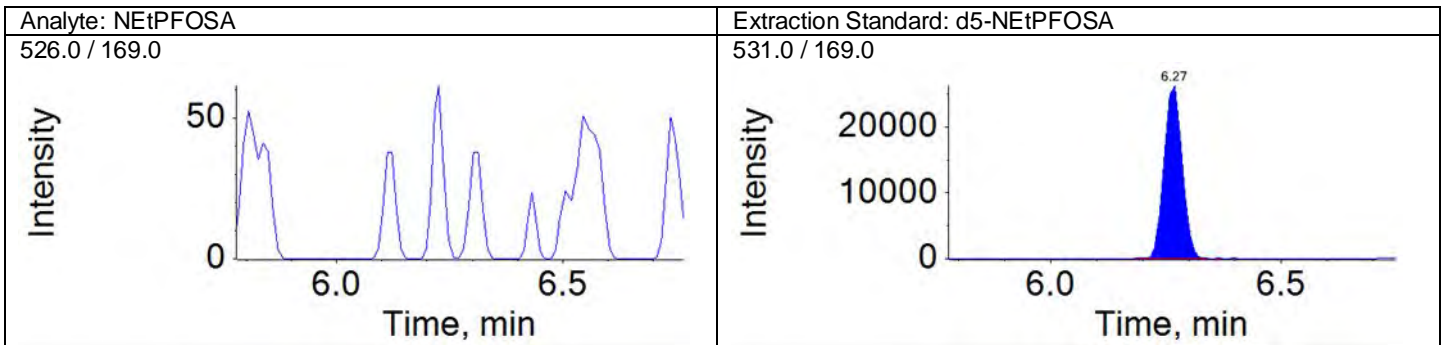
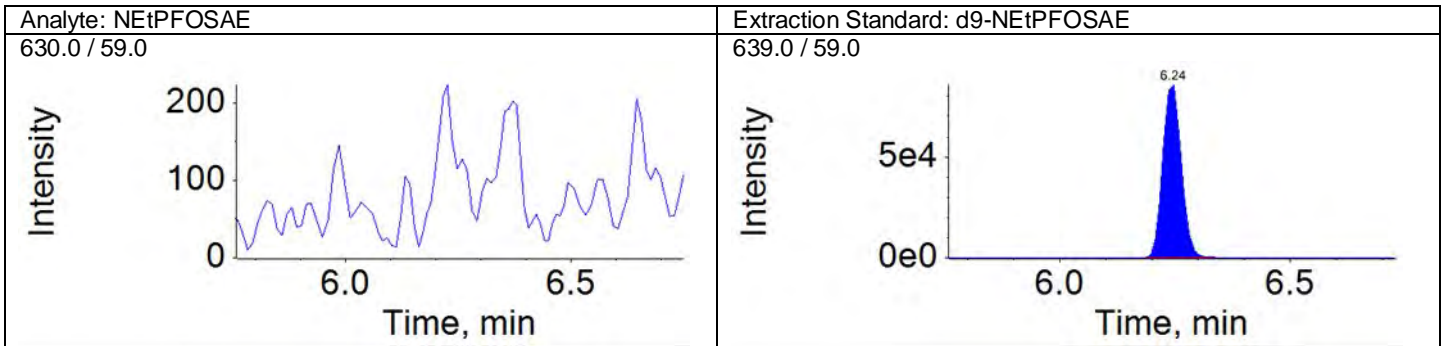
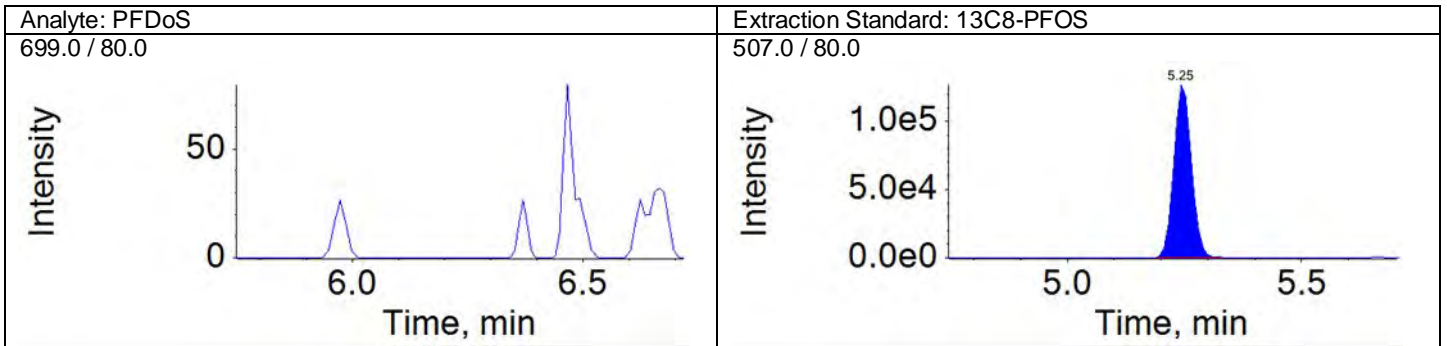
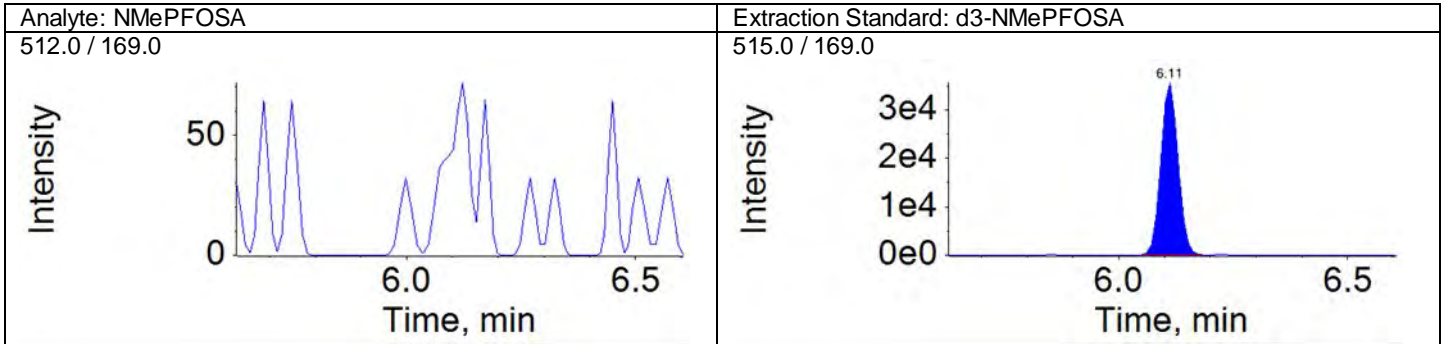
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

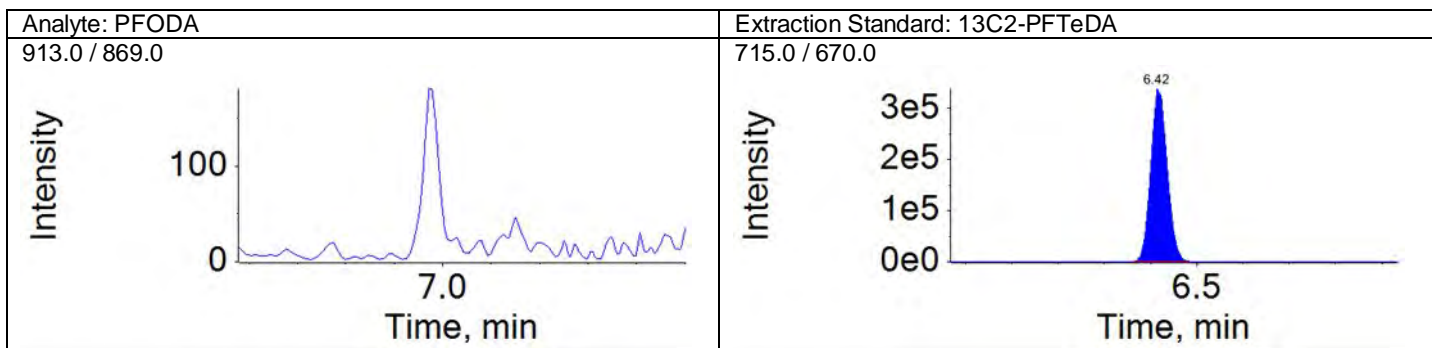
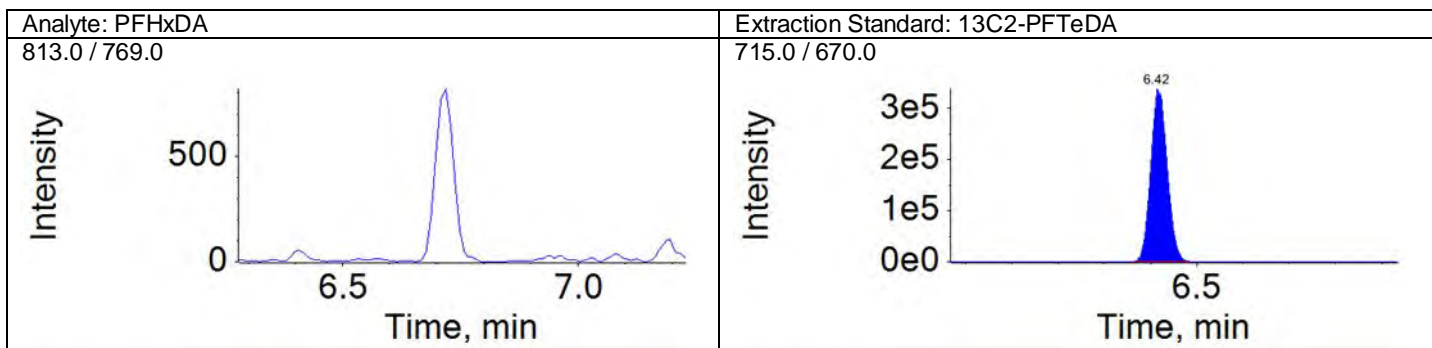
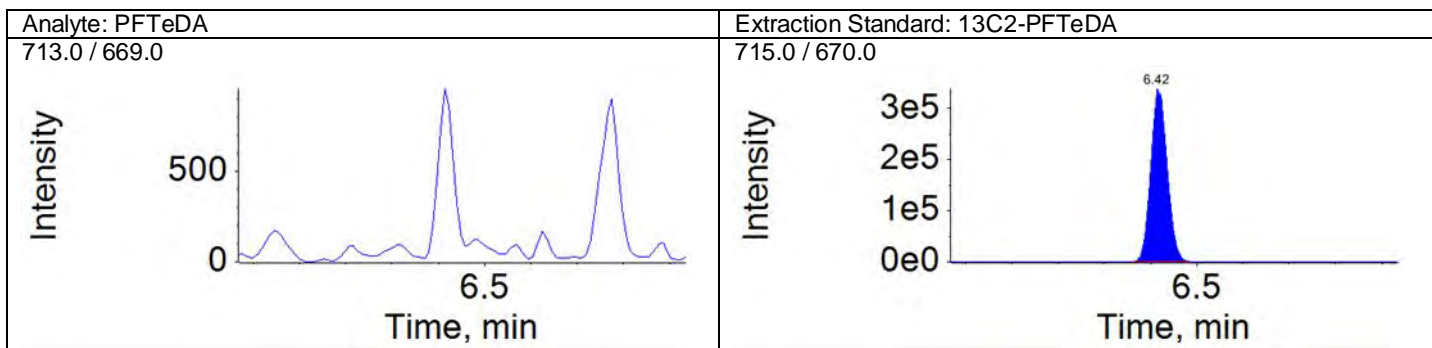
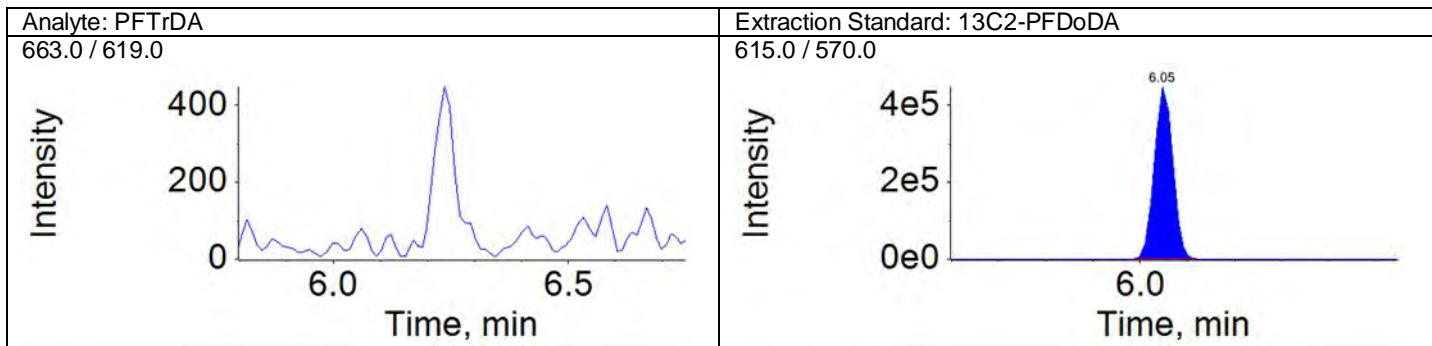
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

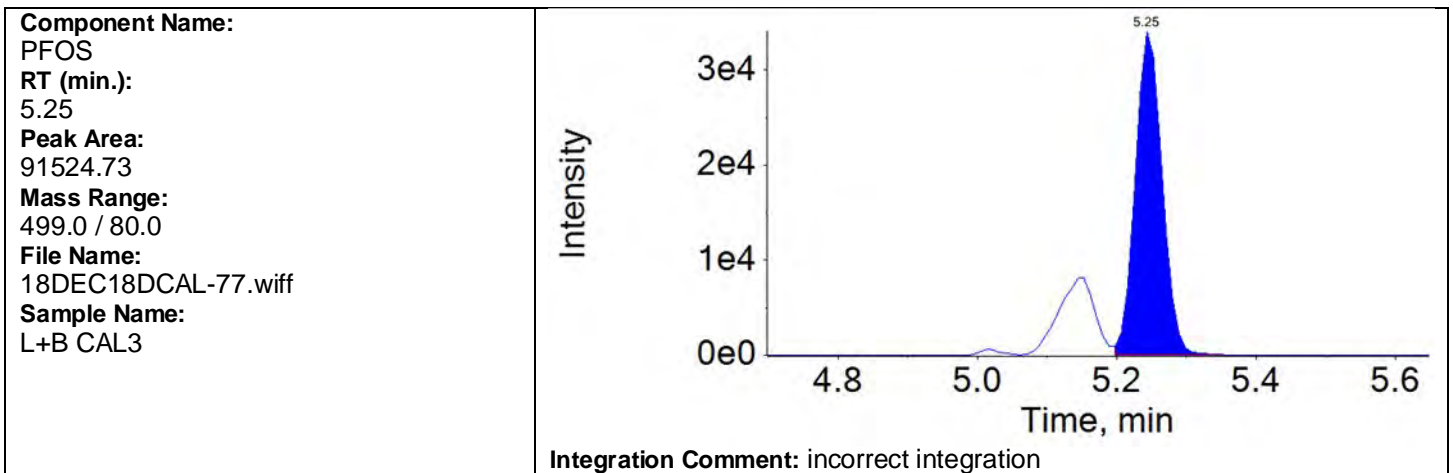
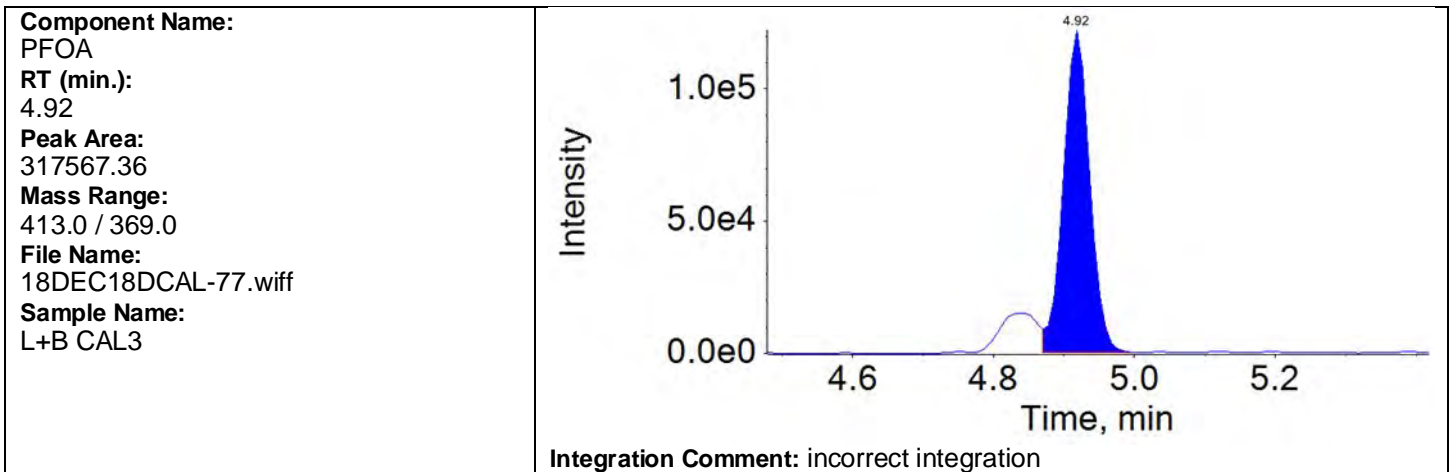
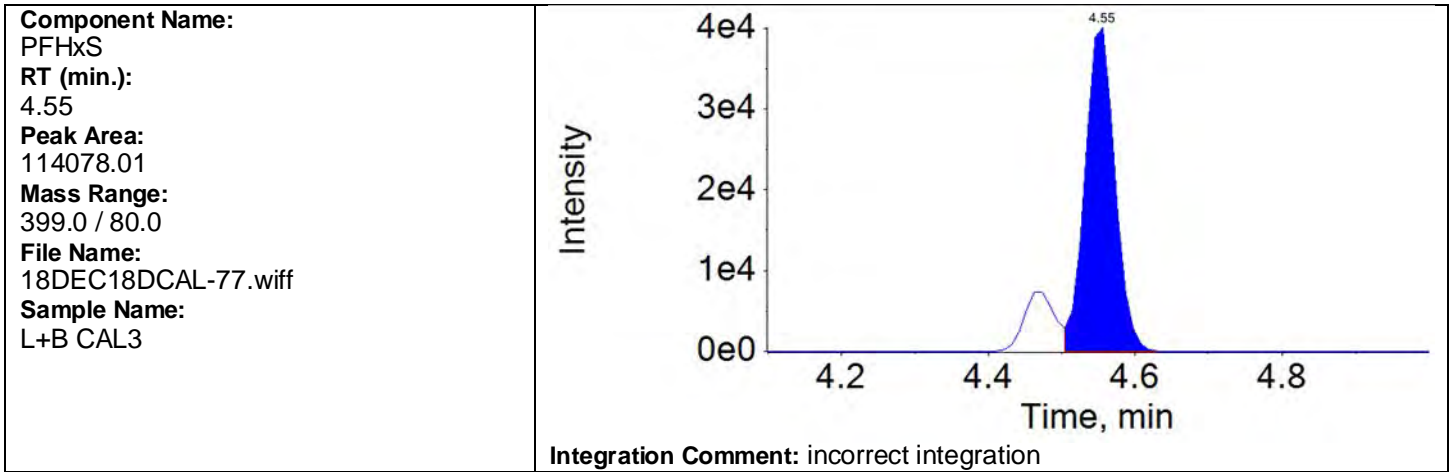
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Acquisition Method: 18AUG13\_3uL.dam





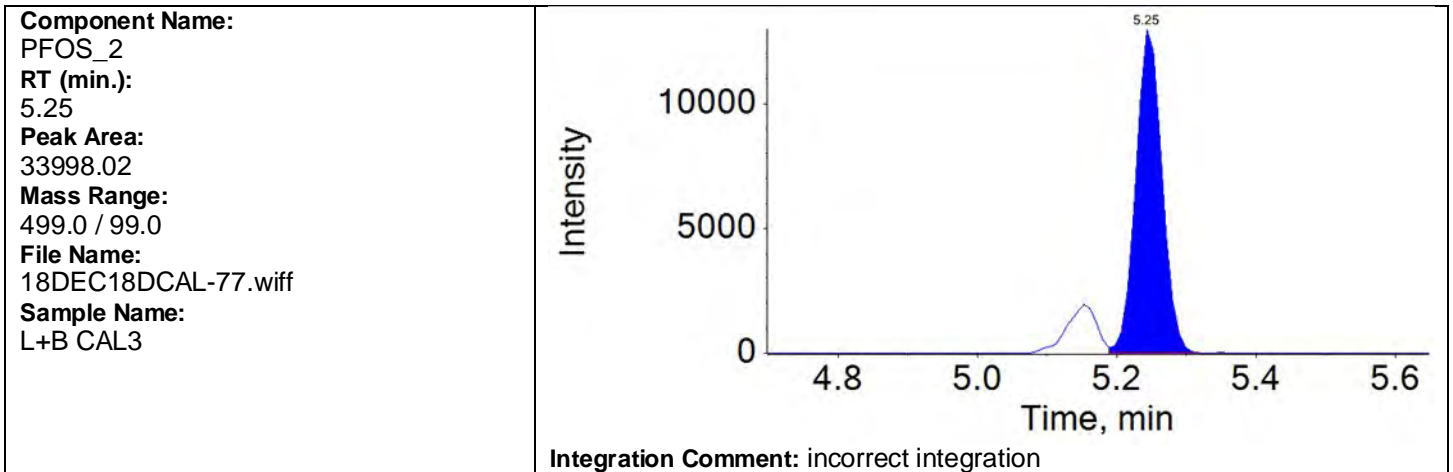
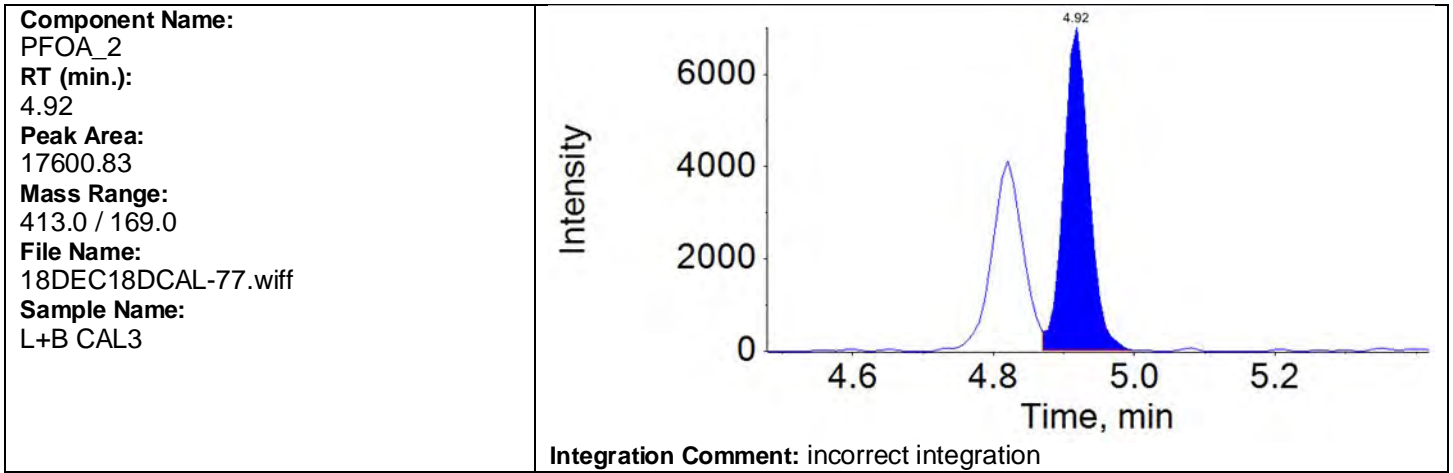
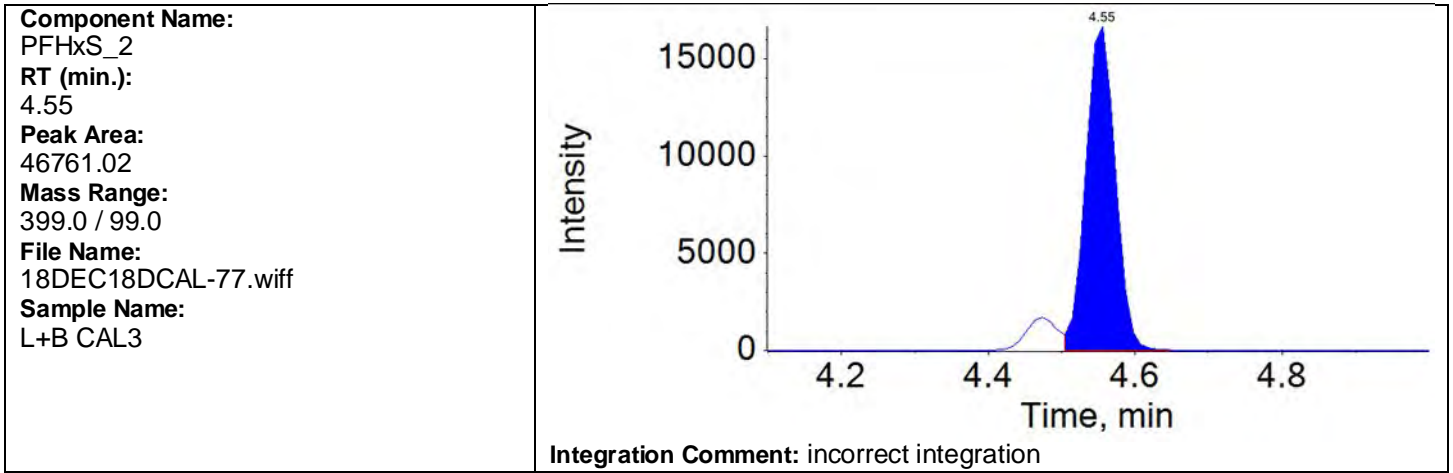
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Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

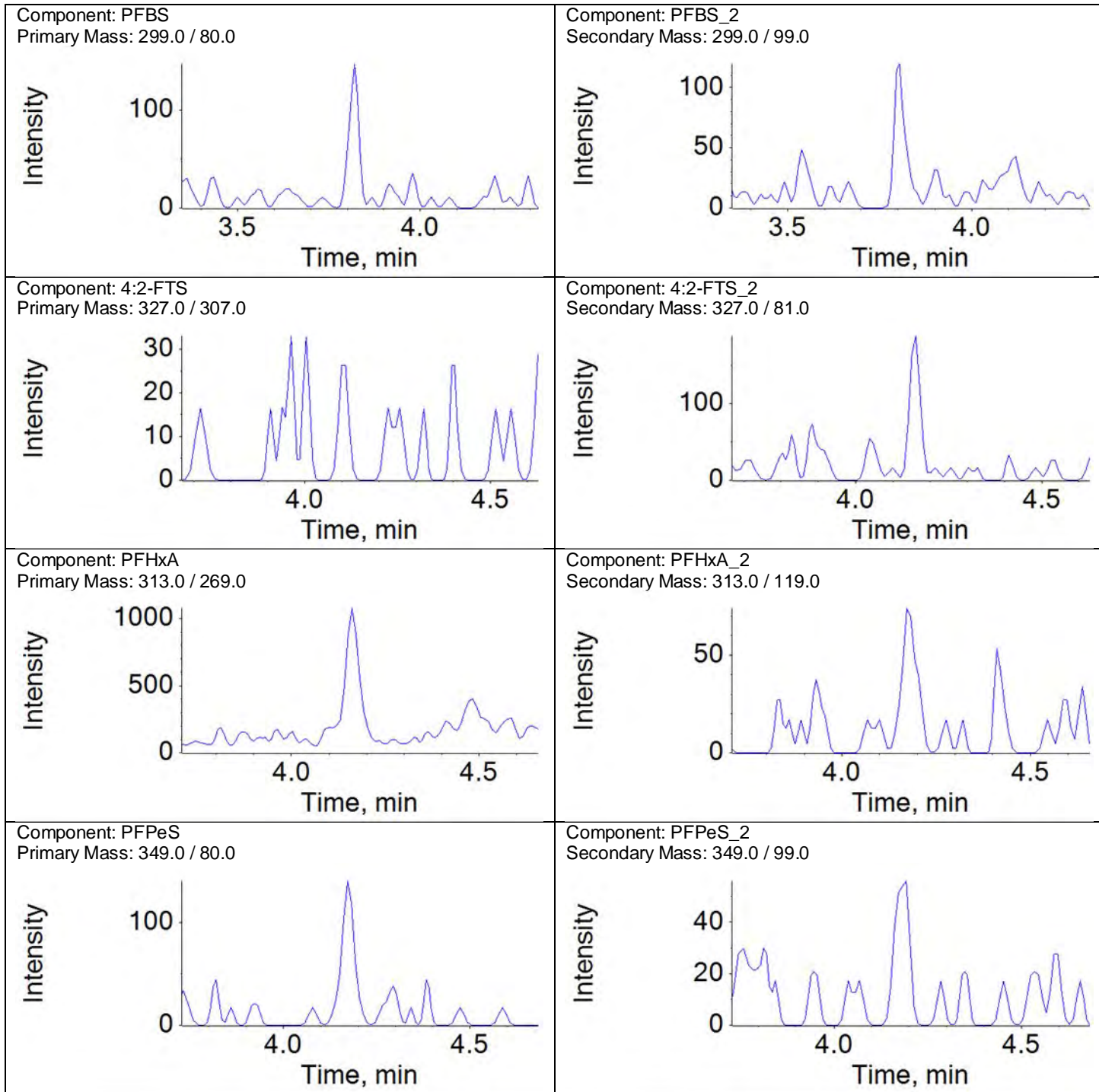
Ion Ratio Report

Sample Name: L+B CAL3

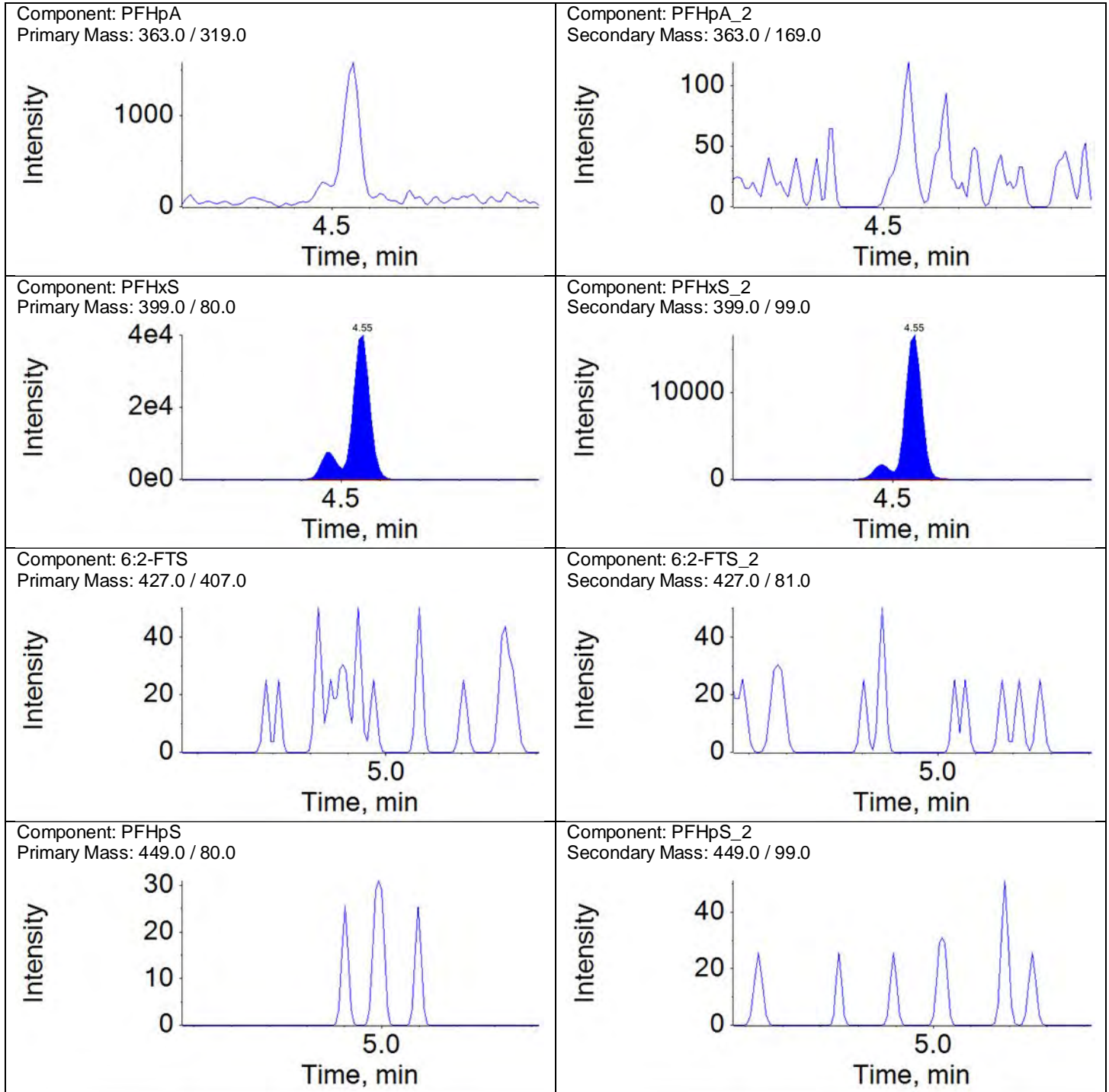
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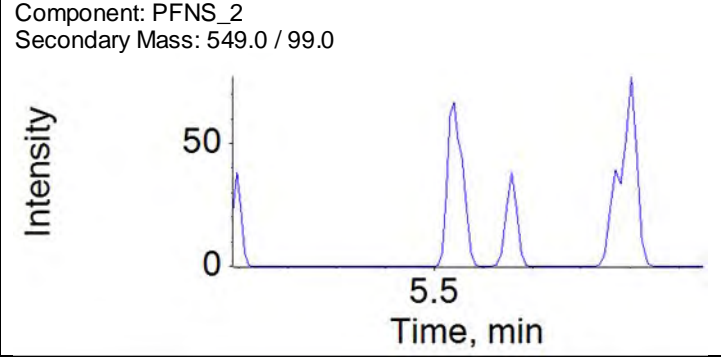
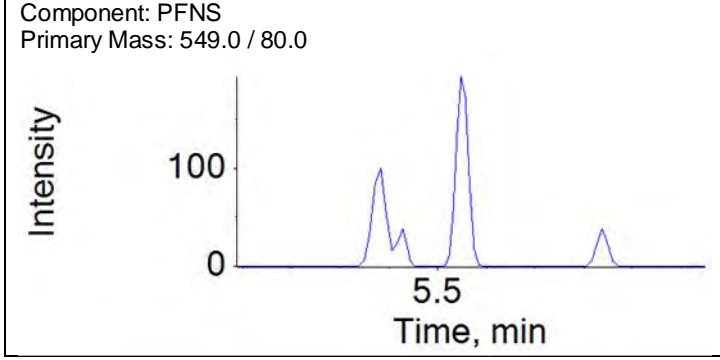
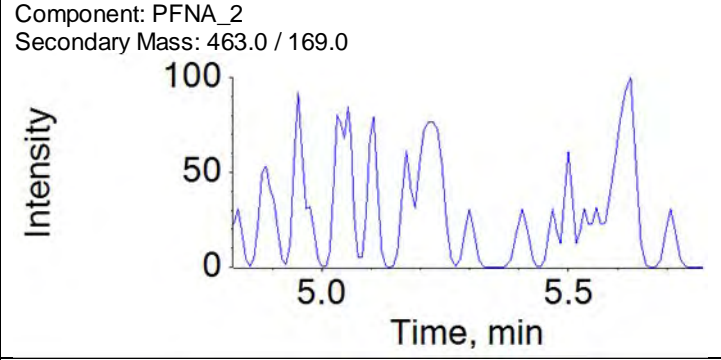
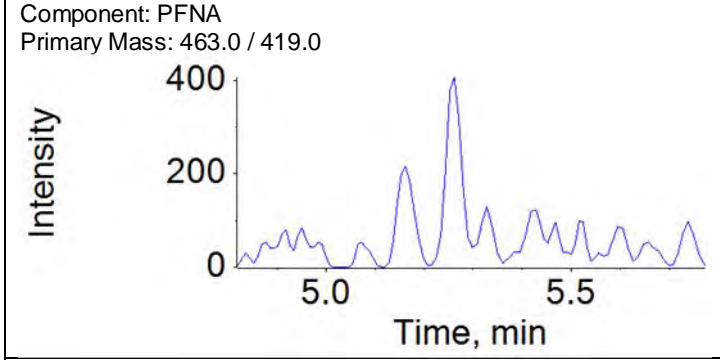
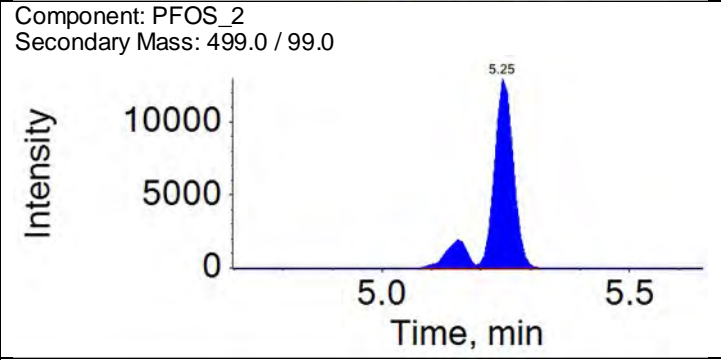
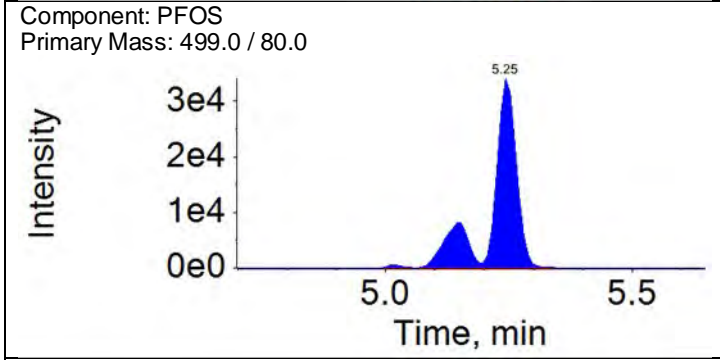
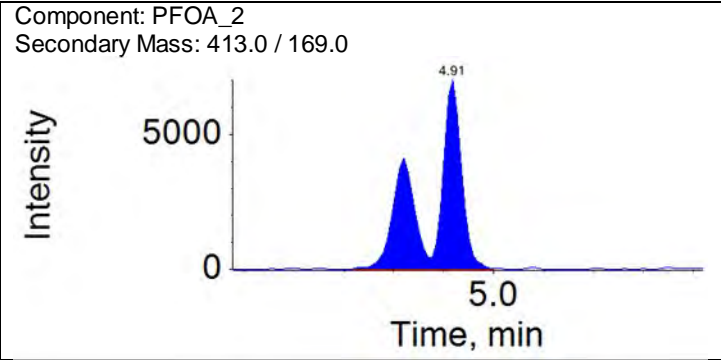
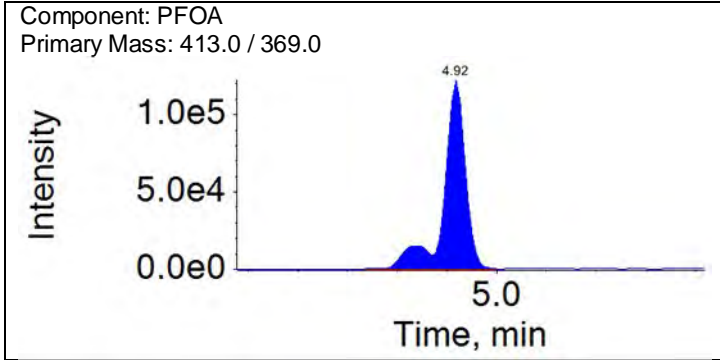
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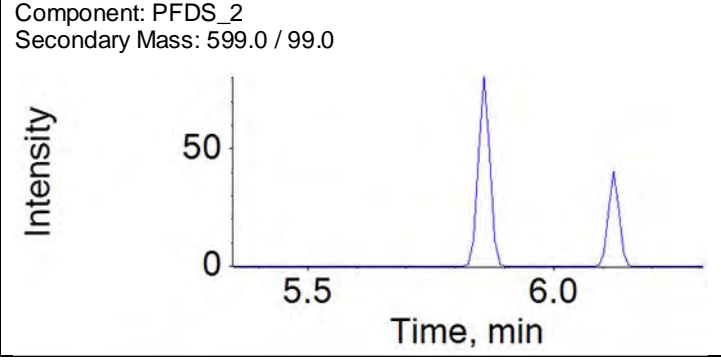
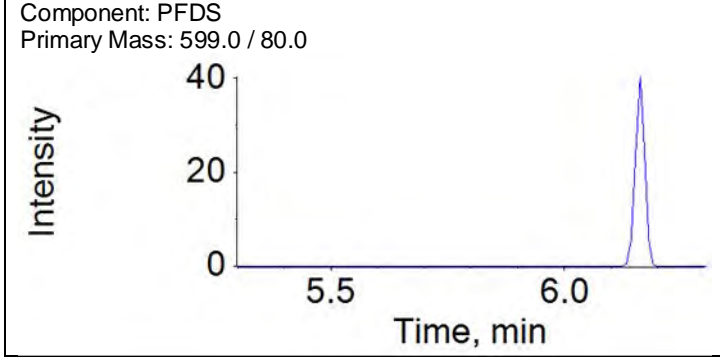
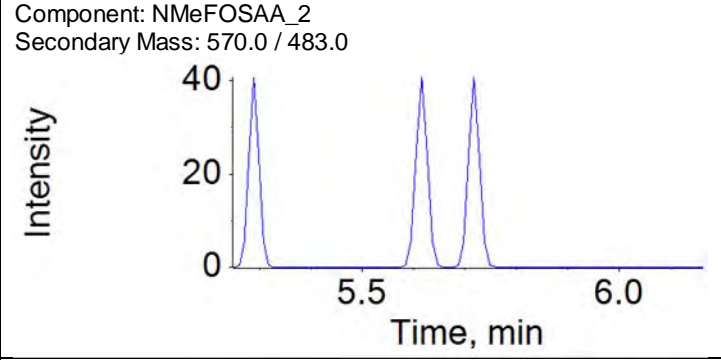
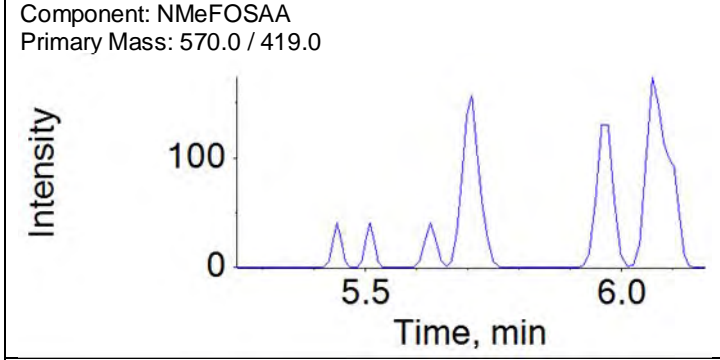
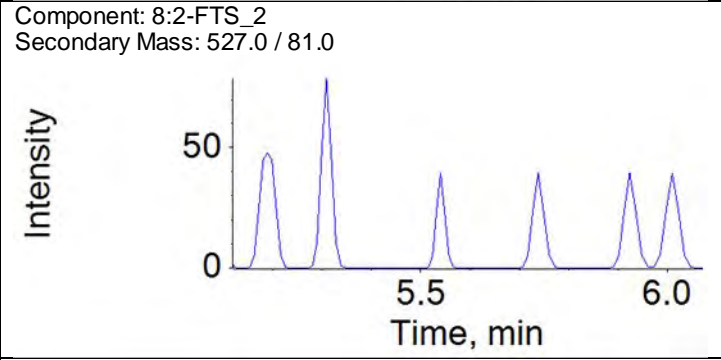
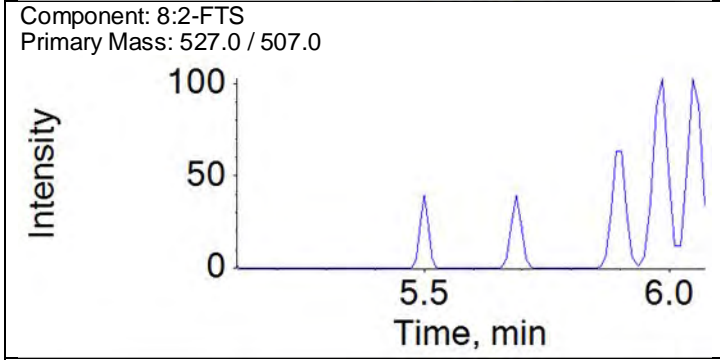
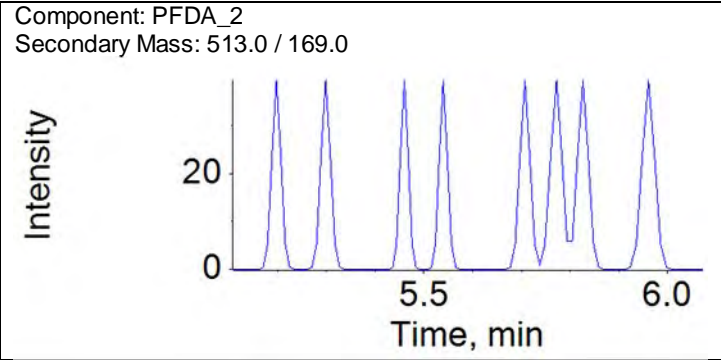
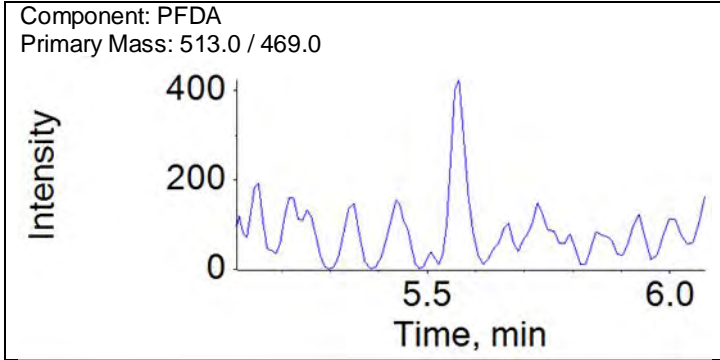
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	1.0000	N/A			
PFBS_2	N/A	N/A	N/A	A	0.3686	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	0.6123	N/A		50	
PFHxA	N/A	N/A	N/A	A	1.0000	N/A			
PFHxA_2	N/A	N/A	N/A	A	0.0115	N/A		50	
PFPeS	N/A	N/A	N/A	A	1.0000	N/A			
PFPeS_2	N/A	N/A	N/A	A	0.5256	N/A		50	
PFHpA	N/A	N/A	N/A	A	1.0000	N/A			
PFHpA_2	N/A	N/A	N/A	A	0.0547	N/A		50	
PFHxS	4.55	1.00	135519.08	M	1.0000	1.0000			
PFHxS_2	4.55	1.00	51738.87	M	0.3359	0.3818	14	50	
6:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	0.6344	N/A		50	
PFHpS	N/A	N/A	N/A	A	1.0000	N/A			
PFHpS_2	N/A	N/A	N/A	A	0.4110	N/A		50	
PFOA	4.92	1.00	376989.77	M	1.0000	1.0000			
PFOA_2	4.91	1.00	30425.35	M	0.0590	0.0807	37	50	
PFOS	5.25	1.00	122501.93	M	1.0000	1.0000			
PFOS_2	5.25	1.00	39785.16	M	0.2980	0.3248	9	50	
PFNA	N/A	N/A	N/A	A	1.0000	N/A			
PFNA_2	N/A	N/A	N/A	A	0.0214	N/A		50	
PFNS	N/A	N/A	N/A	A	1.0000	N/A			
PFNS_2	N/A	N/A	N/A	A	0.4608	N/A		50	
PFDA	N/A	N/A	N/A	A	1.0000	N/A			
PFDA_2	N/A	N/A	N/A	A	0.0064	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	0.5879	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	1.0000	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	0.2625	N/A		50	
PFDS	N/A	N/A	N/A	A	1.0000	N/A			
PFDS_2	N/A	N/A	N/A	A	0.4962	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0035	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	1.0000	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	0.6883	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0134	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	1.0000	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	0.7018	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0093	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0058	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
PFOA_2	N/A	N/A	N/A	A	0.0656	N/A		50	
PFOA	N/A	N/A	N/A	A	1.0000	N/A			
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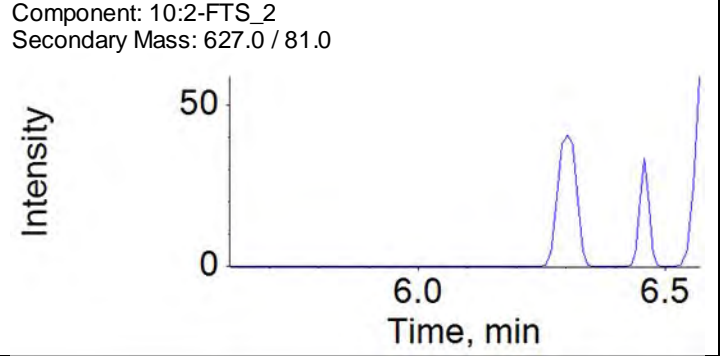
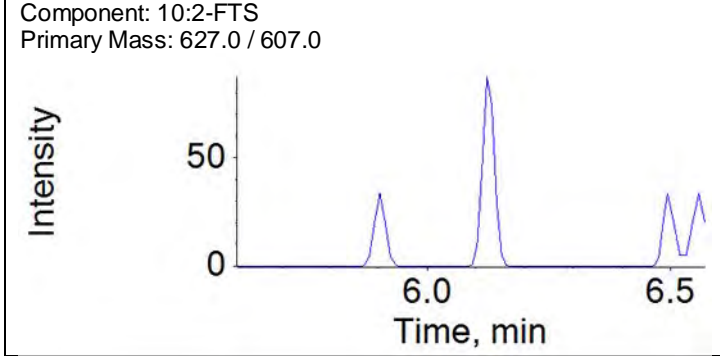
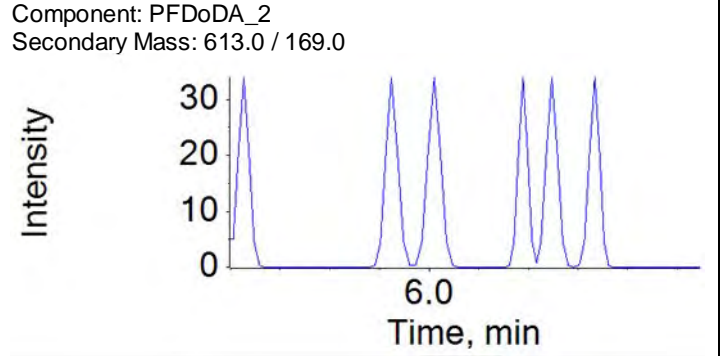
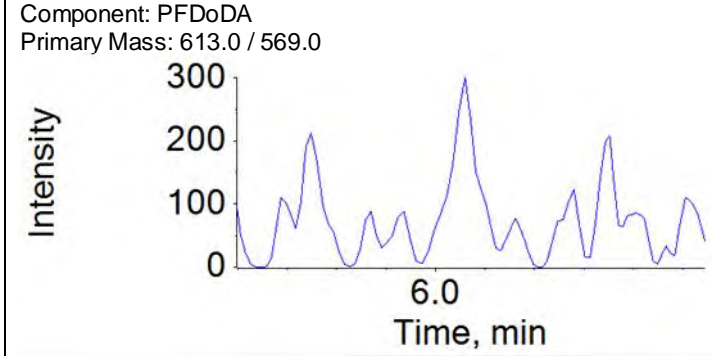
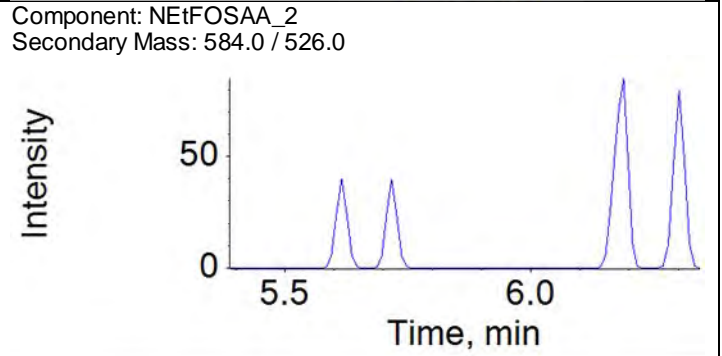
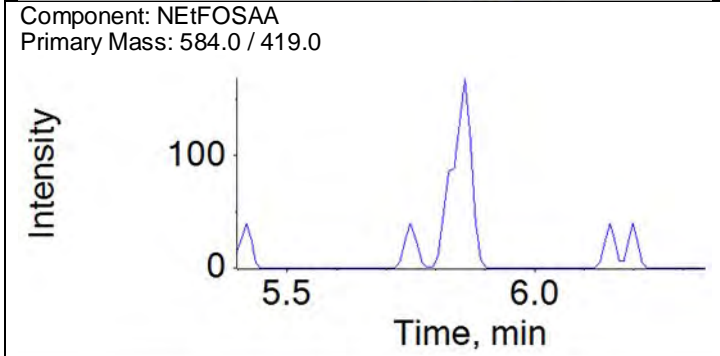
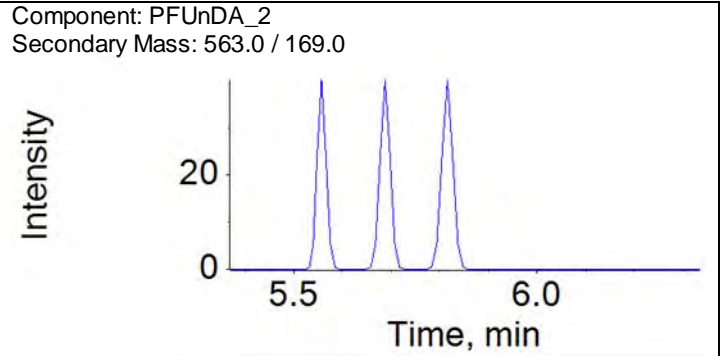
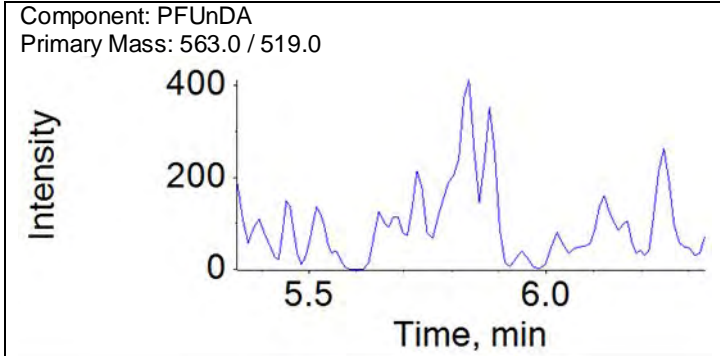




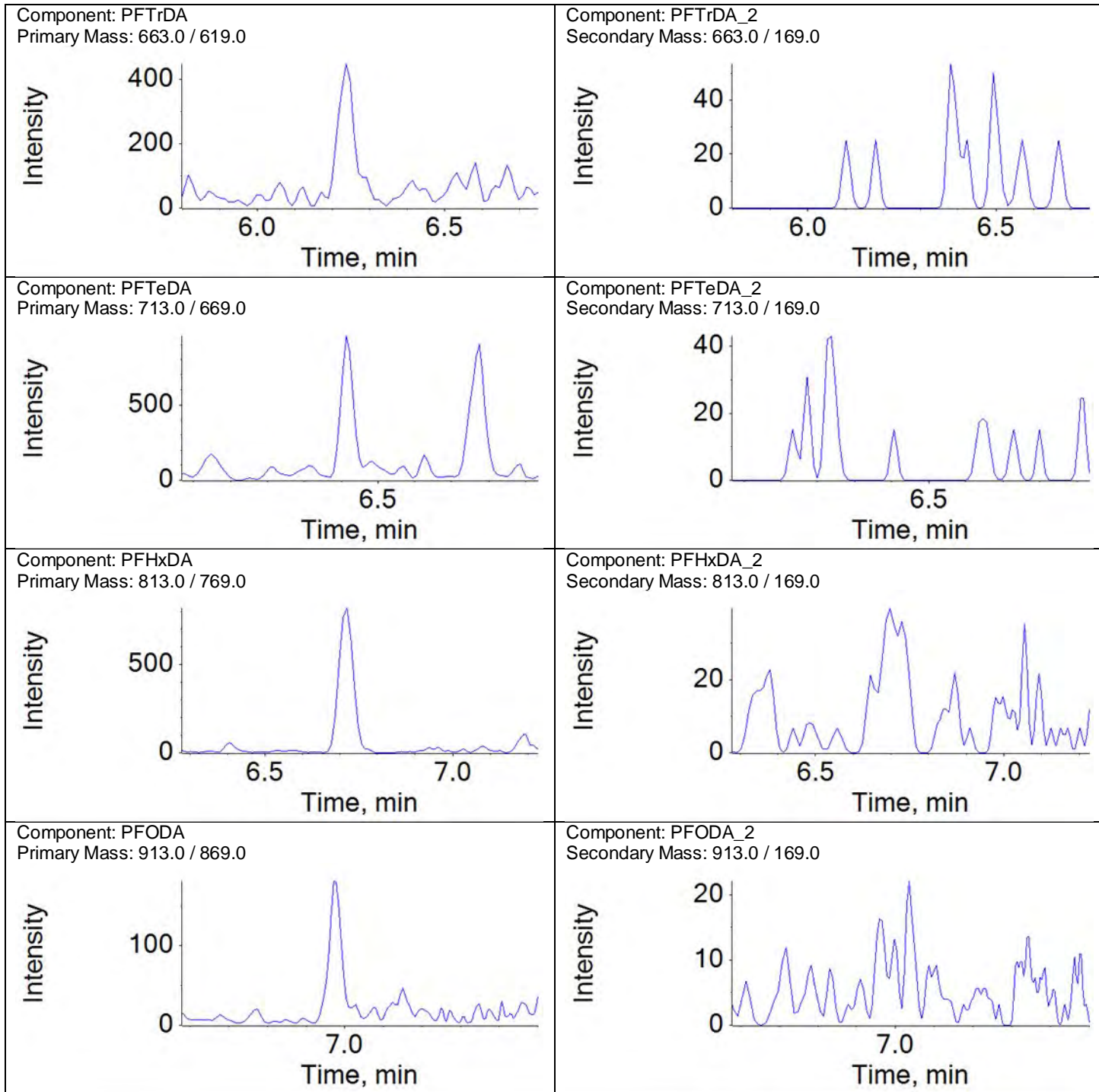












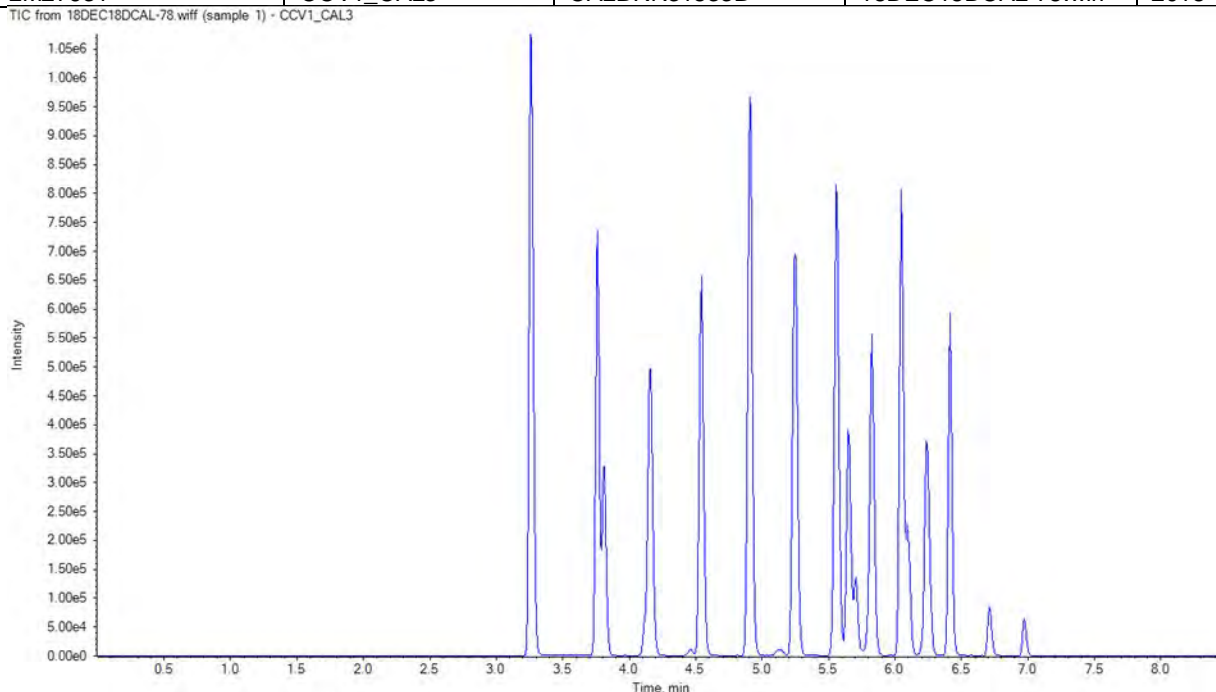


Continuing Calibration Verification

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_CAL3	CALBRN31833B	18DEC18DCAL-78.wiff	2018-12-19T01:05:05



Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	931673.3	941251.6	-1	50	
13C2-PFOA	5.0	517839.6	485595.3	7	50	
13C4-PFOS	4.8	300541.8	292182.6	3	50	
13C2-PFDA	5.0	461995.4	467216.0	-1	50	

**Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL      Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_CAL3	CALBRN31833B	18DEC18DCAL-78.wiff	2018-12-19T01:05:05

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	428384.1	10	13C4-PFBA	1039696.3	5.0	0.412	3.26	1.000	2.000	2.188	9	30	
PFPeA	421063.6	11	13C5-PFPeA	999967.7	5.0	0.421	3.76	1.000	2.000	2.174	9	30	
PFBS	174296.1	10	13C3-PFBS	430239.4	4.7	0.405	3.81	1.000	1.770	2.000	13	30	
4:2-FTS	49087.0	11	13C2-4:2-FTS	59909.8	4.7	0.819	4.12	1.000	1.870	2.150	15	30	
PFHxA	388326.7	11	13C5-PFHxA	703753.3	5.0	0.552	4.16	1.000	2.000	2.273	14	30	
PFPeS	88563.6	11	13C3-PFBS	430239.4	4.7	0.206	4.18	1.100	1.880	2.096	11	30	
PFHpA	411871.6	11	13C4-PFHpA	593302.4	5.0	0.694	4.54	1.000	2.000	2.302	15	30	
PFHxS	127273.3	19	13C3-PFHxS	322553.5	4.7	0.395	4.54	1.000	1.820	1.919	5	30	
6:2-FTS	45983.7	11	13C2-6:2-FTS	51959.8	4.8	0.885	4.90	1.000	1.900	2.203	16	30	
PFHpS	125155.7	10	13C3-PFHxS	322553.5	4.7	0.388	4.90	1.080	1.900	2.053	8	30	
PFOA	414271.2	11	13C8-PFOA	987186.8	5.0	0.420	4.91	1.000	2.000	2.223	11	30	
PFOS	141737.2	22	13C8-PFOS	313926.9	4.8	0.451	5.24	1.000	1.850	1.977	7	30	
PFNA	426327.6	11	13C9-PFNA	664731.6	5.0	0.641	5.25	1.000	2.000	2.549	27	30	
PFNS	99495.9	11	13C8-PFOS	313926.9	4.8	0.317	5.54	1.060	1.920	2.015	5	30	
PFDA	355807.1	11	13C6-PFDA	850023.2	5.0	0.419	5.56	1.000	2.000	2.162	8	30	
8:2-FTS	46733.6	11	13C2-8:2-FTS	43126.4	4.8	1.084	5.56	1.000	1.920	2.181	14	30	
PFOSA	251903.3	11	13C8-PFOSA	638165.8	5.0	0.395	5.65	1.000	2.000	1.974	-1	30	
NMeFOSAA	75350.0	18	d3-NMeFOSAA	210058.3	5.0	0.359	5.70	1.000	2.000	2.229	11	30	
PFDS	79355.3	11	13C8-PFOS	313926.9	4.8	0.253	5.80	1.110	1.930	2.075	8	30	
PFUnDA	375287.3	11	13C7-PFUnDA	567462.3	5.0	0.661	5.82	1.000	2.000	2.190	10	30	
NEtFOSAA	69397.2	21	d5-NEtFOSAA	166030.6	5.0	0.418	5.84	1.000	2.000	2.130	7	30	
PFDODA	512002.2	11	13C2-PFDODA	1097714.7	5.0	0.466	6.05	1.000	2.000	2.350	17	30	
10:2-FTS	47194.6	11	13C2-8:2-FTS	43126.4	4.8	1.094	6.06	1.090	1.930	2.229	15	30	
NMePFOSAE	130231.6	11	d7-NMePFOSAE	261869.5	5.0	0.497	6.10	1.000	2.000	2.194	10	30	
NMePFOSA	36162.8	11	d3-NMePFOSA	81106.2	5.0	0.446	6.11	1.000	2.000	2.251	13	30	
PFDoS	43520.5	10	13C8-PFOS	313926.9	4.8	0.139	6.21	1.190	1.940	2.100	8	30	
NEtPFOSAE	148630.5	11	d9-NEtPFOSAE	229490.8	5.0	0.648	6.25	1.000	2.000	2.116	6	30	
NEtPFOSA	31752.1	11	d5-NEtPFOSA	67222.0	5.0	0.472	6.27	1.000	2.000	2.209	10	30	
PFTTrDA	472947.8	11	13C2-PFDODA	1097714.7	5.0	0.431	6.24	1.030	2.000	2.210	11	30	
PFTeDA	330447.9	10	13C2-PFTeDA	825659.0	5.0	0.400	6.41	1.000	2.000	2.155	8	30	
PFHxDA	169410.4	11	13C2-PFTeDA	825659.0	5.0	0.205	6.71	1.050	2.000	2.253	13	30	
PFOA	127433.6	10	13C2-PFTeDA	825659.0	5.0	0.154	6.97	1.090	2.000	2.218	11	30	

**Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV1_CAL3	Data File:	18DEC18DCAL-78.wiff
Sample ID:	CALBRN31833B	Acquis Date:	2018-12-19T01:05:05
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	5	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC18DCAL
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MM26157
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	931673.3	941251.6	-1	50	
13C2-PFOA	5.0	517839.6	485595.3	7	50	
13C4-PFOS	4.8	300541.8	292182.6	3	50	
13C2-PFDA	5.0	461995.4	467216.0	-1	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1039696.3	13C3-PFBA	931673.3	1.116	5.000	4.942	99	70-130	
E13C5-PFPeA	999967.7	13C3-PFBA	931673.3	1.073	5.000	5.005	100	70-130	
E13C3-PFBS	430239.4	13C3-PFBA	931673.3	0.462	4.650	4.497	97	70-130	
E13C2-4:2-FTS	59909.8	13C2-PFOA	517839.6	0.116	4.670	4.394	94	70-130	
E13C5-PFHxA	703753.3	13C2-PFOA	517839.6	1.359	5.000	4.861	97	70-130	
E13C3-PFHxS	322553.5	13C2-PFOA	517839.6	0.623	4.730	4.713	100	70-130	
E13C4-PFHpA	593302.4	13C2-PFOA	517839.6	1.146	5.000	4.949	99	70-130	
E13C2-6:2-FTS	51959.8	13C2-PFOA	517839.6	0.100	4.750	5.048	106	70-130	
E13C8-PFOA	987186.8	13C2-PFOA	517839.6	1.906	5.000	5.242	105	70-130	
E13C8-PFOS	313926.9	13C4-PFOS	300541.8	1.045	4.780	4.671	98	70-130	
E13C9-PFNA	664731.6	13C4-PFOS	300541.8	2.212	5.000	5.032	101	70-130	
E13C6-PFDA	850023.2	13C2-PFDA	461995.4	1.840	5.000	5.241	105	70-130	
E13C2-8:2-FTS	43126.4	13C2-PFDA	461995.4	0.093	4.790	4.811	100	70-130	
E13C8-PFOA	638165.8	13C2-PFDA	461995.4	1.381	5.000	5.379	108	70-130	
Ed3-NMeFOSAA	210058.3	13C2-PFDA	461995.4	0.455	5.000	5.002	100	70-130	
E13C7-PFUnDA	567462.3	13C2-PFDA	461995.4	1.228	5.000	5.141	103	70-130	
Ed5-NEtFOSAA	166030.6	13C2-PFDA	461995.4	0.359	5.000	5.294	106	70-130	
E13C2-PFDoDA	1097714.7	13C2-PFDA	461995.4	2.376	5.000	4.999	100	70-130	
Ed7-NMePFOSAE	261869.5	13C2-PFDA	461995.4	0.567	5.000	5.065	101	70-130	
Ed3-NMePFOSA	81106.2	13C2-PFDA	461995.4	0.176	5.000	4.824	96	70-130	
Ed9-NEtPFOSAE	229490.8	13C2-PFDA	461995.4	0.497	5.000	5.079	102	70-130	
Ed5-NEtPFOSA	67222.0	13C2-PFDA	461995.4	0.146	5.000	5.047	101	70-130	
E13C2-PFTeDA	825659.0	13C2-PFDA	461995.4	1.787	5.000	5.036	101	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam

Analyte Quantitation Peak Table

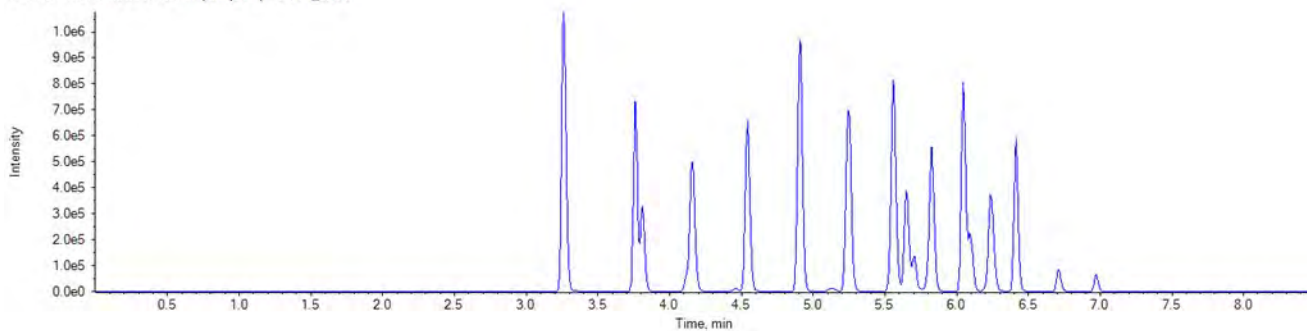
Sample Name: CCV1\_CAL3 Instrument Name: LM27631 File Name: 18DEC18DCAL-78.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	428384.1		A	13C4-PFBA	3.26	1039696.3	0.412	2.188
PFPeA	3.76	1.000	421063.6		A	13C5-PFPeA	3.76	999967.7	0.421	2.174
PFBS	3.81	1.000	174296.1		A	13C3-PFBS	3.81	430239.4	0.405	2.000
4:2-FTS	4.12	1.000	49087.0		A	13C2-4:2-FTS	4.12	59909.8	0.819	2.150
PFHxA	4.16	1.000	388326.7		A	13C5-PFHxA	4.16	703753.3	0.552	2.273
PFPeS	4.18	1.100	88563.6		A	13C3-PFBS	3.81	430239.4	0.206	2.096
PFHpA	4.54	1.000	411871.6		A	13C4-PFHpA	4.54	593302.4	0.694	2.302
PFHxS	4.54	1.000	127273.3		M	13C3-PFHxS	4.54	322553.5	0.395	1.919
6:2-FTS	4.90	1.000	45983.7		A	13C2-6:2-FTS	4.90	51959.8	0.885	2.203
PFHpS	4.90	1.080	125155.7		A	13C3-PFHxS	4.54	322553.5	0.388	2.053
PFOA	4.91	1.000	414271.2		A	13C8-PFOA	4.91	987186.8	0.420	2.223
PFOS	5.24	1.000	141737.2		M	13C8-PFOS	5.24	313926.9	0.451	1.977
PFNA	5.25	1.000	426327.6		A	13C9-PFNA	5.25	664731.6	0.641	2.549
PFNS	5.54	1.060	99495.9		A	13C8-PFOS	5.24	313926.9	0.317	2.015
PFDA	5.56	1.000	355807.1		A	13C6-PFDA	5.56	850023.2	0.419	2.162
8:2-FTS	5.56	1.000	46733.6		A	13C2-8:2-FTS	5.56	43126.4	1.084	2.181
PFOSA	5.65	1.000	251903.3		A	13C8-PFOSA	5.65	638165.8	0.395	1.974
NMeFOSAA	5.70	1.000	75350.0		M	d3-NMeFOSAA	5.70	210058.3	0.359	2.229
PFDS	5.80	1.110	79355.3		A	13C8-PFOS	5.24	313926.9	0.253	2.075
PUnDA	5.82	1.000	375287.3		A	13C7-PUnDA	5.83	567462.3	0.661	2.190
NEtFOSAA	5.84	1.000	69397.2		M	d5-NEtFOSAA	5.84	166030.6	0.418	2.130
PFDoDA	6.05	1.000	512002.2		A	13C2-PFDoDA	6.05	1097714.7	0.466	2.350
10:2-FTS	6.06	1.090	47194.6		A	13C2-8:2-FTS	5.56	43126.4	1.094	2.229
NMePFOSAE	6.10	1.000	130231.6		A	d7-NMePFOSAE	6.09	261869.5	0.497	2.194
NMePFOSA	6.11	1.000	36162.8		A	d3-NMePFOSA	6.11	81106.2	0.446	2.251
PFDoS	6.21	1.190	43520.5		A	13C8-PFOS	5.24	313926.9	0.139	2.100
NEtPFOSAE	6.25	1.000	148630.5		A	d9-NEtPFOSAE	6.24	229490.8	0.648	2.116
NEtPFOSA	6.27	1.000	31752.1		A	d5-NEtPFOSA	6.26	67222.0	0.472	2.209
PFTeDA	6.24	1.030	472947.8		A	13C2-PFDoDA	6.05	1097714.7	0.431	2.210
PFTeDA	6.41	1.000	330447.9		A	13C2-PFTeDA	6.41	825659.0	0.400	2.155
PFHxDA	6.71	1.050	169410.4		A	13C2-PFTeDA	6.41	825659.0	0.205	2.253
PFODA	6.97	1.090	127433.6		A	13C2-PFTeDA	6.41	825659.0	0.154	2.218

Total Ion Chromatogram

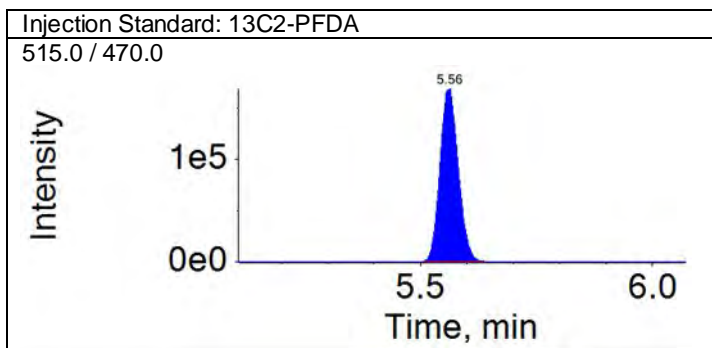
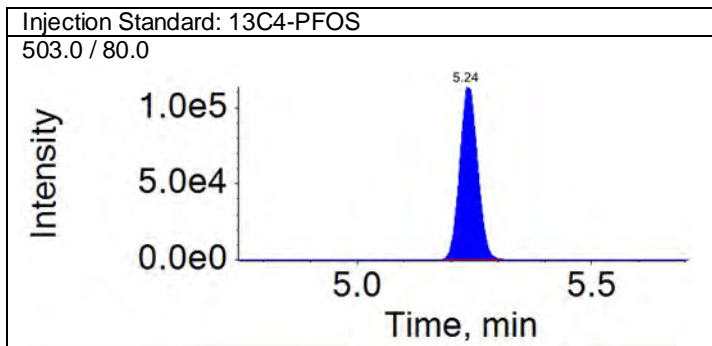
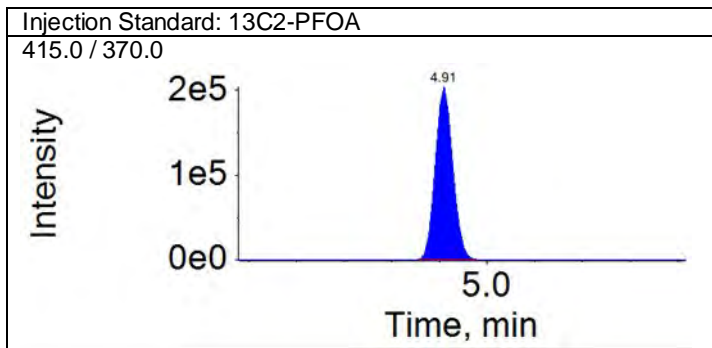
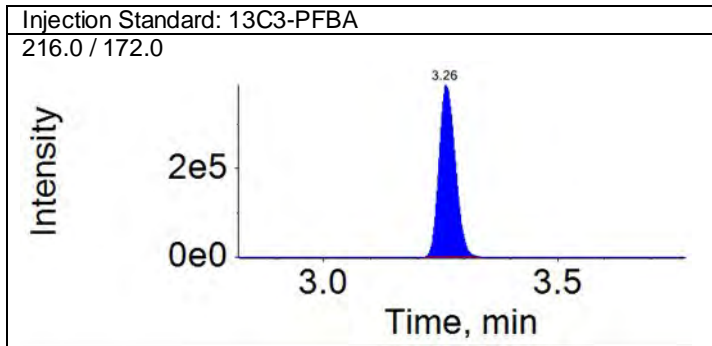
TIC from 18DEC18DCAL-78.wiff (sample 1) - CCV1\_CAL3





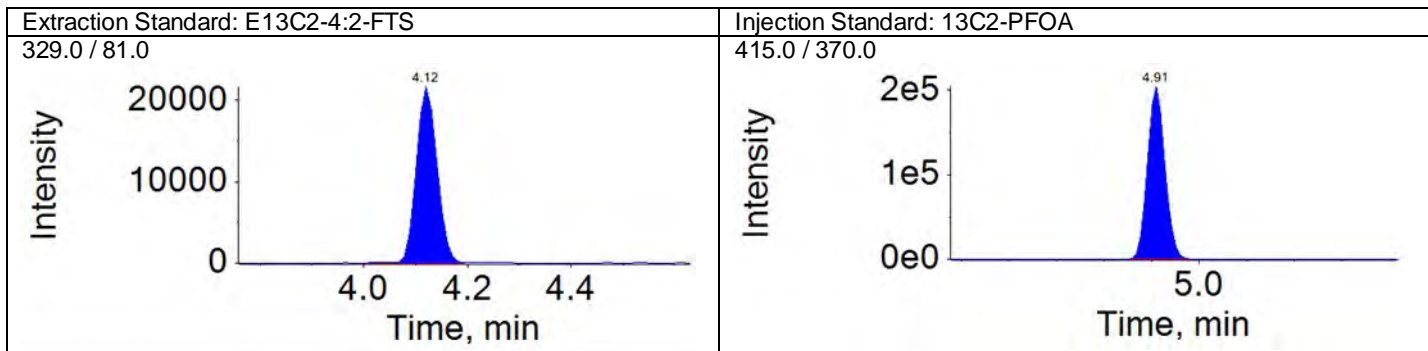
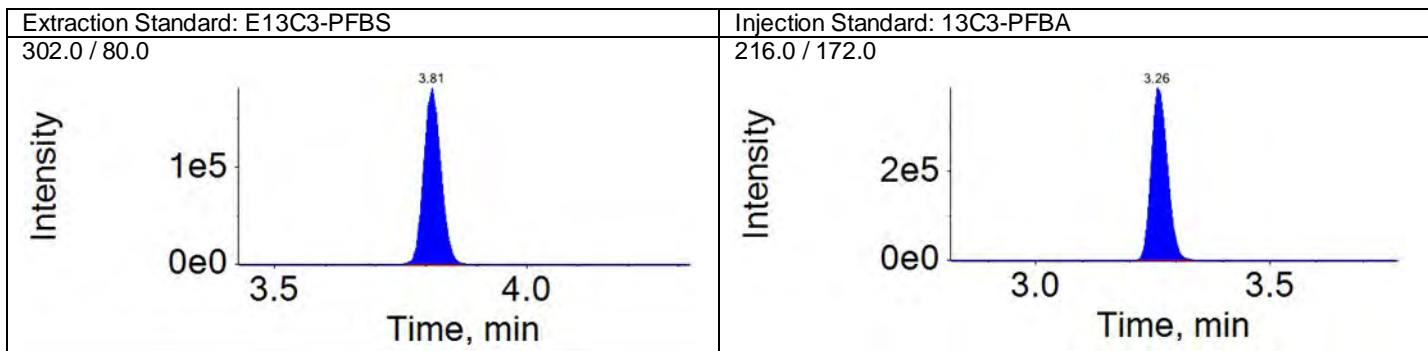
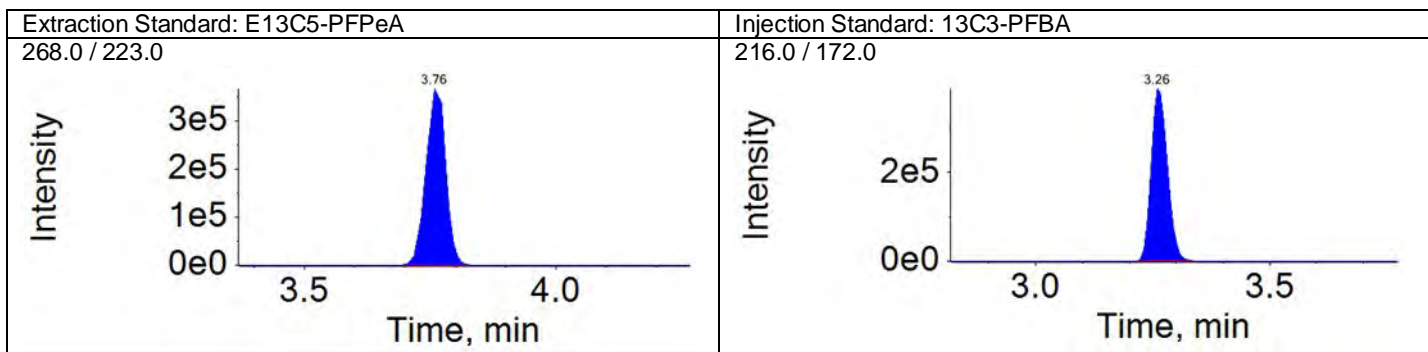
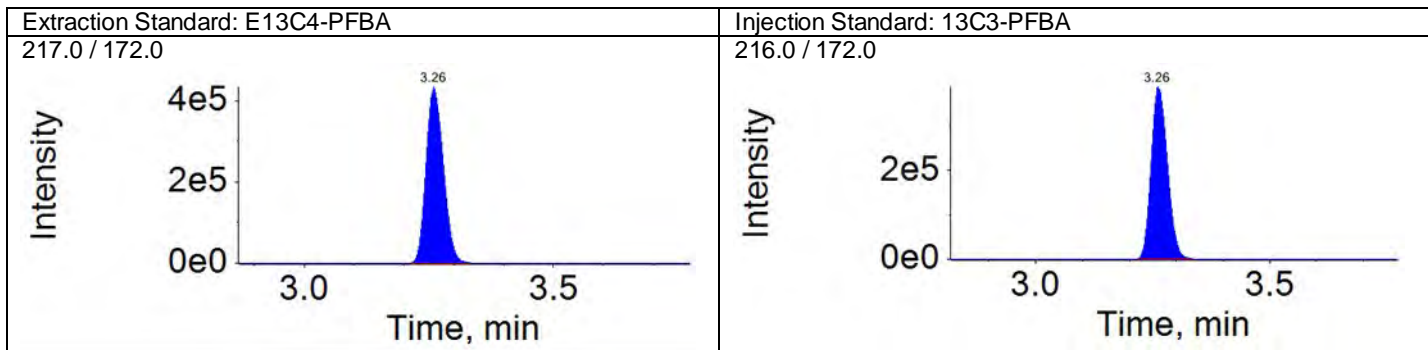
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



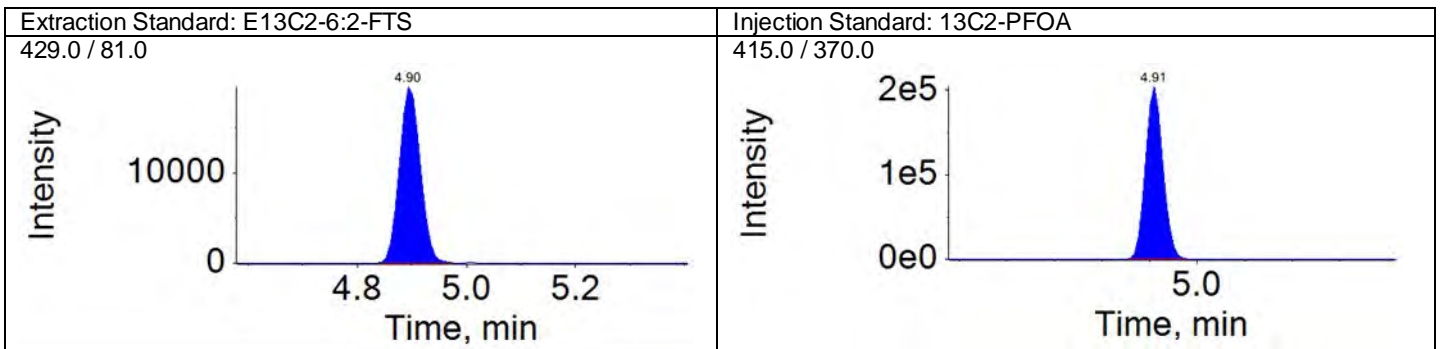
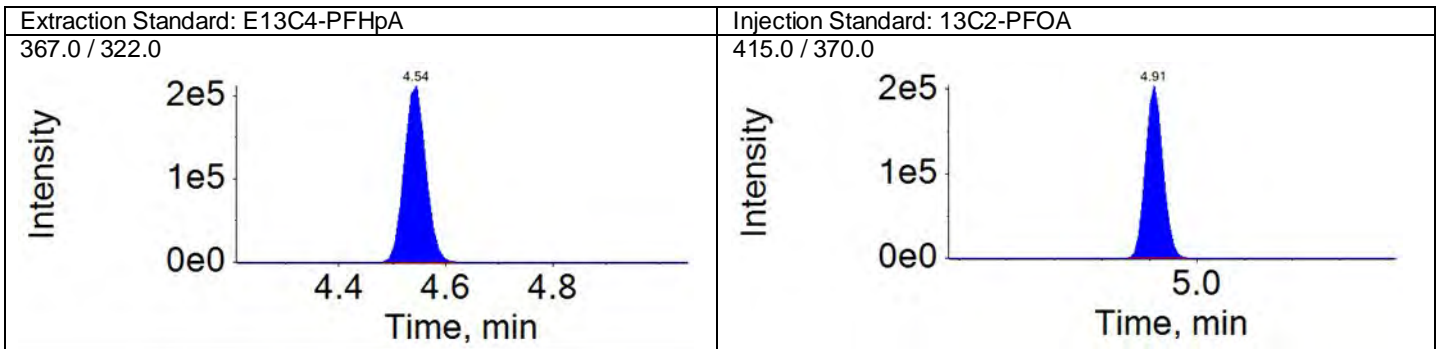
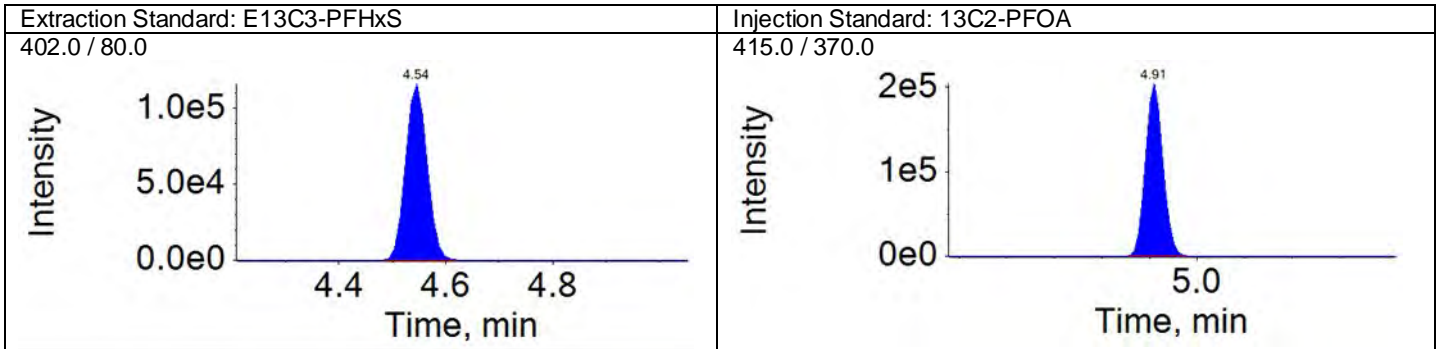
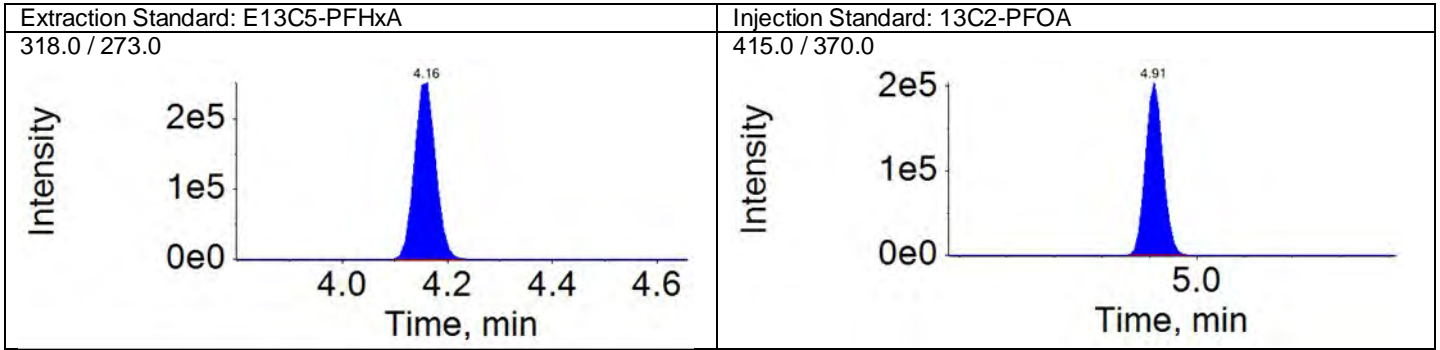
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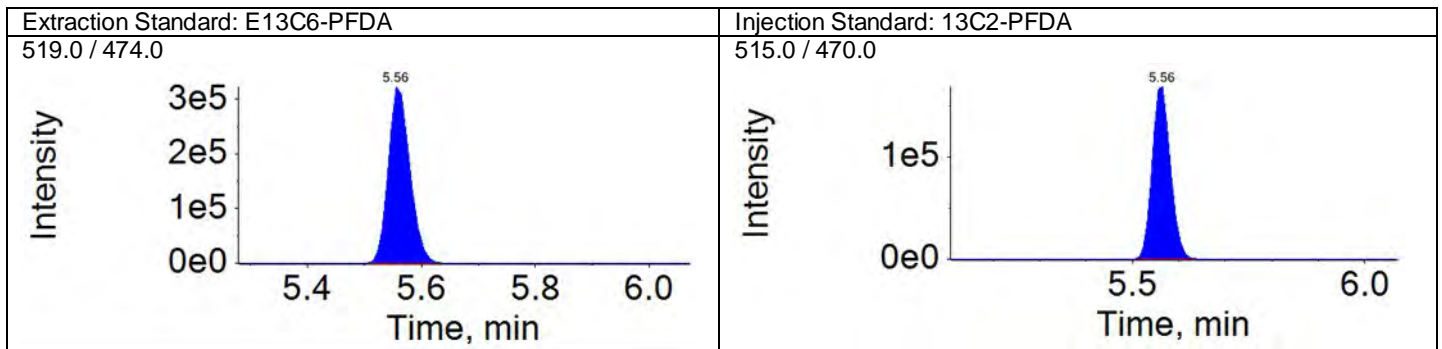
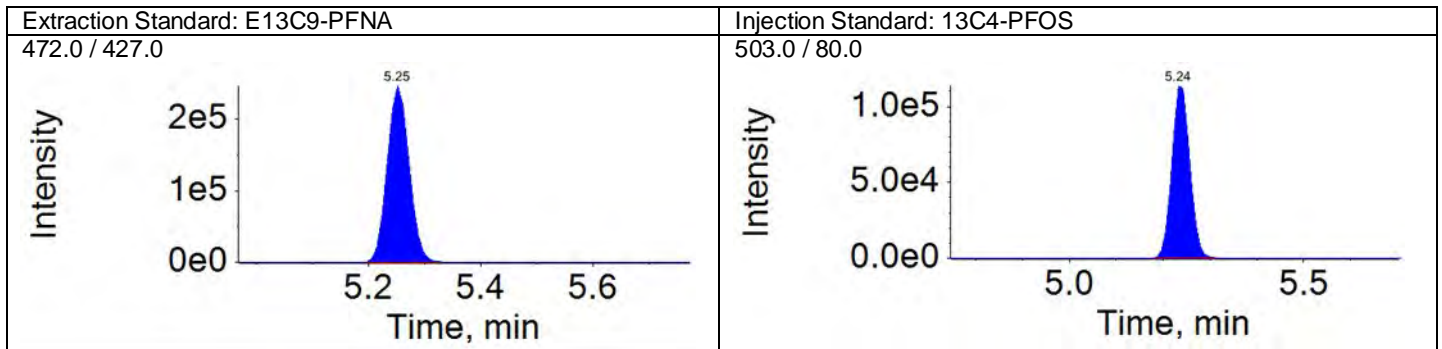
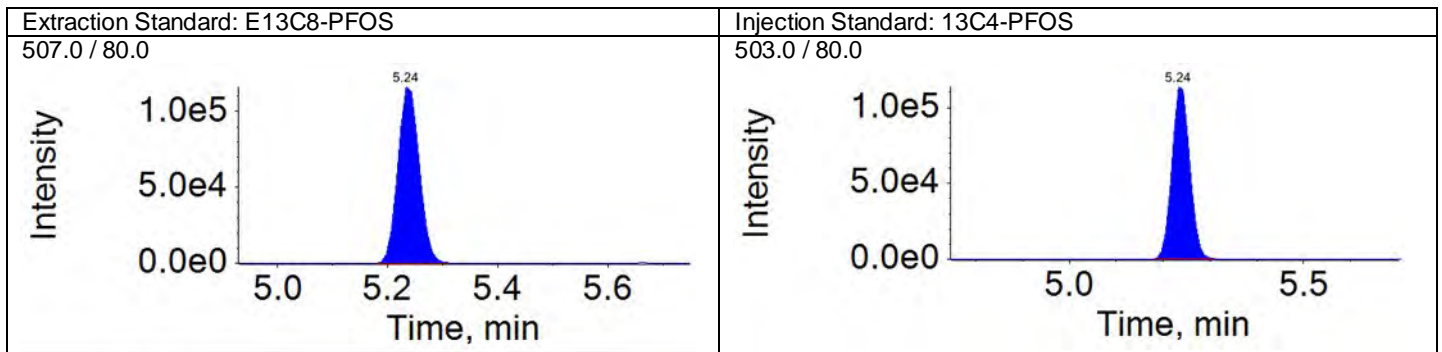
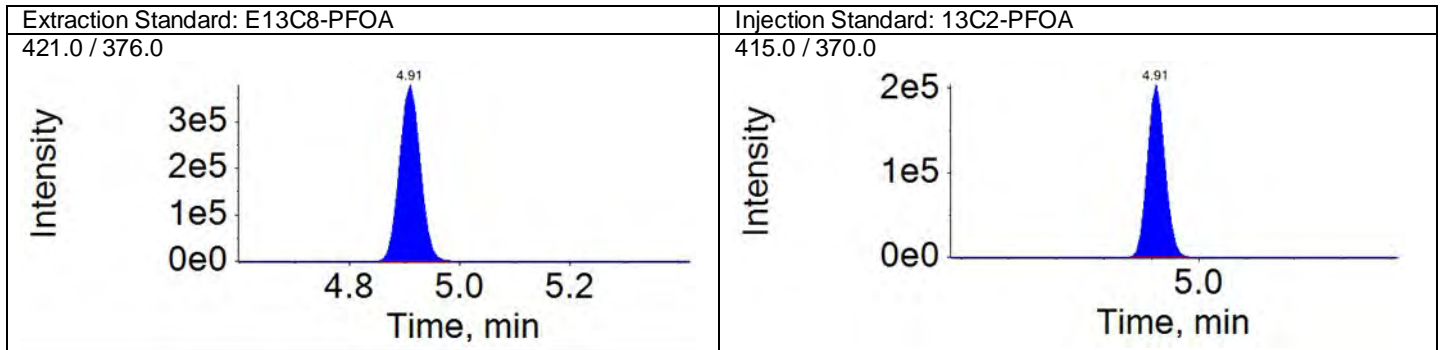
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

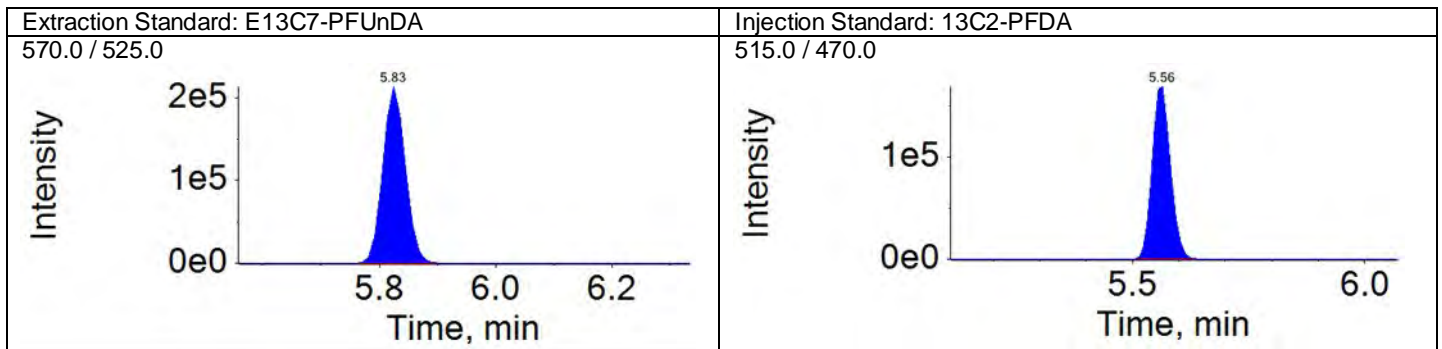
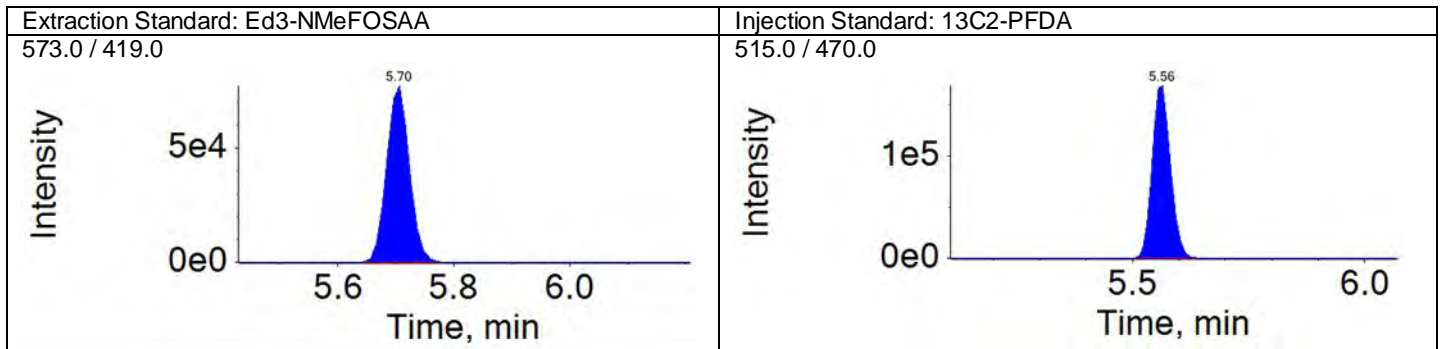
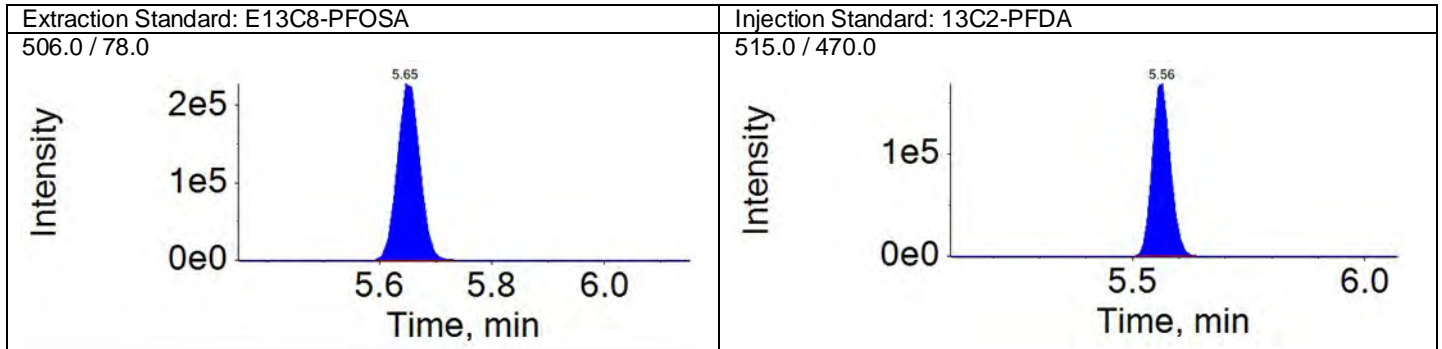
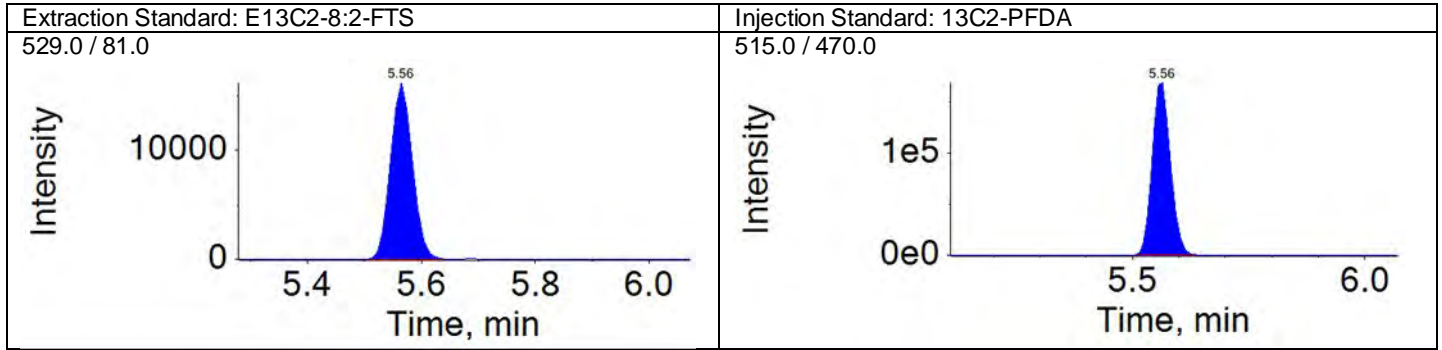
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

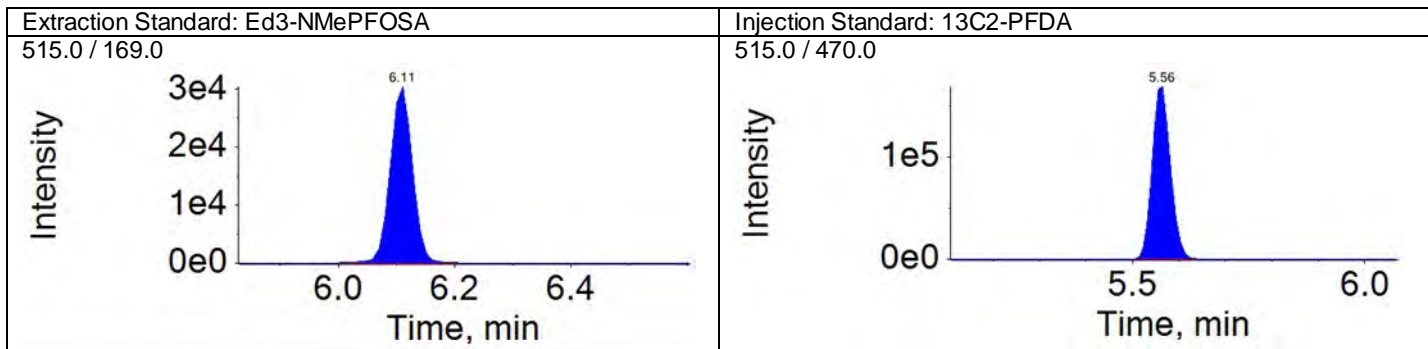
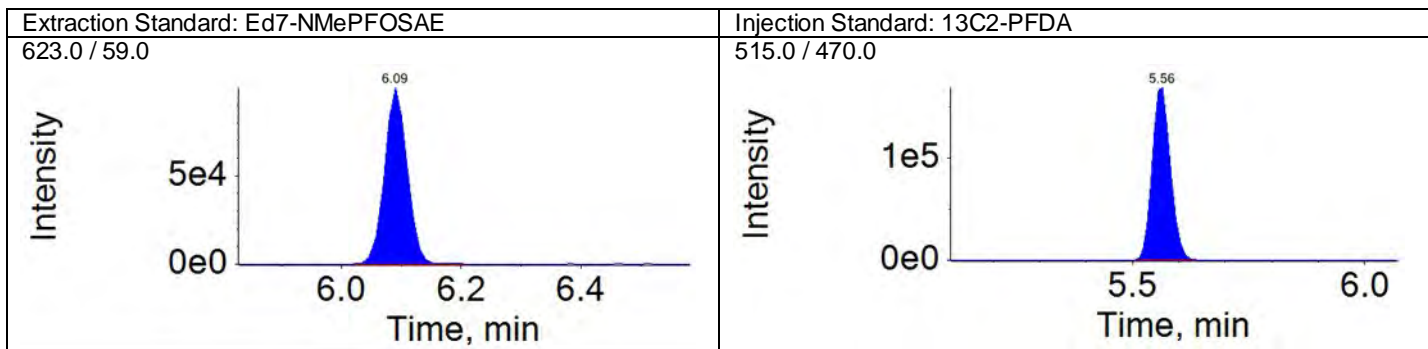
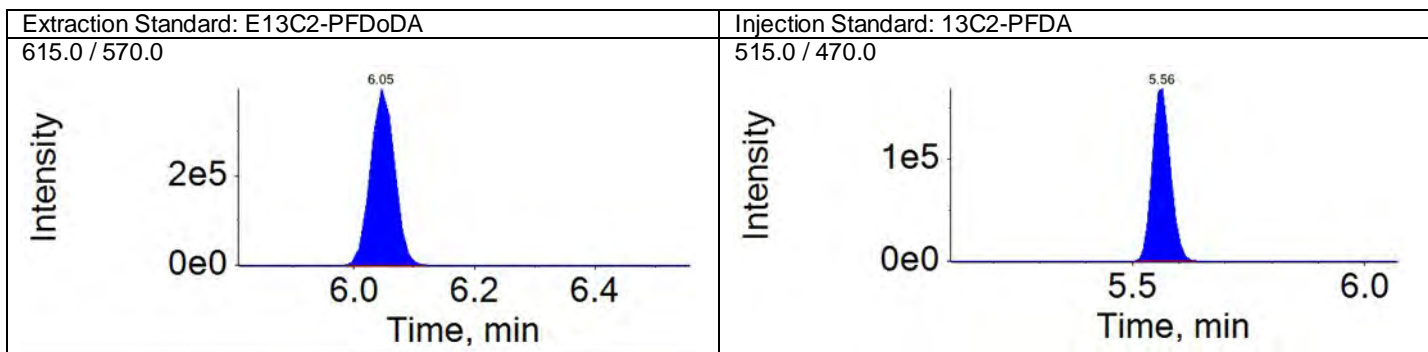
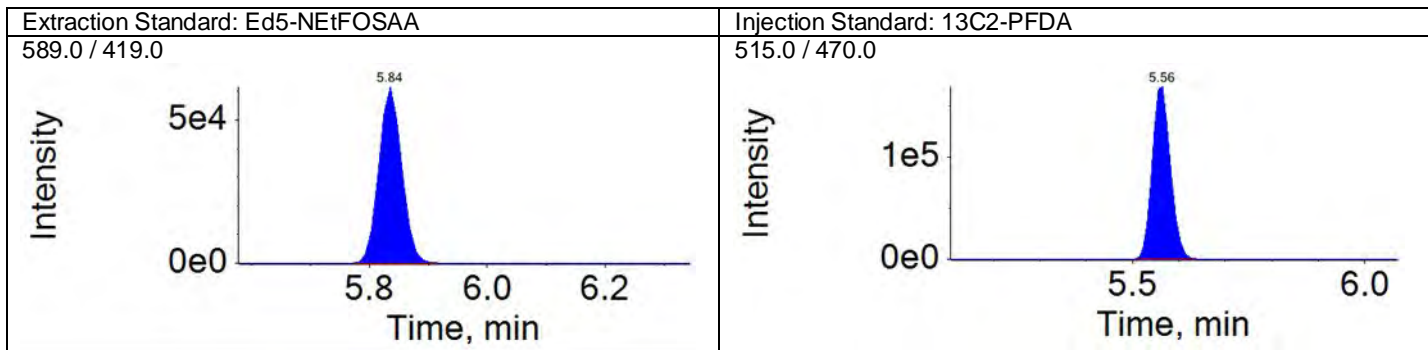
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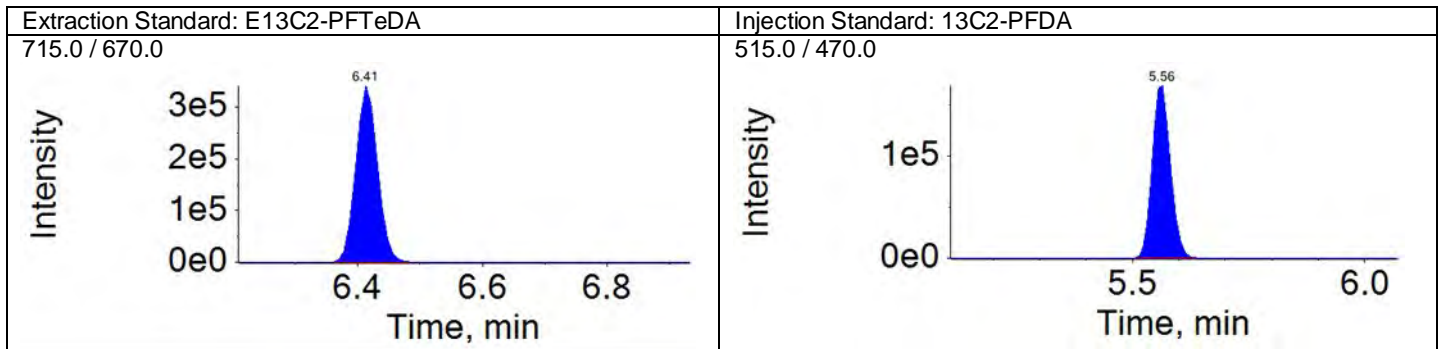
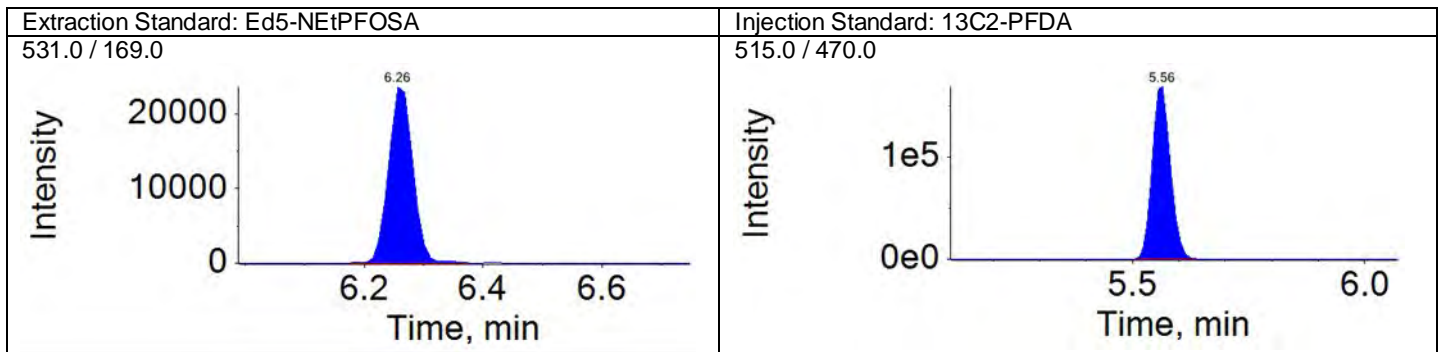
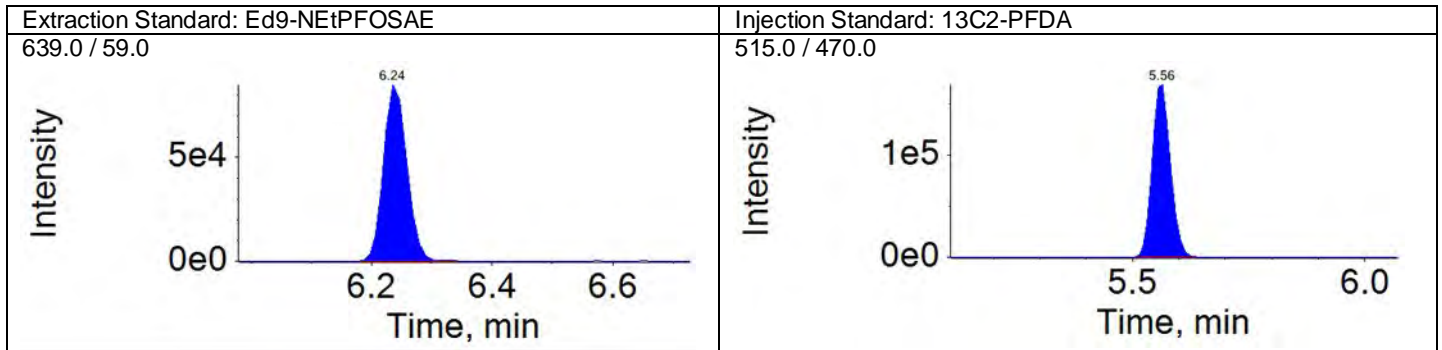
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



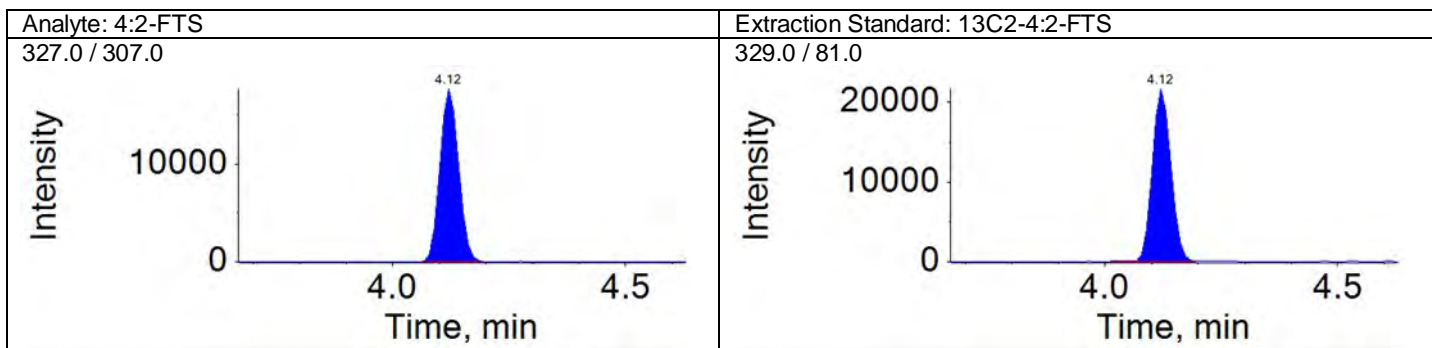
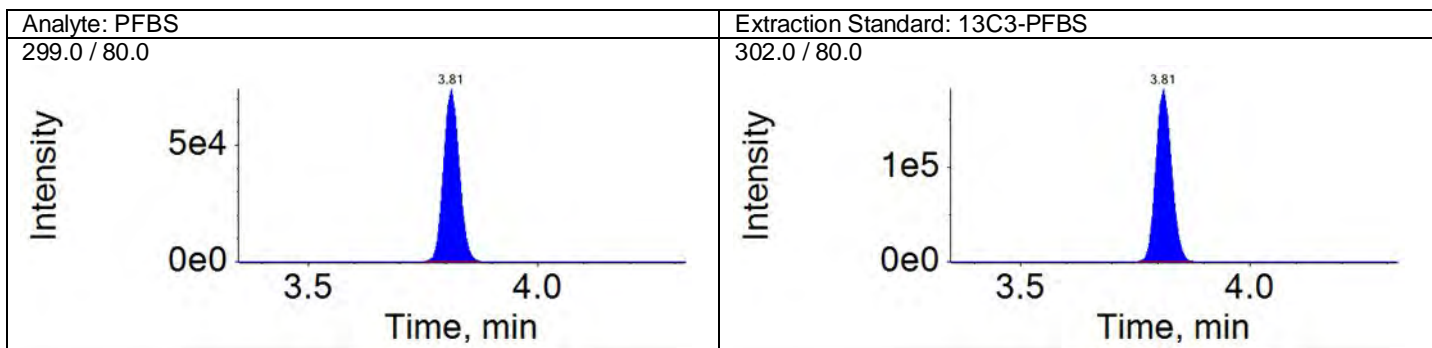
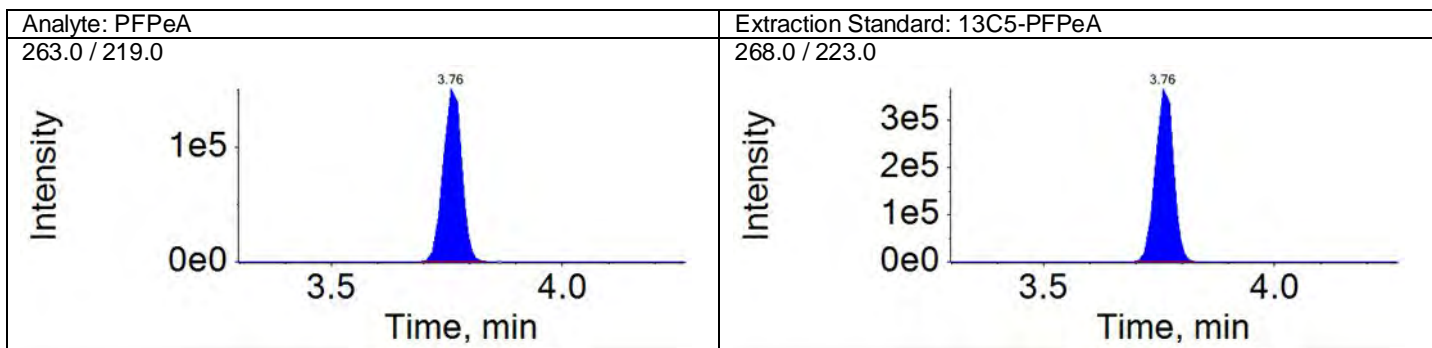
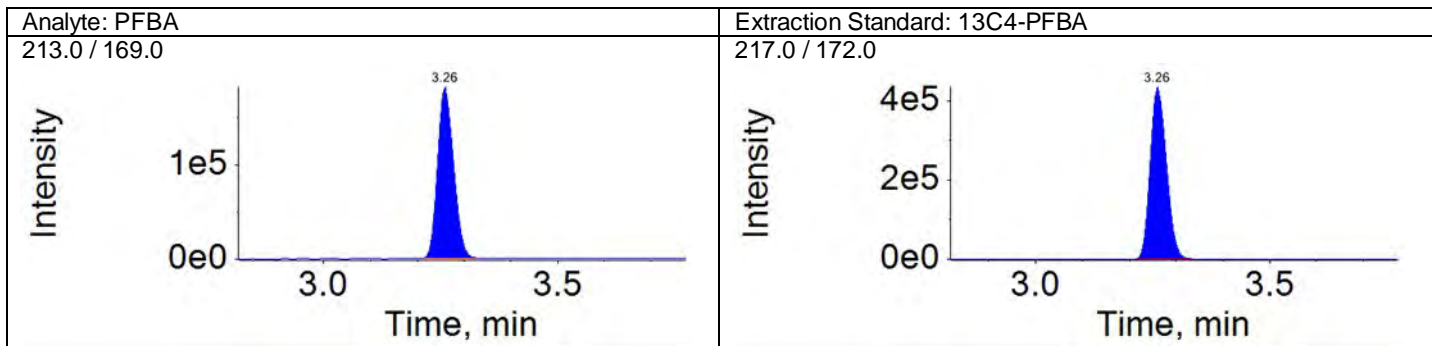
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



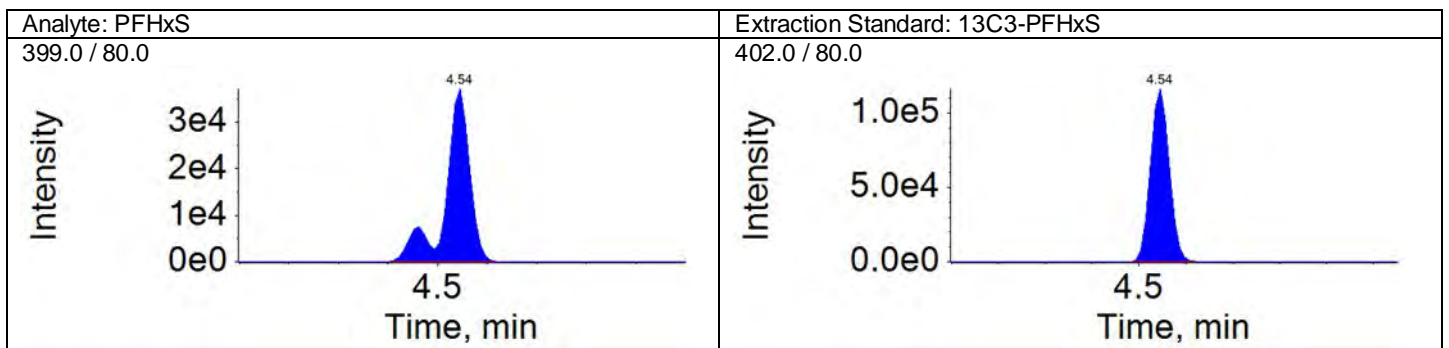
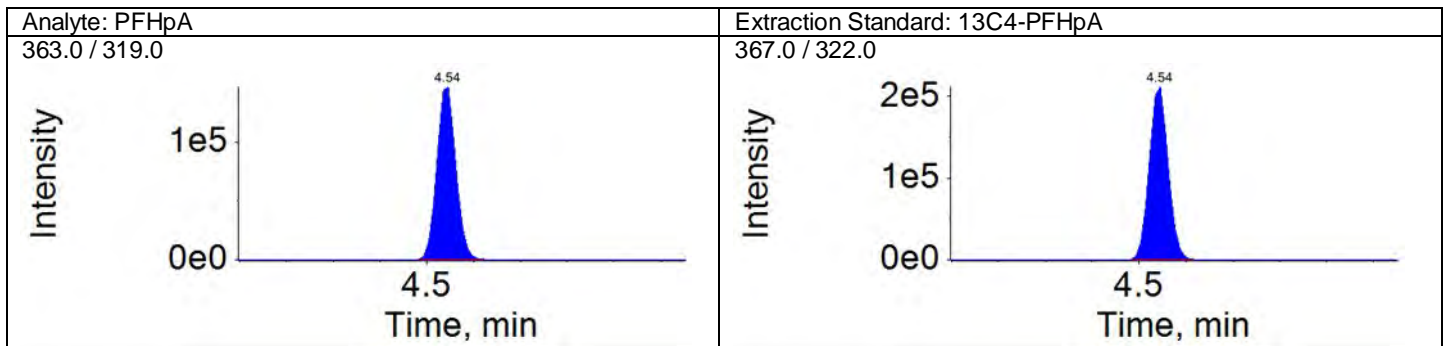
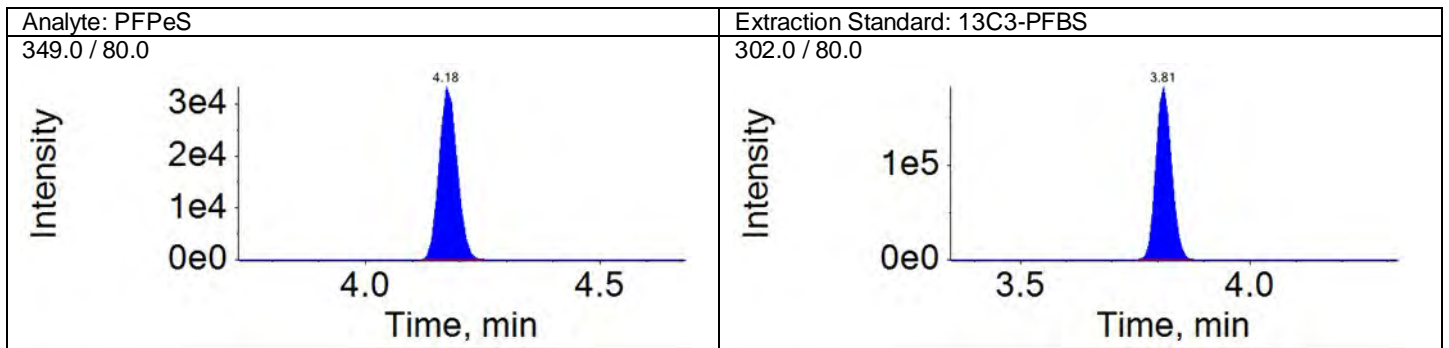
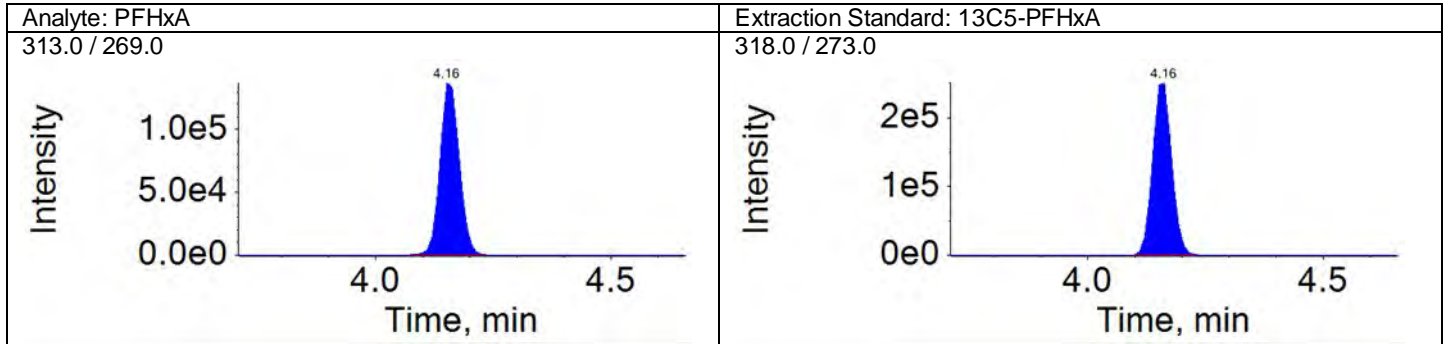
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QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

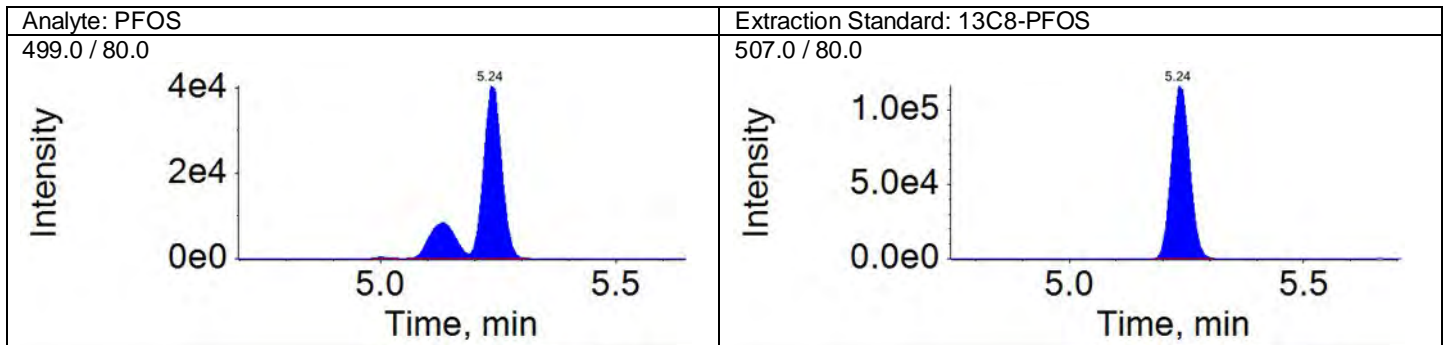
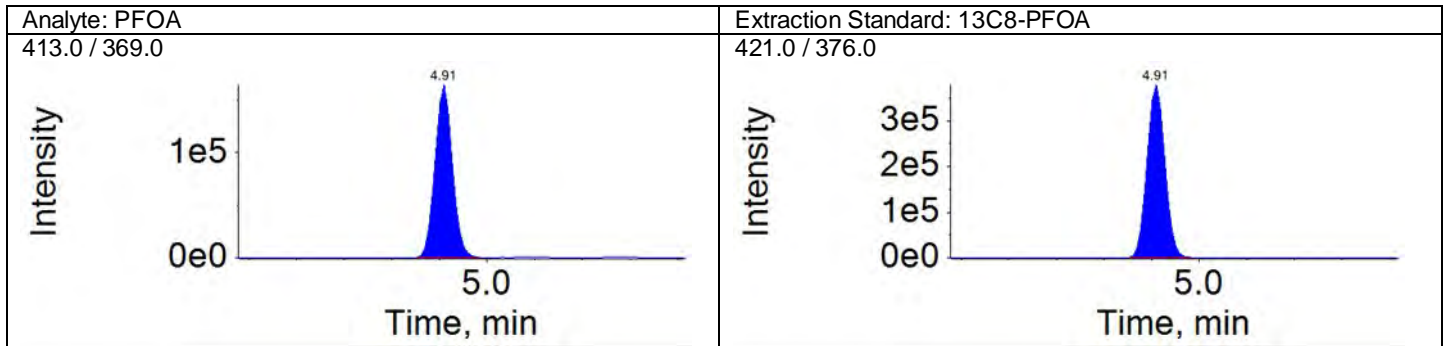
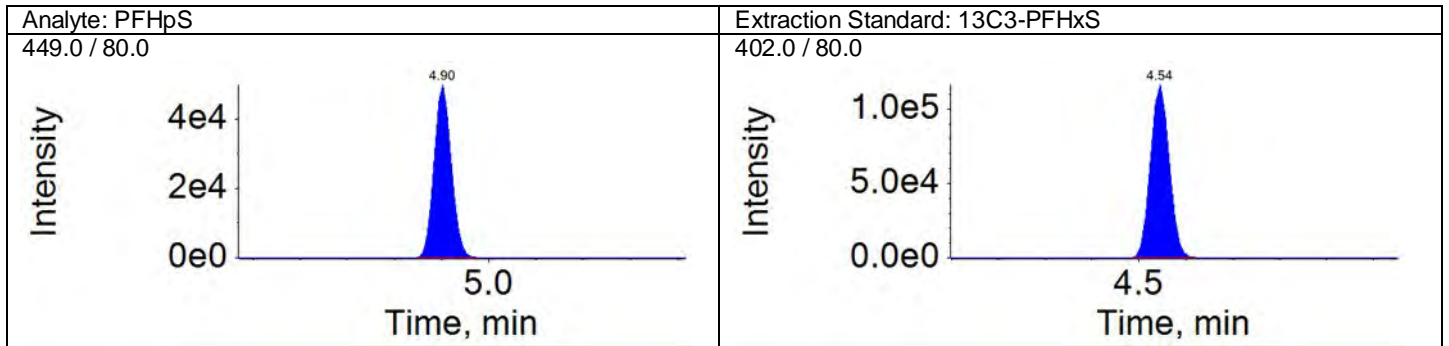
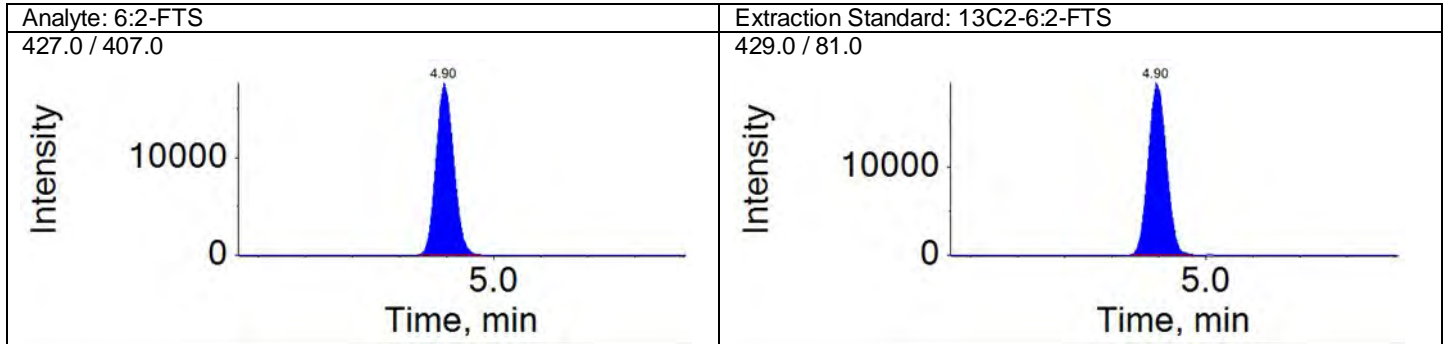
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

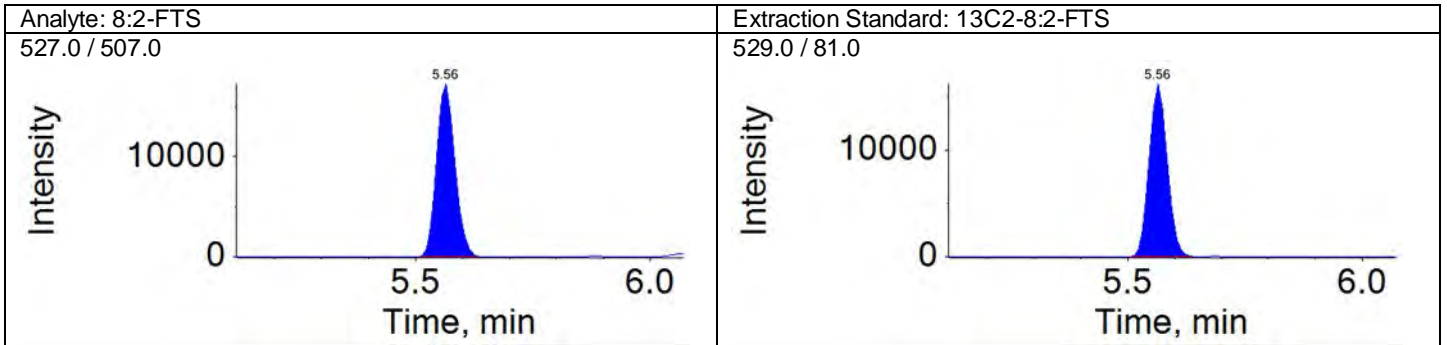
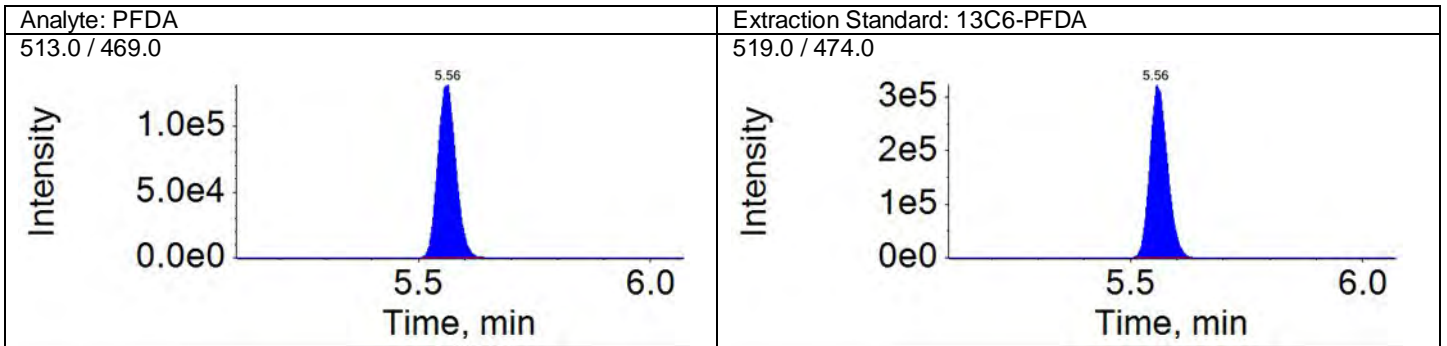
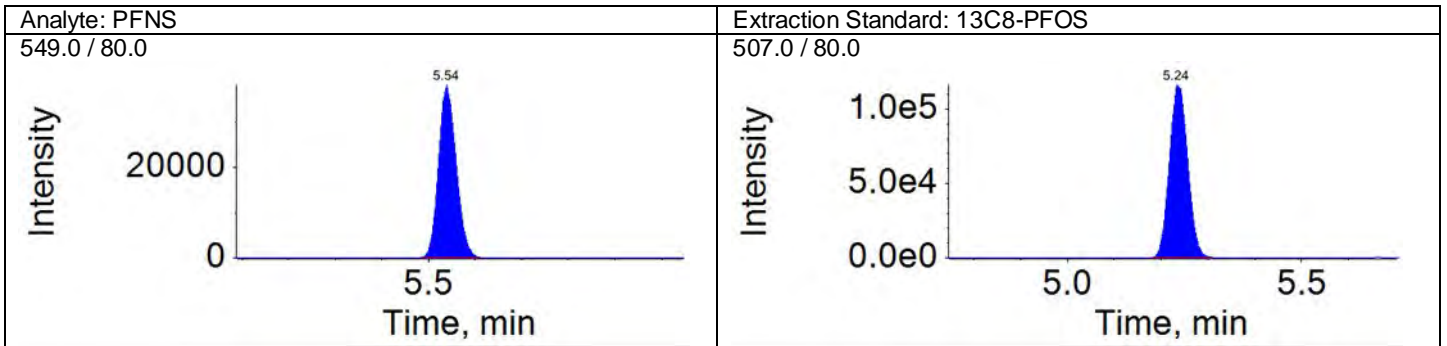
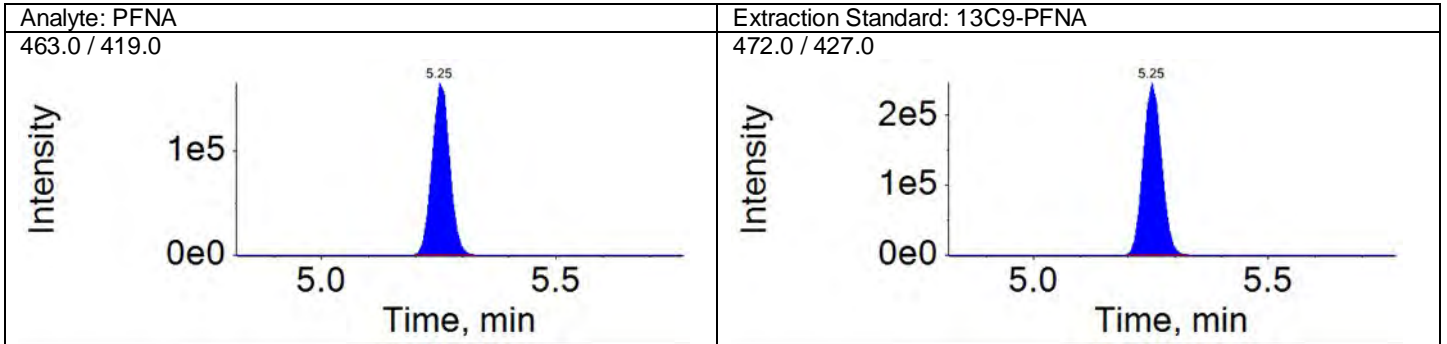
Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam





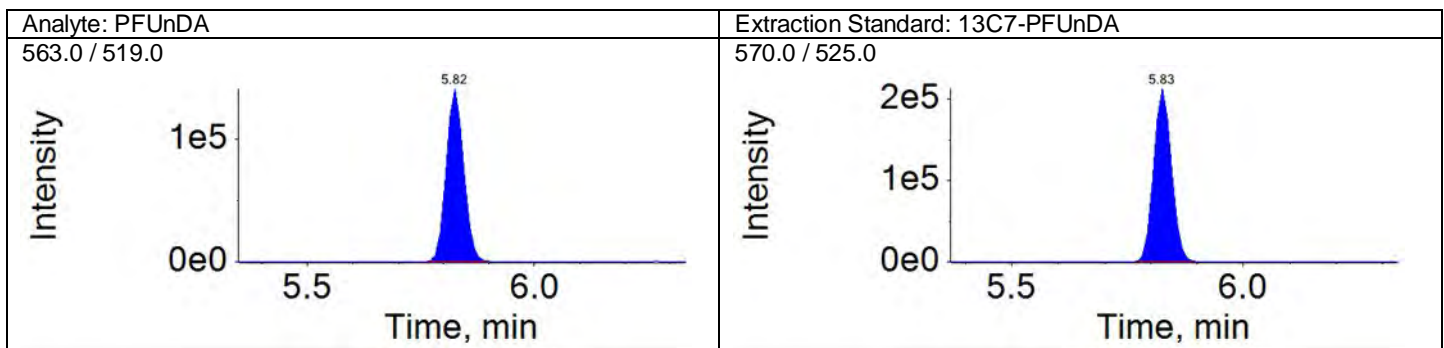
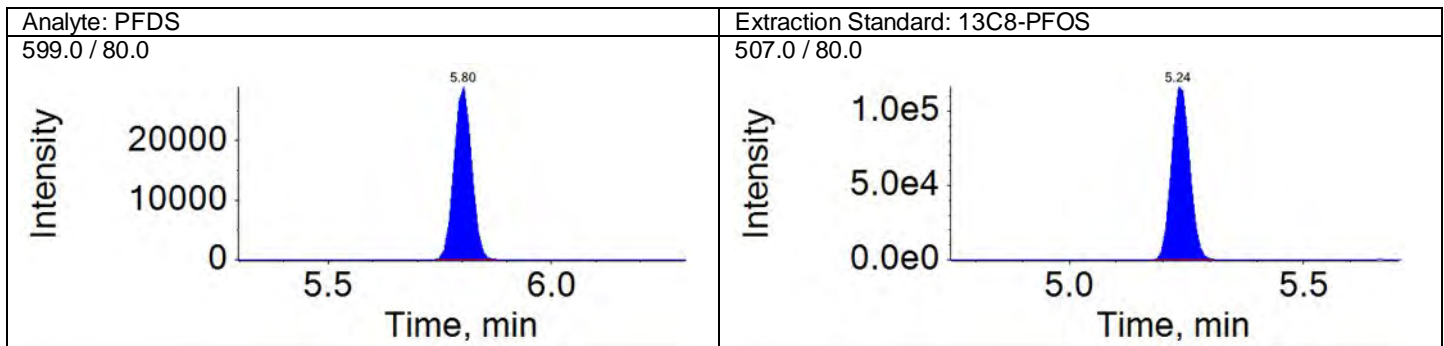
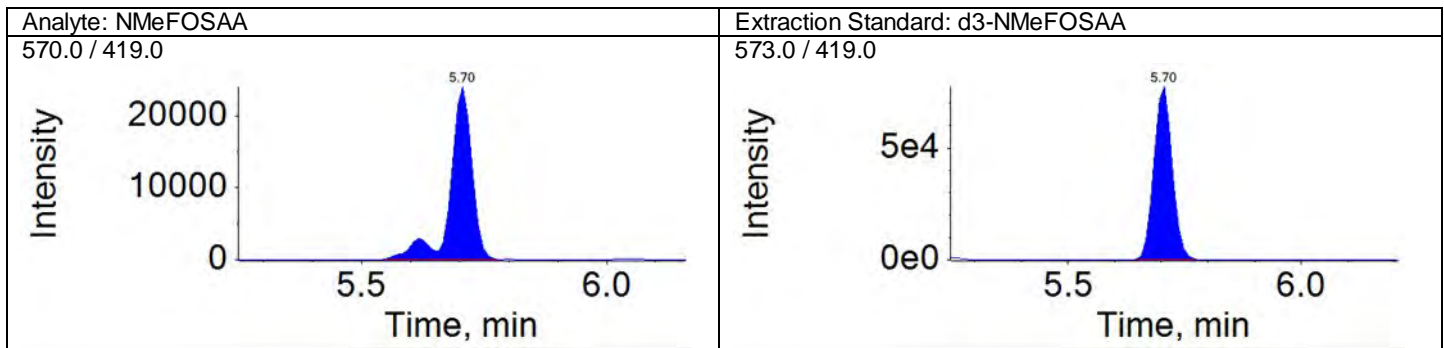
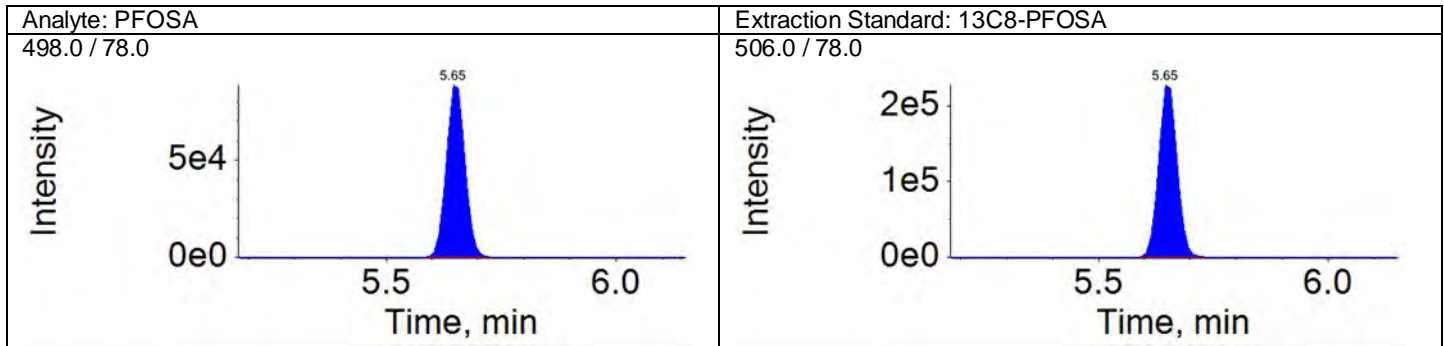
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



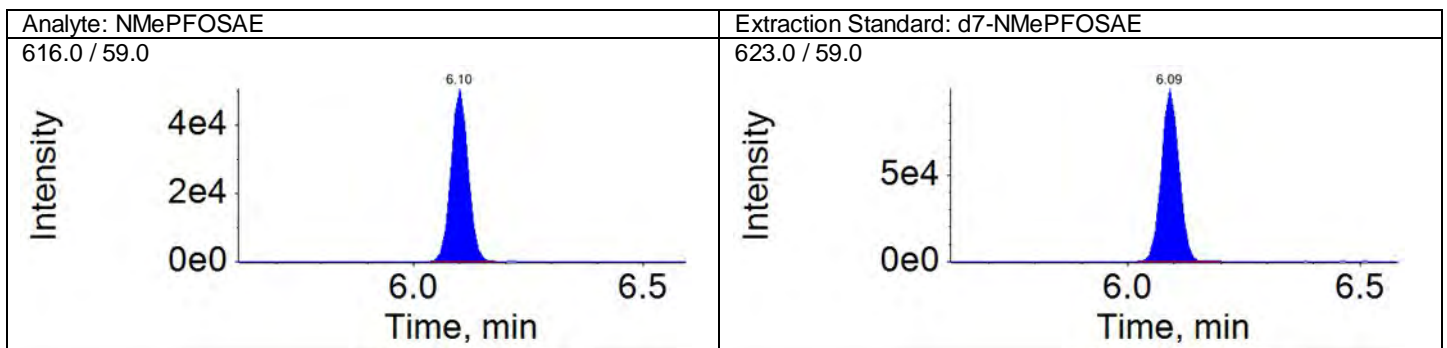
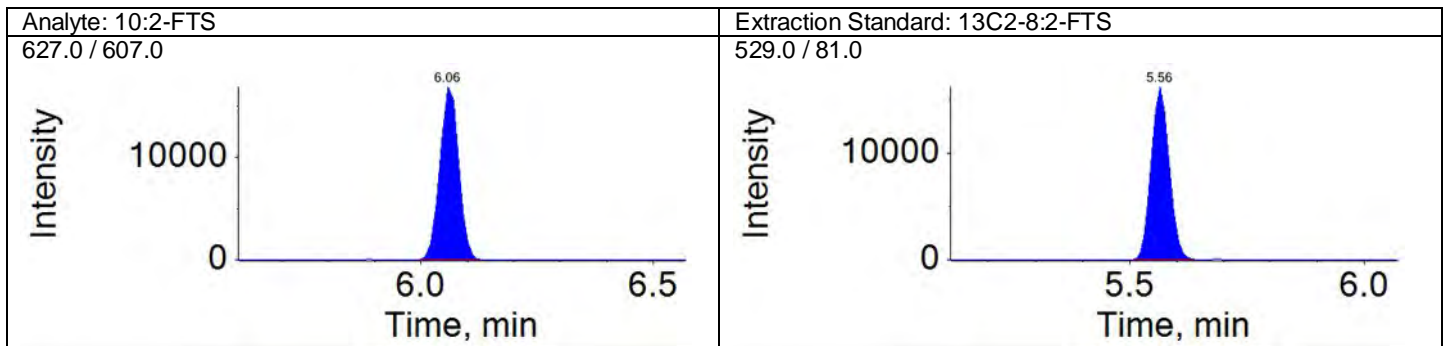
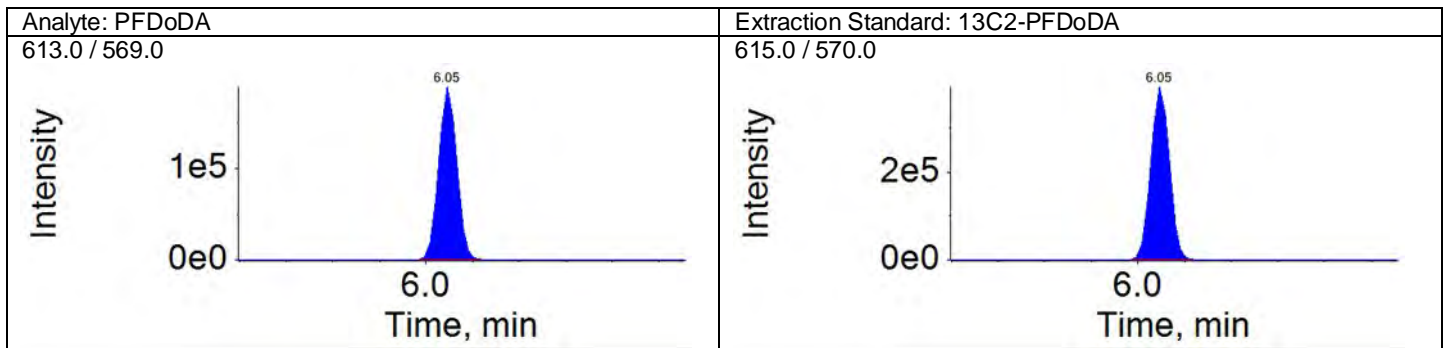
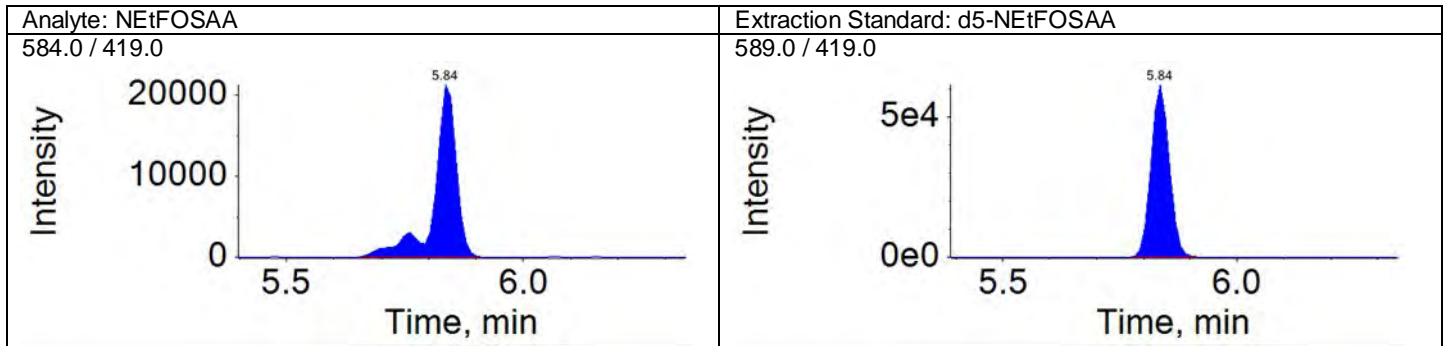
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



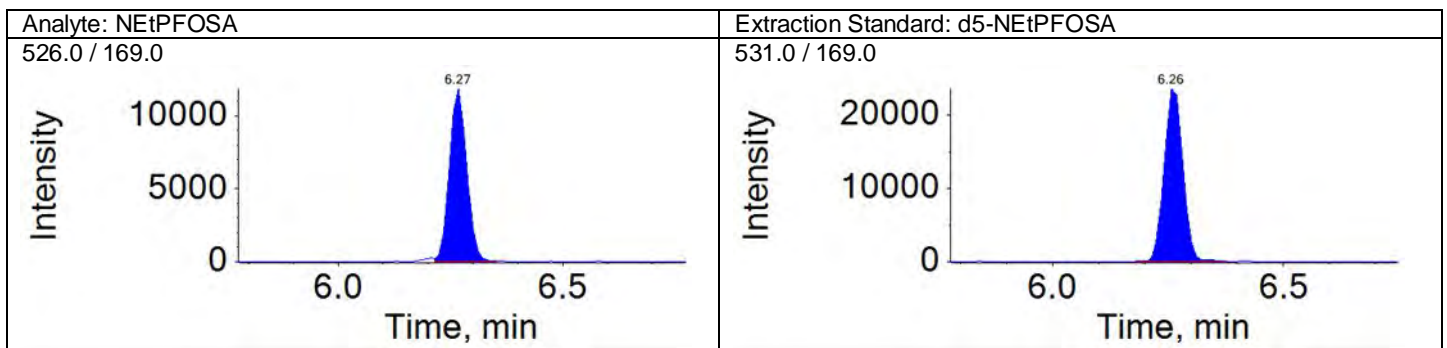
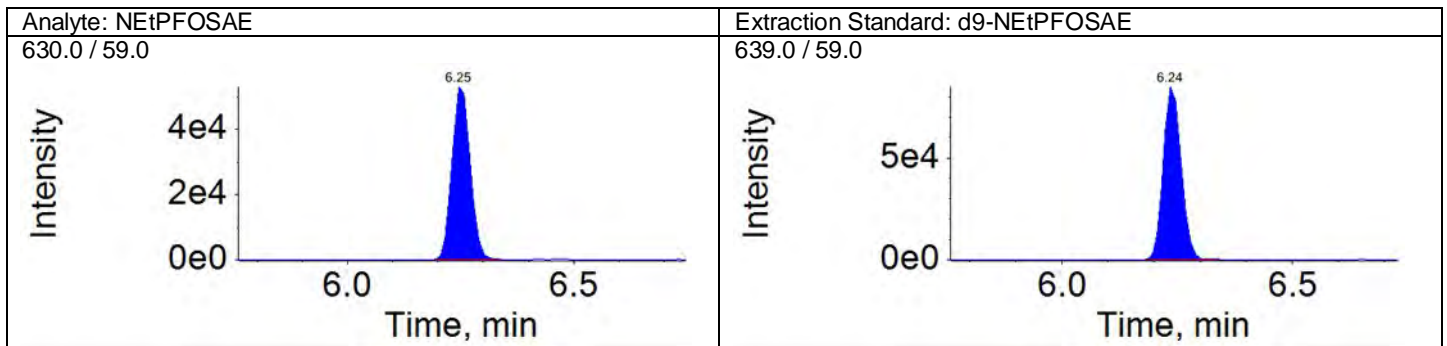
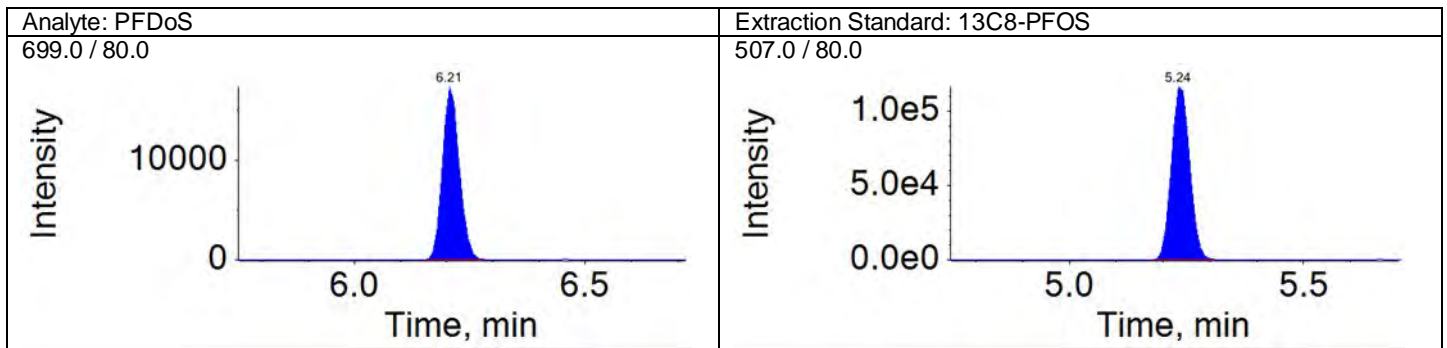
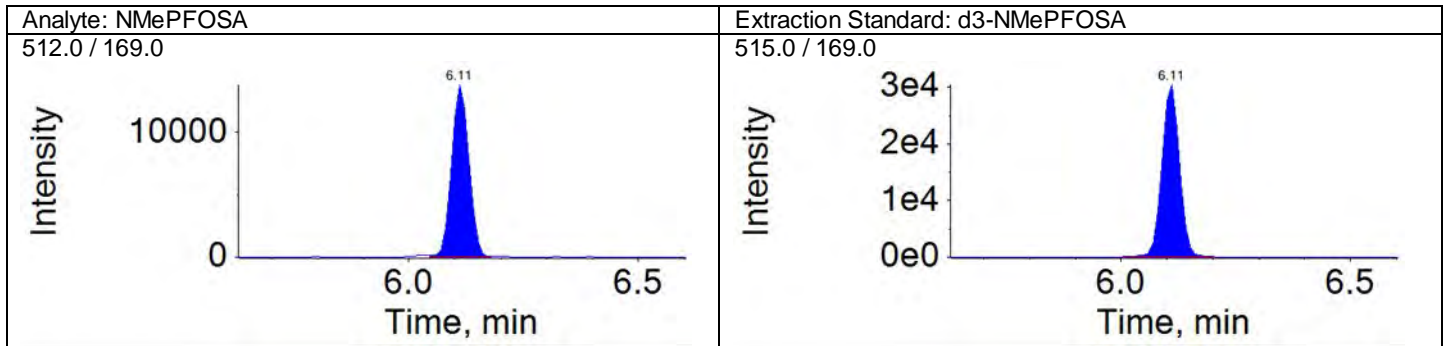
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

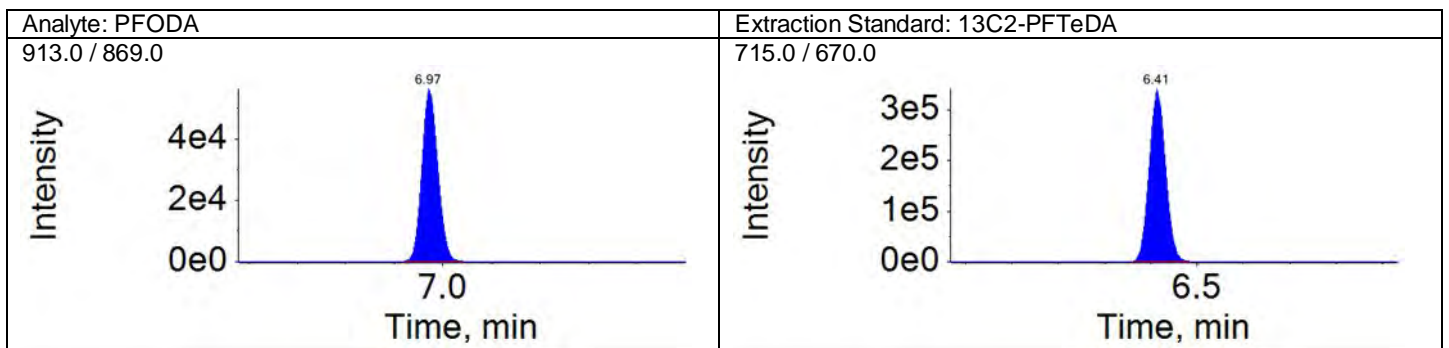
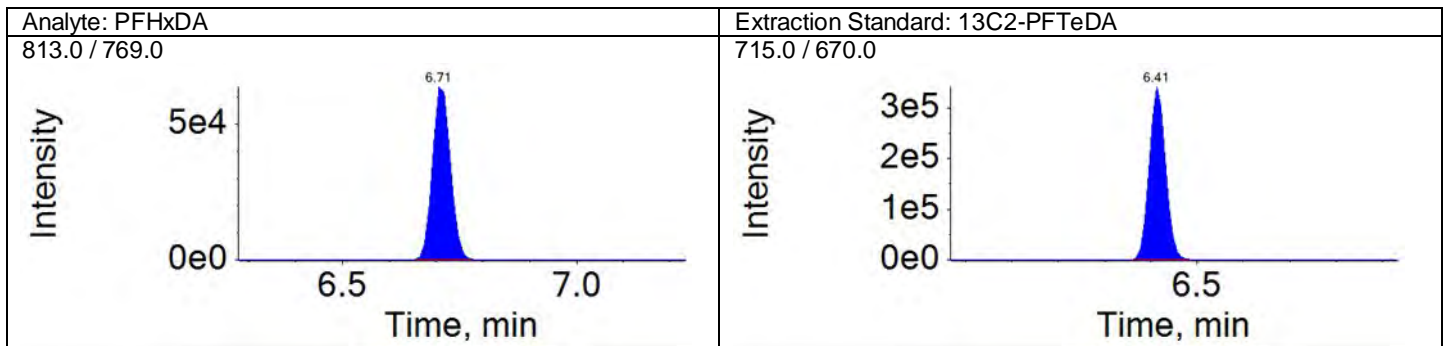
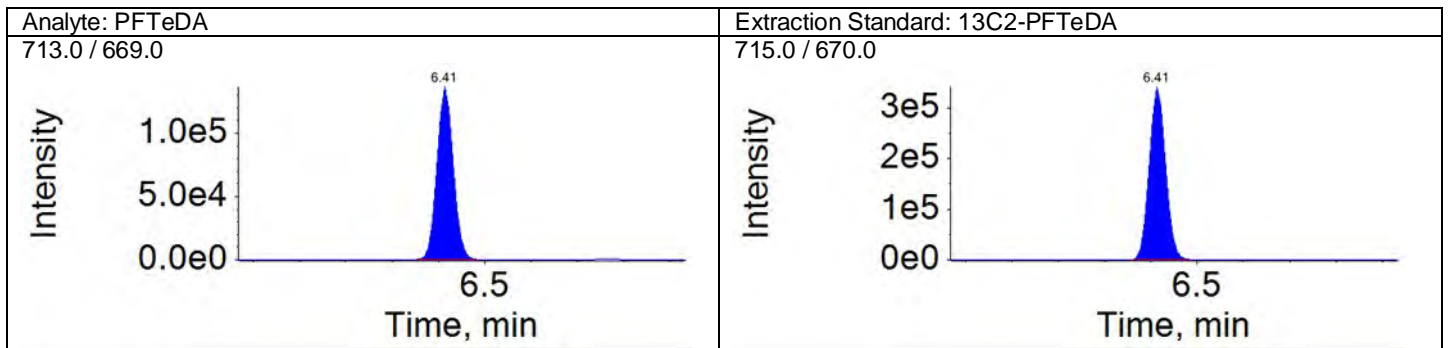
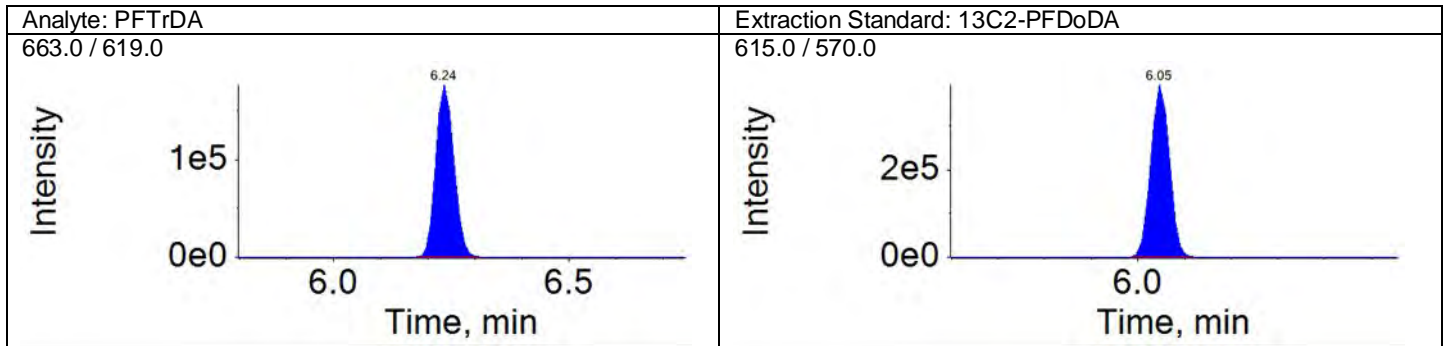
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

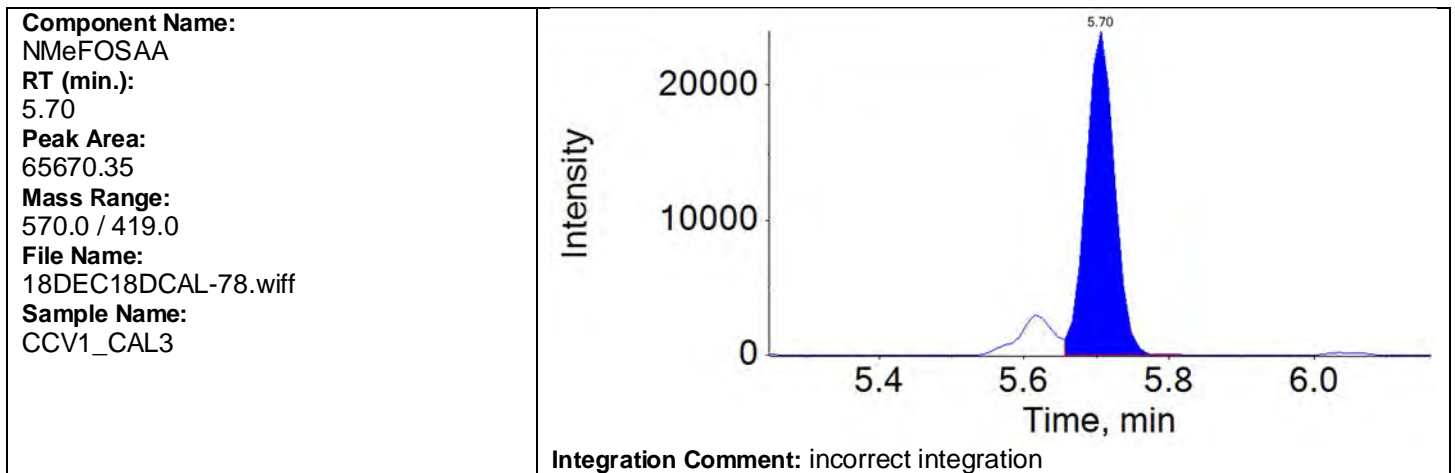
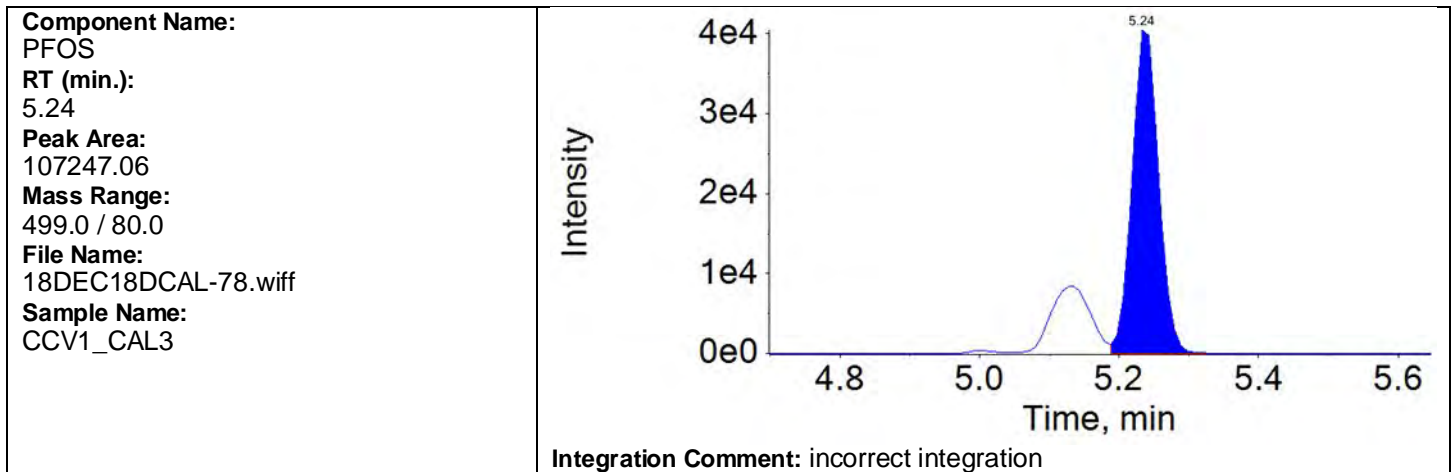
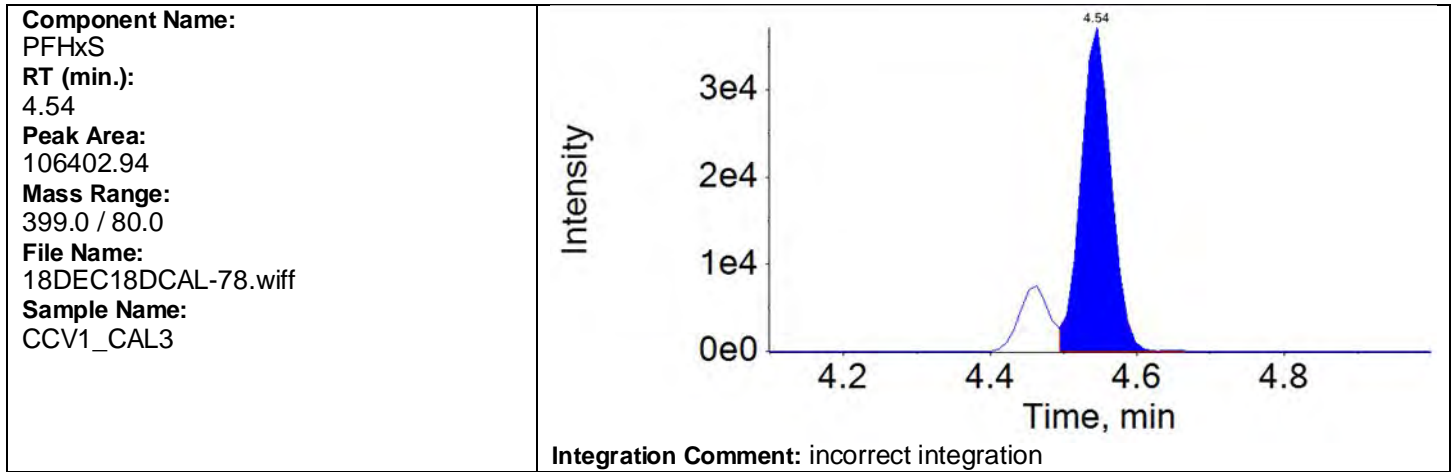
Result Table: 18DEC18DCAL 12/19/2018 9:34:01 AM  
Acquisition Method: 18AUG13\_3uL.dam





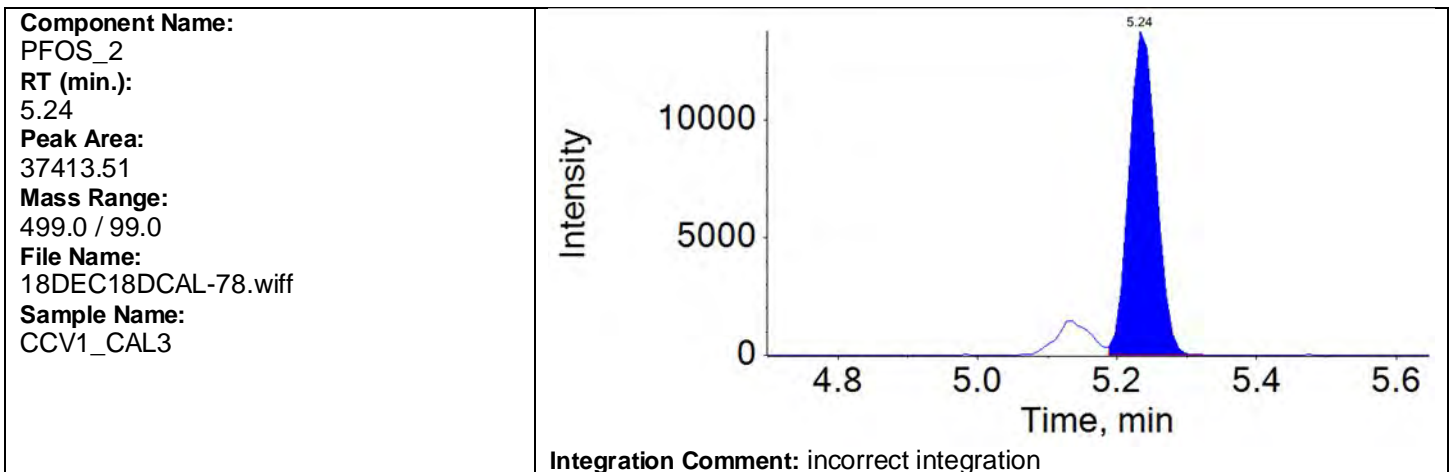
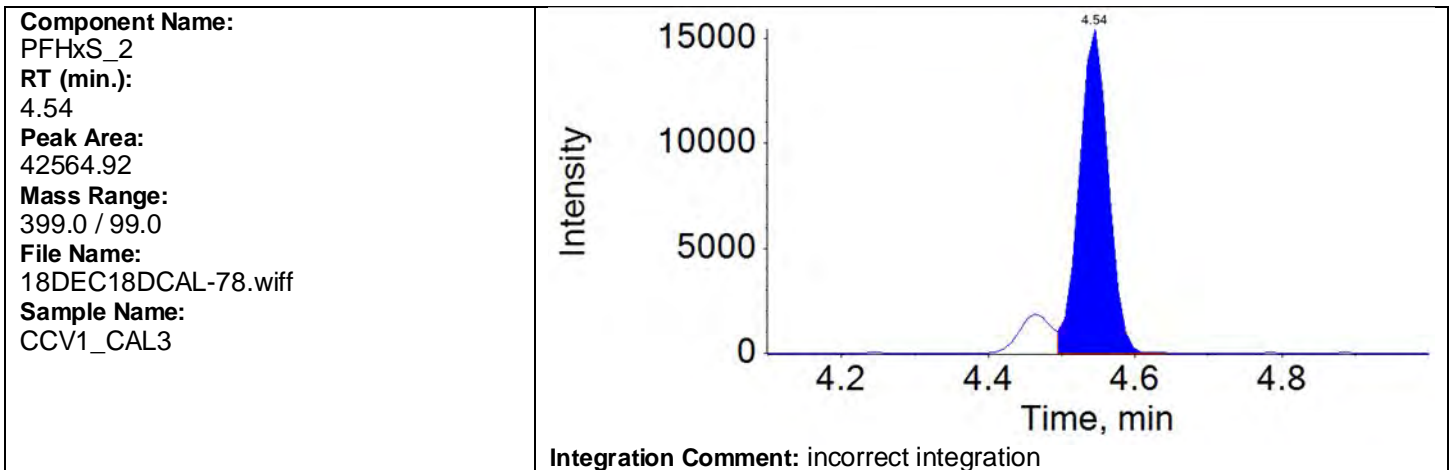
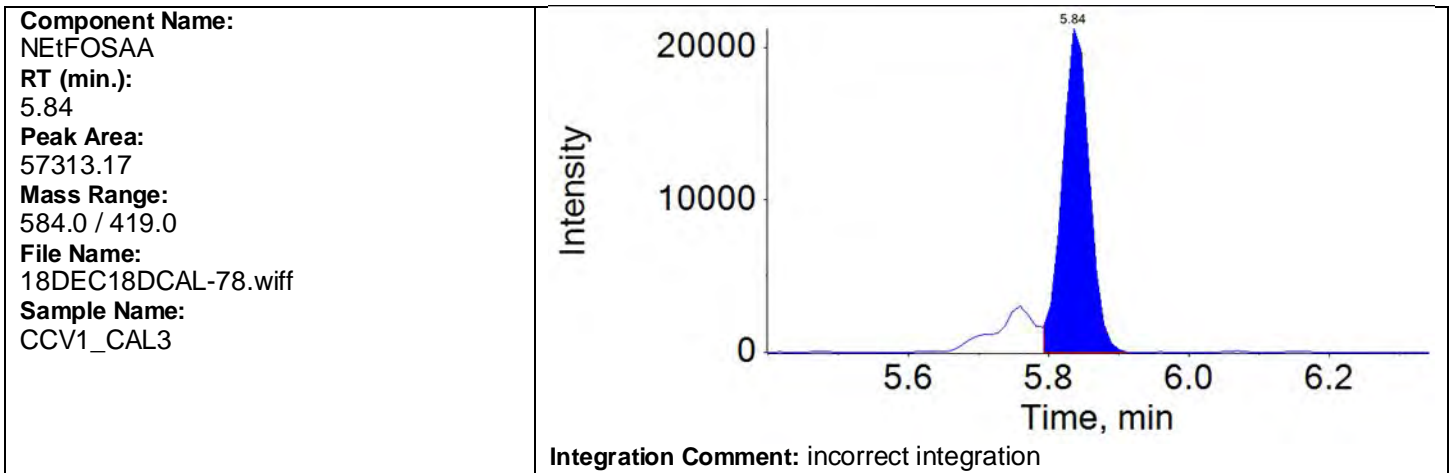
Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



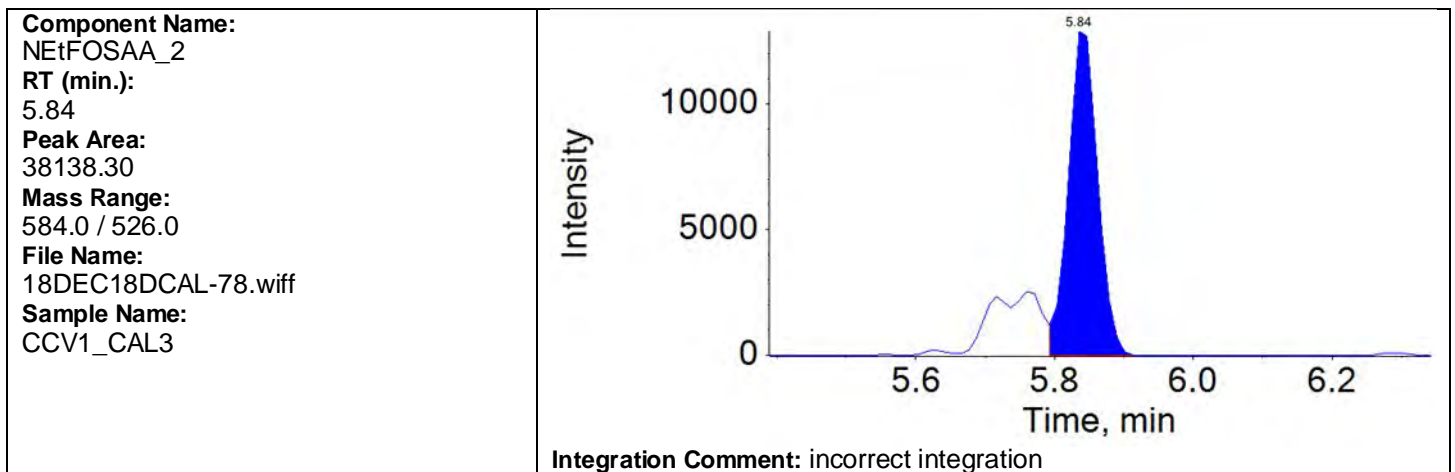
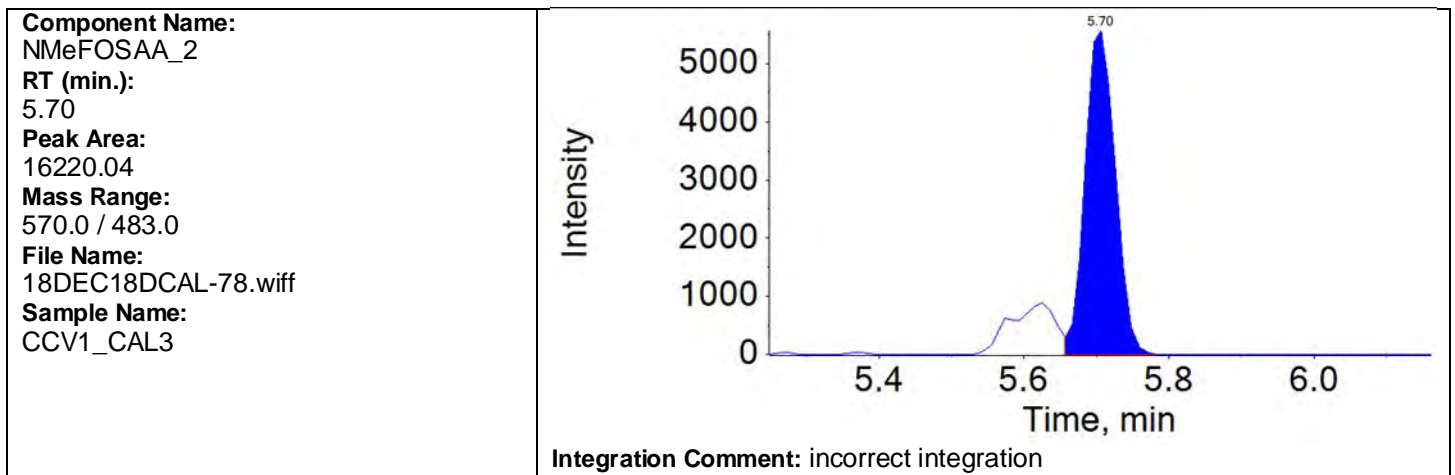
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Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC18DCAL  
Results Table Date: 12/19/2018 9:34:01 AM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**APPROVED**  
By MSM at 11:49 am, 12/19/18

**REVIEWED**  
By HMK at 11:53 am, 12/21/18

Ion Ratio Report

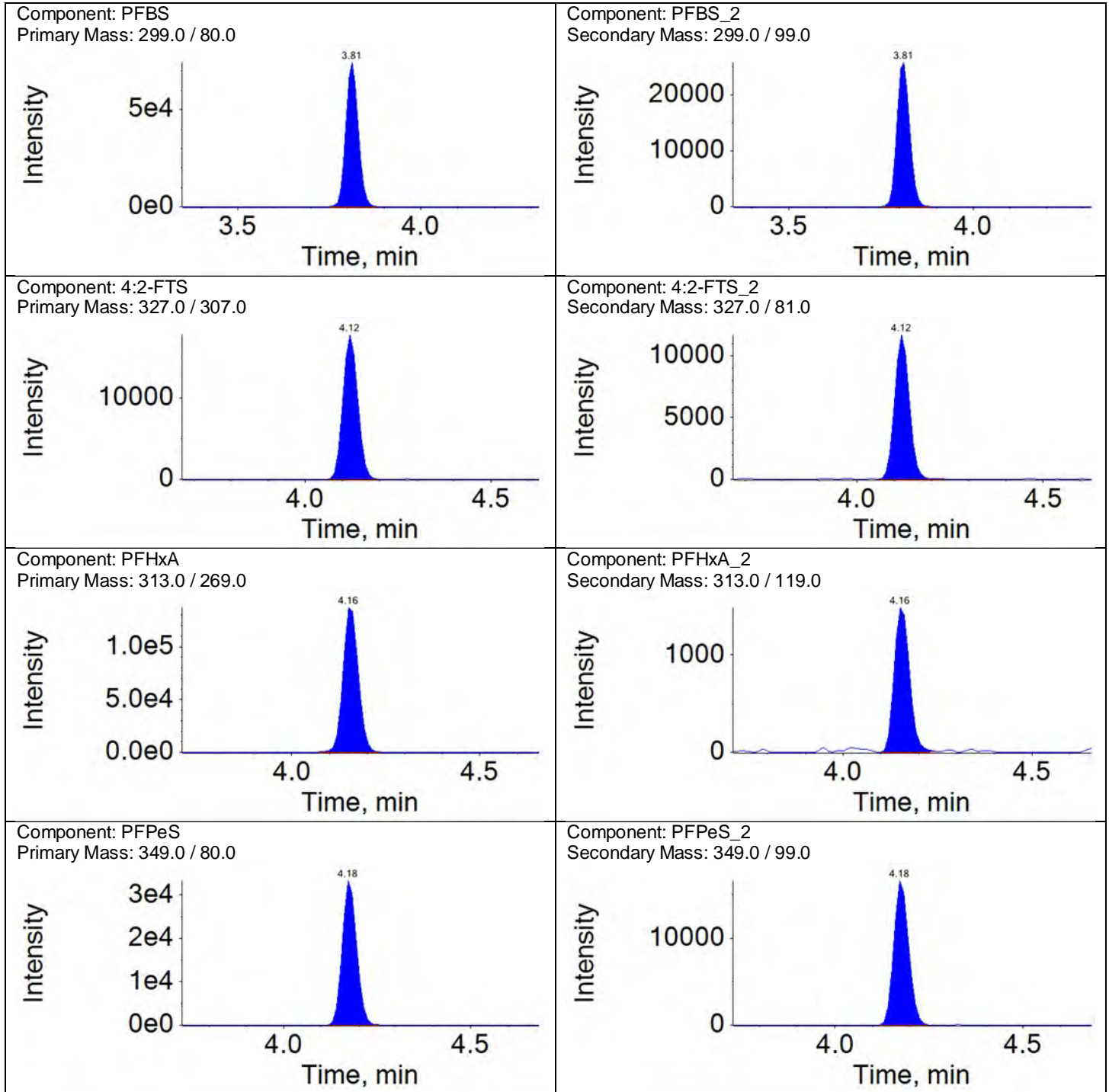
Sample Name: CCV1\_CAL3

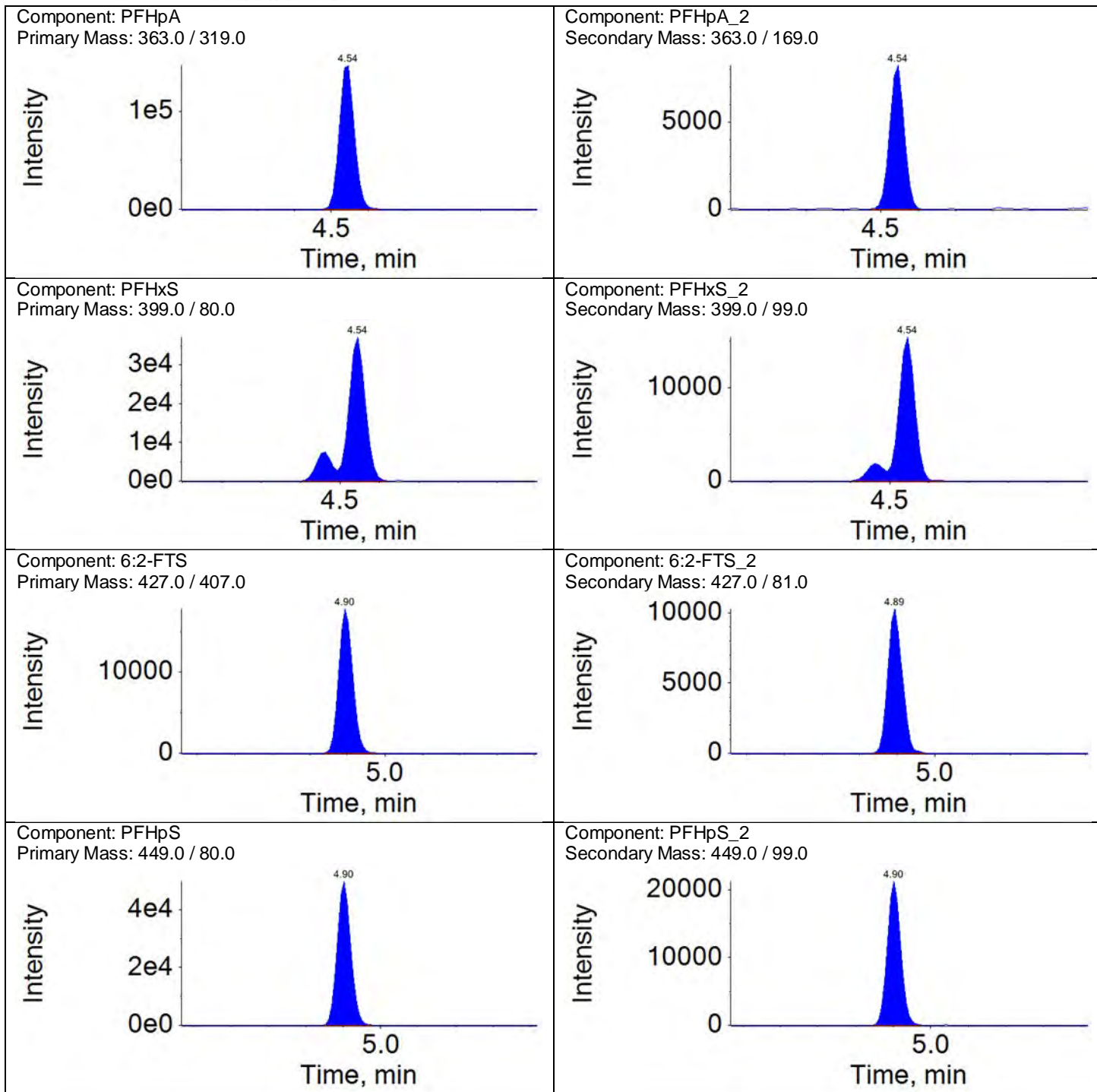
Instrument Name: LM27631

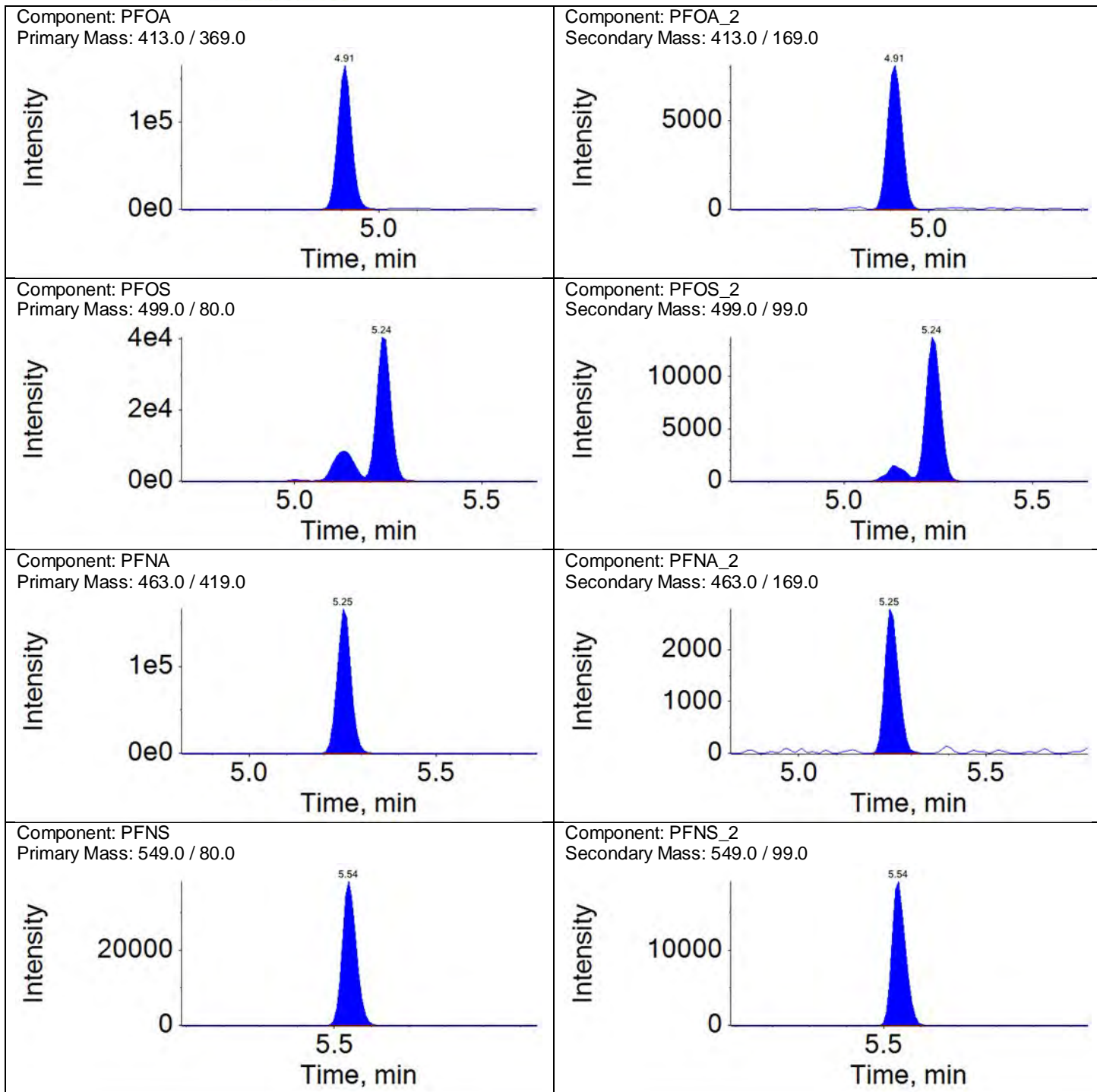
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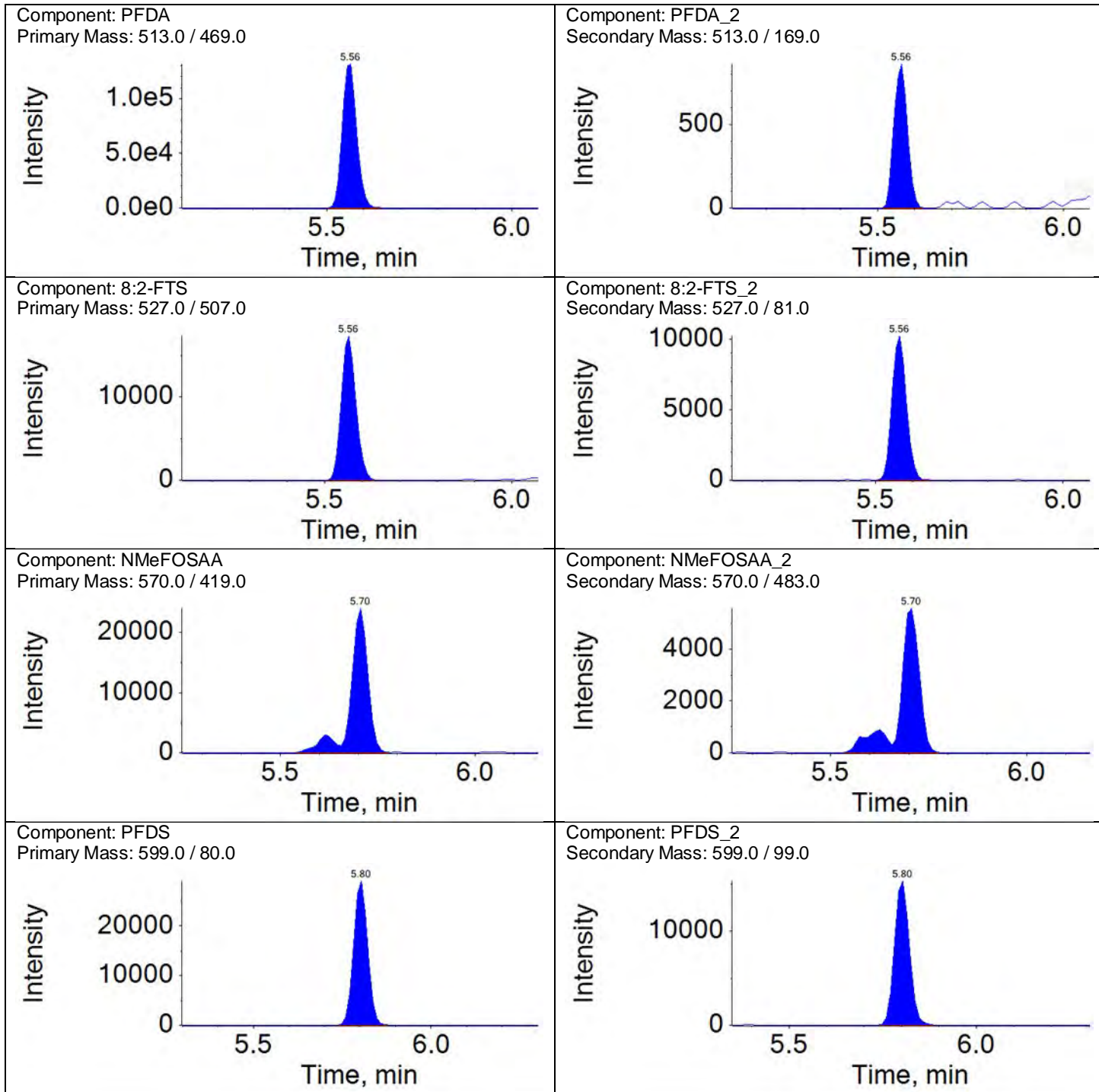
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	174296.10	A	1.0000	1.0000			
PFBS_2	3.81	1.00	62169.68	A	0.3686	0.3567	-3	50	
4:2-FTS	4.12	1.00	49086.95	A	1.0000	1.0000			
4:2-FTS_2	4.12	1.00	31782.10	A	0.6123	0.6475	6	50	
PFHxA	4.16	1.00	388326.65	A	1.0000	1.0000			
PFHxA_2	4.16	1.00	4195.54	A	0.0115	0.0108	-6	50	
PFPeS	4.18	1.10	88563.56	A	1.0000	1.0000			
PFPeS_2	4.18	1.10	45528.23	A	0.5256	0.5141	-2	50	
PFHpA	4.54	1.00	411871.58	A	1.0000	1.0000			
PFHpA_2	4.54	1.00	22245.36	A	0.0547	0.0540	-1	50	
PFHxS	4.54	1.00	127273.28	M	1.0000	1.0000			
PFHxS_2	4.54	1.00	48136.09	M	0.3359	0.3782	13	50	
6:2-FTS	4.90	1.00	45983.73	A	1.0000	1.0000			
6:2-FTS_2	4.89	1.00	27253.15	A	0.6344	0.5927	-7	50	
PFHpS	4.90	1.08	125155.66	A	1.0000	1.0000			
PFHpS_2	4.90	1.08	52446.19	A	0.4110	0.4190	2	50	
PFOA	4.91	1.00	414271.22	A	1.0000	1.0000			
PFOA_2	4.91	1.00	21676.55	A	0.0590	0.0523	-11	50	
PFOS	5.24	1.00	141737.19	M	1.0000	1.0000			
PFOS_2	5.24	1.00	42550.65	M	0.2980	0.3002	1	50	
PFNA	5.25	1.00	426327.64	A	1.0000	1.0000			
PFNA_2	5.25	1.00	7111.16	A	0.0214	0.0167	-22	50	
PFNS	5.54	1.06	99495.86	A	1.0000	1.0000			
PFNS_2	5.54	1.06	47930.81	A	0.4608	0.4817	5	50	
PFDA	5.56	1.00	355807.06	A	1.0000	1.0000			
PFDA_2	5.56	1.00	2184.93	A	0.0064	0.0061	-4	50	
8:2-FTS	5.56	1.00	46733.61	A	1.0000	1.0000			
8:2-FTS_2	5.56	1.00	27255.63	A	0.5879	0.5832	-1	50	
NMeFOSAA	5.70	1.00	75349.96	M	1.0000	1.0000			
NMeFOSAA_2	5.70	1.00	20083.17	M	0.2625	0.2665	2	50	
PFDS	5.80	1.11	79355.29	A	1.0000	1.0000			
PFDS_2	5.80	1.11	42325.00	A	0.4962	0.5334	7	50	
PFOA_2	5.82	1.00	375287.28	A	1.0000	1.0000			
PFOA_2	5.83	1.00	1039.62	A	0.0035	0.0028	-22	50	
NEtFOSAA	5.84	1.00	69397.21	M	1.0000	1.0000			
NEtFOSAA_2	5.84	1.00	50966.38	M	0.6883	0.7344	7	50	
PFOA_2	6.05	1.00	512002.22	A	1.0000	1.0000			
PFOA_2	6.05	1.00	7101.00	A	0.0134	0.0139	3	50	
10:2-FTS	6.06	1.09	47194.56	A	1.0000	1.0000			
10:2-FTS_2	6.06	1.09	34367.65	A	0.7018	0.7282	4	50	
PFOA_2	6.24	1.03	472947.84	A	1.0000	1.0000			
PFOA_2	6.23	1.03	3050.65	A	0.0093	0.0065	-31	50	
PFOA_2	6.41	1.00	330447.89	A	1.0000	1.0000			
PFOA_2	6.41	1.00	2109.51	A	0.0058	0.0064	10	50	
PFOA_2	6.71	1.05	169410.44	A	1.0000	1.0000			
PFOA_2	6.71	1.05	10282.24	A	0.0656	0.0607	-8	50	
PFOA_2	6.97	1.09	127433.57	A	1.0000	1.0000			
PFOA_2	6.97	1.09	3364.49	A	0.0273	0.0264	-3	50	



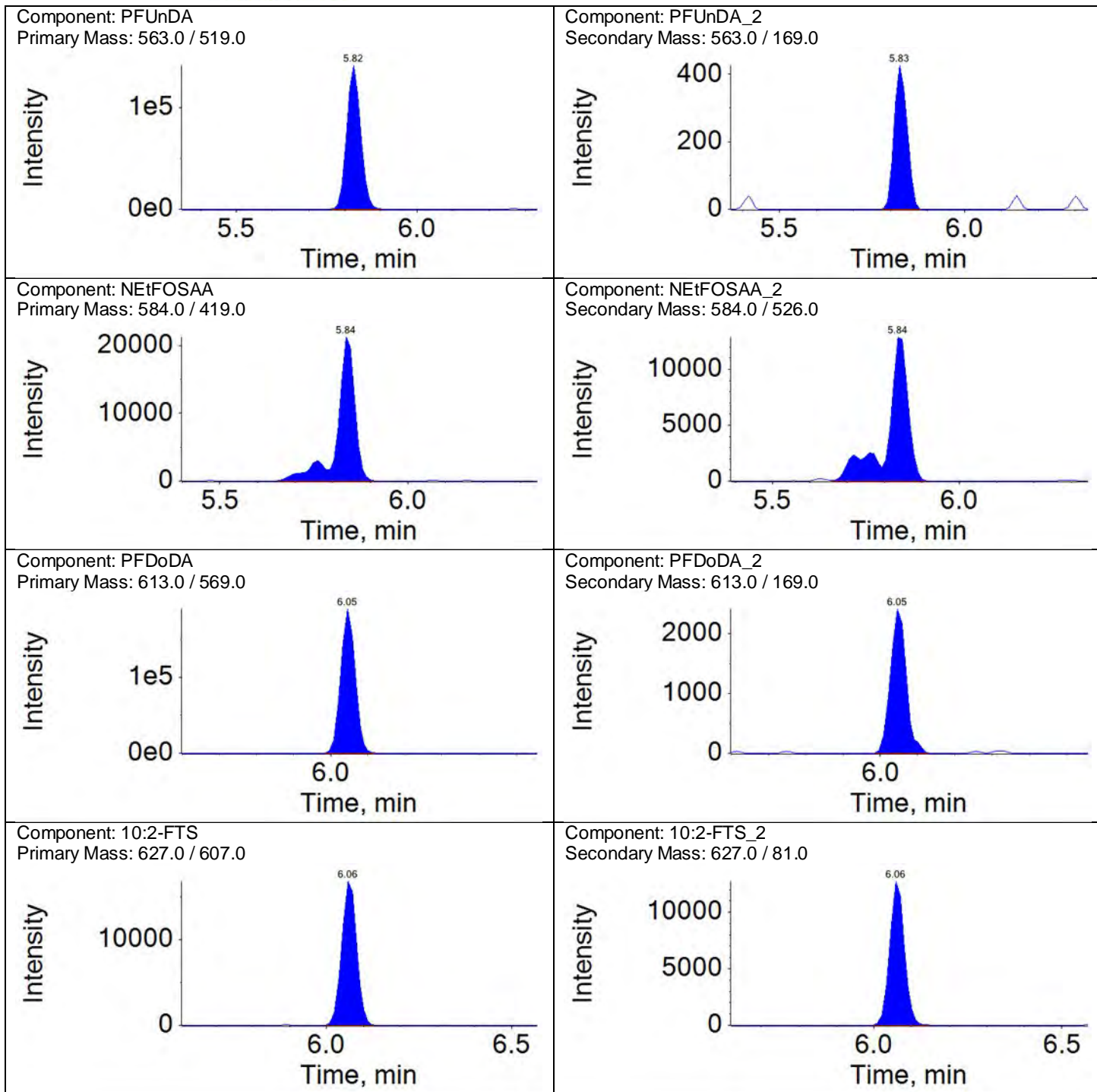




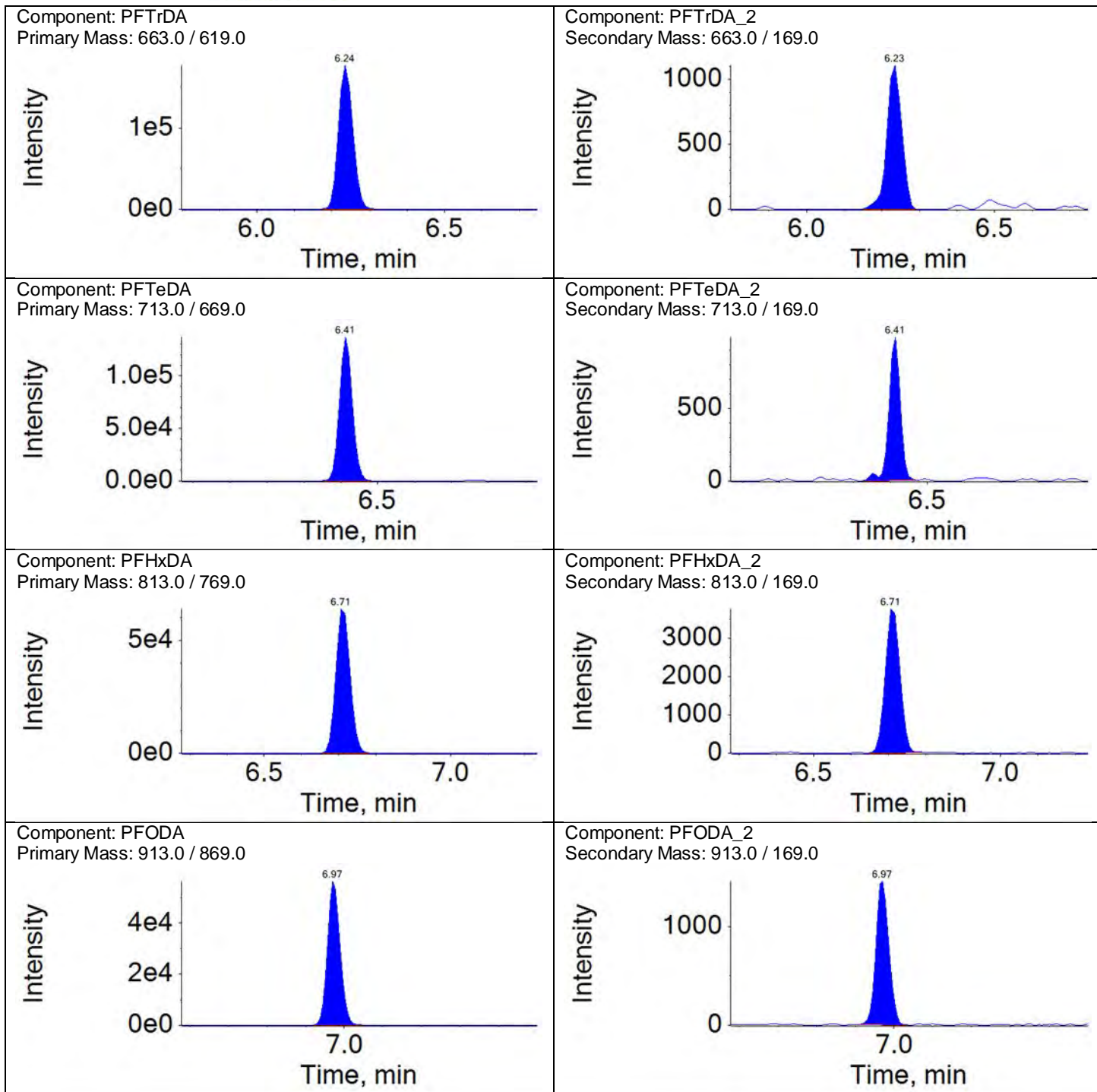












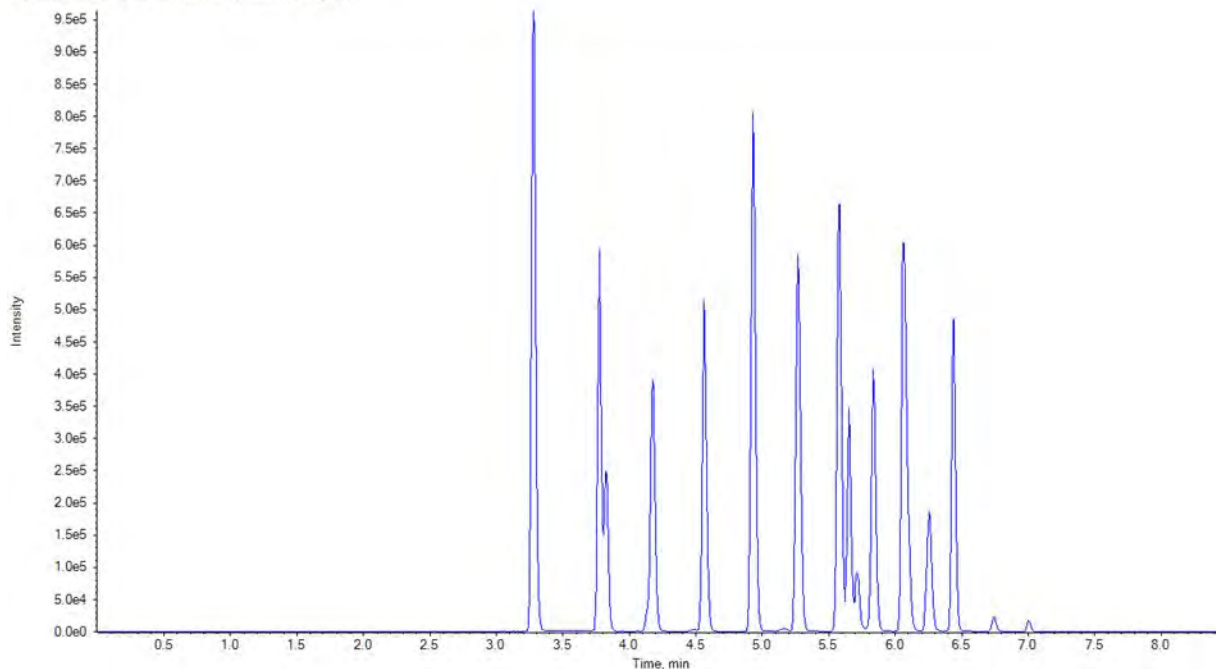
**Instrument Sensitivity Check/  
Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_ISC_CAL2	CALBRN21833C	18DEC19D-05.wiff	2018-12-19T10:43:56

TIC from 18DEC19D-05.wiff (sample 1) - CCV1\_ISC\_CAL2



Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	942675.8	941251.6	0	50	
13C2-PFOA	5.0	520268.5	485595.3	7	50	
13C4-PFOS	4.8	307968.9	292182.6	5	50	
13C2-PFDA	5.0	487375.3	467216.0	4	50	

**Instrument Sensitivity Check/  
Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV1_ISC_CAL2	CALBRN21833C	18DEC19D-05.wiff	2018-12-19T10:43:56

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	112717.4	10	13C4-PFBA	1081831.1	5.0	0.104	3.28	1.000	0.500	0.553	11	30	
PFPeA	115463.4	11	13C5-PFPeA	1015138.6	5.0	0.114	3.78	1.000	0.500	0.587	17	30	
PFBS	44925.3	10	13C3-PFBS	458914.8	4.7	0.098	3.83	1.000	0.443	0.483	9	30	
4:2-FTS	11736.4	11	13C2-4:2-FTS	61511.2	4.7	0.191	4.14	1.000	0.467	0.501	7	30	
PFHxA	107079.2	11	13C5-PFHxA	759858.0	5.0	0.141	4.18	1.000	0.500	0.581	16	30	
PFPeS	22247.6	11	13C3-PFBS	458914.8	4.7	0.048	4.20	1.100	0.469	0.494	5	30	
PFHpA	103683.1	11	13C4-PFHpA	604011.7	5.0	0.172	4.56	1.000	0.500	0.569	14	30	
PFHxS	34370.8	19	13C3-PFHxS	342157.6	4.7	0.100	4.57	1.000	0.456	0.489	7	30	
6:2-FTS	12373.1	11	13C2-6:2-FTS	51341.9	4.8	0.241	4.92	1.000	0.474	0.600	27	30	
PFHpS	33553.7	11	13C3-PFHxS	342157.6	4.7	0.098	4.93	1.080	0.476	0.519	9	30	
PFOA	114562.0	11	13C8-PFOA	1056721.3	5.0	0.108	4.93	1.000	0.500	0.574	15	30	
PFOS	40193.8	22	13C8-PFOS	338685.7	4.8	0.119	5.26	1.000	0.463	0.520	12	30	
PFNA	97577.3	11	13C9-PFNA	685124.5	5.0	0.142	5.28	1.000	0.500	0.566	13	30	
PFNS	26611.4	11	13C8-PFOS	338685.7	4.8	0.079	5.56	1.060	0.480	0.500	4	30	
PFDA	90078.4	11	13C6-PFDA	879280.0	5.0	0.102	5.58	1.000	0.500	0.529	6	30	
8:2-FTS	11537.9	10	13C2-8:2-FTS	41608.9	4.8	0.277	5.58	1.000	0.479	0.558	17	30	
PFOSA	68595.3	11	13C8-PFOA	632676.2	5.0	0.108	5.65	1.000	0.500	0.542	8	30	
NMeFOSAA	17242.8	20	d3-NMeFOSAA	202378.7	5.0	0.085	5.72	1.000	0.500	0.530	6	30	
PFDS	21511.2	11	13C8-PFOS	338685.7	4.8	0.064	5.81	1.100	0.482	0.521	8	30	
PFUnDA	97436.6	11	13C7-PFUnDA	605028.9	5.0	0.161	5.83	1.000	0.500	0.533	7	30	
NEtFOSAA	17285.4	17	d5-NEtFOSAA	176057.5	5.0	0.098	5.85	1.000	0.500	0.500	0	30	
PFDoDA	123420.5	11	13C2-PFDoDA	1238000.4	5.0	0.100	6.06	1.000	0.500	0.502	0	30	
10:2-FTS	9993.2	11	13C2-8:2-FTS	41608.9	4.8	0.240	6.08	1.090	0.482	0.489	1	30	
NMePFOSAE	33183.2	11	d7-NMePFOSAE	265585.1	5.0	0.125	6.10	1.000	0.500	0.551	10	30	
NMePFOSA	9304.1	11	d3-NMePFOSA	81809.0	5.0	0.114	6.11	1.000	0.500	0.574	15	30	
PFDoS	9816.3	11	13C8-PFOS	338685.7	4.8	0.029	6.23	1.180	0.484	0.439	-9	30	
NEtPFOSAE	36673.9	11	d9-NEtPFOSAE	235788.2	5.0	0.156	6.26	1.000	0.500	0.508	2	30	
NEtPFOSA	8488.3	11	d5-NEtPFOSA	69823.4	5.0	0.122	6.28	1.000	0.500	0.569	14	30	
PFTrDA	129114.4	11	13C2-PFDoDA	1238000.4	5.0	0.104	6.26	1.030	0.500	0.535	7	30	
PFTeDA	90148.4	10	13C2-PFTeDA	905389.6	5.0	0.100	6.44	1.000	0.500	0.536	7	30	
PFHxDA	47073.3	11	13C2-PFTeDA	905389.6	5.0	0.052	6.74	1.050	0.500	0.571	14	30	
PFODA	35177.4	10	13C2-PFTeDA	905389.6	5.0	0.039	7.01	1.090	0.500	0.558	12	30	

**Instrument Sensitivity Check/  
Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MCD at 7:31 pm, 12/19/18

**REVIEWED**  
By HMK at 12:23 pm, 12/21/18

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV1_ISC_CAL2	Data File:	18DEC19D-05.wiff
Sample ID:	CALBRN21833C	Acquis Date:	2018-12-19T10:43:56
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	4	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC19DCCV1-5
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MCD7824
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC18DCAL-70

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	942675.8	941251.6	0	50	
13C2-PFOA	5.0	520268.5	485595.3	7	50	
13C4-PFOS	4.8	307968.9	292182.6	5	50	
13C2-PFDA	5.0	487375.3	467216.0	4	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1081831.1	13C3-PFBA	942675.8	1.148	5.000	5.082	102	70-130	
E13C5-PFPeA	1015138.6	13C3-PFBA	942675.8	1.077	5.000	5.022	100	70-130	
E13C3-PFBS	458914.8	13C3-PFBA	942675.8	0.487	4.650	4.740	102	70-130	
E13C2-4:2-FTS	61511.2	13C2-PFOA	520268.5	0.118	4.670	4.490	96	70-130	
E13C5-PFHxA	759858.0	13C2-PFOA	520268.5	1.461	5.000	5.224	104	70-130	
E13C3-PFHxS	342157.6	13C2-PFOA	520268.5	0.658	4.730	4.977	105	70-130	
E13C4-PFHpA	604011.7	13C2-PFOA	520268.5	1.161	5.000	5.015	100	70-130	
E13C2-6:2-FTS	51341.9	13C2-PFOA	520268.5	0.099	4.750	4.965	105	70-130	
E13C8-PFOA	1056721.3	13C2-PFOA	520268.5	2.031	5.000	5.585	112	70-130	
E13C8-PFOS	338685.7	13C4-PFOS	307968.9	1.100	4.780	4.918	103	70-130	
E13C9-PFNA	685124.5	13C4-PFOS	307968.9	2.225	5.000	5.061	101	70-130	
E13C6-PFDA	879280.0	13C2-PFDA	487375.3	1.804	5.000	5.139	103	70-130	
E13C2-8:2-FTS	41608.9	13C2-PFDA	487375.3	0.085	4.790	4.400	92	70-130	
E13C8-PFOA	632676.2	13C2-PFDA	487375.3	1.298	5.000	5.055	101	70-130	
Ed3-NMeFOSAA	202378.7	13C2-PFDA	487375.3	0.415	5.000	4.568	91	70-130	
E13C7-PFUnDA	605028.9	13C2-PFDA	487375.3	1.241	5.000	5.196	104	70-130	
Ed5-NEtFOSAA	176057.5	13C2-PFDA	487375.3	0.361	5.000	5.322	106	70-130	
E13C2-PFDoDA	1238000.4	13C2-PFDA	487375.3	2.540	5.000	5.344	107	70-130	
Ed7-NMePFOSAE	265585.1	13C2-PFDA	487375.3	0.545	5.000	4.869	97	70-130	
Ed3-NMePFOSA	81809.0	13C2-PFDA	487375.3	0.168	5.000	4.612	92	70-130	
Ed9-NEtPFOSAE	235788.2	13C2-PFDA	487375.3	0.484	5.000	4.946	99	70-130	
Ed5-NEtPFOSA	69823.4	13C2-PFDA	487375.3	0.143	5.000	4.969	99	70-130	
E13C2-PFTeDA	905389.6	13C2-PFDA	487375.3	1.858	5.000	5.235	105	70-130	





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

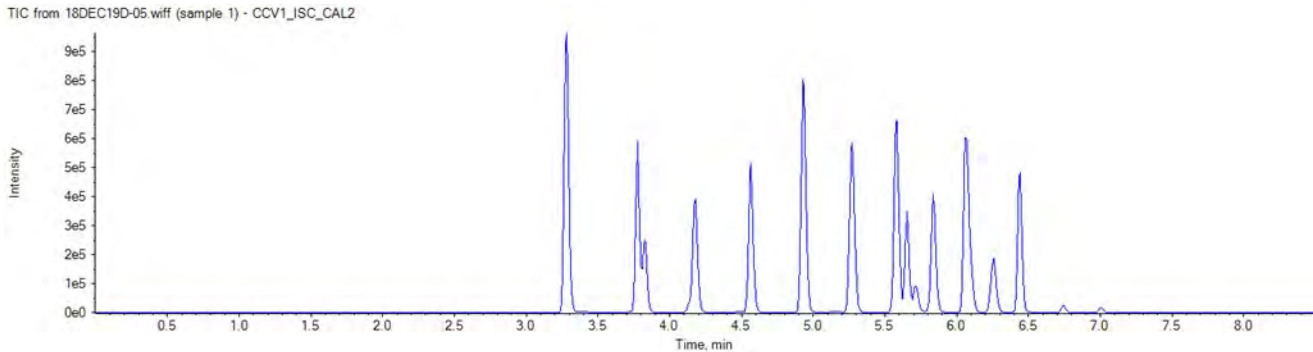
**Analyte Quantitation Peak Table**

Sample Name: CCV1\_ISC\_CAL2 Instrument Name: LM27631 File Name: 18DEC19D-05.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.28	1.000	112717.4		A	13C4-PFBA	3.28	1081831.1	0.104	0.553
PFPeA	3.78	1.000	115463.4		A	13C5-PFPeA	3.78	1015138.6	0.114	0.587
PFBS	3.83	1.000	44925.3		A	13C3-PFBS	3.83	458914.8	0.098	0.483
4:2-FTS	4.14	1.000	11736.4		A	13C2-4:2-FTS	4.14	61511.2	0.191	0.501
PFHxA	4.18	1.000	107079.2		A	13C5-PFHxA	4.18	759858.0	0.141	0.581
PFPeS	4.20	1.100	22247.6		A	13C3-PFBS	3.83	458914.8	0.048	0.494
PFHpA	4.56	1.000	103683.1		A	13C4-PFHpA	4.56	604011.7	0.172	0.569
PFHxS	4.57	1.000	34370.8		M	13C3-PFHxS	4.57	342157.6	0.100	0.489
6:2-FTS	4.92	1.000	12373.1		A	13C2-6:2-FTS	4.92	51341.9	0.241	0.600
PFHpS	4.93	1.080	33553.7		A	13C3-PFHxS	4.57	342157.6	0.098	0.519
PFOA	4.93	1.000	114562.0		A	13C8-PFOA	4.93	1056721.3	0.108	0.574
PFOS	5.26	1.000	40193.8		M	13C8-PFOS	5.26	338685.7	0.119	0.520
PFNA	5.28	1.000	97577.3		A	13C9-PFNA	5.28	685124.5	0.142	0.566
PFNS	5.56	1.060	26611.4		A	13C8-PFOS	5.26	338685.7	0.079	0.500
PFDA	5.58	1.000	90078.4		A	13C6-PFDA	5.58	879280.0	0.102	0.529
8:2-FTS	5.58	1.000	11537.9		A	13C2-8:2-FTS	5.58	41608.9	0.277	0.558
PFOSA	5.65	1.000	68595.3		A	13C8-PFOSA	5.65	632676.2	0.108	0.542
NMeFOSAA	5.72	1.000	17242.8		M	d3-NMeFOSAA	5.71	202378.7	0.085	0.530
PFDS	5.81	1.100	21511.2		A	13C8-PFOS	5.26	338685.7	0.064	0.521
PfUnDA	5.83	1.000	97436.6		A	13C7-PfUnDA	5.84	605028.9	0.161	0.533
NEtFOSAA	5.85	1.000	17285.4		M	d5-NEtFOSAA	5.84	176057.5	0.098	0.500
PFDaDA	6.06	1.000	123420.5		A	13C2-PFDaDA	6.06	1238000.4	0.100	0.502
10:2-FTS	6.08	1.090	9993.2		A	13C2-8:2-FTS	5.58	41608.9	0.240	0.489
NMePFOSAE	6.10	1.000	33183.2		A	d7-NMePFOSAE	6.09	265585.1	0.125	0.551
NMePFOSA	6.11	1.000	9304.1		A	d3-NMePFOSA	6.11	81809.0	0.114	0.574
PFDoS	6.23	1.180	9816.3		A	13C8-PFOS	5.26	338685.7	0.029	0.439
NEtPFOSAE	6.26	1.000	36673.9		A	d9-NEtPFOSAE	6.25	235788.2	0.156	0.508
NEtPFOSA	6.28	1.000	8488.3		A	d5-NEtPFOSA	6.27	69823.4	0.122	0.569
PFTrDA	6.26	1.030	129114.4		A	13C2-PFDaDA	6.06	1238000.4	0.104	0.535
PFTeDA	6.44	1.000	90148.4		A	13C2-PFTeDA	6.44	905389.6	0.100	0.536
PFHxDA	6.74	1.050	47073.3		A	13C2-PFTeDA	6.44	905389.6	0.052	0.571
PFOA	7.01	1.090	35177.4		A	13C2-PFTeDA	6.44	905389.6	0.039	0.558

**Total Ion Chromatogram**

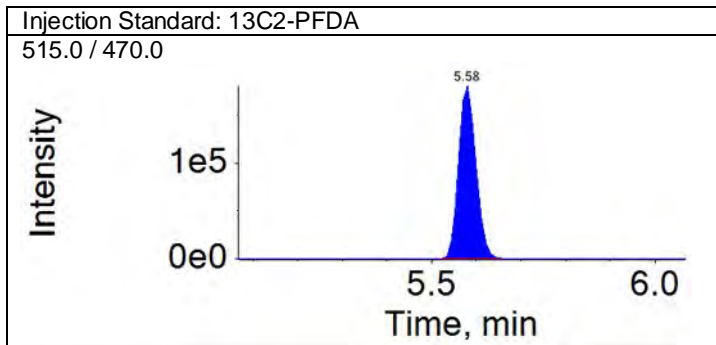
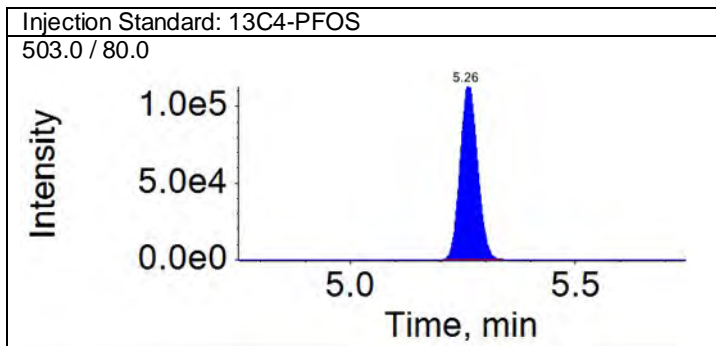
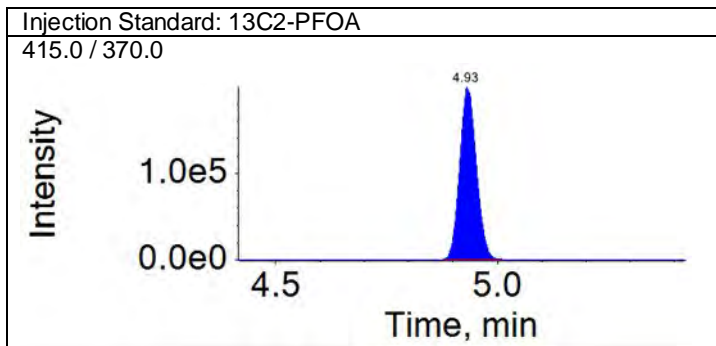
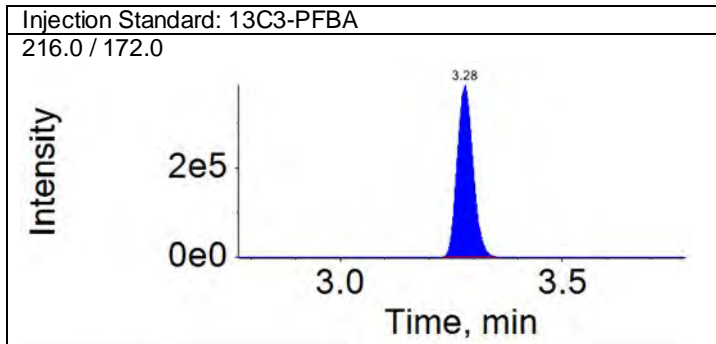


**APPROVED**  
By MCD at 7:31 pm, 12/19/18

**REVIEWED**  
By HMK at 12:23 pm, 12/21/18

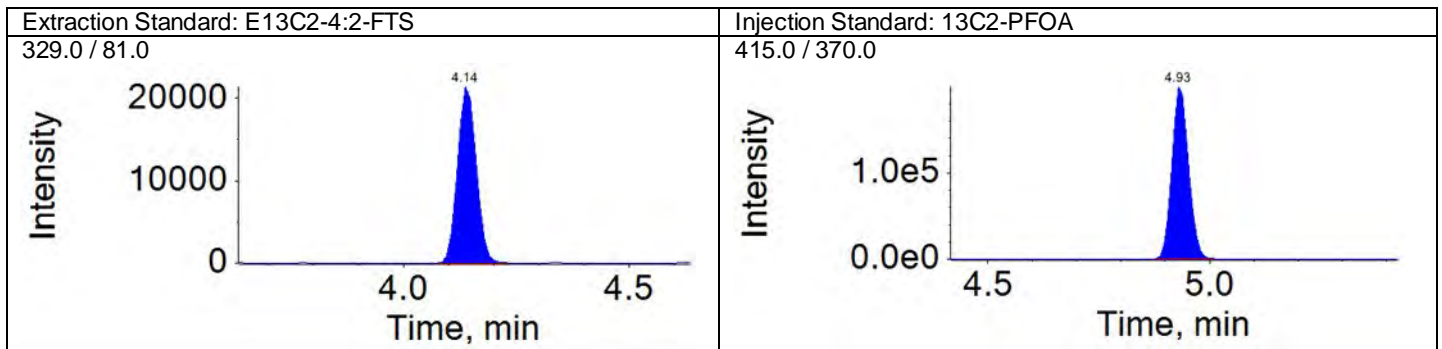
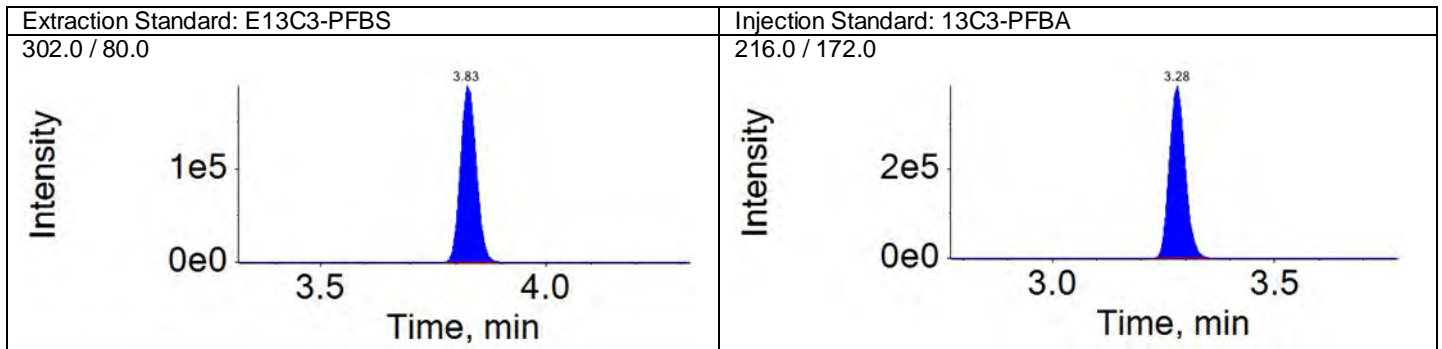
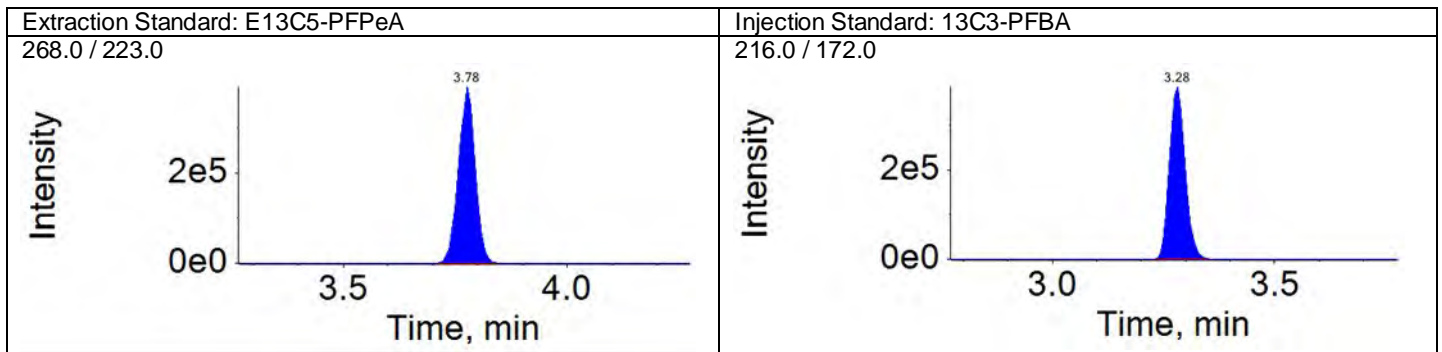
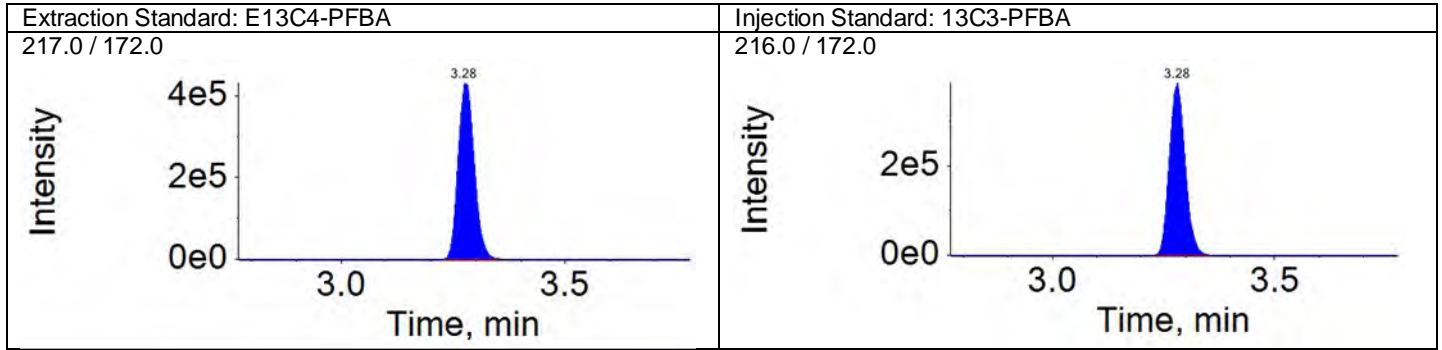
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



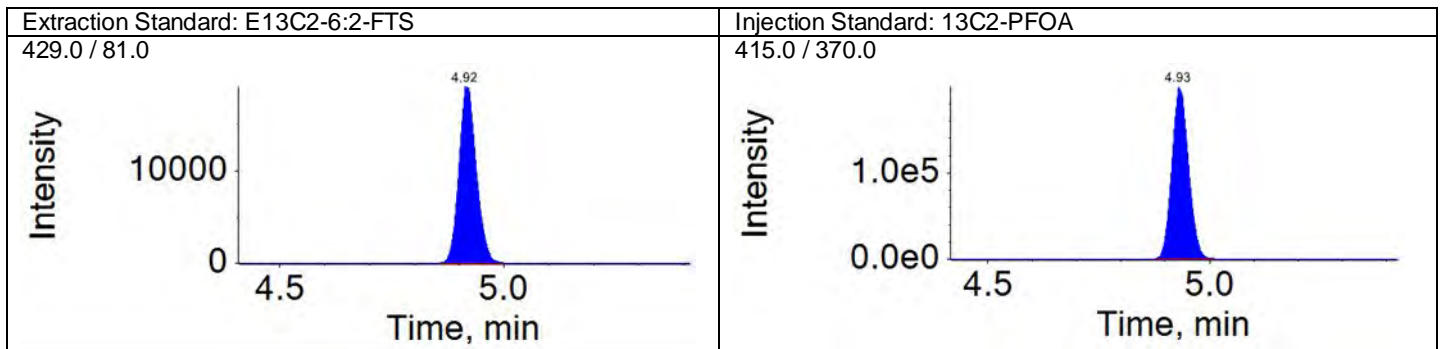
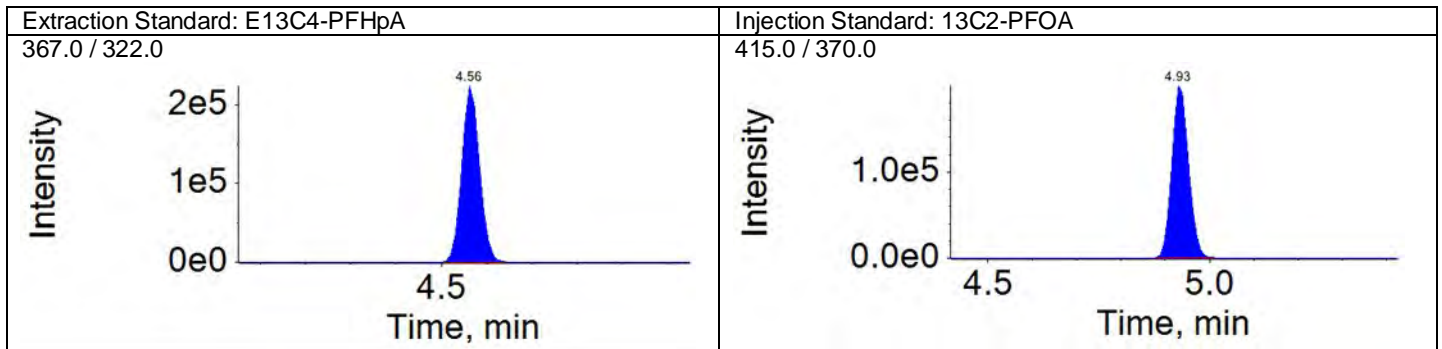
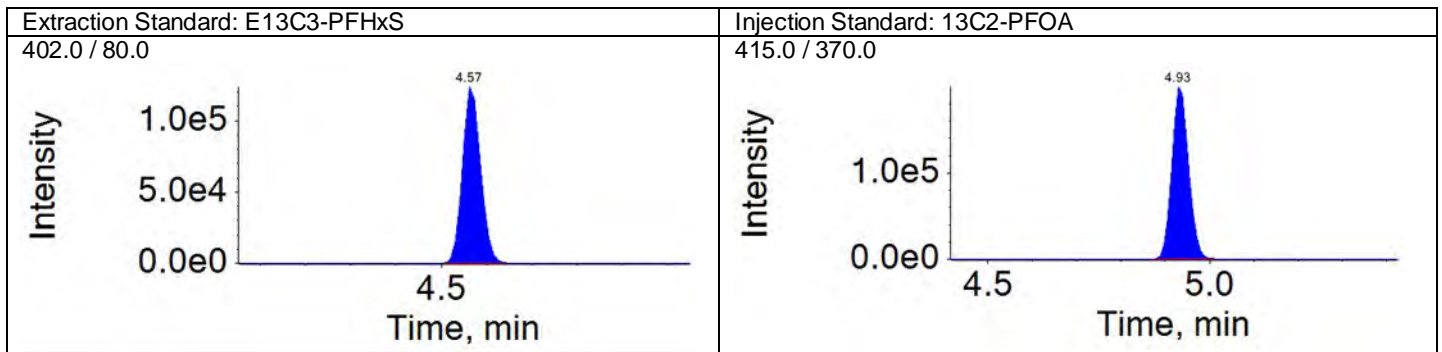
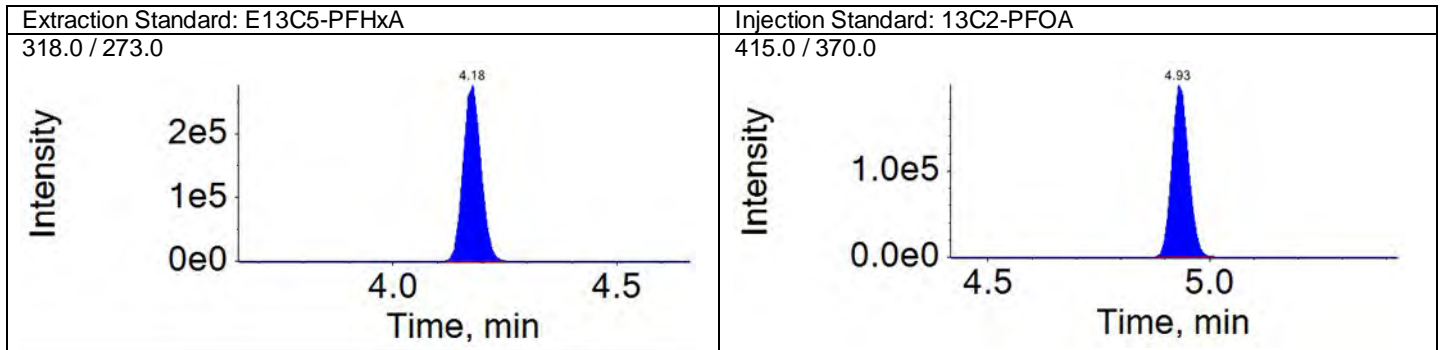
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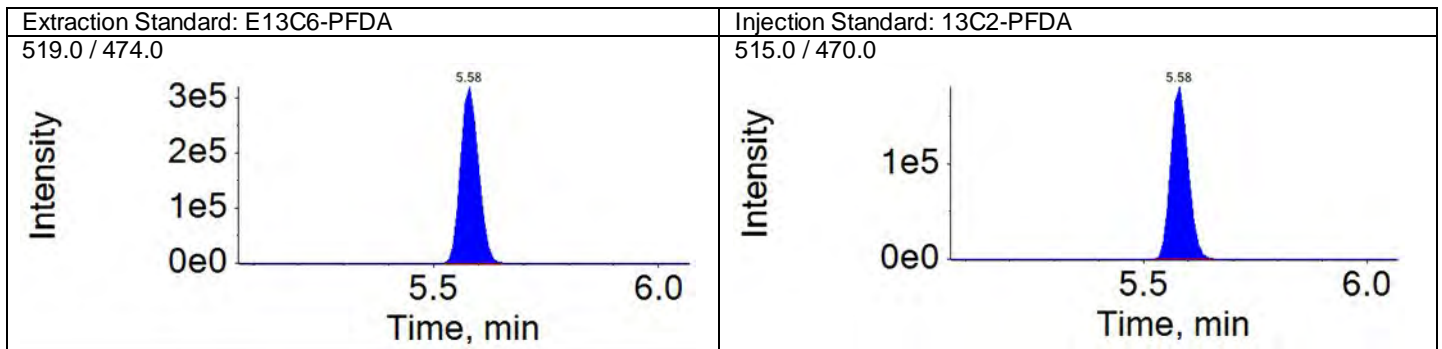
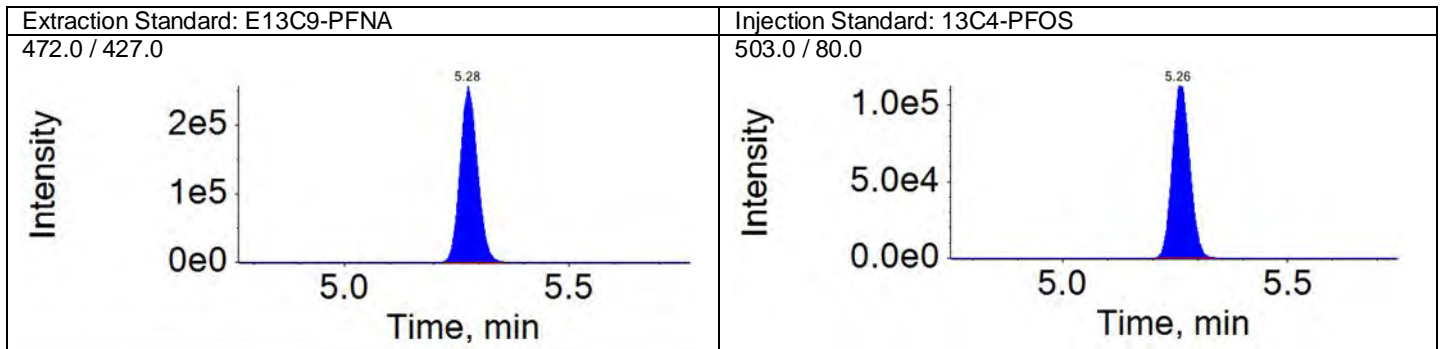
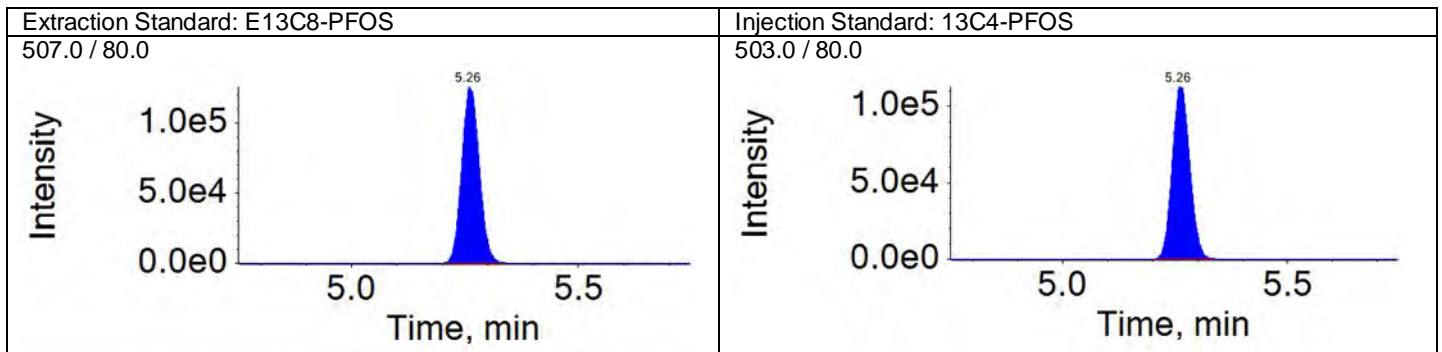
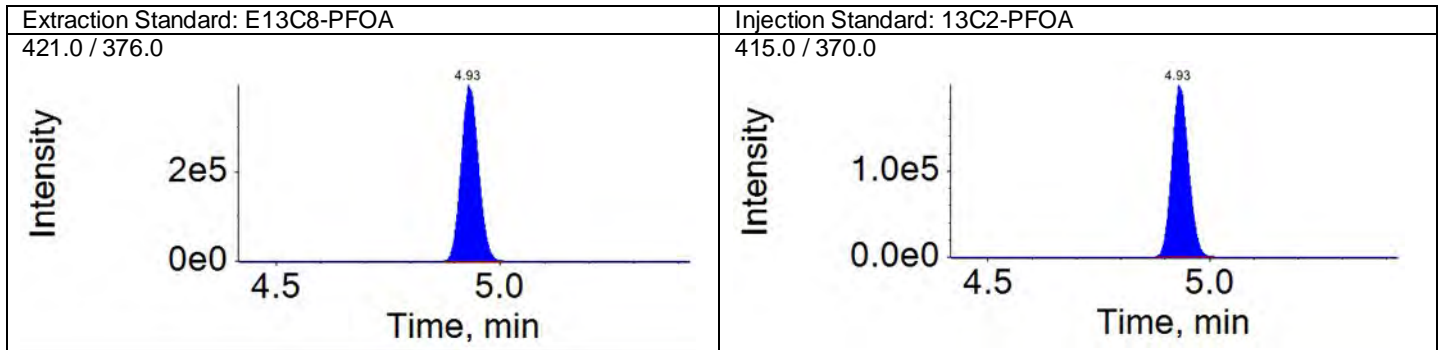
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ICAL Name: 18DEC18DCAL  
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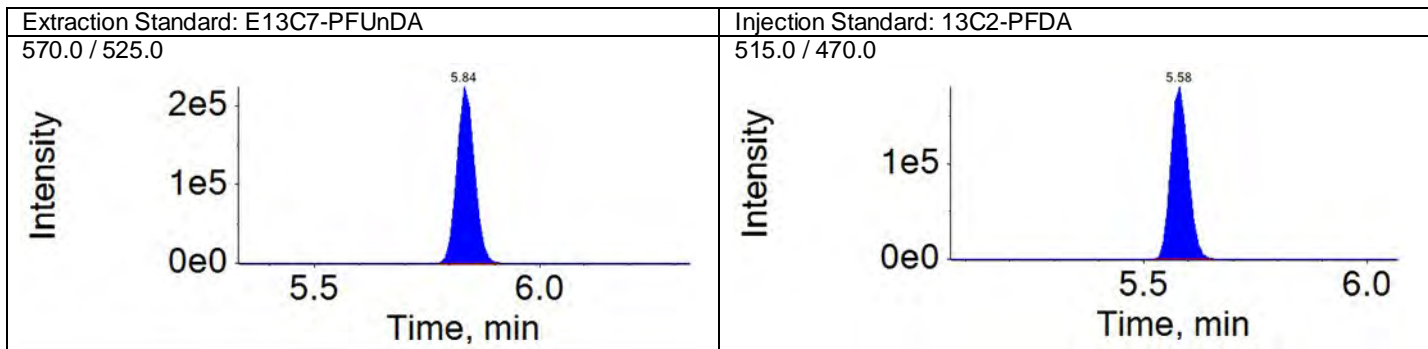
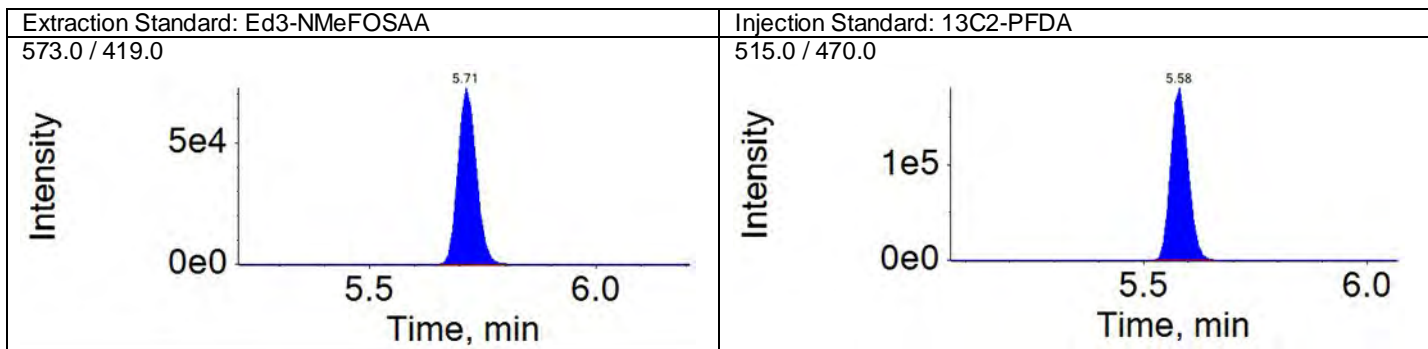
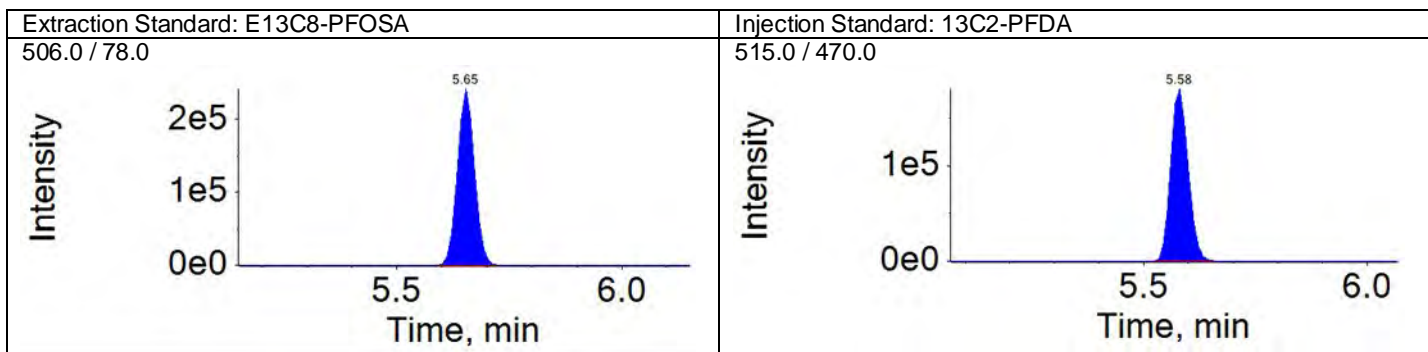
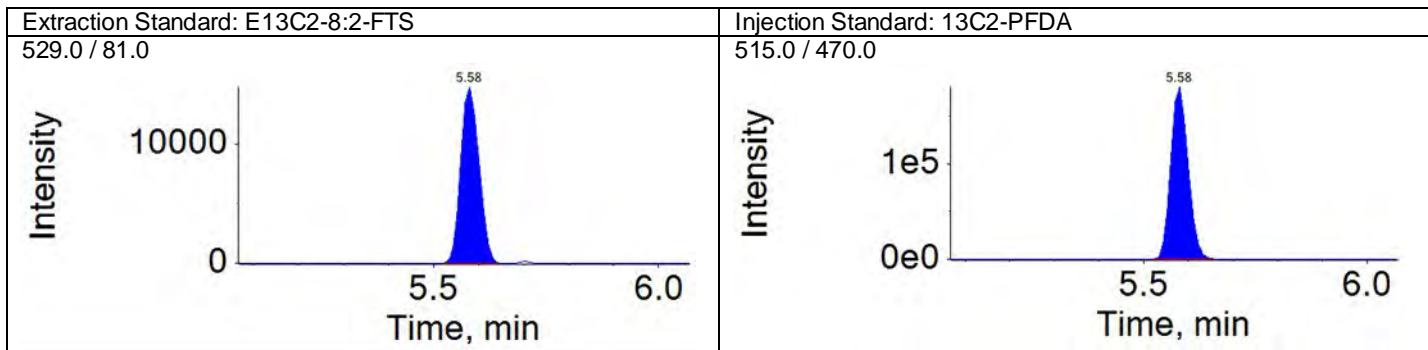
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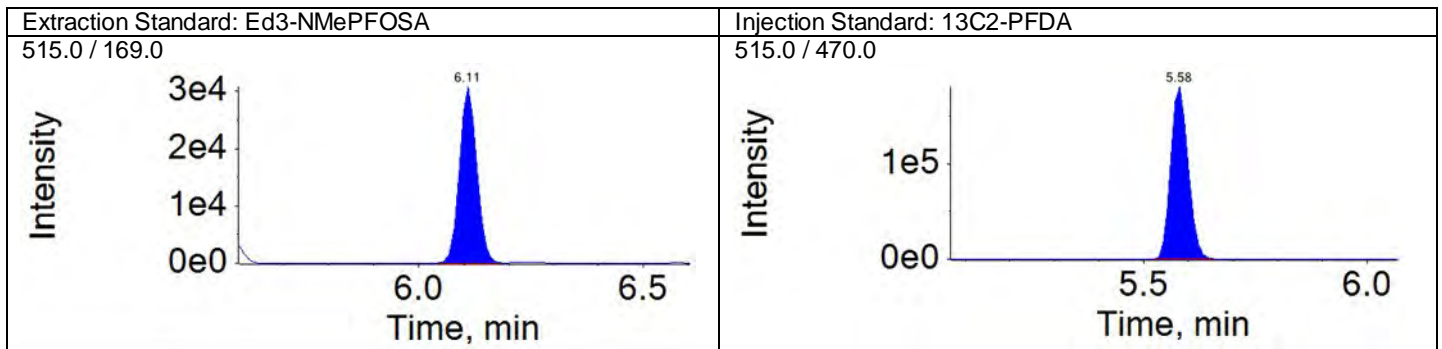
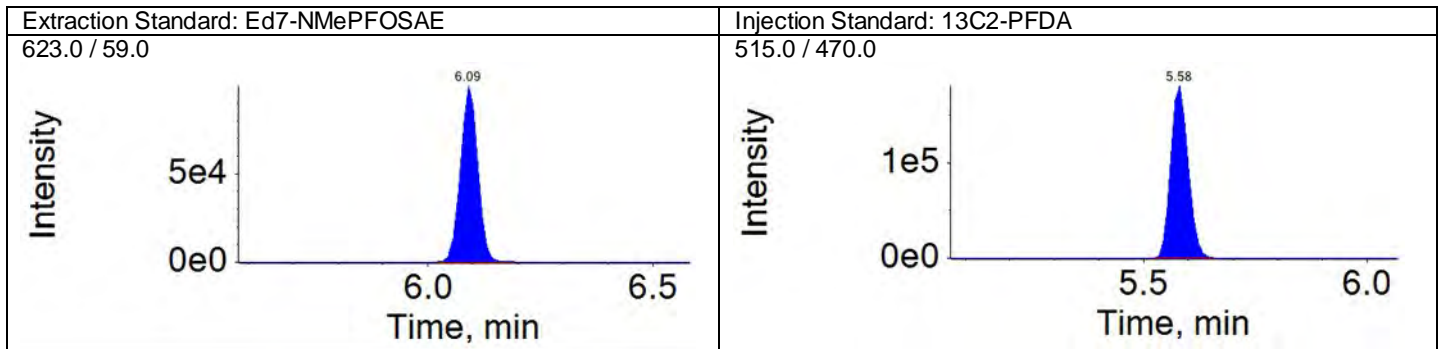
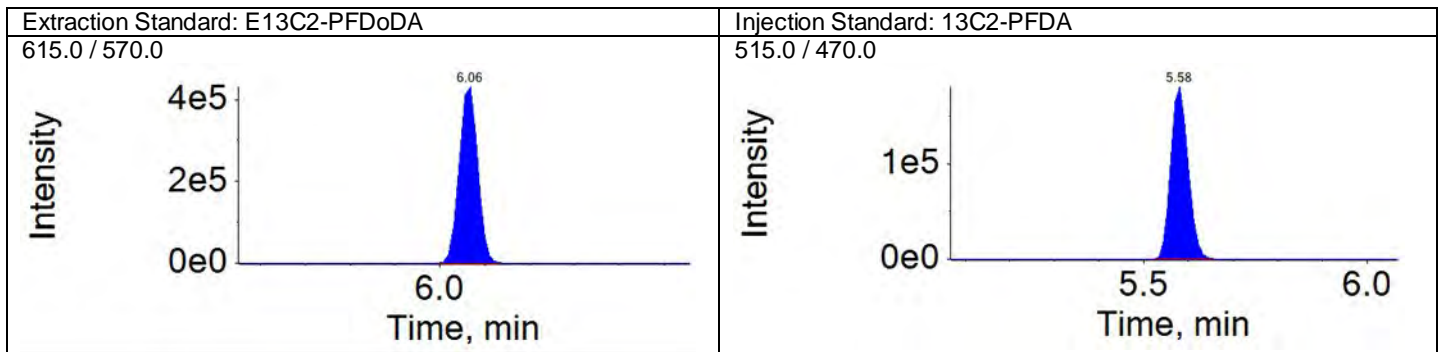
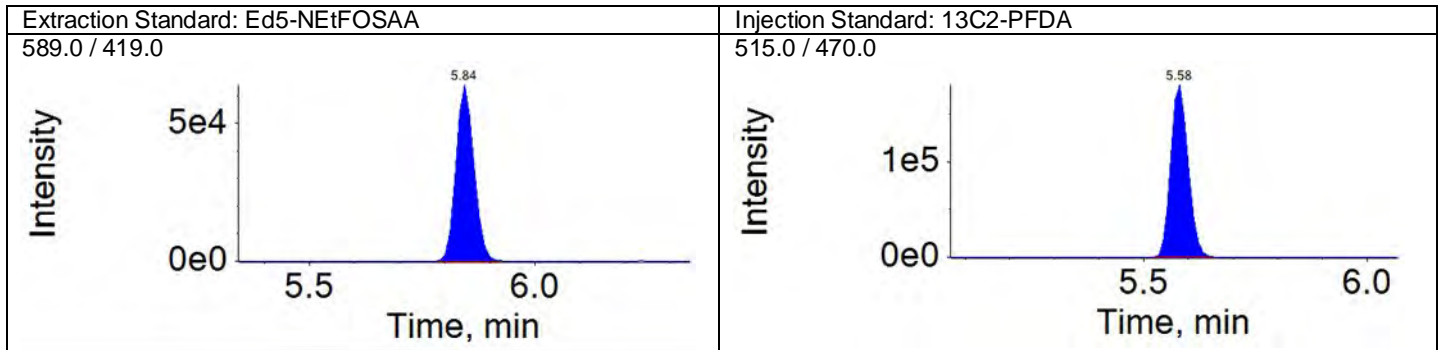
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
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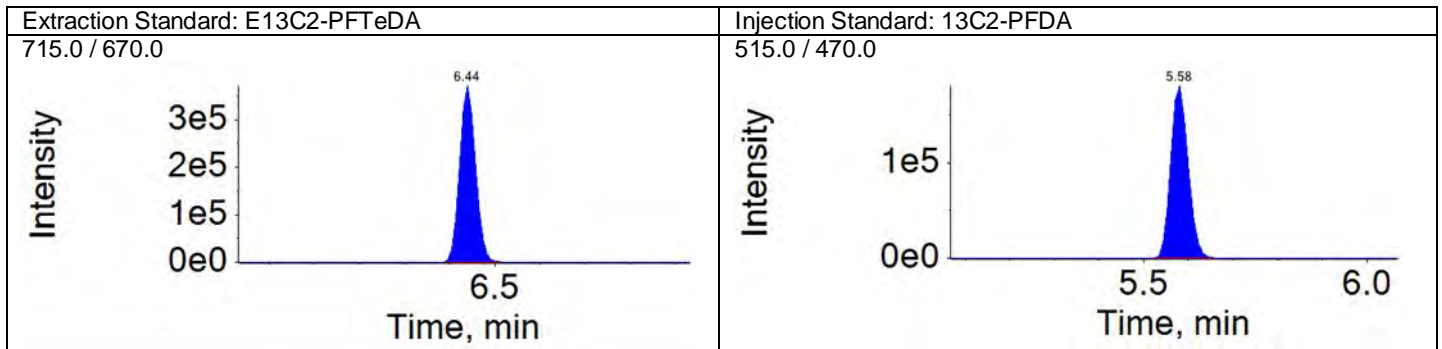
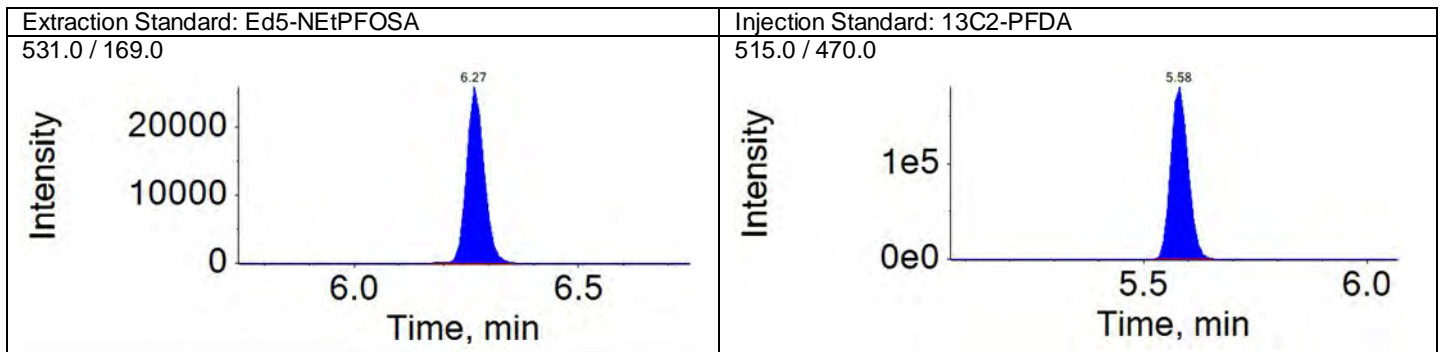
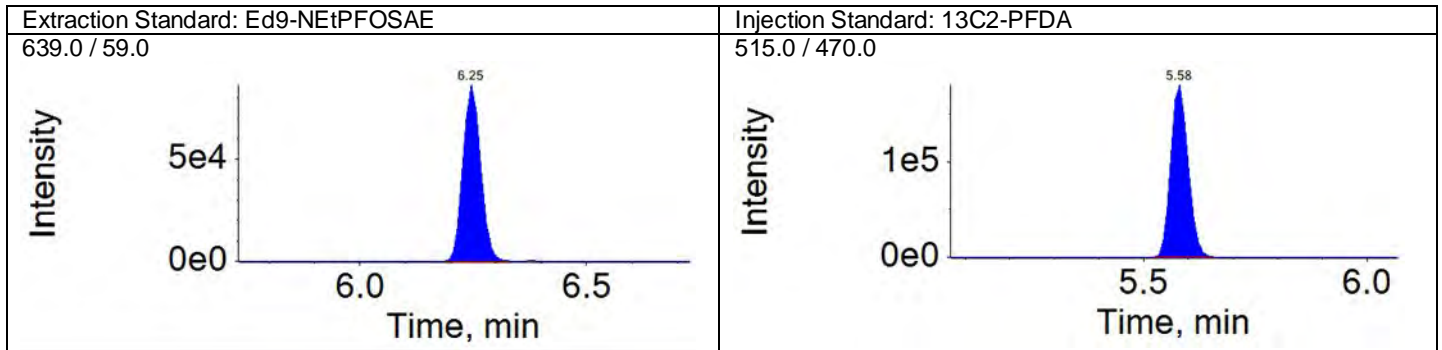
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



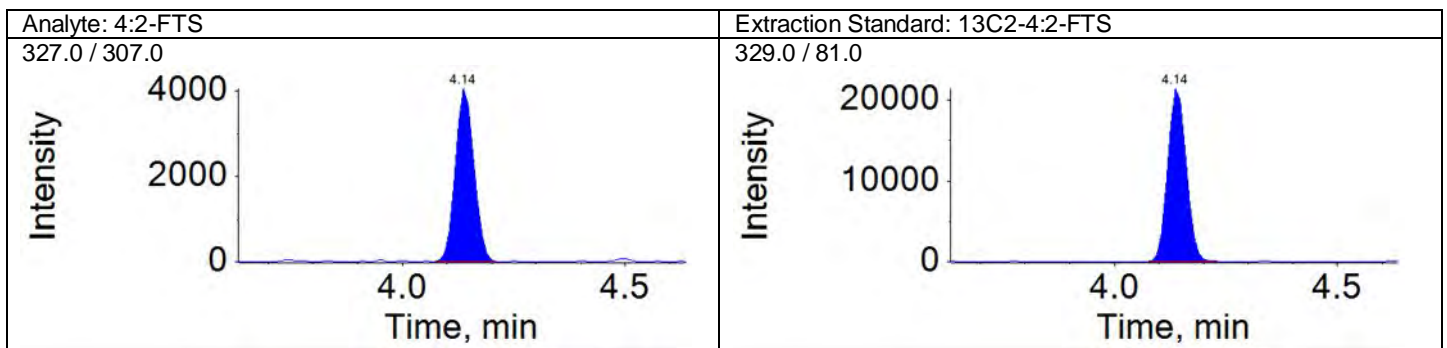
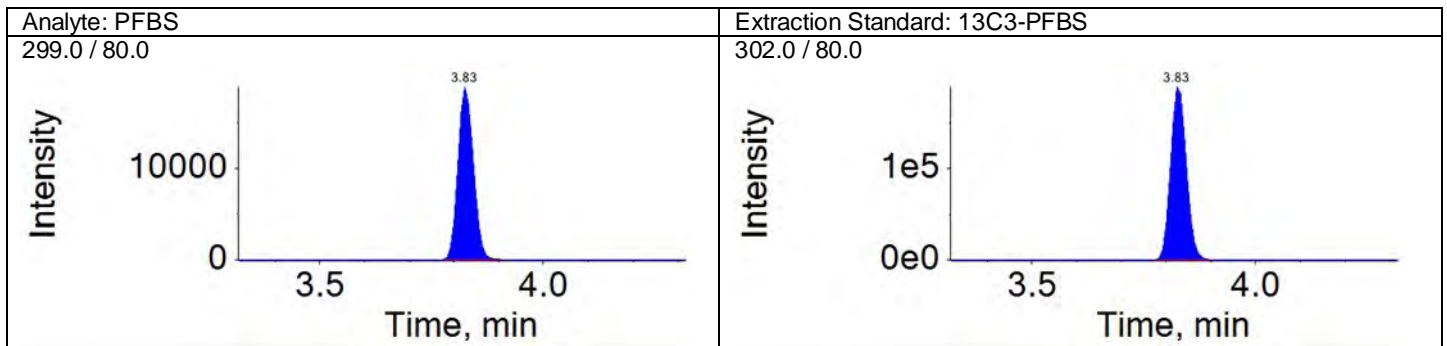
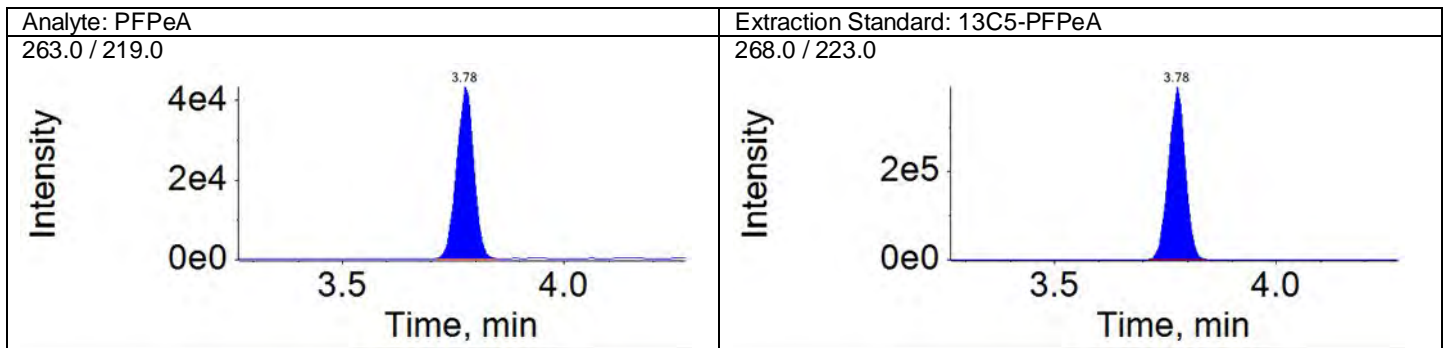
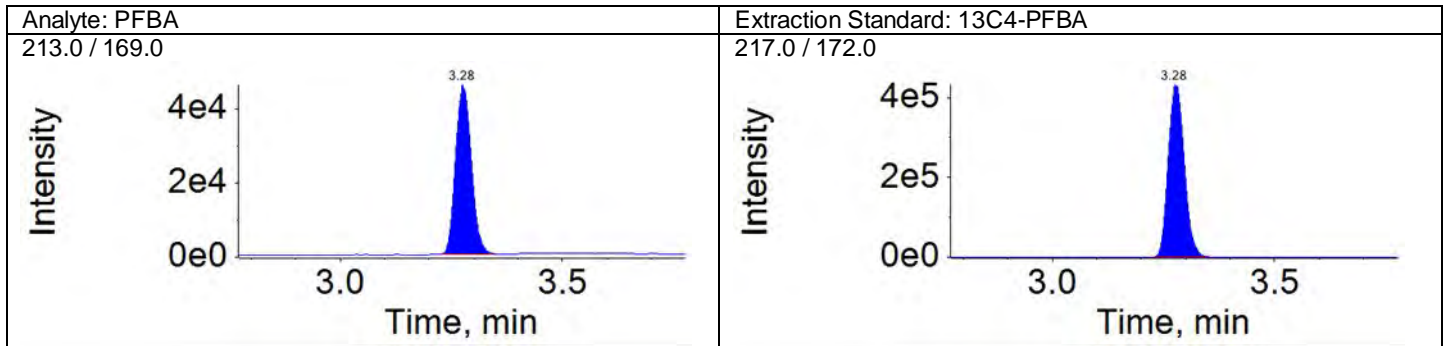
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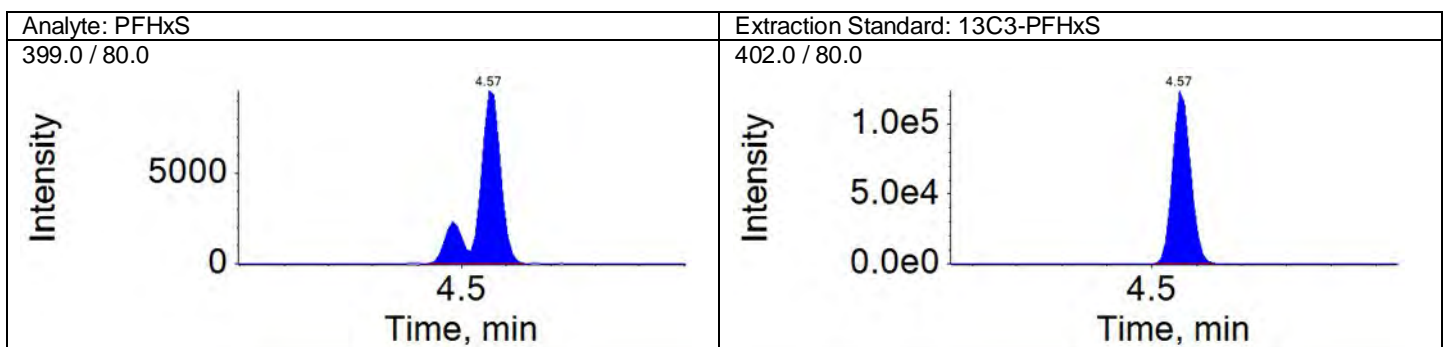
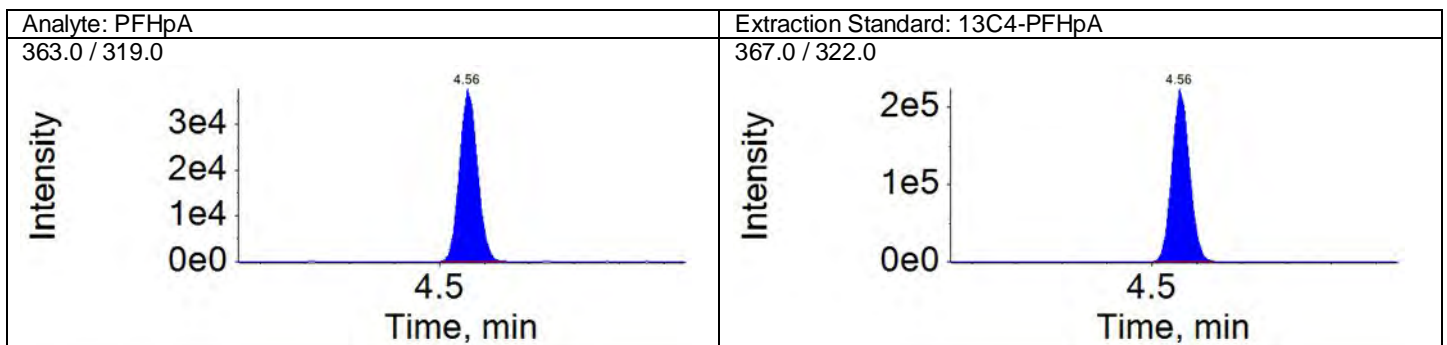
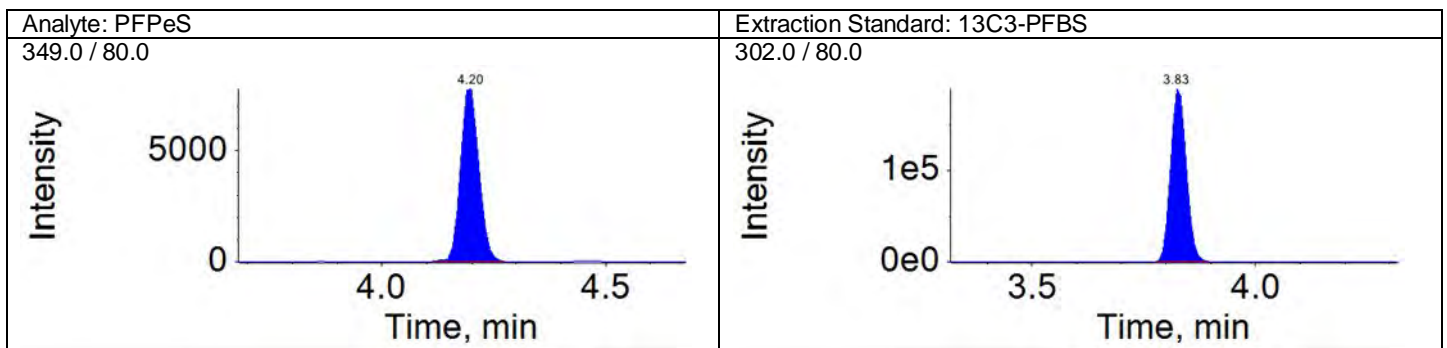
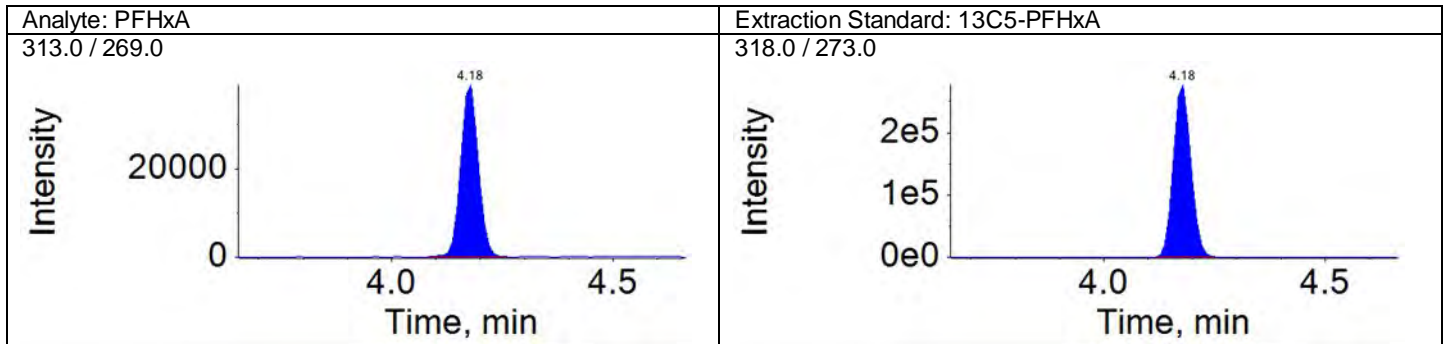
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QMethod Name: 18AUG20QM

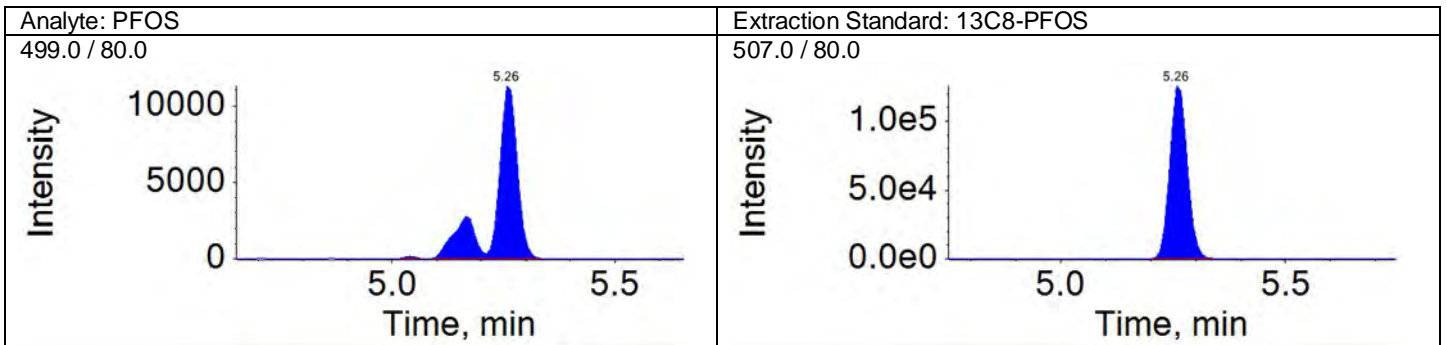
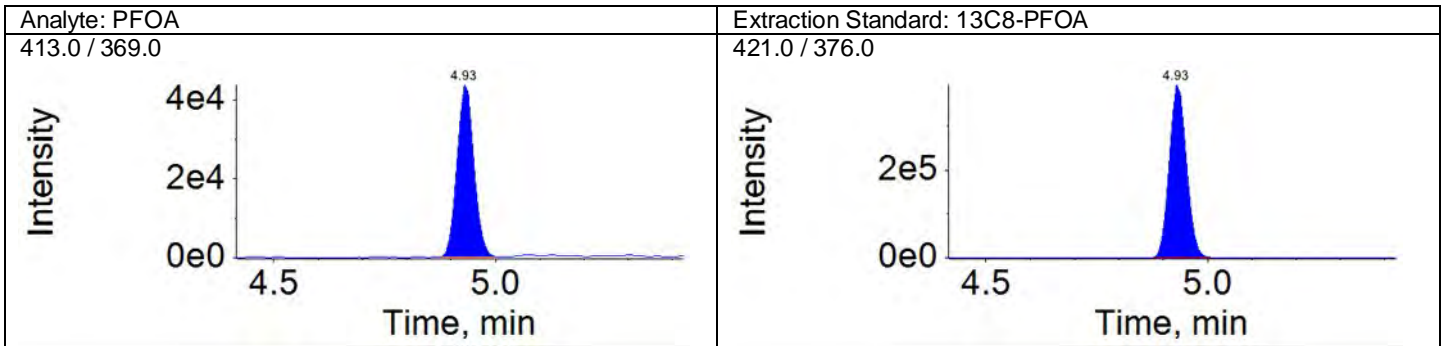
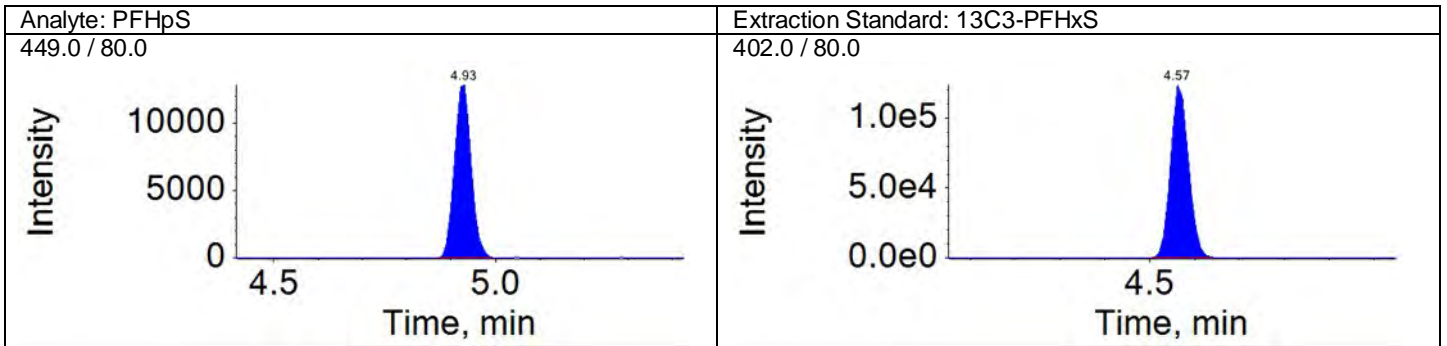
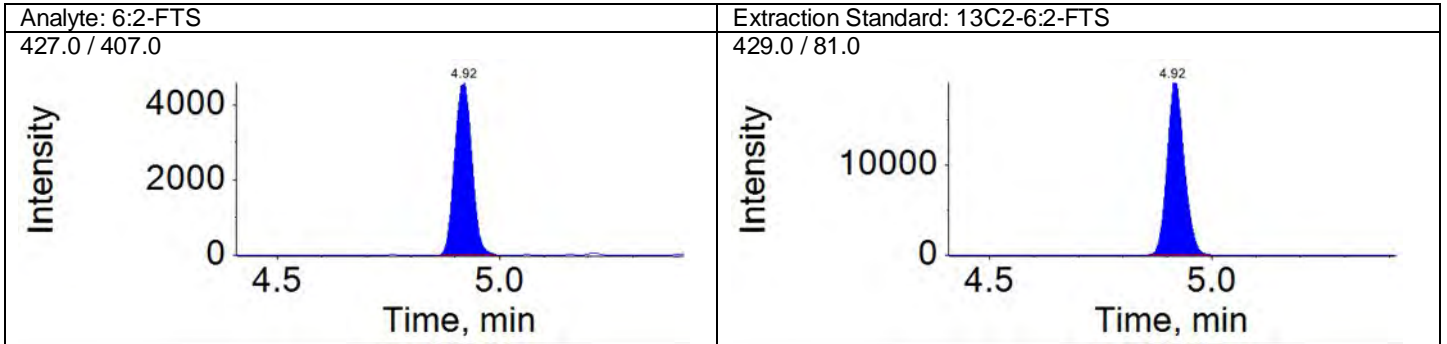
Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam





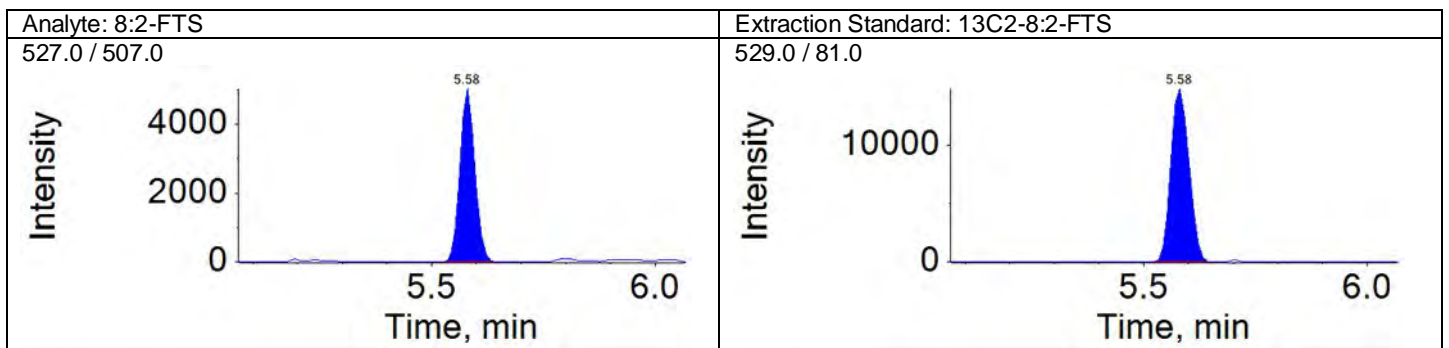
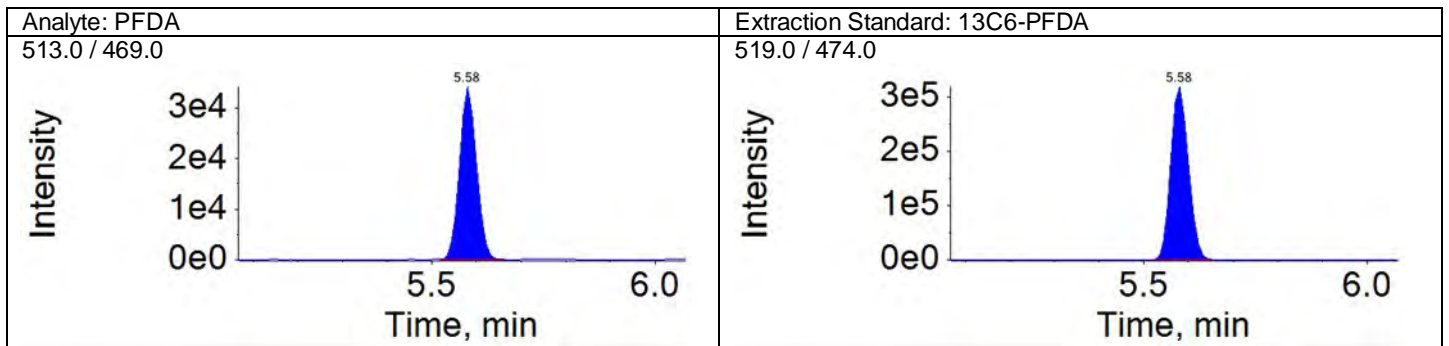
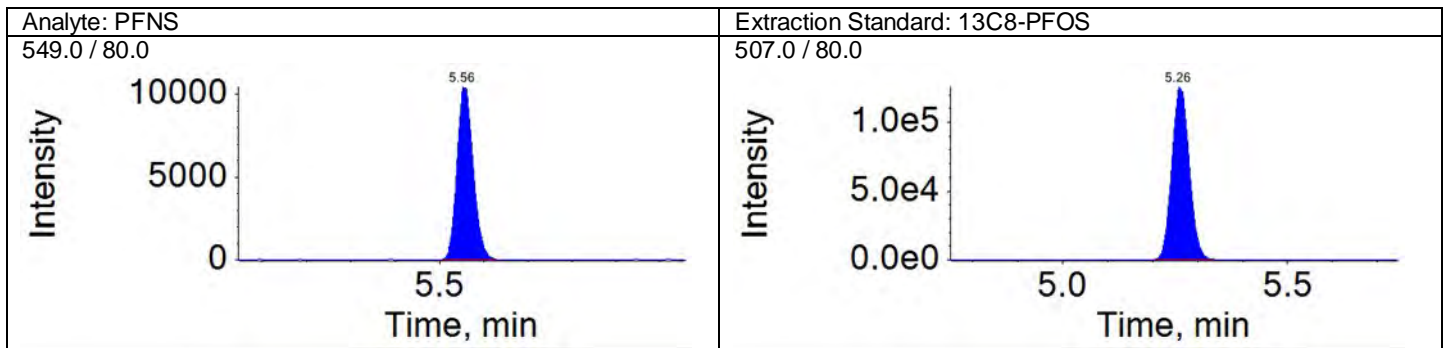
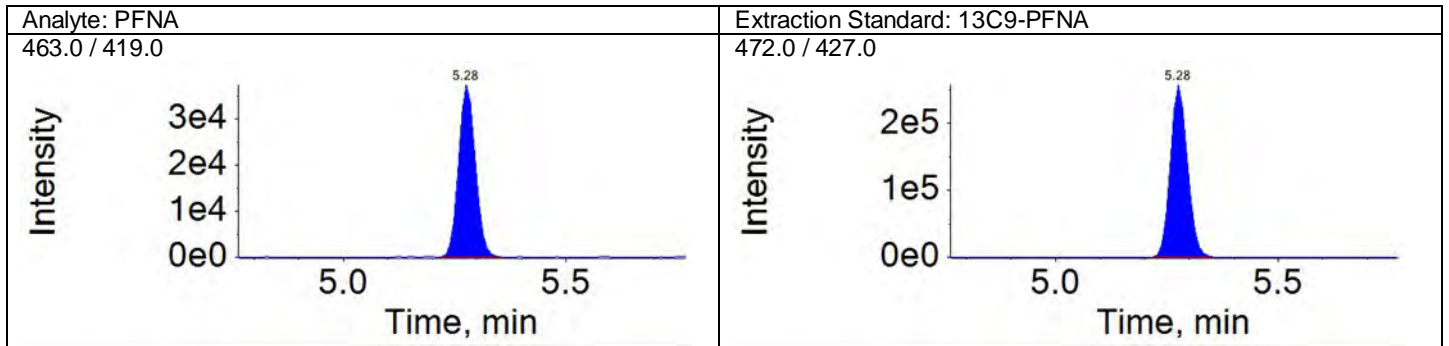
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



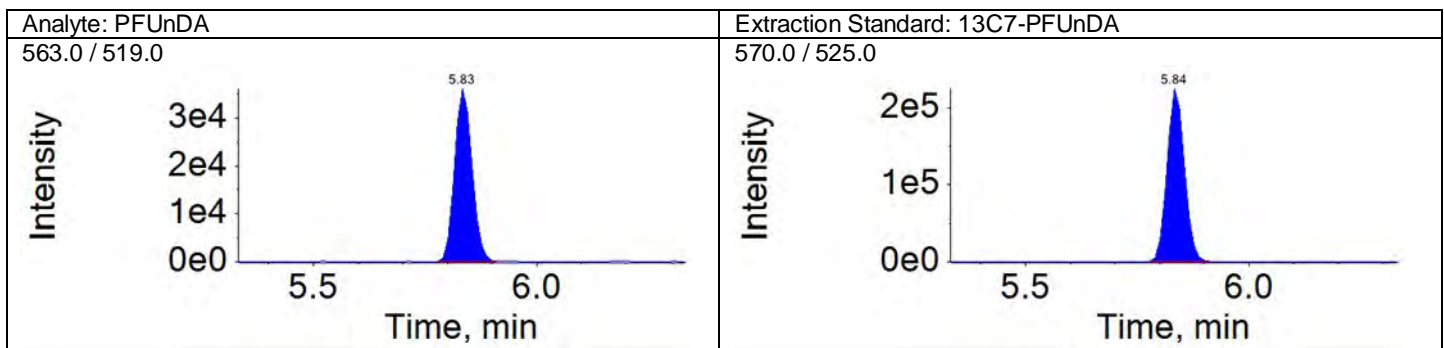
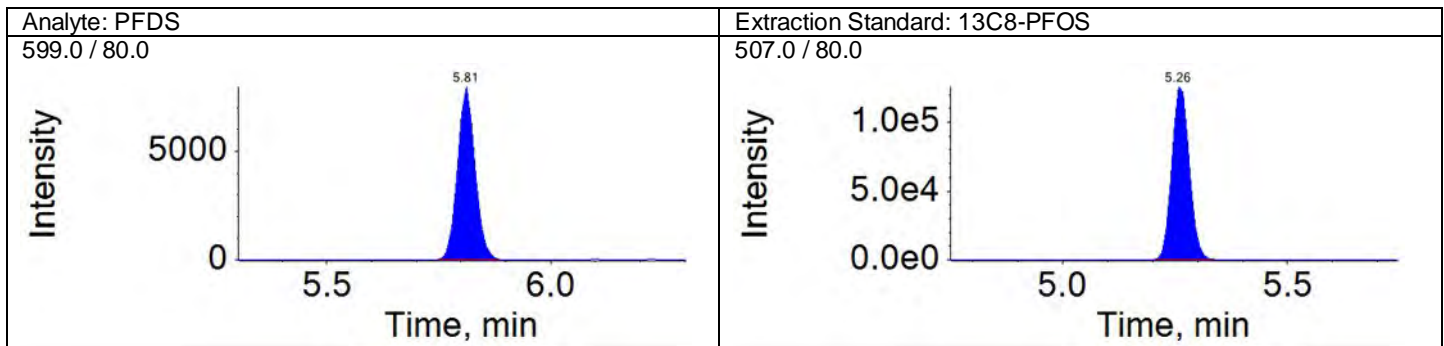
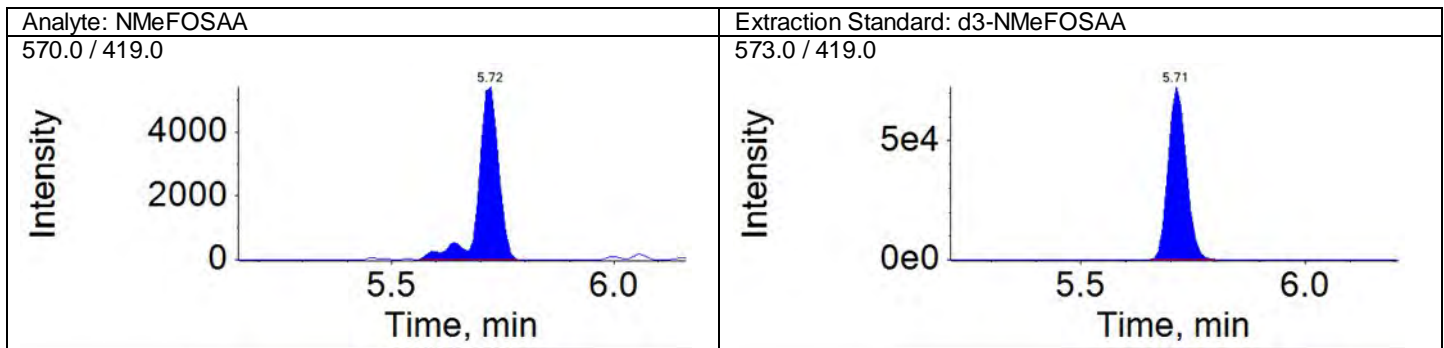
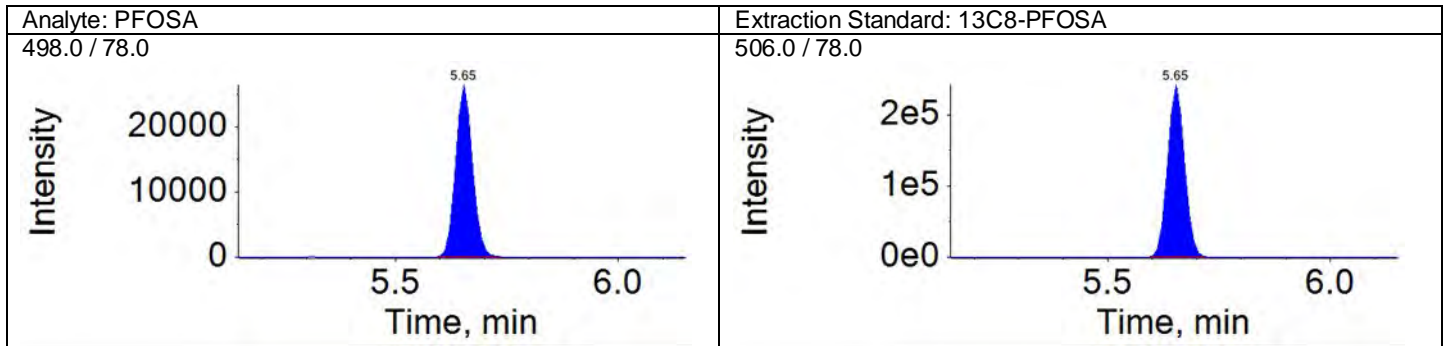
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



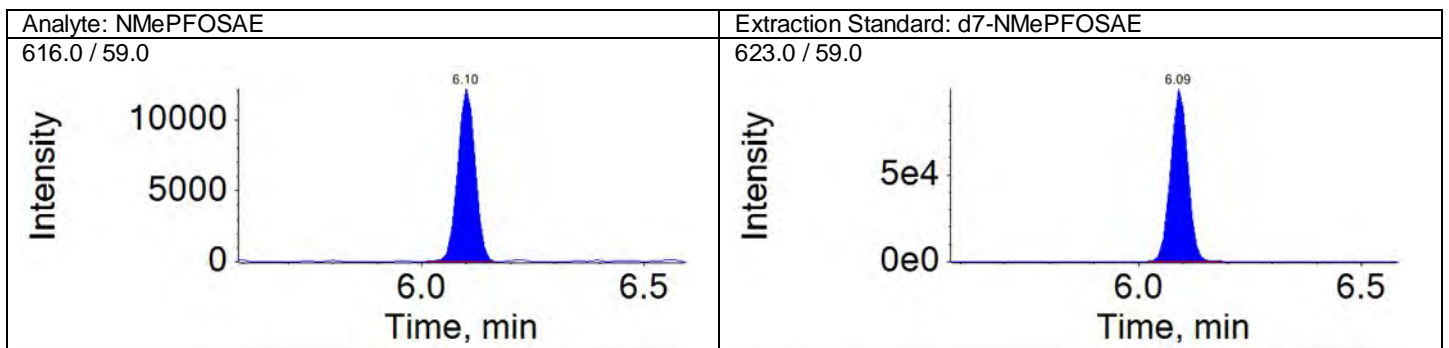
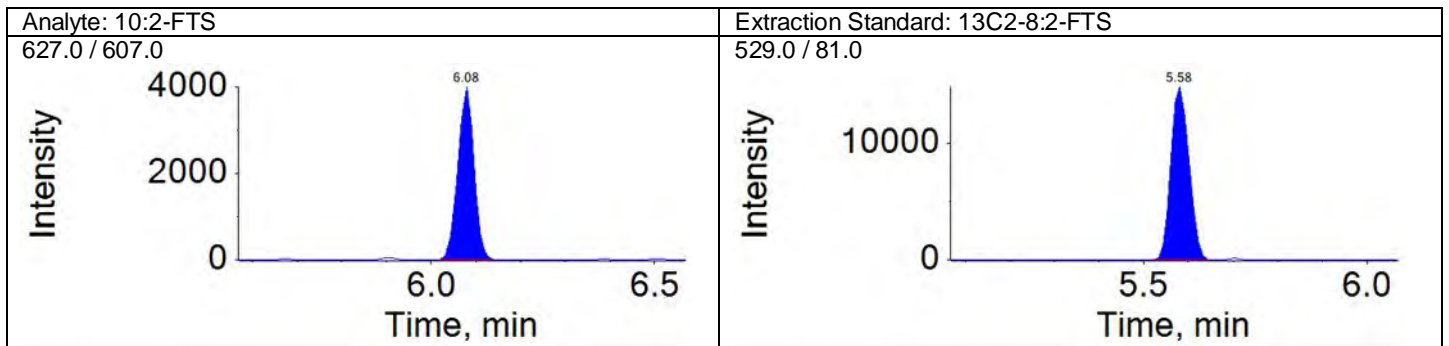
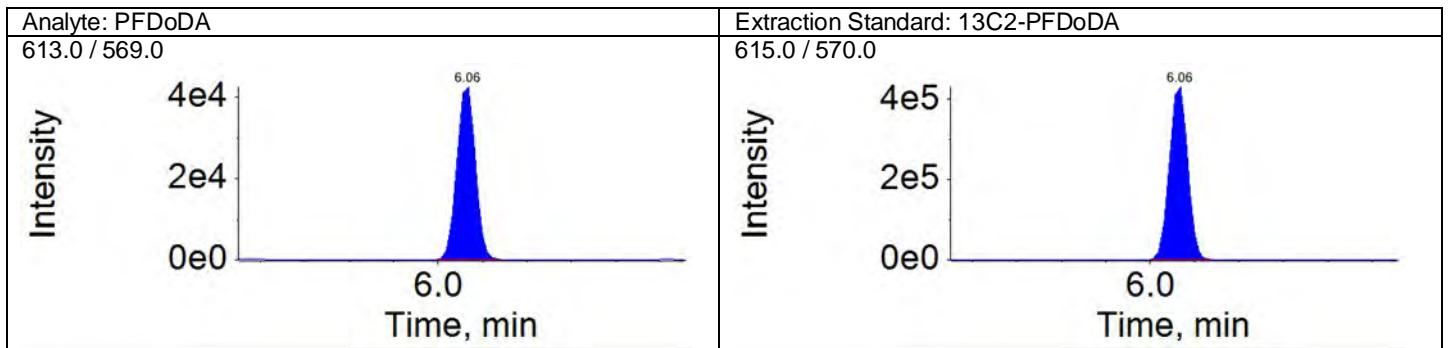
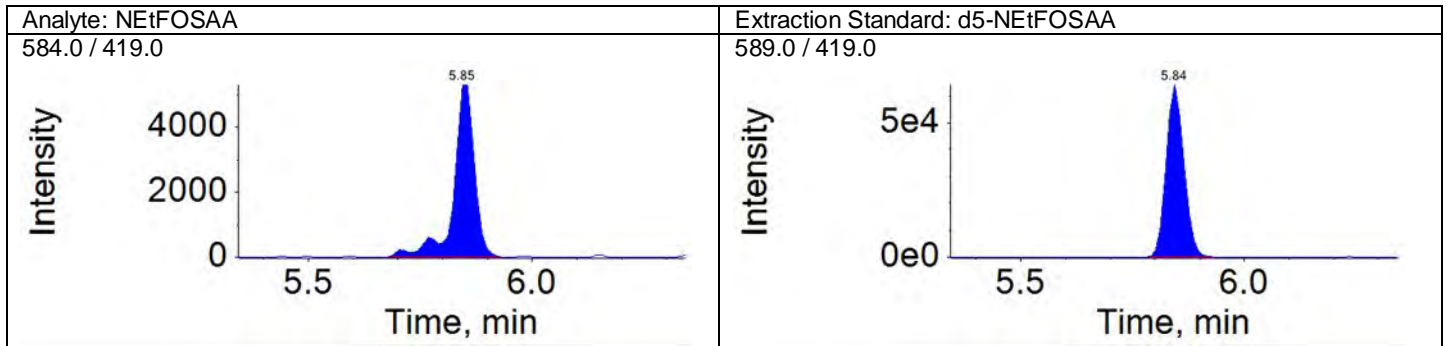
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

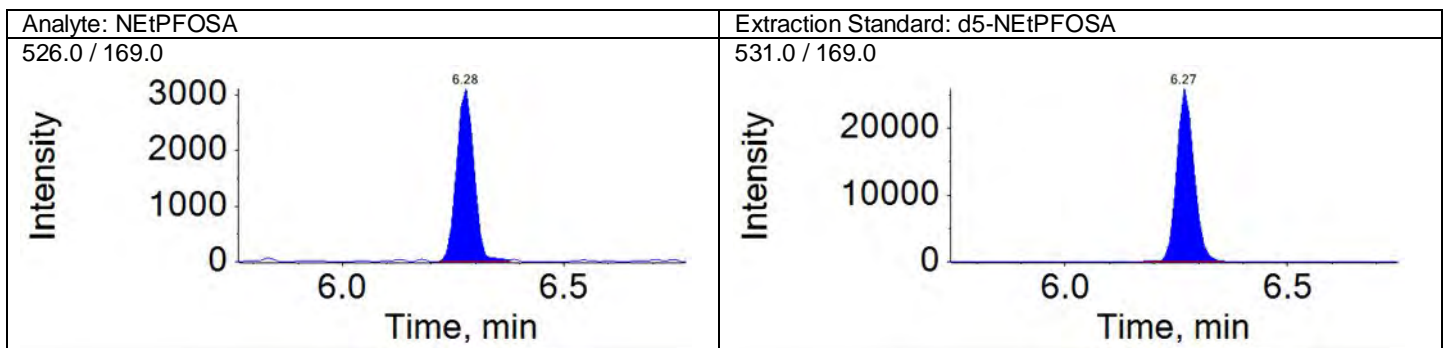
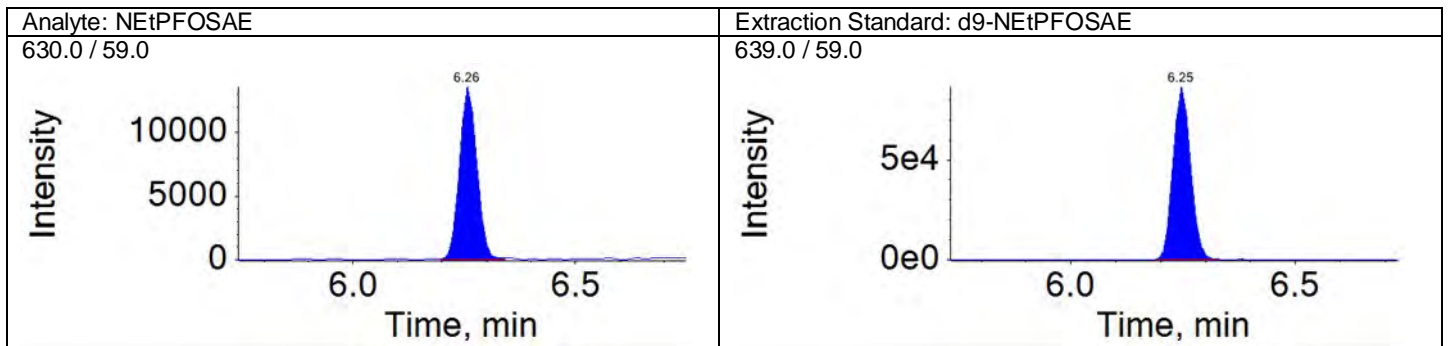
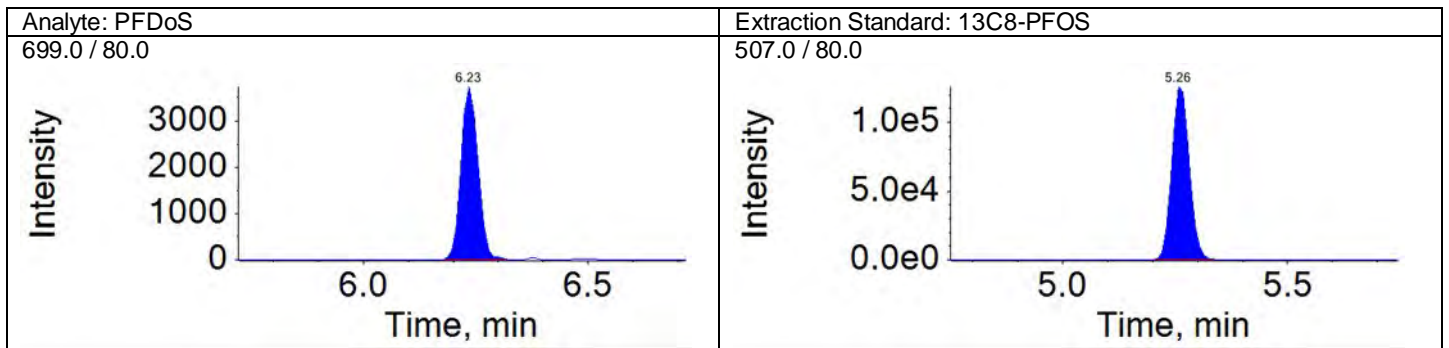
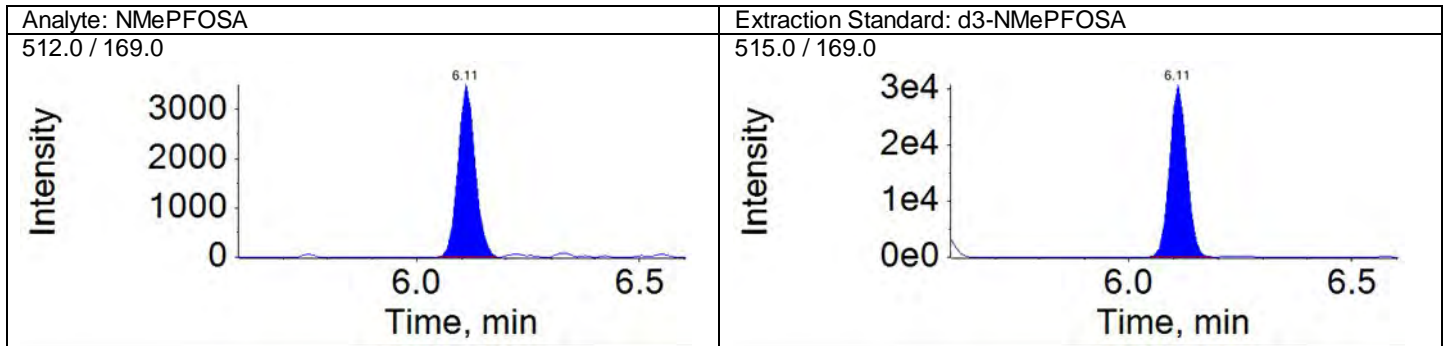
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

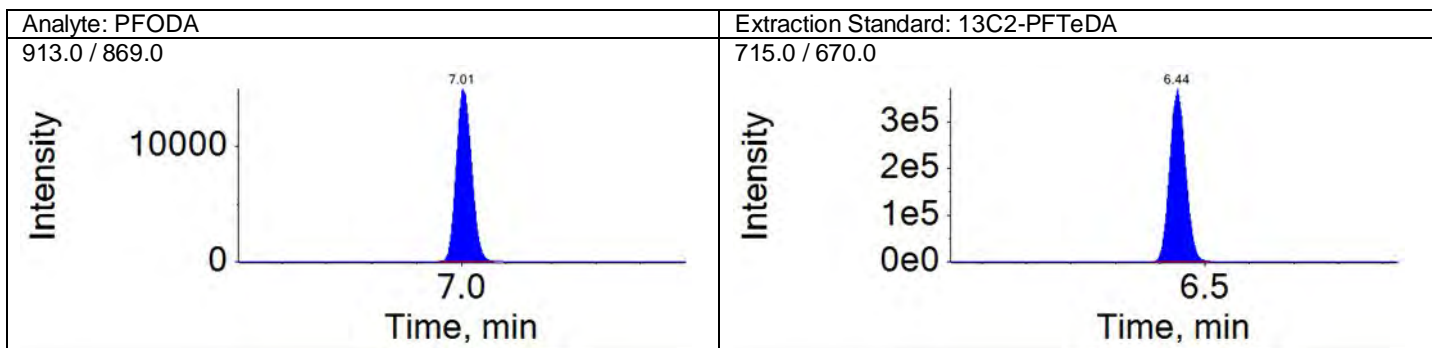
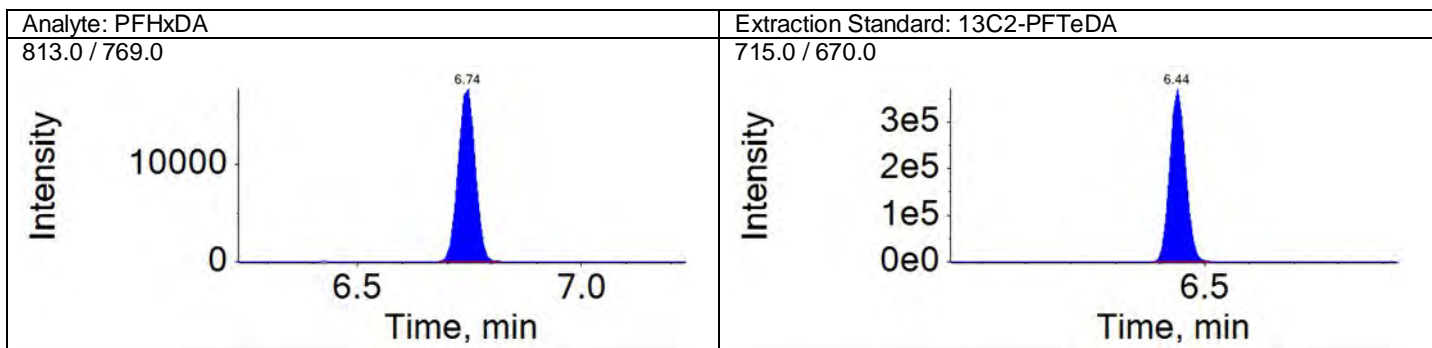
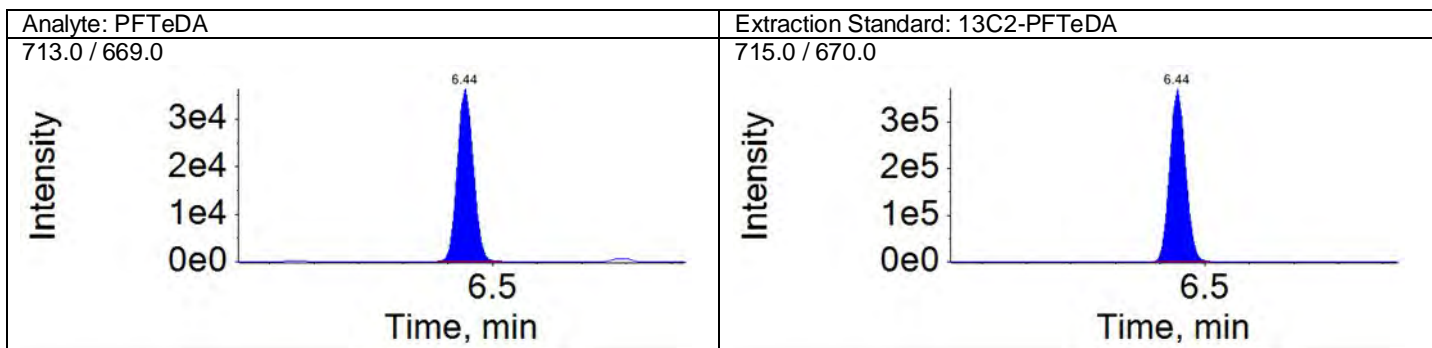
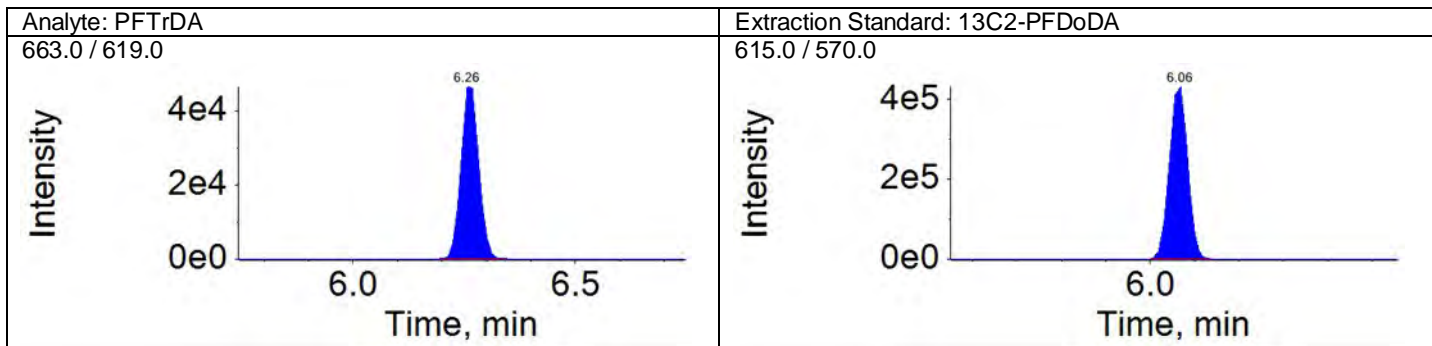
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Acquisition Method: 18AUG13\_3uL.dam





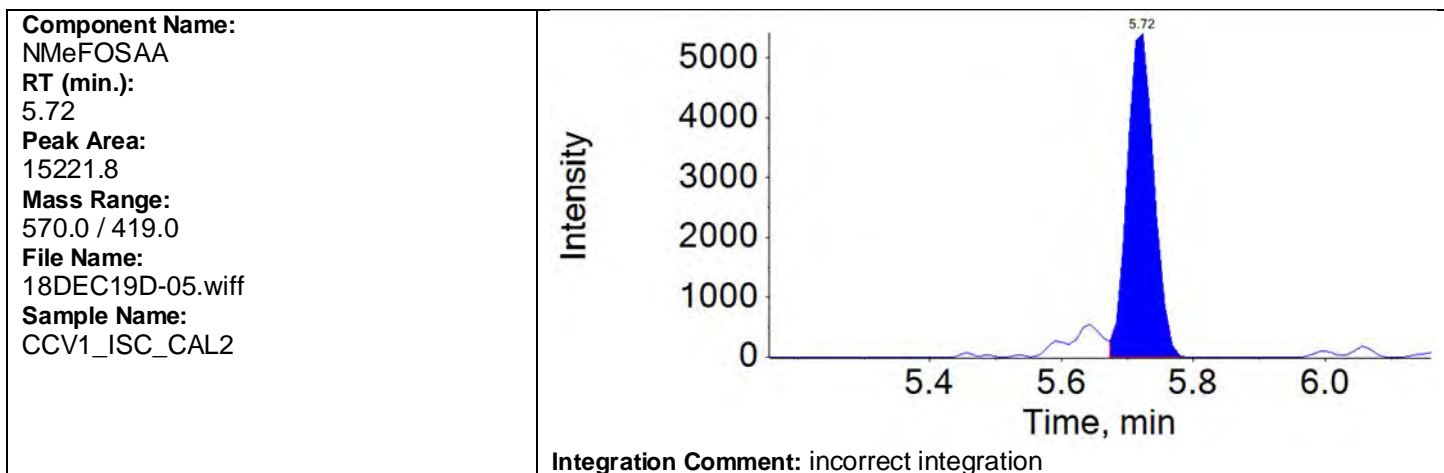
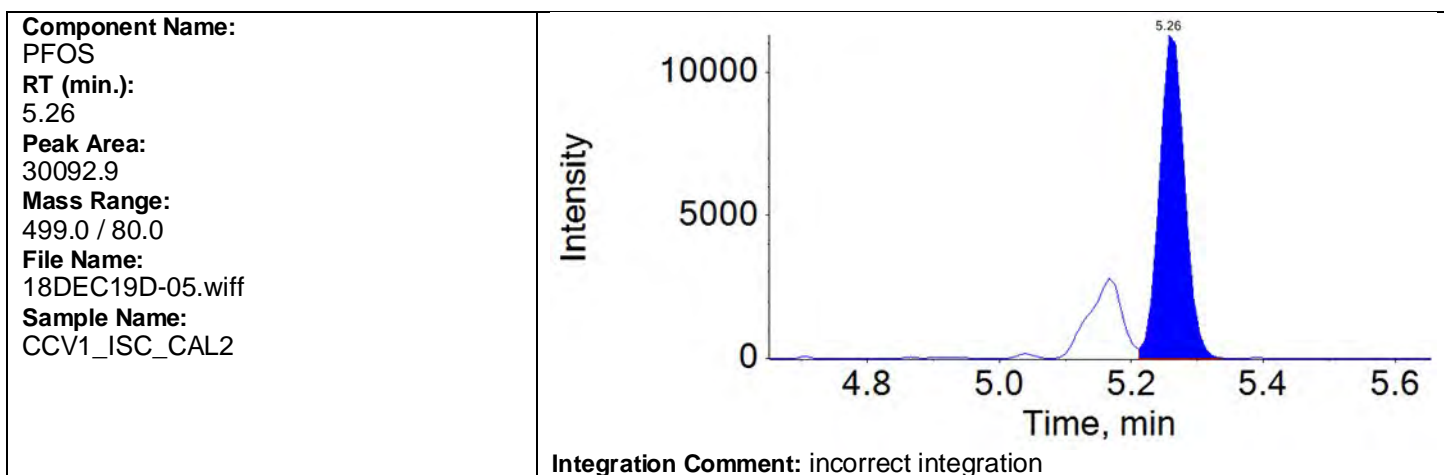
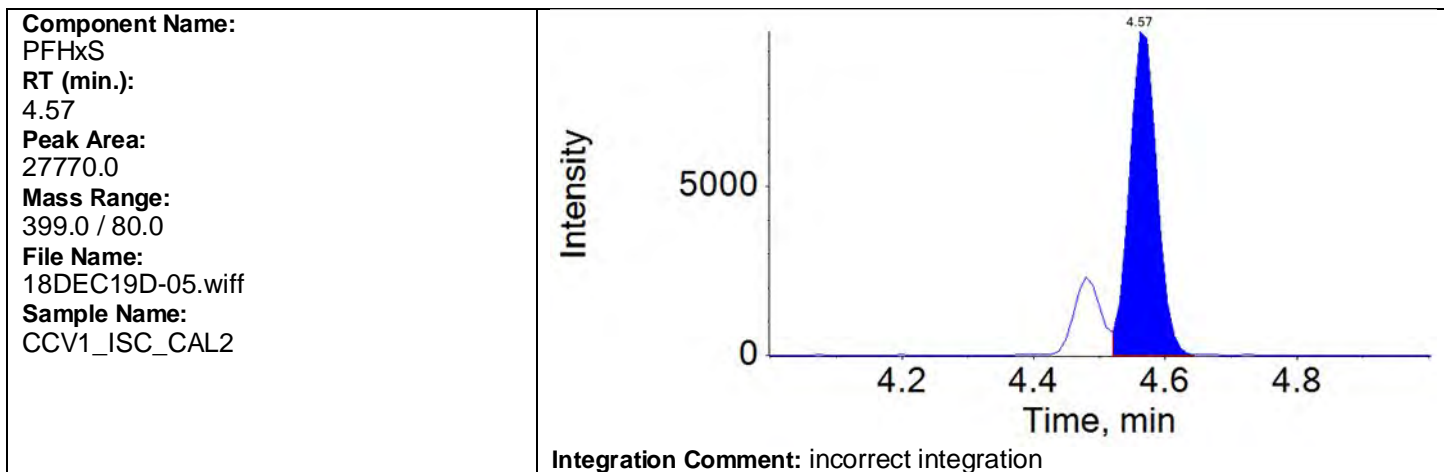
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



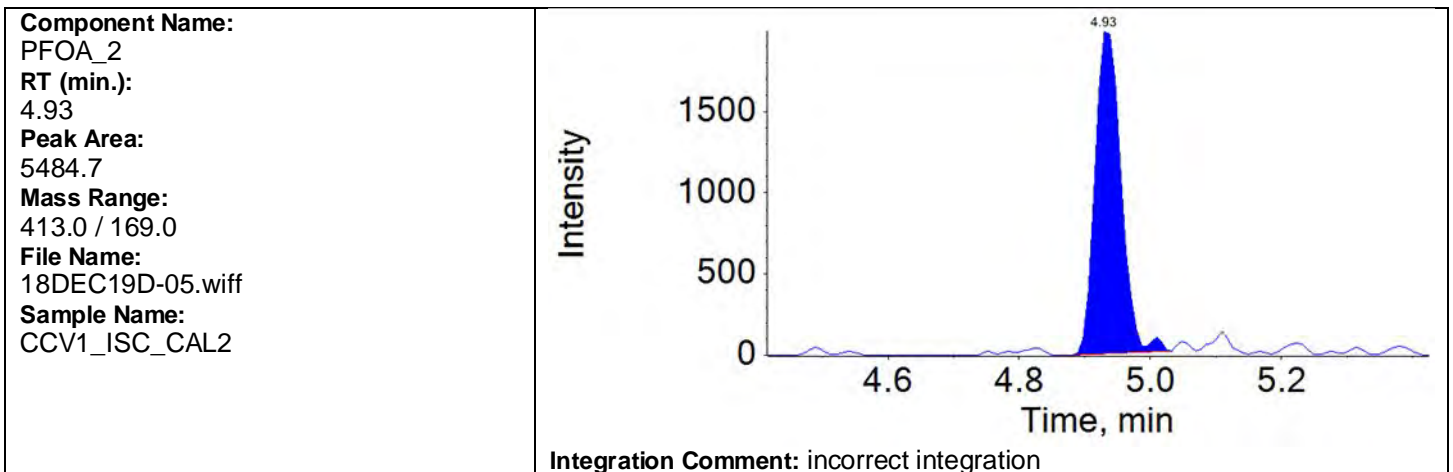
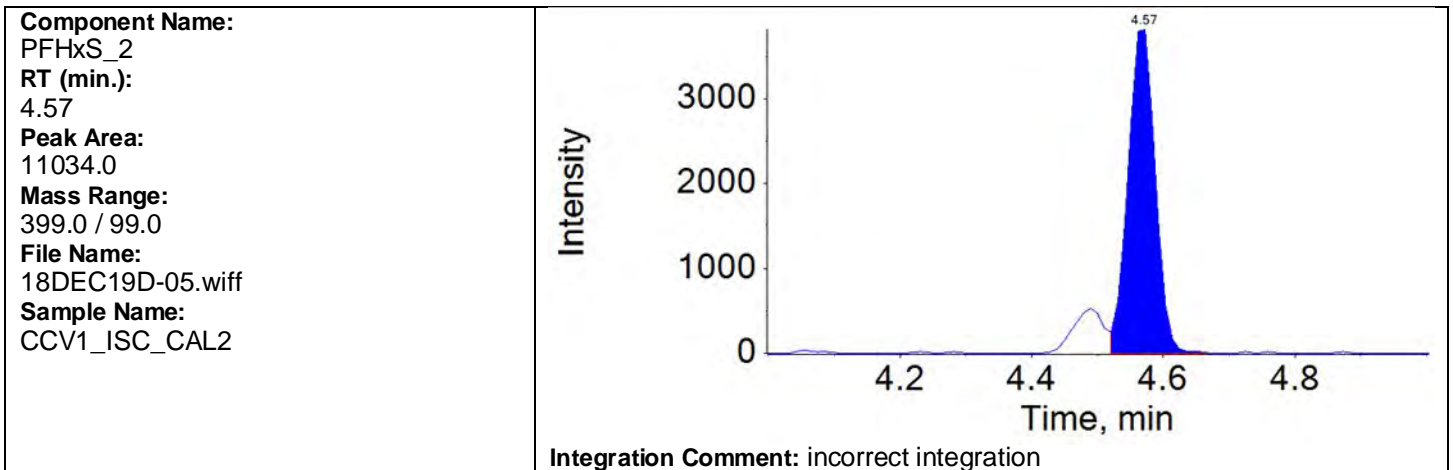
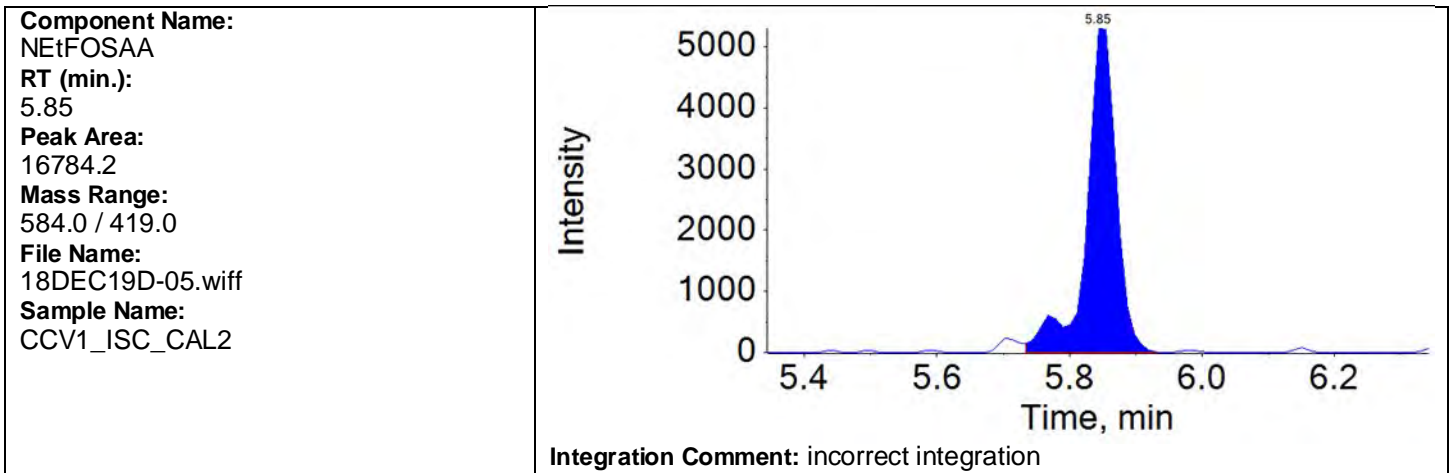
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Results Table Date: 12/19/2018 7:24:29 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



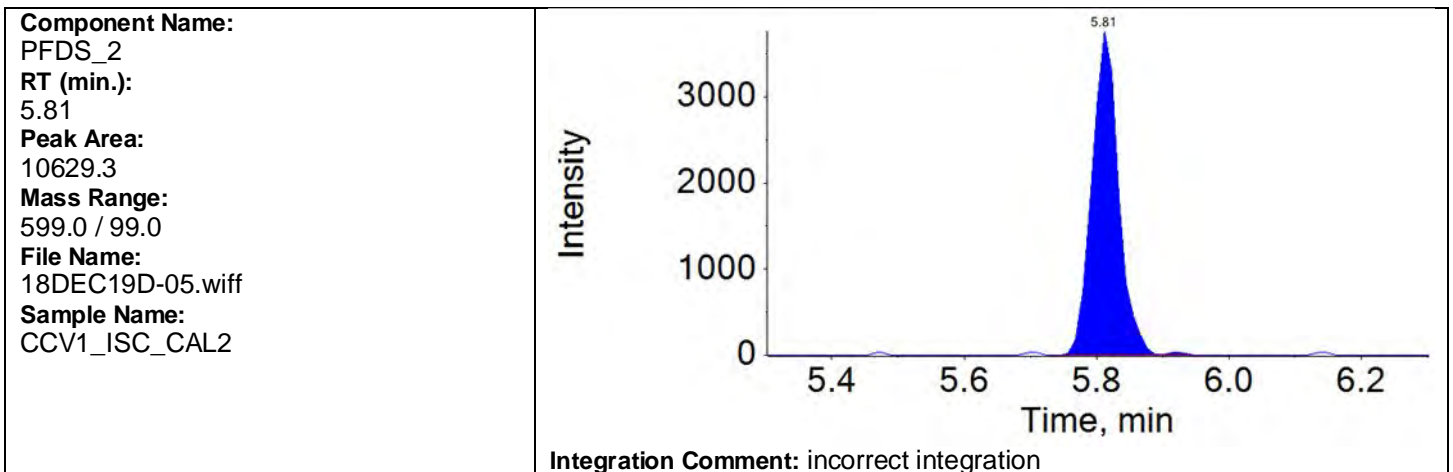
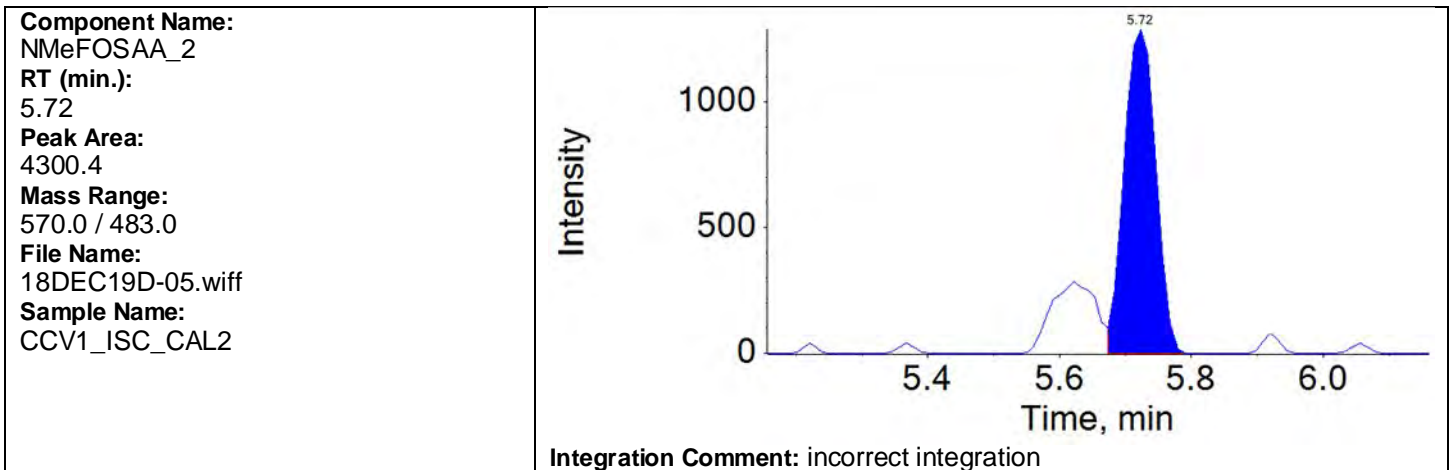
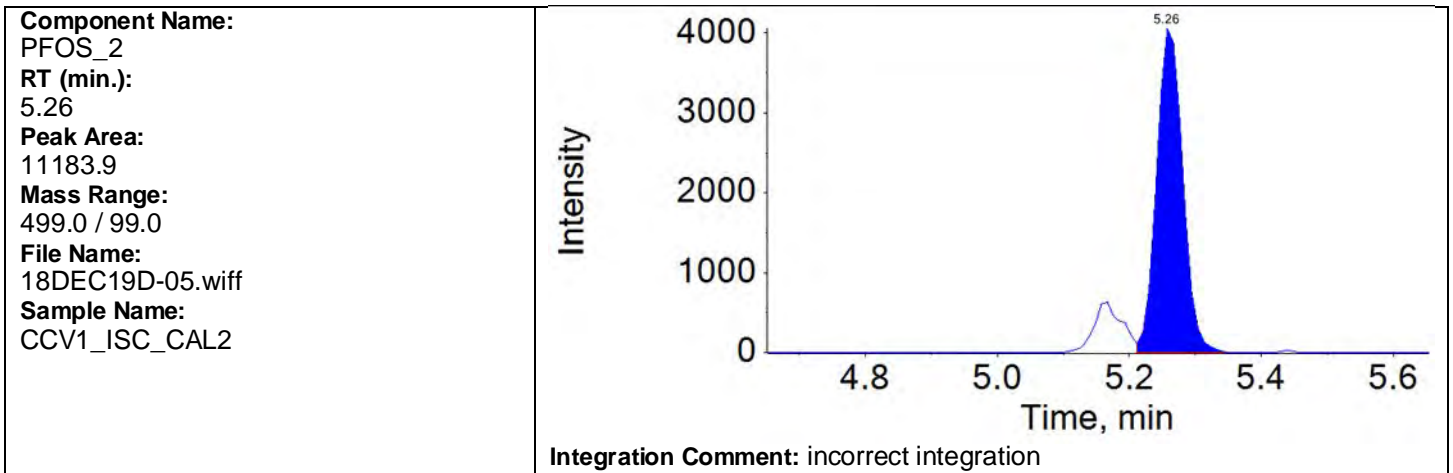
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QMethod File: 18AUG20QM



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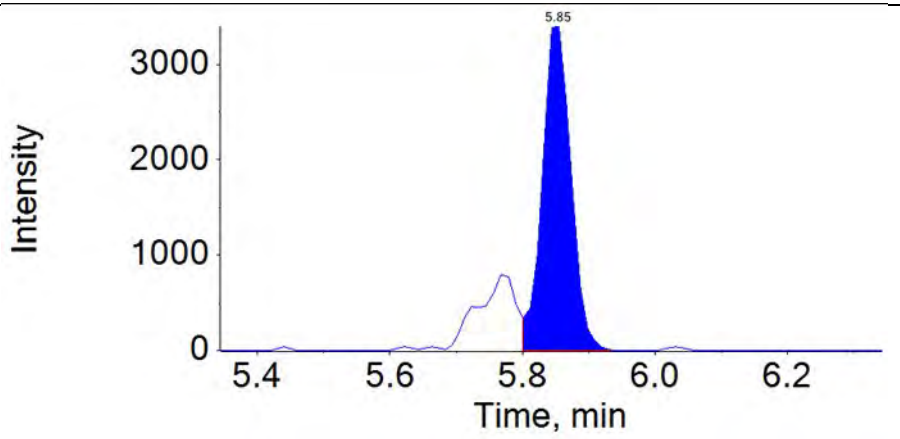
Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



Results Table Name: 18DEC19DCCV1-5  
Results Table Date: 12/19/2018 7:24:29 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Component Name:  
NEtFOSAA\_2  
RT (min.):  
5.85  
Peak Area:  
10282.2  
Mass Range:  
584.0 / 526.0  
File Name:  
18DEC19D-05.wiff  
Sample Name:  
CCV1\_ISC\_CAL2



Integration Comment: incorrect integration



**Results Table Name:** 18DEC19DCCV1-5  
**Results Table Date:** 12/19/2018 7:24:29 PM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

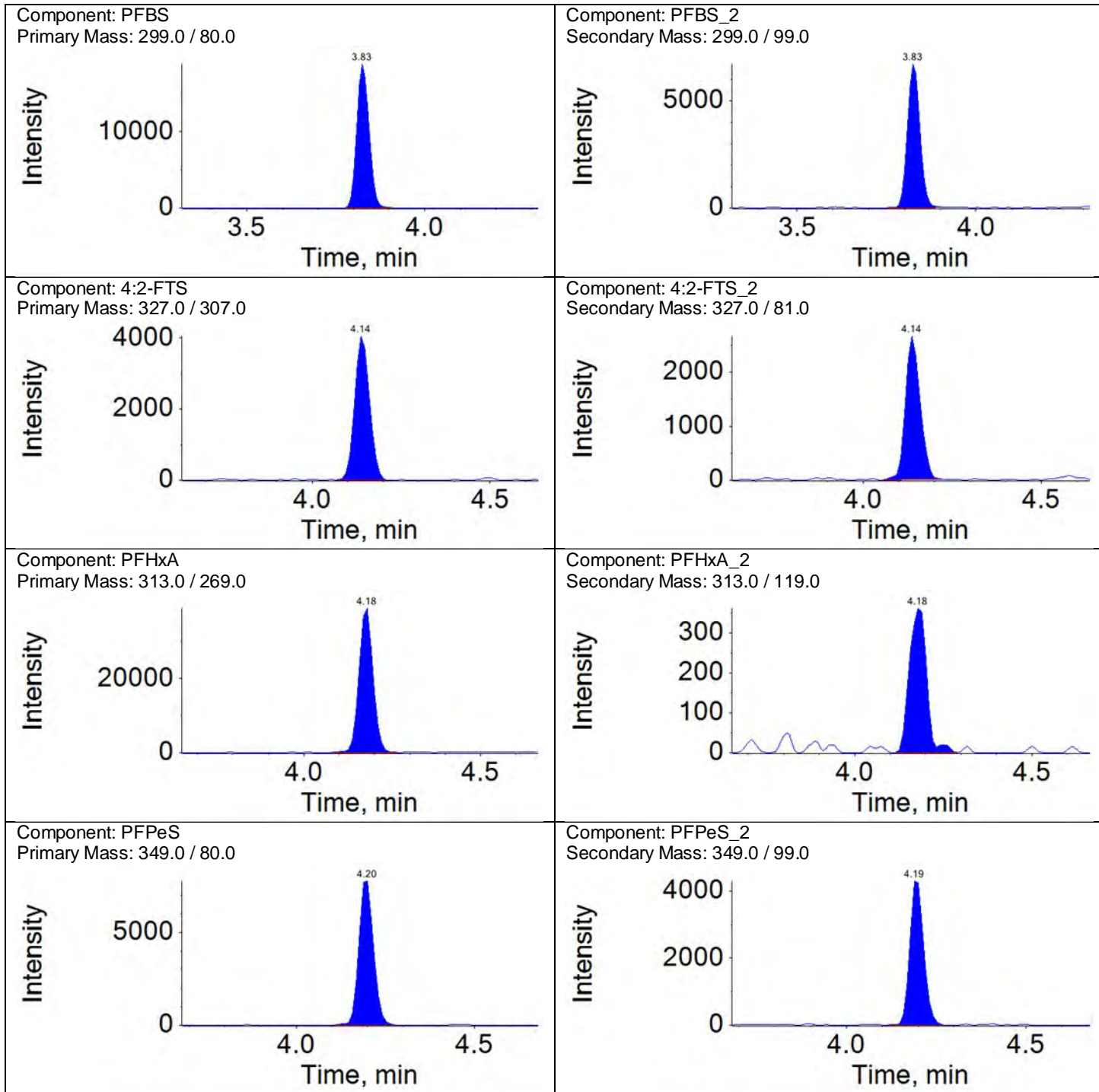
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By MCD at 7:31 pm, 12/19/18

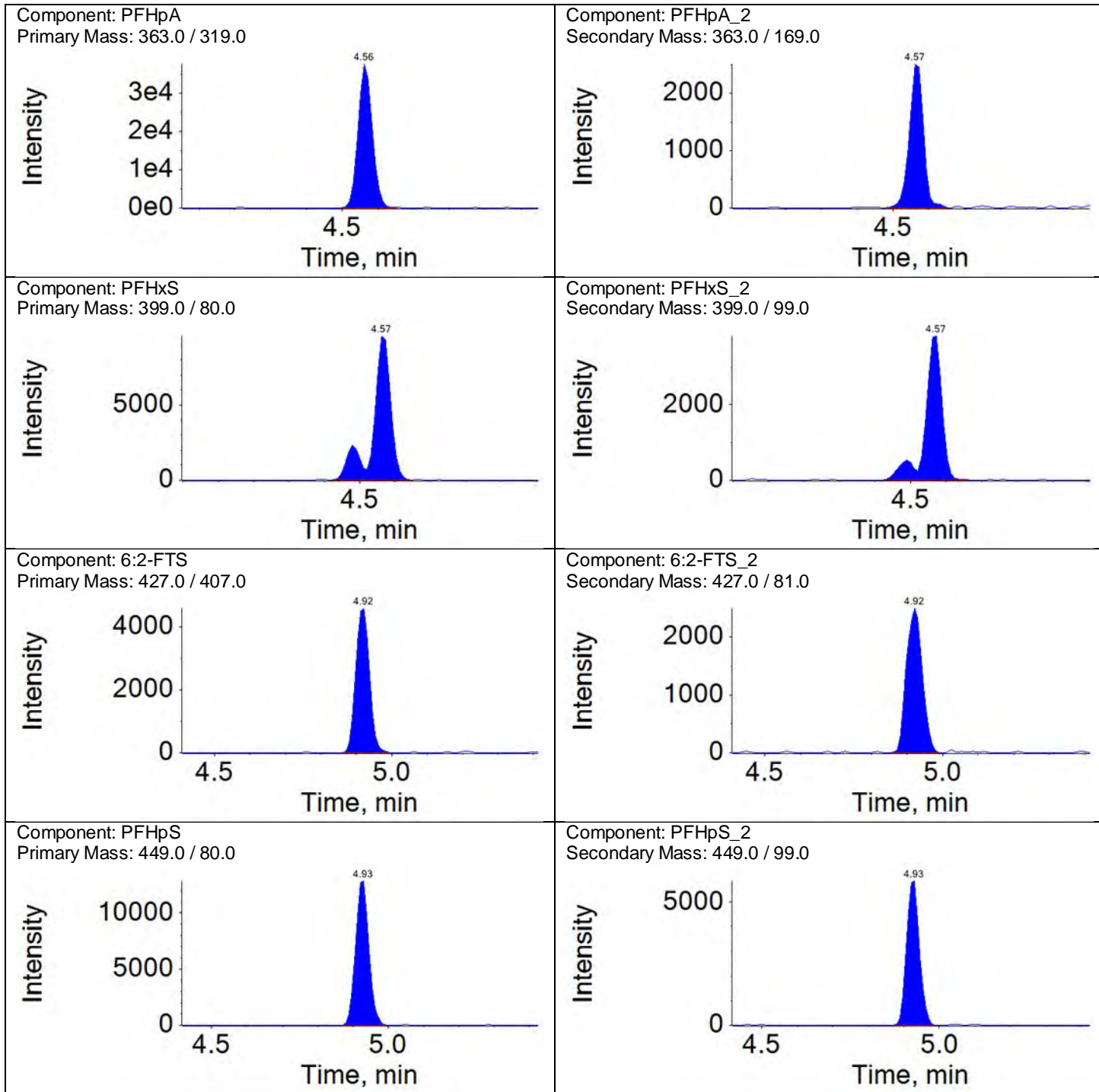
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By HMK at 12:23 pm, 12/21/18

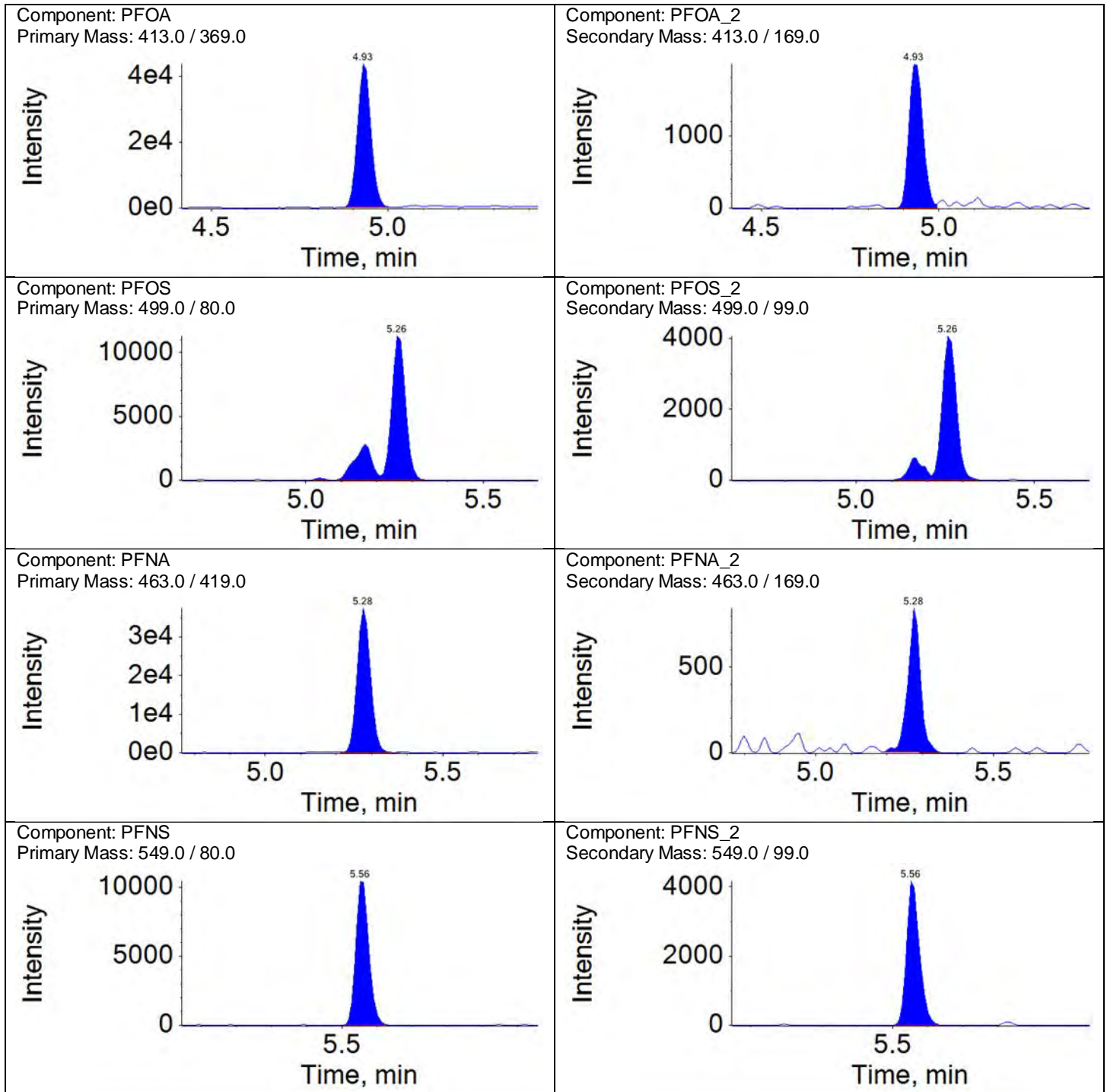
Ion Ratio Report

Sample Name: CCV1\_ISC\_CAL2 Instrument Name: LM27631 File Name: 18DEC19D-05.wiff

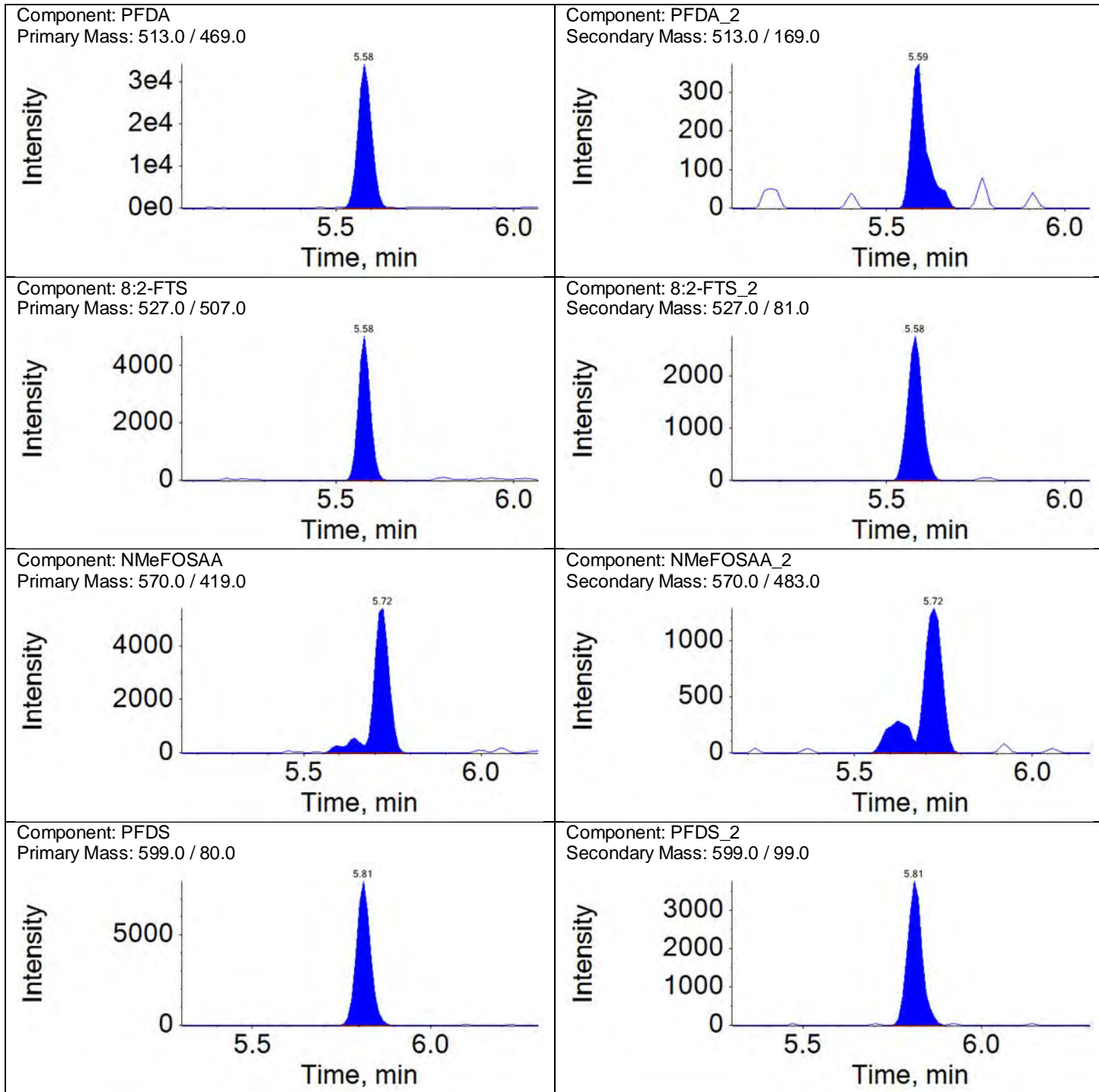
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.83	1.00	44925.3	A	N/A	0.3610			
PFBS_2	3.83	1.00	16217.5	A	N/A	0.3610	-1	50	
4:2-FTS	4.14	1.00	11736.4	A	N/A	0.6490			
4:2-FTS_2	4.14	1.00	7616.8	A	N/A	0.6490	7	50	
PFHxA	4.18	1.00	107079.2	A	N/A	0.0116			
PFHxA_2	4.18	1.00	1237.4	A	N/A	0.0116	6	50	
PFPeS	4.20	1.10	22247.6	A	N/A	0.5216			
PFPeS_2	4.19	1.10	11604.2	A	N/A	0.5216	-1	50	
PFHpA	4.56	1.00	103683.1	A	N/A	0.0665			
PFHpA_2	4.57	1.00	6897.7	A	N/A	0.0665	27	50	
PFHxS	4.57	1.00	34370.8	M	N/A	0.3693			
PFHxS_2	4.57	1.00	12694.2	M	N/A	0.3693	12	50	
6:2-FTS	4.92	1.00	12373.1	A	N/A	0.6331			
6:2-FTS_2	4.92	1.00	7833.6	A	N/A	0.6331	0	50	
PFHpS	4.93	1.08	33553.7	A	N/A	0.4419			
PFHpS_2	4.93	1.08	14826.8	A	N/A	0.4419	7	50	
PFOA	4.93	1.00	114562.0	A	N/A	0.0476			
PFOA_2	4.93	1.00	5452.7	M	N/A	0.0476	-16	50	
PFOS	5.26	1.00	40193.8	M	N/A	0.3250			
PFOS_2	5.26	1.00	13063.4	M	N/A	0.3250	10	50	
PFNA	5.28	1.00	97577.3	A	N/A	0.0212			
PFNA_2	5.28	1.00	2068.8	A	N/A	0.0212	0	50	
PFNS	5.56	1.06	26611.4	A	N/A	0.3935			
PFNS_2	5.56	1.06	10471.7	A	N/A	0.3935	-15	50	
PFDA	5.58	1.00	90078.4	A	N/A	0.0126			
PFDA_2	5.59	1.00	1131.9	A	N/A	0.0126	111	50	OOS
8:2-FTS	5.58	1.00	11537.9	A	N/A	0.6891			
8:2-FTS_2	5.58	1.00	7951.2	A	N/A	0.6891	18	50	
NMeFOSAA	5.72	1.00	17242.8	M	N/A	0.3274			
NMeFOSAA_2	5.72	1.00	5645.7	M	N/A	0.3274	26	50	
PFDS	5.81	1.10	21511.2	A	N/A	0.4910			
PFDS_2	5.81	1.10	10561.2	M	N/A	0.4910	-1	50	
PFAUnDA	5.83	1.00	97436.6	A	N/A	0.0087			
PFAUnDA_2	5.84	1.00	844.7	A	N/A	0.0087	173	50	OOS
NEtFOSAA	5.85	1.00	17285.4	M	N/A	0.7776			
NEtFOSAA_2	5.85	1.00	13441.7	M	N/A	0.7776	14	50	
PFAoDA	6.06	1.00	123420.5	A	N/A	0.0146			
PFAoDA_2	6.06	1.00	1806.8	A	N/A	0.0146	17	50	
10:2-FTS	6.08	1.09	9993.2	A	N/A	0.8305			
10:2-FTS_2	6.08	1.09	8298.9	A	N/A	0.8305	19	50	
PFATrDA	6.26	1.03	129114.4	A	N/A	0.0076			
PFATrDA_2	6.27	1.03	976.2	A	N/A	0.0076	-14	50	
PFATeDA	6.44	1.00	90148.4	A	N/A	0.0073			
PFATeDA_2	6.44	1.00	661.1	A	N/A	0.0073	35	50	
PFHxDA	6.74	1.05	47073.3	A	N/A	0.0633			
PFHxDA_2	6.74	1.05	2978.3	A	N/A	0.0633	-4	50	
PFOA	7.01	1.09	35177.4	A	N/A	0.0245			
PFOA_2	7.01	1.09	861.0	A	N/A	0.0245	-10	50	

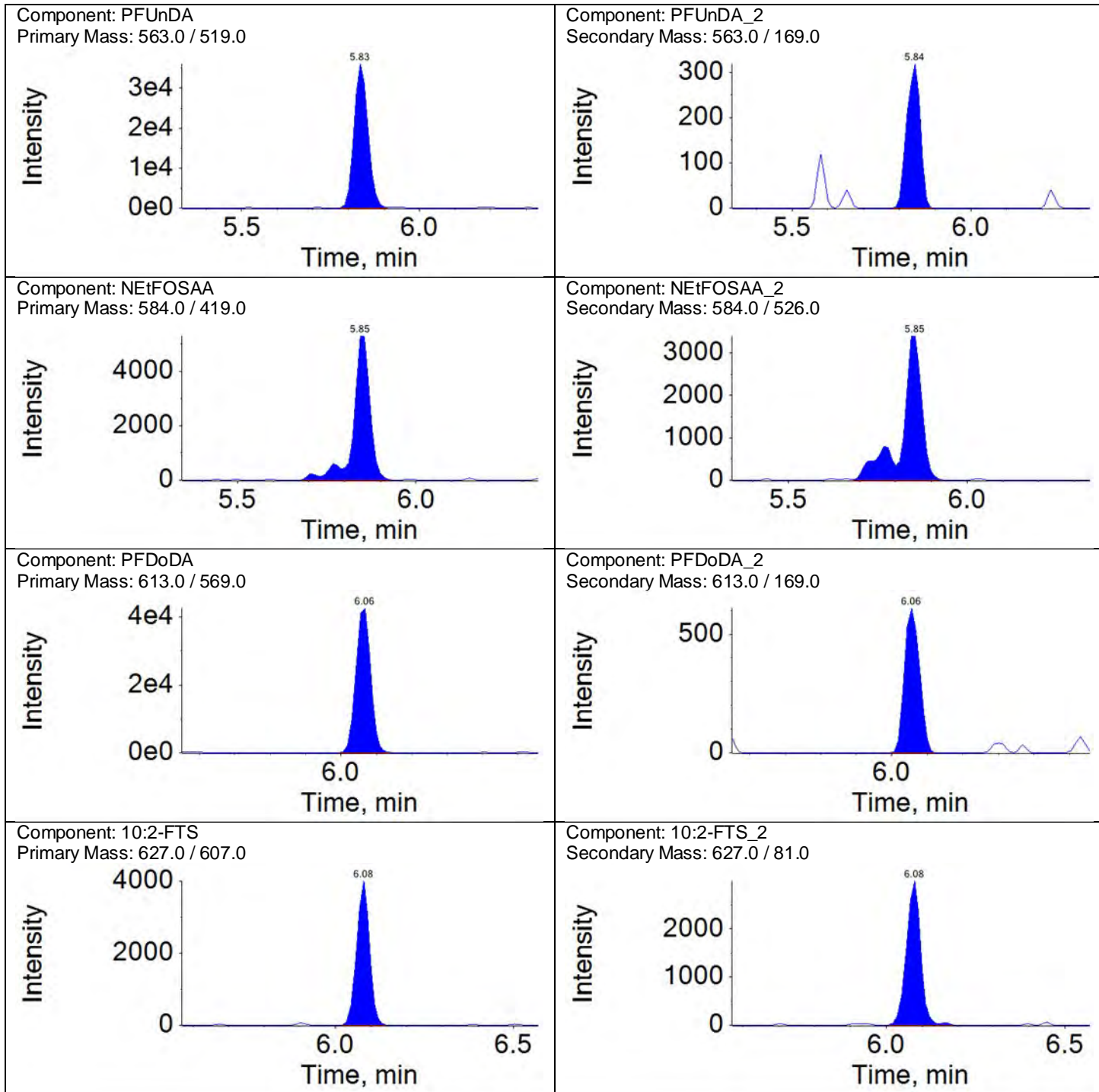


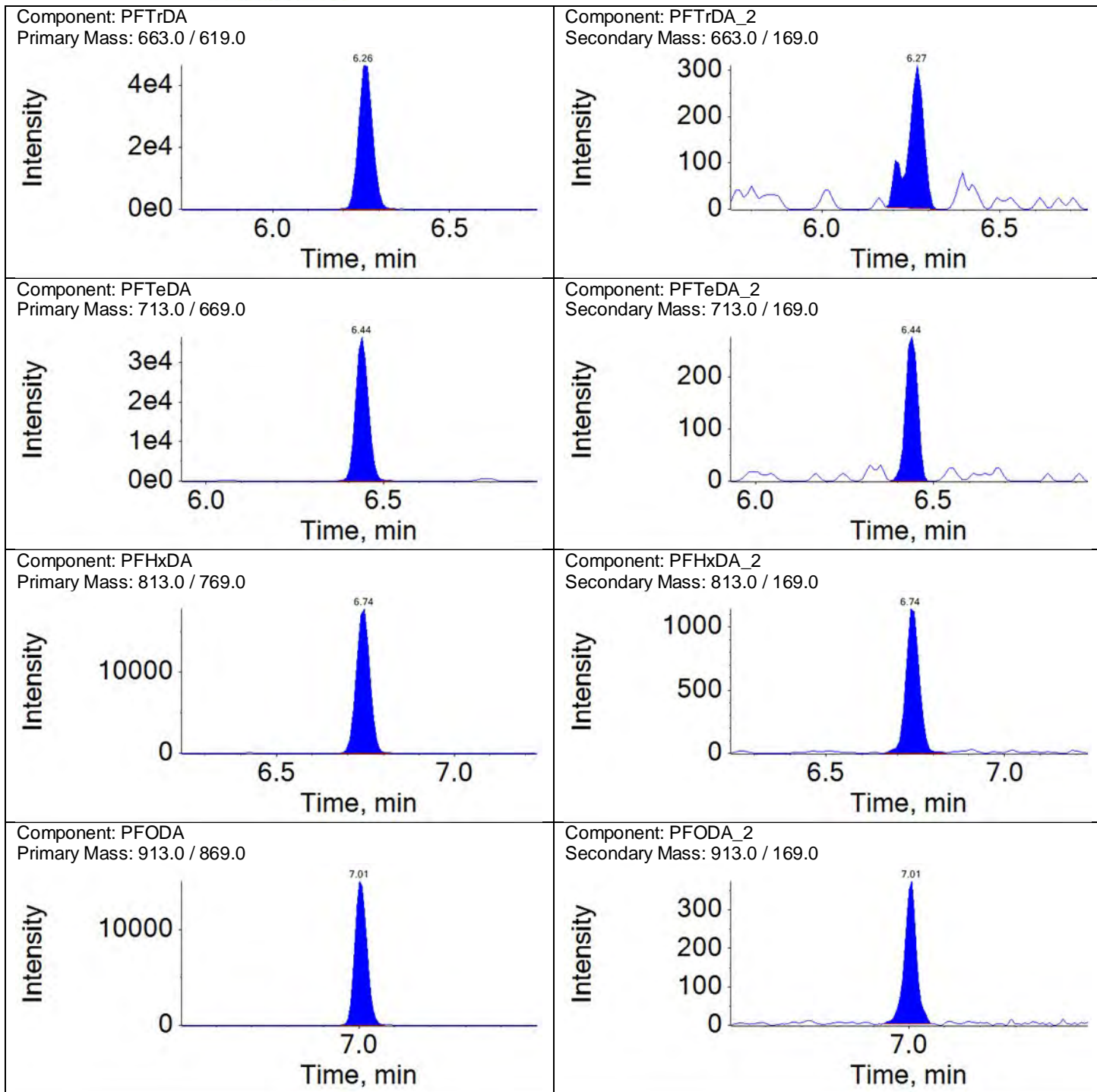












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	Instrument blank	Data File:	18DEC19D-06.wiff
Sample ID:	methanol+labels	Acquis Date:	2018-12-19T10:52:56
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	1	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC19DCCV1-5
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MCD7824
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	1065859.6	942675.8	13	50	
13C2-PFOA	5.0	609460.8	520268.5	17	50	
13C4-PFOS	4.8	342305.3	307968.9	11	50	
13C2-PFDA	5.0	561481.4	487375.3	15	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1168579.9	13C3-PFBA	1065859.6	1.096	5.000	4.855	97	70-130	
E13C5-PFPeA	1104717.7	13C3-PFBA	1065859.6	1.036	5.000	4.833	97	70-130	
E13C3-PFBS	459920.1	13C3-PFBA	1065859.6	0.432	4.650	4.202	90	70-130	
E13C2-4:2-FTS	66944.3	13C2-PFOA	609460.8	0.110	4.670	4.172	89	70-130	
E13C5-PFHxA	810344.6	13C2-PFOA	609460.8	1.330	5.000	4.756	95	70-130	
E13C3-PFHxS	355337.3	13C2-PFOA	609460.8	0.583	4.730	4.412	93	70-130	
E13C4-PFHpA	633375.9	13C2-PFOA	609460.8	1.039	5.000	4.489	90	70-130	
E13C2-6:2-FTS	53536.4	13C2-PFOA	609460.8	0.088	4.750	4.420	93	70-130	
E13C8-PFOA	1145930.7	13C2-PFOA	609460.8	1.880	5.000	5.170	103	70-130	
E13C8-PFOS	350938.0	13C4-PFOS	342305.3	1.025	4.780	4.585	96	70-130	
E13C9-PFNA	700684.7	13C4-PFOS	342305.3	2.047	5.000	4.657	93	70-130	
E13C6-PFDA	996746.8	13C2-PFDA	561481.4	1.775	5.000	5.057	101	70-130	
E13C2-8:2-FTS	49207.1	13C2-PFDA	561481.4	0.088	4.790	4.517	94	70-130	
E13C8-PFOSA	755686.1	13C2-PFDA	561481.4	1.346	5.000	5.241	105	70-130	
Ed3-NMeFOSAA	269891.4	13C2-PFDA	561481.4	0.481	5.000	5.288	106	70-130	
E13C7-PFUnDA	640215.1	13C2-PFDA	561481.4	1.140	5.000	4.773	95	70-130	
Ed5-NEtFOSAA	187271.4	13C2-PFDA	561481.4	0.334	5.000	4.914	98	70-130	
E13C2-PFDoDA	1343218.4	13C2-PFDA	561481.4	2.392	5.000	5.033	101	70-130	
Ed7-NMePFOSAE	269906.1	13C2-PFDA	561481.4	0.481	5.000	4.295	86	70-130	
Ed3-NMePFOSA	92114.7	13C2-PFDA	561481.4	0.164	5.000	4.508	90	70-130	
Ed9-NEtPFOSAE	257907.1	13C2-PFDA	561481.4	0.459	5.000	4.696	94	70-130	
Ed5-NEtPFOSA	77073.0	13C2-PFDA	561481.4	0.137	5.000	4.761	95	70-130	
E13C2-PFTeDA	957950.1	13C2-PFDA	561481.4	1.706	5.000	4.808	96	70-130	



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

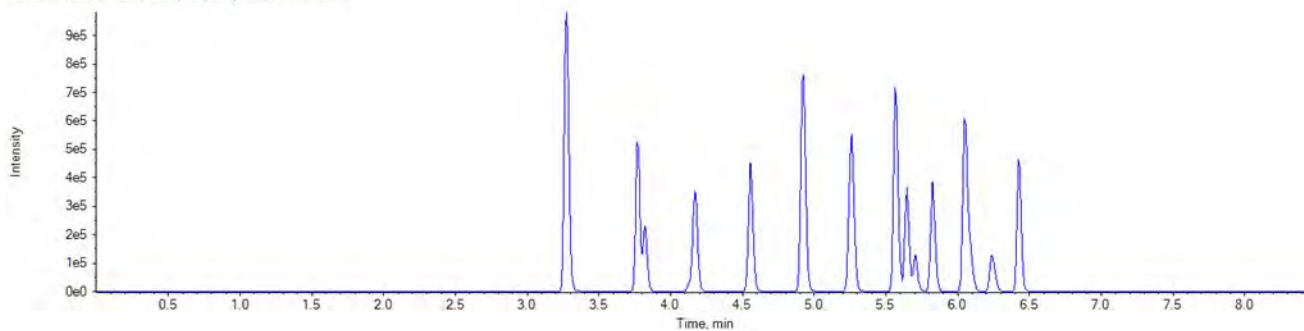
Sample Name: Instrument blank      Instrument Name: LM27631      File Name: 18DEC19D-06.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	N/A	N/A	N/A		A	13C4-PFBA	3.27	1168579.9	N/A	
PFPeA	N/A	N/A	N/A		A	13C5-PFPeA	3.77	1104717.7	N/A	
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.82	459920.1	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.13	66944.3	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.17	810344.6	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.82	459920.1	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.56	633375.9	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.56	355337.3	N/A	
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.91	53536.4	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.56	355337.3	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.92	1145930.7	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.25	350938.0	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.27	700684.7	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.25	350938.0	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.57	996746.8	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	49207.1	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.65	755686.1	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.70	269891.4	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.25	350938.0	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.92	1145930.7	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.83	187271.4	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.05	1343218.4	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	49207.1	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.08	269906.1	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.10	92114.7	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.25	350938.0	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.24	257907.1	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.26	77073.0	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.05	1343218.4	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.43	957950.1	N/A	
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.43	957950.1	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.43	957950.1	N/A	

**Total Ion Chromatogram**

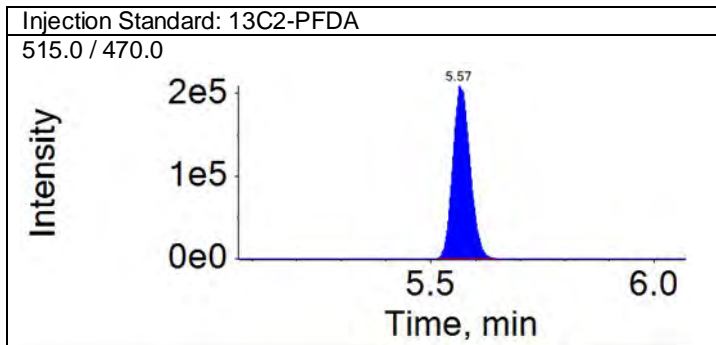
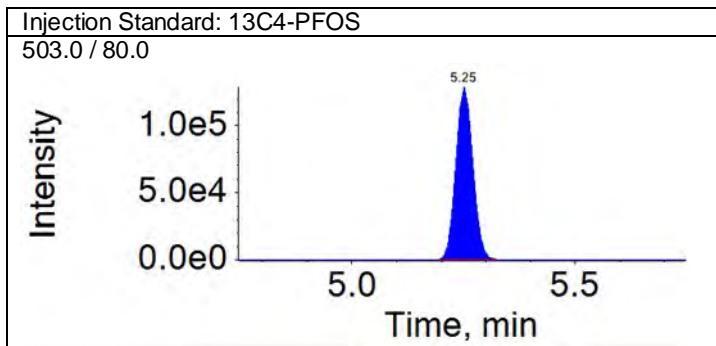
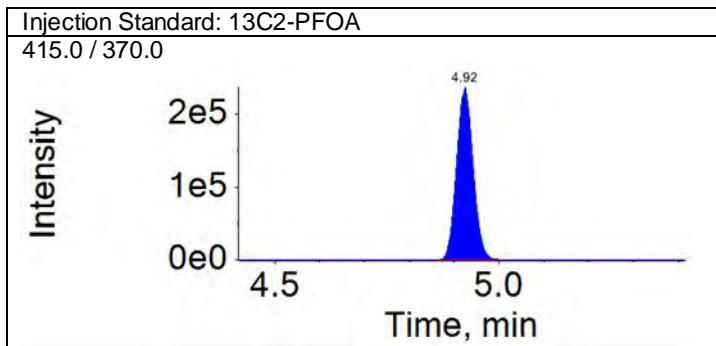
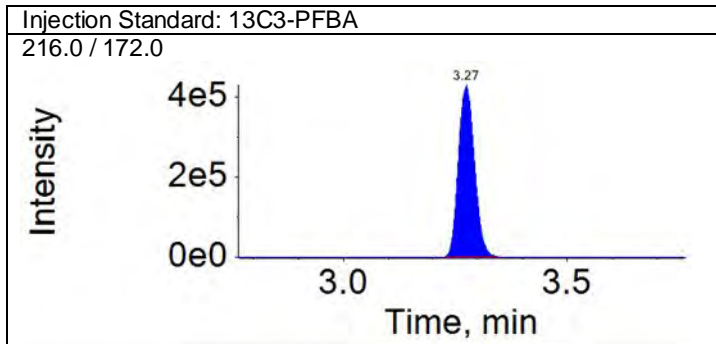
TIC from 18DEC19D-06.wiff (sample 1) - Instrument blank





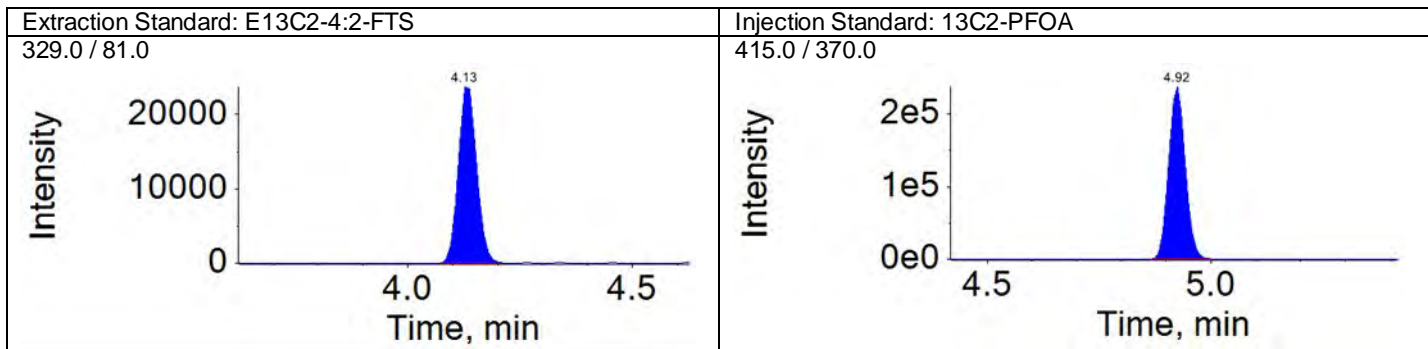
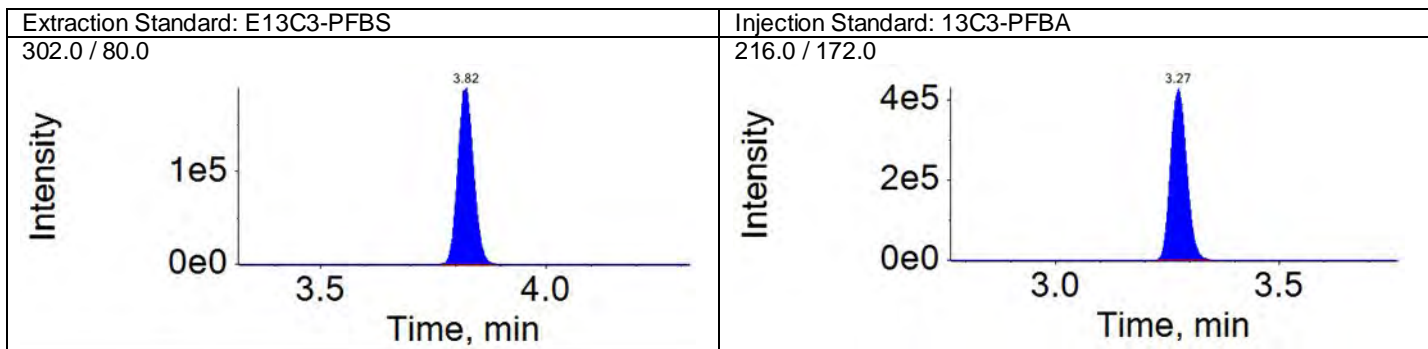
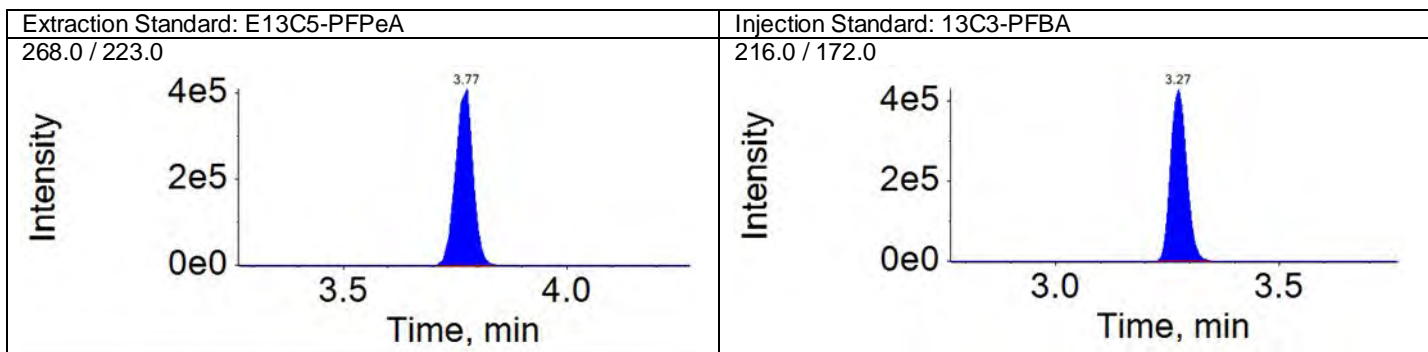
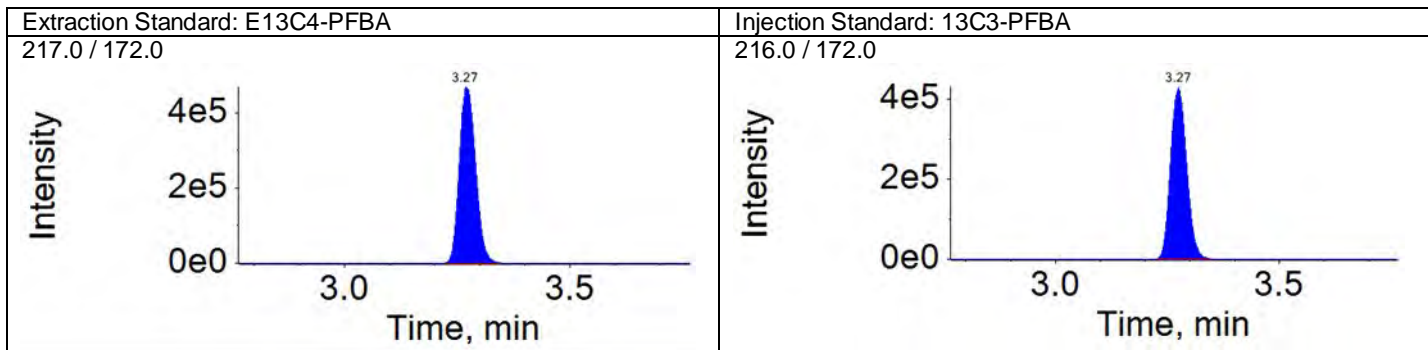
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



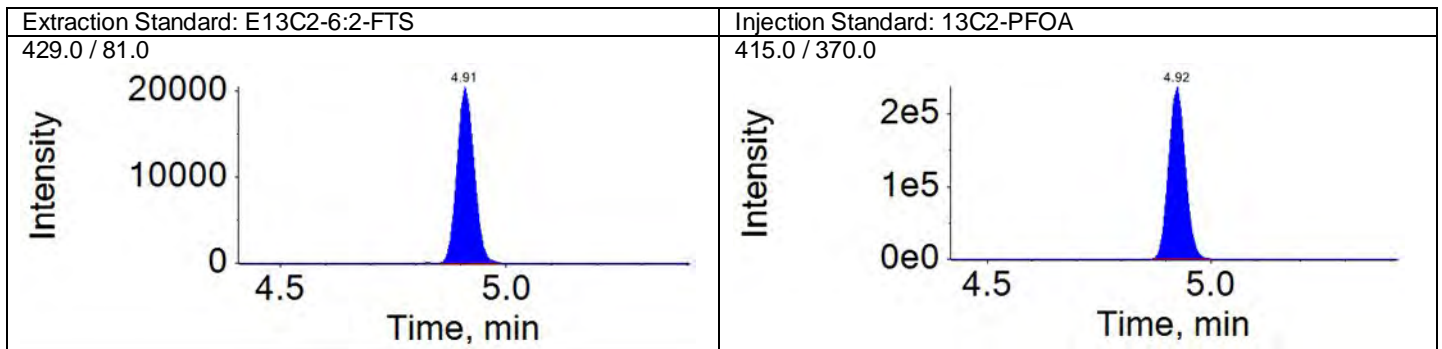
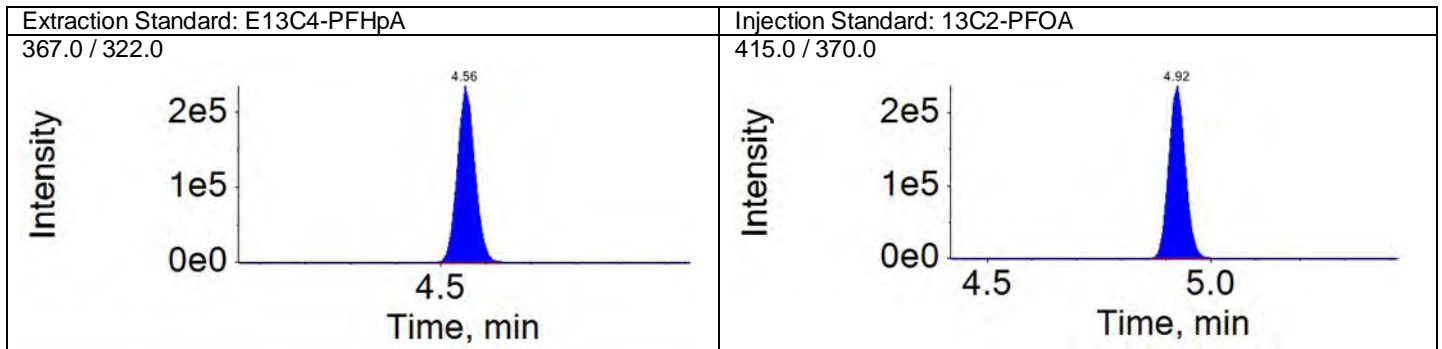
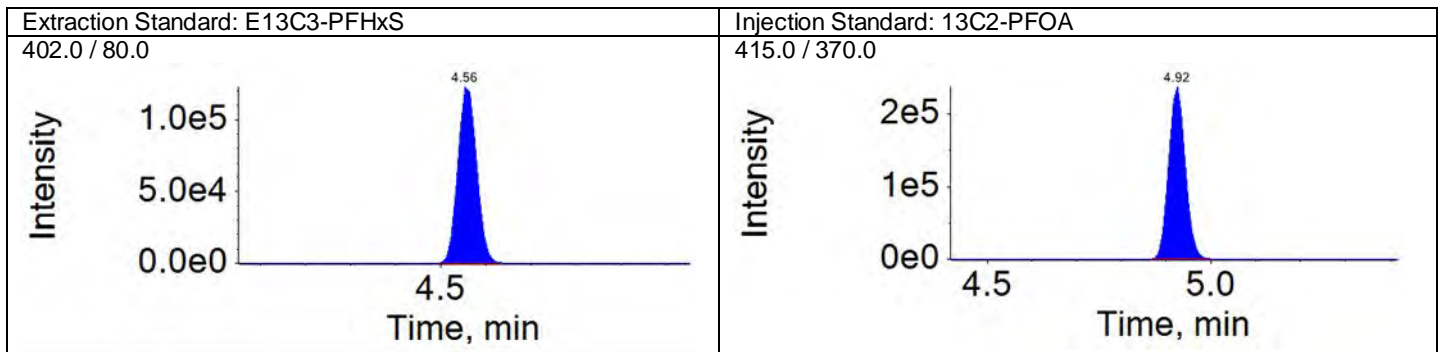
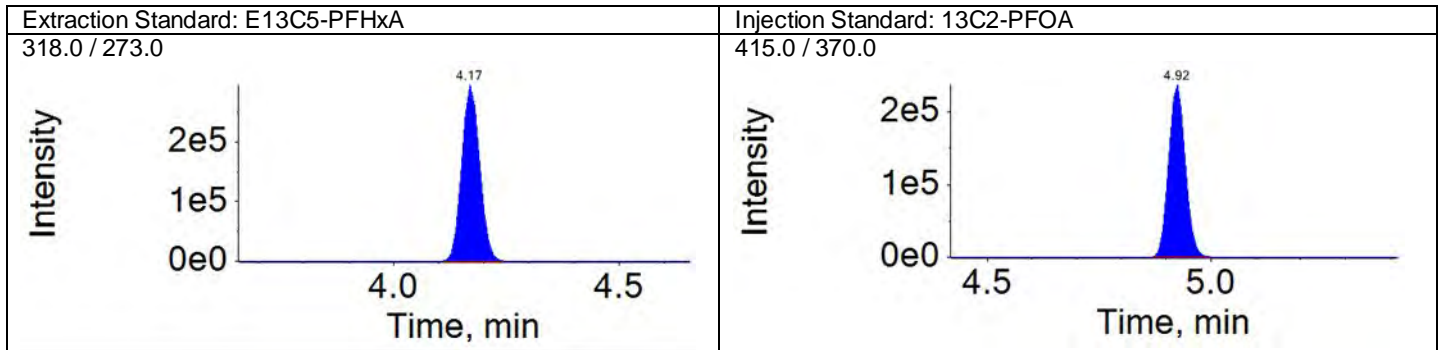
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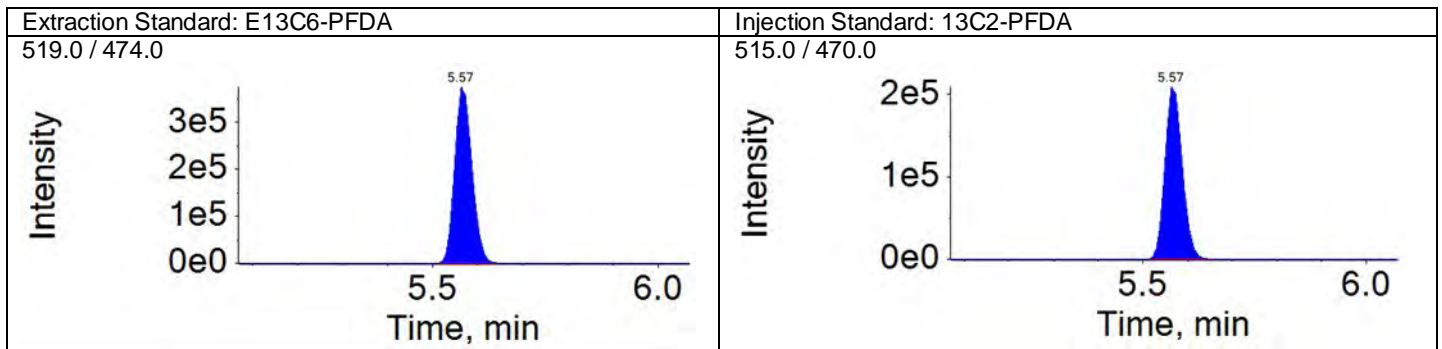
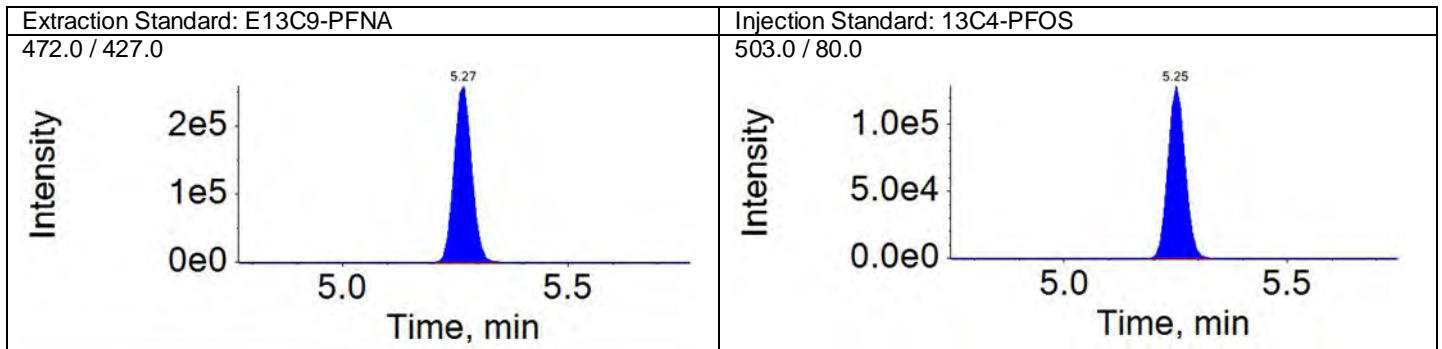
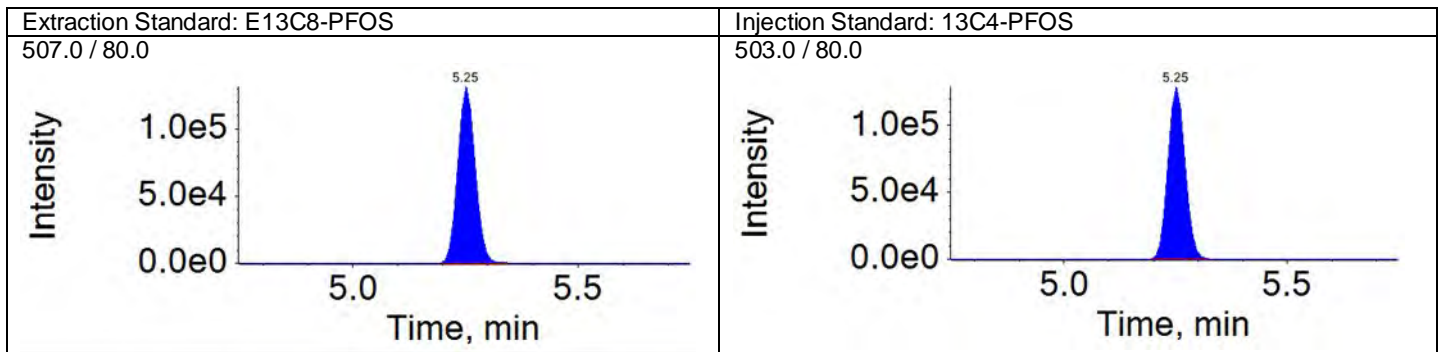
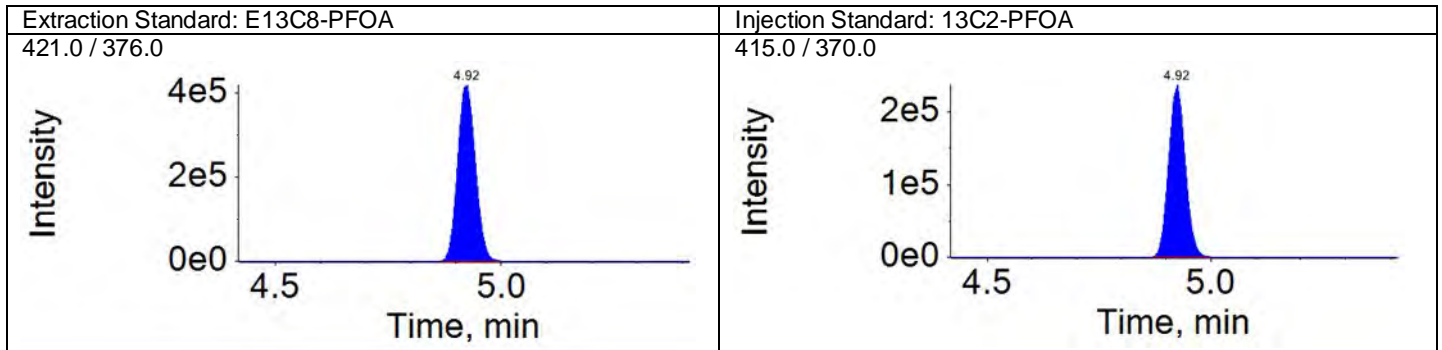
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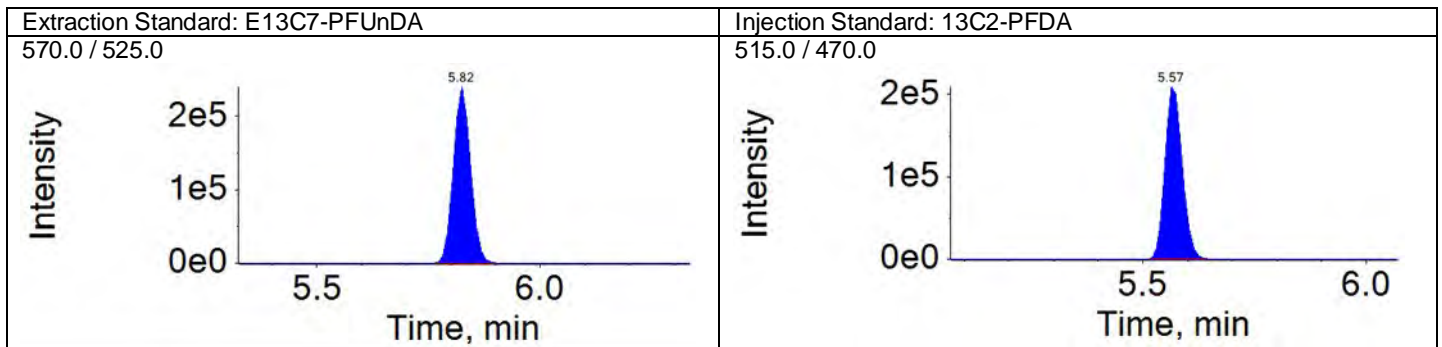
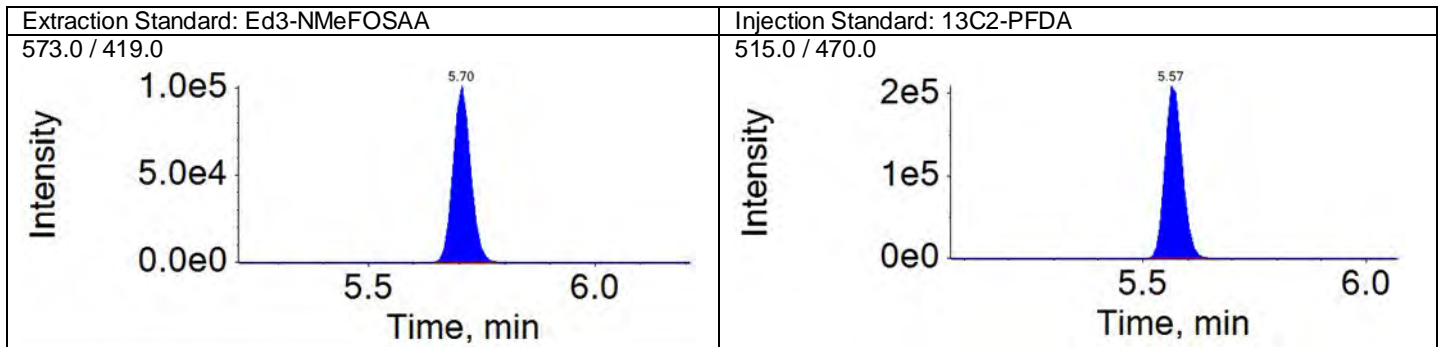
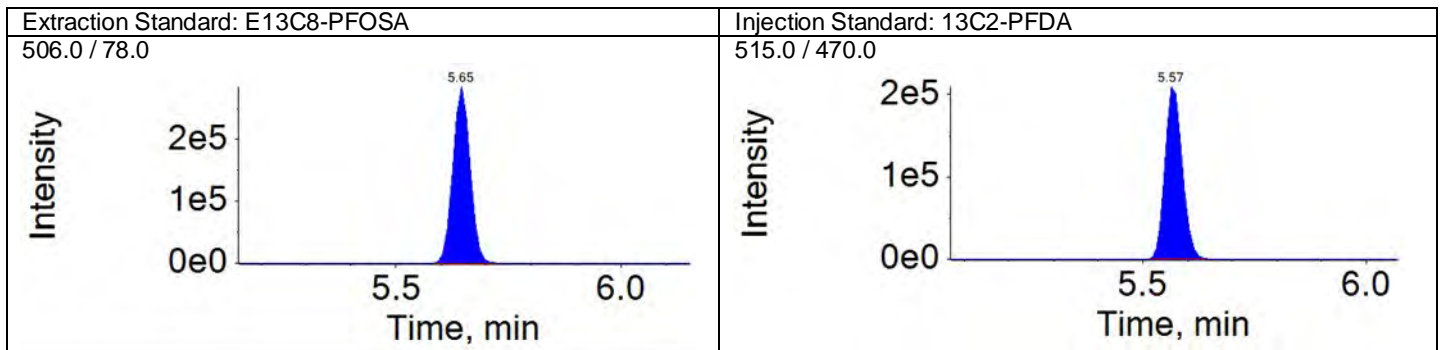
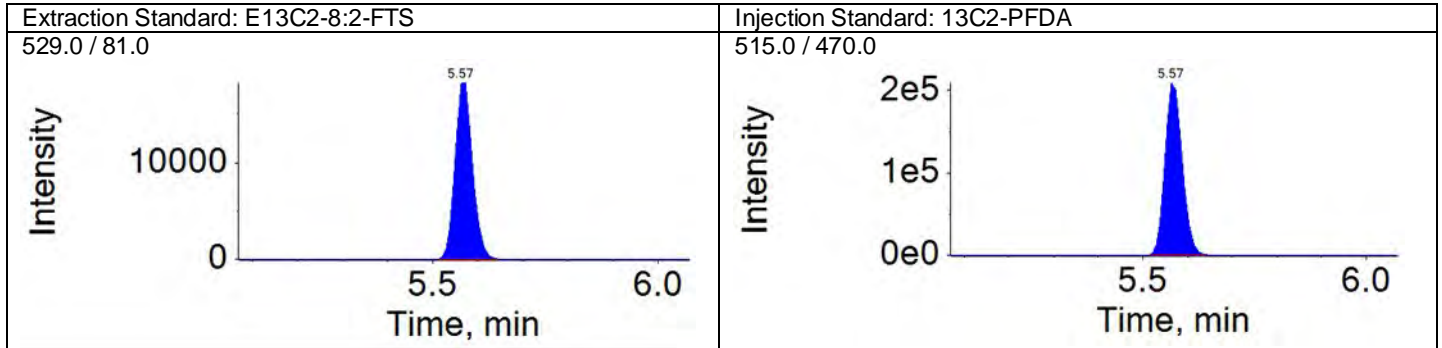
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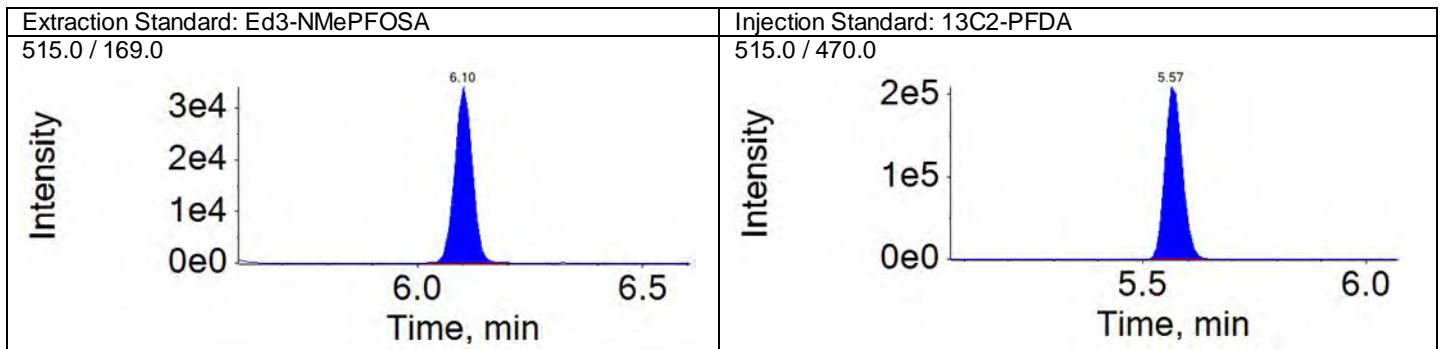
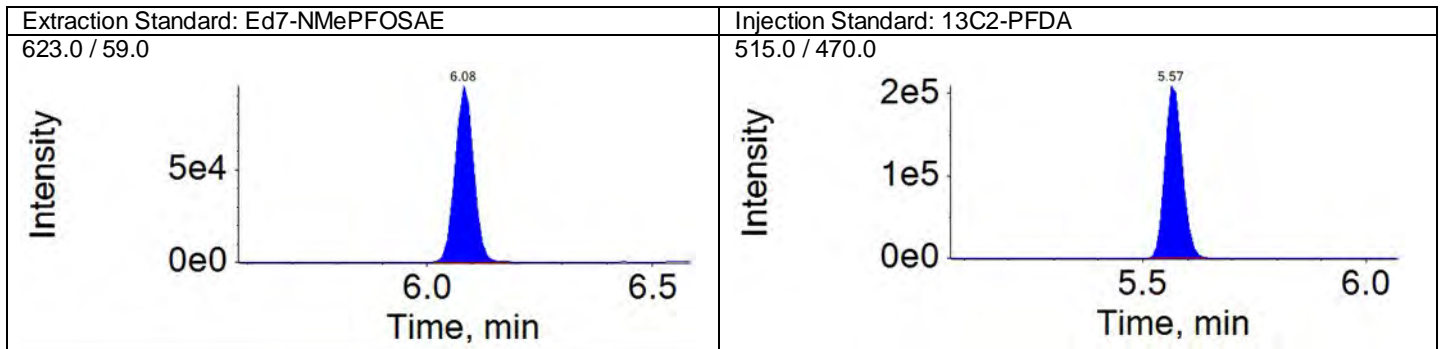
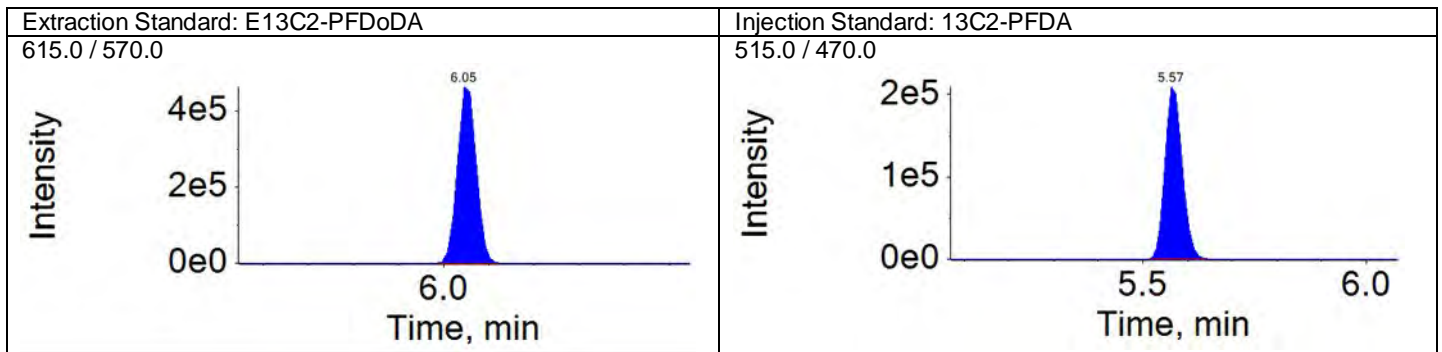
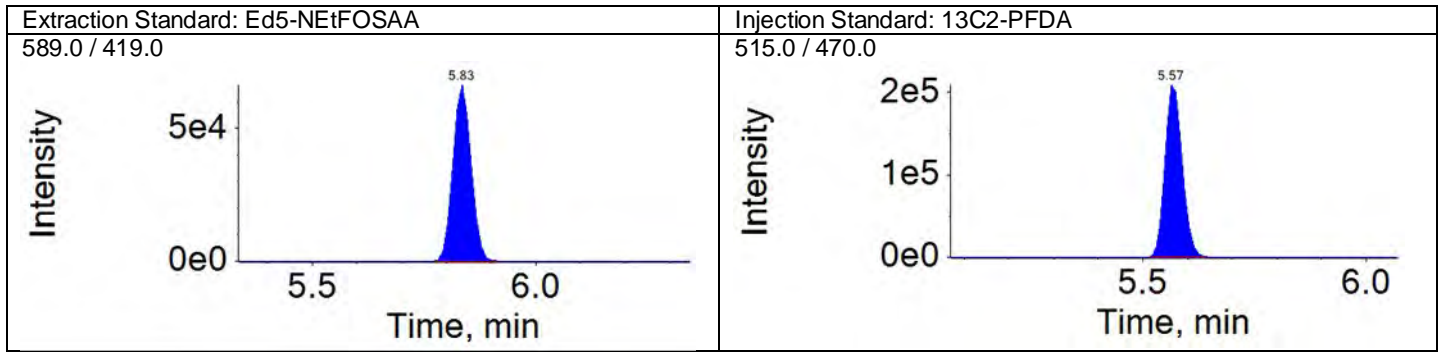
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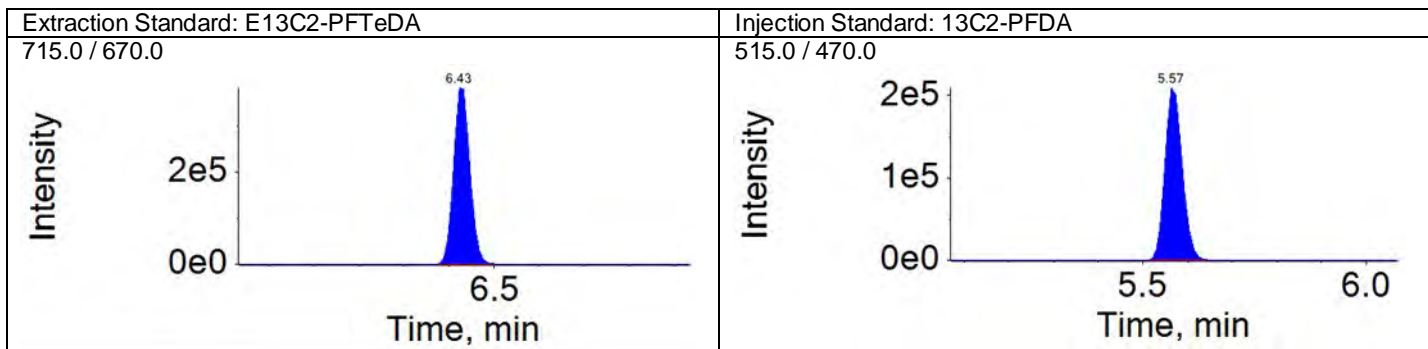
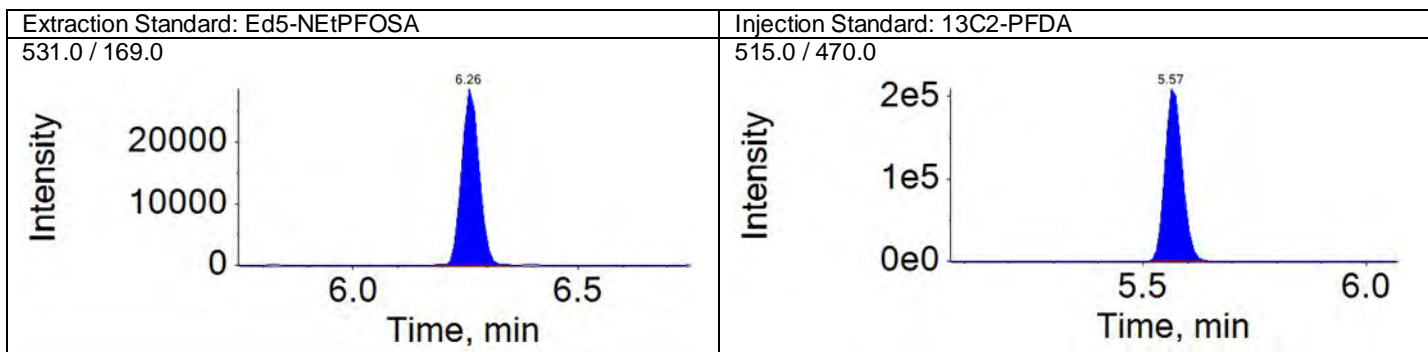
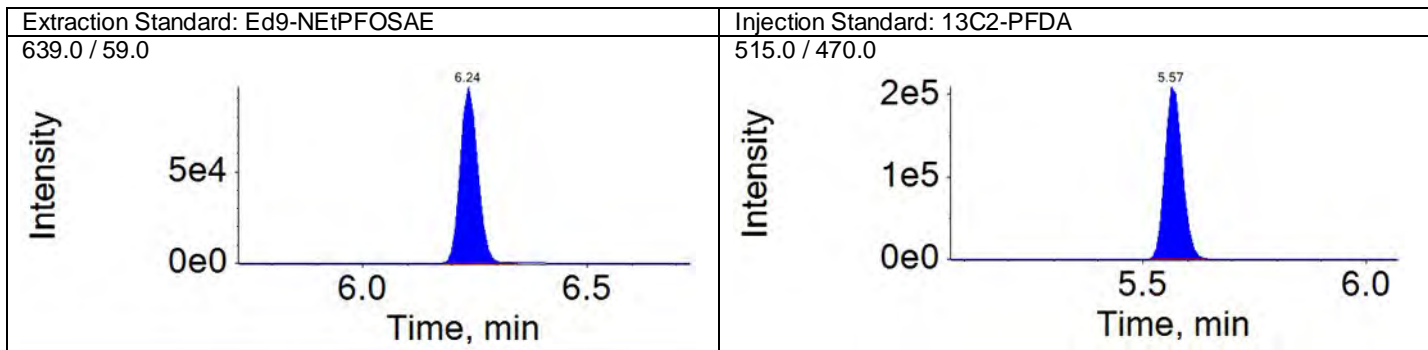
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
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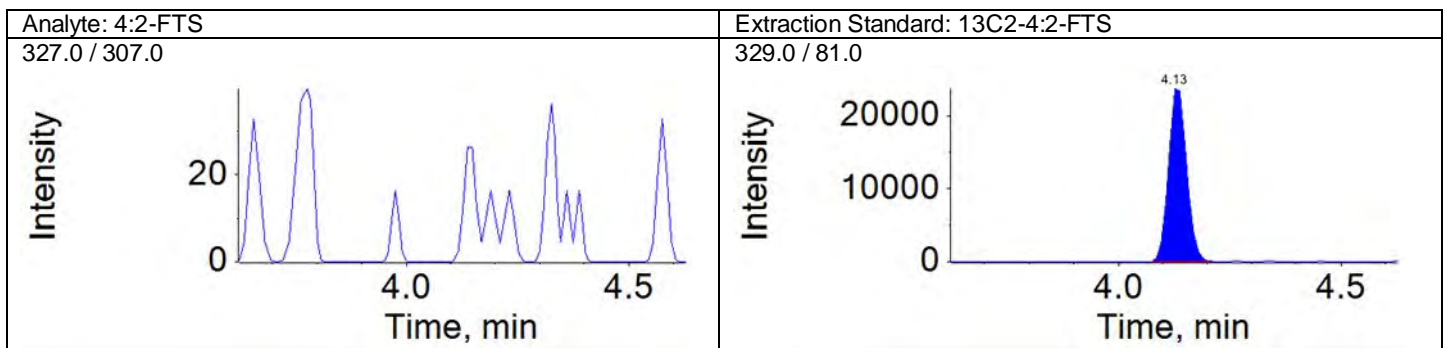
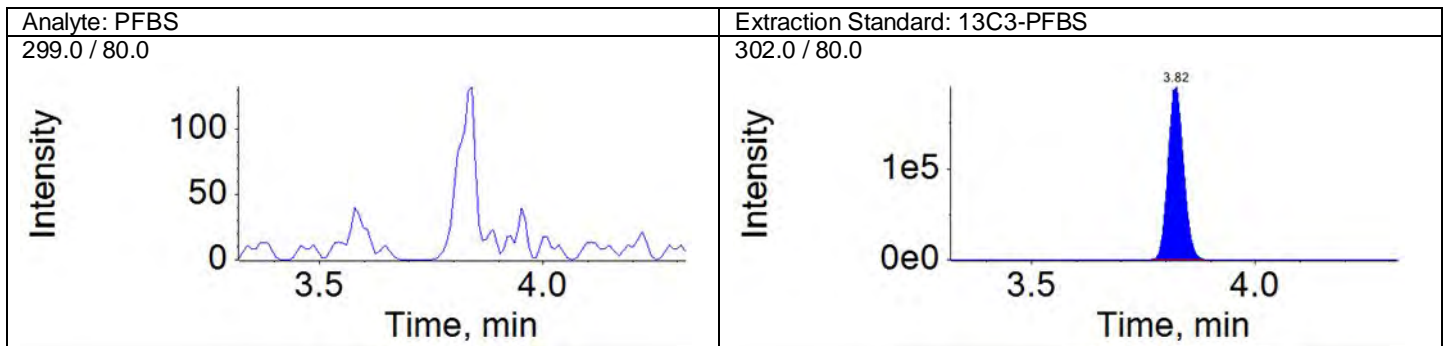
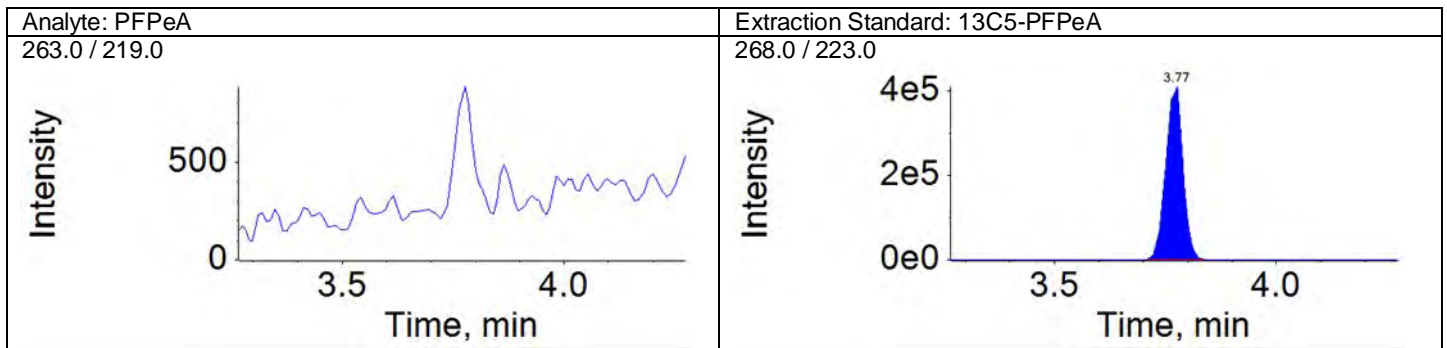
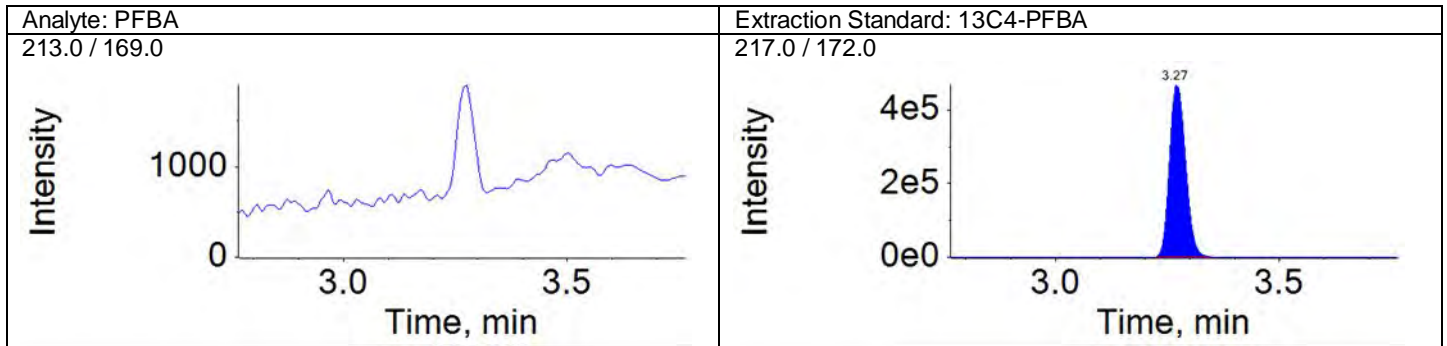
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
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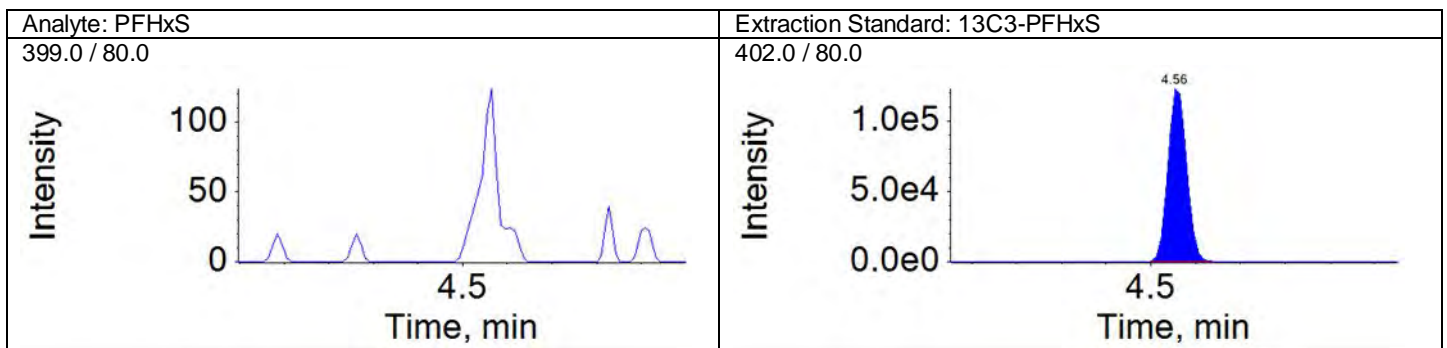
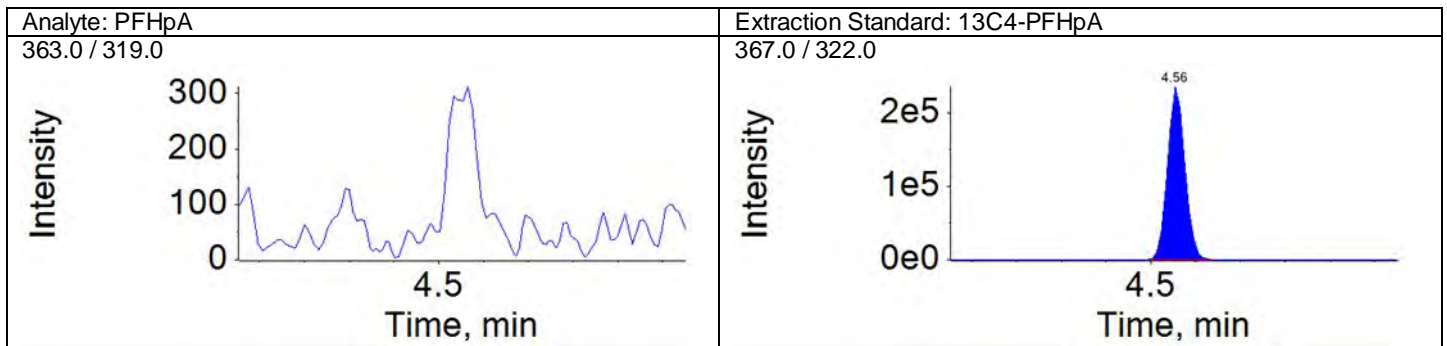
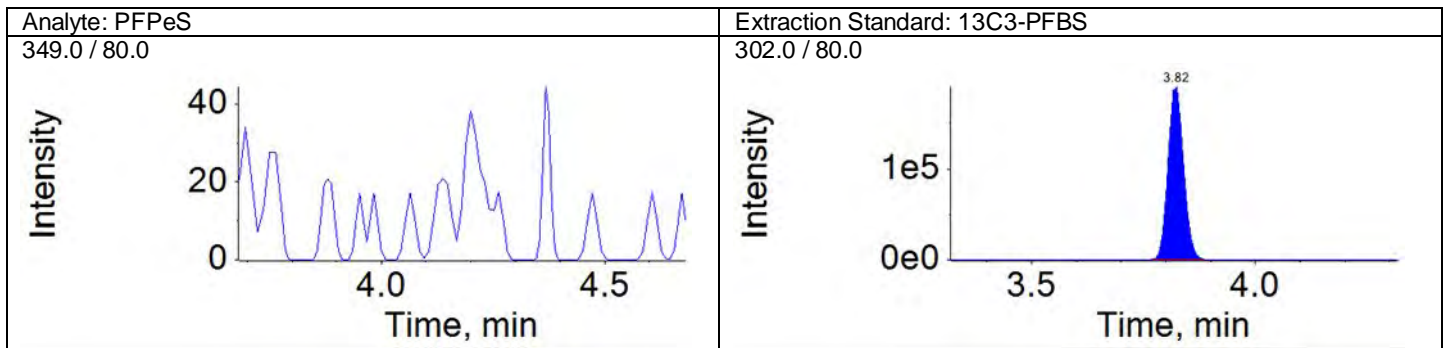
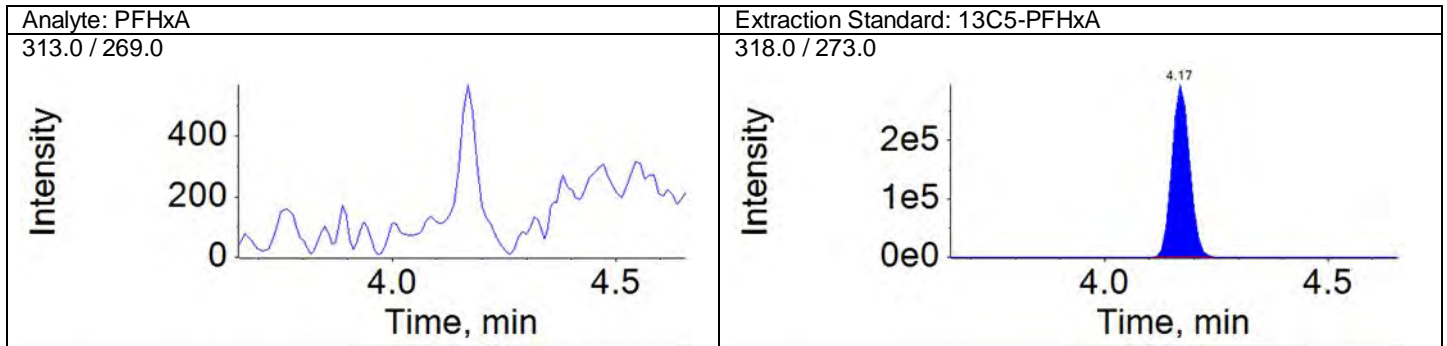
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
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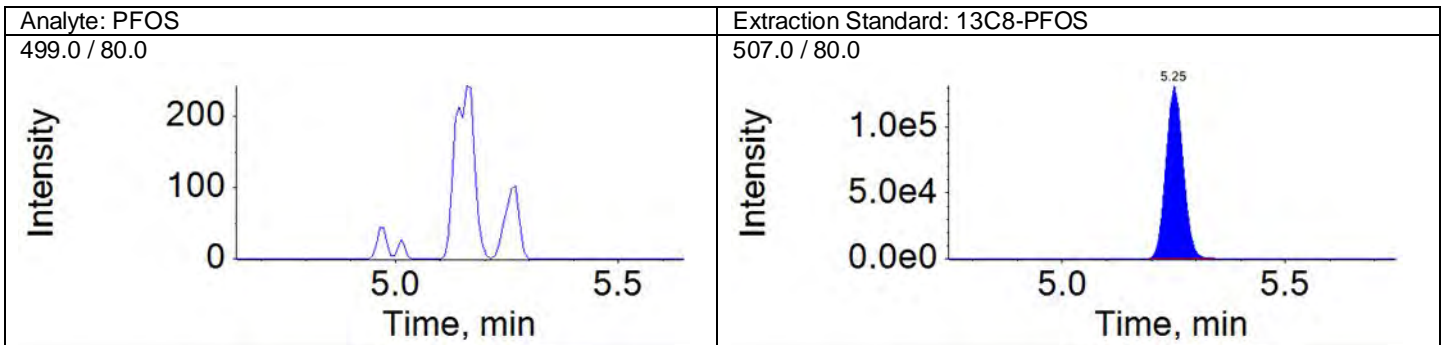
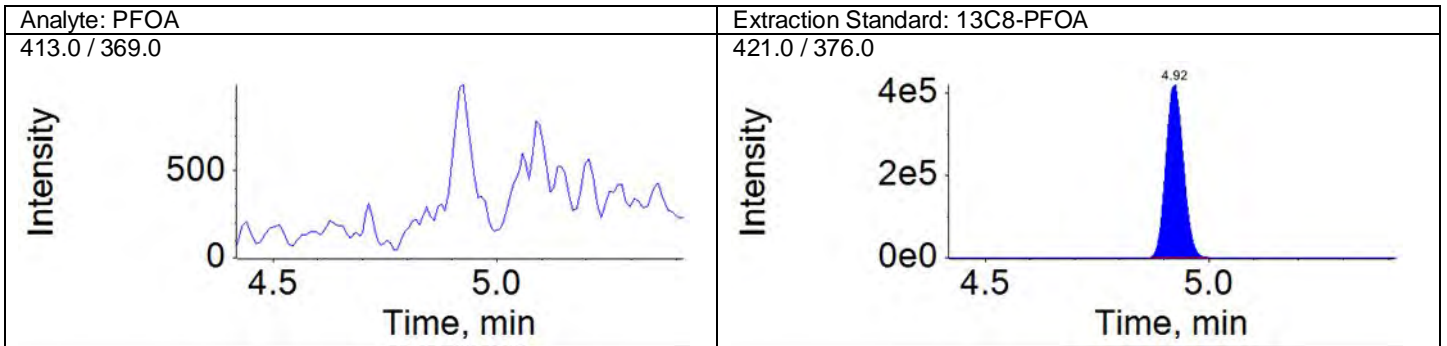
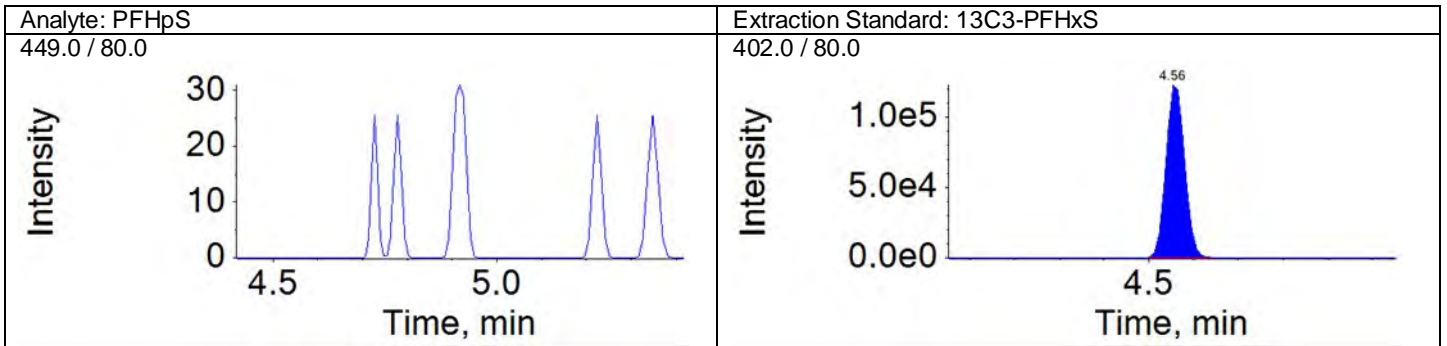
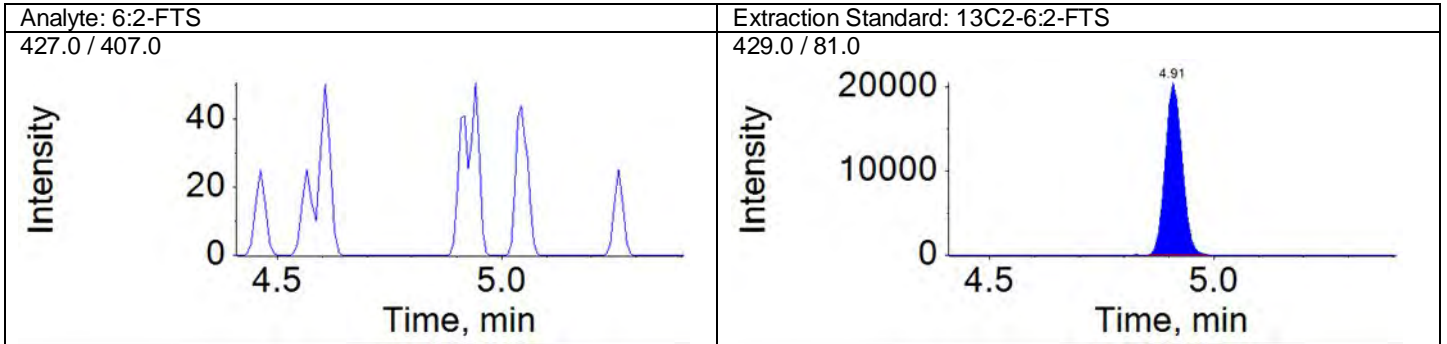
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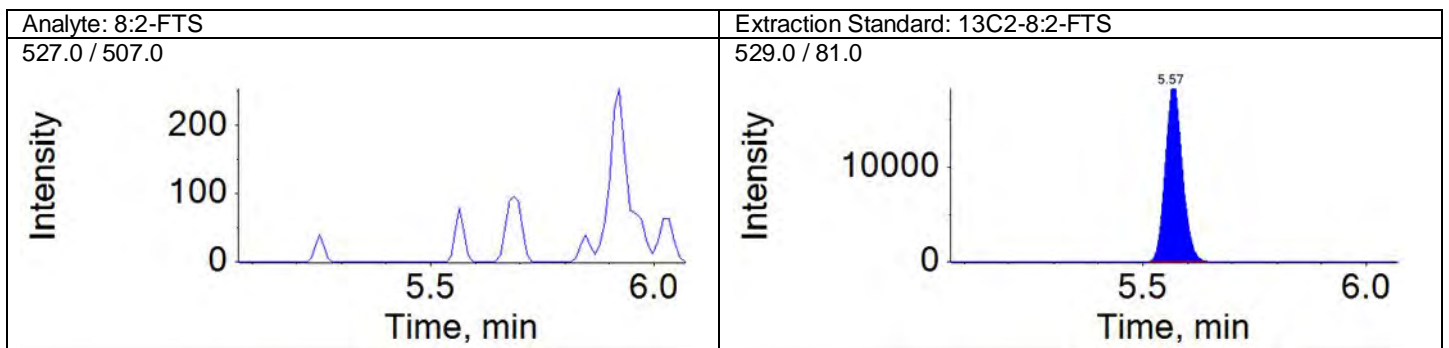
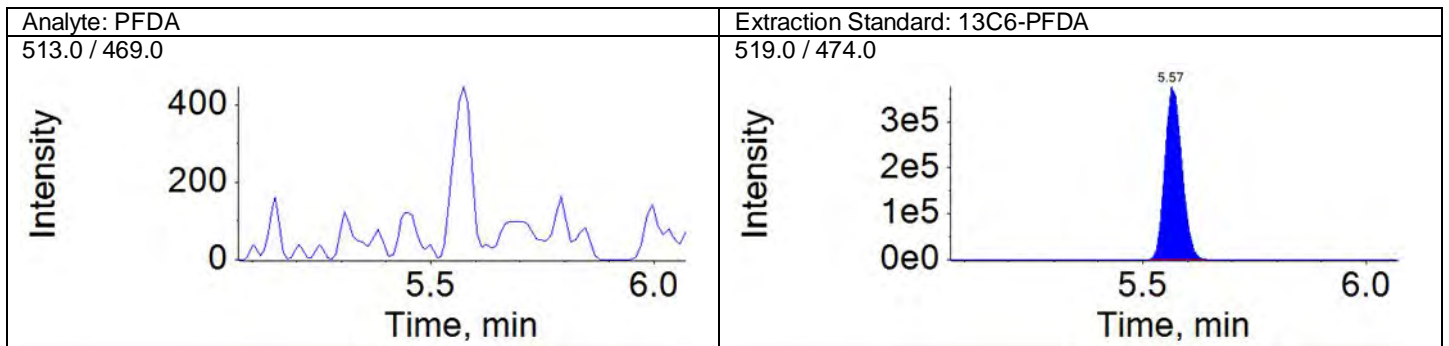
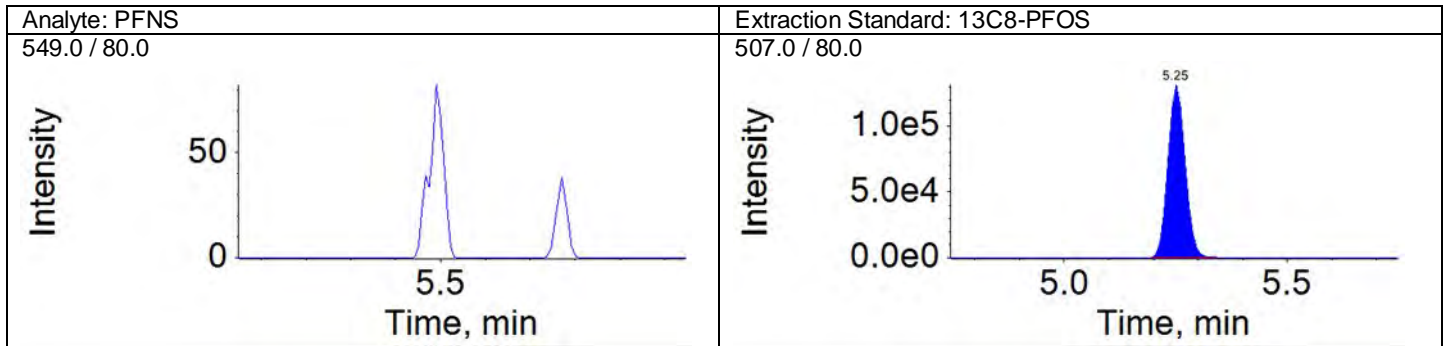
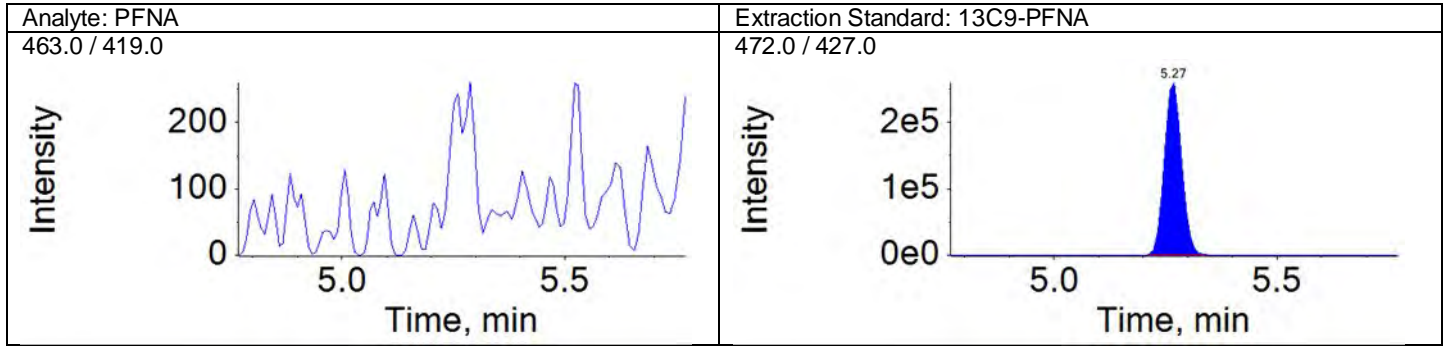
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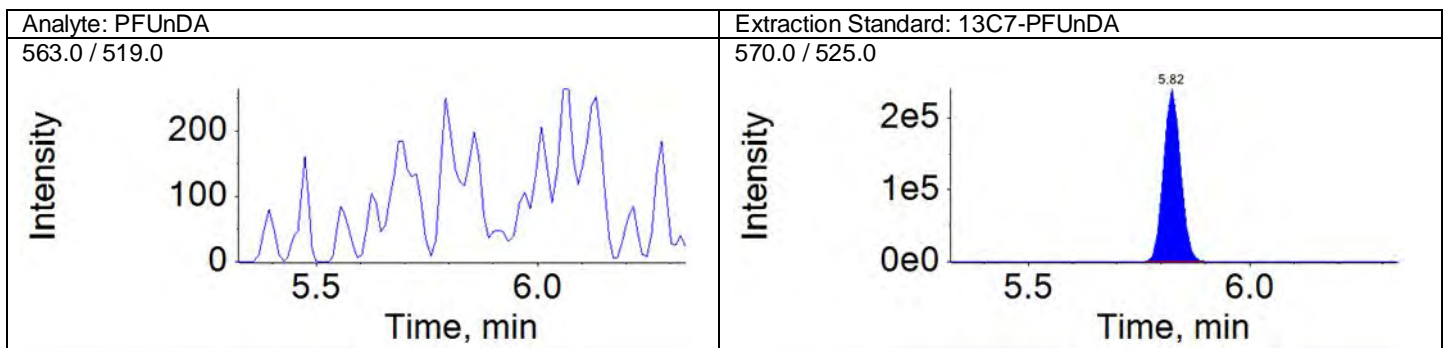
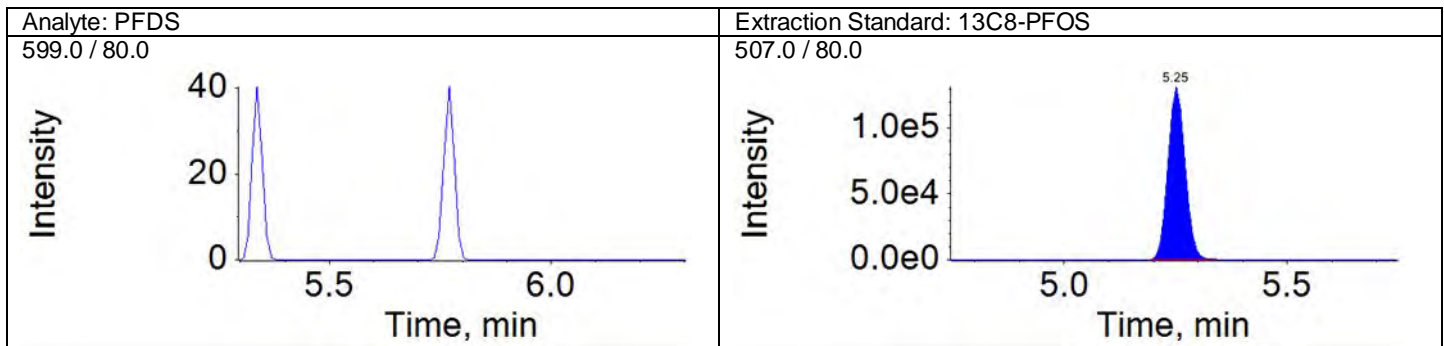
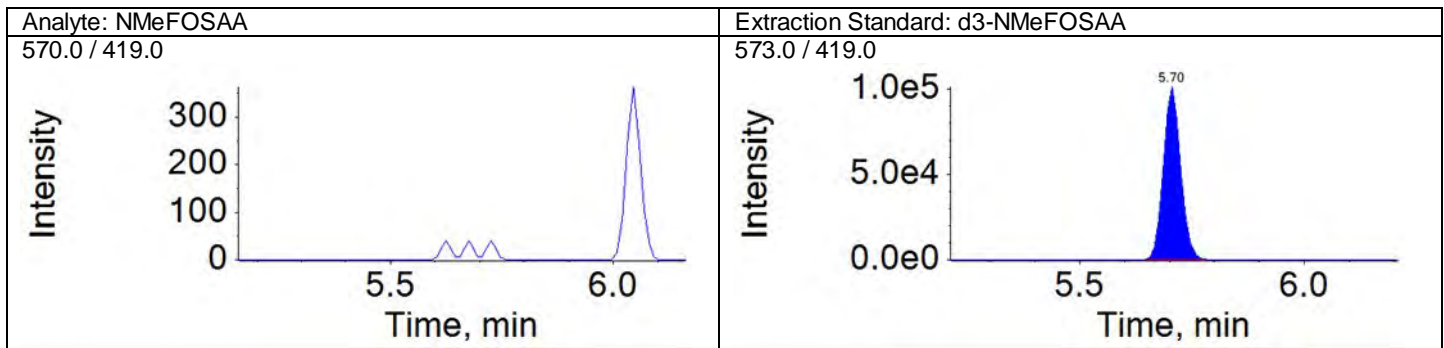
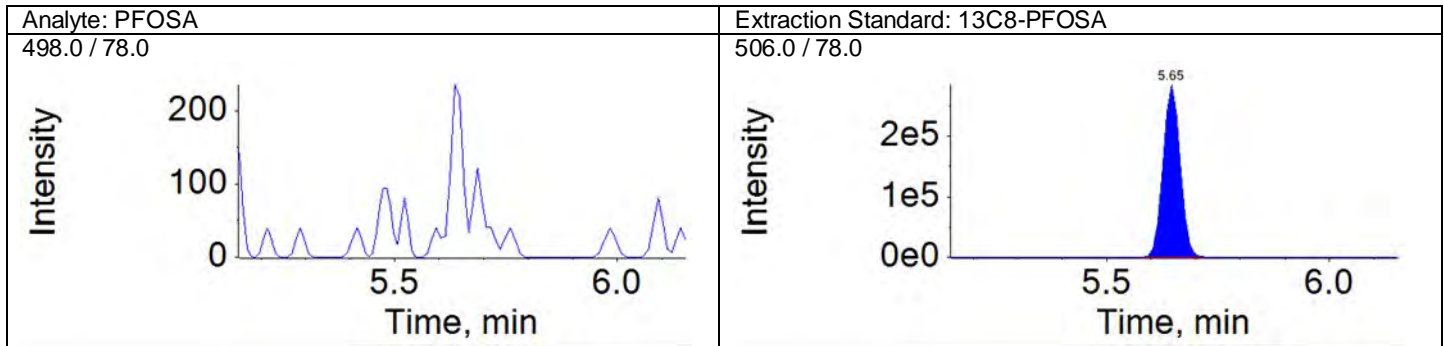
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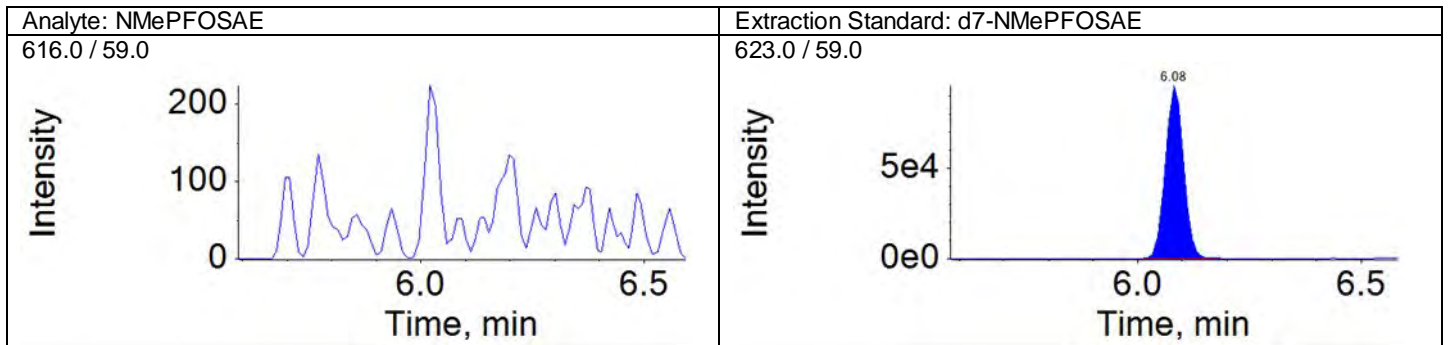
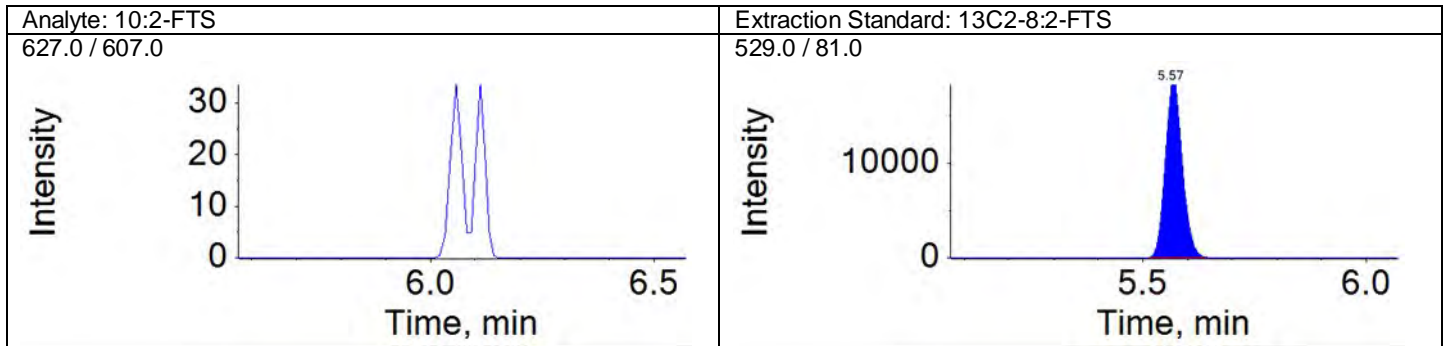
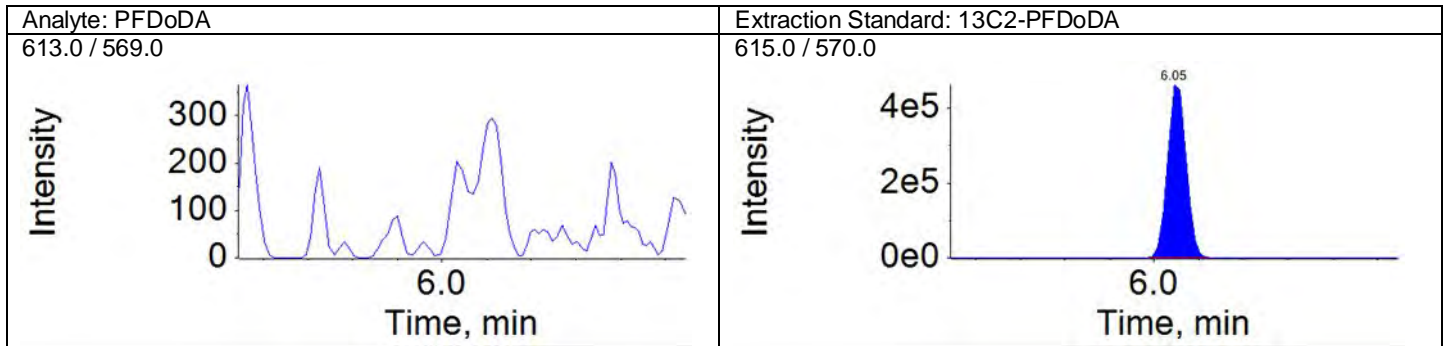
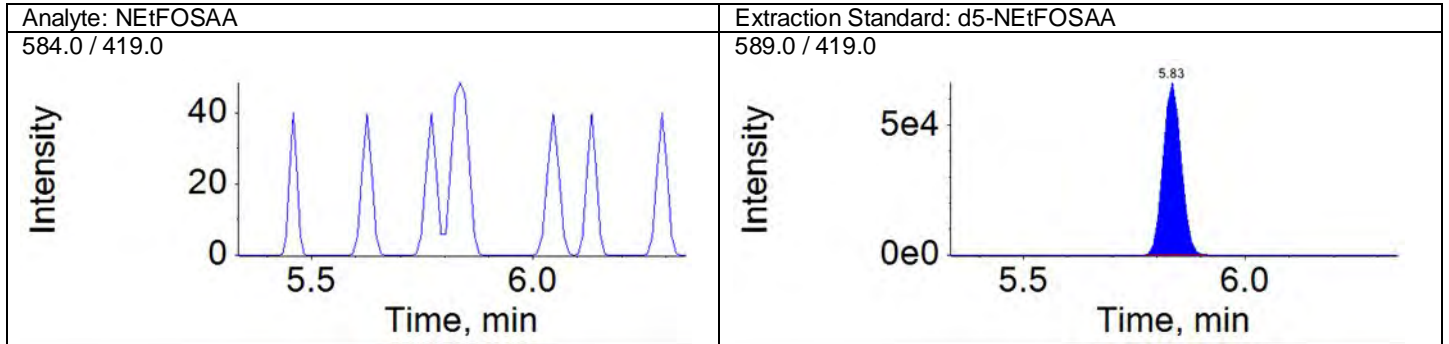
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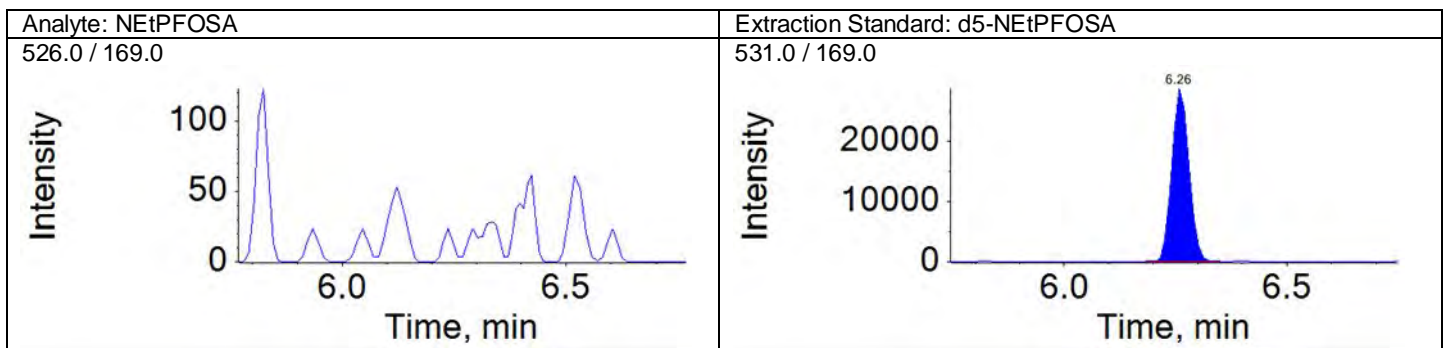
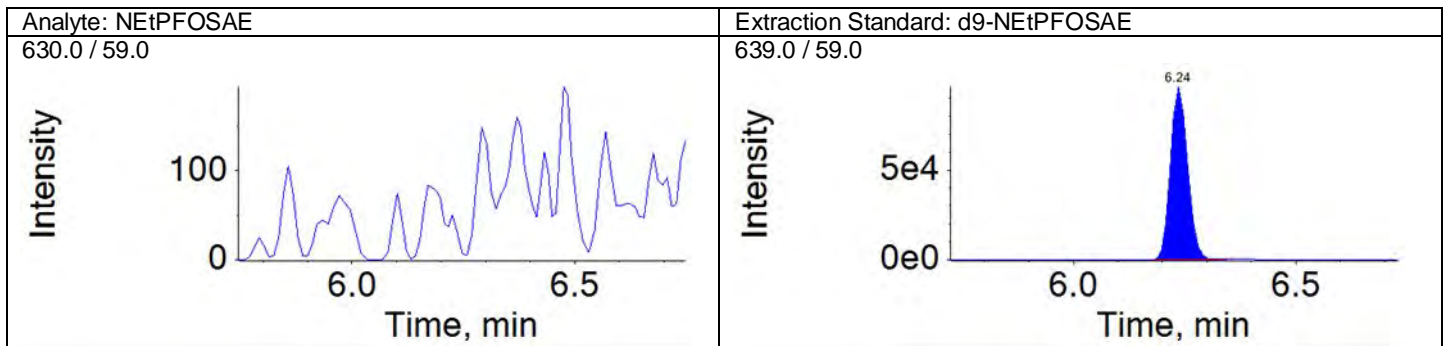
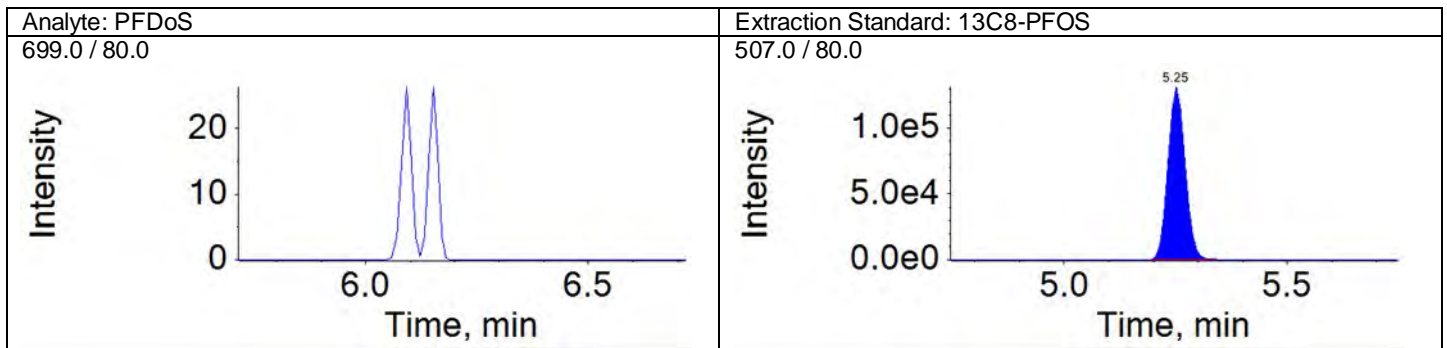
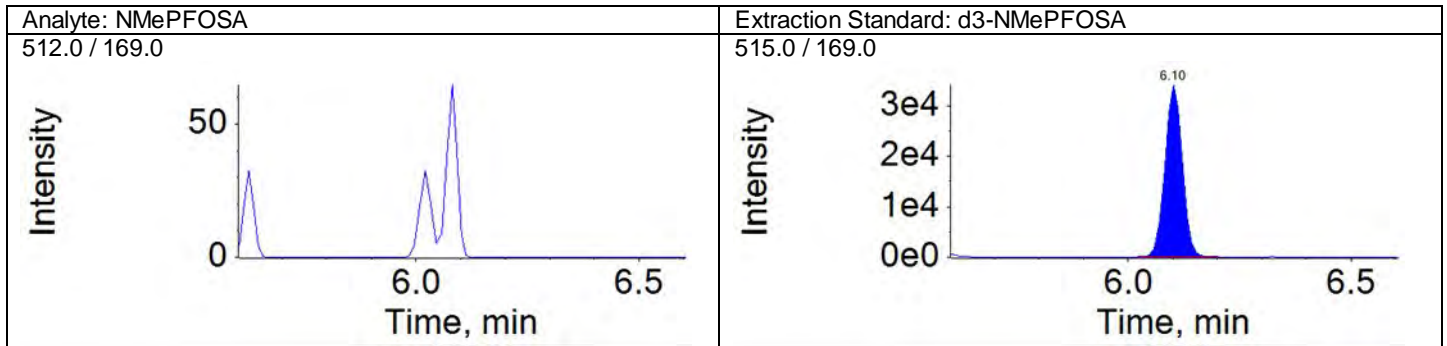
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Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

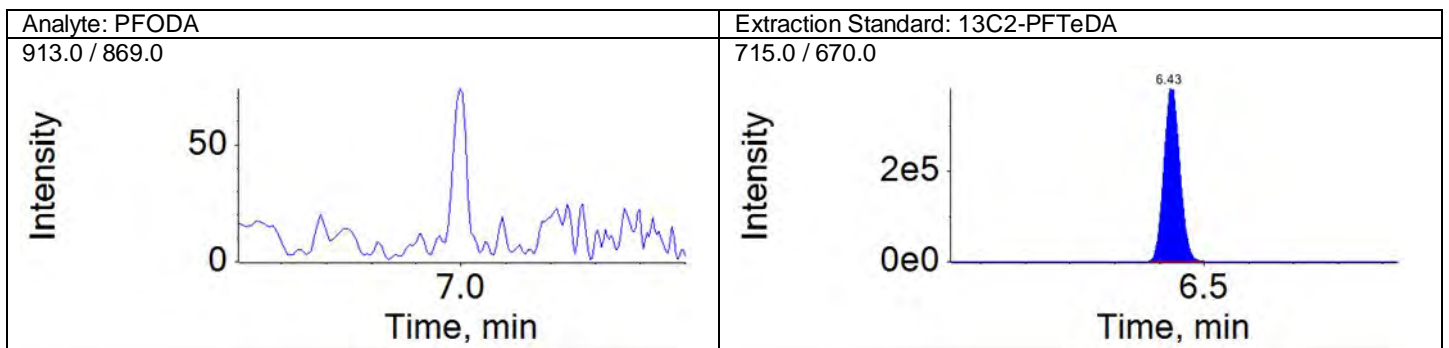
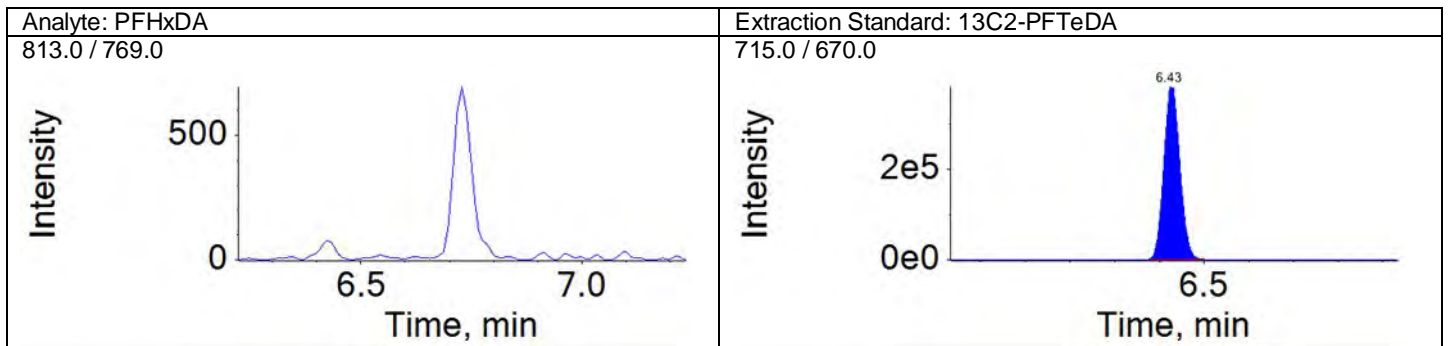
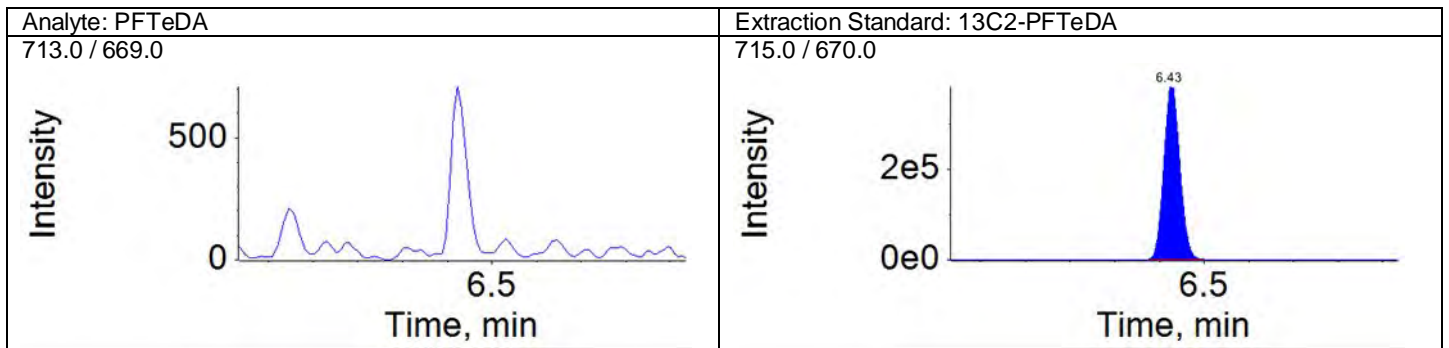
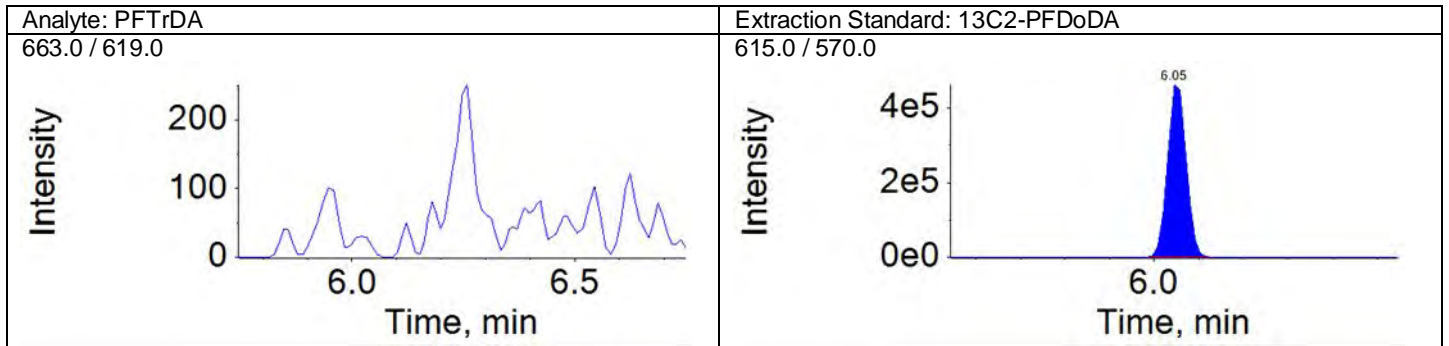
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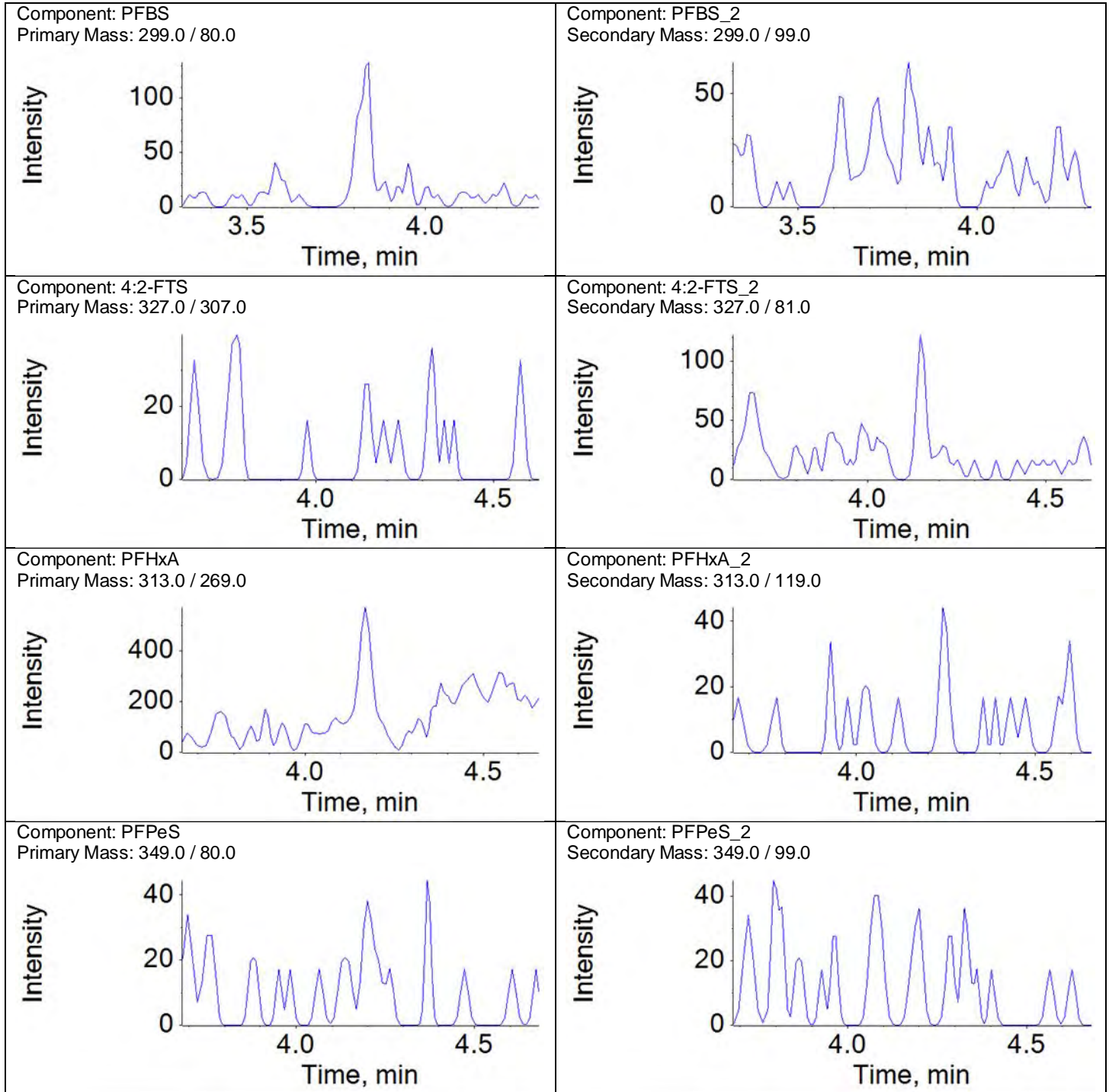


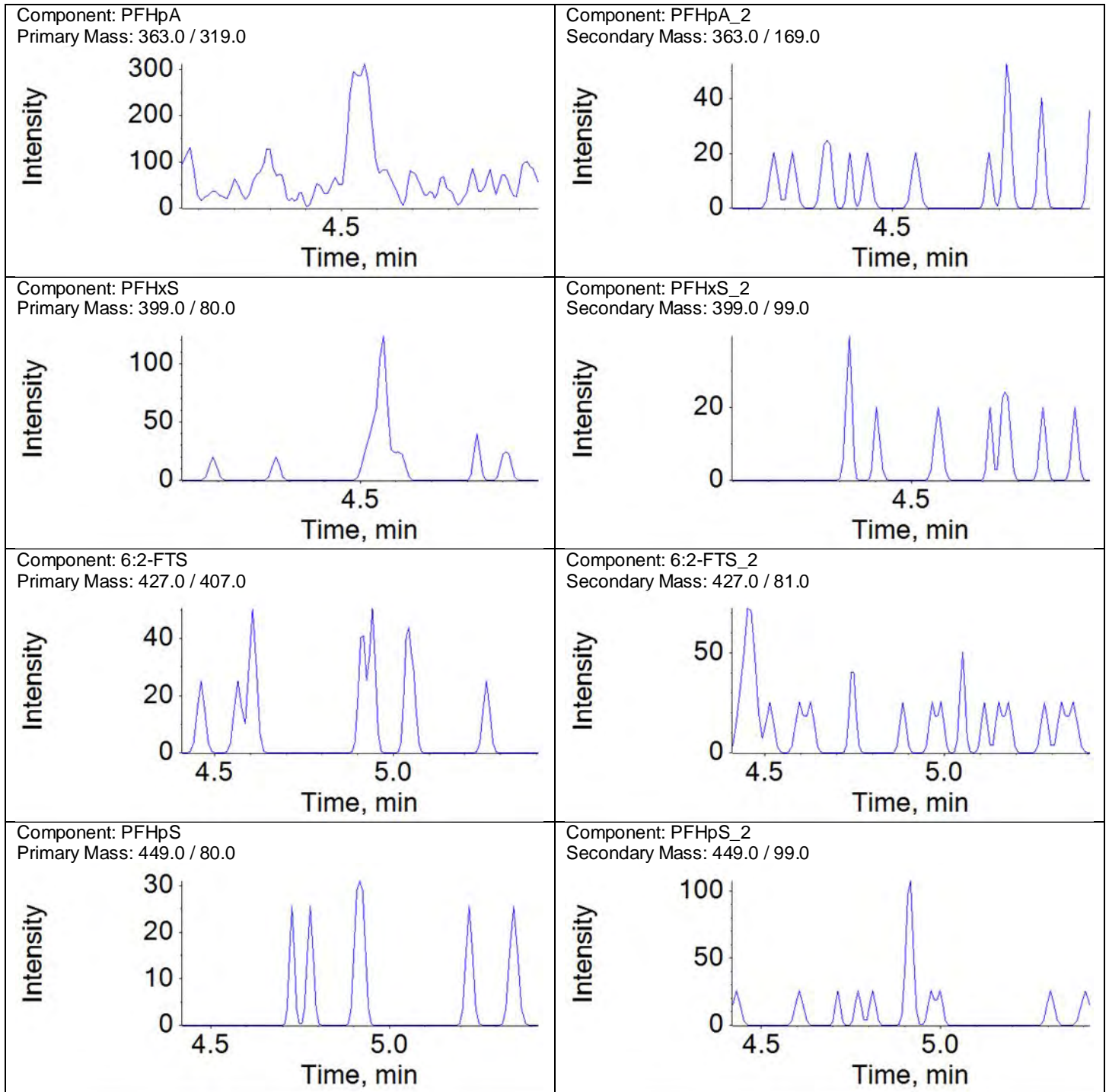


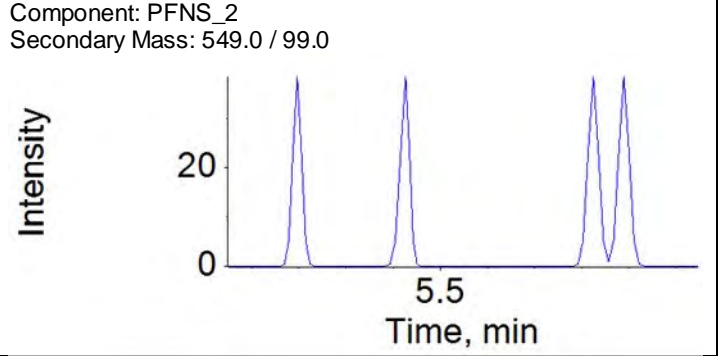
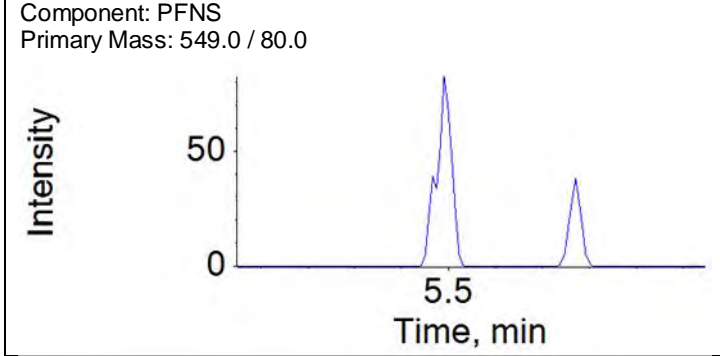
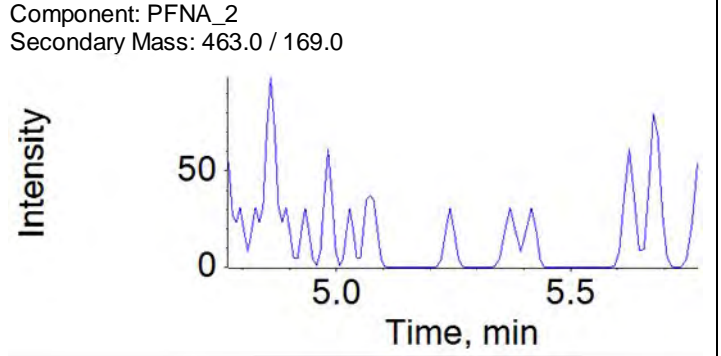
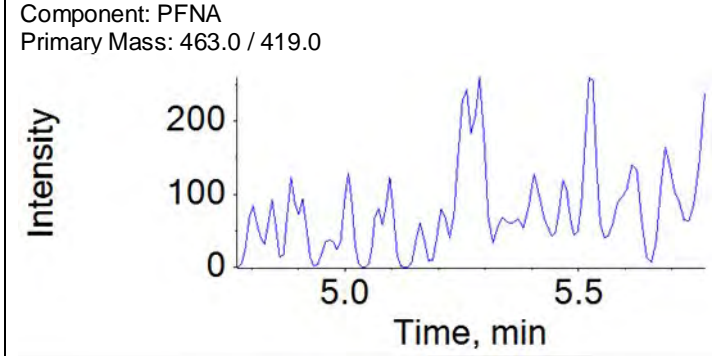
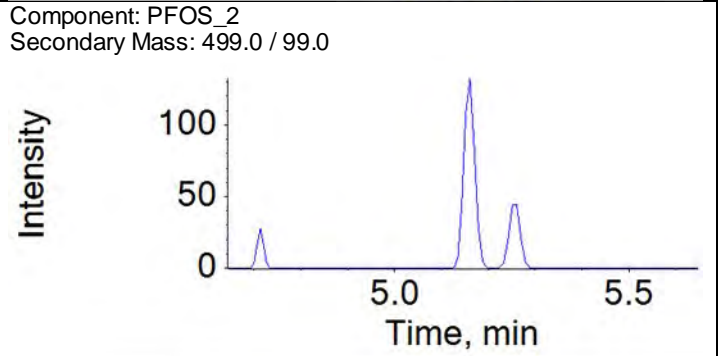
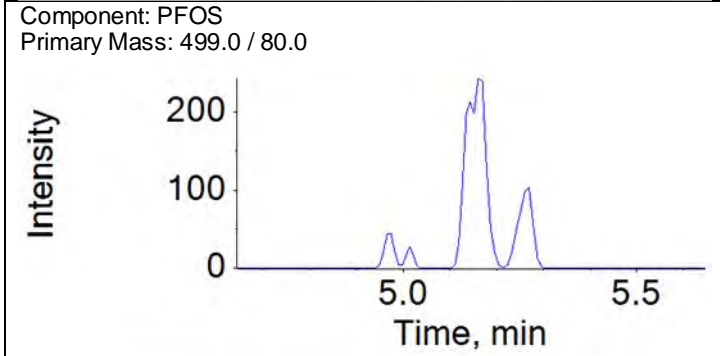
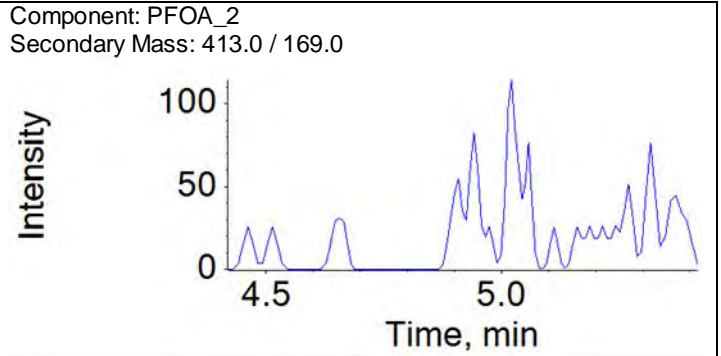
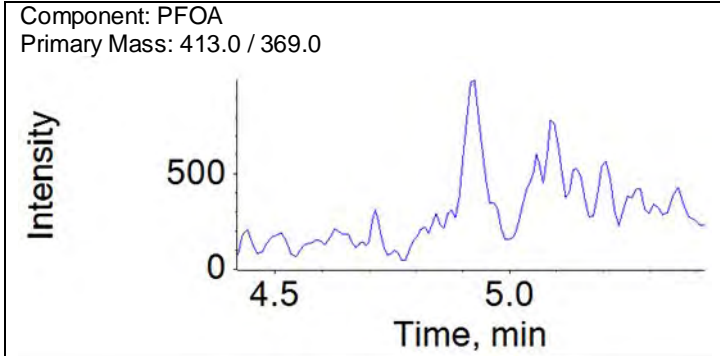
Ion Ratio Report

Sample Name: Instrument blank    Instrument Name: LM27631    File Name: 18DEC19D-06.wiff

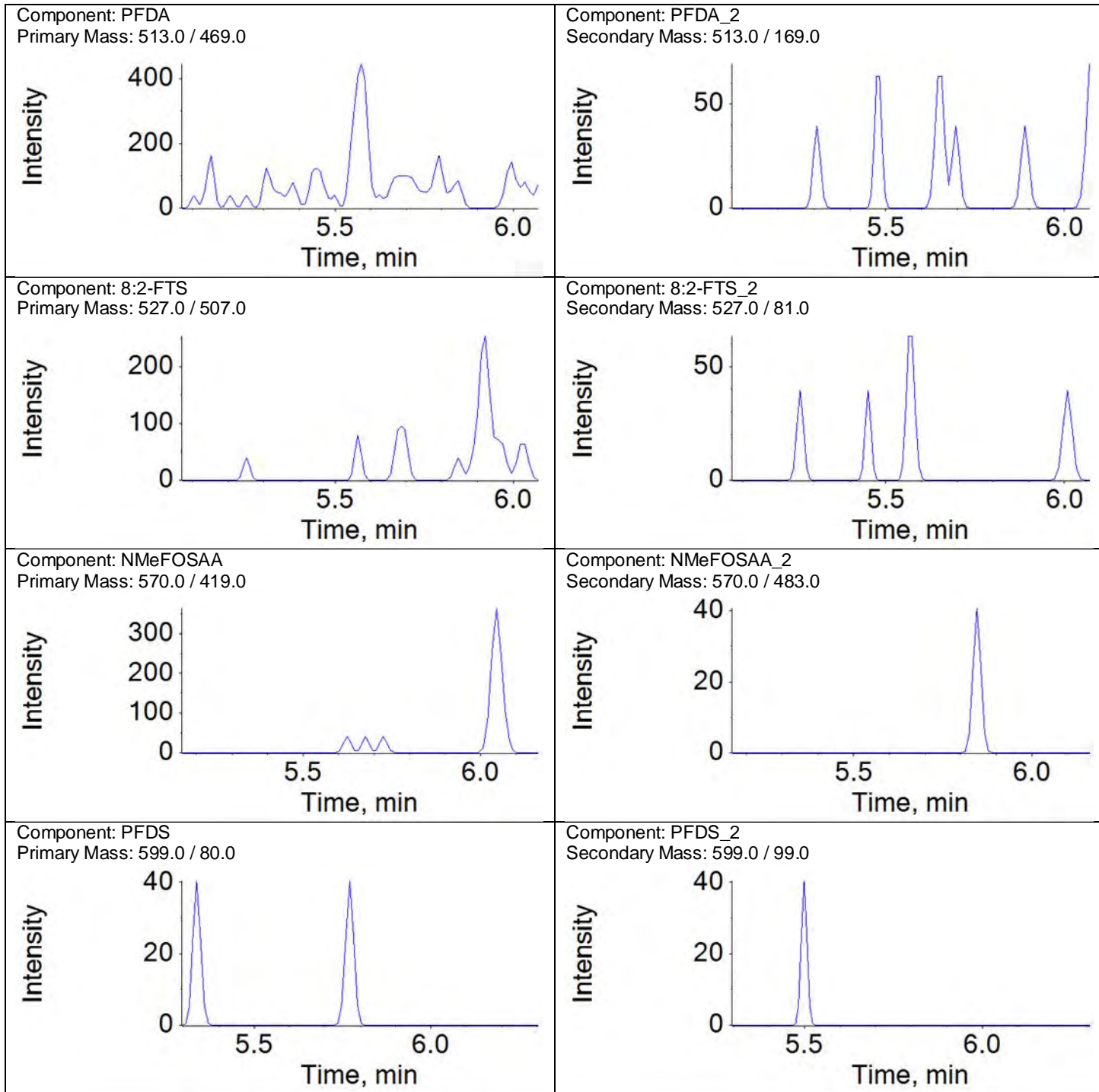
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	N/A	N/A			
PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFPeS	N/A	N/A	N/A	A	N/A	N/A			
PFPeS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
6:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpS	N/A	N/A	N/A	A	N/A	N/A			
PFHpS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNS	N/A	N/A	N/A	A	N/A	N/A			
PFNS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDS	N/A	N/A	N/A	A	N/A	N/A			
PFDS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAoDA	N/A	N/A	N/A	A	N/A	N/A			
PFAoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFATrDA	N/A	N/A	N/A	A	N/A	N/A			
PFATrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFATeDA	N/A	N/A	N/A	A	N/A	N/A			
PFATeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxDA	N/A	N/A	N/A	A	N/A	N/A			
PFHxDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	



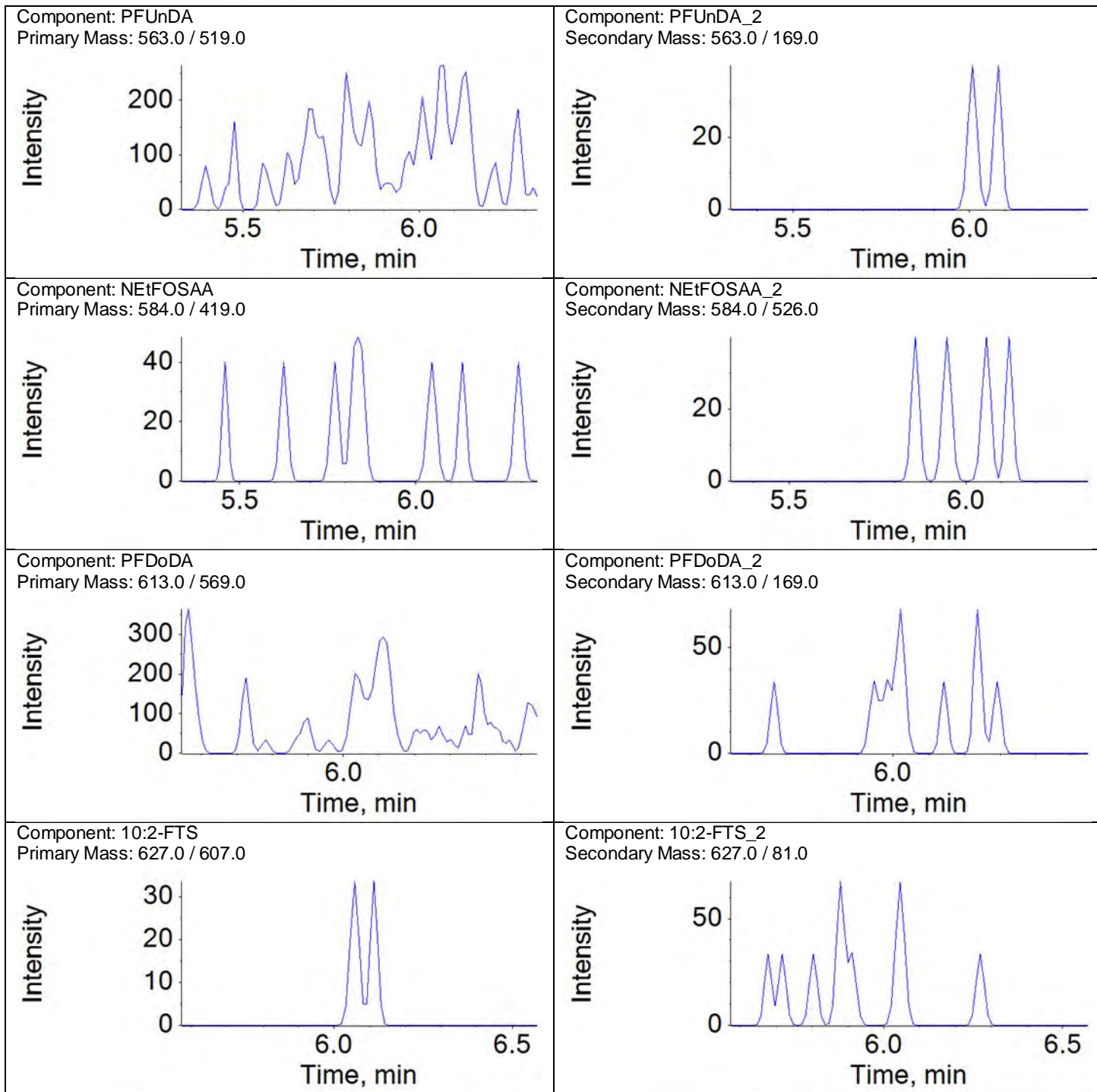


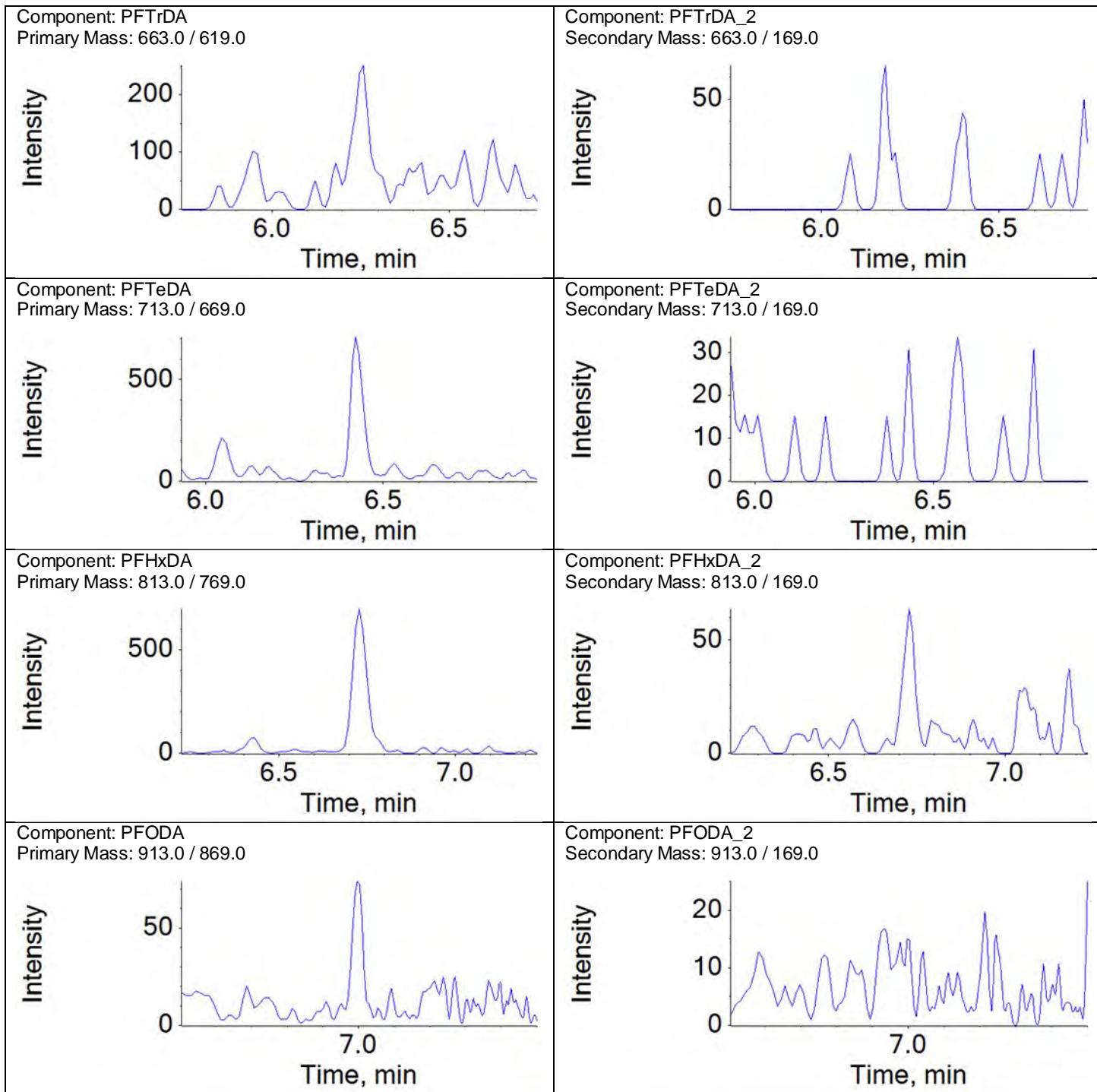










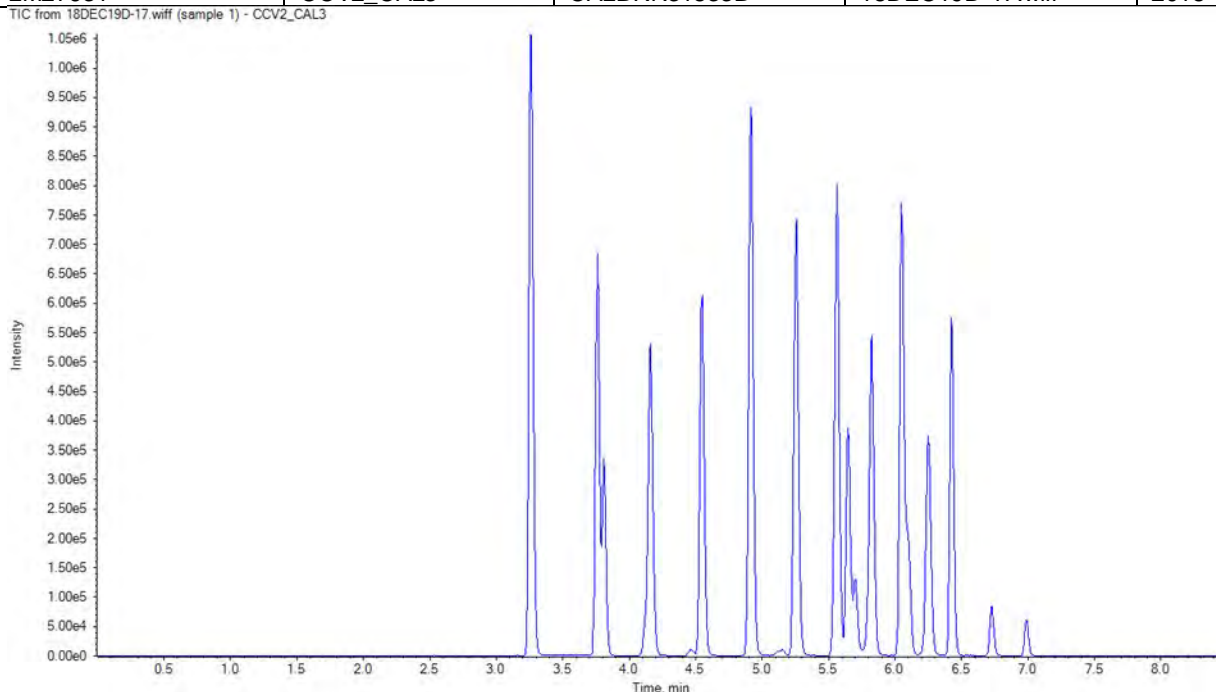


Continuing Calibration Verification

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV2_CAL3	CALBRN31833B	18DEC19D-17.wiff	2018-12-19T12:32:05



Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	921359.9	942675.8	-2	50	
13C2-PFOA	5.0	499231.7	520268.5	-4	50	
13C4-PFOS	4.8	304937.8	307968.9	-1	50	
13C2-PFDA	5.0	444282.3	487375.3	-9	50	

**Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL      Result Table: 18DEC19DCCV1-5    12/19/2018 7:21:42 PM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV2_CAL3	CALBRN31833B	18DEC19D-17.wiff	2018-12-19T12:32:05

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	422962.8	10	13C4-PFBA	1041459.2	5.0	0.406	3.26	1.000	2.000	2.156	8	30	
PFPeA	415736.1	11	13C5-PFPeA	991244.2	5.0	0.419	3.76	1.000	2.000	2.165	8	30	
PFBS	172638.8	10	13C3-PFBS	430435.8	4.7	0.401	3.81	1.000	1.770	1.980	12	30	
4:2-FTS	48437.0	11	13C2-4:2-FTS	62715.7	4.7	0.772	4.12	1.000	1.870	2.026	8	30	
PFHxA	394612.5	11	13C5-PFHxA	710233.2	5.0	0.556	4.16	1.000	2.000	2.289	14	30	
PFPeS	85897.1	11	13C3-PFPeS	430435.8	4.7	0.200	4.18	1.100	1.880	2.032	8	30	
PFHpA	395165.7	11	13C4-PFHxA	540874.0	5.0	0.731	4.55	1.000	2.000	2.423	21	30	
PFHxS	129625.2	19	13C3-PFHxS	338483.6	4.7	0.383	4.55	1.000	1.820	1.863	2	30	
6:2-FTS	42693.2	11	13C2-6:2-FTS	45597.3	4.8	0.936	4.90	1.000	1.900	2.331	23	30	
PFHpS	129595.0	10	13C3-PFHxS	338483.6	4.7	0.383	4.91	1.080	1.900	2.025	7	30	
PFOA	410966.0	11	13C8-PFOA	977096.9	5.0	0.421	4.92	1.000	2.000	2.228	11	30	
PFOS	138194.6	22	13C8-PFOS	323744.9	4.8	0.427	5.25	1.000	1.850	1.869	1	30	
PFNA	394301.3	11	13C9-PFNA	653790.8	5.0	0.603	5.26	1.000	2.000	2.397	20	30	
PFNS	97632.6	10	13C8-PFOS	323744.9	4.8	0.302	5.54	1.060	1.920	1.918	0	30	
PFDA	354163.8	11	13C6-PFDA	833860.3	5.0	0.425	5.56	1.000	2.000	2.194	10	30	
8:2-FTS	46161.7	11	13C2-8:2-FTS	48843.8	4.8	0.945	5.57	1.000	1.920	1.902	-1	30	
PFOSA	258929.7	11	13C8-PFOSA	621051.1	5.0	0.417	5.65	1.000	2.000	2.085	4	30	
NMeFOSAA	74530.0	18	d3-NMeFOSAA	211669.9	5.0	0.352	5.70	1.000	2.000	2.188	9	30	
PFDS	80356.0	11	13C8-PFOS	323744.9	4.8	0.248	5.80	1.100	1.930	2.038	6	30	
PFUnDA	365394.2	11	13C7-PFUnDA	556397.6	5.0	0.657	5.82	1.000	2.000	2.175	9	30	
NEtFOSAA	78019.8	21	d5-NEtFOSAA	185772.3	5.0	0.420	5.84	1.000	2.000	2.141	7	30	
PFDoDA	525708.8	11	13C2-PFDoDA	1141978.4	5.0	0.460	6.05	1.000	2.000	2.319	16	30	
10:2-FTS	43377.8	11	13C2-8:2-FTS	48843.8	4.8	0.888	6.07	1.090	1.930	1.809	-6	30	
NMePFOSAE	139498.0	11	d7-NMePFOSAE	235720.4	5.0	0.592	6.10	1.000	2.000	2.611	31	30	OOS
NMePFOSA	36085.8	11	d3-NMePFOSA	84477.0	5.0	0.427	6.11	1.000	2.000	2.156	8	30	
PFDoS	41285.2	11	13C8-PFOS	323744.9	4.8	0.128	6.22	1.190	1.940	1.932	0	30	
NEtPFOSAE	141602.3	11	d9-NEtPFOSAE	222699.5	5.0	0.636	6.26	1.000	2.000	2.077	4	30	
NEtPFOSA	34381.7	11	d5-NEtPFOSA	67398.2	5.0	0.510	6.27	1.000	2.000	2.386	19	30	
PFTTrDA	470034.5	11	13C2-PFDoDA	1141978.4	5.0	0.412	6.25	1.030	2.000	2.112	6	30	
PFTeDA	338043.0	10	13C2-PFTeDA	845410.2	5.0	0.400	6.43	1.000	2.000	2.153	8	30	
PFHxDA	164786.3	11	13C2-PFTeDA	845410.2	5.0	0.195	6.73	1.050	2.000	2.140	7	30	
PFOA	127400.5	10	13C2-PFTeDA	845410.2	5.0	0.151	6.99	1.090	2.000	2.165	8	30	

**Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MCD at 7:31 pm, 12/19/18

**REVIEWED**  
By HMK at 12:23 pm, 12/21/18



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV2_CAL3	Data File:	18DEC19D-17.wiff
Sample ID:	CALBRN31833B	Acquis Date:	2018-12-19T12:32:05
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	5	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC19DCCV1-5
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MCD7824
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	921359.9	942675.8	-2	50	
13C2-PFOA	5.0	499231.7	520268.5	-4	50	
13C4-PFOS	4.8	304937.8	307968.9	-1	50	
13C2-PFDA	5.0	444282.3	487375.3	-9	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1041459.2	13C3-PFBA	921359.9	1.130	5.000	5.005	100	70-130	
E13C5-PFPeA	991244.2	13C3-PFBA	921359.9	1.076	5.000	5.017	100	70-130	
E13C3-PFBS	430435.8	13C3-PFBA	921359.9	0.467	4.650	4.549	98	70-130	
E13C2-4:2-FTS	62715.7	13C2-PFOA	499231.7	0.126	4.670	4.771	102	70-130	
E13C5-PFHxA	710233.2	13C2-PFOA	499231.7	1.423	5.000	5.089	102	70-130	
E13C3-PFHxS	338483.6	13C2-PFOA	499231.7	0.678	4.730	5.131	108	70-130	
E13C4-PFHpA	540874.0	13C2-PFOA	499231.7	1.083	5.000	4.680	94	70-130	
E13C2-6:2-FTS	45597.3	13C2-PFOA	499231.7	0.091	4.750	4.595	97	70-130	
E13C8-PFOA	977096.9	13C2-PFOA	499231.7	1.957	5.000	5.382	108	70-130	
E13C8-PFOS	323744.9	13C4-PFOS	304937.8	1.062	4.780	4.748	99	70-130	
E13C9-PFNA	653790.8	13C4-PFOS	304937.8	2.144	5.000	4.877	98	70-130	
E13C6-PFDA	833860.3	13C2-PFDA	444282.3	1.877	5.000	5.346	107	70-130	
E13C2-8:2-FTS	48843.8	13C2-PFDA	444282.3	0.110	4.790	5.666	118	70-130	
E13C8-PFOSA	621051.1	13C2-PFDA	444282.3	1.398	5.000	5.443	109	70-130	
Ed3-NMeFOSAA	211669.9	13C2-PFDA	444282.3	0.476	5.000	5.242	105	70-130	
E13C7-PFUnDA	556397.6	13C2-PFDA	444282.3	1.252	5.000	5.242	105	70-130	
Ed5-NEtFOSAA	185772.3	13C2-PFDA	444282.3	0.418	5.000	6.160	123	70-130	
E13C2-PFDoDA	1141978.4	13C2-PFDA	444282.3	2.570	5.000	5.408	108	70-130	
Ed7-NMePFOSAE	235720.4	13C2-PFDA	444282.3	0.531	5.000	4.741	95	70-130	
Ed3-NMePFOSA	84477.0	13C2-PFDA	444282.3	0.190	5.000	5.225	104	70-130	
Ed9-NEtPFOSAE	222699.5	13C2-PFDA	444282.3	0.501	5.000	5.125	102	70-130	
Ed5-NEtPFOSA	67398.2	13C2-PFDA	444282.3	0.152	5.000	5.262	105	70-130	
E13C2-PFTeDA	845410.2	13C2-PFDA	444282.3	1.903	5.000	5.362	107	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

Analyte Quantitation Peak Table

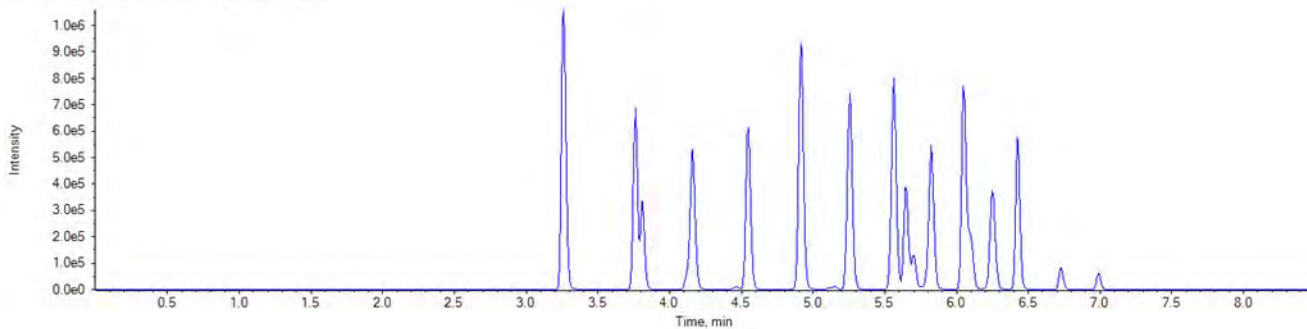
Sample Name: CCV2\_CAL3 Instrument Name: LM27631 File Name: 18DEC19D-17.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	422962.8		A	13C4-PFBA	3.26	1041459.2	0.406	2.156
PFPeA	3.76	1.000	415736.1		A	13C5-PFPeA	3.76	991244.2	0.419	2.165
PFBS	3.81	1.000	172638.8		A	13C3-PFBS	3.81	430435.8	0.401	1.980
4:2-FTS	4.12	1.000	48437.0		A	13C2-4:2-FTS	4.12	62715.7	0.772	2.026
PFHxA	4.16	1.000	394612.5		A	13C5-PFHxA	4.16	710233.2	0.556	2.289
PFPeS	4.18	1.100	85897.1		A	13C3-PFBS	3.81	430435.8	0.200	2.032
PFHpA	4.55	1.000	395165.7		A	13C4-PFHpA	4.55	540874.0	0.731	2.423
PFHxS	4.55	1.000	129625.2		M	13C3-PFHxS	4.55	338483.6	0.383	1.863
6:2-FTS	4.90	1.000	42693.2		A	13C2-6:2-FTS	4.90	45597.3	0.936	2.331
PFHpS	4.91	1.080	129595.0		A	13C3-PFHxS	4.55	338483.6	0.383	2.025
PFOA	4.92	1.000	410966.0		A	13C8-PFOA	4.92	977096.9	0.421	2.228
PFOS	5.25	1.000	138194.6		M	13C8-PFOS	5.25	323744.9	0.427	1.869
PFNA	5.26	1.000	394301.3		A	13C9-PFNA	5.26	653790.8	0.603	2.397
PFNS	5.54	1.060	97632.6		A	13C8-PFOS	5.25	323744.9	0.302	1.918
PFDA	5.56	1.000	354163.8		A	13C6-PFDA	5.56	833860.3	0.425	2.194
8:2-FTS	5.57	1.000	46161.7		A	13C2-8:2-FTS	5.57	48843.8	0.945	1.902
PFOSA	5.65	1.000	258929.7		A	13C8-PFOSA	5.65	621051.1	0.417	2.085
NMeFOSAA	5.70	1.000	74530.0		M	d3-NMeFOSAA	5.70	211669.9	0.352	2.188
PFDS	5.80	1.100	80356.0		A	13C8-PFOS	5.25	323744.9	0.248	2.038
PUnDA	5.82	1.000	365394.2		A	13C7-PUnDA	5.82	556397.6	0.657	2.175
NEtFOSAA	5.84	1.000	78019.8		M	d5-NEtFOSAA	5.83	185772.3	0.420	2.141
PFDaDA	6.05	1.000	525708.8		A	13C2-PFDaDA	6.05	1141978.4	0.460	2.319
10:2-FTS	6.07	1.090	43377.8		A	13C2-8:2-FTS	5.57	48843.8	0.888	1.809
NMePFOSAE	6.10	1.000	139498.0		A	d7-NMePFOSAE	6.09	235720.4	0.592	2.611
NMePFOSA	6.11	1.000	36085.8		A	d3-NMePFOSA	6.11	84477.0	0.427	2.156
PFDoS	6.22	1.190	41285.2		A	13C8-PFOS	5.25	323744.9	0.128	1.932
NEtPFOSAE	6.26	1.000	141602.3		A	d9-NEtPFOSAE	6.24	222699.5	0.636	2.077
NEtPFOSA	6.27	1.000	34381.7		A	d5-NEtPFOSA	6.27	67398.2	0.510	2.386
PFTrDA	6.25	1.030	470034.5		A	13C2-PFDaDA	6.05	1141978.4	0.412	2.112
PFTeDA	6.43	1.000	338043.0		A	13C2-PFTeDA	6.43	845410.2	0.400	2.153
PFHxDA	6.73	1.050	164786.3		A	13C2-PFTeDA	6.43	845410.2	0.195	2.140
PFODA	6.99	1.090	127400.5		A	13C2-PFTeDA	6.43	845410.2	0.151	2.165

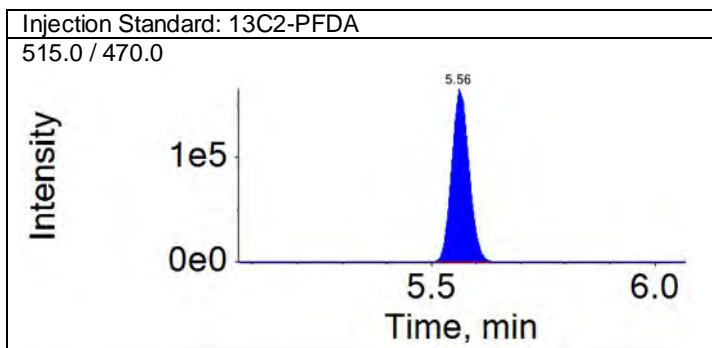
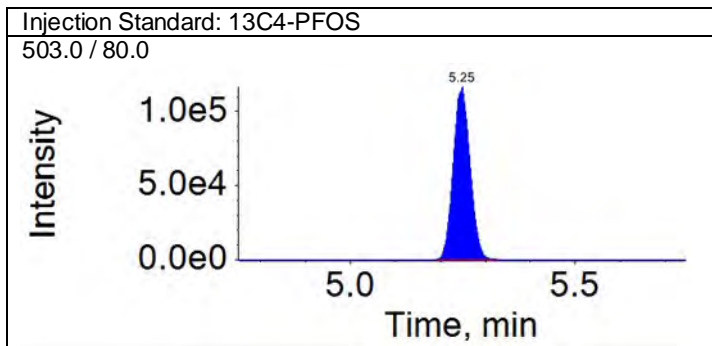
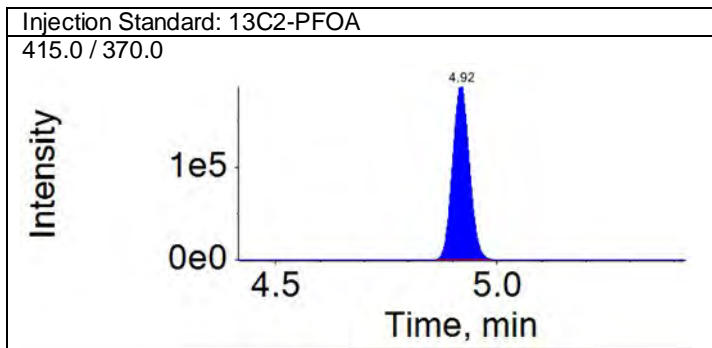
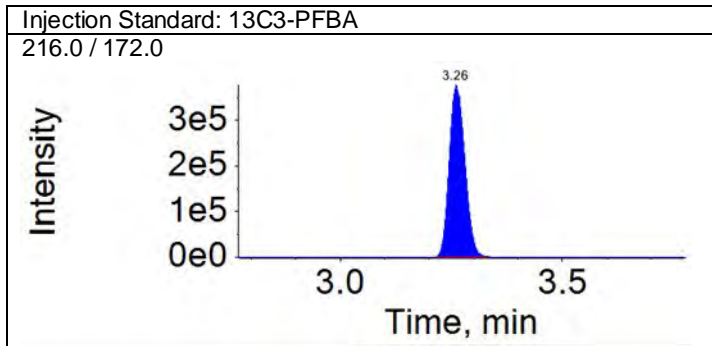
Total Ion Chromatogram

TIC from 18DEC19D-17.wiff (sample 1) - CCV2\_CAL3



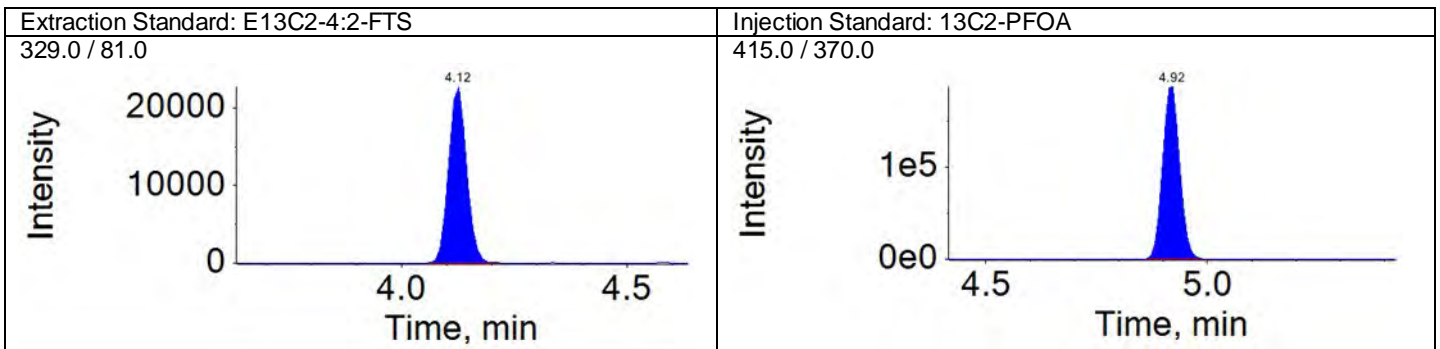
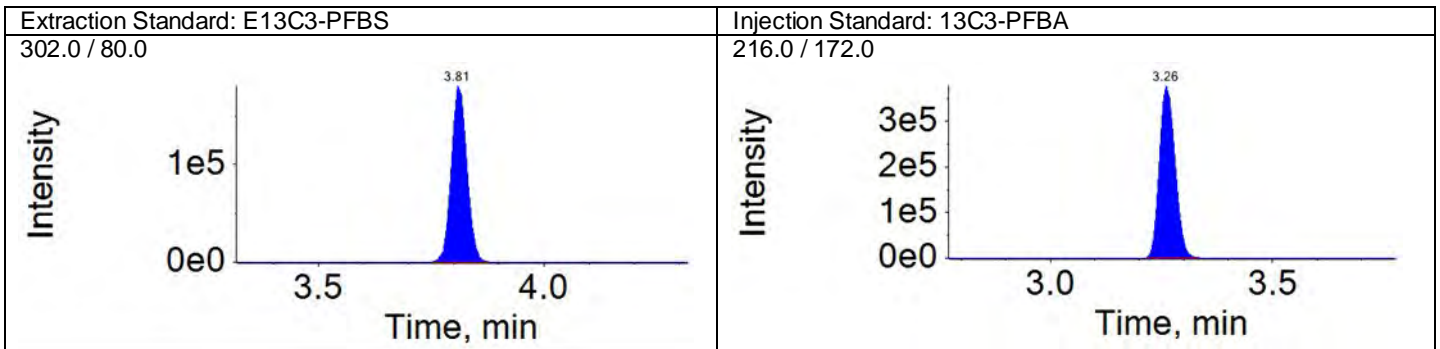
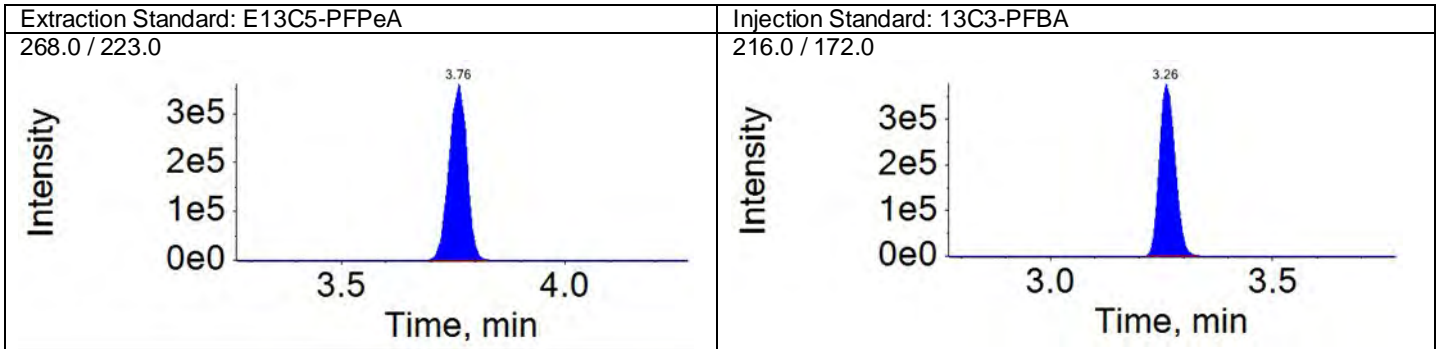
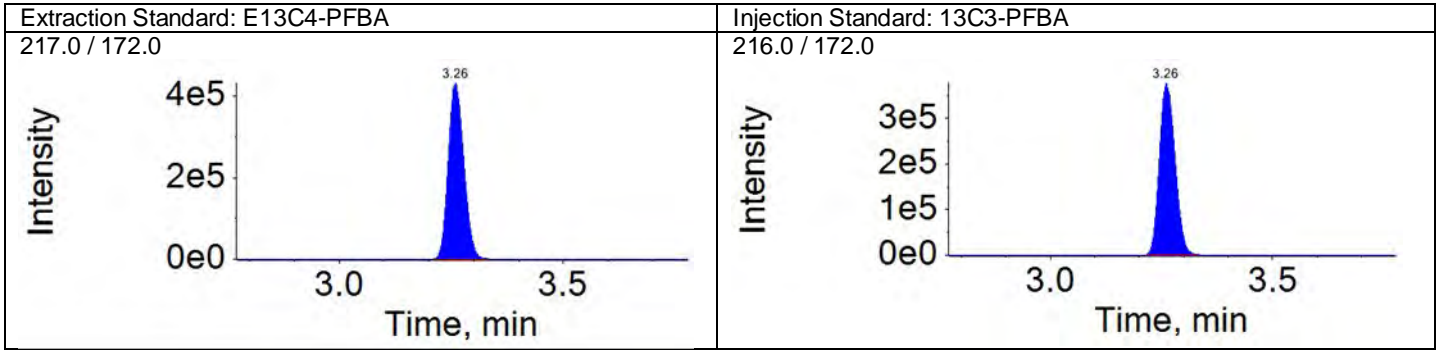
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



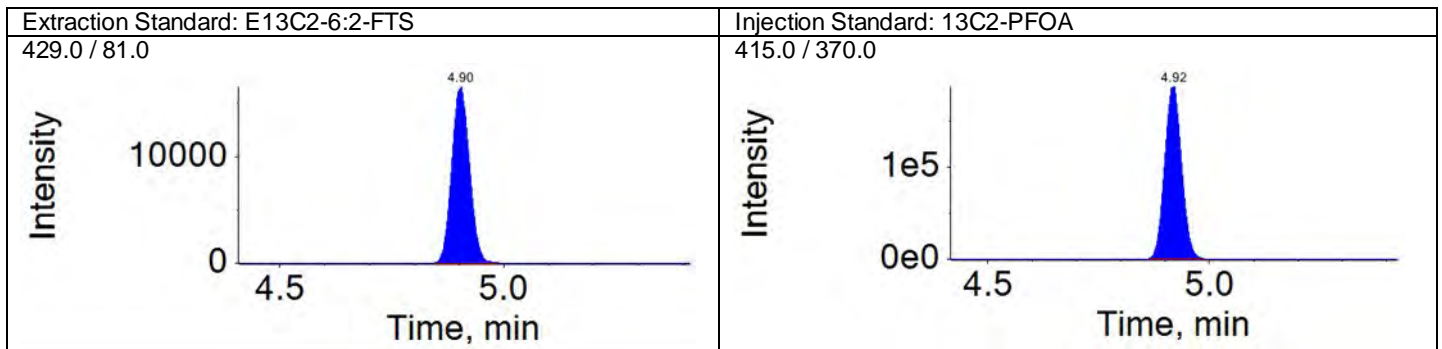
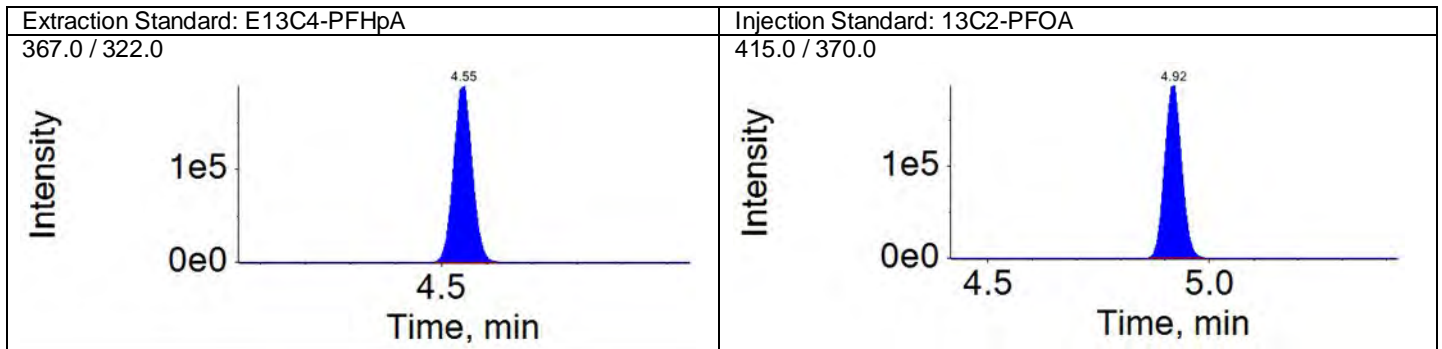
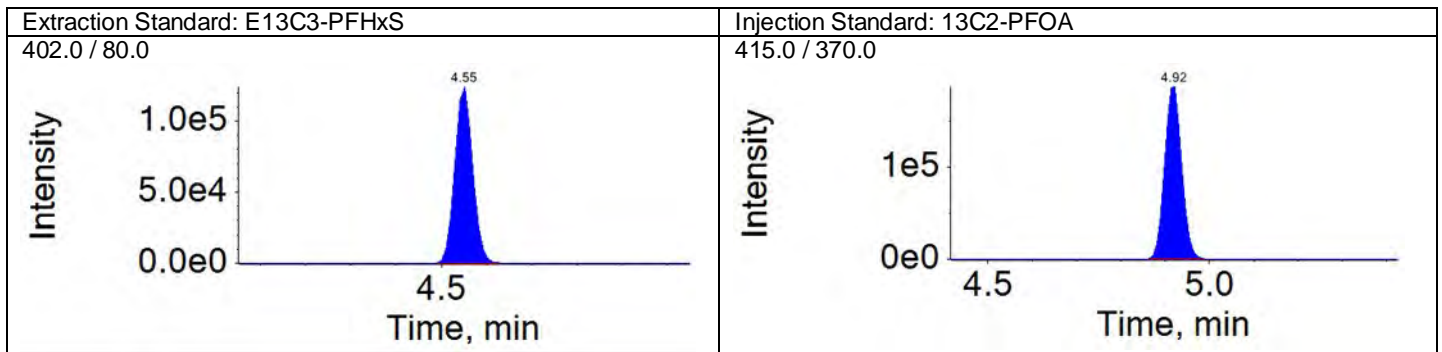
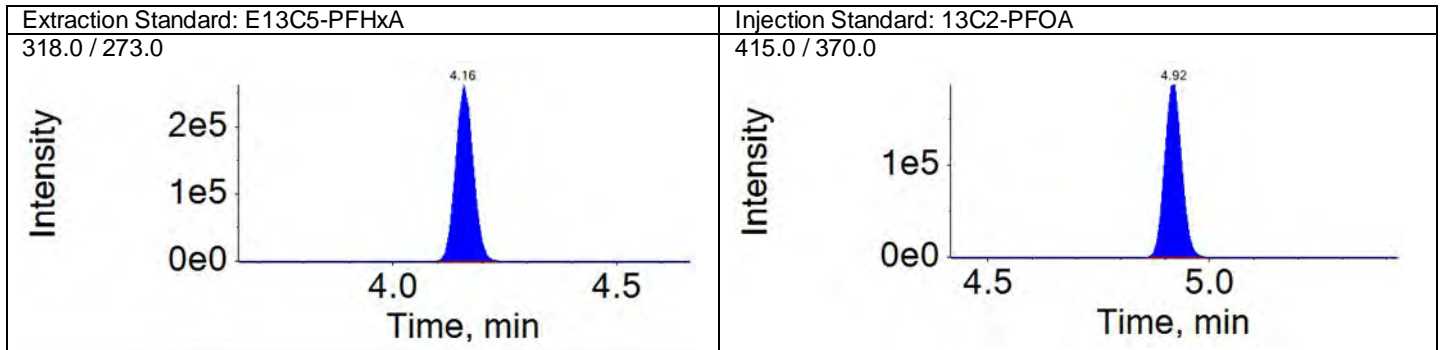
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

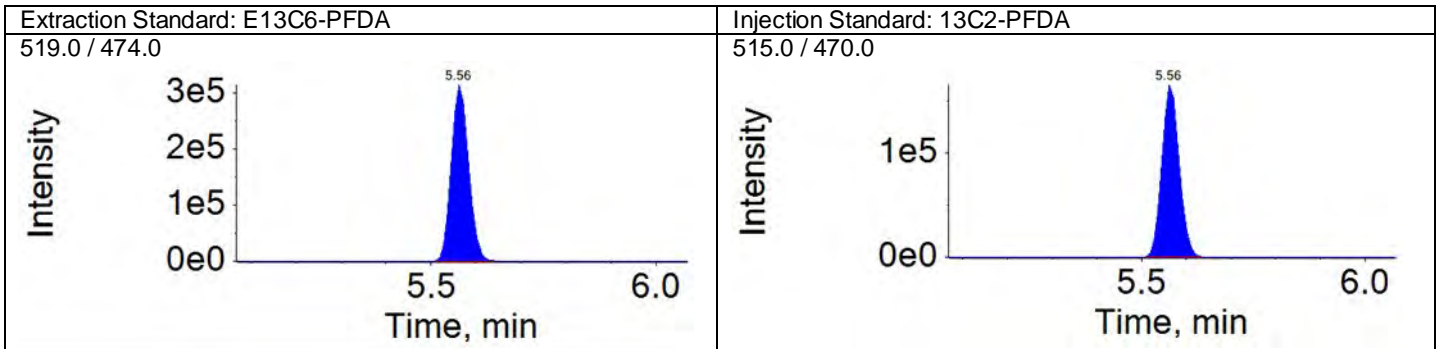
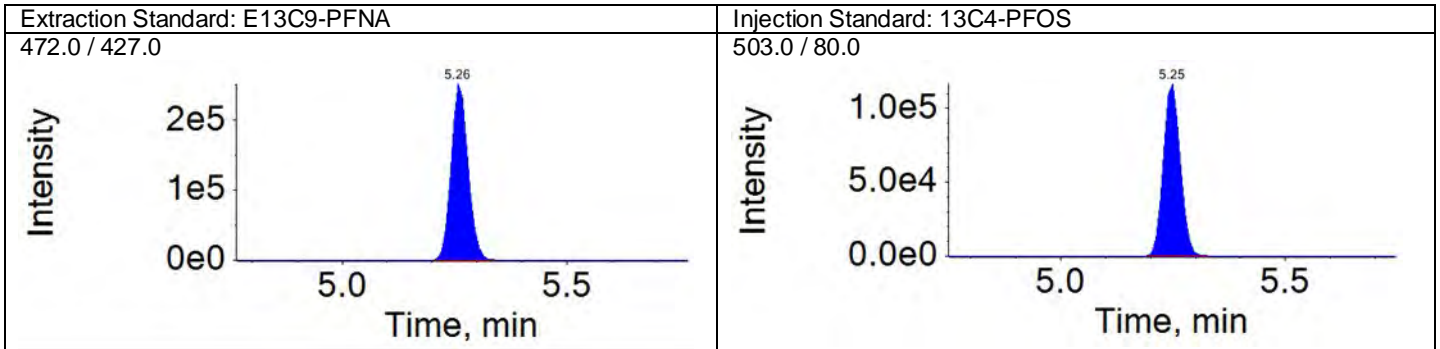
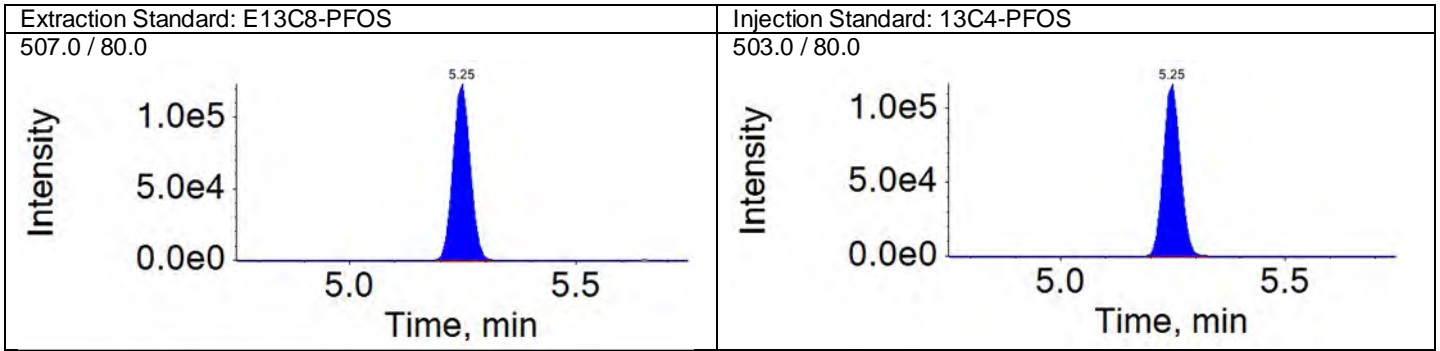
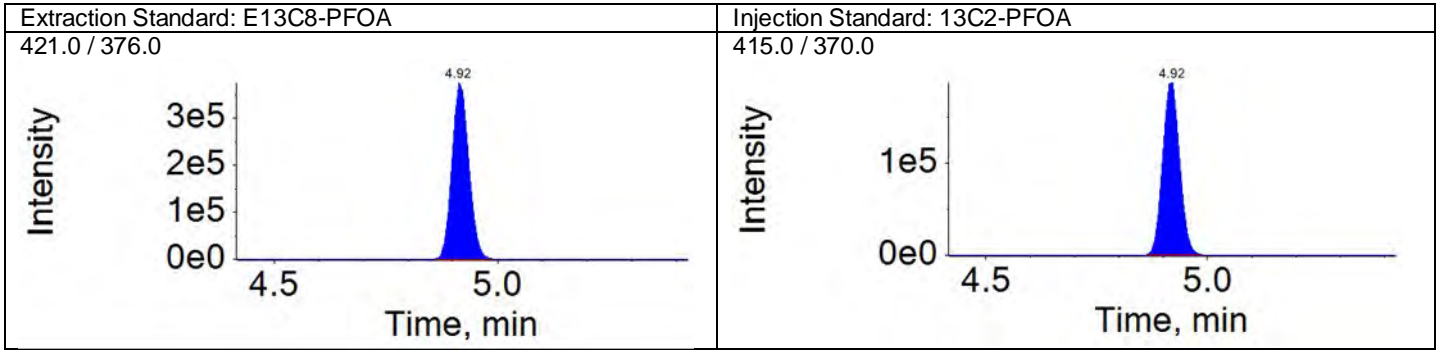
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Acquisition Method: 18AUG13\_3uL.dam





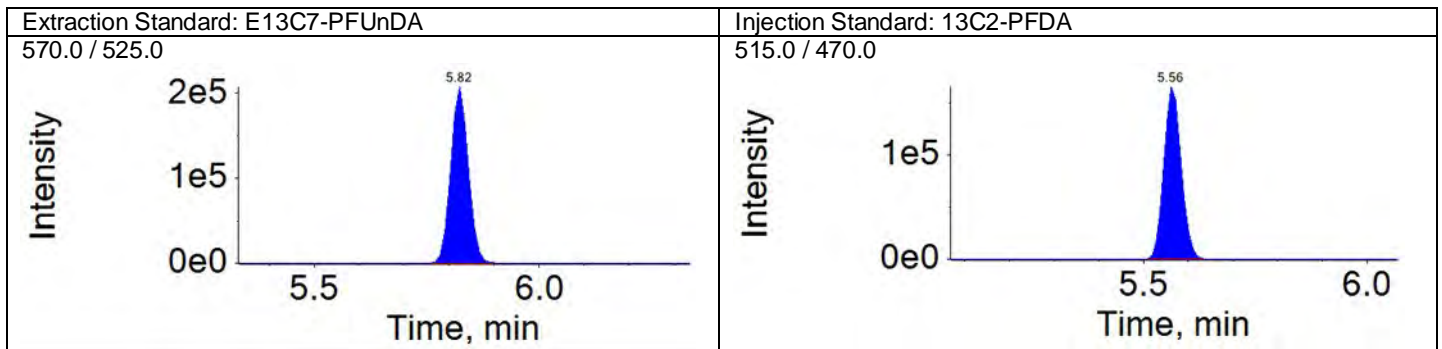
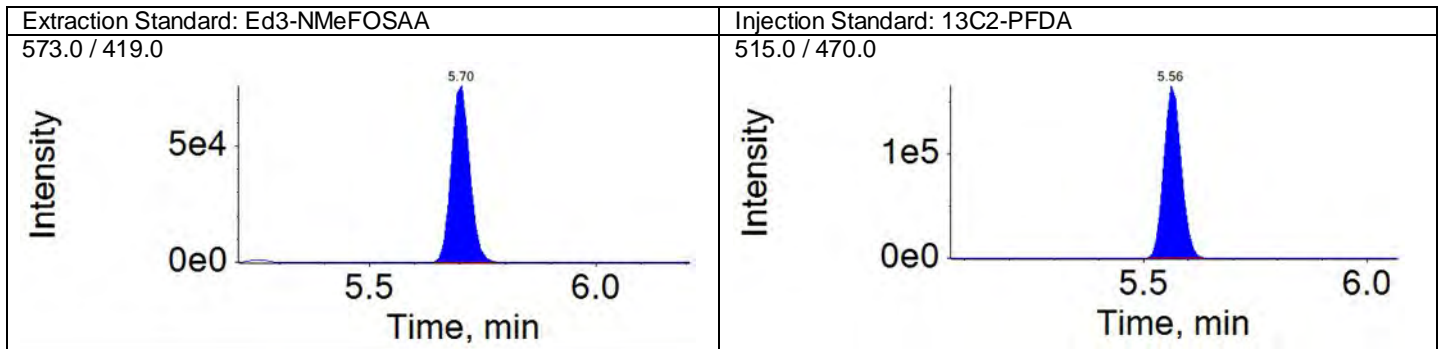
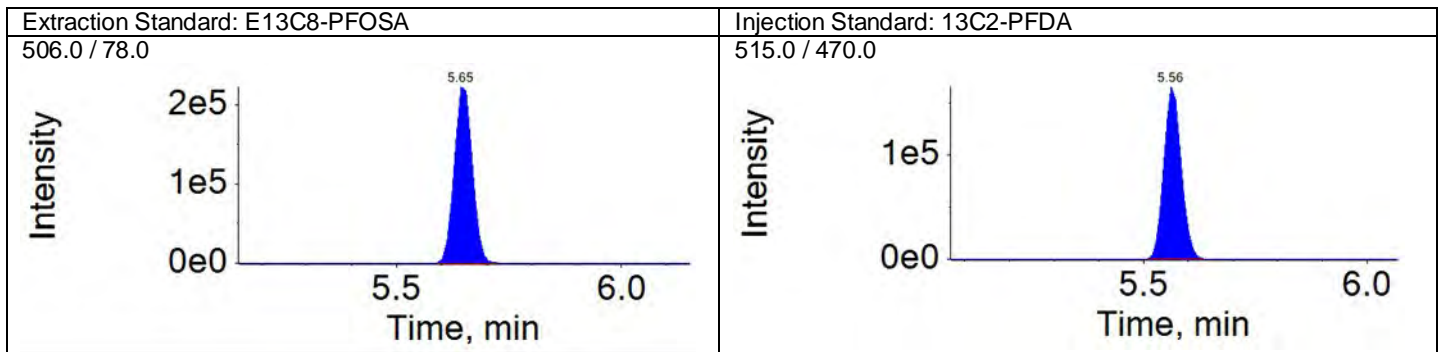
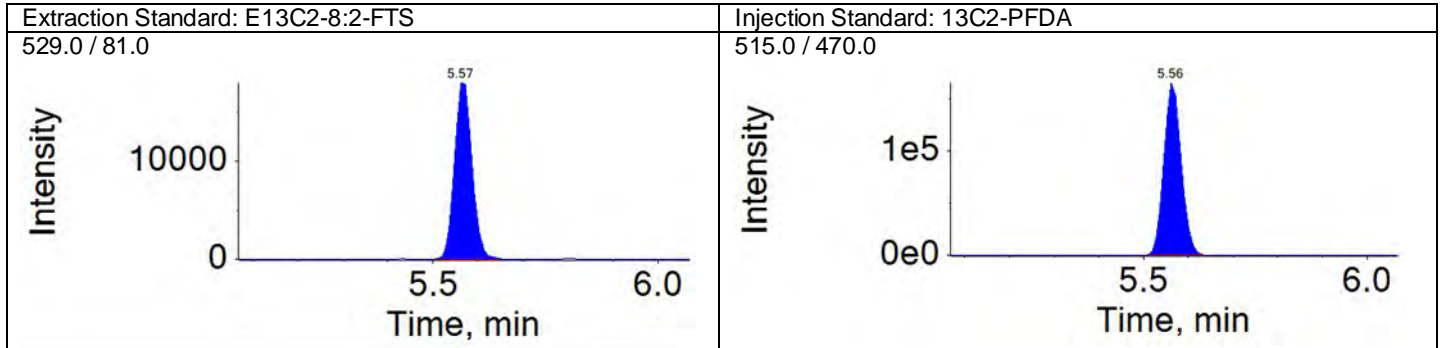
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



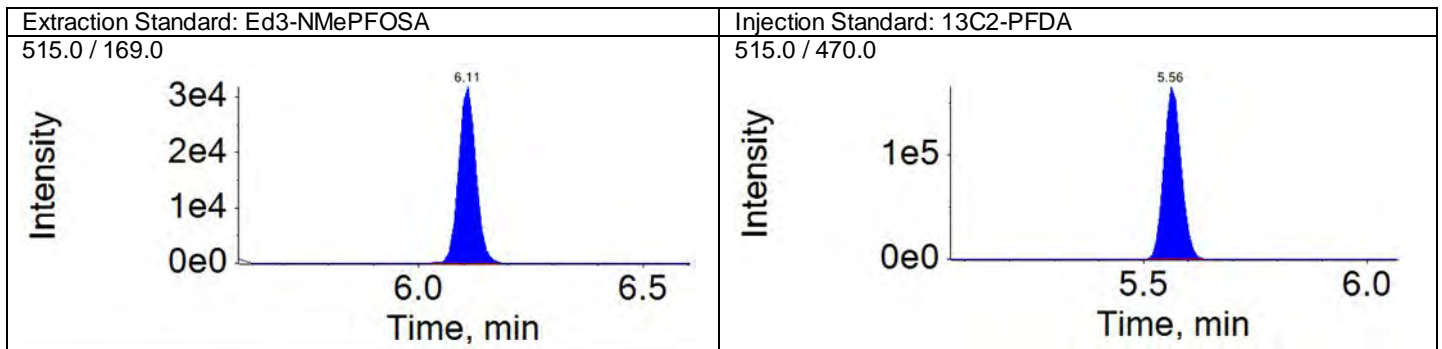
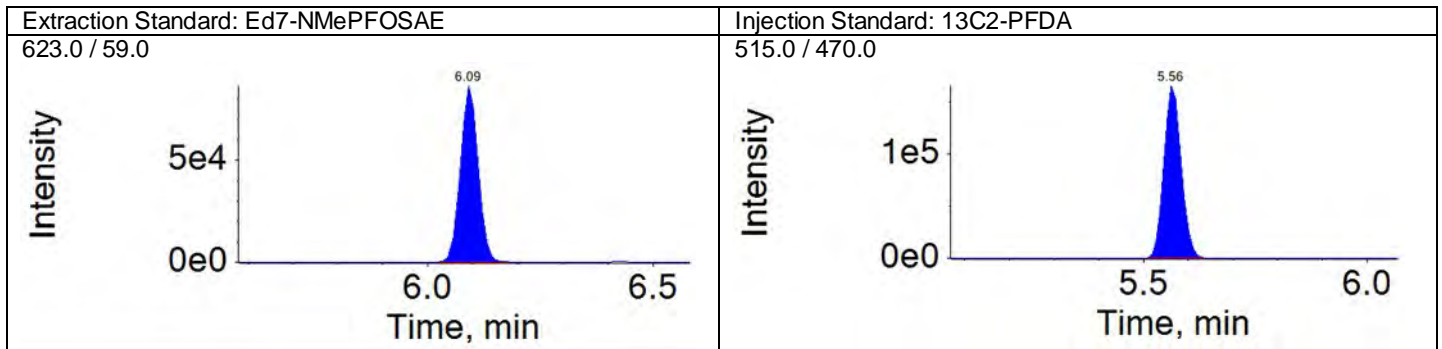
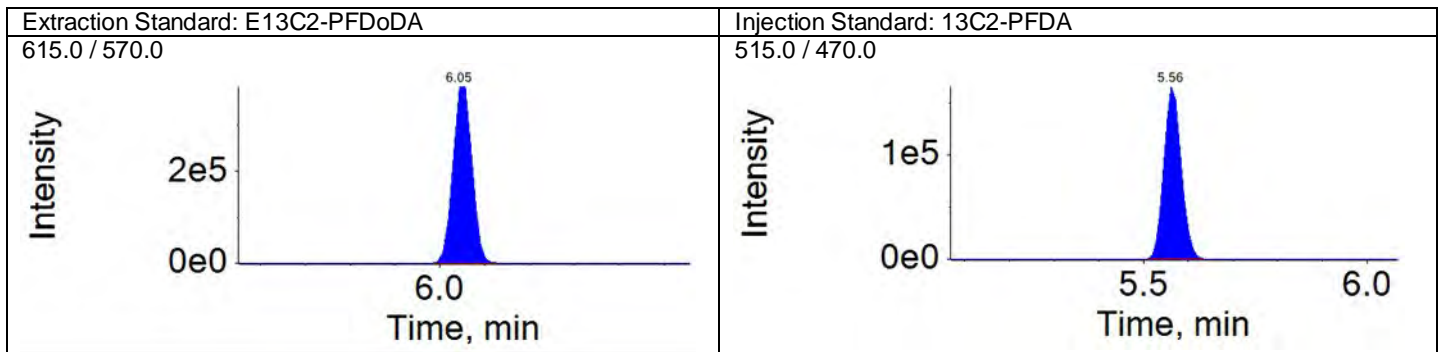
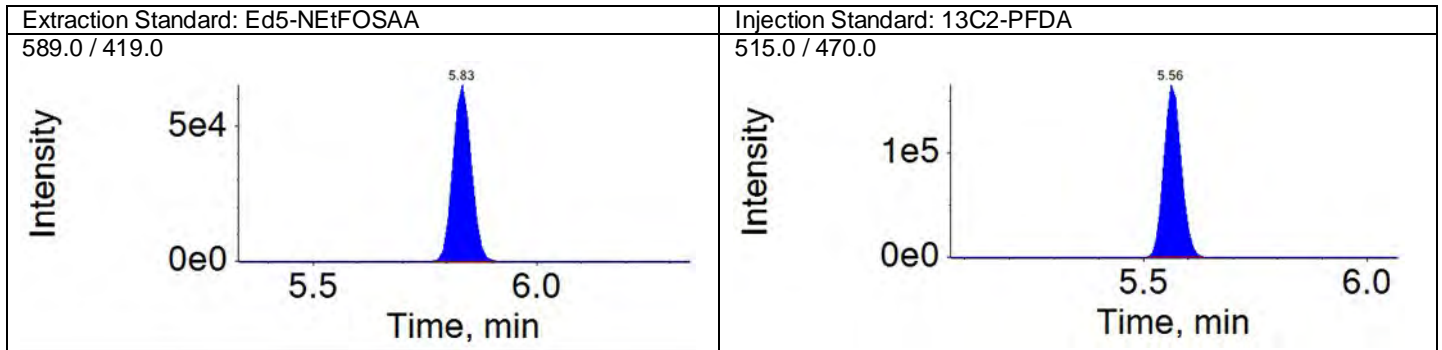
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



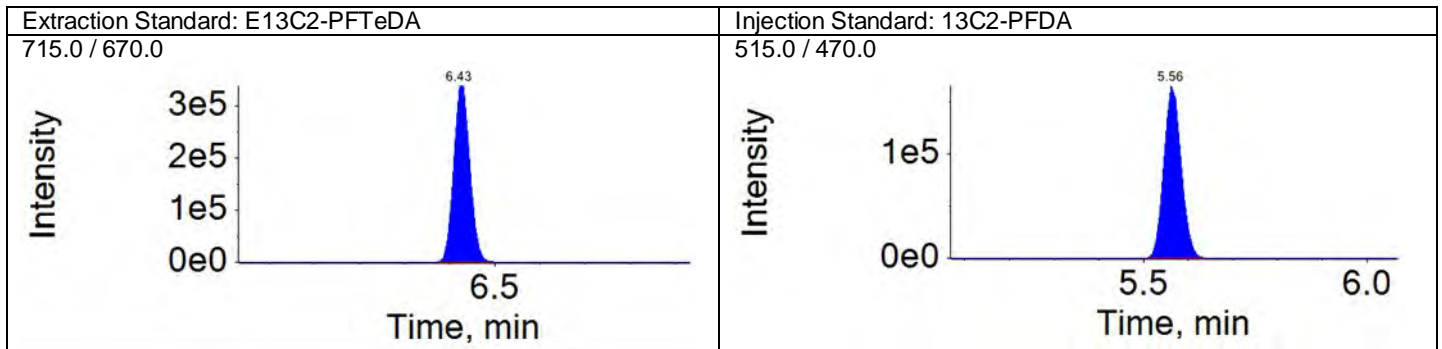
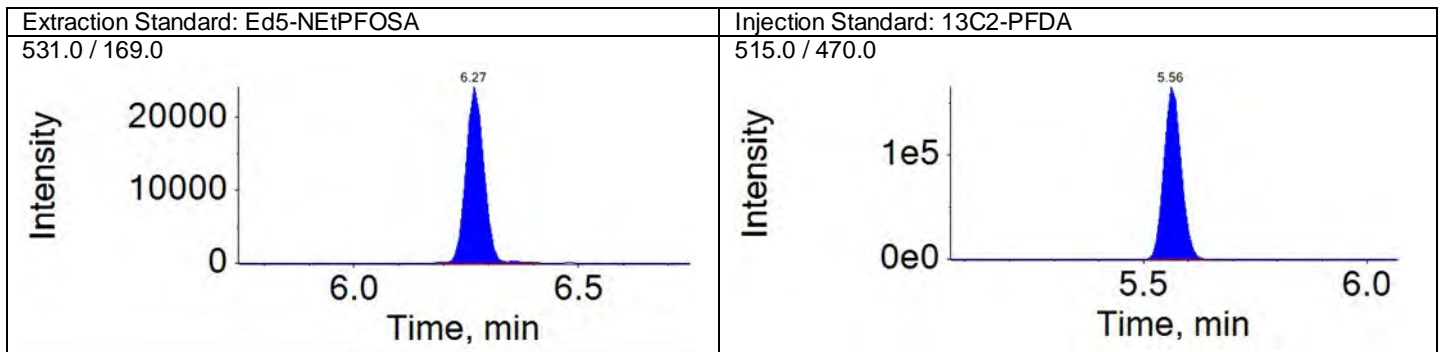
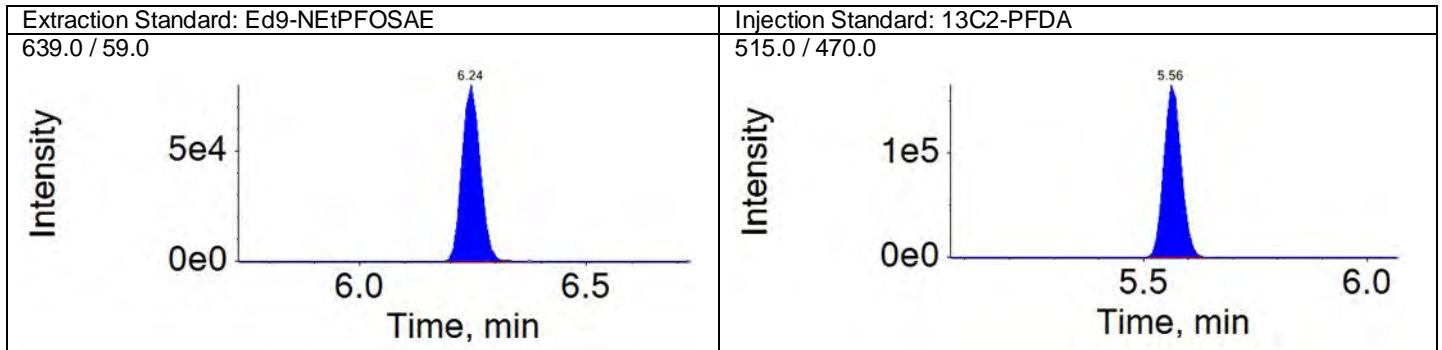
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

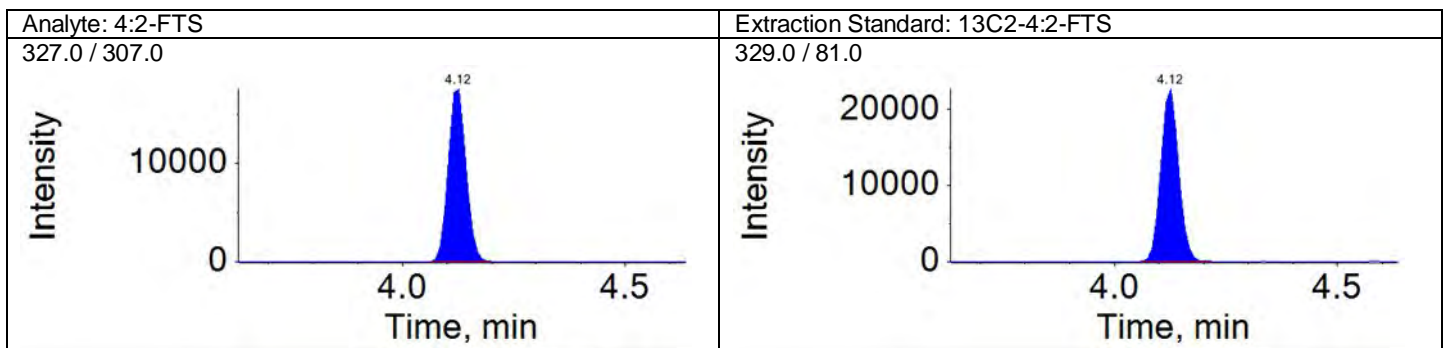
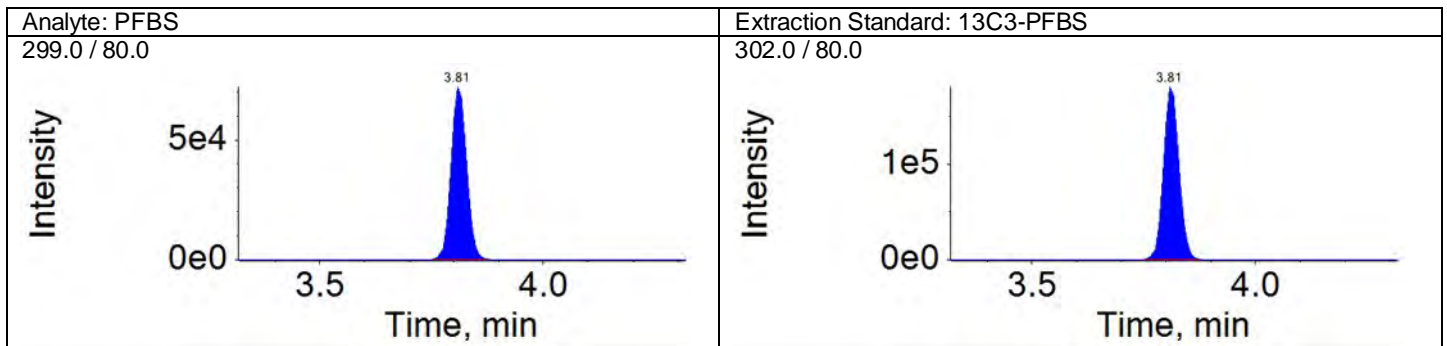
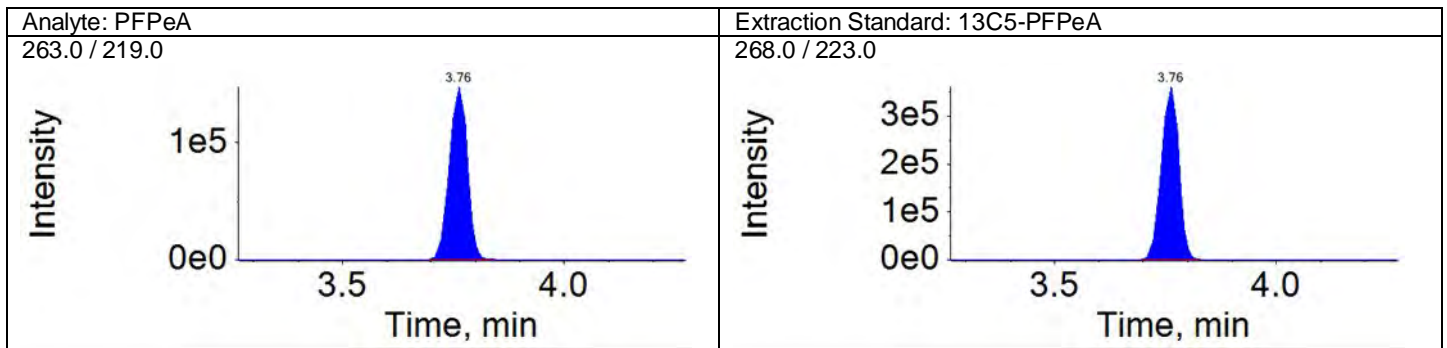
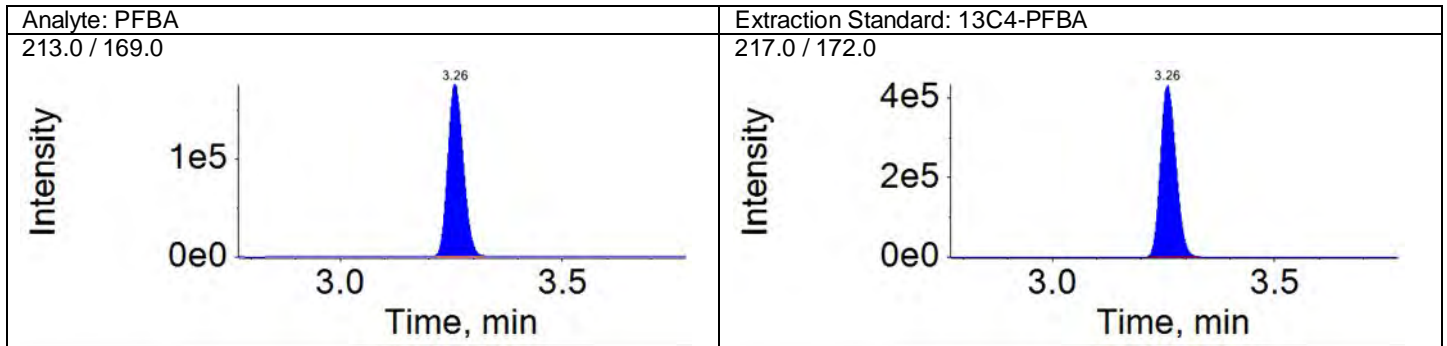
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

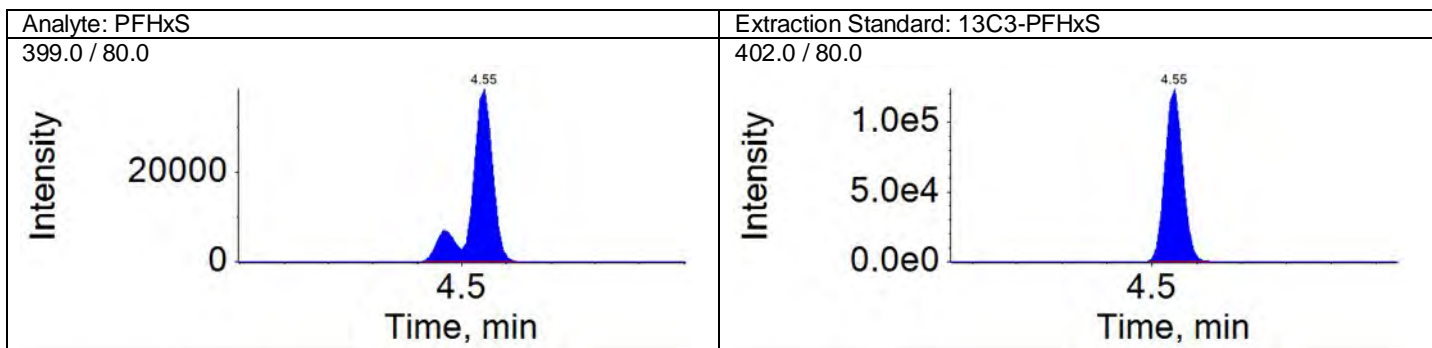
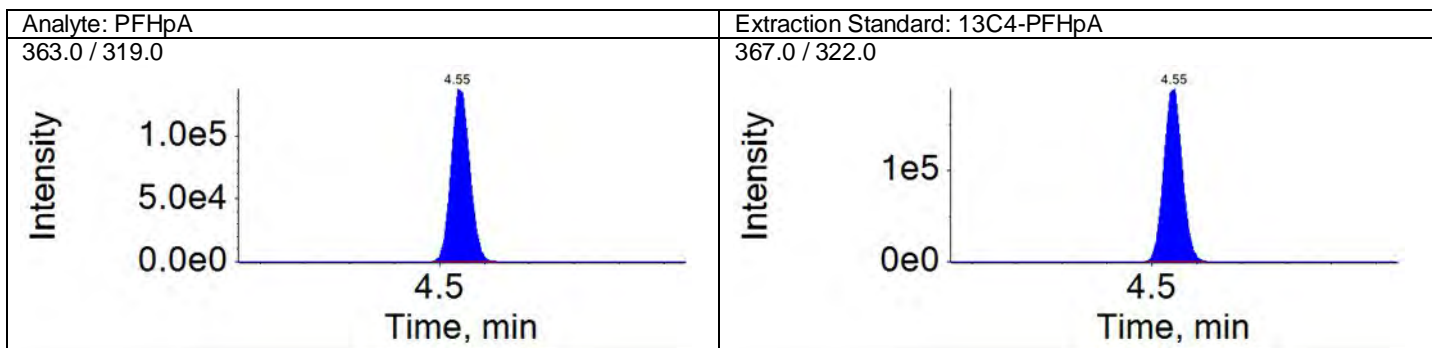
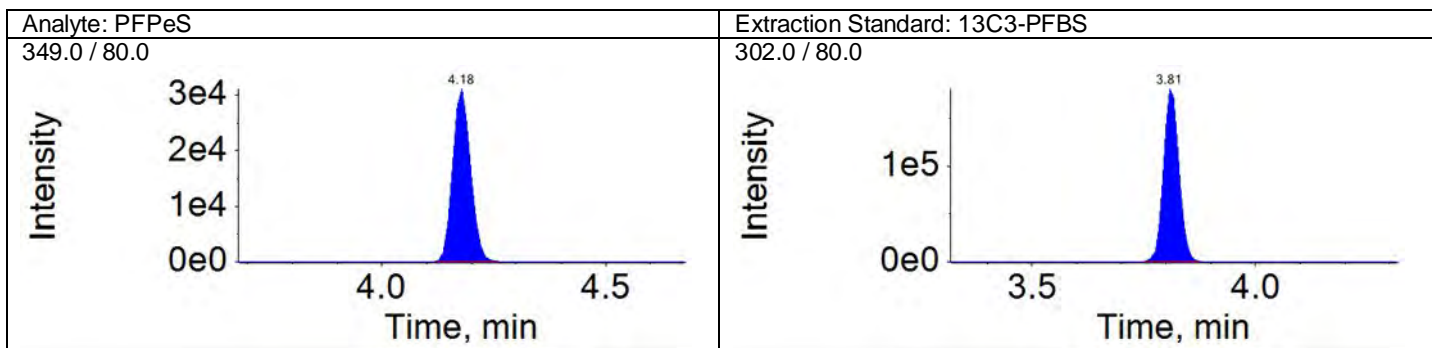
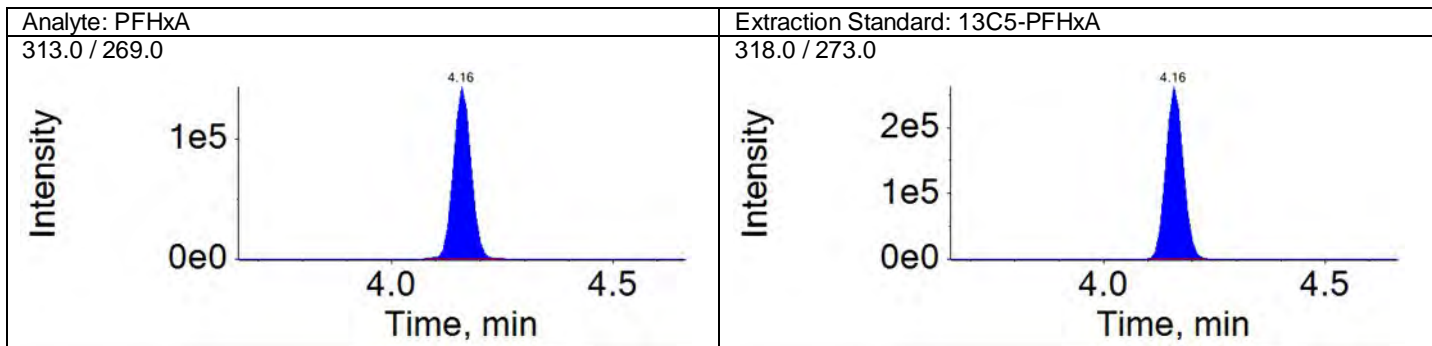
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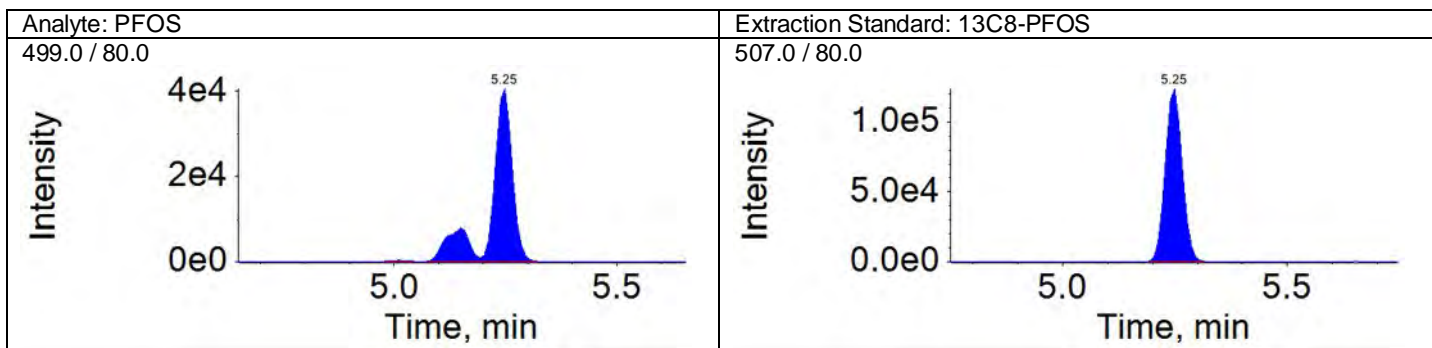
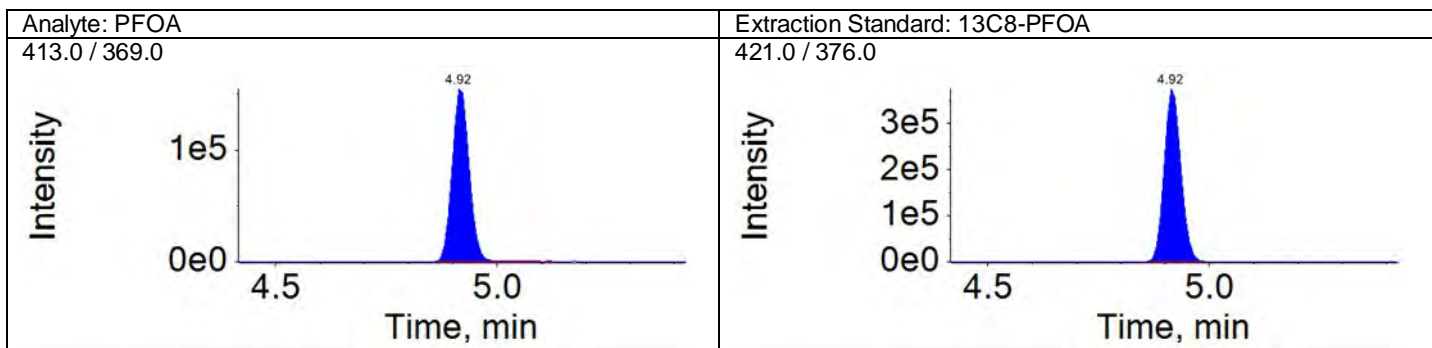
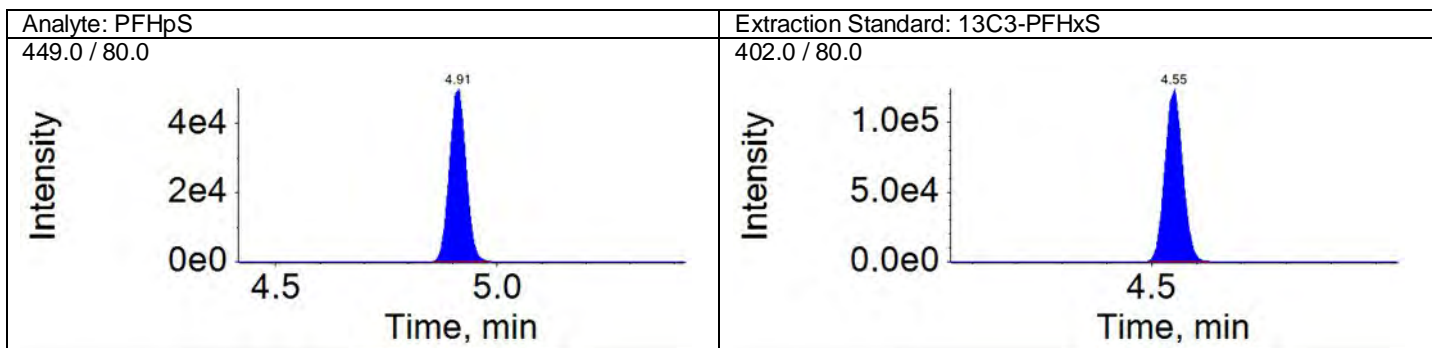
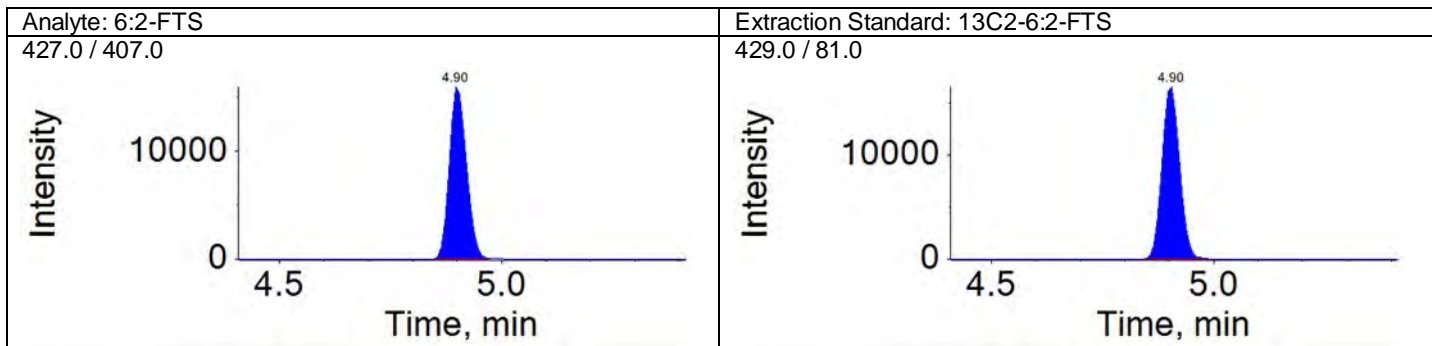
ICAL Name: 18DEC18DCAL  
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



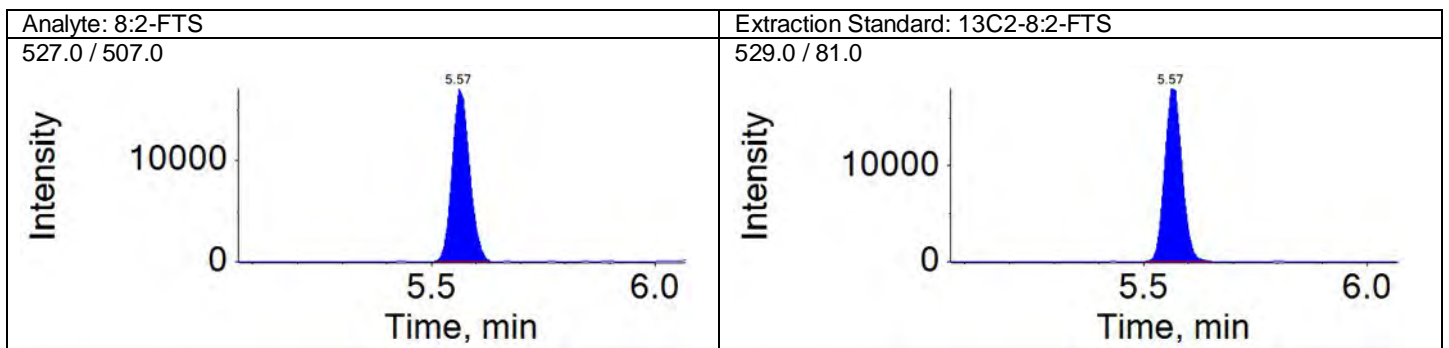
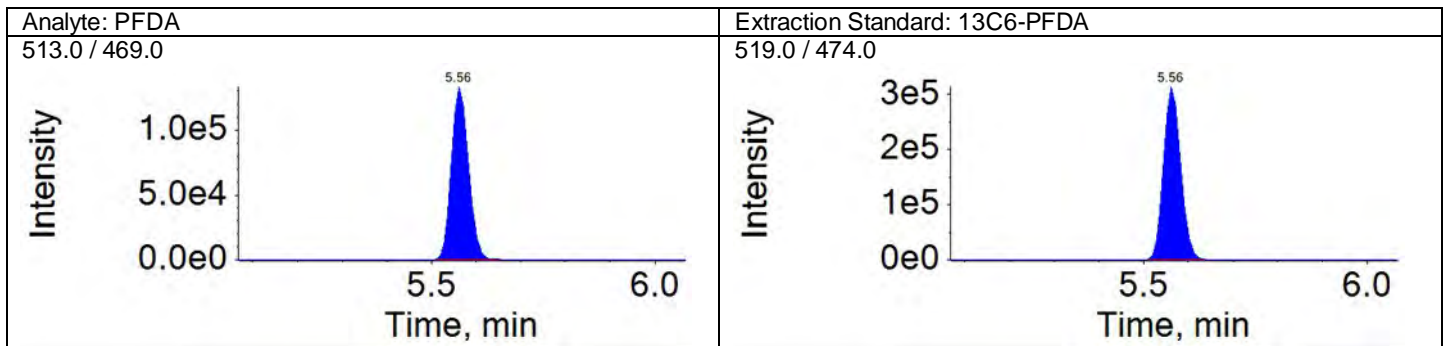
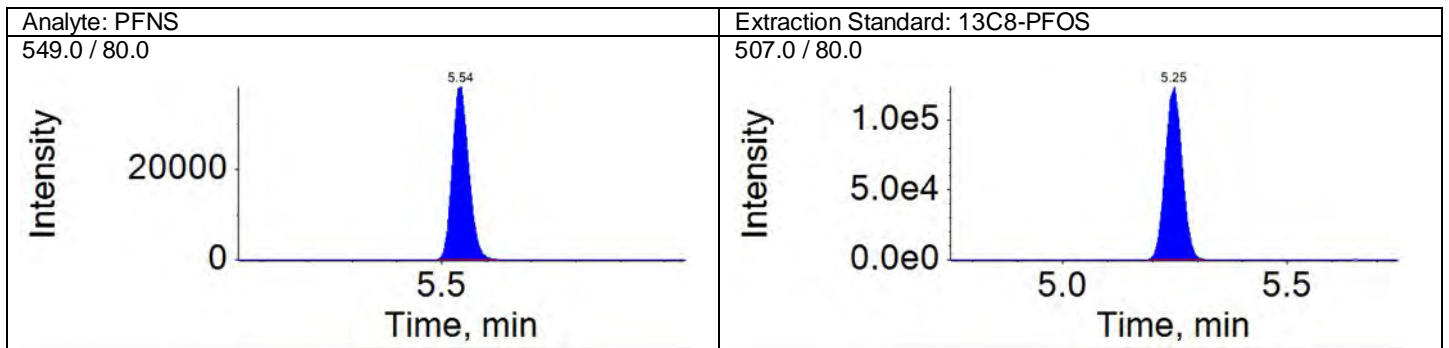
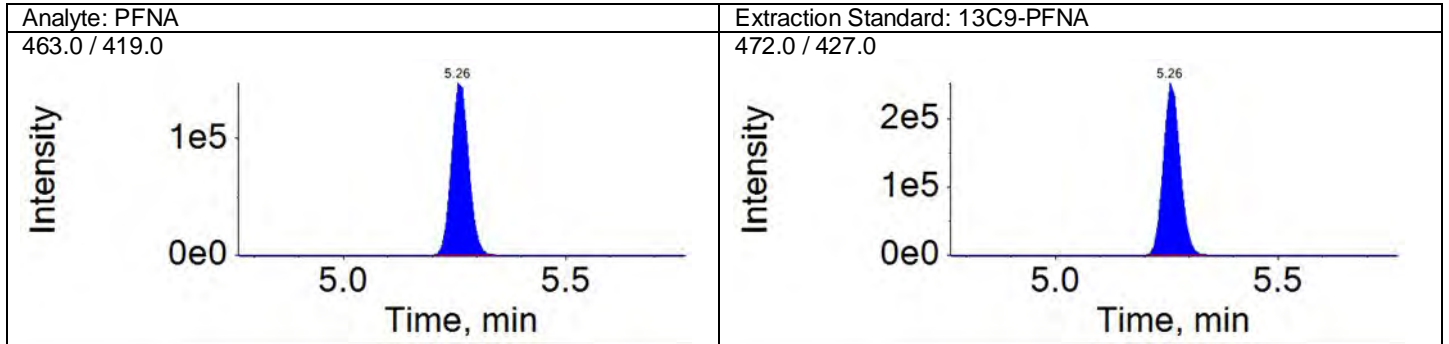
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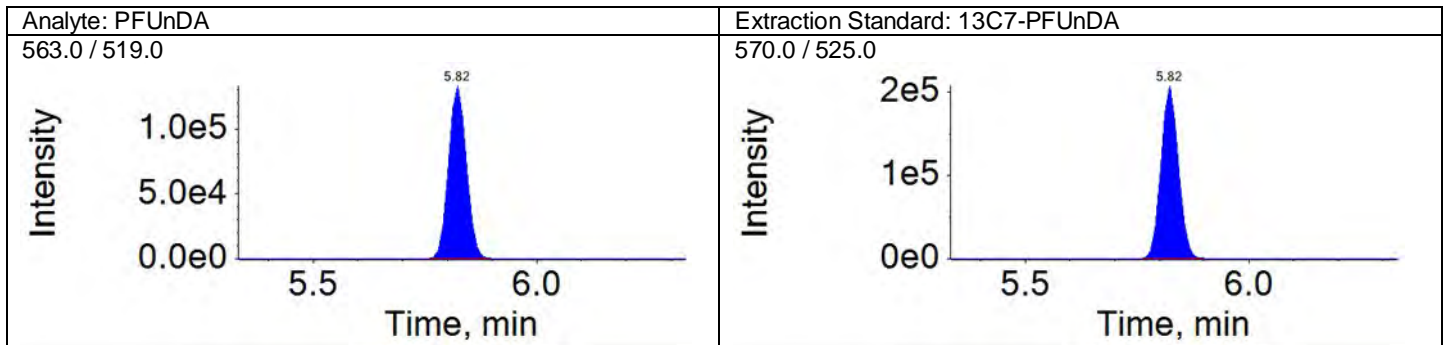
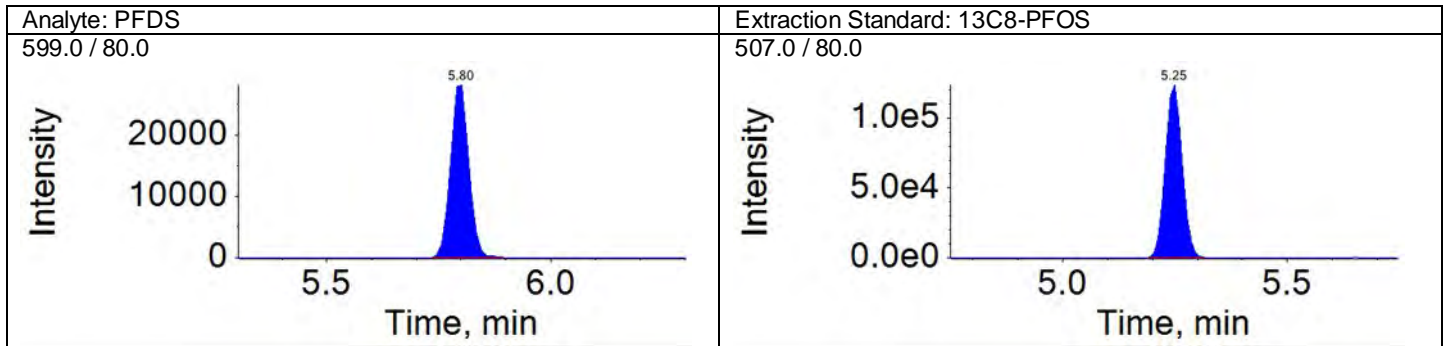
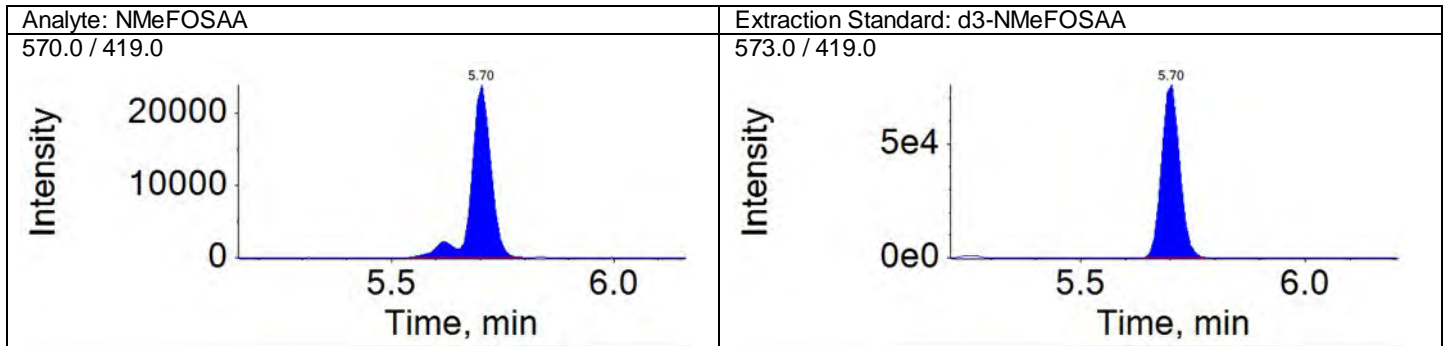
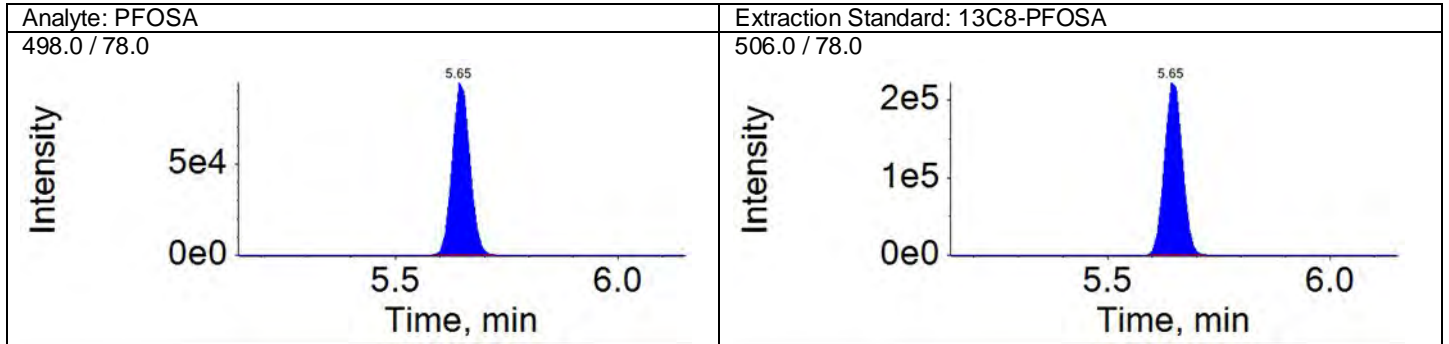
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

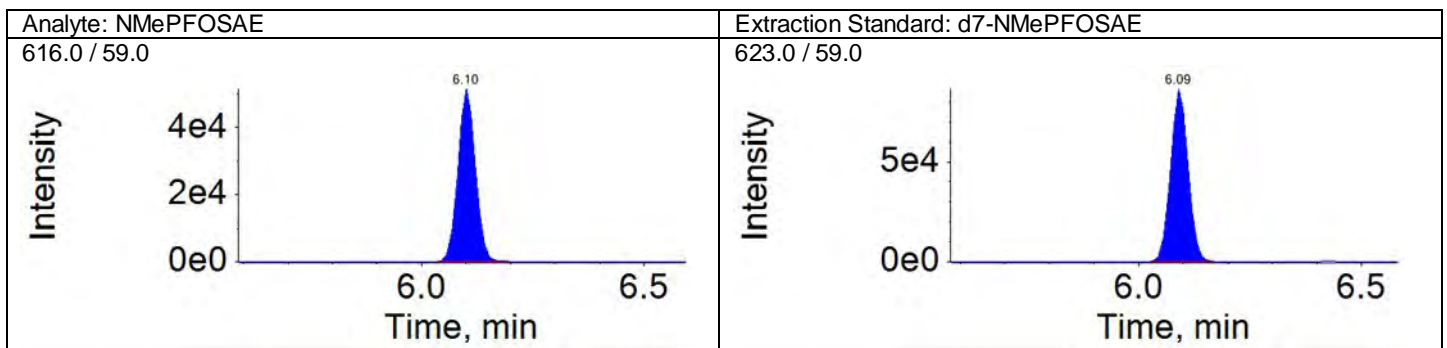
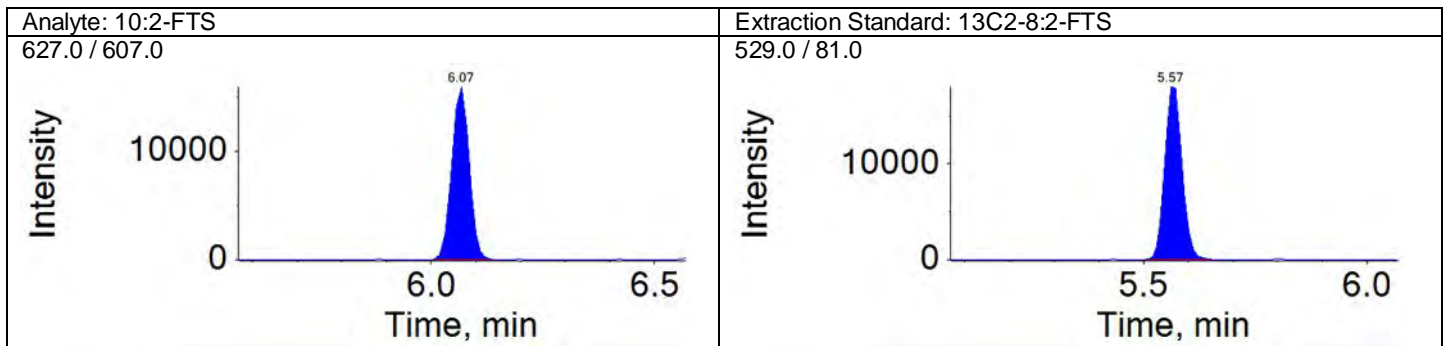
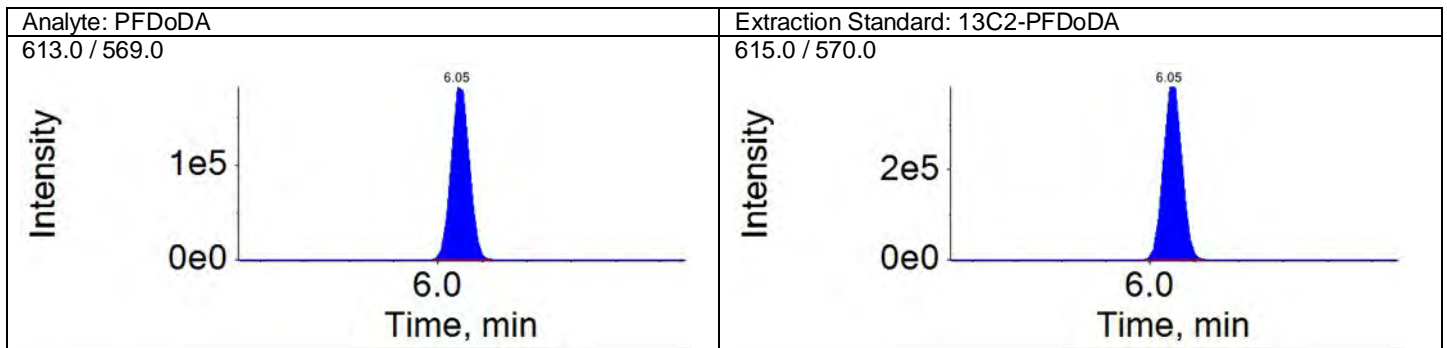
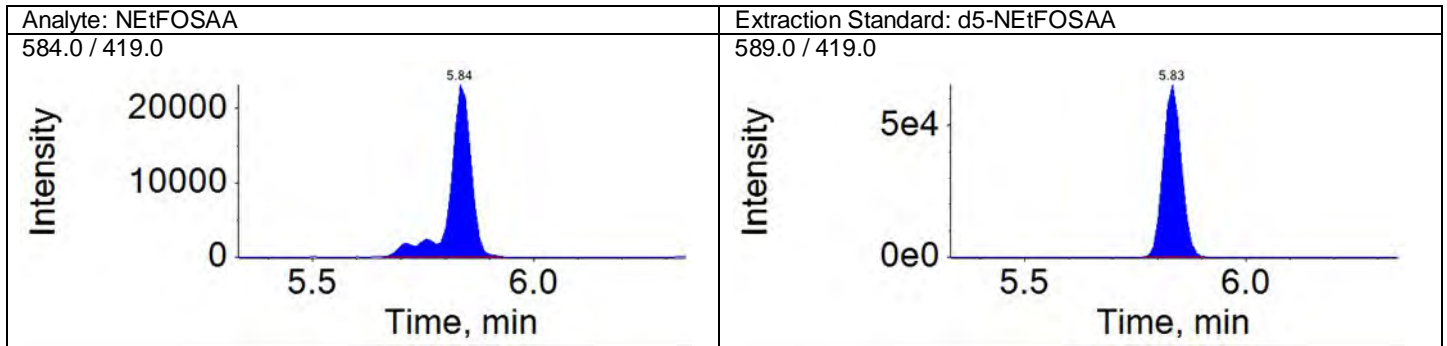
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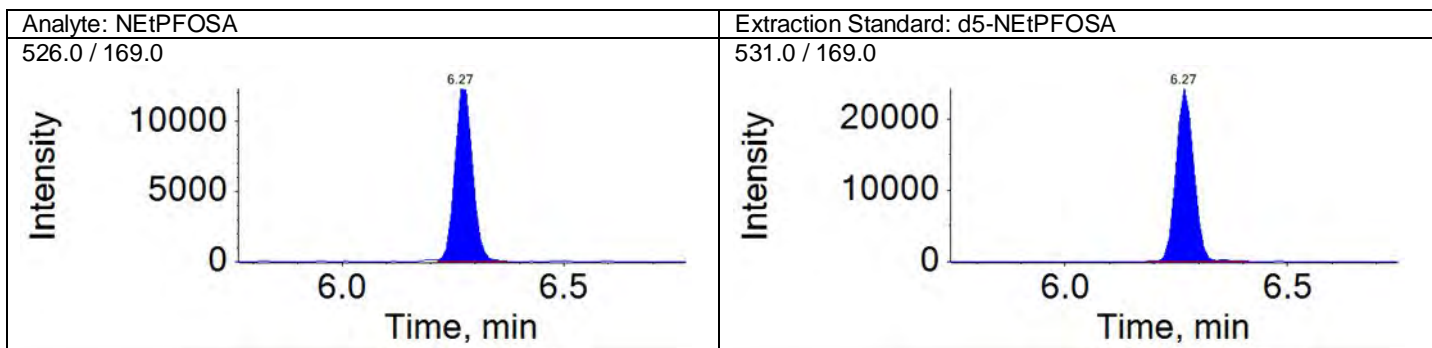
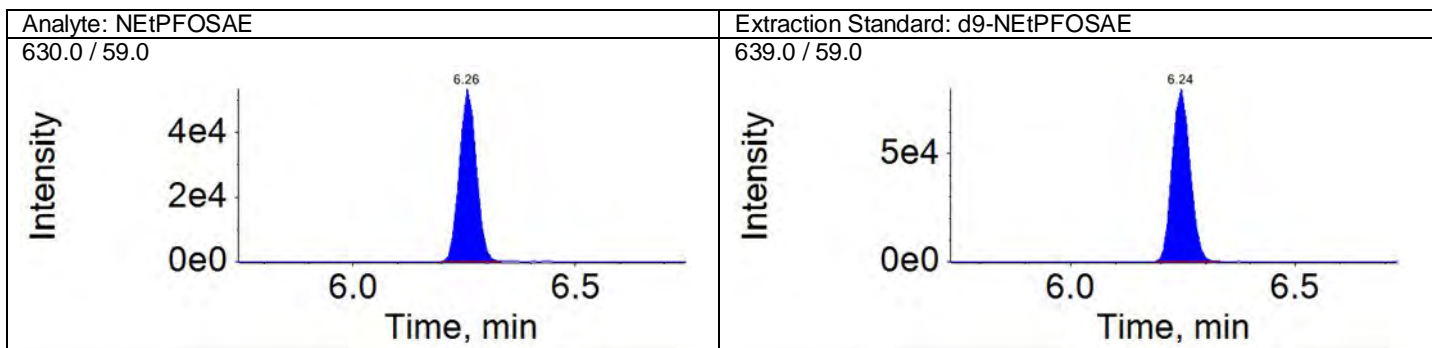
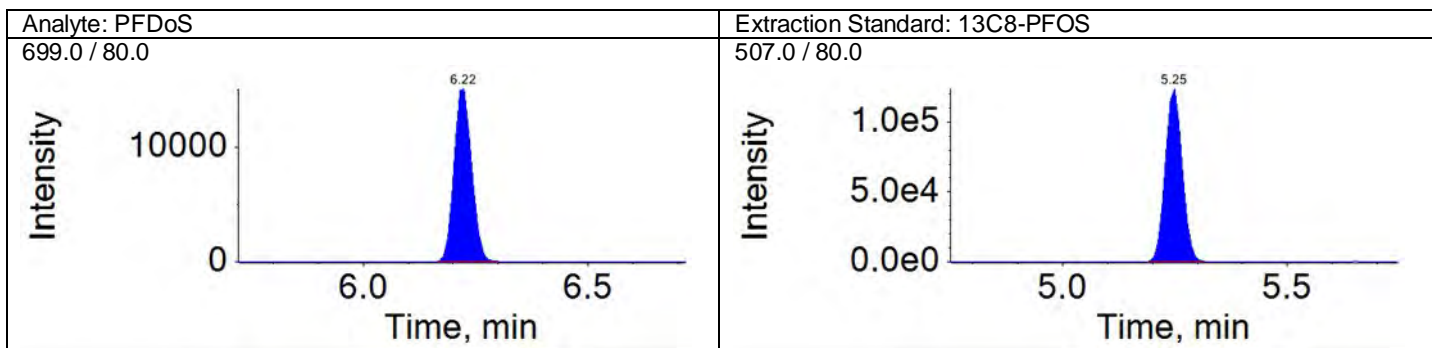
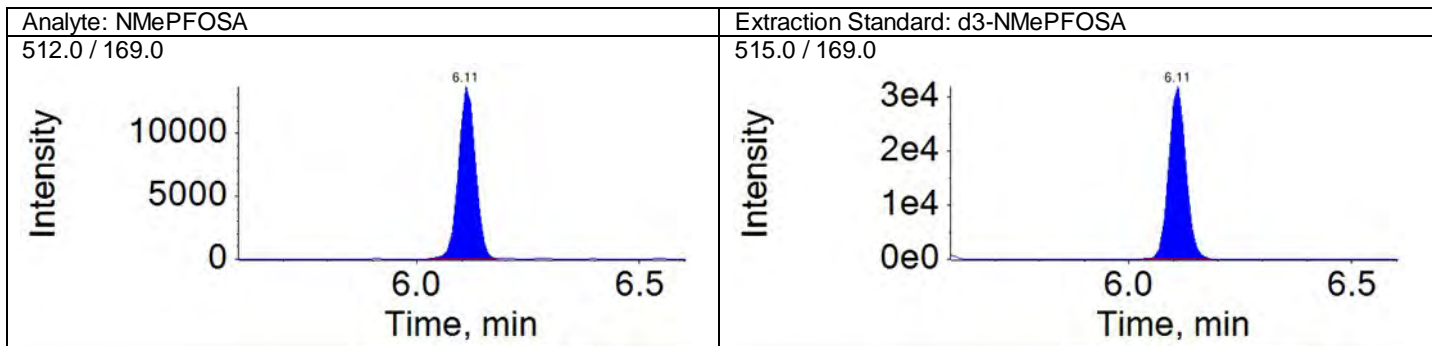
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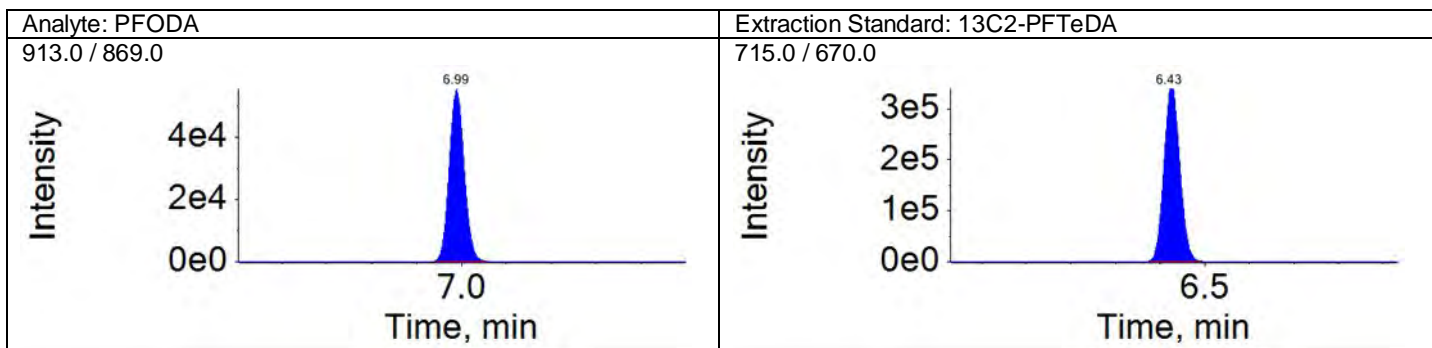
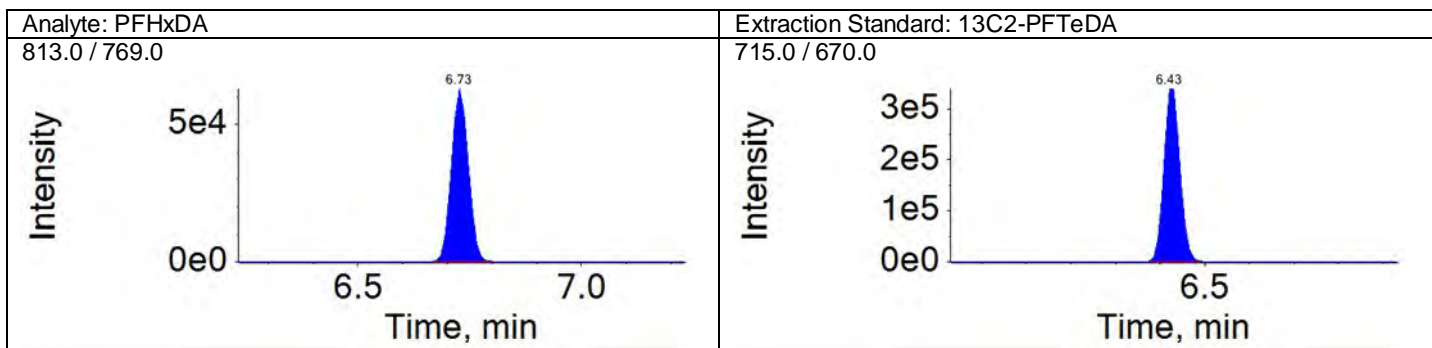
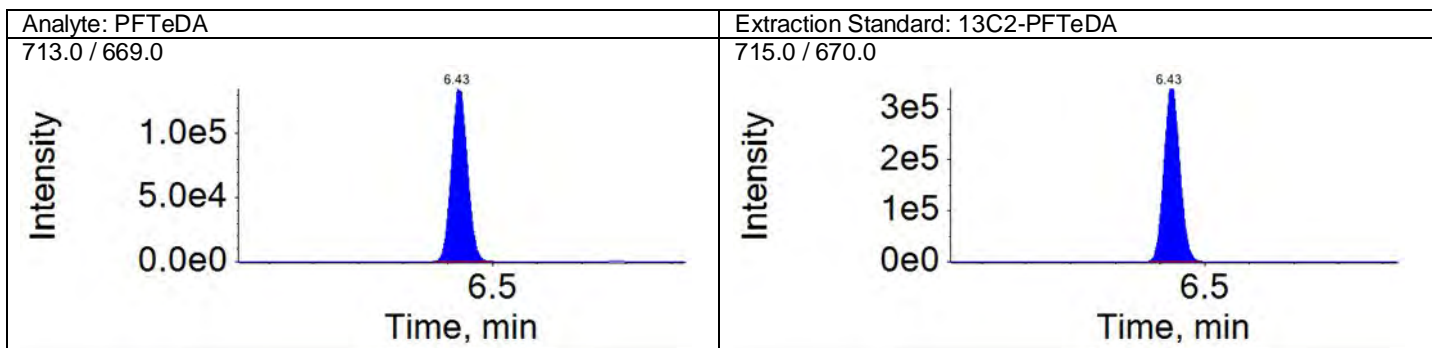
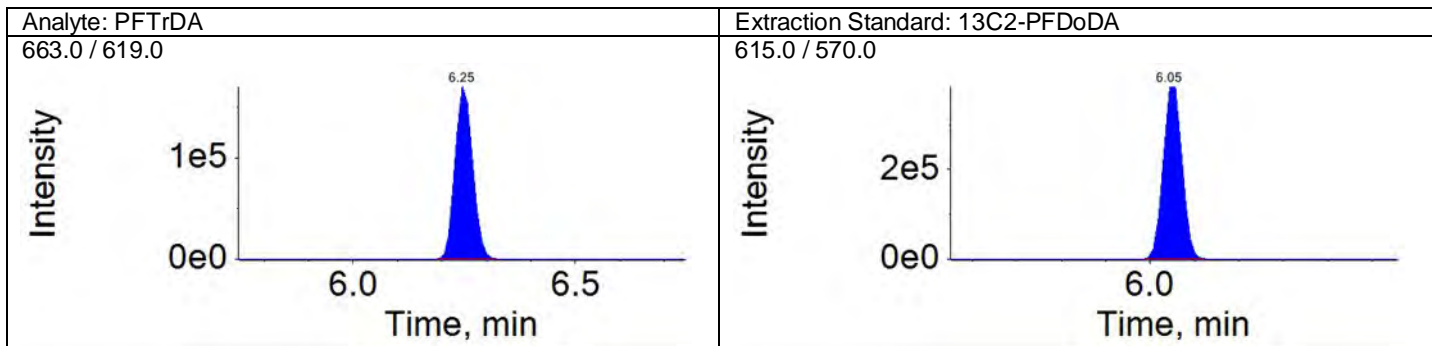
ICAL Name: 18DEC18DCAL  
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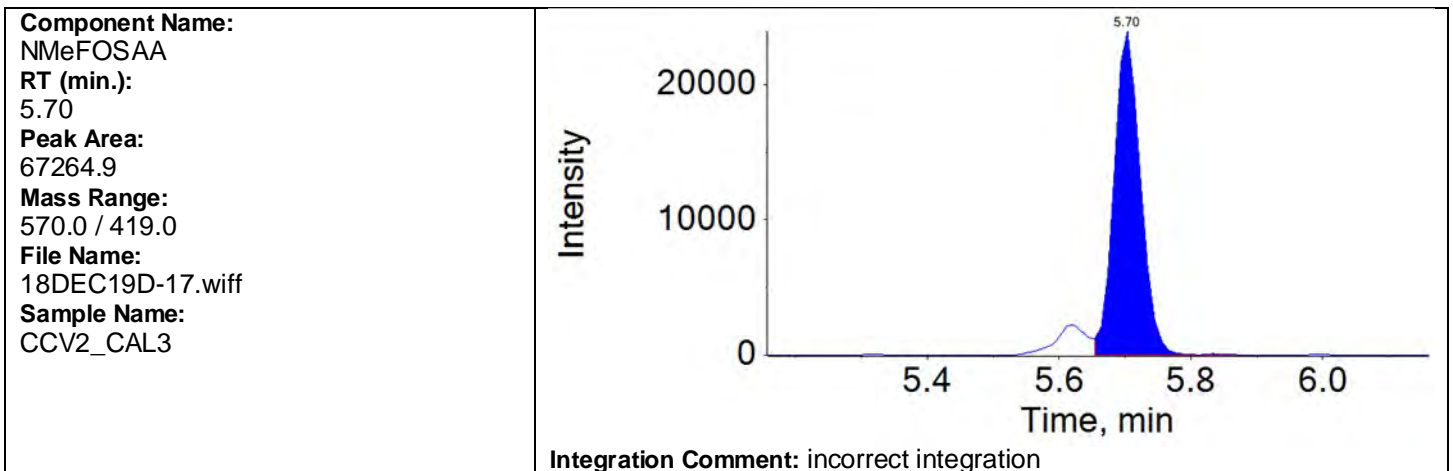
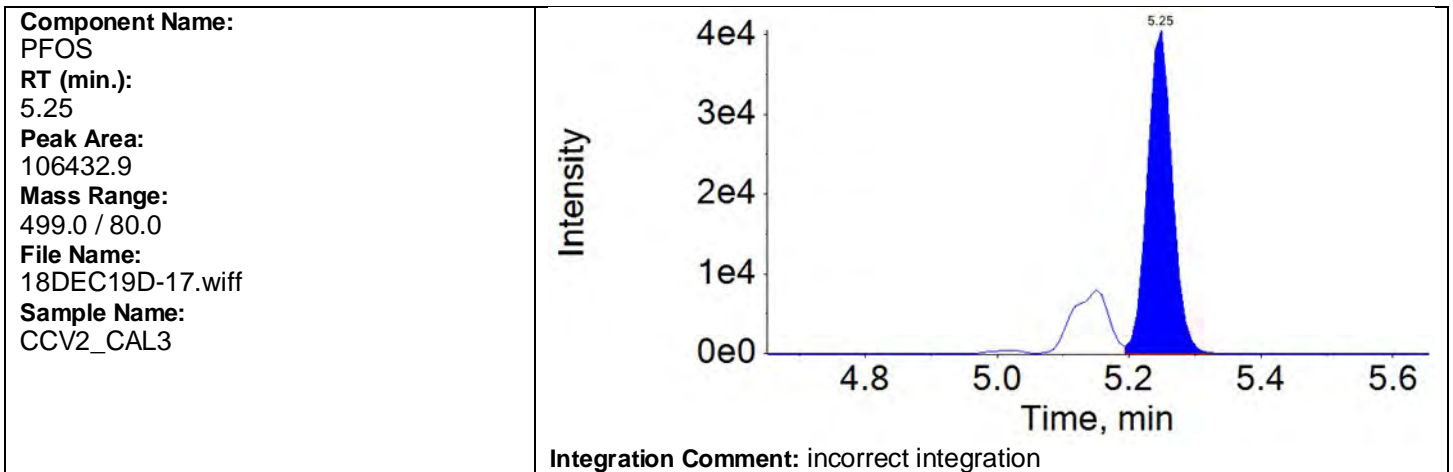
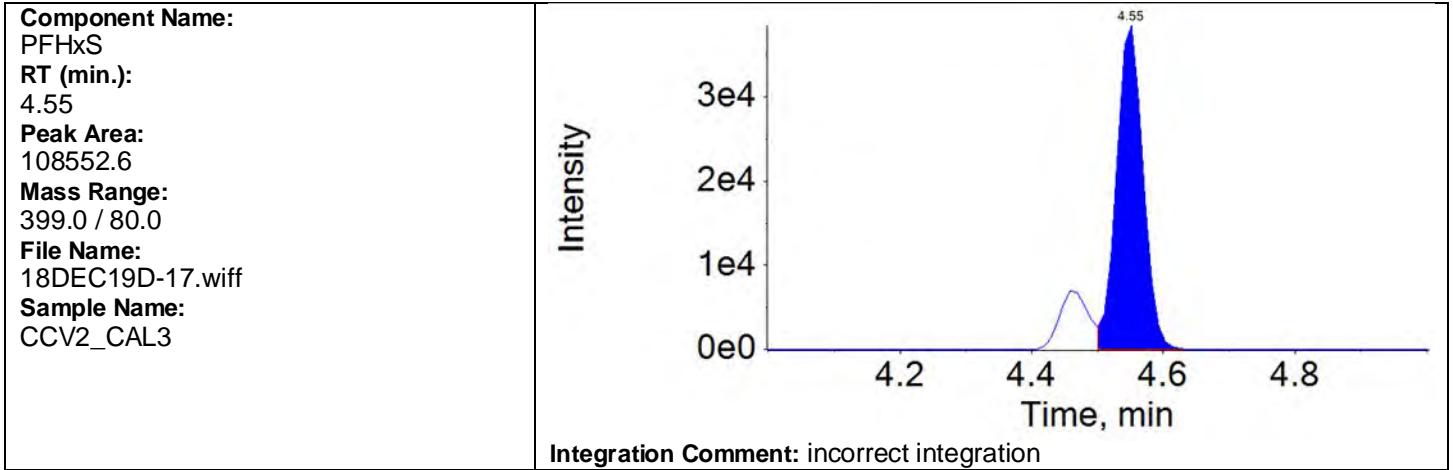
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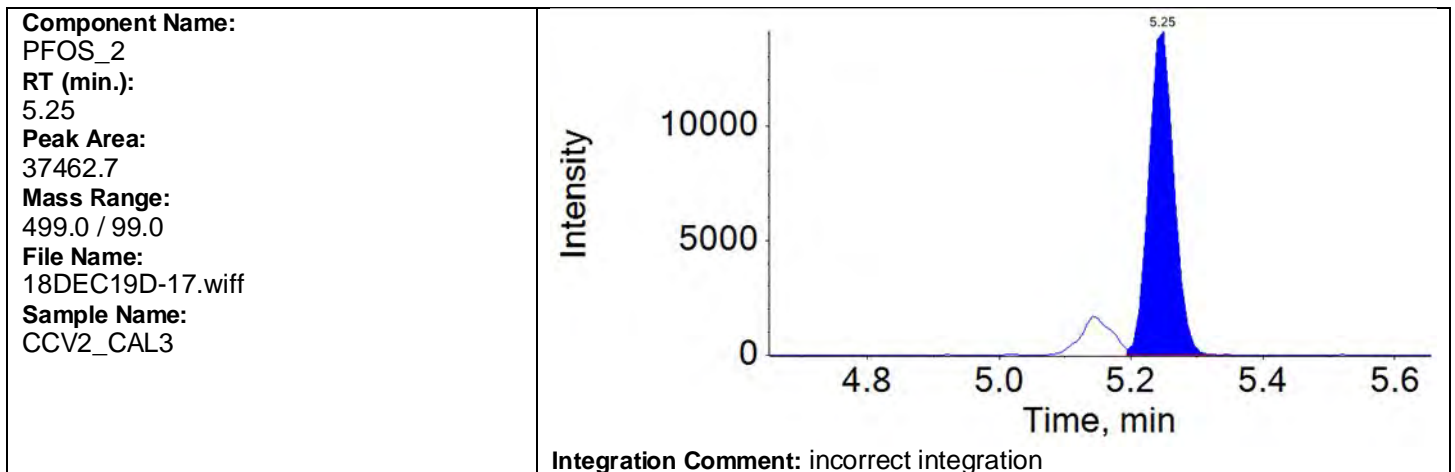
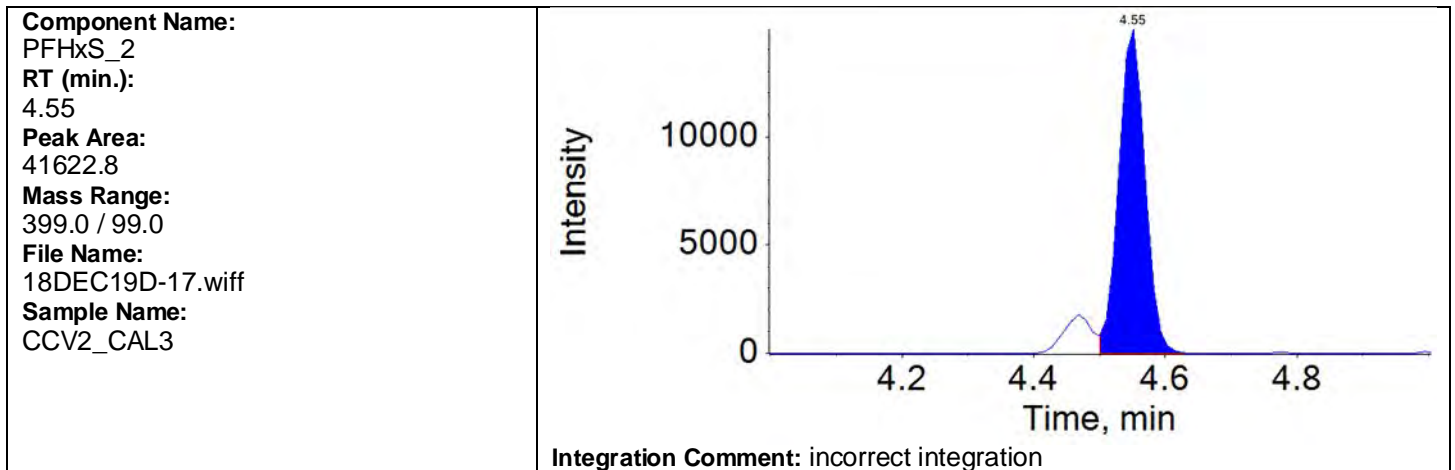
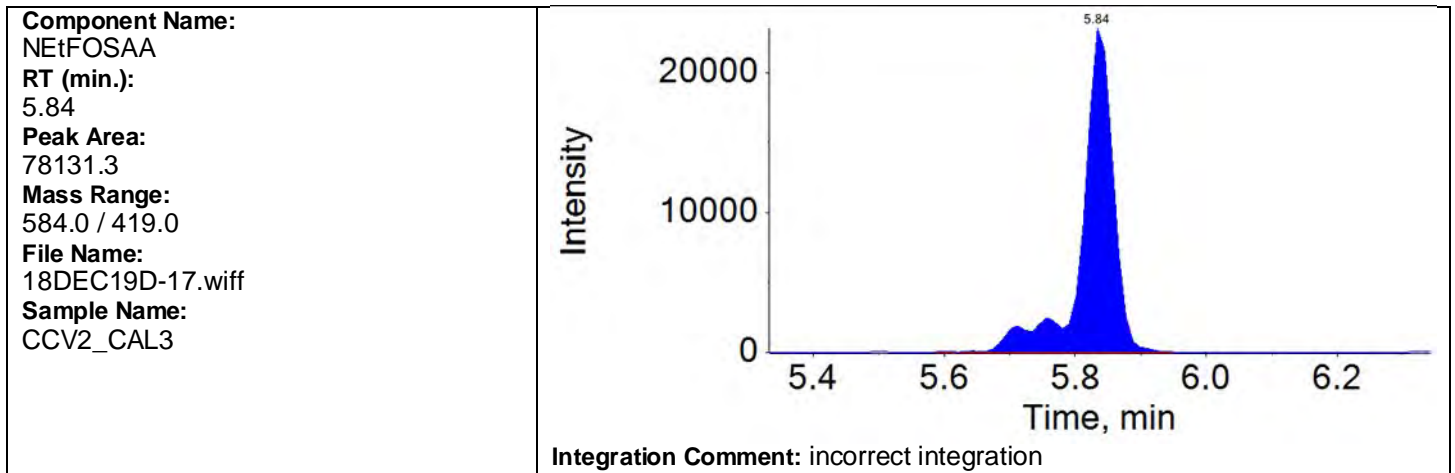
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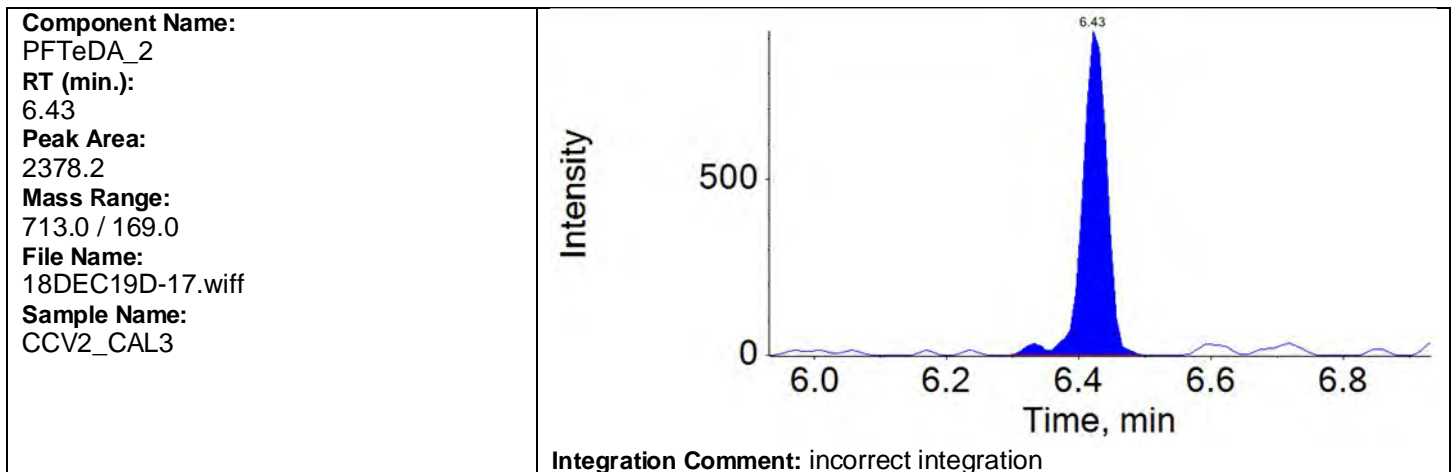
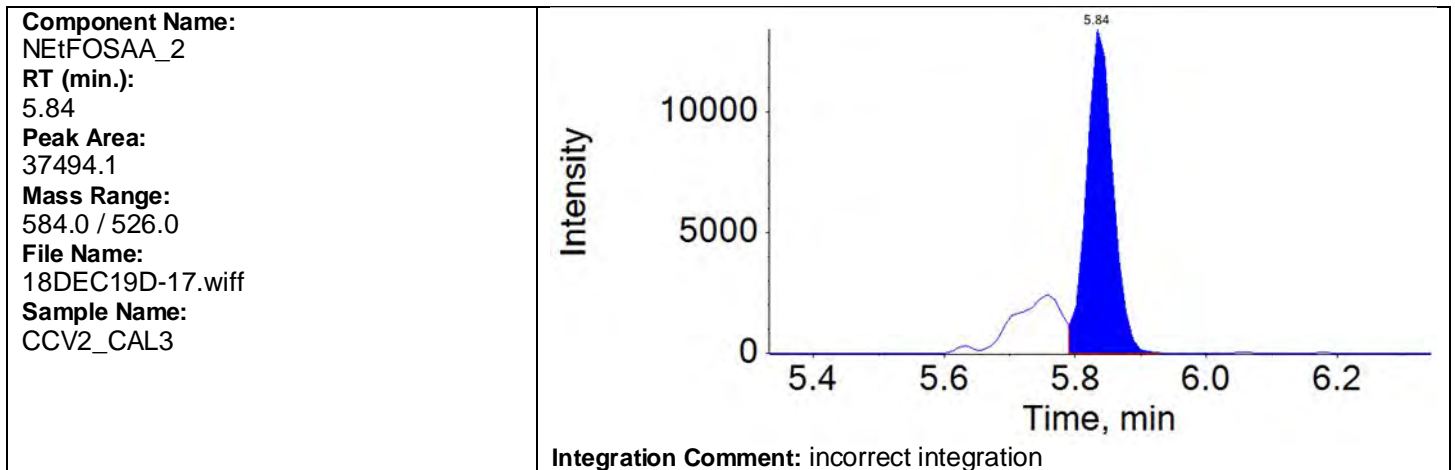
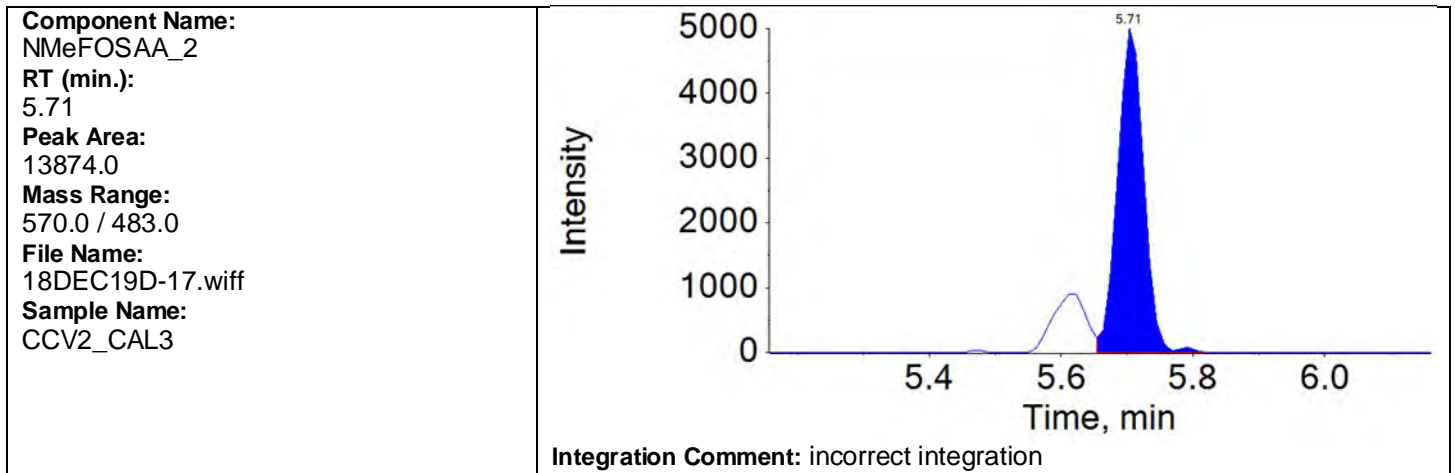
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QMethod File: 18AUG20QM



Results Table Name: 18DEC19DCCV1-5  
Results Table Date: 12/19/2018 7:24:29 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM





**Results Table Name:** 18DEC19DCCV1-5  
**Results Table Date:** 12/19/2018 7:24:29 PM

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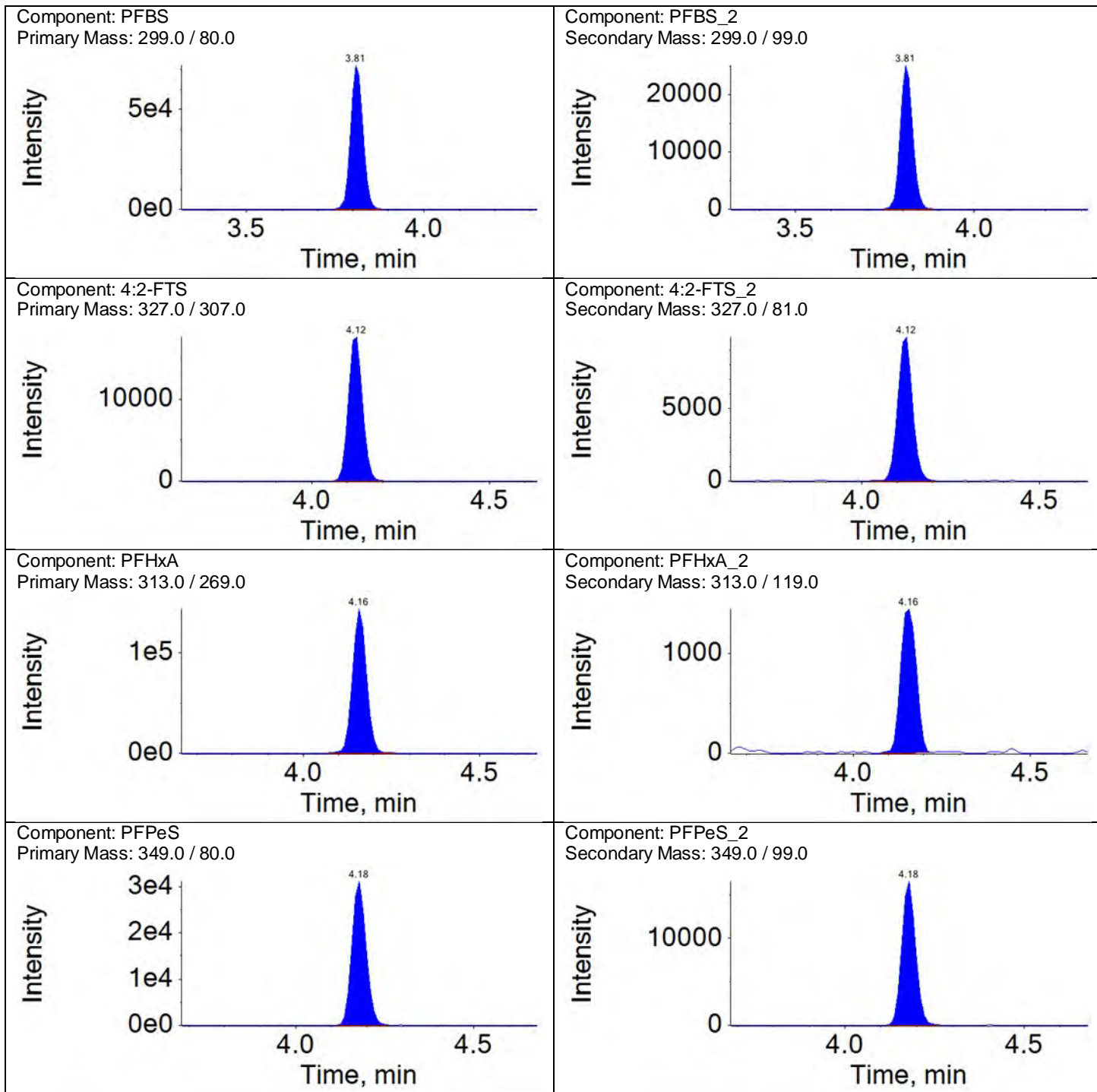
**APPROVED**  
By MCD at 7:31 pm, 12/19/18

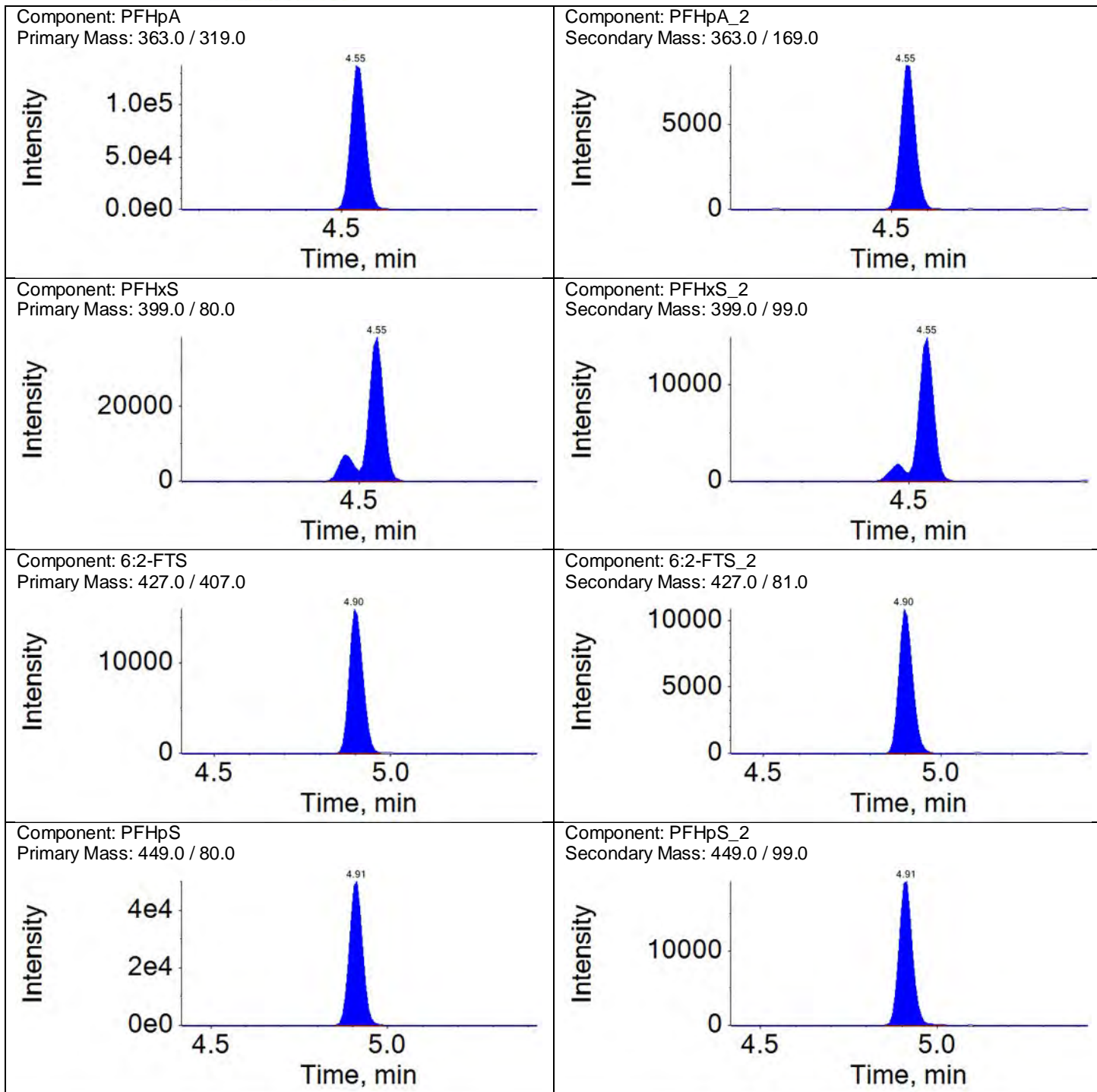
**REVIEWED**  
By HMK at 12:23 pm, 12/21/18

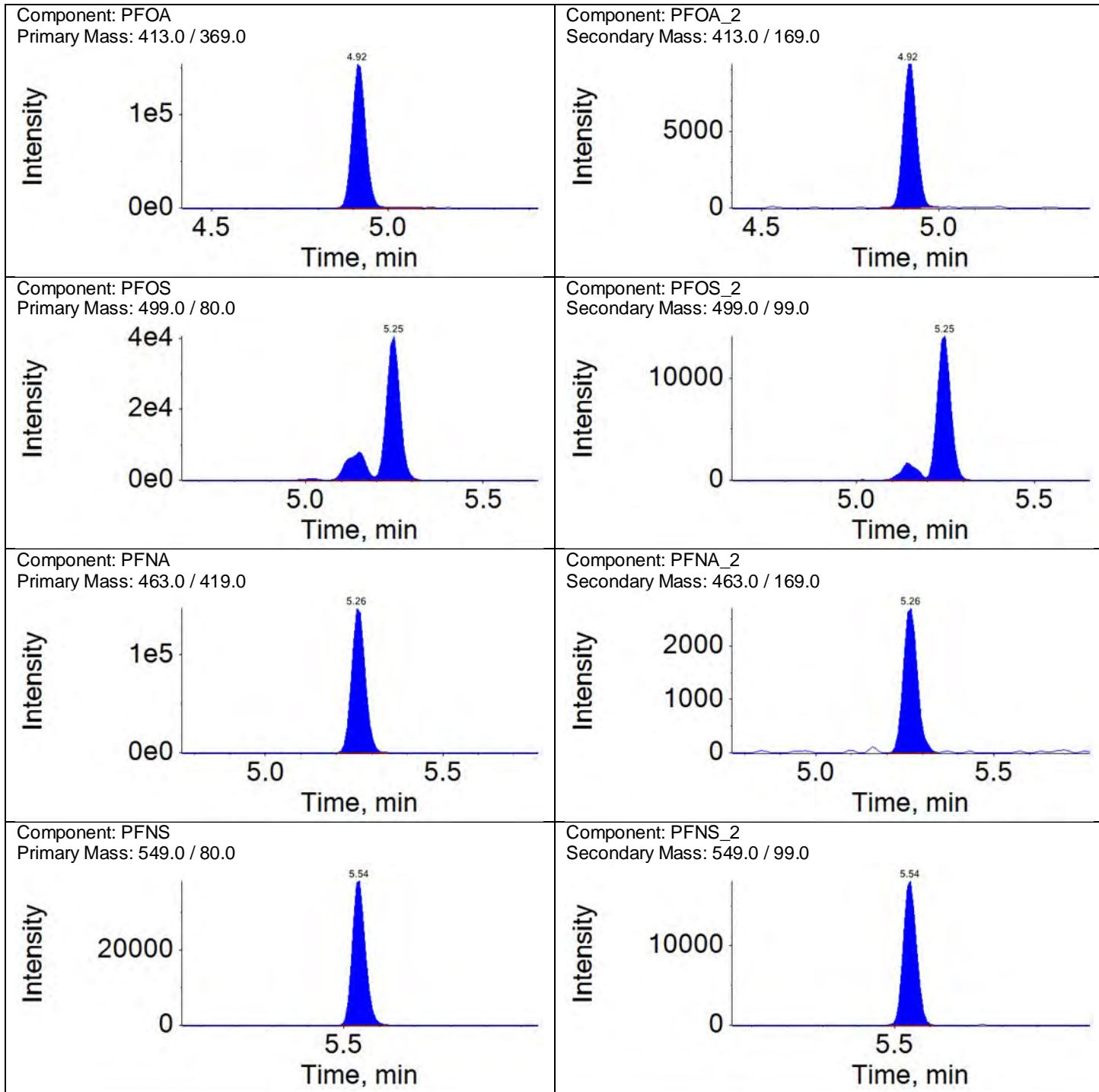
Ion Ratio Report

Sample Name: CCV2\_CAL3      Instrument Name: LM27631      File Name: 18DEC19D-17.wiff

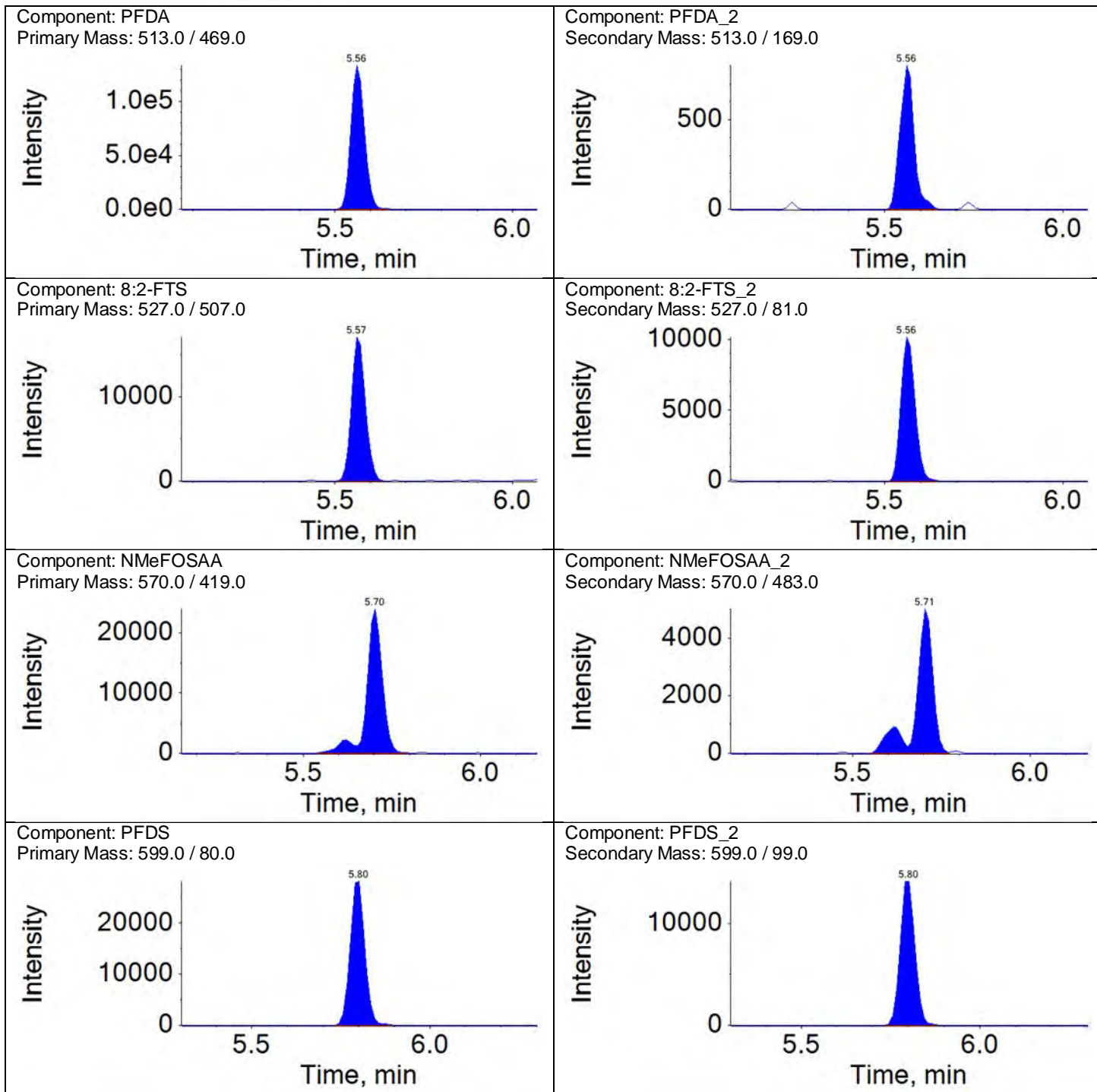
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	172638.8	A	N/A	0.3513			
PFBS_2	3.81	1.00	60648.1	A	N/A	0.3513	-4	50	
4:2-FTS	4.12	1.00	48437.0	A	N/A	0.5881			
4:2-FTS_2	4.12	1.00	28488.2	A	N/A	0.5881	-3	50	
PFHxA	4.16	1.00	394612.5	A	N/A	0.0113			
PFHxA_2	4.16	1.00	4461.1	A	N/A	0.0113	4	50	
PFPeS	4.18	1.10	85897.1	A	N/A	0.5127			
PFPeS_2	4.18	1.10	44043.6	A	N/A	0.5127	-3	50	
PFHpA	4.55	1.00	395165.7	A	N/A	0.0611			
PFHpA_2	4.55	1.00	24162.6	A	N/A	0.0611	16	50	
PFHxS	4.55	1.00	129625.2	M	N/A	0.3617			
PFHxS_2	4.55	1.00	46891.2	M	N/A	0.3617	9	50	
6:2-FTS	4.90	1.00	42693.2	A	N/A	0.6823			
6:2-FTS_2	4.90	1.00	29128.0	A	N/A	0.6823	7	50	
PFHpS	4.91	1.08	129595.0	A	N/A	0.3915			
PFHpS_2	4.91	1.08	50739.6	A	N/A	0.3915	-5	50	
PFOA	4.92	1.00	410966.0	A	N/A	0.0605			
PFOA_2	4.92	1.00	24880.0	A	N/A	0.0605	7	50	
PFOS	5.25	1.00	138194.6	M	N/A	0.3117			
PFOS_2	5.25	1.00	43075.4	M	N/A	0.3117	5	50	
PFNA	5.26	1.00	394301.3	A	N/A	0.0189			
PFNA_2	5.26	1.00	7451.0	A	N/A	0.0189	-11	50	
PFNS	5.54	1.06	97632.6	A	N/A	0.4768			
PFNS_2	5.54	1.06	46550.3	A	N/A	0.4768	3	50	
PFDA	5.56	1.00	354163.8	A	N/A	0.0063			
PFDA_2	5.56	1.00	2213.7	A	N/A	0.0063	5	50	
8:2-FTS	5.57	1.00	46161.7	A	N/A	0.6048			
8:2-FTS_2	5.56	1.00	27920.4	A	N/A	0.6048	4	50	
NMeFOSAA	5.70	1.00	74530.0	M	N/A	0.2271			
NMeFOSAA_2	5.71	1.00	16928.8	M	N/A	0.2271	-13	50	
PFDS	5.80	1.10	80356.0	A	N/A	0.5046			
PFDS_2	5.80	1.11	40550.3	A	N/A	0.5046	2	50	
PFOA	5.82	1.00	365394.2	A	N/A	0.0059			
PFOA_2	5.82	1.00	2145.9	A	N/A	0.0059	85	50	OOS
NEtFOSAA	5.84	1.00	78019.8	M	N/A	0.6341			
NEtFOSAA_2	5.84	1.00	49475.3	M	N/A	0.6341	-7	50	
PFOA	6.05	1.00	525708.8	A	N/A	0.0139			
PFOA_2	6.05	1.00	7313.4	A	N/A	0.0139	11	50	
10:2-FTS	6.07	1.09	43377.8	A	N/A	0.7102			
10:2-FTS_2	6.07	1.09	30807.3	A	N/A	0.7102	2	50	
PFOA	6.25	1.03	470034.5	A	N/A	0.0083			
PFOA_2	6.25	1.03	3918.1	A	N/A	0.0083	-6	50	
PFOA	6.43	1.00	338043.0	A	N/A	0.0068			
PFOA_2	6.43	1.00	2315.1	M	N/A	0.0068	26	50	
PFHxDA	6.73	1.05	164786.3	A	N/A	0.0696			
PFHxDA_2	6.73	1.05	11473.1	A	N/A	0.0696	6	50	
PFOA	6.99	1.09	127400.5	A	N/A	0.0258			
PFOA_2	6.99	1.09	3291.6	A	N/A	0.0258	-5	50	

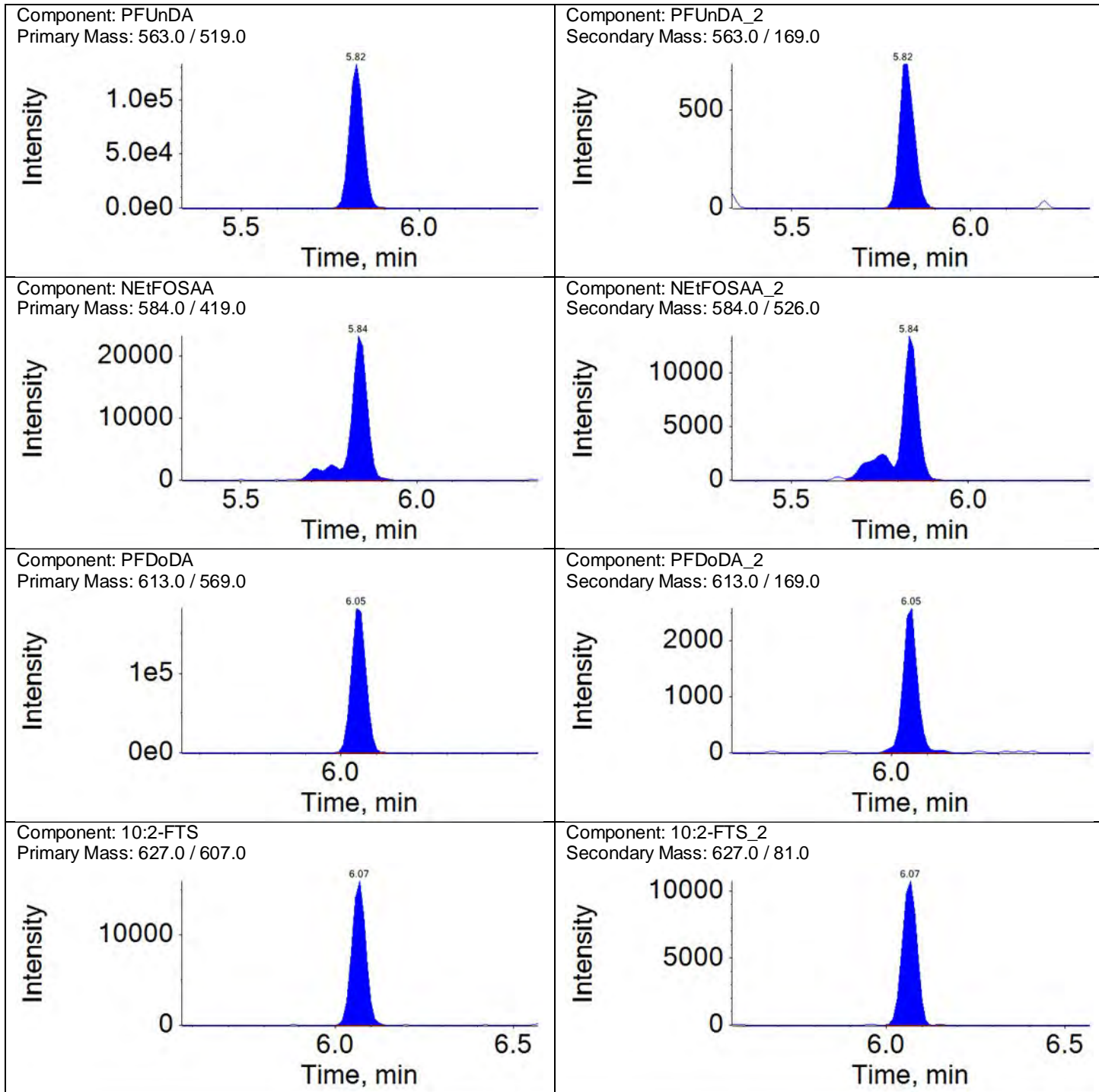


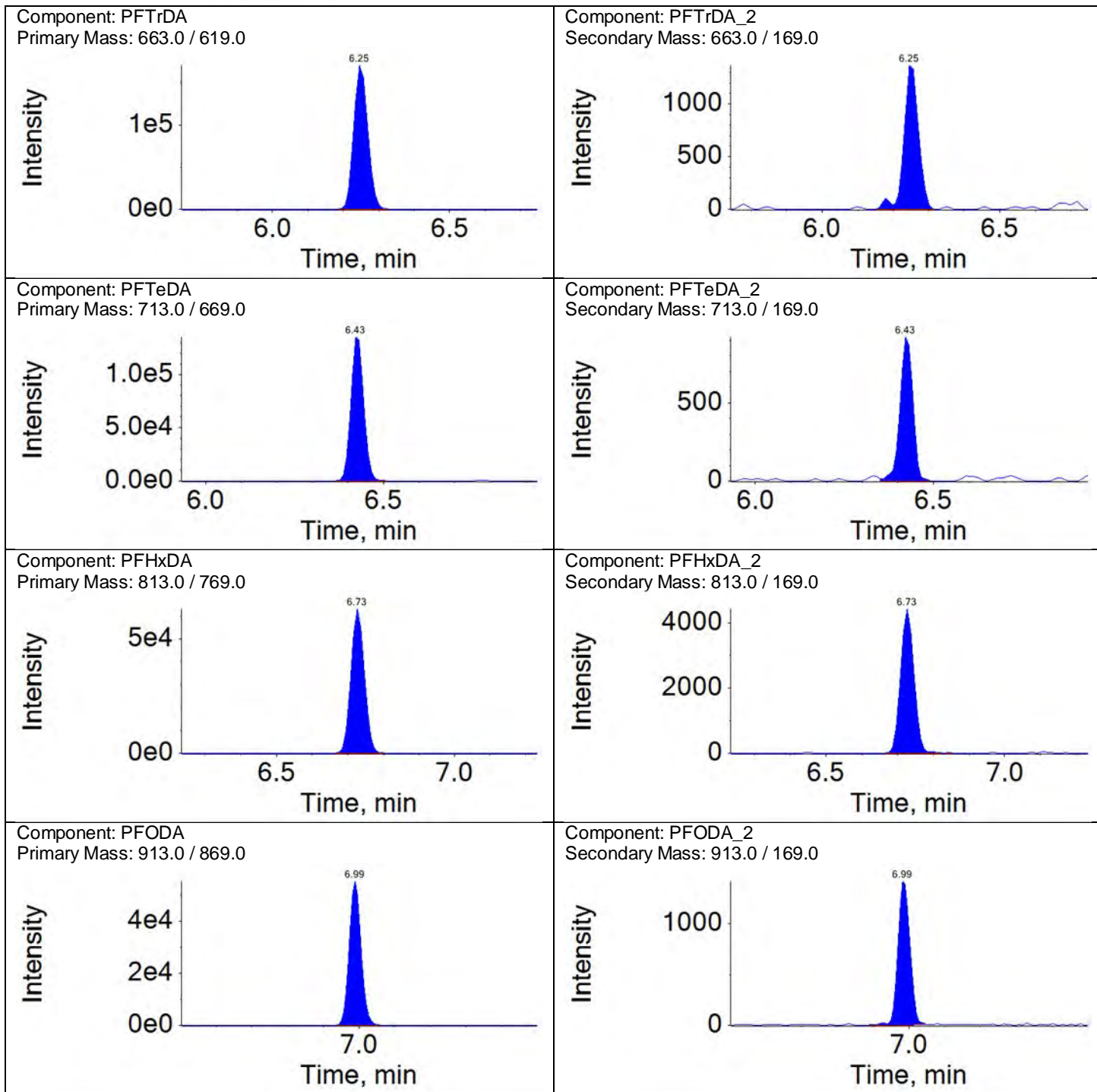










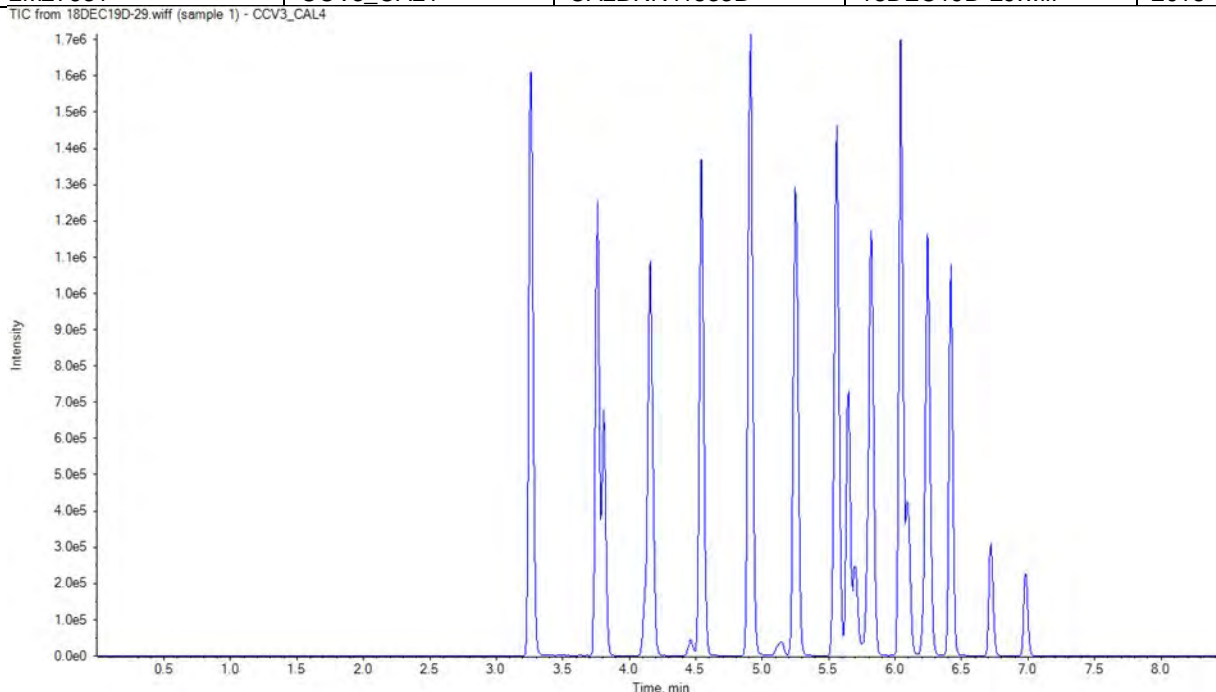


Continuing Calibration Verification

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV3_CAL4	CALBRN41833B	18DEC19D-29.wiff	2018-12-19T14:20:11



Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	1002788.6	942675.8	6	50	
13C2-PFOA	5.0	550833.0	520268.5	6	50	
13C4-PFOS	4.8	316395.3	307968.9	3	50	
13C2-PFDA	5.0	490342.9	487375.3	1	50	

**Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL      Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	CCV3_CAL4	CALBRN41833B	18DEC19D-29.wiff	2018-12-19T14:20:11

Analyte Name	Analyte Area	Sc /pk	Ext Std Name	Ext Std Area	Ext Std con	Area Ratio	RT (min)	RRT	Spec Amt	Calc Amt	% Diff	% Diff Lim	% Diff OOS
PFBA	1597479.1	10	13C4-PFBA	1085064.1	5.0	1.472	3.26	1.000	8.000	7.817	-2	30	
PFPeA	1565451.5	11	13C5-PFPeA	1032018.6	5.0	1.517	3.76	1.000	8.000	7.830	-2	30	
PFBS	653396.2	10	13C3-PFBS	455818.8	4.7	1.433	3.81	1.000	7.080	7.076	0	30	
4:2-FTS	180828.4	11	13C2-4:2-FTS	65027.7	4.7	2.781	4.12	1.000	7.470	7.296	-2	30	
PFHxA	1396819.3	12	13C5-PFHxA	765878.3	5.0	1.824	4.16	1.000	8.000	7.513	-6	30	
PFPeS	332457.4	11	13C3-PFBS	455818.8	4.7	0.729	4.17	1.100	7.500	7.425	-1	30	
PFHpA	1502687.8	11	13C4-PFHpA	613136.8	5.0	2.451	4.54	1.000	8.000	8.127	2	30	
PFHxS	496304.8	19	13C3-PFHxS	356555.1	4.7	1.392	4.55	1.000	7.300	6.770	-7	30	
6:2-FTS	158075.4	11	13C2-6:2-FTS	54797.3	4.8	2.885	4.90	1.000	7.580	7.181	-5	30	
PFHpS	490917.1	11	13C3-PFHxS	356555.1	4.7	1.377	4.90	1.080	7.610	7.283	-4	30	
PFOA	1504971.5	11	13C8-PFOA	1008590.9	5.0	1.492	4.91	1.000	8.000	7.905	-1	30	
PFOS	531547.6	22	13C8-PFOS	333209.5	4.8	1.595	5.24	1.000	7.400	6.984	-6	30	
PFNA	1451121.1	11	13C9-PFNA	653602.6	5.0	2.220	5.26	1.000	8.000	8.824	10	30	
PFNS	385325.4	10	13C8-PFOS	333209.5	4.8	1.156	5.54	1.060	7.680	7.353	-4	30	
PFDA	1318623.9	11	13C6-PFDA	896851.3	5.0	1.470	5.56	1.000	8.000	7.593	-5	30	
8:2-FTS	167074.7	11	13C2-8:2-FTS	42481.8	4.8	3.933	5.56	1.000	7.660	7.916	3	30	
PFOSA	979943.8	11	13C8-PFOSA	652865.0	5.0	1.501	5.65	1.000	8.000	7.507	-6	30	
NMeFOSAA	298989.3	18	d3-NMeFOSAA	218623.3	5.0	1.368	5.70	1.000	8.000	8.500	6	30	
PFDS	326186.1	11	13C8-PFOS	333209.5	4.8	0.979	5.80	1.110	7.700	8.036	4	30	
PFUnDA	1450270.9	11	13C7-PFUnDA	596287.2	5.0	2.432	5.82	1.000	8.000	8.055	1	30	
NEtFOSAA	295766.0	21	d5-NEtFOSAA	204670.1	5.0	1.445	5.83	1.000	8.000	7.365	-8	30	
PFDODA	1954227.8	11	13C2-PFDODA	1214911.6	5.0	1.609	6.04	1.000	8.000	8.103	1	30	
10:2-FTS	162345.3	11	13C2-8:2-FTS	42481.8	4.8	3.822	6.06	1.090	7.710	7.783	1	30	
NMePFOSAE	524404.0	11	d7-NMePFOSAE	269543.2	5.0	1.946	6.10	1.000	8.000	8.584	7	30	
NMePFOSA	138727.6	11	d3-NMePFOSA	88868.3	5.0	1.561	6.11	1.000	8.000	7.881	-1	30	
PFDoS	162134.7	11	13C8-PFOS	333209.5	4.8	0.487	6.21	1.180	7.740	7.372	-5	30	
NEtPFOSAE	547559.2	11	d9-NEtPFOSAE	239340.9	5.0	2.288	6.25	1.000	8.000	7.474	-7	30	
NEtPFOSA	112234.1	11	d5-NEtPFOSA	69951.9	5.0	1.604	6.27	1.000	8.000	7.505	-6	30	
PFTTrDA	1717721.1	11	13C2-PFDODA	1214911.6	5.0	1.414	6.24	1.030	8.000	7.253	-9	30	
PFTeDA	1272846.9	10	13C2-PFTeDA	895046.0	5.0	1.422	6.42	1.000	8.000	7.658	-4	30	
PFHxDA	645103.5	11	13C2-PFTeDA	895046.0	5.0	0.721	6.72	1.050	8.000	7.915	-1	30	
PFOA	490544.0	10	13C2-PFTeDA	895046.0	5.0	0.548	6.98	1.090	8.000	7.875	-2	30	





**Continuing Calibration Verification**

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:21:42 PM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MCD at 7:31 pm, 12/19/18

**REVIEWED**  
By HMK at 12:23 pm, 12/21/18

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	CCV3_CAL4	Data File:	18DEC19D-29.wiff
Sample ID:	CALBRN41833B	Acquis Date:	2018-12-19T14:20:11
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	6	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18DEC19DCCV1-5
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	N/A	Operator:	MCD7824
Sample Wt.:	1.00000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	1002788.6	942675.8	6	50	
13C2-PFOA	5.0	550833.0	520268.5	6	50	
13C4-PFOS	4.8	316395.3	307968.9	3	50	
13C2-PFDA	5.0	490342.9	487375.3	1	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1085064.1	13C3-PFBA	1002788.6	1.082	5.000	4.792	96	70-130	
E13C5-PFPeA	1032018.6	13C3-PFBA	1002788.6	1.029	5.000	4.799	96	70-130	
E13C3-PFBS	455818.8	13C3-PFBA	1002788.6	0.455	4.650	4.426	95	70-130	
E13C2-4:2-FTS	65027.7	13C2-PFOA	550833.0	0.118	4.670	4.484	96	70-130	
E13C5-PFHxA	765878.3	13C2-PFOA	550833.0	1.390	5.000	4.973	99	70-130	
E13C3-PFHxS	356555.1	13C2-PFOA	550833.0	0.647	4.730	4.898	104	70-130	
E13C4-PFHpA	613136.8	13C2-PFOA	550833.0	1.113	5.000	4.808	96	70-130	
E13C2-6:2-FTS	54797.3	13C2-PFOA	550833.0	0.099	4.750	5.005	105	70-130	
E13C8-PFOA	1008590.9	13C2-PFOA	550833.0	1.831	5.000	5.035	101	70-130	
E13C8-PFOS	333209.5	13C4-PFOS	316395.3	1.053	4.780	4.710	99	70-130	
E13C9-PFNA	653602.6	13C4-PFOS	316395.3	2.066	5.000	4.699	94	70-130	
E13C6-PFDA	896851.3	13C2-PFDA	490342.9	1.829	5.000	5.210	104	70-130	
E13C2-8:2-FTS	42481.8	13C2-PFDA	490342.9	0.087	4.790	4.465	93	70-130	
E13C8-PFOSA	652865.0	13C2-PFDA	490342.9	1.331	5.000	5.185	104	70-130	
Ed3-NMeFOSAA	218623.3	13C2-PFDA	490342.9	0.446	5.000	4.905	98	70-130	
E13C7-PFUnDA	596287.2	13C2-PFDA	490342.9	1.216	5.000	5.090	102	70-130	
Ed5-NEtFOSAA	204670.1	13C2-PFDA	490342.9	0.417	5.000	6.149	123	70-130	
E13C2-PFDoDA	1214911.6	13C2-PFDA	490342.9	2.478	5.000	5.213	104	70-130	
Ed7-NMePFOSAE	269543.2	13C2-PFDA	490342.9	0.550	5.000	4.912	98	70-130	
Ed3-NMePFOSA	88868.3	13C2-PFDA	490342.9	0.181	5.000	4.980	100	70-130	
Ed9-NEtPFOSAE	239340.9	13C2-PFDA	490342.9	0.488	5.000	4.990	100	70-130	
Ed5-NEtPFOSA	69951.9	13C2-PFDA	490342.9	0.143	5.000	4.948	99	70-130	
E13C2-PFTeDA	895046.0	13C2-PFDA	490342.9	1.825	5.000	5.144	103	70-130	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

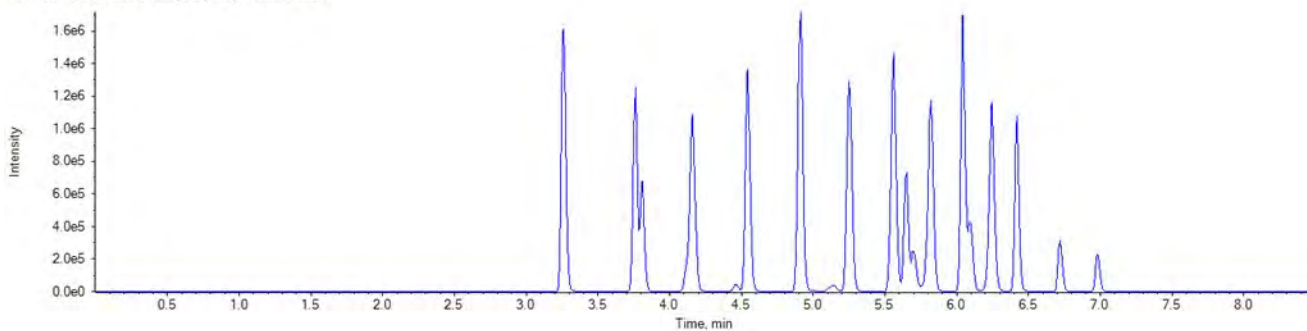
Sample Name: CCV3\_CAL4 Instrument Name: LM27631 File Name: 18DEC19D-29.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
1.00000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/g)
PFBA	3.26	1.000	1597479.1		A	13C4-PFBA	3.26	1085064.1	1.472	7.817
PFPeA	3.76	1.000	1565451.5		A	13C5-PFPeA	3.76	1032018.6	1.517	7.830
PFBS	3.81	1.000	653396.2		A	13C3-PFBS	3.81	455818.8	1.433	7.076
4:2-FTS	4.12	1.000	180828.4		A	13C2-4:2-FTS	4.12	65027.7	2.781	7.296
PFHxA	4.16	1.000	1396819.3		A	13C5-PFHxA	4.16	765878.3	1.824	7.513
PFPeS	4.17	1.100	332457.4		A	13C3-PFBS	3.81	455818.8	0.729	7.425
PFHpA	4.54	1.000	1502687.8		A	13C4-PFHpA	4.54	613136.8	2.451	8.127
PFHxS	4.55	1.000	496304.8		M	13C3-PFHxS	4.55	356555.1	1.392	6.770
6:2-FTS	4.90	1.000	158075.4		A	13C2-6:2-FTS	4.90	54797.3	2.885	7.181
PFHpS	4.90	1.080	490917.1		A	13C3-PFHxS	4.55	356555.1	1.377	7.283
PFOA	4.91	1.000	1504971.5		A	13C8-PFOA	4.91	1008590.9	1.492	7.905
PFOS	5.24	1.000	531547.6		M	13C8-PFOS	5.24	333209.5	1.595	6.984
PFNA	5.26	1.000	1451121.1		A	13C9-PFNA	5.26	653602.6	2.220	8.824
PFNS	5.54	1.060	385325.4		A	13C8-PFOS	5.24	333209.5	1.156	7.353
PFDA	5.56	1.000	1318623.9		A	13C6-PFDA	5.56	896851.3	1.470	7.593
8:2-FTS	5.56	1.000	167074.7		A	13C2-8:2-FTS	5.56	42481.8	3.933	7.916
PFOSA	5.65	1.000	979943.8		A	13C8-PFOSA	5.65	652865.0	1.501	7.507
NMeFOSAA	5.70	1.000	298989.3		M	d3-NMeFOSAA	5.70	218623.3	1.368	8.500
PFDS	5.80	1.110	326186.1		A	13C8-PFOS	5.24	333209.5	0.979	8.036
PfUnDA	5.82	1.000	1450270.9		A	13C7-PfUnDA	5.82	596287.2	2.432	8.055
NEtFOSAA	5.83	1.000	295766.0		M	d5-NEtFOSAA	5.83	204670.1	1.445	7.365
PFDoDA	6.04	1.000	1954227.8		A	13C2-PFDoDA	6.04	1214911.6	1.609	8.103
10:2-FTS	6.06	1.090	162345.3		A	13C2-8:2-FTS	5.56	42481.8	3.822	7.783
NMePFOSAE	6.10	1.000	524404.0		A	d7-NMePFOSAE	6.09	269543.2	1.946	8.584
NMePFOSA	6.11	1.000	138727.6		A	d3-NMePFOSA	6.10	88868.3	1.561	7.881
PFDoS	6.21	1.180	162134.7		A	13C8-PFOS	5.24	333209.5	0.487	7.372
NEtPFOSAE	6.25	1.000	547559.2		A	d9-NEtPFOSAE	6.24	239340.9	2.288	7.474
NEtPFOSA	6.27	1.000	112234.1		A	d5-NEtPFOSA	6.26	69951.9	1.604	7.505
PFTeDA	6.24	1.030	1717721.1		A	13C2-PFDoDA	6.04	1214911.6	1.414	7.253
PFTeDA	6.42	1.000	1272846.9		A	13C2-PFTeDA	6.42	895046.0	1.422	7.658
PFHxDA	6.72	1.050	645103.5		A	13C2-PFTeDA	6.42	895046.0	0.721	7.915
PFODA	6.98	1.090	490544.0		A	13C2-PFTeDA	6.42	895046.0	0.548	7.875

**Total Ion Chromatogram**

TIC from 18DEC19D-29.wiff (sample 1) - CCV3\_CAL4

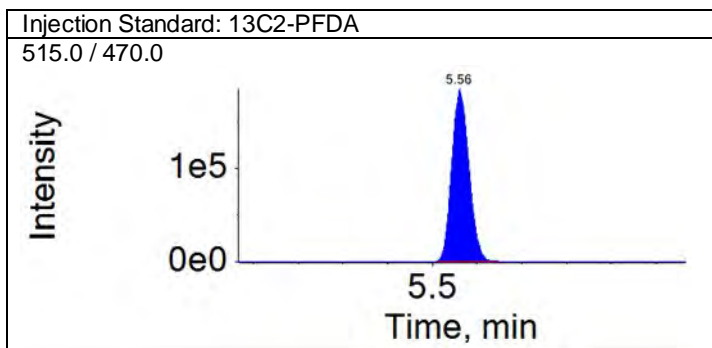
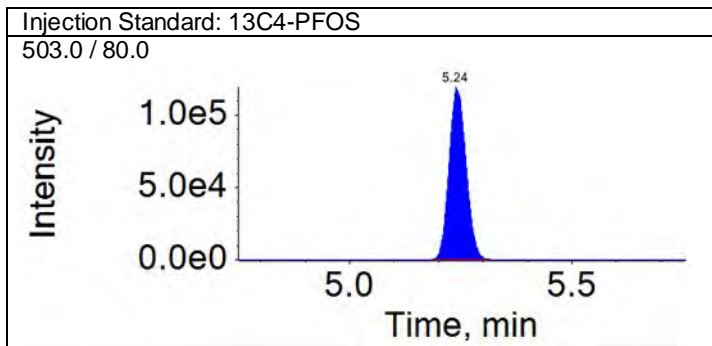
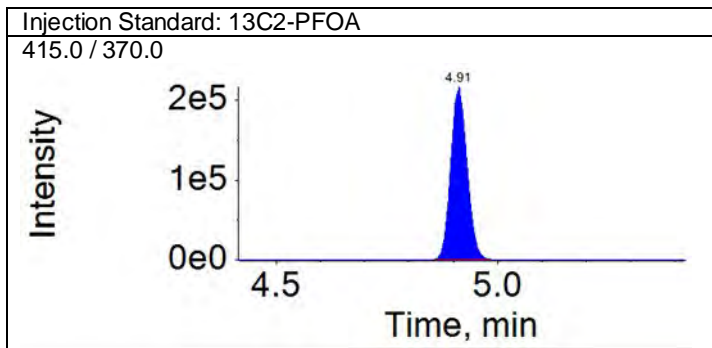
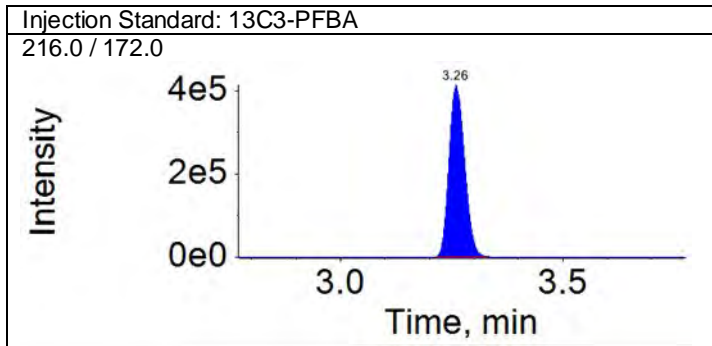


**APPROVED**  
By MCD at 7:31 pm, 12/19/18

**REVIEWED**  
By HMK at 12:23 pm, 12/21/18

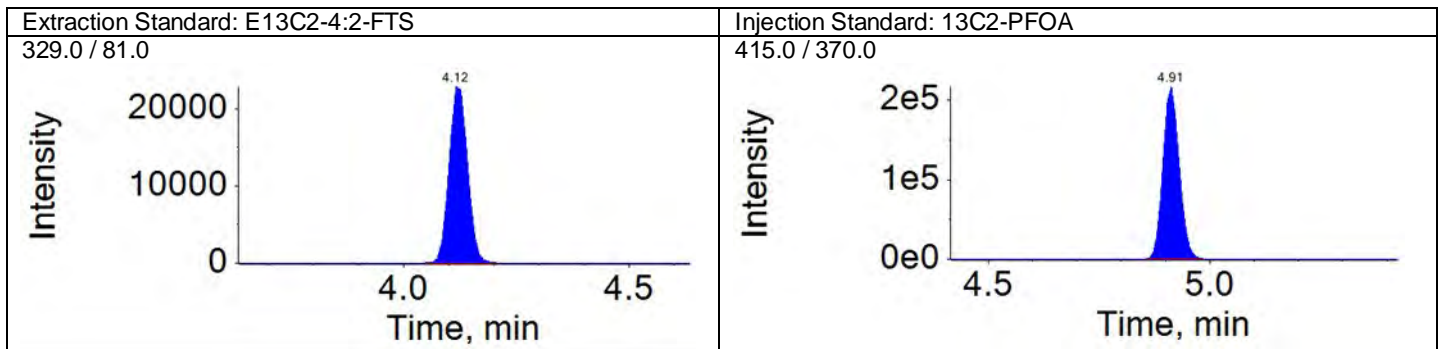
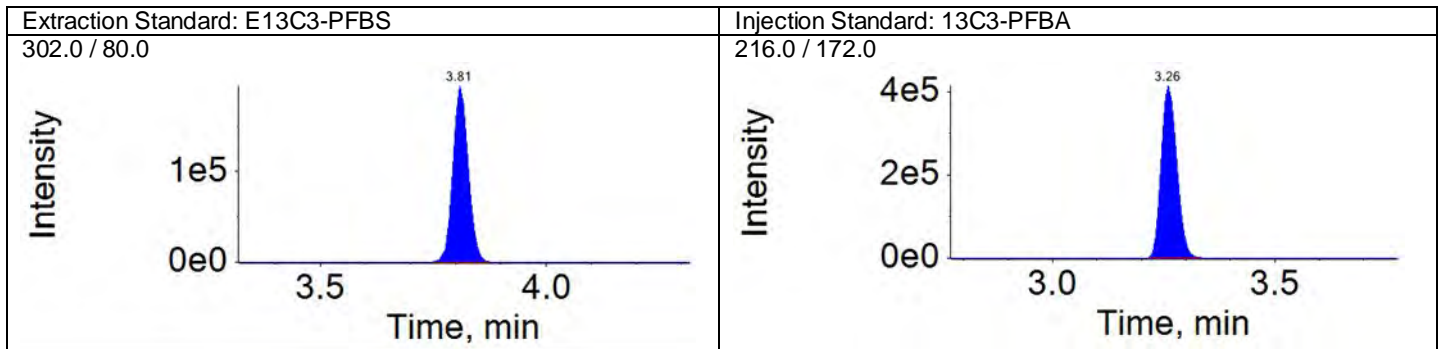
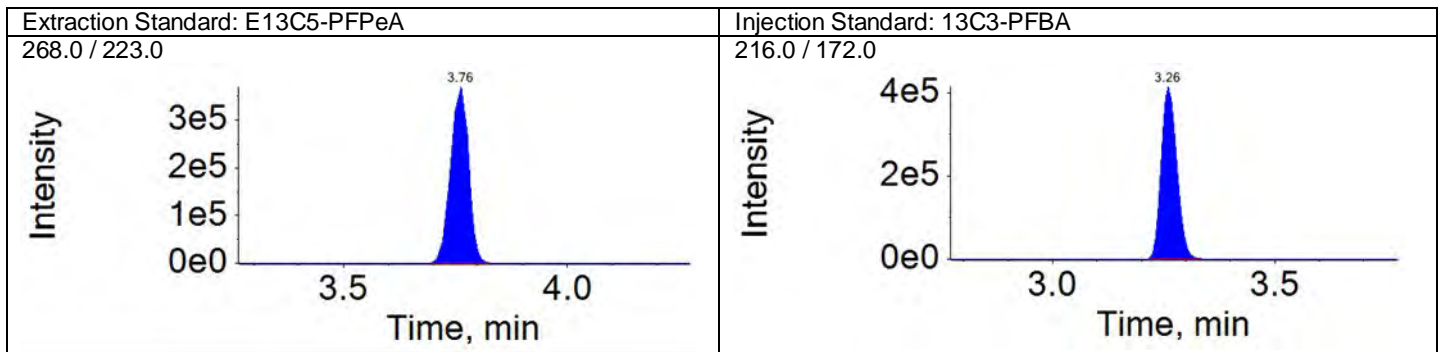
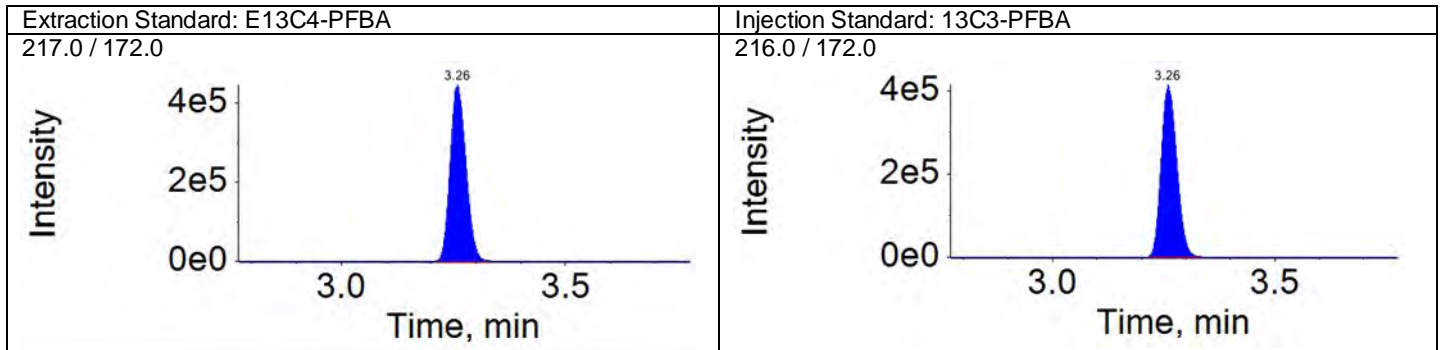
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

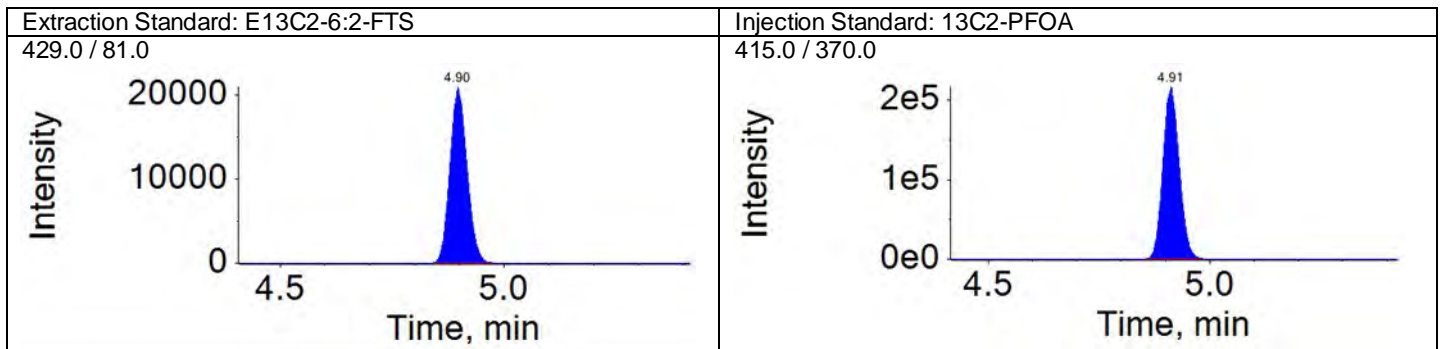
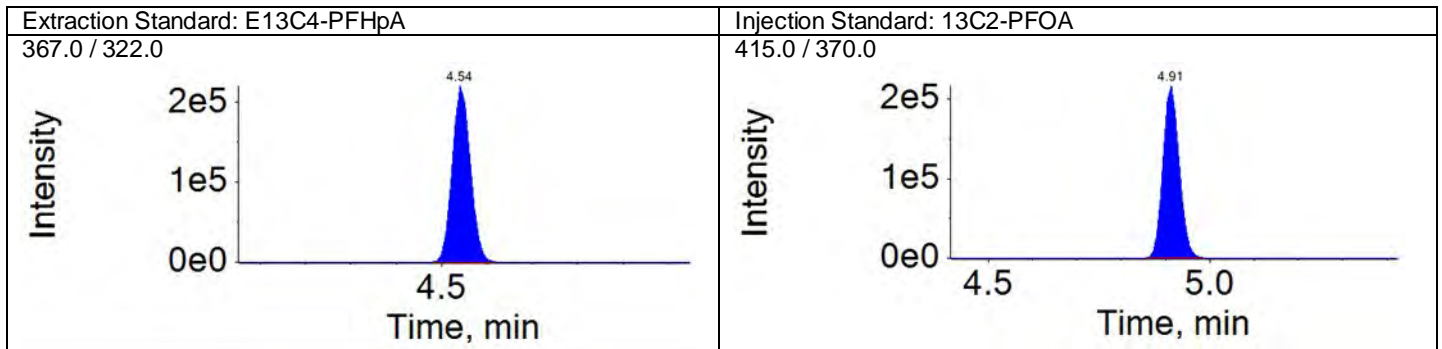
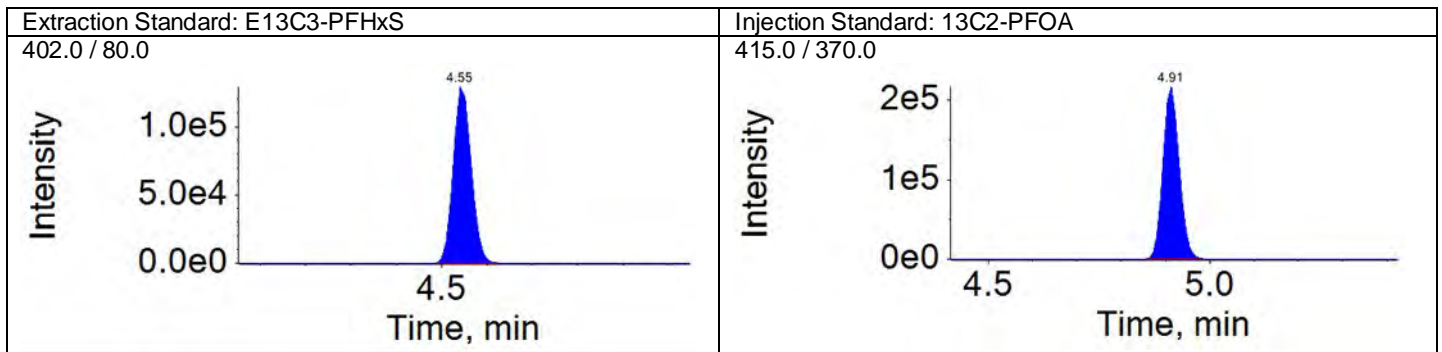
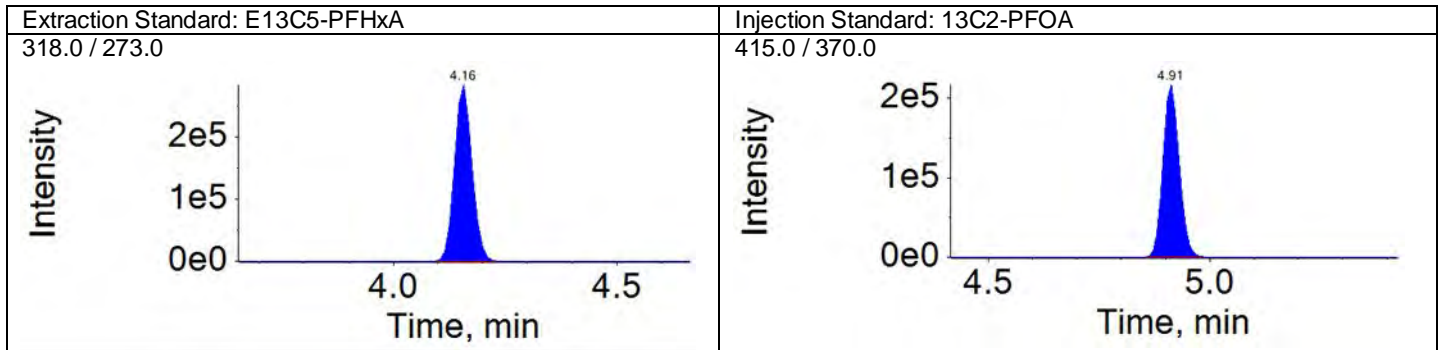
Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam





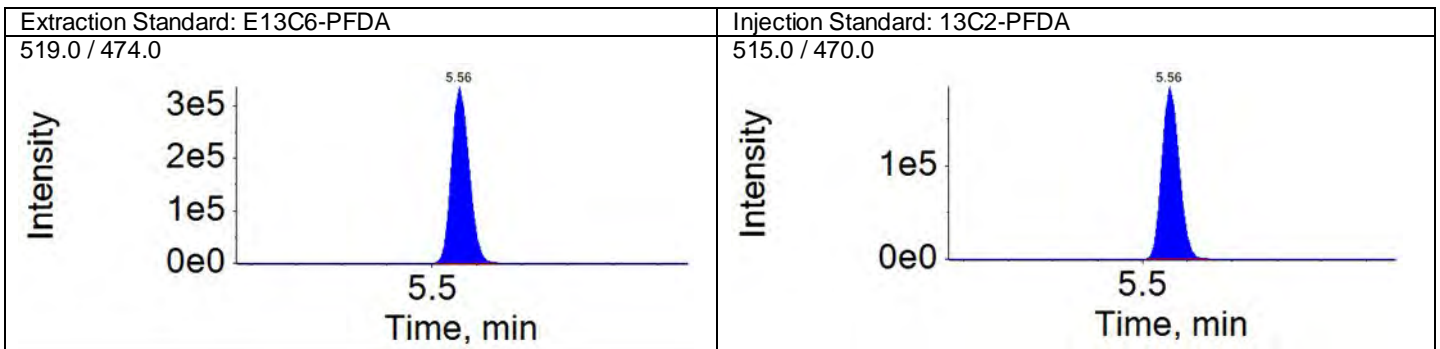
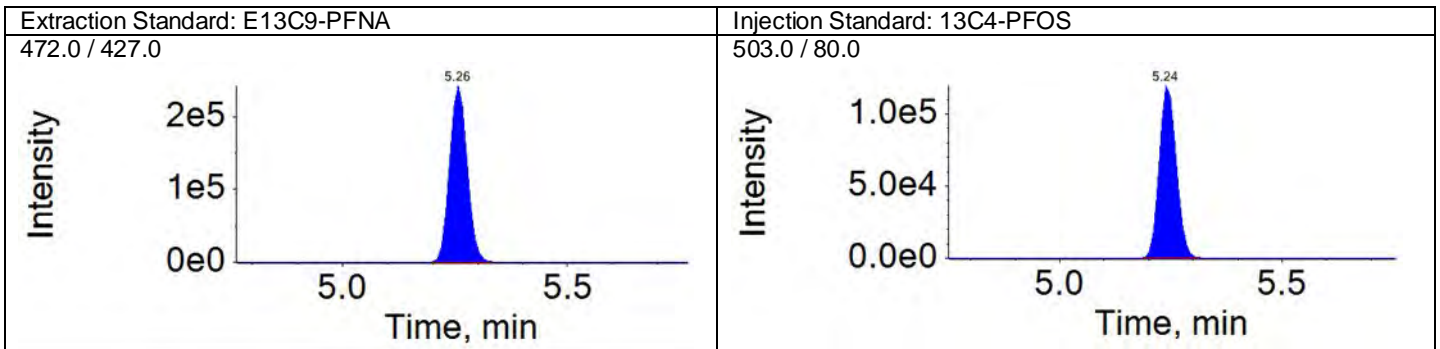
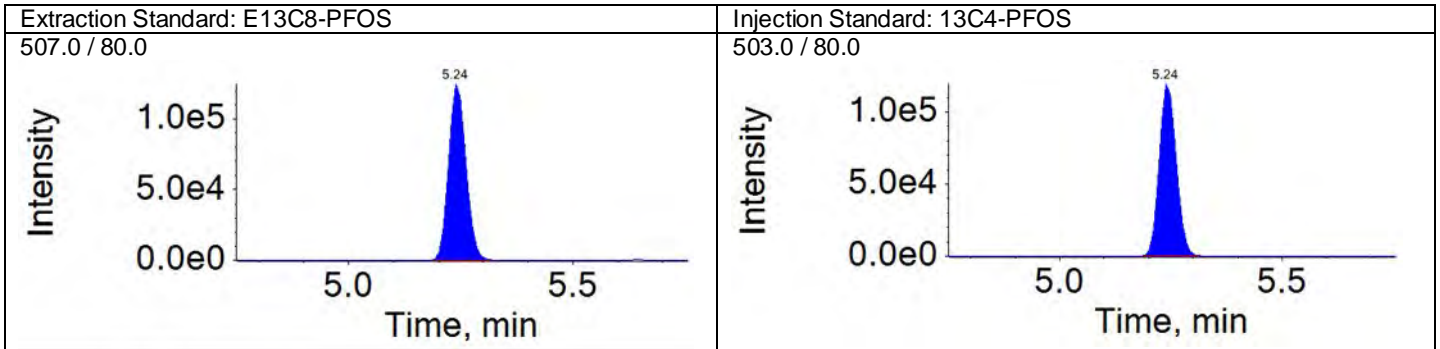
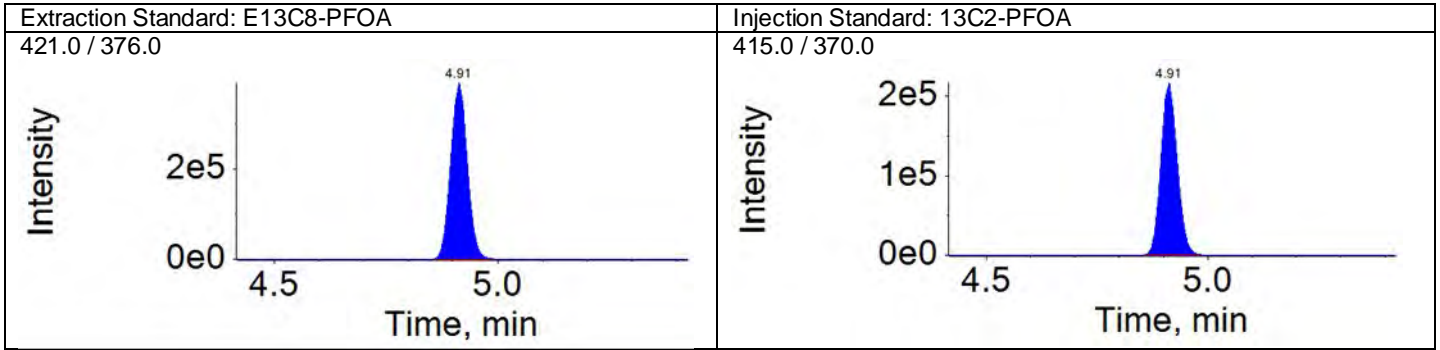
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



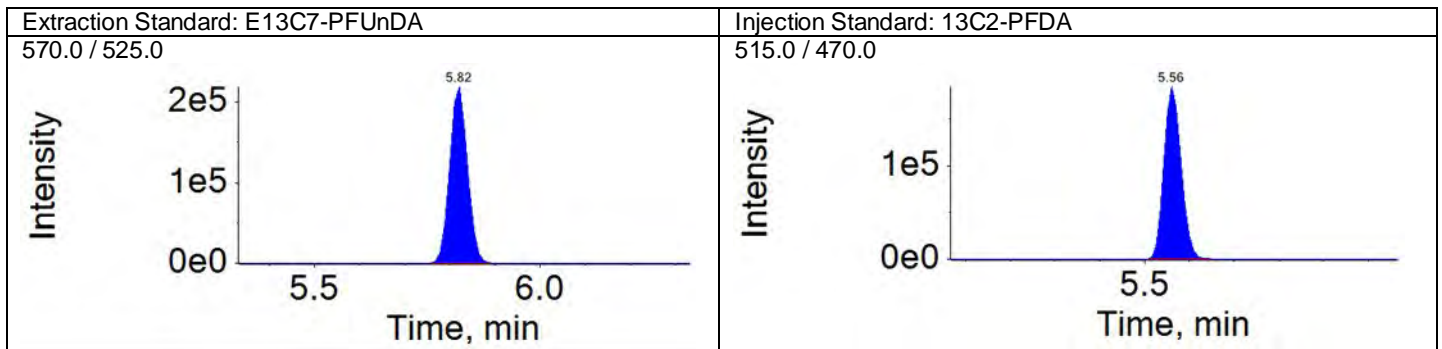
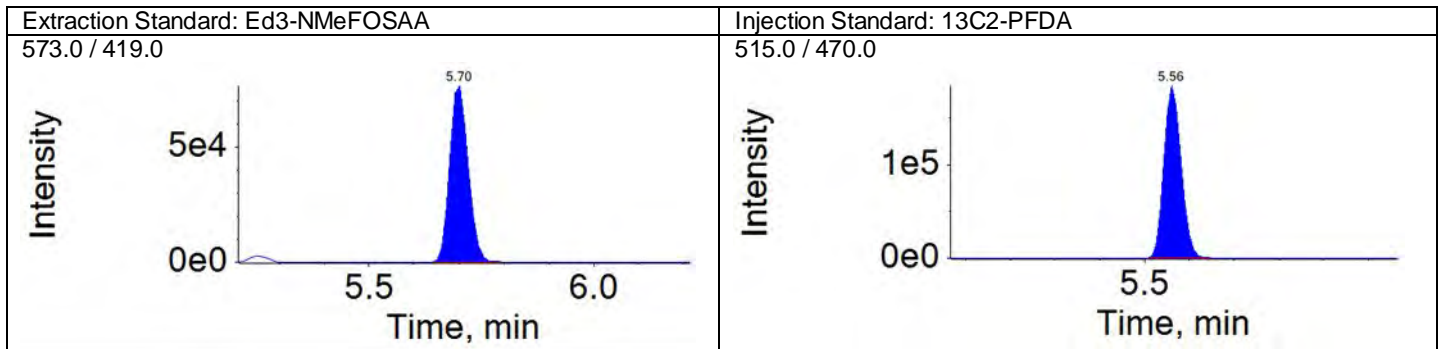
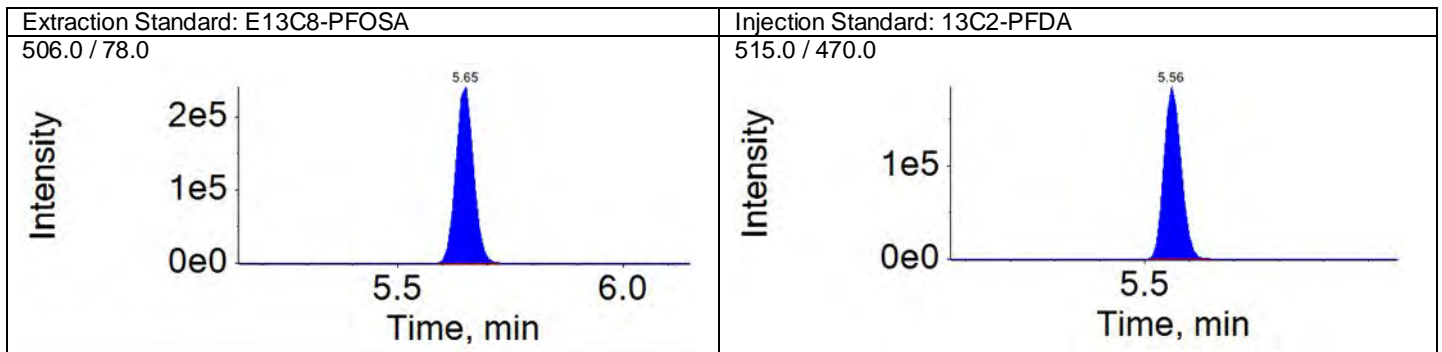
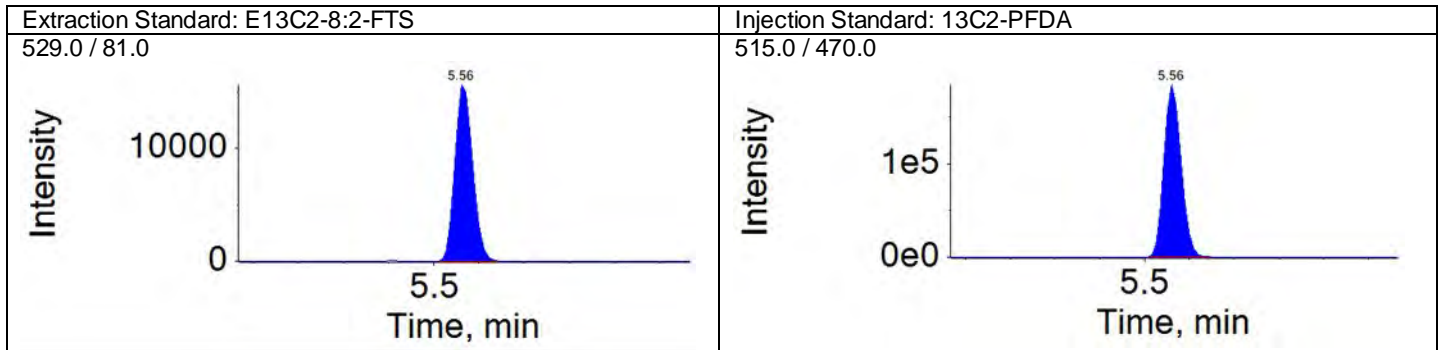
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



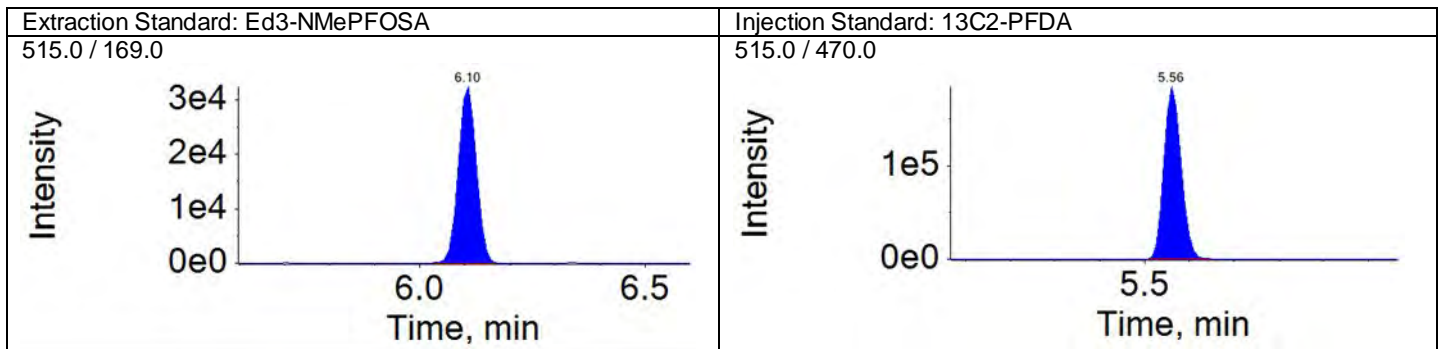
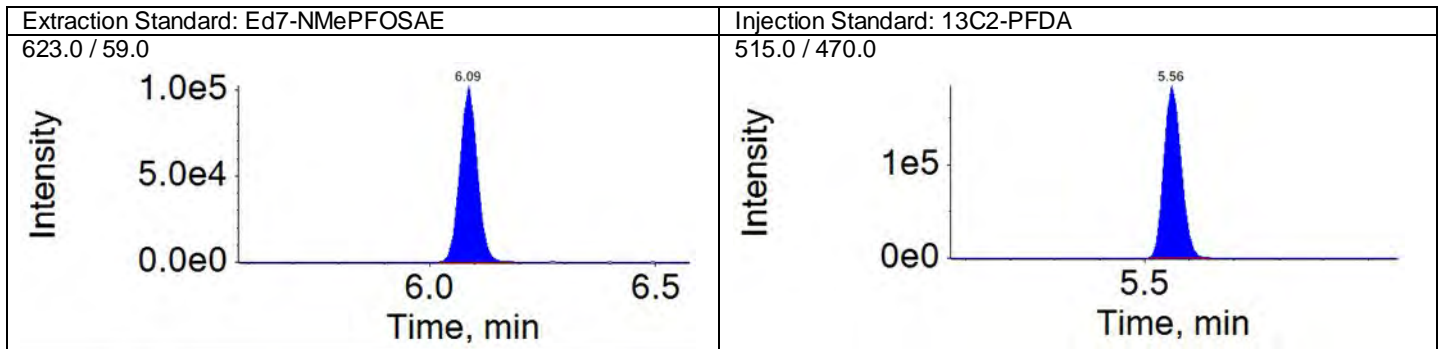
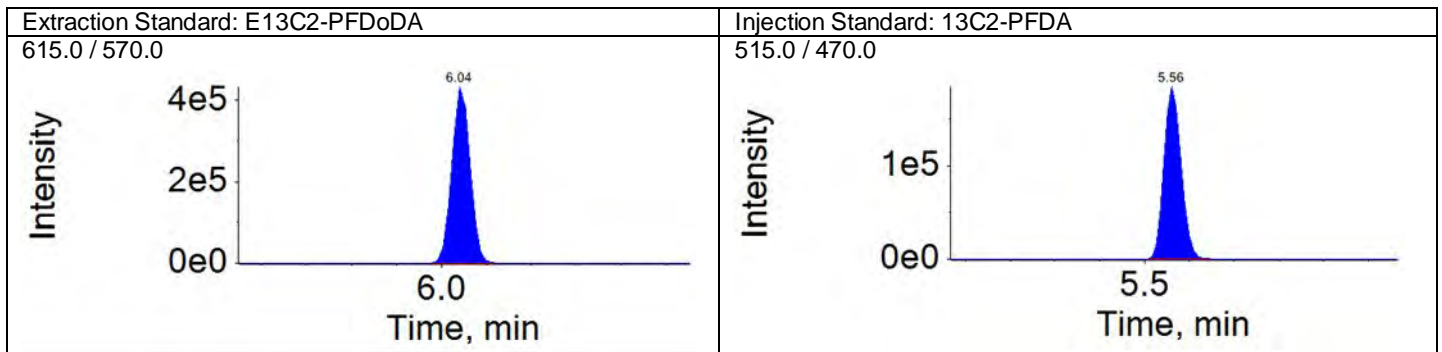
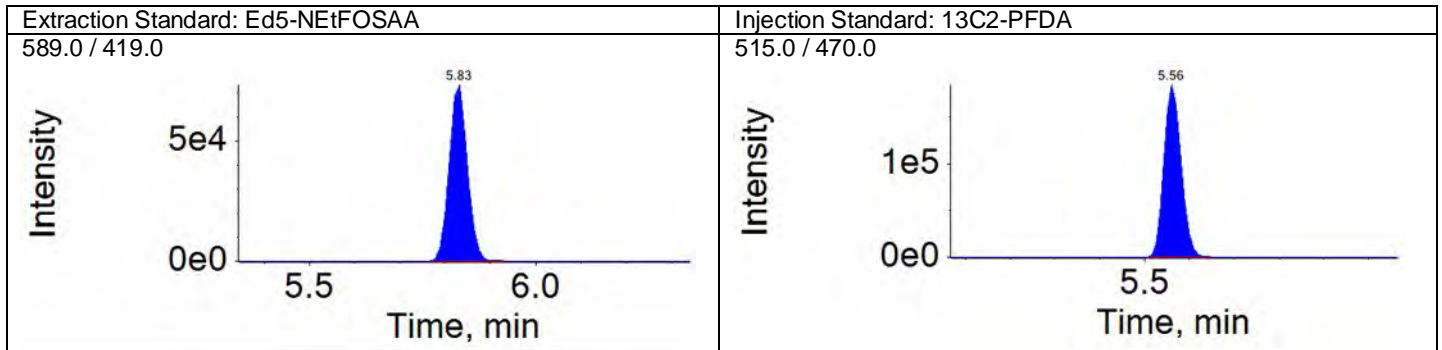
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QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

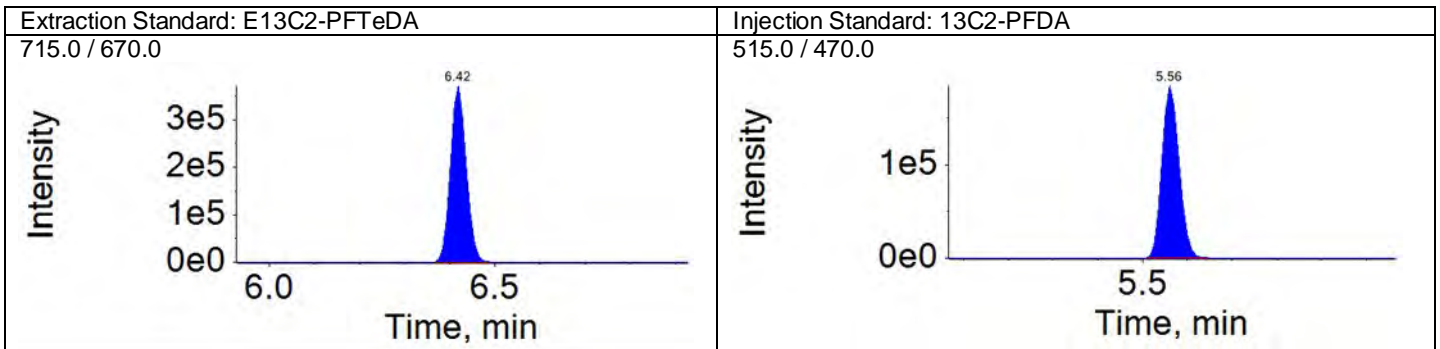
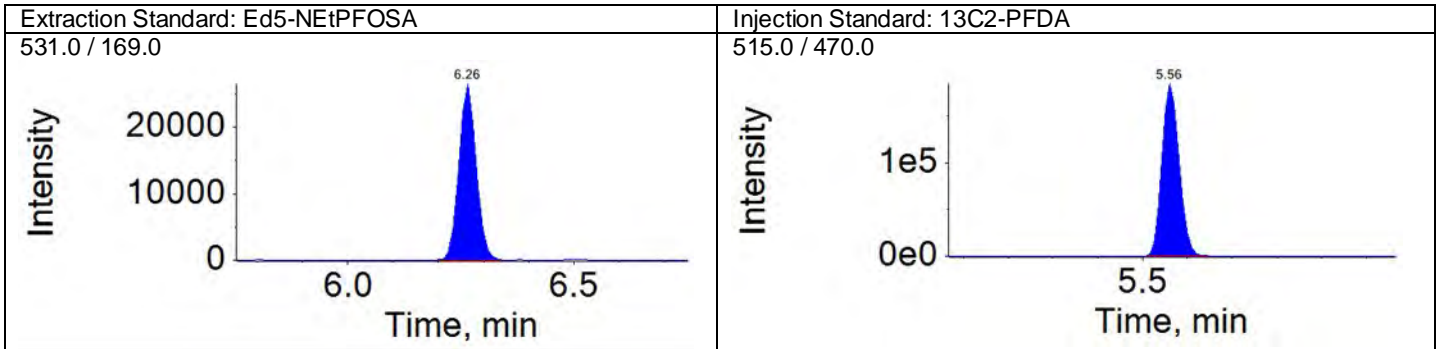
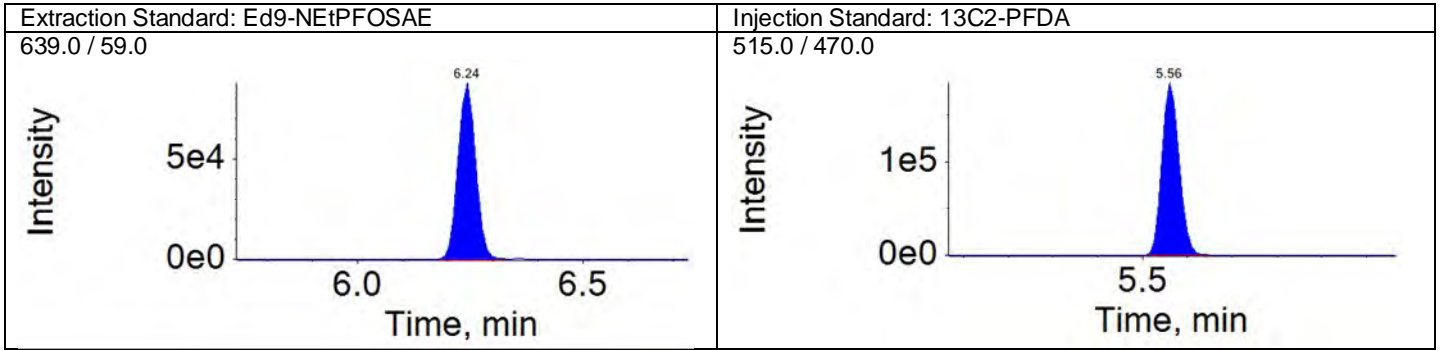
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

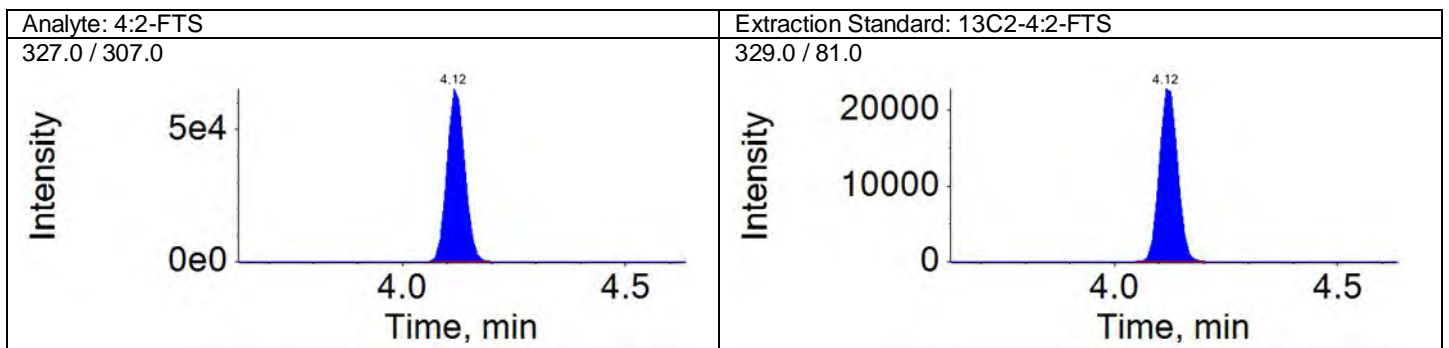
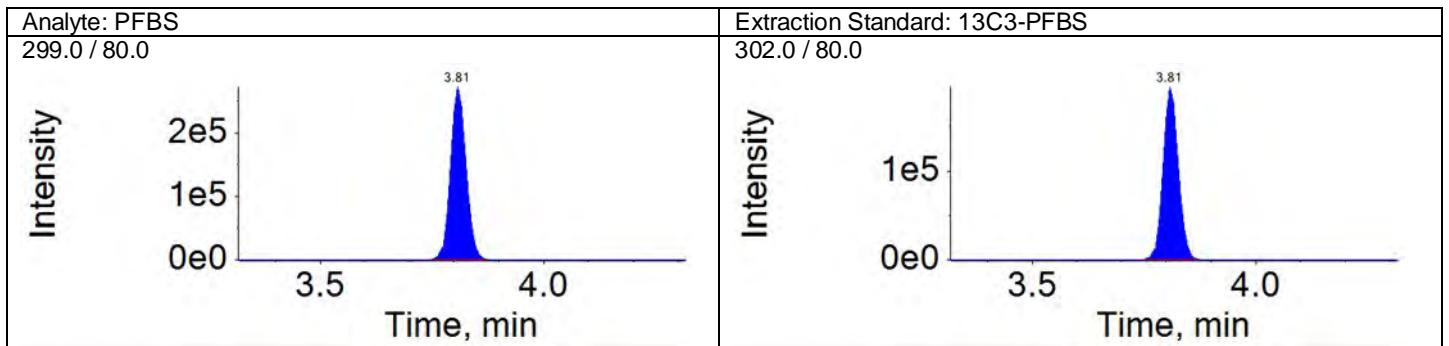
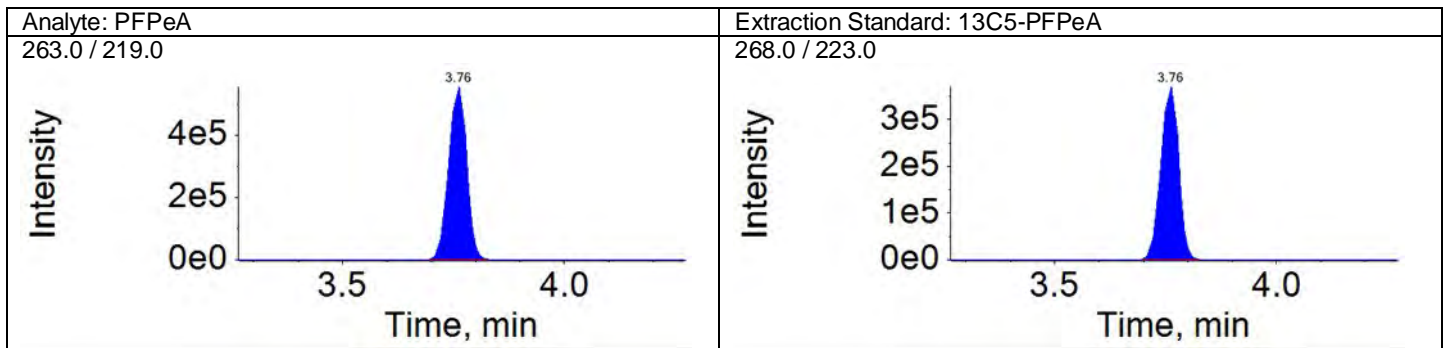
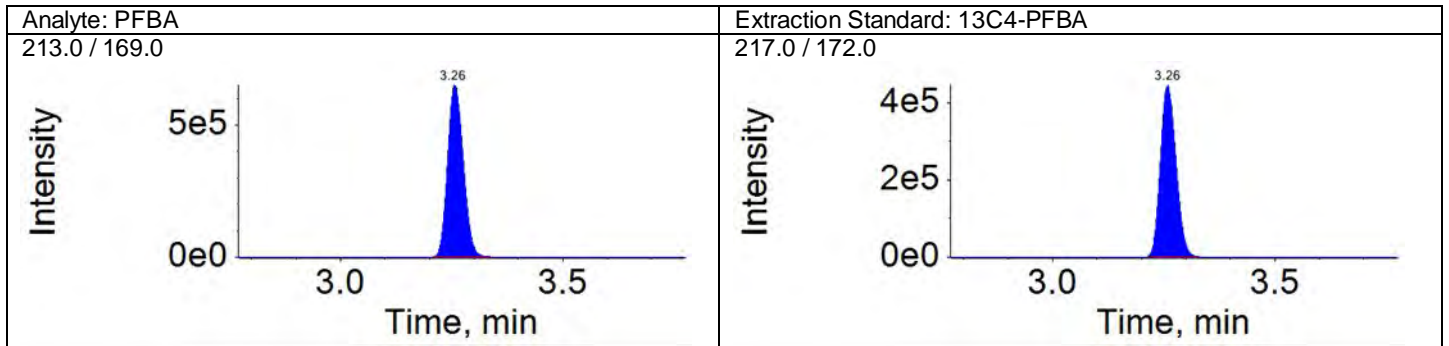
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Acquisition Method: 18AUG13\_3uL.dam





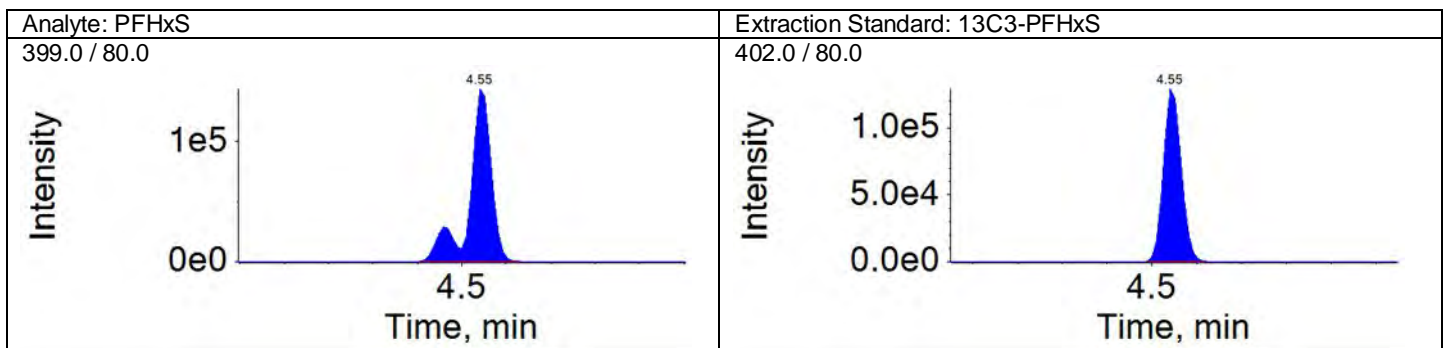
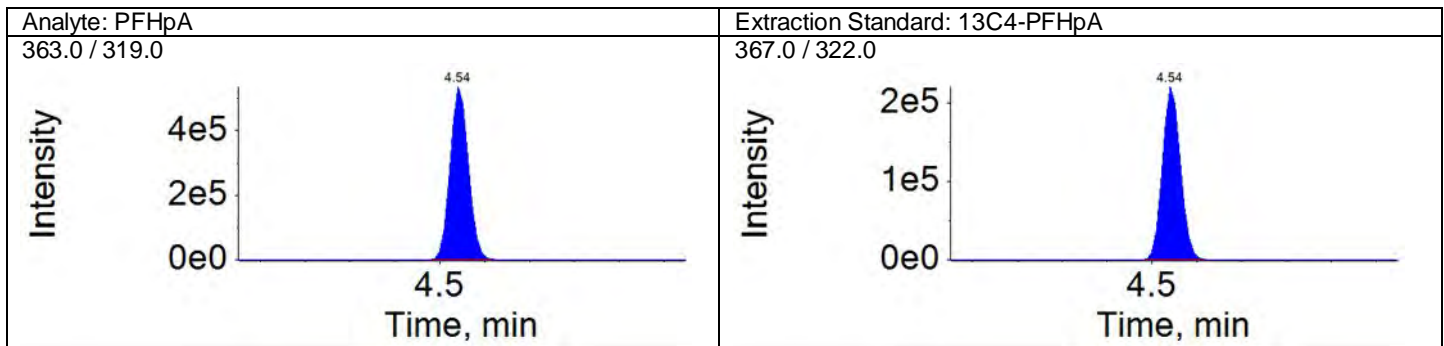
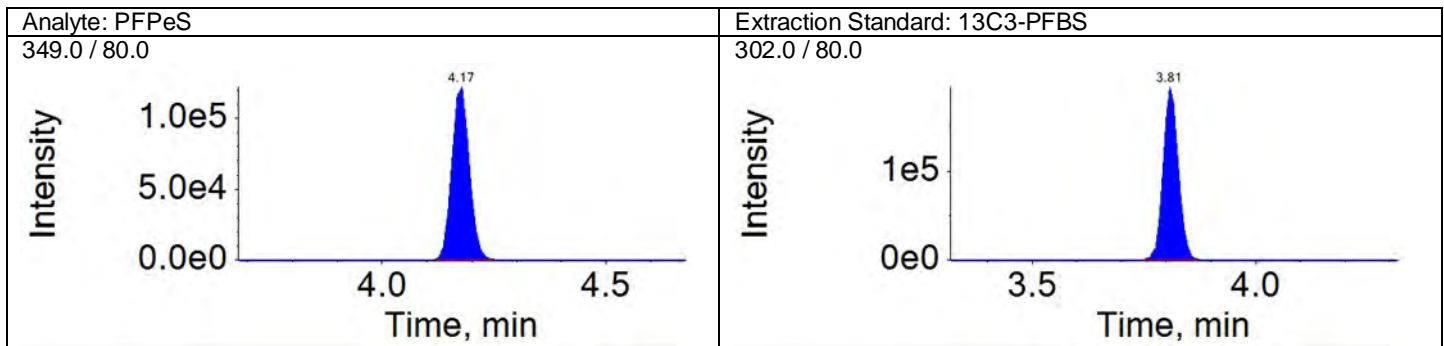
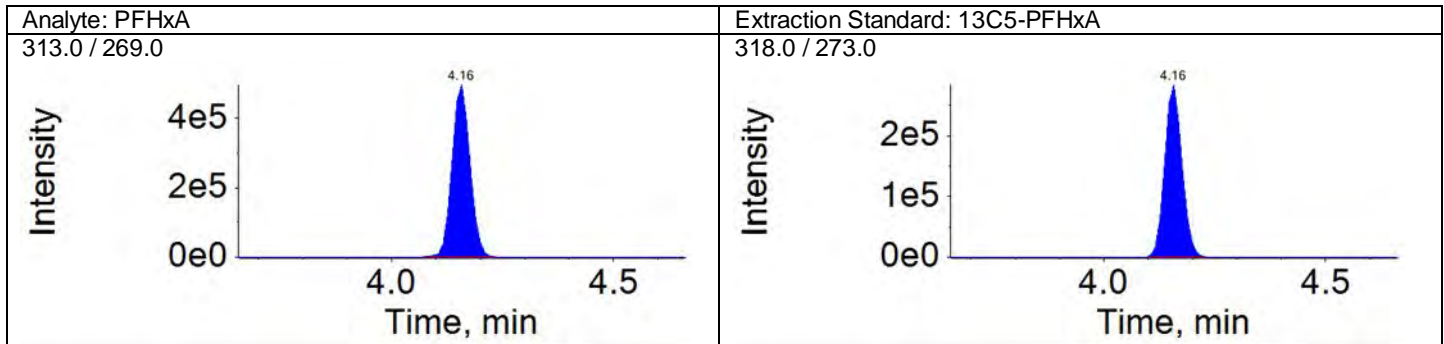
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



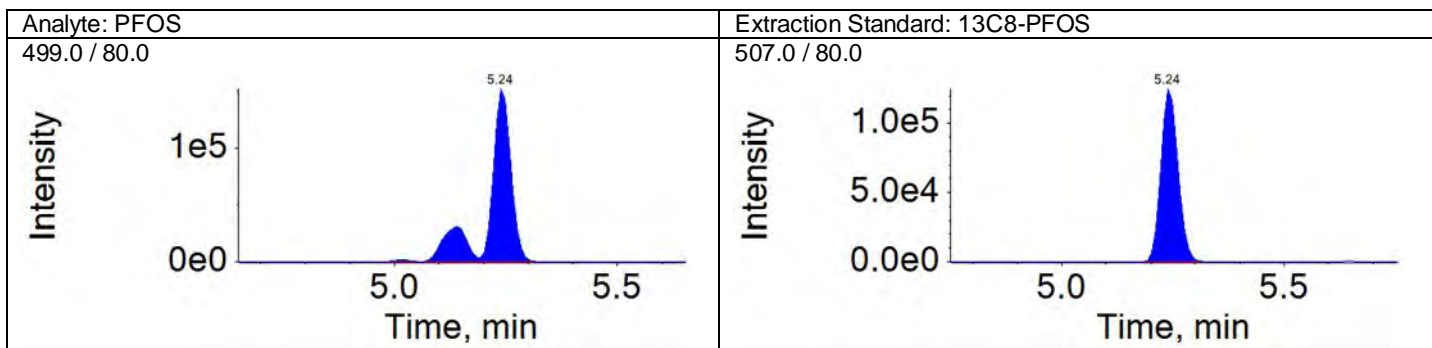
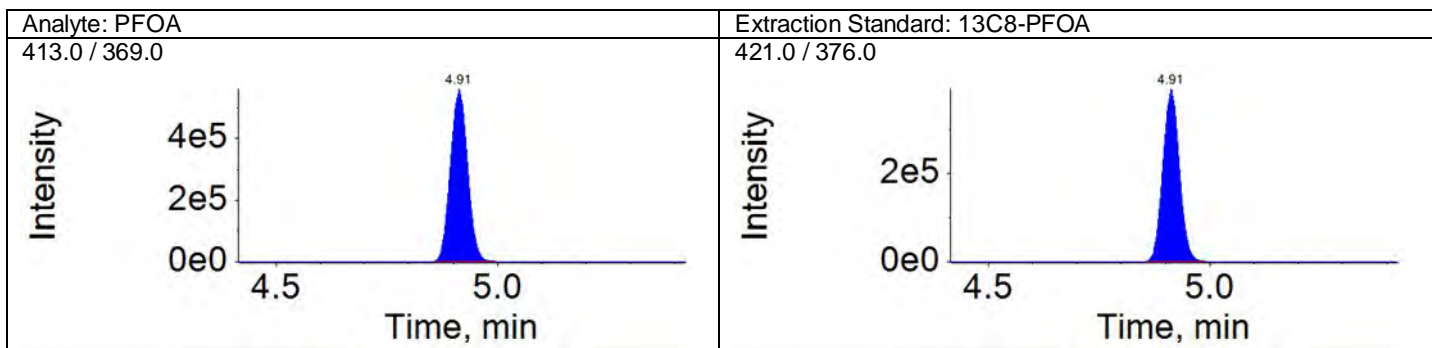
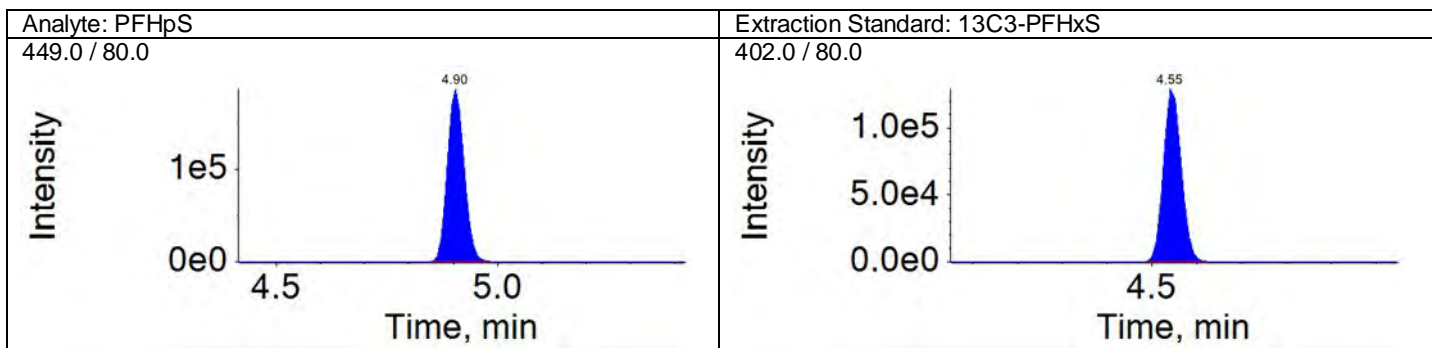
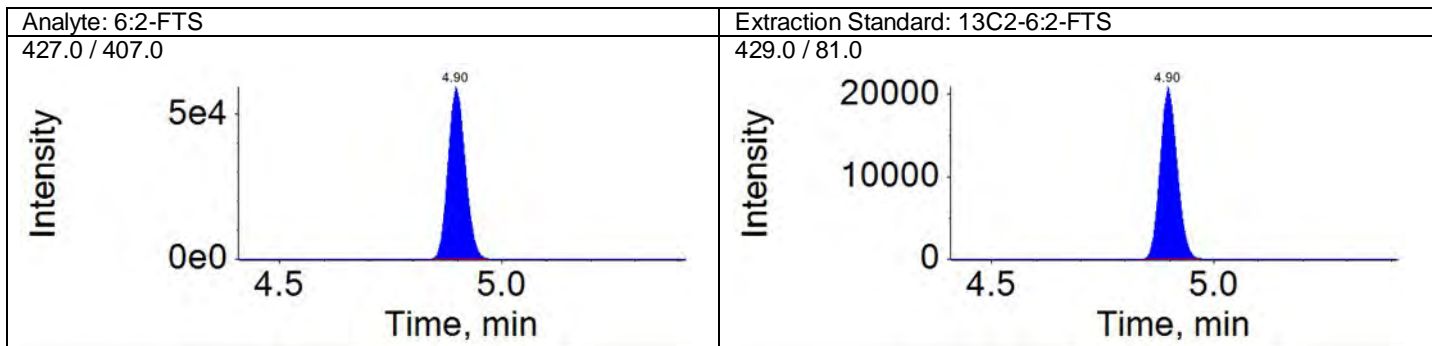
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
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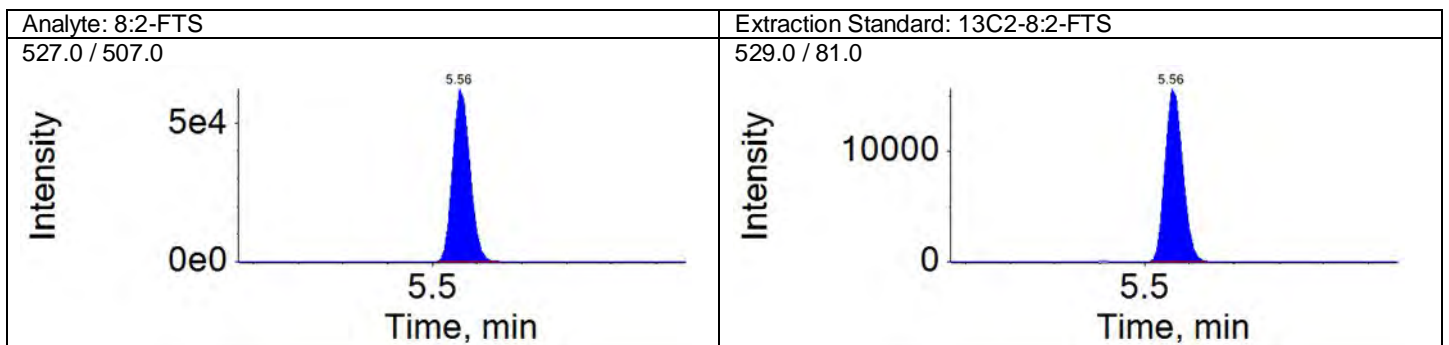
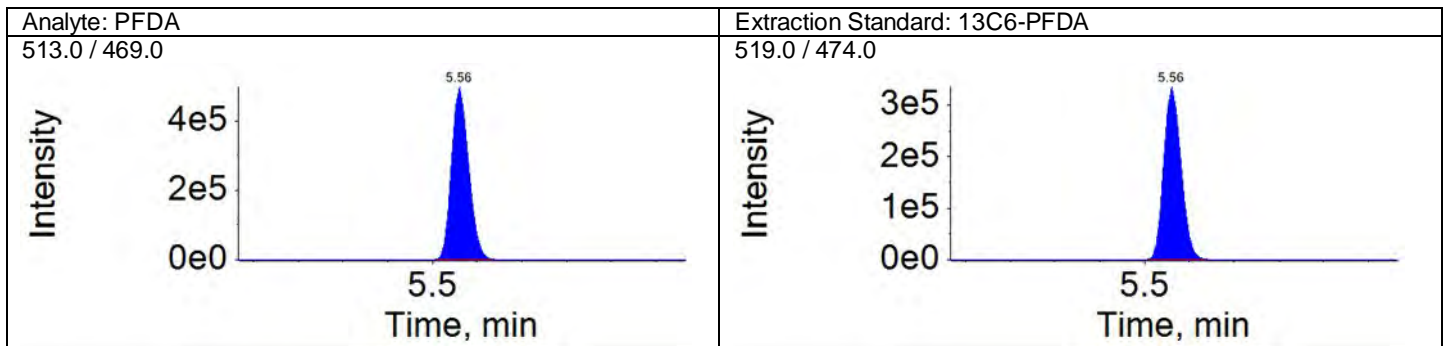
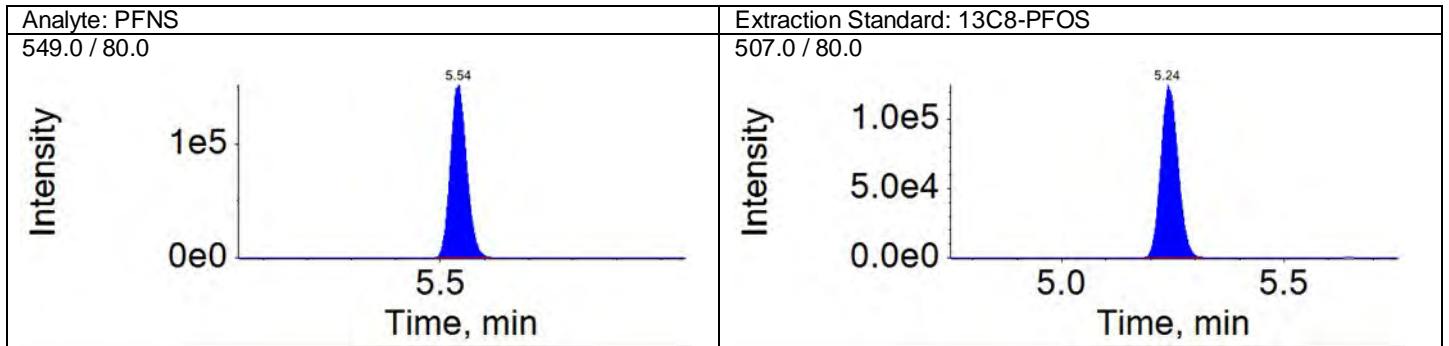
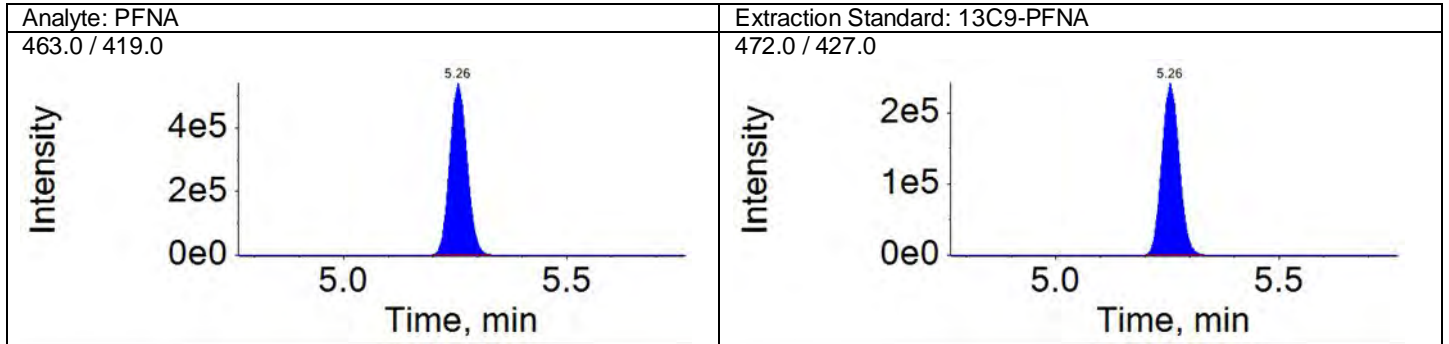
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

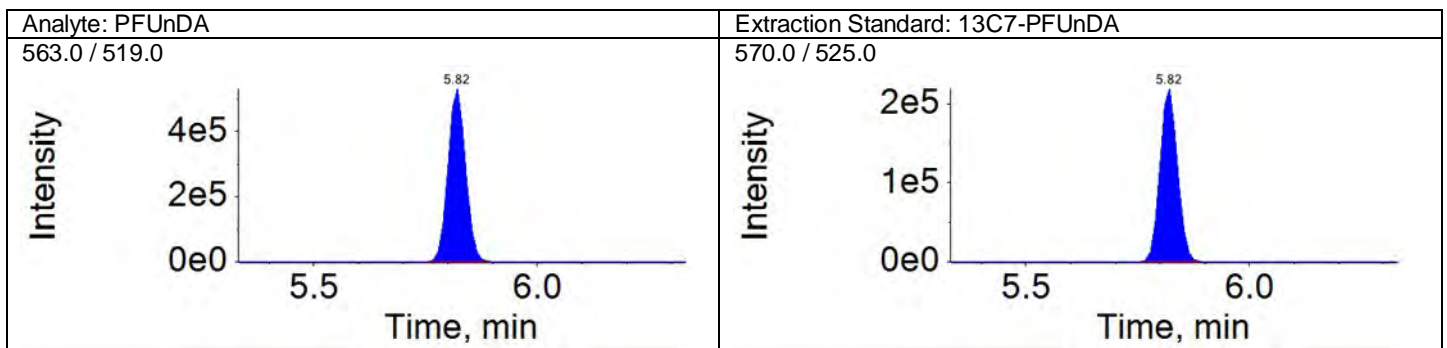
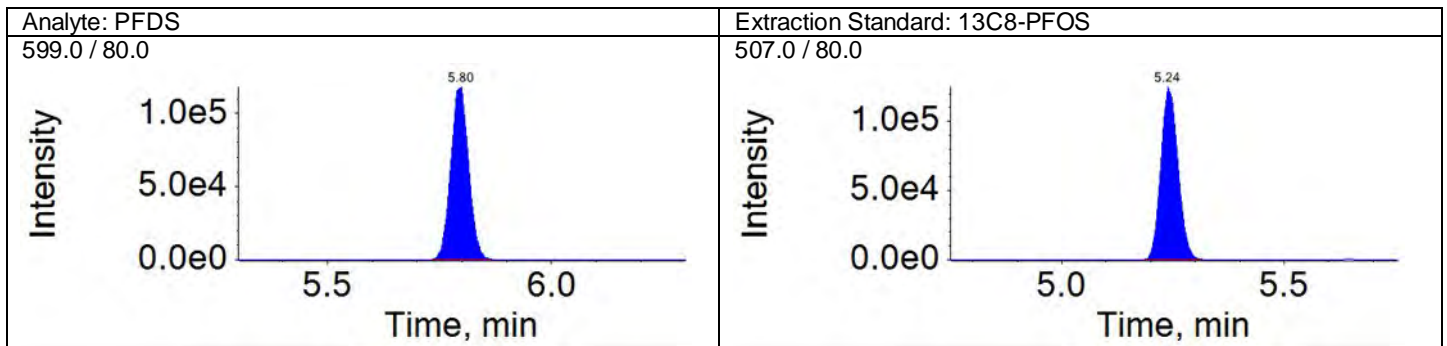
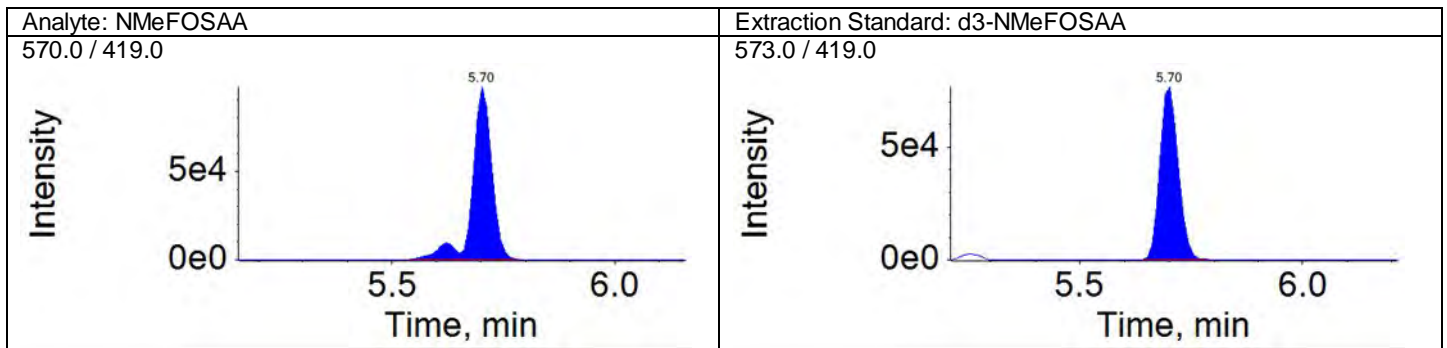
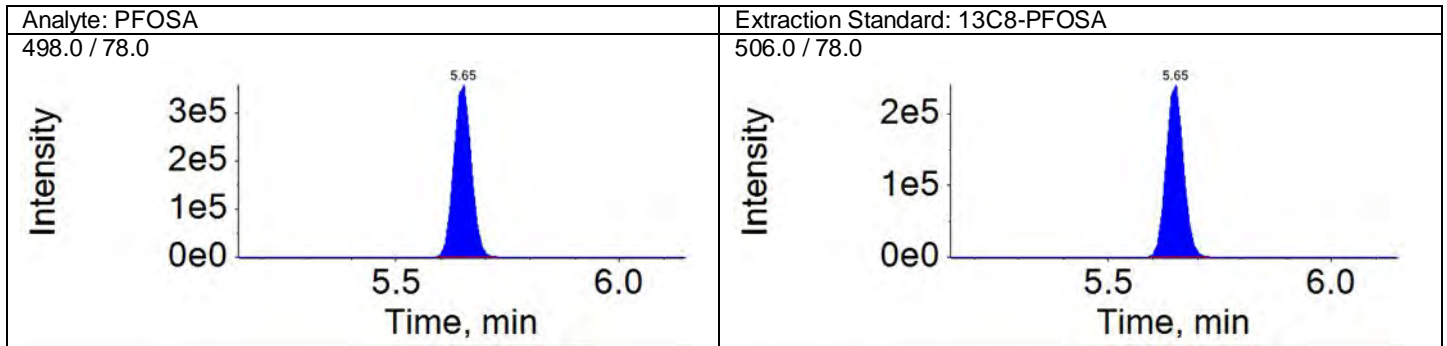
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ICAL Name: 18DEC18DCAL  
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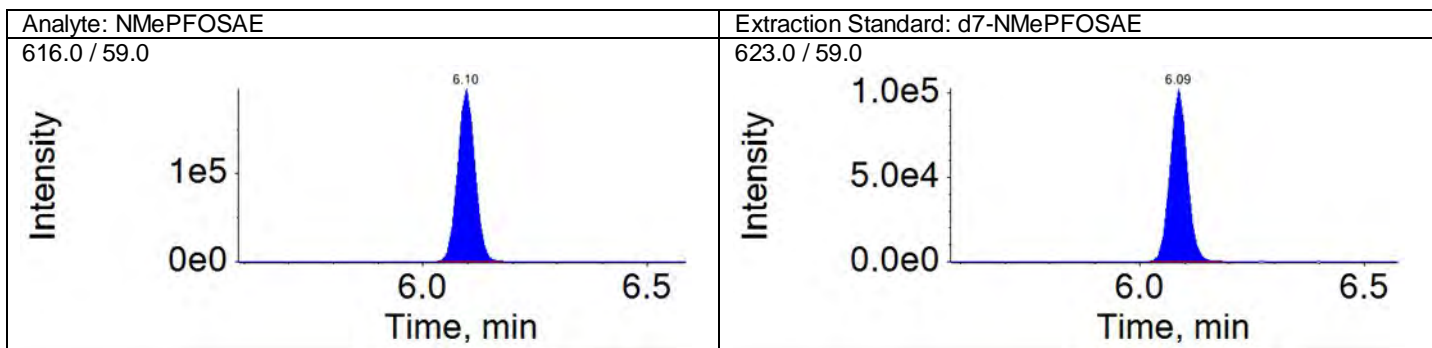
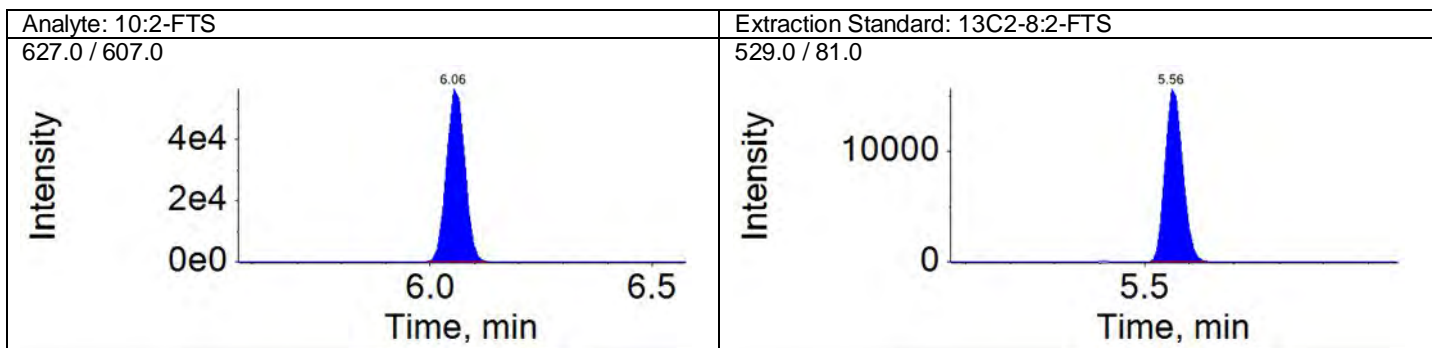
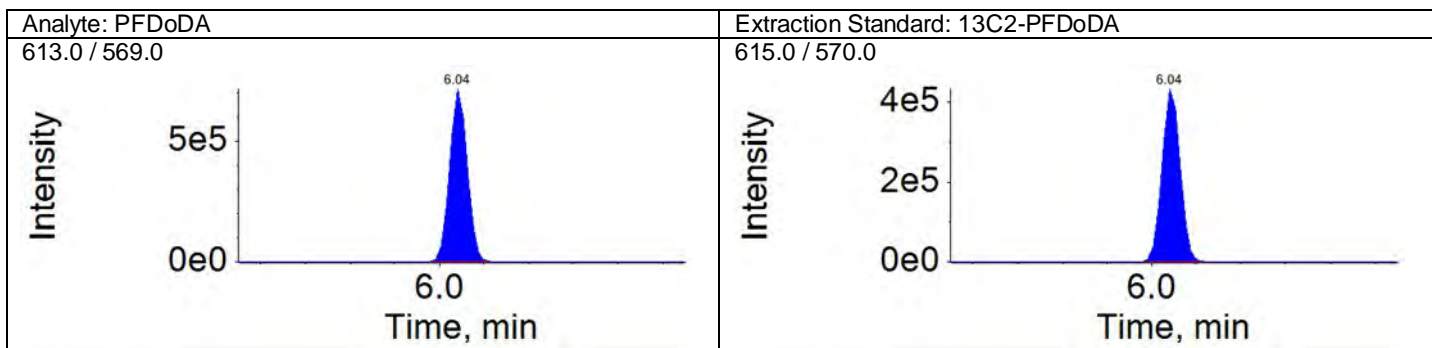
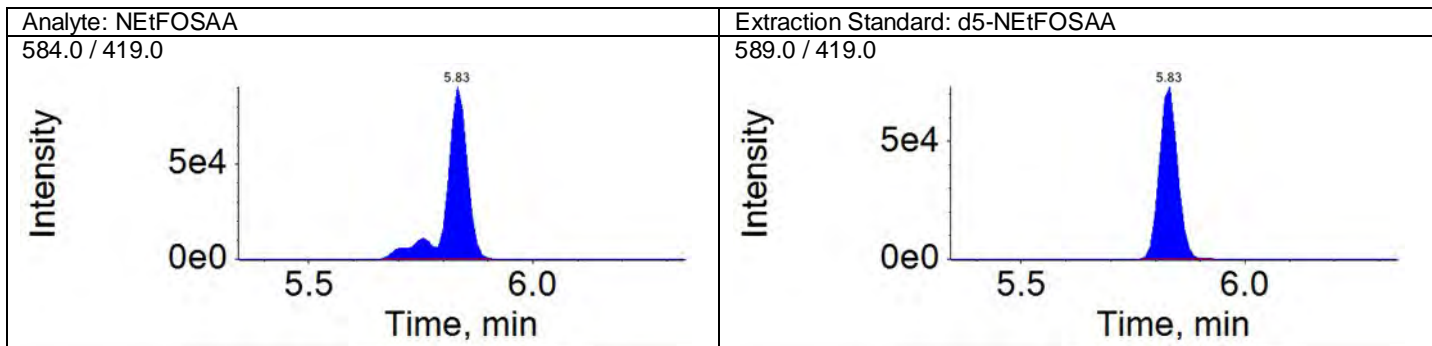
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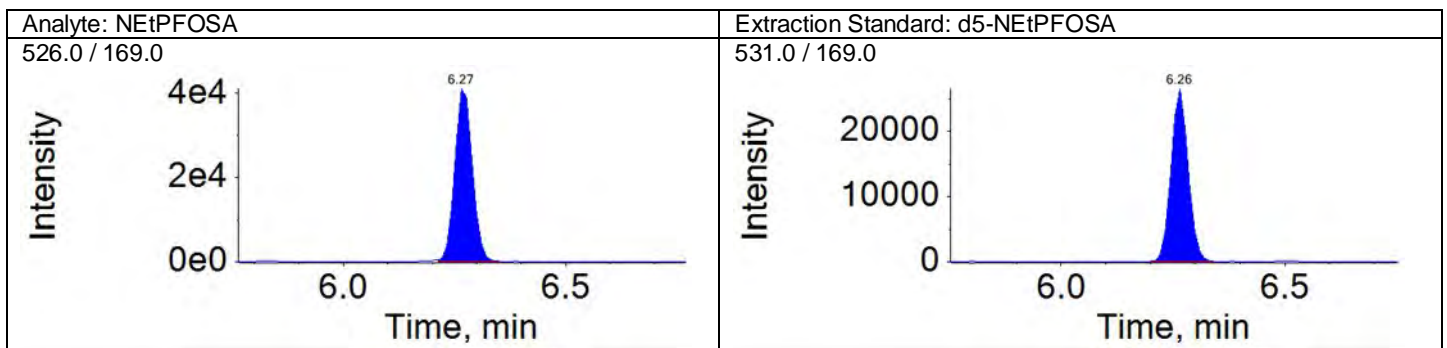
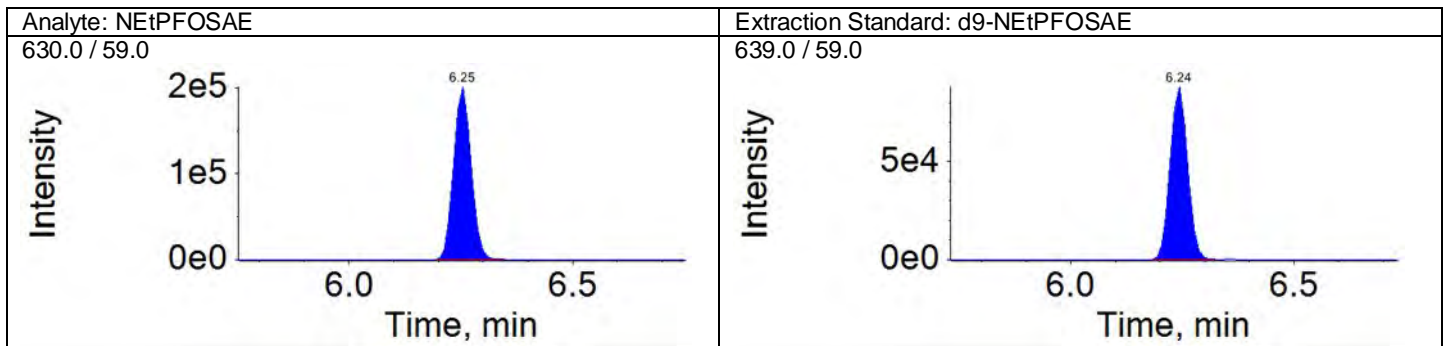
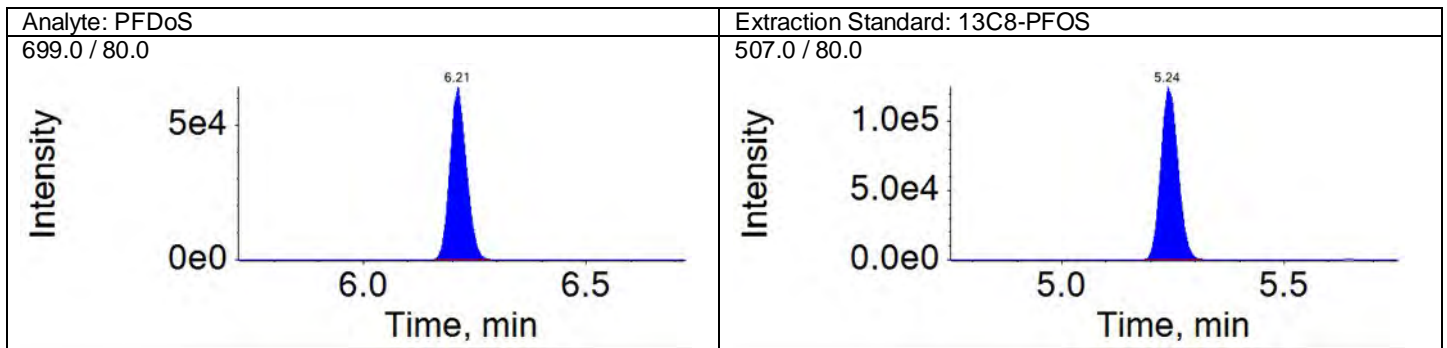
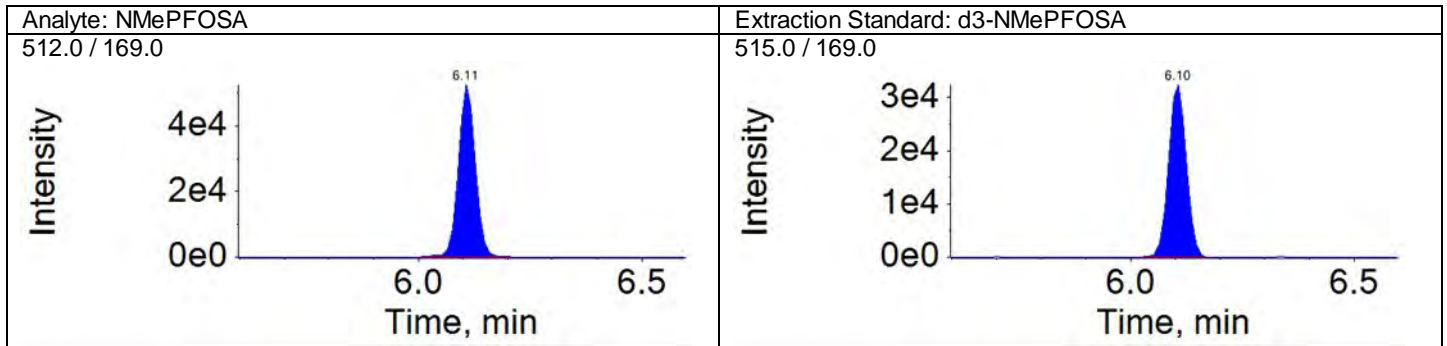
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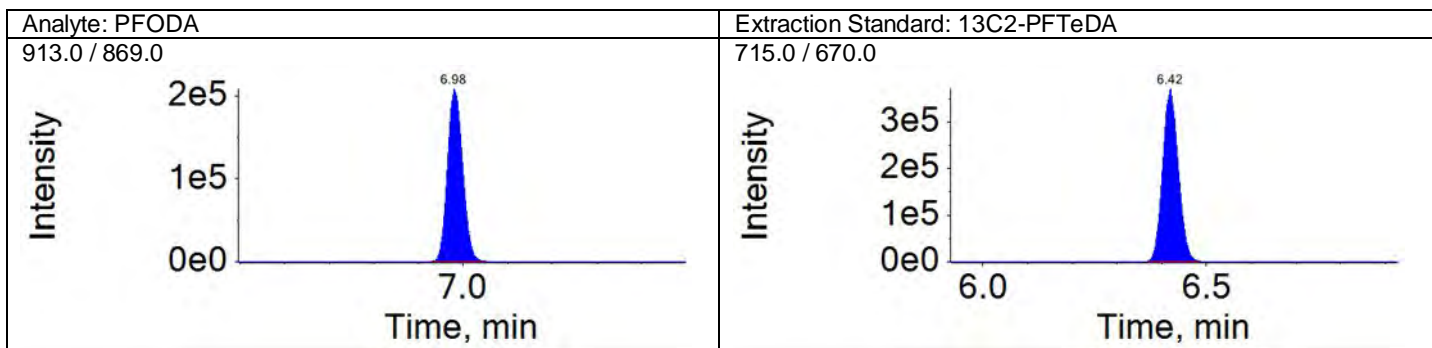
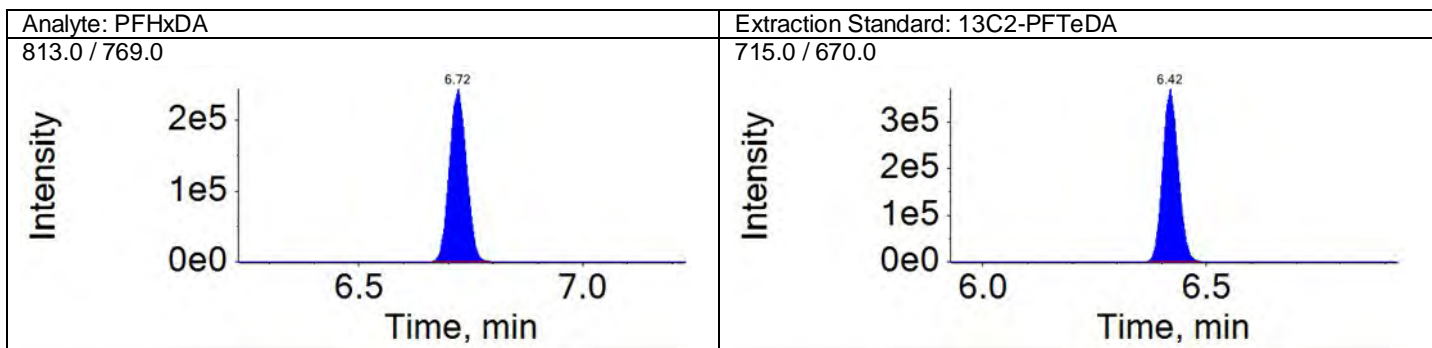
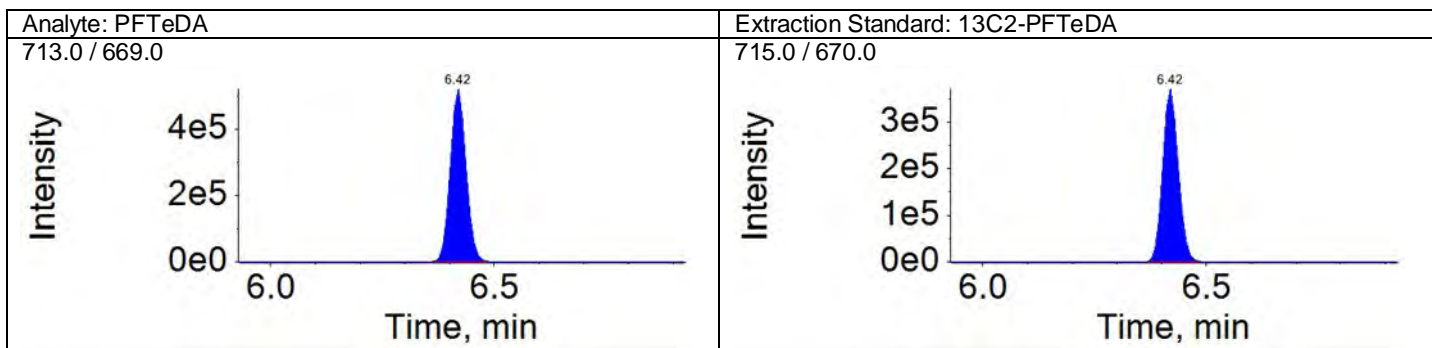
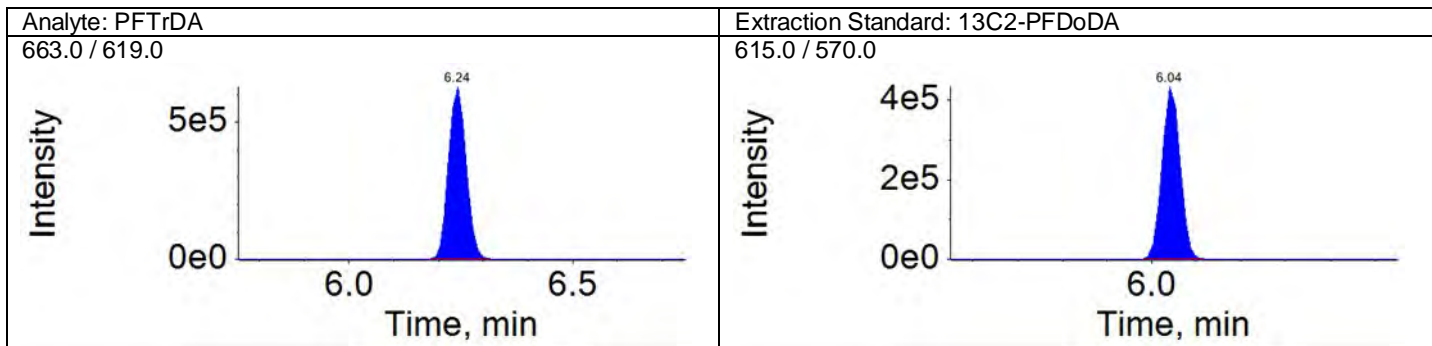
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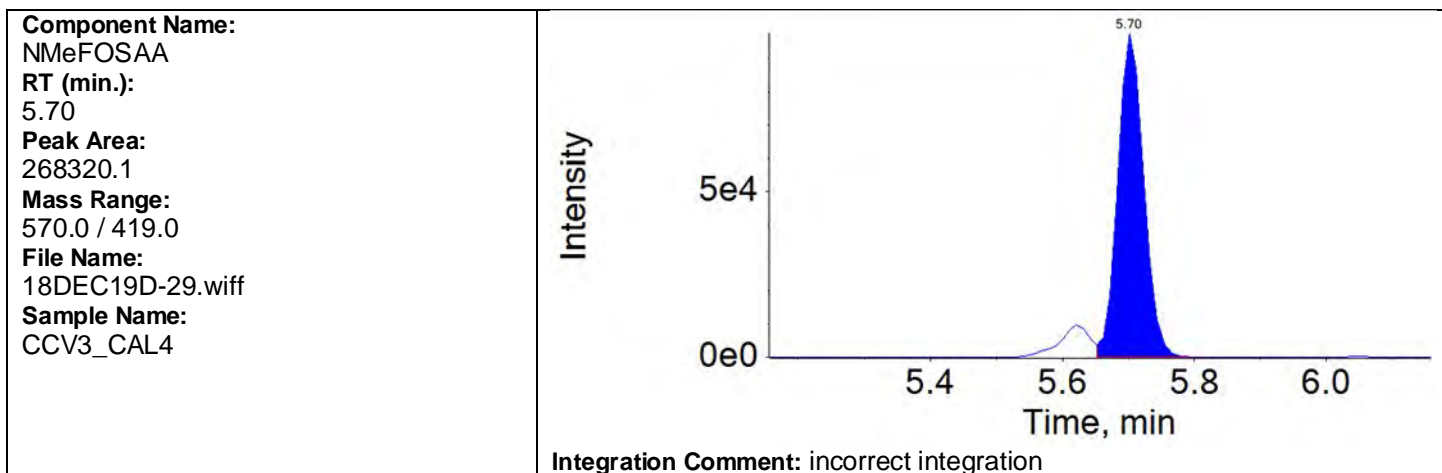
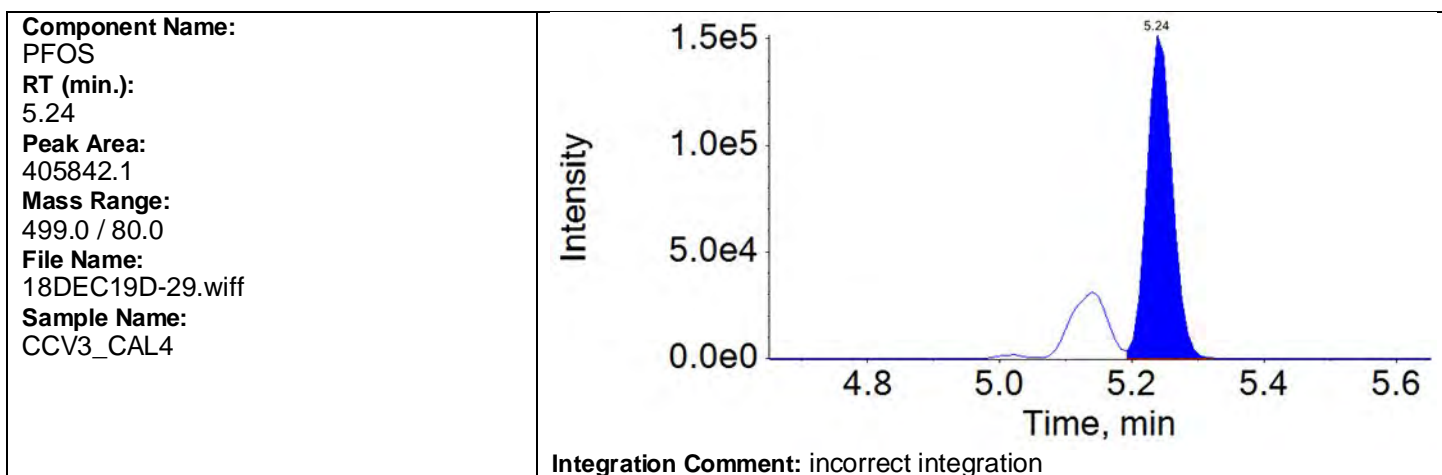
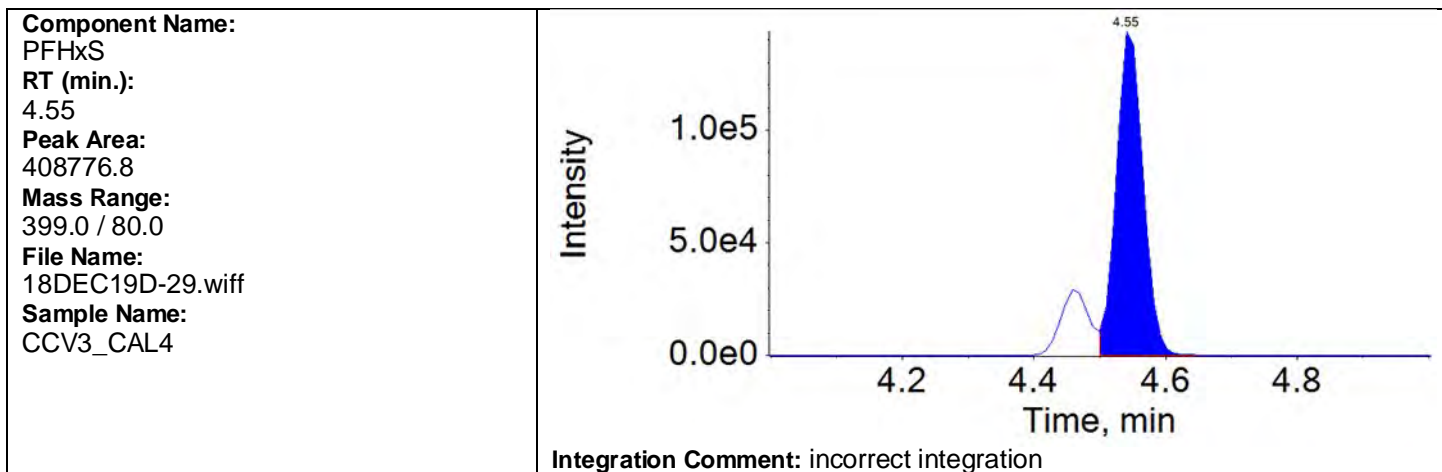
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Result Table: 18DEC19DCCV1-5 12/19/2018 7:24:29 PM  
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Results Table Name: 18DEC19DCCV1-5  
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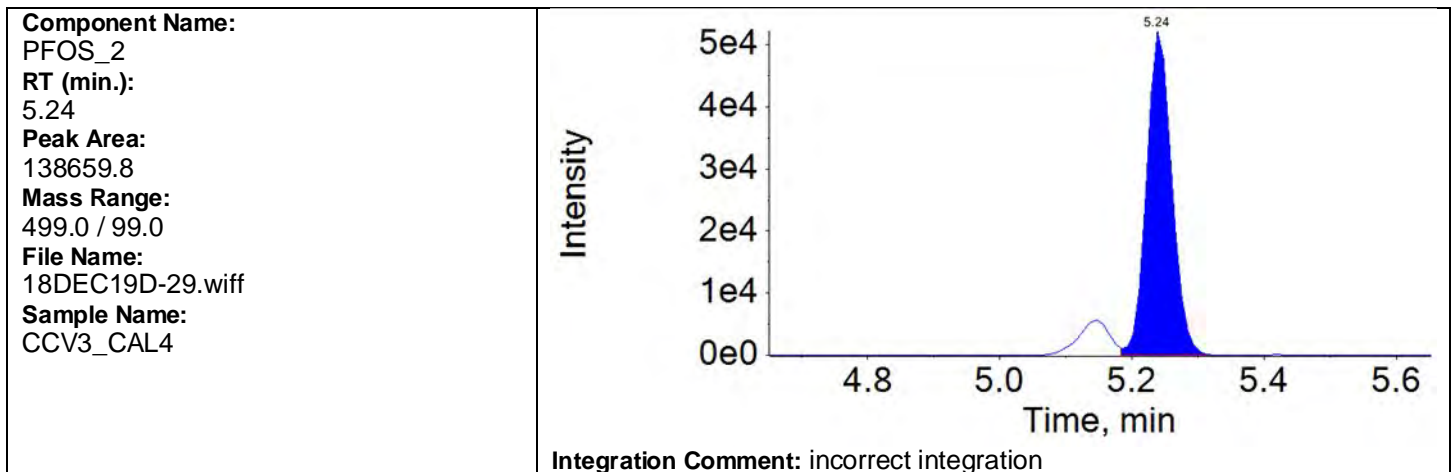
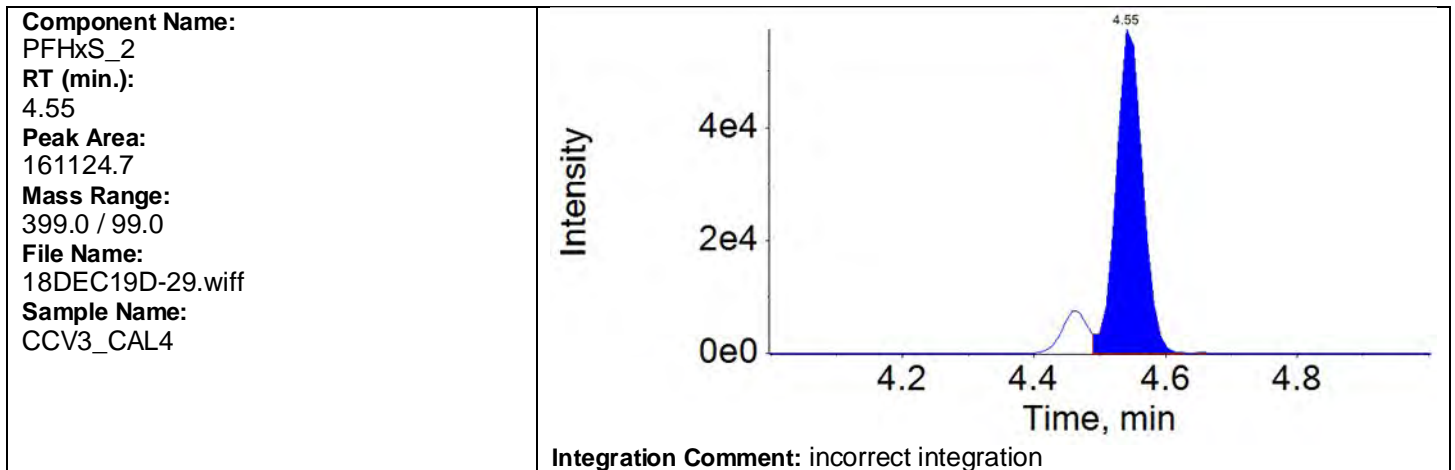
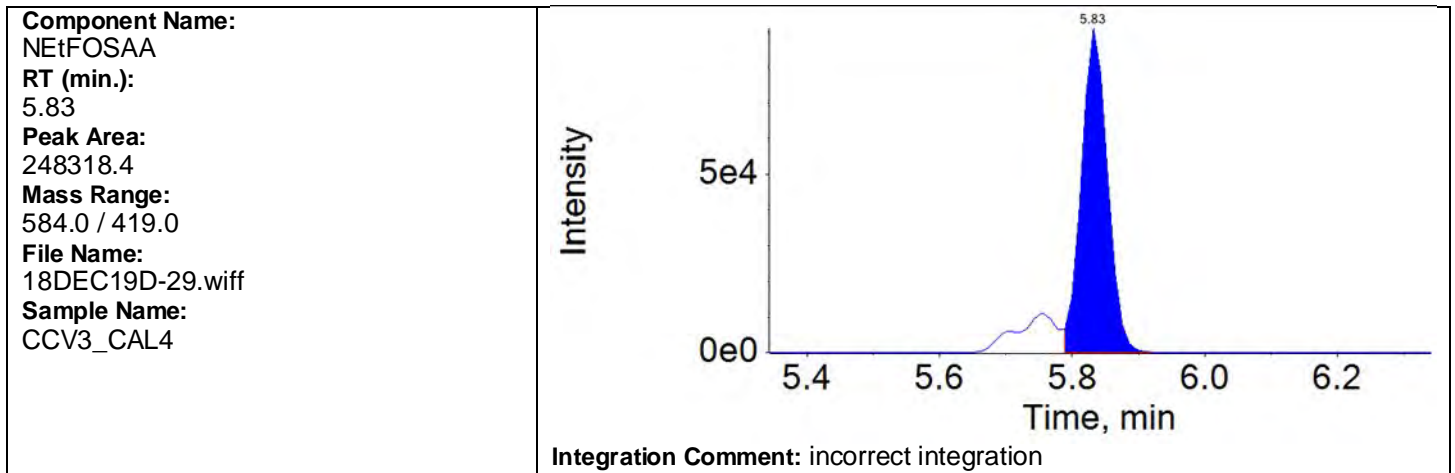
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Results Table Name: 18DEC19DCCV1-5  
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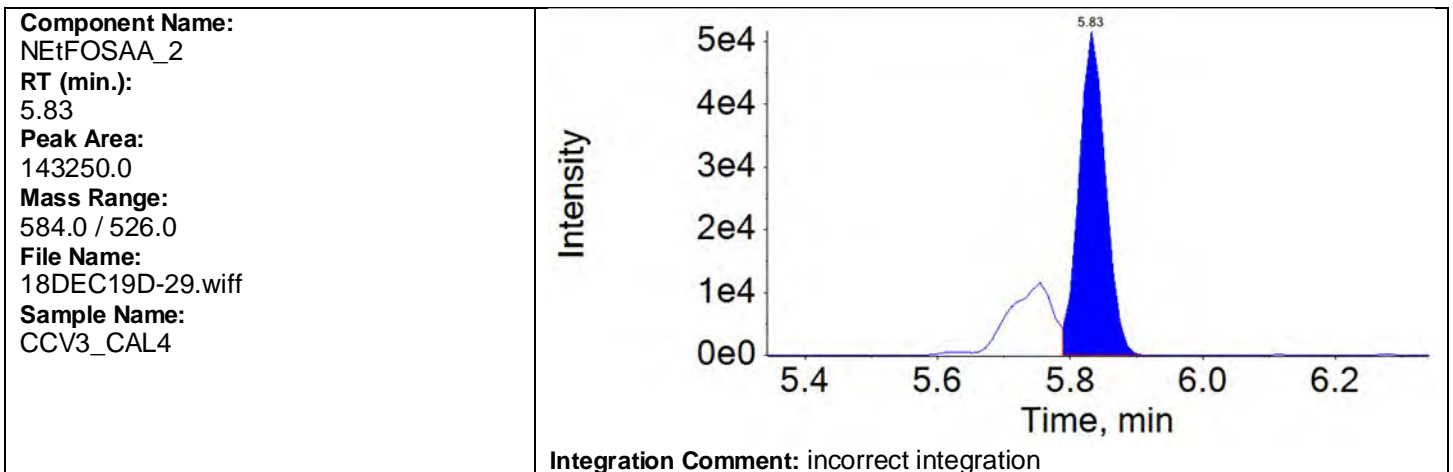
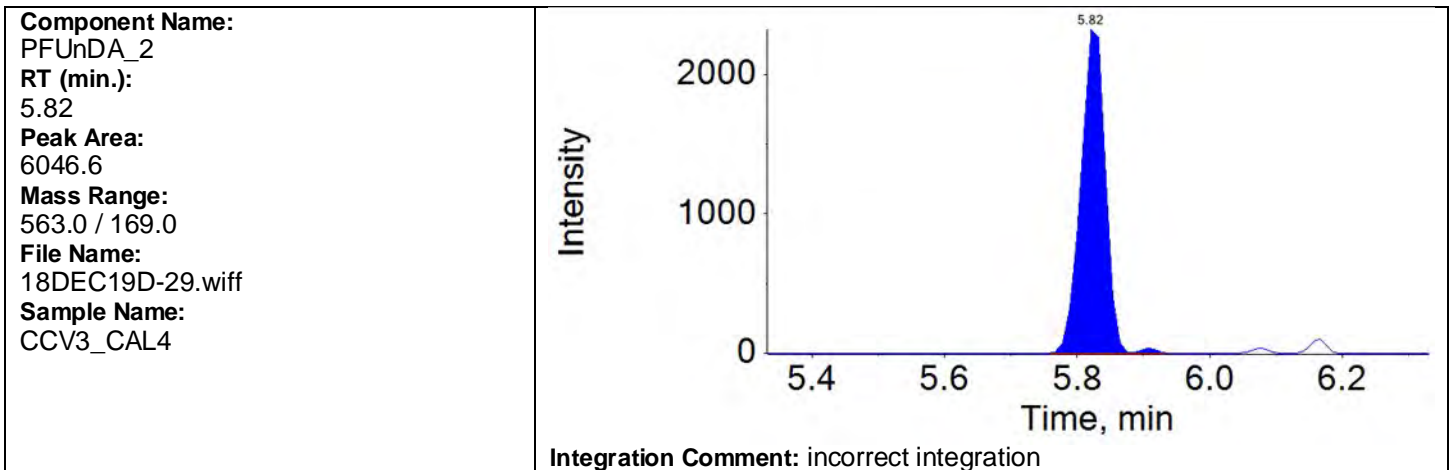
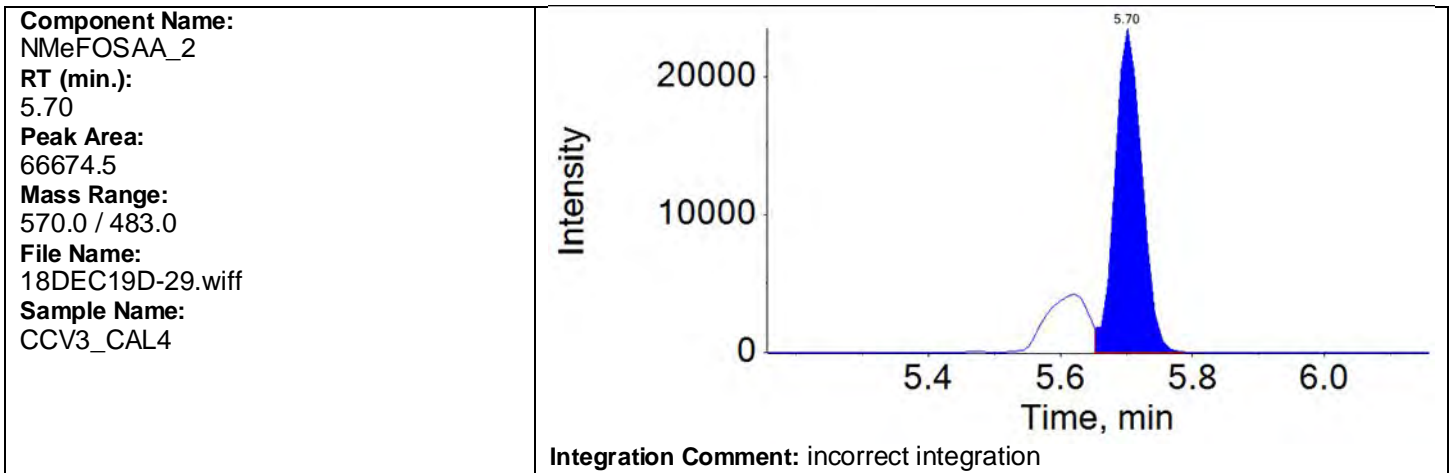
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Results Table Date: 12/19/2018 7:24:29 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



**Results Table Name:** 18DEC19DCCV1-5  
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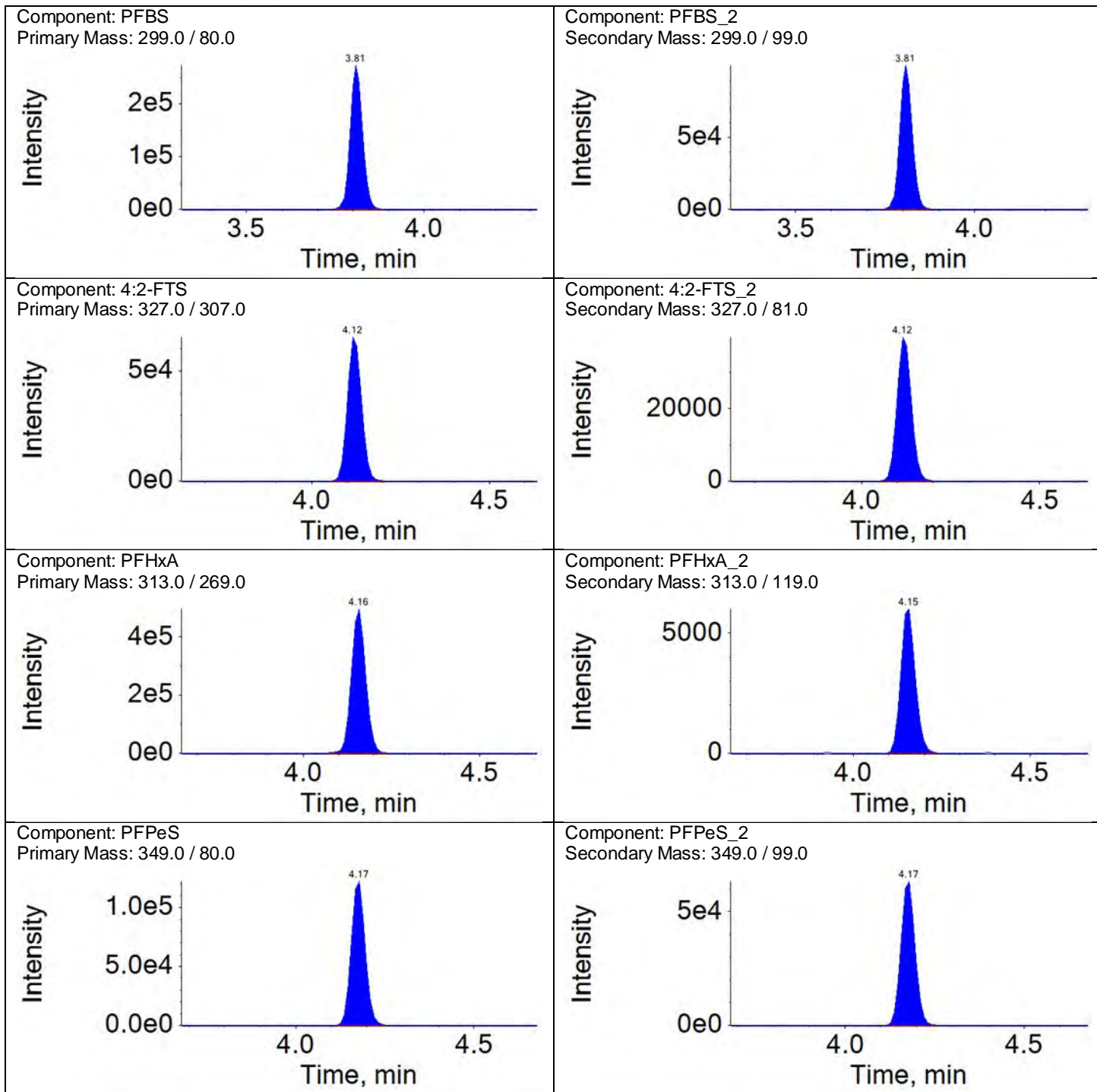
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By MCD at 7:31 pm, 12/19/18

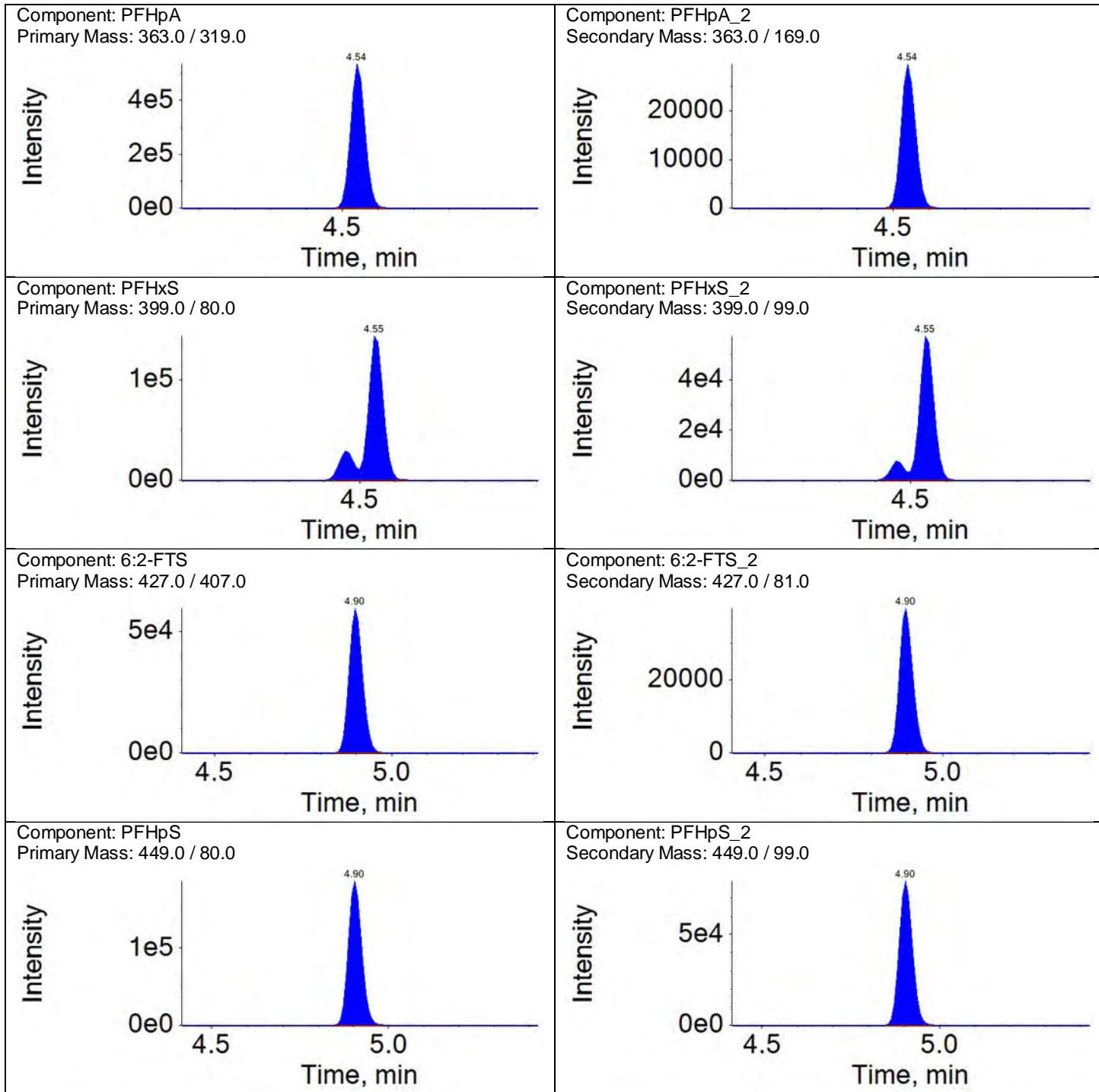
**REVIEWED**  
By HMK at 12:23 pm, 12/21/18

Ion Ratio Report

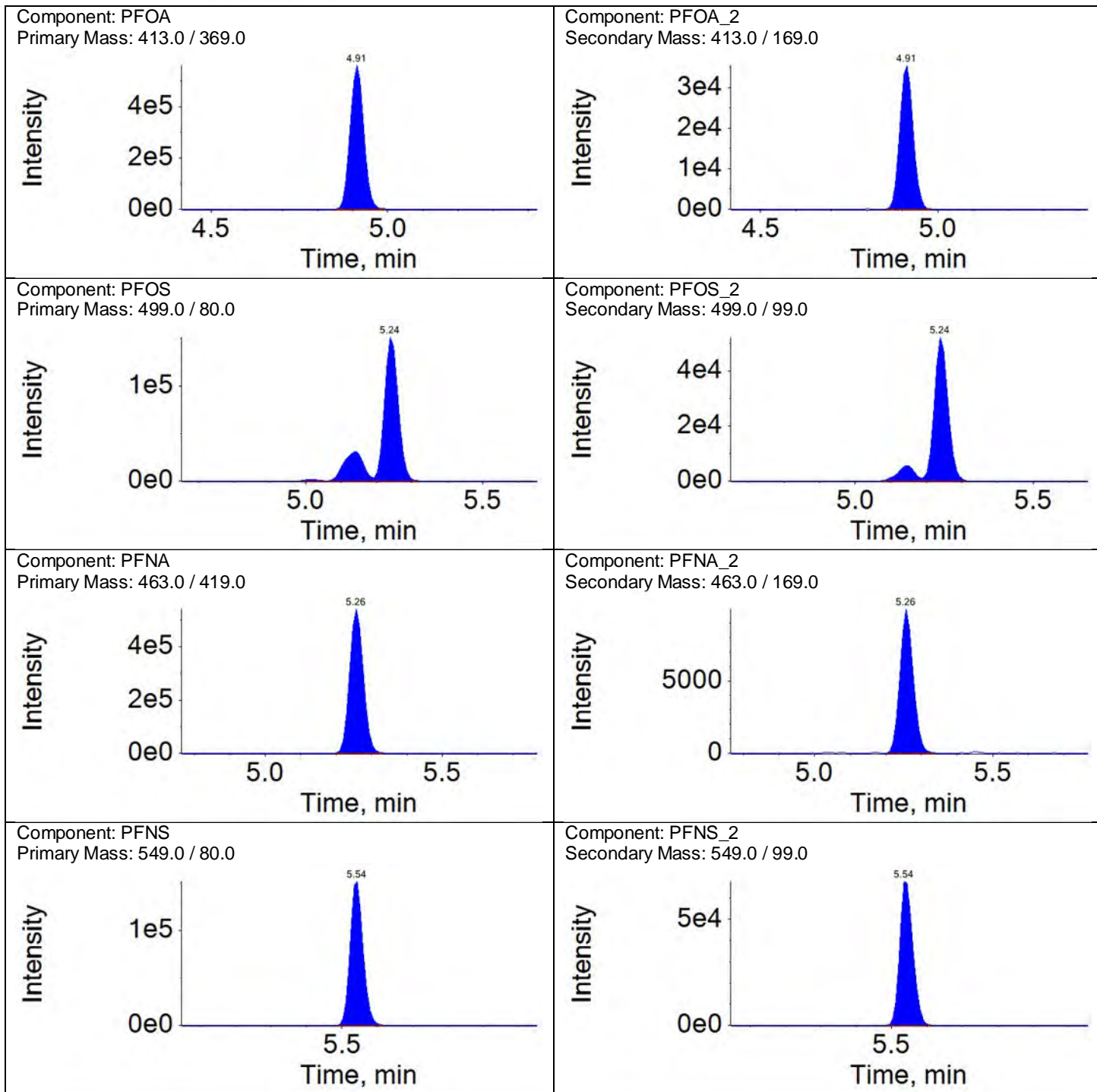
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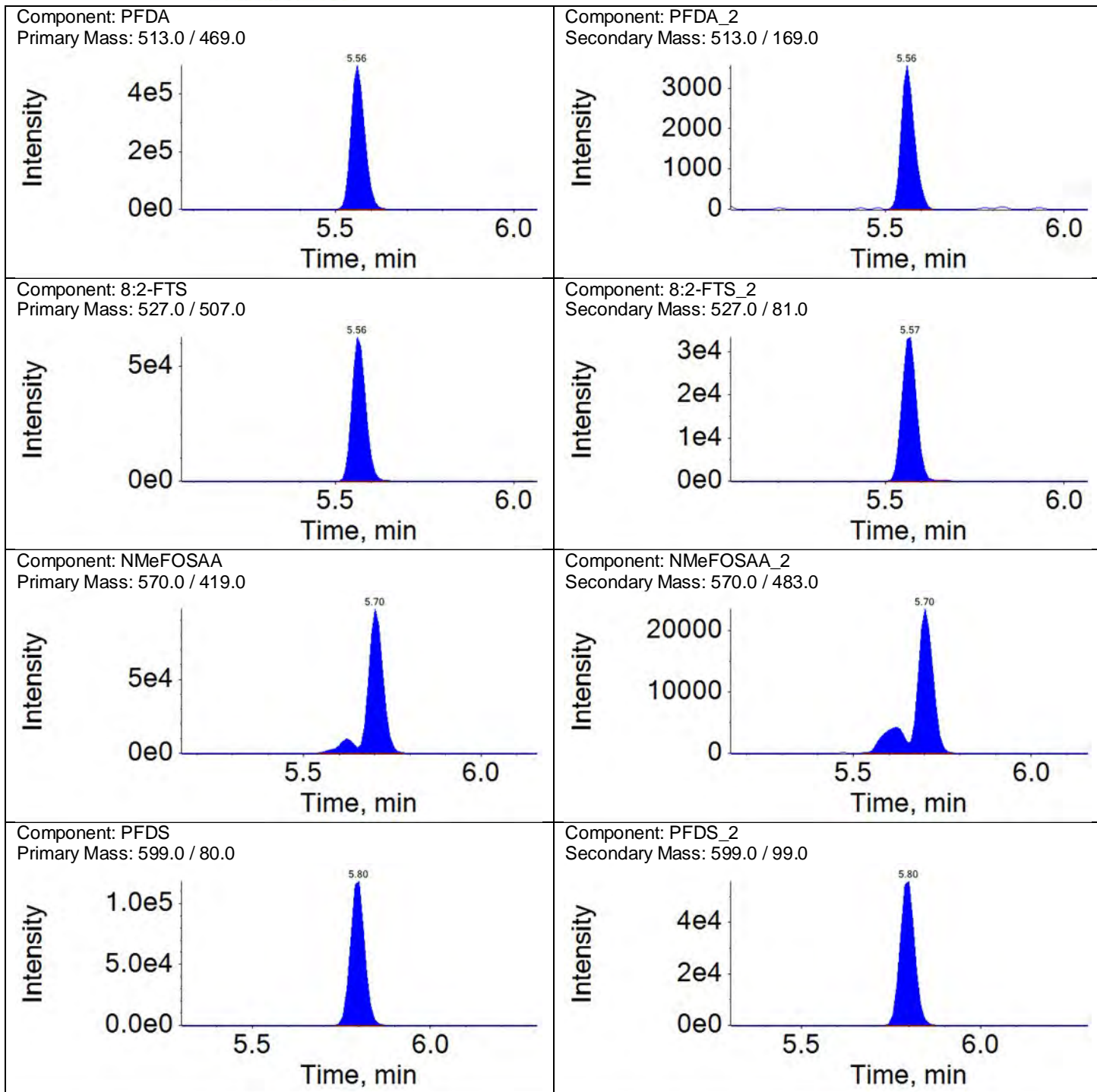
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PFBS_2	3.81	1.00	241667.3	A	N/A	0.3699	1	50	
4:2-FTS	4.12	1.00	180828.4	A	N/A	0.6177			
4:2-FTS_2	4.12	1.00	111705.2	A	N/A	0.6177	2	50	
PFHxA	4.16	1.00	1396819.3	A	N/A	0.0123			
PFHxA_2	4.15	1.00	17135.9	A	N/A	0.0123	12	50	
PFPeS	4.17	1.10	332457.4	A	N/A	0.5205			
PFPeS_2	4.17	1.10	173059.0	A	N/A	0.5205	-1	50	
PFHpA	4.54	1.00	1502687.8	A	N/A	0.0554			
PFHpA_2	4.54	1.00	83270.2	A	N/A	0.0554	6	50	
PFHxS	4.55	1.00	496304.8	M	N/A	0.3644			
PFHxS_2	4.55	1.00	180843.8	M	N/A	0.3644	10	50	
6:2-FTS	4.90	1.00	158075.4	A	N/A	0.6580			
6:2-FTS_2	4.90	1.00	104019.0	A	N/A	0.6580	4	50	
PFHpS	4.90	1.08	490917.1	A	N/A	0.4223			
PFHpS_2	4.90	1.08	207308.1	A	N/A	0.4223	2	50	
PFOA	4.91	1.00	1504971.5	A	N/A	0.0617			
PFOA_2	4.91	1.00	92859.0	A	N/A	0.0617	9	50	
PFOS	5.24	1.00	531547.6	M	N/A	0.2959			
PFOS_2	5.24	1.00	157265.7	M	N/A	0.2959	0	50	
PFNA	5.26	1.00	1451121.1	A	N/A	0.0178			
PFNA_2	5.26	1.00	25795.5	A	N/A	0.0178	-16	50	
PFNS	5.54	1.06	385325.4	A	N/A	0.4543			
PFNS_2	5.54	1.06	175038.8	A	N/A	0.4543	-1	50	
PFDA	5.56	1.00	1318623.9	A	N/A	0.0069			
PFDA_2	5.56	1.00	9102.4	A	N/A	0.0069	16	50	
8:2-FTS	5.56	1.00	167074.7	A	N/A	0.5669			
8:2-FTS_2	5.57	1.00	94718.0	A	N/A	0.5669	-3	50	
NMeFOSAA	5.70	1.00	298989.3	M	N/A	0.2842			
NMeFOSAA_2	5.70	1.00	84971.9	M	N/A	0.2842	9	50	
PFDS	5.80	1.11	326186.1	A	N/A	0.4848			
PFDS_2	5.80	1.11	158141.7	A	N/A	0.4848	-2	50	
PFAUnDA	5.82	1.00	1450270.9	A	N/A	0.0041			
PFAUnDA_2	5.82	1.00	5983.7	M	N/A	0.0041	30	50	
NEtFOSAA	5.83	1.00	295766.0	M	N/A	0.6600			
NEtFOSAA_2	5.83	1.00	195212.6	M	N/A	0.6600	-4	50	
PFAoDA	6.04	1.00	1954227.8	A	N/A	0.0114			
PFAoDA_2	6.04	1.00	22182.0	A	N/A	0.0114	-9	50	
10:2-FTS	6.06	1.09	162345.3	A	N/A	0.7194			
10:2-FTS_2	6.06	1.09	116786.1	A	N/A	0.7194	3	50	
PFArDA	6.24	1.03	1717721.1	A	N/A	0.0093			
PFArDA_2	6.24	1.03	16020.0	A	N/A	0.0093	6	50	
PFAeDA	6.42	1.00	1272846.9	A	N/A	0.0061			
PFAeDA_2	6.42	1.00	7822.4	A	N/A	0.0061	13	50	
PFHxDA	6.72	1.05	645103.5	A	N/A	0.0618			
PFHxDA_2	6.72	1.05	39869.3	A	N/A	0.0618	-6	50	
PFOA	6.98	1.09	490544.0	A	N/A	0.0255			
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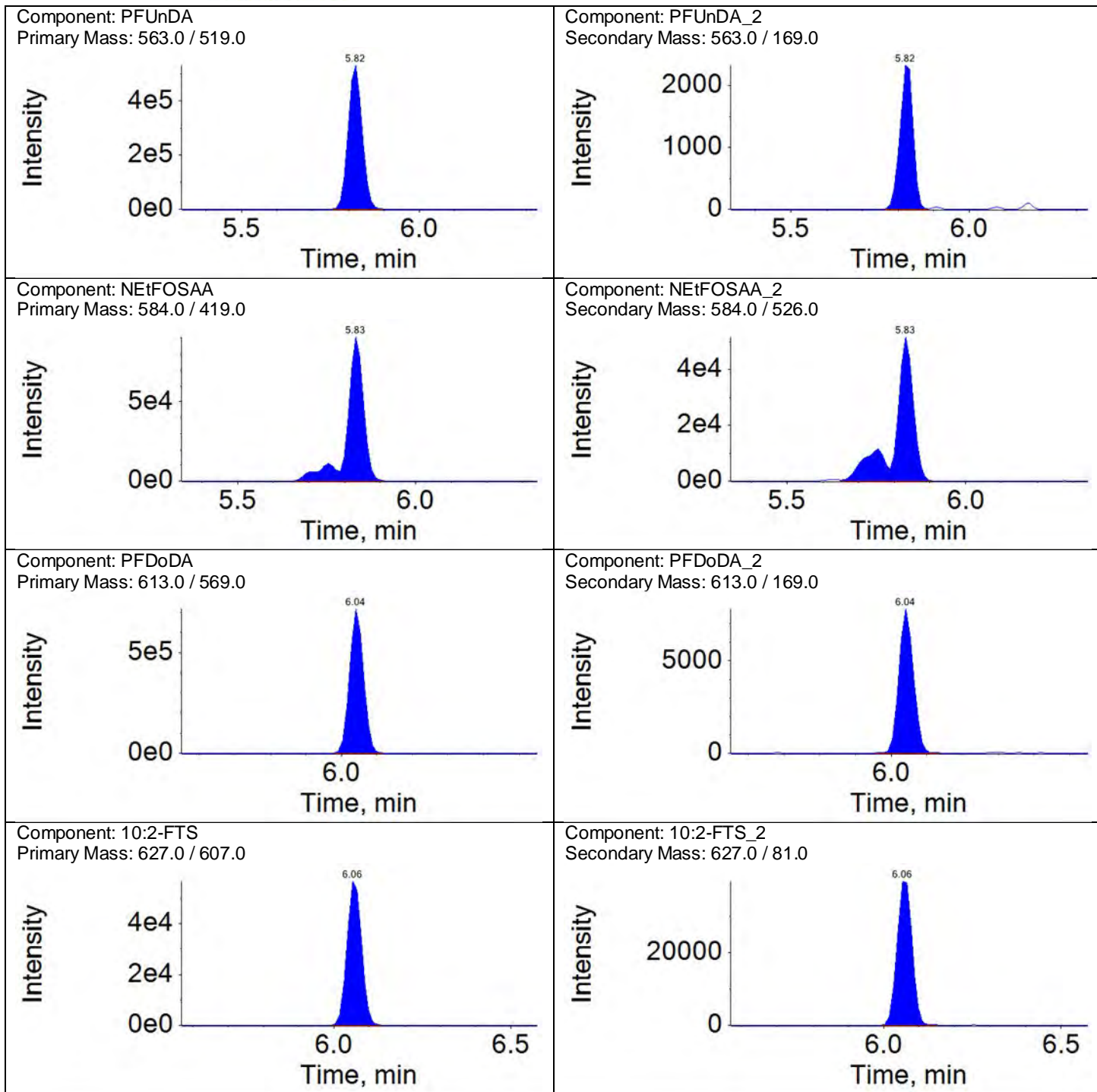


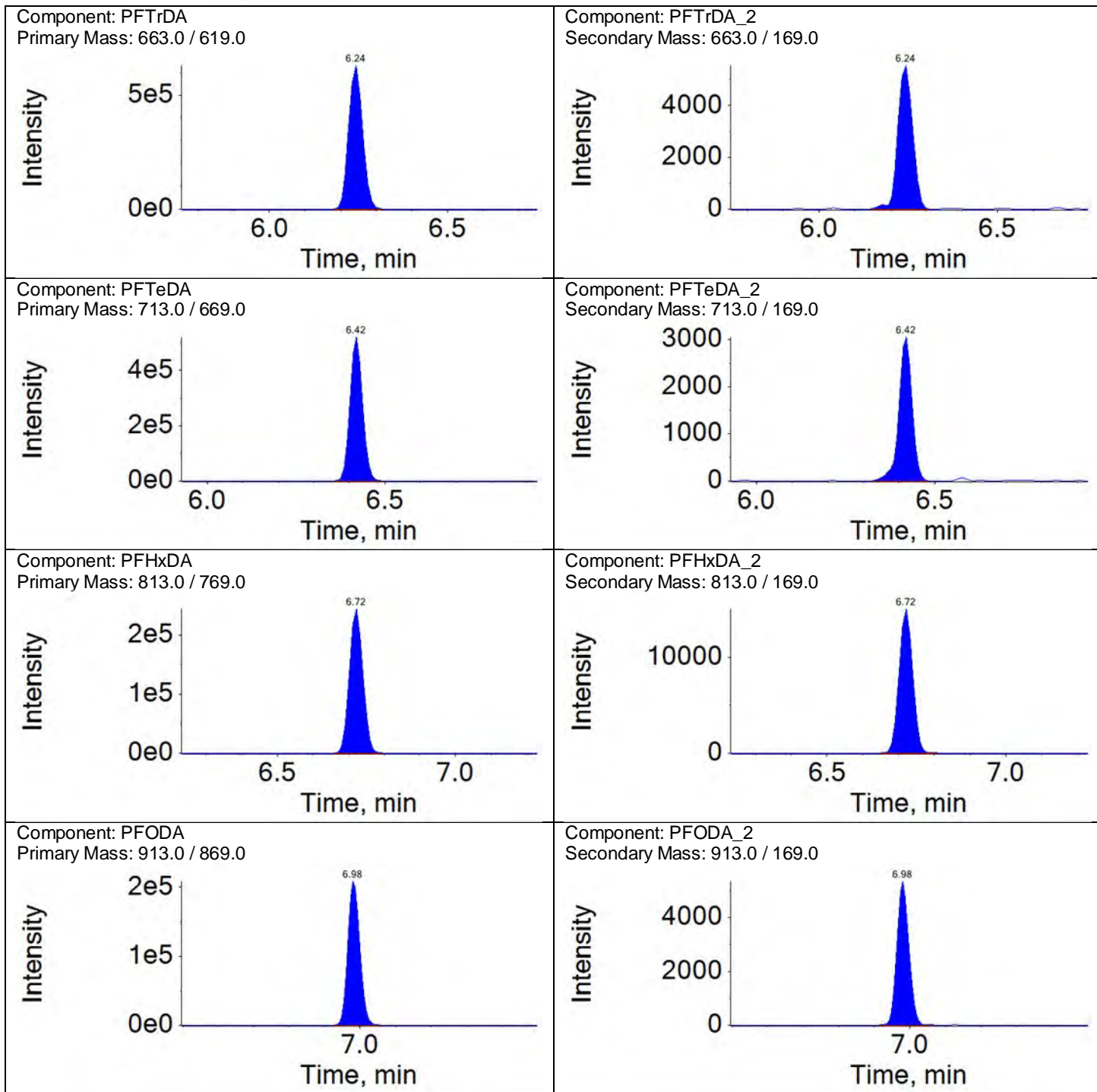












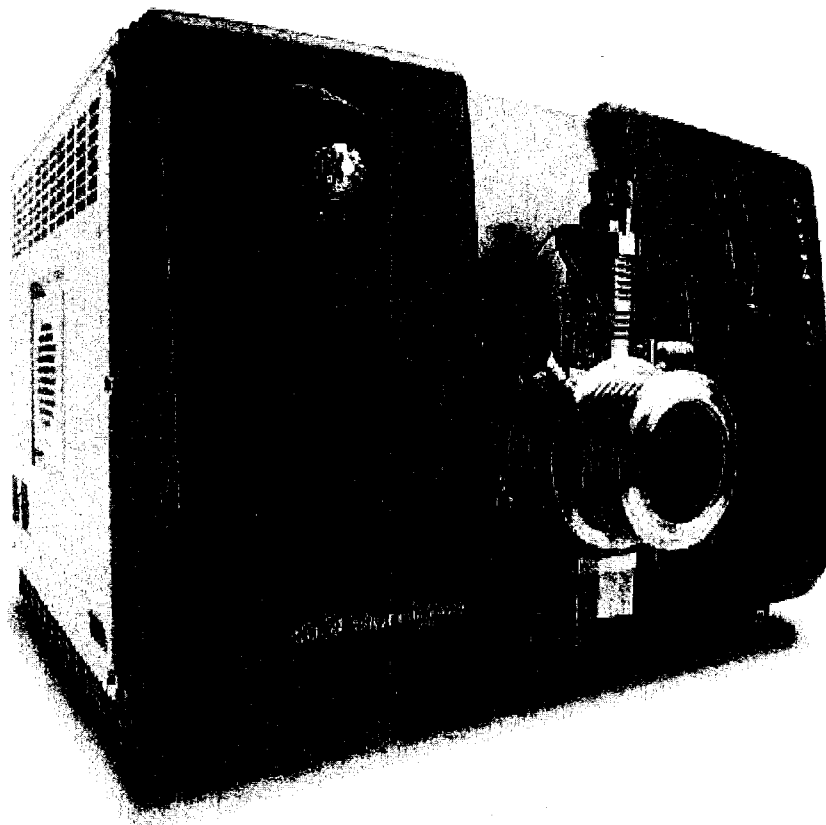
LM 27631



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# Triple Quad™ 4500 and Triple Quad™ 4500MD Systems

Installation Checklist and Data Log





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# Installation Preparation

# 1

**Note:** For regulatory and safety information for the mass spectrometer, refer to the *System User Guide*.

**Note:** Before starting the installation, verify that the customer has completed the checklist in the *Site Planning Guide*.

## Customer Information

Organization	Eurofins		
Address	2425 New Holland Pike Lancaster, PA 17601		
Telephone	717-556-7231	Fax	N/A
Contact name	Charles Neslund		
E-mail address	CharlesNeslund@eurofinsUS.com		

## System Information

Table 1-1 Mass Spectrometer Information

Mass spectrometer location	A-223
Mass Spectrometer model name	4500QQQ
Mass spectrometer serial number	EB220251804
Firmware version	PL1801
Roughing pump serial number	31001702300

**Table 1-2 Acquisition Computer Information**

Model	XE2	Service tag	5L3QLN2
OS version	Win7 64bit	OS service pack	SP1
Analyst <sup>®</sup> or Analyst <sup>®</sup> MD software version	1.7.0	Analyst <sup>®</sup> or Analyst <sup>®</sup> MD software hotfix	HF2
Cliquid <sup>®</sup> MD software version (4500MD systems only)	N/A		
MultiQuant <sup>™</sup> or MultiQuant <sup>™</sup> MD software version	3.0.3		

**Table 1-3 Ion Source Information**

Component	Serial Number
Turbo V <sup>™</sup> ion source <ul style="list-style-type: none"> <li>TurbolonSpray<sup>®</sup> probe</li> <li>APCI probe (if applicable)</li> </ul>	2001171213
	20380130321
	20252130221
NanoSpray <sup>®</sup> ion source (if applicable, non-MD systems only)	N/A
DuoSpray <sup>™</sup> ion source (if applicable, non-MD systems only) <ul style="list-style-type: none"> <li>TurbolonSpray<sup>®</sup> probe</li> <li>APCI probe (if applicable)</li> </ul>	N/A
	N/A
	N/A
Other/Third-party ion source (if applicable, non-MD systems only)	N/A

**Table 1-4 System Components and Peripherals**

Component	Serial Number
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

# Installation Checklist


The Field Service Employee (FSE) must complete this checklist to make sure that every step in the installation procedure is completed. The checklist also contains an installation acceptance form for the customer representative and the FSE to sign when the work is complete. Refer to Signoff on page 21.

## Unpacking and Inspection

Task	Complete	N/A
Inspect the packaging: <ul style="list-style-type: none"> <li>Inspect all tip and shock indicators for signs of excessive shock or tilting.</li> <li>Inspect the boxes for exterior damage.</li> </ul>	<input checked="" type="checkbox"/>	
Unpack and inspect all of the components.	<input checked="" type="checkbox"/>	
(Optional) Unpack, inspect, and install the bench. <ol style="list-style-type: none"> <li>Inspect the packaging for exterior damage.</li> <li>Unpack the bench and then inspect for damage.</li> <li>Install the bench.</li> </ol>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



## Hardware Installation

Task	Complete	N/A
Install the mass spectrometer on the bench.	<input checked="" type="checkbox"/>	
Affix the name plate on the front cover of the mass spectrometer (only applies to mass spectrometer with the prefix 'C' in the serial number).	<input checked="" type="checkbox"/>	
Verify that the mains supply outlets for the roughing pump and the mass spectrometer deliver stable output voltages that meet the specified electrical requirements.	<input checked="" type="checkbox"/>	
(Optional) Install the SCIEX-supplied UPS.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Install the roughing pump, connecting it to the mass spectrometer and the vent. Make sure that the roughing pump contains sufficient oil.	<input checked="" type="checkbox"/>	
(Optional) Install the SCIEX-supplied gas generator.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Connect the gas lines.	<input checked="" type="checkbox"/>	
Install and connect the drain bottle.	<input checked="" type="checkbox"/>	
Install the Turbo V™ ion source. Refer to the <i>Turbo V™ Ion Source Operator Guide</i> . For 4500MD systems, refer to the <i>System User Guide</i> . For other systems, refer to the <i>Turbo V™ Ion Source Operator Guide</i> .	<input checked="" type="checkbox"/>	
Adjust the stopper on the integrated syringe pump.	<input checked="" type="checkbox"/>	
<div style="border: 1px solid black; padding: 5px;">  <p><b>WARNING! Electrical Shock Hazard. Make sure that the system can be disconnected from the mains supply outlet in an emergency. Do not block the mains supply outlet.</b></p> </div>	<input checked="" type="checkbox"/>	
Plug in and turn on the roughing pump, and then plug in and turn on the mass spectrometer.	<input checked="" type="checkbox"/>	

Installation Checklist

## Acquisition Computer Installation



Task	Complete	N/A
Install the computer and monitor on the computer table.	<input checked="" type="checkbox"/>	
Connect the Ethernet cable from the computer to the mass spectrometer.	<input checked="" type="checkbox"/>	
Turn on the computer.	<input checked="" type="checkbox"/>	
Configure IP addresses for communication with the mass spectrometer.	<input checked="" type="checkbox"/>	
(Optional) Connect the computer to the customer network.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Install the Analyst <sup>®</sup> or Analyst <sup>®</sup> MD software.	<input checked="" type="checkbox"/>	
Install any applicable Analyst <sup>®</sup> or Analyst <sup>®</sup> MD software hotfixes.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(4500MD systems) Install the Cliquid <sup>®</sup> MD software.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Install the MultiQuant <sup>™</sup> or MultiQuant <sup>™</sup> MD software.	<input checked="" type="checkbox"/>	
(If applicable, not for use with 4500MD systems) Install the StatusScope <sup>®</sup> agent on the acquisition computer, and then perform these tasks: <ul style="list-style-type: none"> <li>• Discuss warranty coverage for the StatusScope<sup>®</sup> software.</li> <li>• If the customer wants the StatusScope<sup>®</sup> software installed, then complete the StatusScope<sup>®</sup> user access form.</li> <li>• If the customer does not want the StatusScope<sup>®</sup> software installed, then remove the StatusScope<sup>®</sup> software.</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(Optional) Install and license any add-on software purchased and shipped with the system. <ul style="list-style-type: none"> <li>• (Non-MD systems) If applicable, Cliquid<sup>®</sup> software has been installed.</li> <li>• Other Analyst<sup>®</sup> or Analyst<sup>®</sup> MD compatible add-on software shipped with the system has been installed.</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Triple Quad<sup>™</sup> 4500 and Triple Quad<sup>™</sup> 4500MD  
Systems  
8 of 22

Installation Checklist and Data Log




GEN-IDV-06-1212-C | D5082309 C

Installation Checklist





Task	Complete	N/A
Verify and update the firmware and configuration files.		
Install the factory files.		

## Initialization and Verification




**Note:** Perform these tasks after the mass spectrometer reaches operating vacuum.

Task	Complete	N/A
Perform the high pressure source and blocked exhaust flow tests.		
Measure and tune the Q1, Q3, and QJet® coil boxes.		
Perform all installation tests, print out the test results, and complete the Data Log.		

## Wrap-up

Task	Complete	N/A
Delete unnecessary files from the computers.		
Back up the computer file systems, including the Analyst Data folder.		
Create a computer image using the image utility.		
Apply the biohazard labels included in the install kit. Apply one label to the ion source, and the other to the waste bottle. Find a vacant space that is clearly visible to affix the labels.		

**Installation Checklist**

Task	Complete	N/A
Complete all of the sections in the <i>Customer Familiarization Checklist</i> . Make a copy of the completed checklist and then give the original to the customer.		
Inform the customer about the continuous improvement telephone surveys, and then advise the customer that a third party will call to obtain feedback.		
Complete the <i>Installation Checklist and Data Log</i> : <ul style="list-style-type: none"> <li>• Obtain customer acceptance.</li> <li>• Make a copy of the form and the test results.</li> <li>• Provide the customer with the originals.</li> <li>• (For MD systems only) E-mail this completed document and the test result files to servicedata@scitex.com.</li> </ul>		

# Data Log

Use this log to record the test data obtained during performance of the system verification tests during installation.


**Note:** Perform all procedures with the Turbo V™ ion source, unless otherwise specified.

<b>Pre-test Pressure Verification is Complete</b>		
Perform this test with the Analyst® or Analyst® MD software.		
Test	Specification	Result
Vacuum chamber pressure with CAD gas off	$0.4 \times 10^{-5} \text{ torr} \leq P_{CAD\ 0} \leq 1.1 \times 10^{-5} \text{ torr}$	<del>0.77 x 10e-5 torr</del>
Vacuum chamber pressure with CAD gas set to Full	$1.8 \times 10^{-5} \text{ torr} \leq (P_{CAD\ 12} - P_{CAD\ 0}) \leq 2.8 \times 10^{-5} \text{ torr}$	<del>2.11 x 10e-5 torr</del>




Data Log

<p><b>Q1 Positive PPGs Test is Complete: Intensity and Peak Width (Scan Rate=10 Da/s, Cycles=10)</b></p>				
<ul style="list-style-type: none"> <li>• Test solution: POS PPG, 2e-6 M</li> <li>• Flow rate: 5 µL/min</li> <li>• MCA: On</li> <li>• Printouts required: Spectra for masses 59.050, 175.133, 500.380, 616.464, 906.673, 1254.925, 1545.134, 1952.427, with peak intensities, peak width, and mass shift results, complete with method file information.</li> </ul>				
Mass (Da)	Intensity (cps)		Peak width (Da)	
	Specification	Result	Specification	Result
175.133	$\geq 8.0 \times 10^6$	1.6298e7	0.6 to 0.8	0.7105
500.380	$\geq 8.0 \times 10^6$	2.4240e7	0.6 to 0.8	0.6995
906.673	$\geq 2.0 \times 10^7$	3.2349e7	0.6 to 0.8	0.7151
1952.427	$\geq 8.8 \times 10^5$	7.8122e6	0.6 to 0.8	0.7423


Q1 Positive PPGs Test is Complete: Peak Width for Identified Masses					
Mass (Da)	Scan Rate (Da/s)	Cycles	Specification (Da)	Result (Passed)	
59.050, 175.133, 500.380, 616.464, 906.673, 1254.925, 1545.134, 1952.427	10	10	0.6 to 0.8		
	200	50	0.6 to 0.8		
	1000	50	0.6 to 0.8		
	2000	100	0.6 to 0.8		

Data Log

<p><b>Q3 Positive PPGs Test is Complete: Intensity and Peak Width (Scan Rate=10 Da/s, Cycles=10)</b></p>				
<ul style="list-style-type: none"> <li>• Test solution: POS PPG, 2e-6 M</li> <li>• Flow rate: 5 µL/min</li> <li>• MCA: On</li> <li>• Printouts required: Spectra for masses 59.050, 175.133, 500.380, 616.464, 906.673, 1254.925, 1545.134, 1952.427, with peak intensities, peak width, and mass shift results, complete with method file information.</li> </ul>				
Mass (Da)	Intensity (cps)		Peak width (Da)	
	Specification	Result	Specification	Result
175.133	$\geq 8.0 \times 10^6$	1.9501e7	0.6 to 0.8	0.6916
500.380	$\geq 8.0 \times 10^6$	1.9268e7	0.6 to 0.8	0.7278
906.673	$\geq 2.0 \times 10^7$	3.1634e7	0.6 to 0.8	0.7403
1952.427	$\geq 8.8 \times 10^5$	2.4968e6	0.6 to 0.8	0.7828

Q3 Positive PPGs Test is Complete: Peak Width for Identified Masses				
Mass (Da)	Scan Rate (Da/s)	Cycles	Specification (Da)	Result (Passed)
59.050, 175.133, 500.380, 616.464, 906.673, 1254.925, 1545.134, 1952.427	10	10	0.6 to 0.8	<input checked="" type="checkbox"/>
	200	50	0.6 to 0.8	
	1000	50	0.6 to 0.8	
	2000	100	0.6 to 0.8	

Data Log


**Q1 Negative PPGs Test is Complete** 

- Test solution: NEG PPG, 3e-4 M
- Flow rate: 10 µL/min
- MCA: On
- Printouts required: Spectra for masses 44.998, 411.259, 585.385, 933.636, 1223.845, 1572.097, 1863.306, 1979.389, with peak intensities, peak width, and mass shift results; complete with method file information.


Table 3-1 Verification: Intensity and Peak Width (Scan Rate=10 Da/s, Cycles=10) for the Q1 Negative PPGs Tests

Mass (Da)	Intensity (cps)		Peak width (Da)	
	Specification	Result	Specification	Result
933.636	$\geq 1.8 \times 10^7$	223787	0.6 to 0.8	0.638
1863.306	$\geq 1.4 \times 10^6$	210466	0.6 to 0.8	0.7369

Table 3-2 Verification: Peak Width for Identified Masses for the Q1 Negative PPGs Tests

Mass (Da)	Scan Rate (Da/s)	Cycles	Specification (Da)	Result (Passed)
				Result (Passed)
44.998, 411.259, 585.385, 933.636 1223.845, 1572.097, 1863.306, 1979.389	10	10	0.6 to 0.8	
	200	50	0.6 to 0.8	
	1000	50	0.6 to 0.8	
	2000	100	0.6 to 0.8	




- Q3 Negative PPGs Test is Complete** 
- **Test solution:** NEG PPG, 3e-4 M
  - **Flow rate:** 10 µL/min
  - **MCA:** On
  - **Printouts required:** Spectra for masses 44.998, 411.259, 585.385, 933.636, 1223.845, 1572.097, 1863.306, 1979.389, with peak intensities, peak width, and mass shift results, complete with method file information.


**Table 3-3 Verification: Intensity and Peak Width (Scan Rate=10 Da/s, Cycles=10) for the Q3 Negative PPGs Tests**



Mass (Da)	Intensity (cps)		Peak width (Da)	
	Specification	Result	Specification	Result
933.636	$\geq 1.8 \times 10^7$	<del>21682167</del>	0.6 to 0.8	<del>0.7288</del>
1863.306	$\geq 2.0 \times 10^6$	<del>31572466</del>	0.6 to 0.8	<del>0.7038</del>

**Table 3-4 Verification: Peak Width for Identified Masses for the Q3 Negative PPGs Tests**


Mass (Da)	Scan Rate (Da/s)	Cycles	Specification (Da)	Result (Passed)
				Result (Passed)
44.998, 411.259, 585.385, 933.636 1223.845, 1572.097, 1863.306 1979.389	10	10	0.6 to 0.8	
	200	50	0.6 to 0.8	
	1000	50	0.6 to 0.8	
	2000	100	0.6 to 0.8	

Data Log

	
<p><b>Reserpine MS/MS Test is Complete</b></p> <ul style="list-style-type: none"> <li>• <b>Test solution:</b> Reserpine solution 0.167 pmol/µL</li> <li>• <b>Flow rate:</b> 5 µL/min</li> <li>• <b>Scan rate:</b> 10 Da/s (both MS and MS/MS)</li> <li>• <b>Scan mode:</b> Product Ion (MS2)</li> <li>• <b>Product Of:</b> 609.3 (or as calibrated)</li> <li>• <b>Product Ion:</b> 195.1</li> <li>• <b>Cycles:</b> 10</li> <li>• <b>MCA:</b> On</li> <li>• <b>Printouts required:</b> Spectra for masses 609.3 and 195.1, with peak intensities, peak width, and mass shift results, complete with method file information.</li> </ul>	
<p><b>Table 3-5 Verification for the Reserpine MS/MS Test</b></p>	
<p><b>Specification</b></p> <p>Transmission efficiency</p>	<p><b>Result</b></p> <p>100%</p>
$\frac{\text{Intensity for ion at } m/z \text{ 195.1}}{\text{Intensity for ion at } m/z \text{ 609.2 (or as calibrated)}} \times 100 \geq 10\%$	


Turbo V™ Ion Source Acceptance Test is Complete			
Table 3-6 Verification for the Turbo V™ Ion Source Acceptance Test			
Probe	Test	Specification	Result (Passed)
TurboIonSpray®	Set the temperature parameter to 500 °C.	The Analyst® or Analyst® MD software reports that the temperature is reached.	
APCI	Set the temperature parameter to 400 °C.	The Analyst® or Analyst® MD software reports that the temperature is reached.	

Data Log

<p><b>Post-test Pressure Verification is Complete</b></p> <p>Perform this test with the Analyst<sup>®</sup> or Analyst<sup>®</sup> MD software.</p>			
Test	Specification	Result	
Vacuum chamber pressure with CAD gas off	$0.4 \times 10^{-5} \text{ torr} \leq P_{\text{CAD } 0} \leq 1.1 \times 10^{-5} \text{ torr}$	<del>DATA</del> <del>10E-5</del> <del>OFF</del>	
Vacuum chamber pressure with CAD gas set to Full	$1.8 \times 10^{-5} \text{ torr} \leq (P_{\text{CAD } 12} - P_{\text{CAD } 0}) \leq 2.8 \times 10^{-5} \text{ torr}$	<del>DATA</del> <del>10E-5</del> <del>OFF</del>	

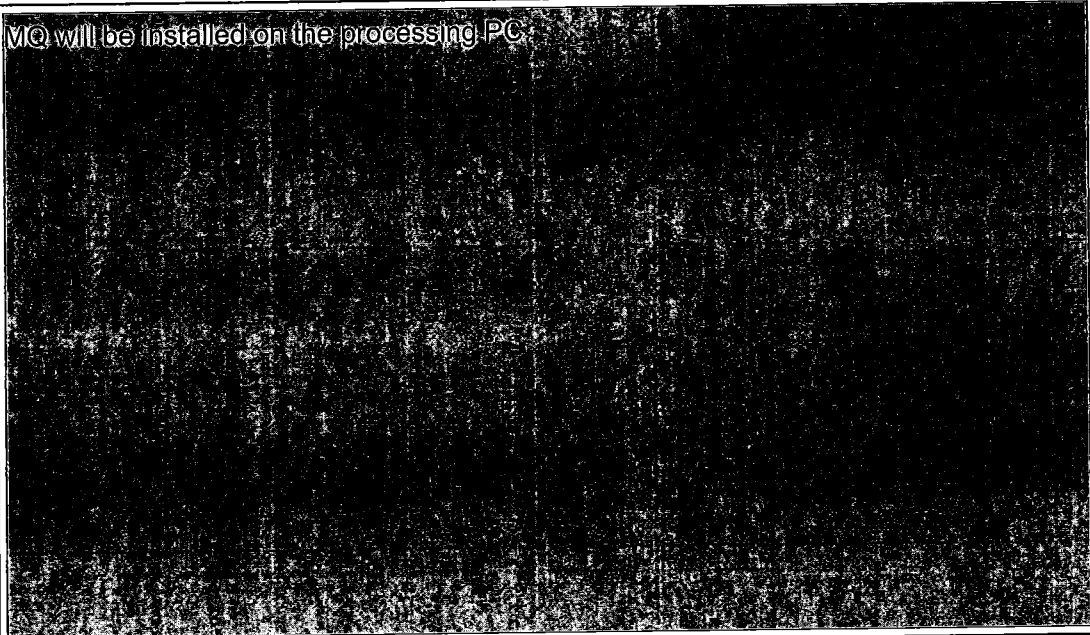
# Signoff

# 4

Organization	Eurofins		
Customer contact name		Date (yyyy-mm-dd)	
Customer contact signature*			
FSE name	Michael F Pennell	Date (yyyy-mm-dd)	2018-05-29
FSE signature			

\* Signature required on hard copy only.

## Comments and Exceptions

<p>MQ will be installed on the processing PC.</p> 
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# Revision History

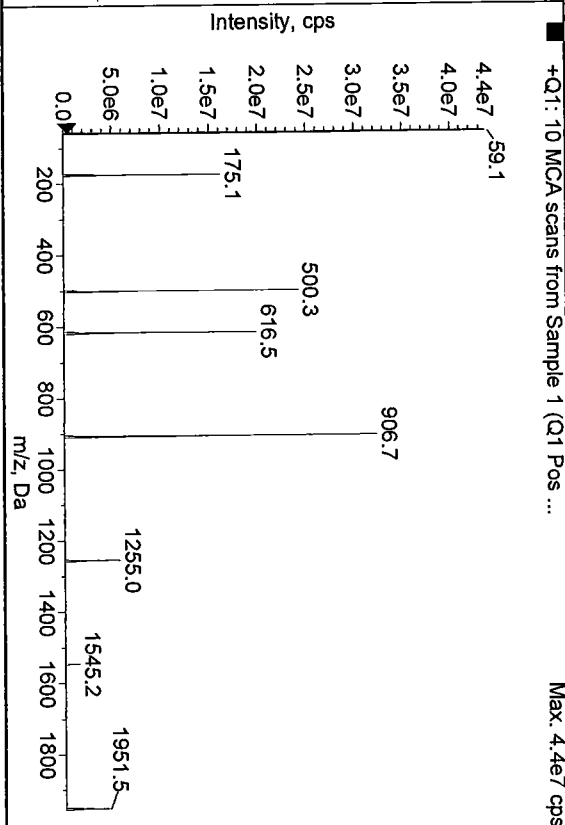
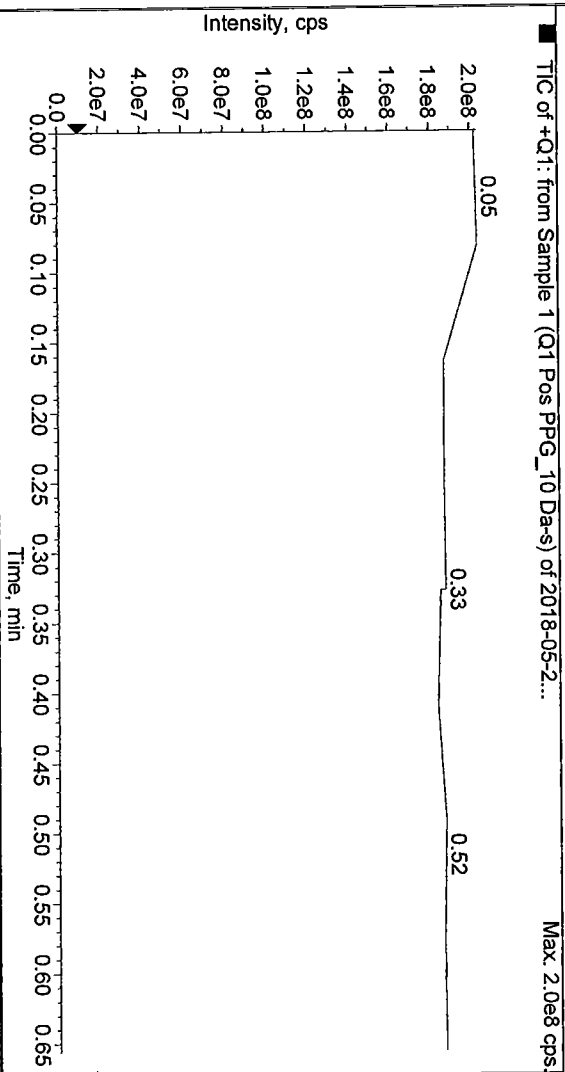
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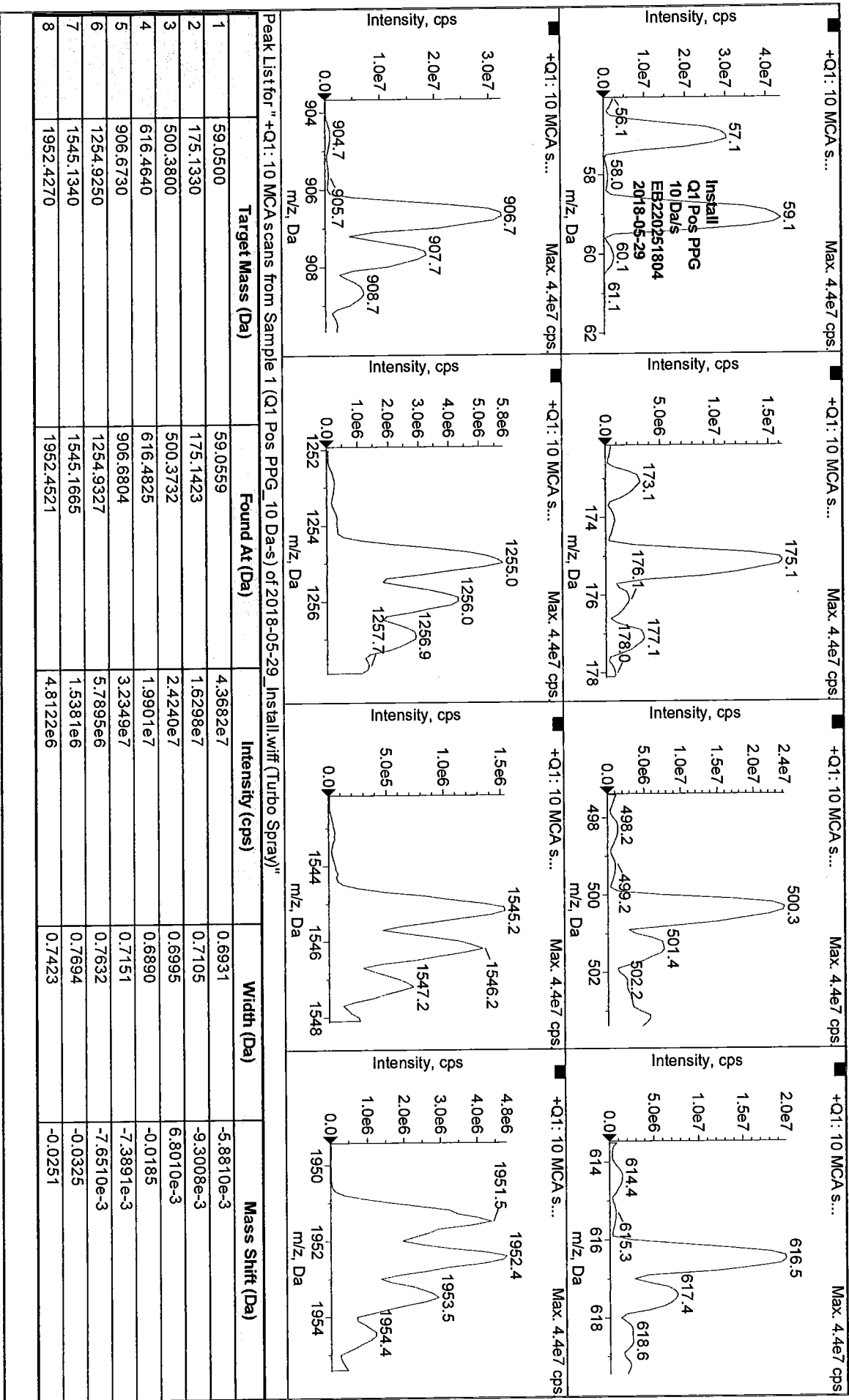
Revision	Reason for Change	Date
A	First release of the combined <i>SCIEX Triple Quad™ 4500 and 4500MD System Installation Checklist and Data Log</i> . Replaces D5028556 E.	May 2014
B	Updated the installation test data.	December 2014
C	<ul style="list-style-type: none"><li>• Applied new template.</li><li>• Updated the System Information, Acquisition Computer Installation, and Data Log sections.</li></ul>	October 2016

State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 5500.0  
 Curtain Gas (CUR): 10.0  
 Ion Spray Voltage (IS): 5500.0  
 Temperature (TEM): 0.0  
 Ion Source Gas 1 (GS1): 17.0  
 Ion Source Gas 2 (GS2): 0.0  
 Entrance Potential (EP): 10.0  
 Period 1:  
 Scans in Period: 10  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1  
 Period 1 Experiment 1:  
 Scan Type: Q1 MS (Q1)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit





Peak List for "+Q1: 10 MCA scans from Sample 1 (Q1 Pos PPG\_10 Da-s) of 2018-05-29\_Install.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0559	4.3682e7	0.6931	-5.8810e-3
2	175.1330	175.1423	1.6298e7	0.7105	-9.3008e-3
3	500.3800	500.3732	2.4240e7	0.6995	6.8010e-3
4	616.4640	616.4825	1.9901e7	0.6890	-0.0185
5	906.6730	906.6804	3.2349e7	0.7151	-7.3891e-3
6	1254.9250	1254.9327	5.7895e6	0.7632	-7.6510e-3
7	1545.1340	1545.1665	1.5381e6	0.7694	-0.0325
8	1952.4270	1952.4521	4.8122e6	0.7423	-0.0251

State Parameter Editor

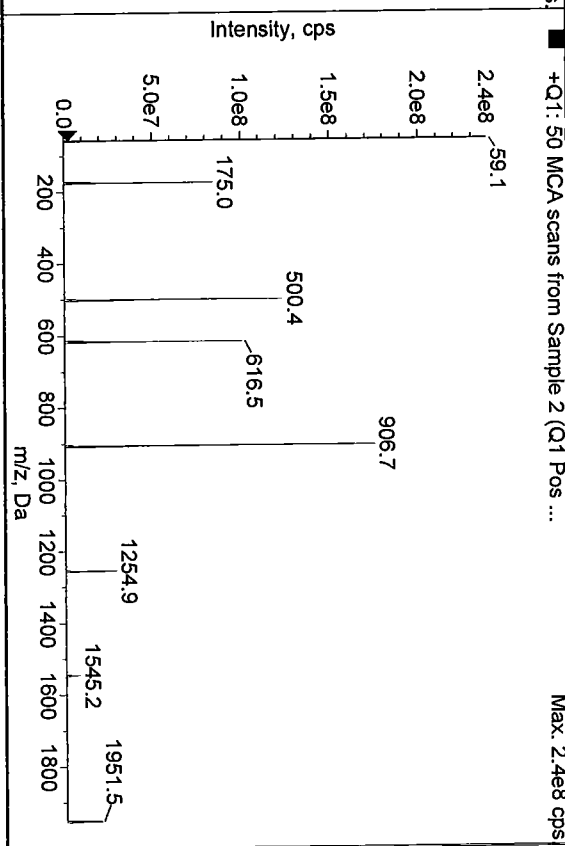
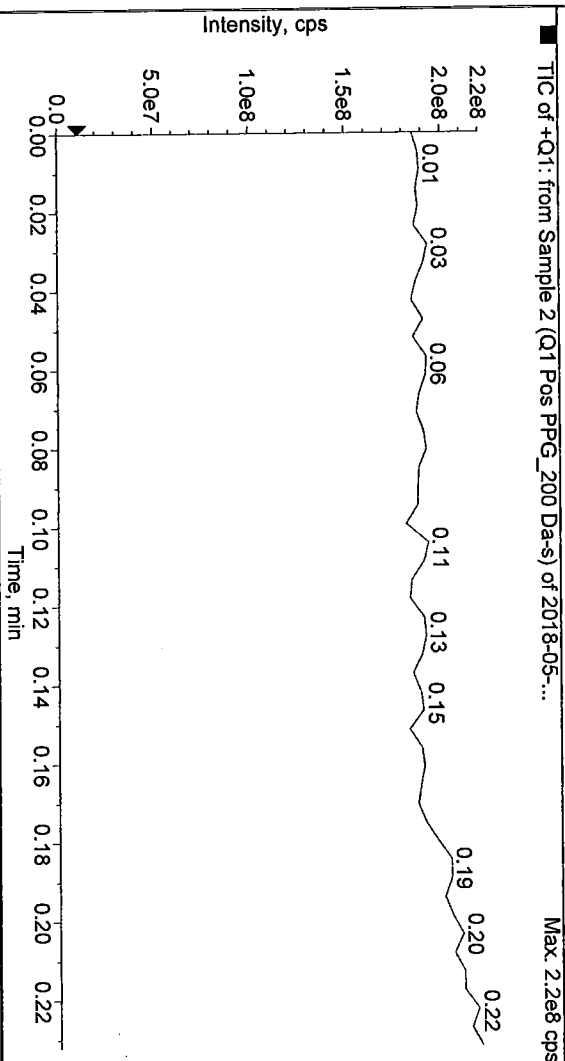
Mass Spectrometer Method Properties

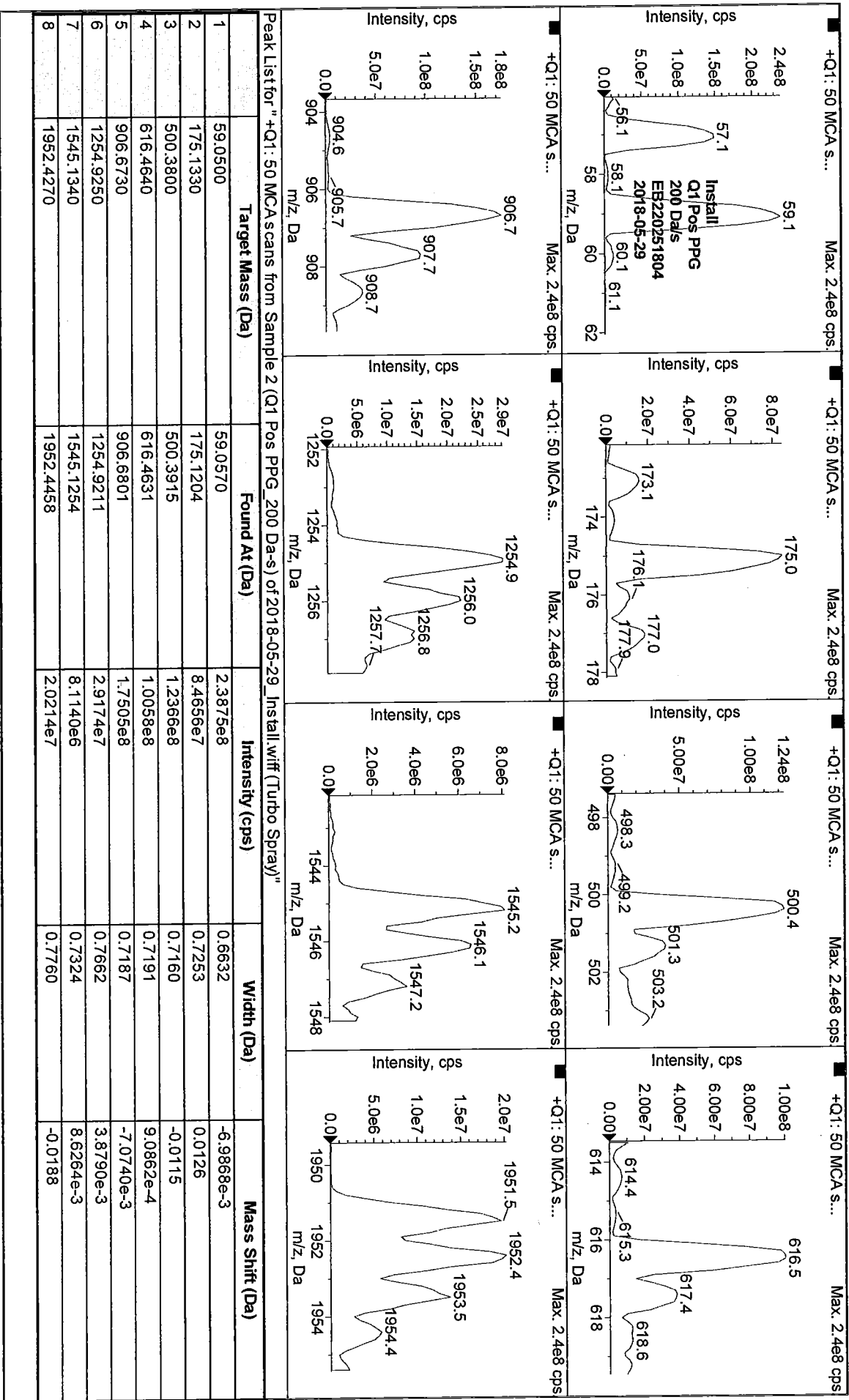
Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CRG): 5900.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TBM): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 10.0  
 Entrance Potential (EP): 10.0

Period 1:  
 Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: OFF  
 Experiments in Period: 1

Period 1 Experiment 1:  
 Scan Type: Q1 MS (Q1)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit

Q1 Resolution: Unit  
 Ion Energy 1 (IE1): 1.2  
 QM (QM): 1800.0





Peak List for "+Q1: 50 MCA scans from Sample 2 (Q1 Pos PPG\_200 Da-s) of 2018-05-29\_Install.wif (Turbo Spray)"

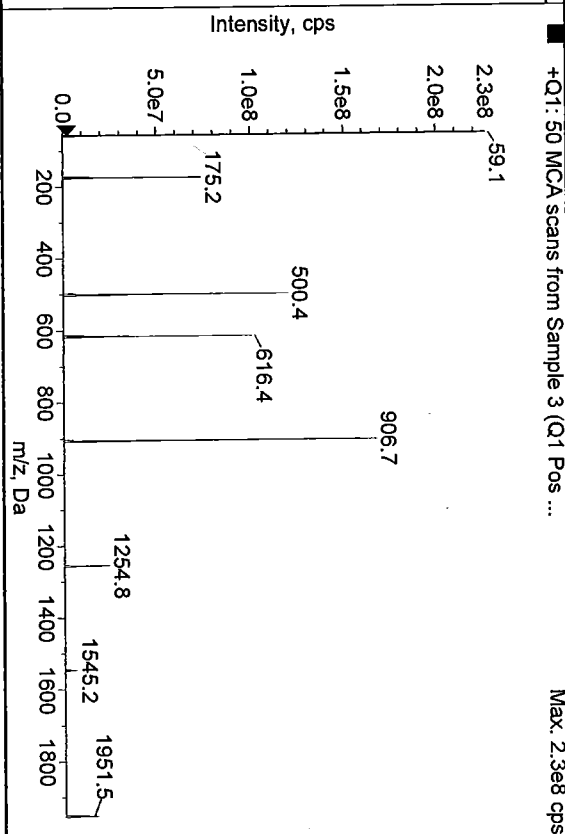
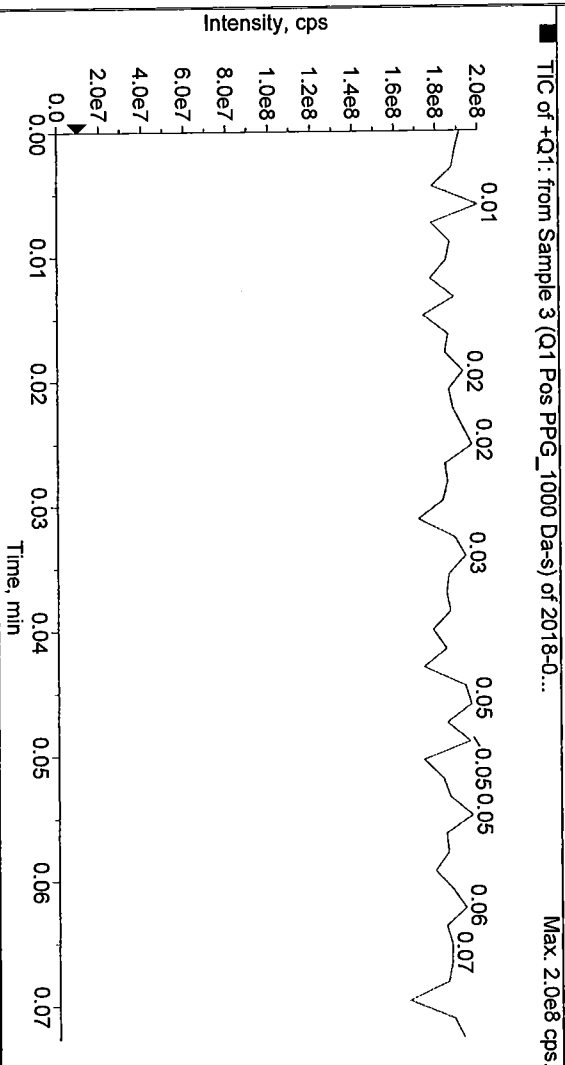
	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0570	2.3875e8	0.6632	-6.9868e-3
2	175.1330	175.1204	8.4656e7	0.7253	0.0126
3	500.3800	500.3915	1.2366e8	0.7160	-0.0115
4	616.4640	616.4631	1.0058e8	0.7191	9.0862e-4
5	906.6730	906.6801	1.7505e8	0.7187	-7.0740e-3
6	1254.9250	1254.9211	2.9174e7	0.7662	3.8790e-3
7	1545.1340	1545.1254	8.1140e6	0.7324	8.6264e-3
8	1952.4270	1952.4458	2.0214e7	0.7760	-0.0188



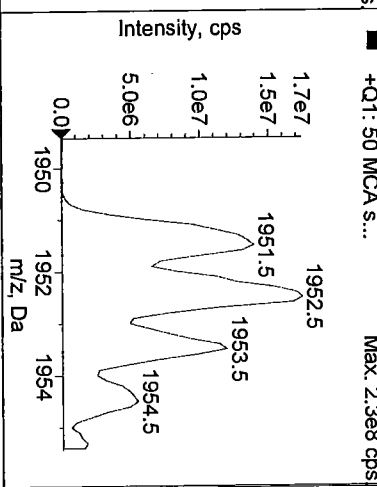
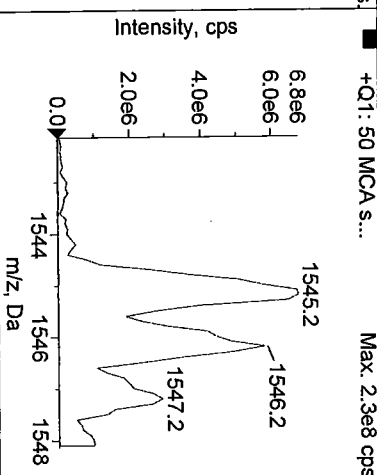
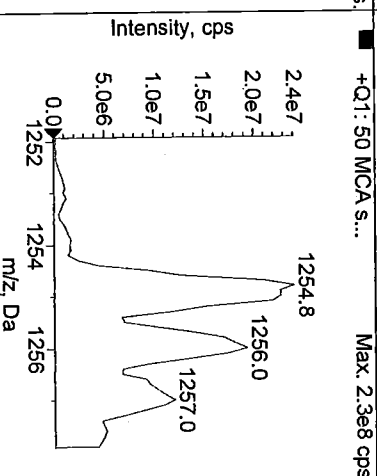
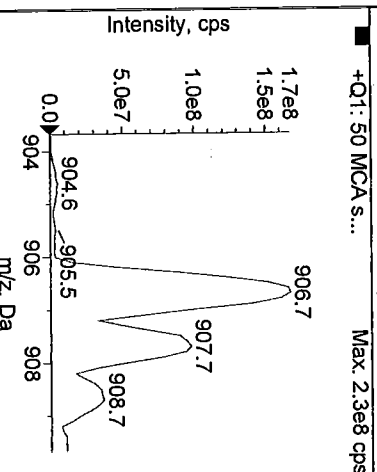
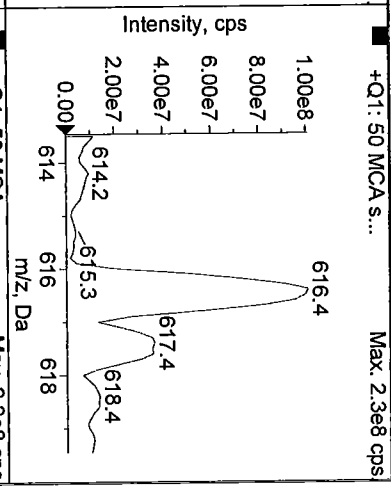
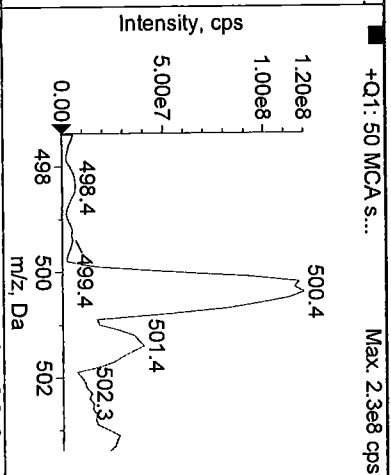
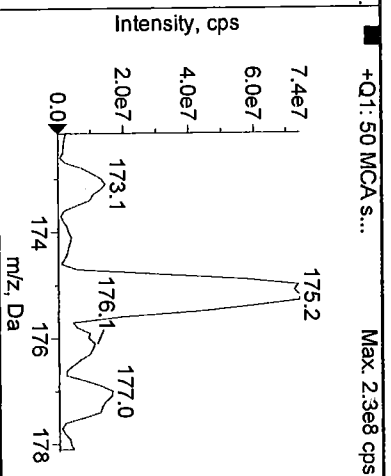
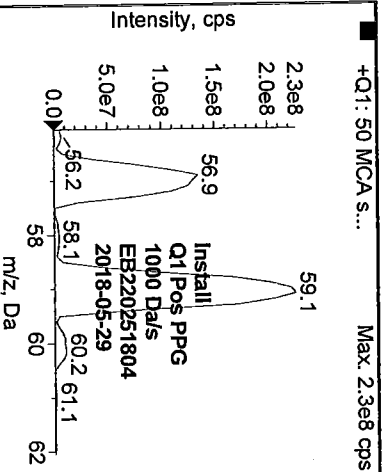
State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CUR): 5500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TM): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 10.0  
 Distance Potential (EP): 10.0  
 Period 1:  
 Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: OFF  
 Experiments in Period: 1  
 Period 1 Experiment 1:  
 Scan Type: Q1 MS (Q1)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit



Peak List for "+Q1: 50 MCA scans from Sample 3 (Q1 Pos PPG_1000 Da-s) of 2018-05-29_Install.wif (Turbo Spray)"	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0540	2.2668e8	0.6411	-4.0020e-3
2	175.1330	175.1630	7.4160e7	0.7037	-0.0300
3	500.3800	500.3767	1.2013e8	0.7536	3.3425e-3
4	616.4640	616.4720	1.0080e8	0.7224	-8.0022e-3
5	906.6730	906.6738	1.6743e8	0.7638	-8.2831e-4
6	1254.9250	1254.9160	2.4100e7	0.7104	9.0009e-3
7	1545.1340	1545.1314	6.7600e6	0.6758	2.5866e-3
8	1952.4270	1952.4259	1.7440e7	0.7572	1.0770e-3



State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CUR): 5500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TM): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 10.0

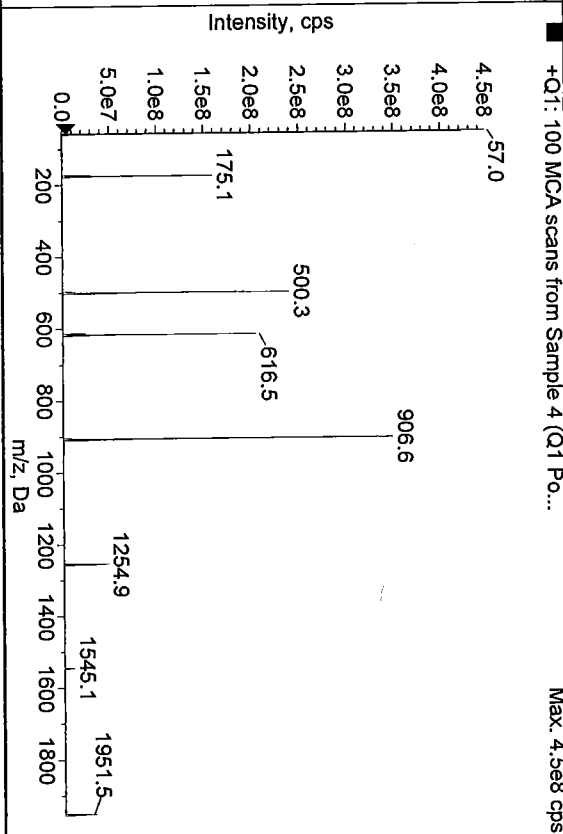
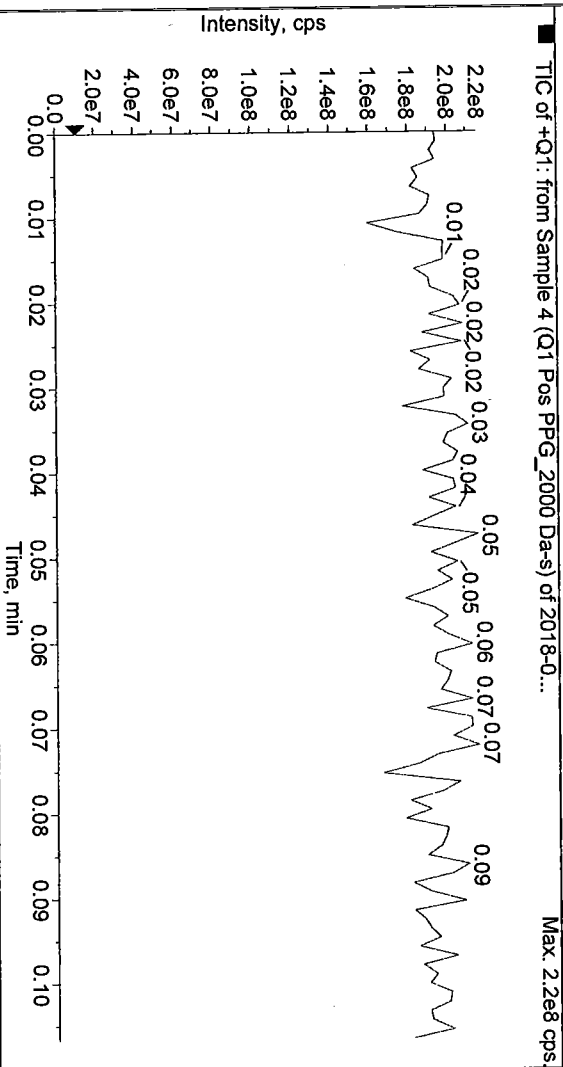
Period 1:  
 Scans in Period: 100  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1

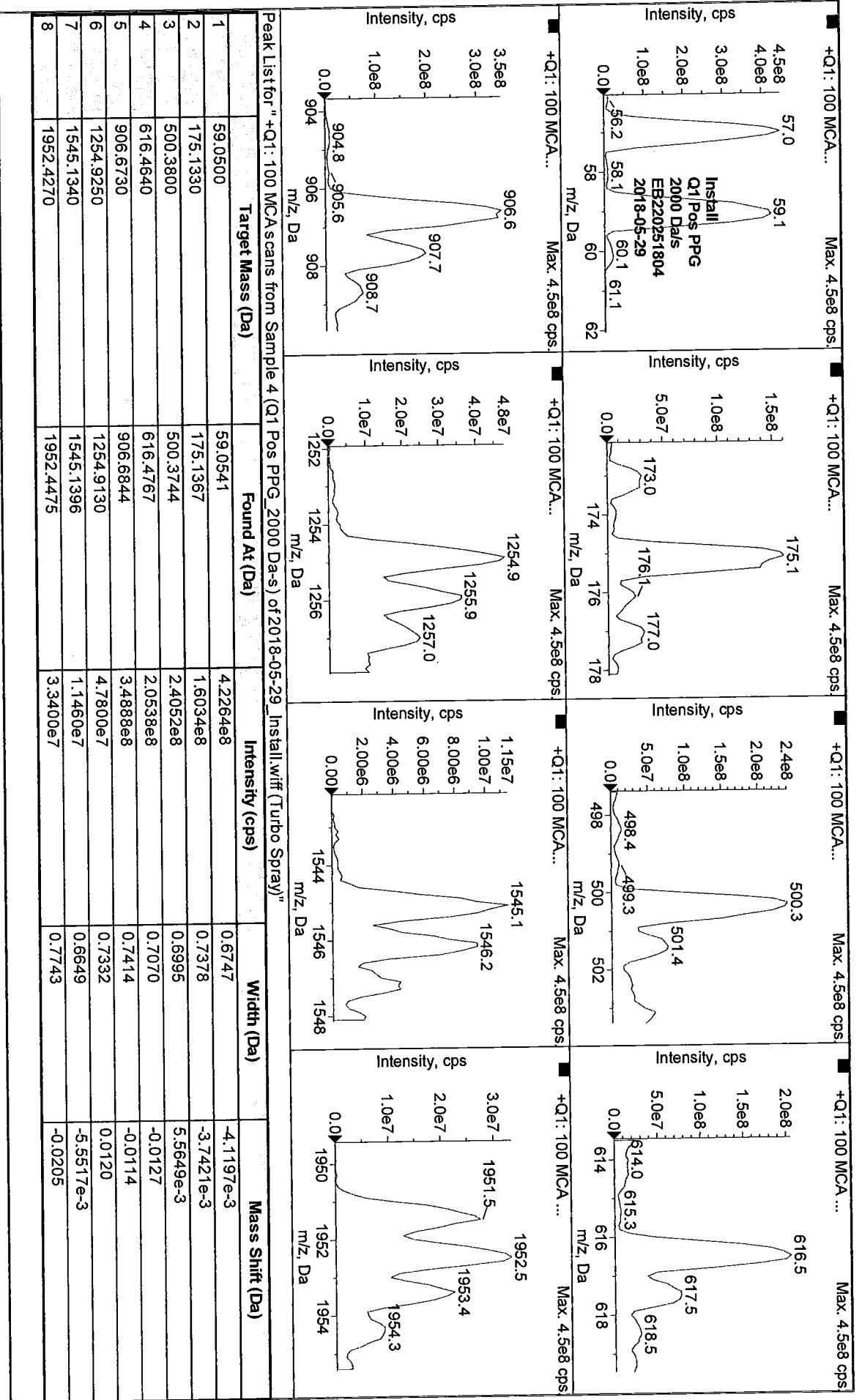
Distance Potential (EP): 10.0

Period 1 Experiment 1:

Q1 Resolution: Unit  
 Ion Energy 1 (IE1): 1.2  
 QM (QM): 1800.0

Scan Type: Q1 MS (Q1)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit

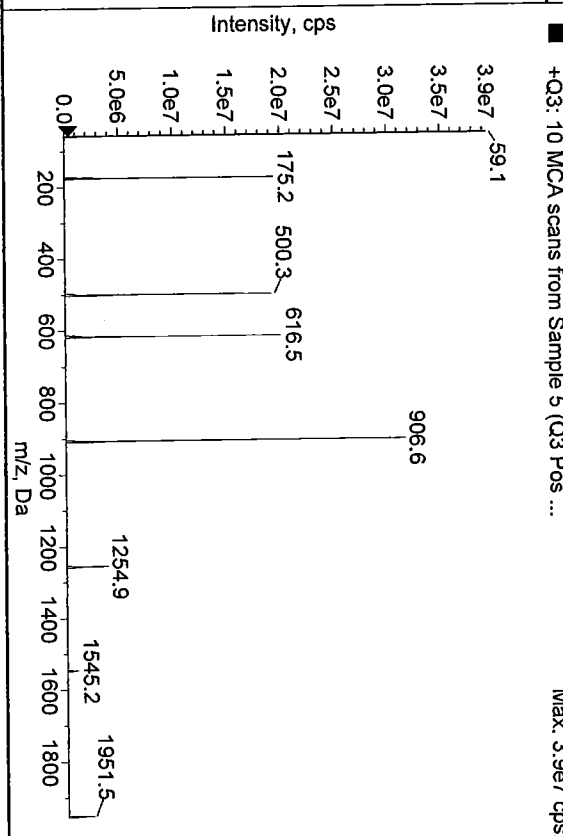
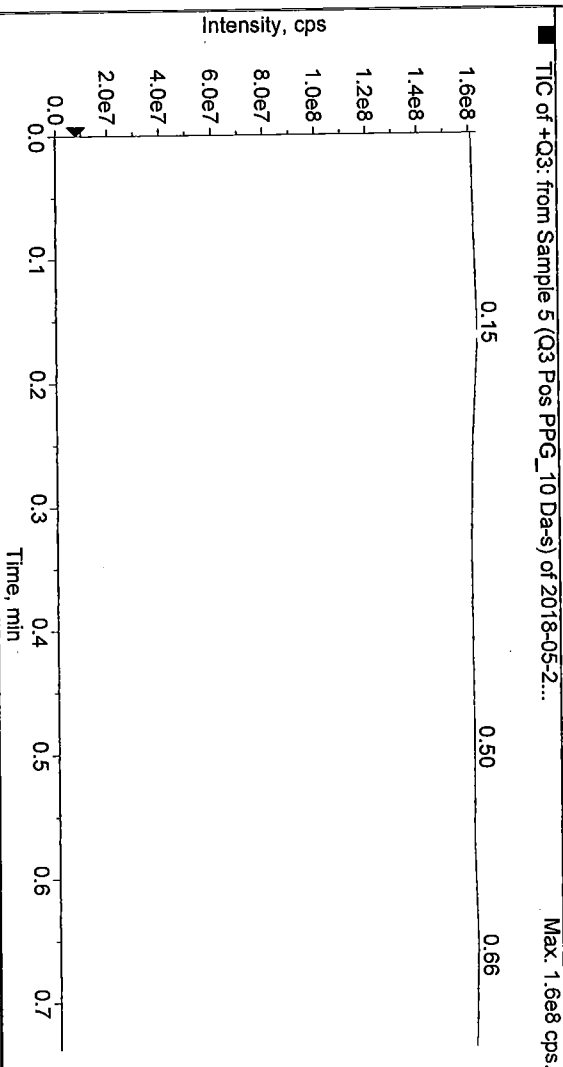




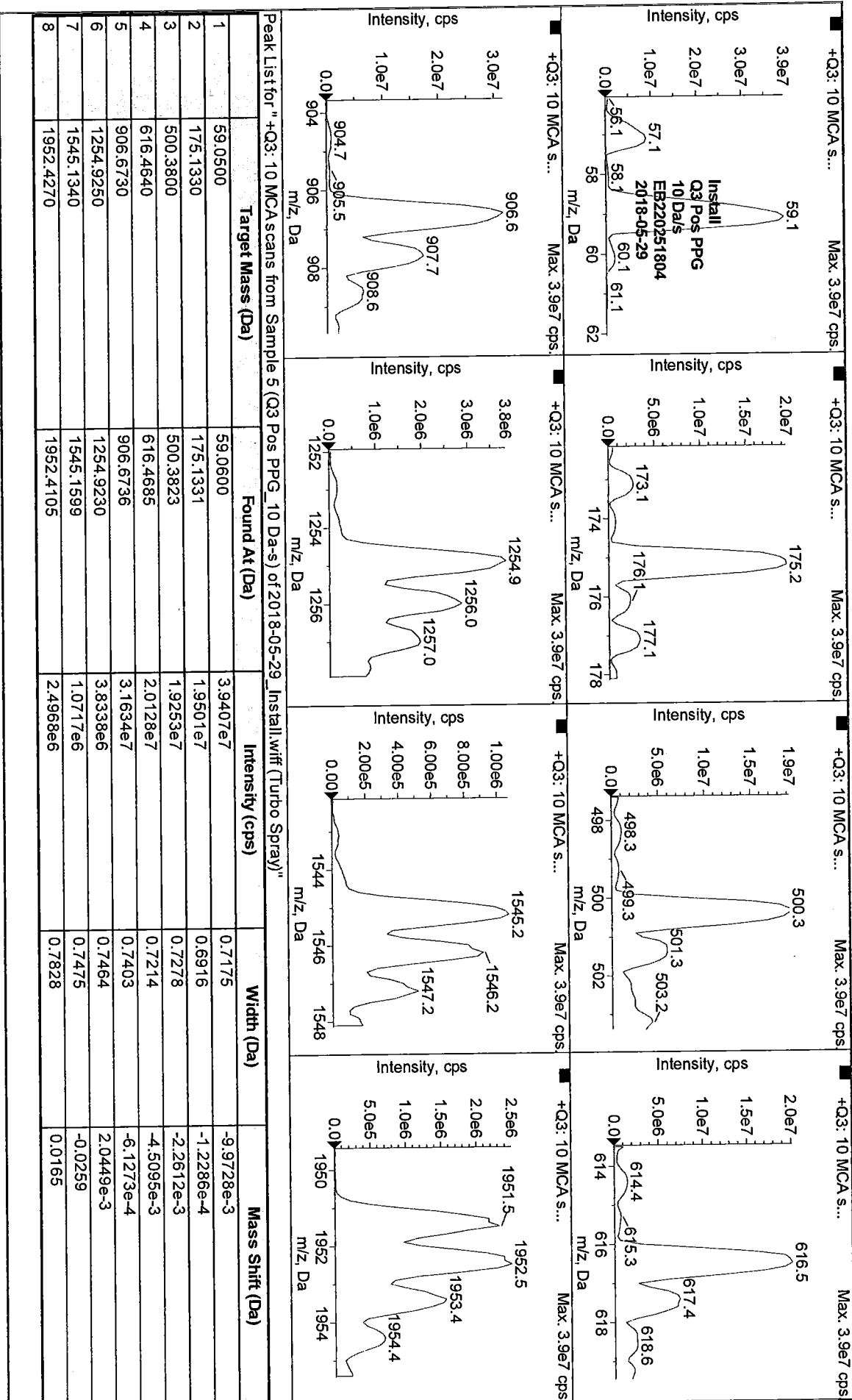
State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 590.0  
 Curtain Gas (CUR): 10.0  
 Ion Spray Voltage (IS): 5900.0  
 Temperature (TRM): 0.0  
 Ion Source Gas 1 (GS1): 17.0  
 Ion Source Gas 2 (GS2): 0.0  
 Distance Potential (EP): 10.0  
 Period 1:  
 Scans in Period: 10  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: OFF  
 Experiments in Period: 1  
 Period 1 Experiment 1:  
 Scan Type: Q3 MS (Q3)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q3: Unit



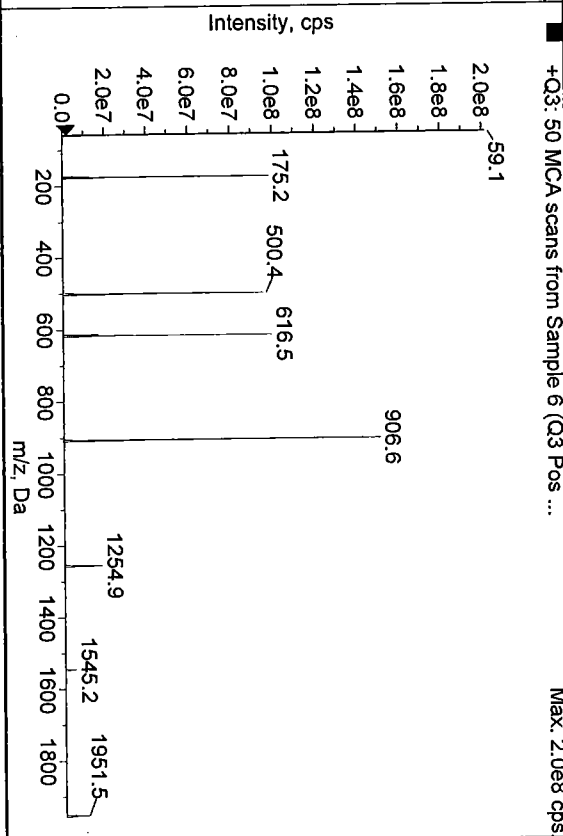
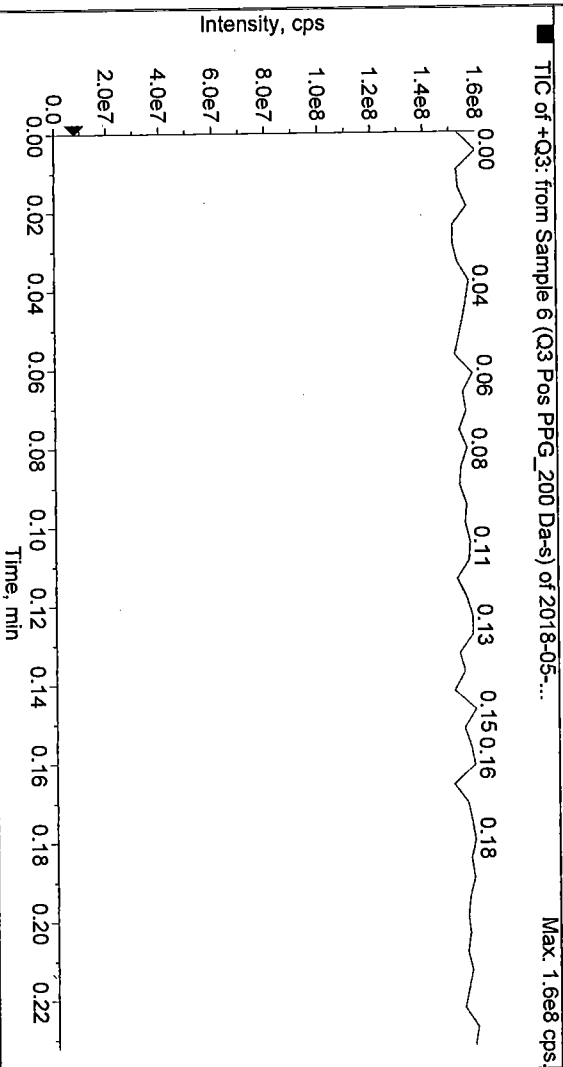


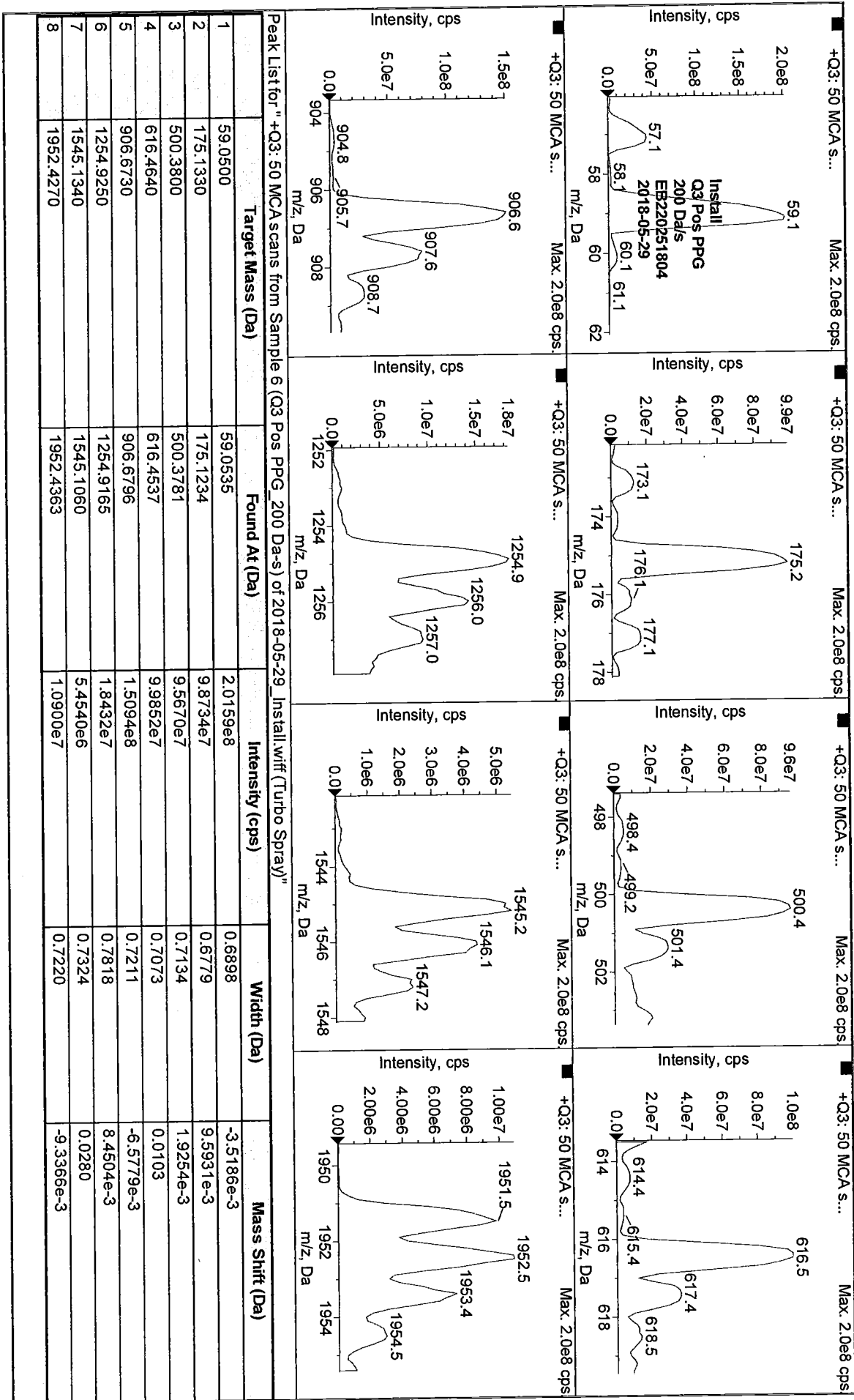


State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CRG): 5000.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TDA): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 10.0  
 Distance Potential (EP): 10.0  
 Period 1:  
 Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1  
 Period 1 Experiment 1:  
 Scan Type: Q3 MS (Q3)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q3: Unit





State Parameter Editor

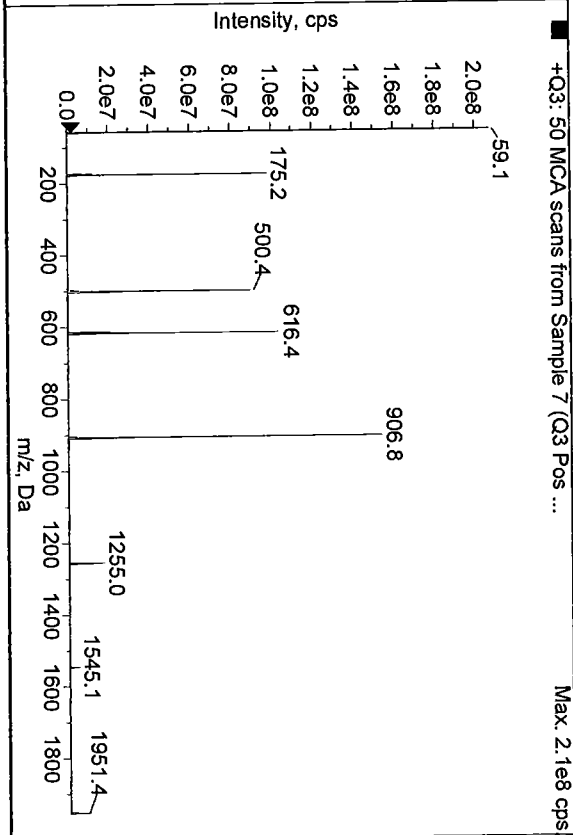
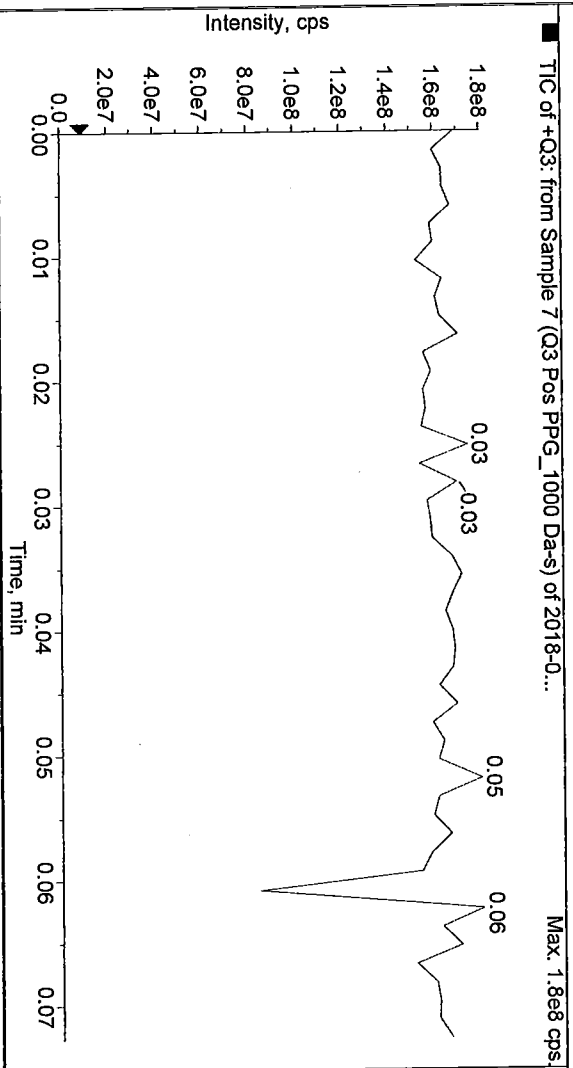
Mass Spectrometer Method Properties

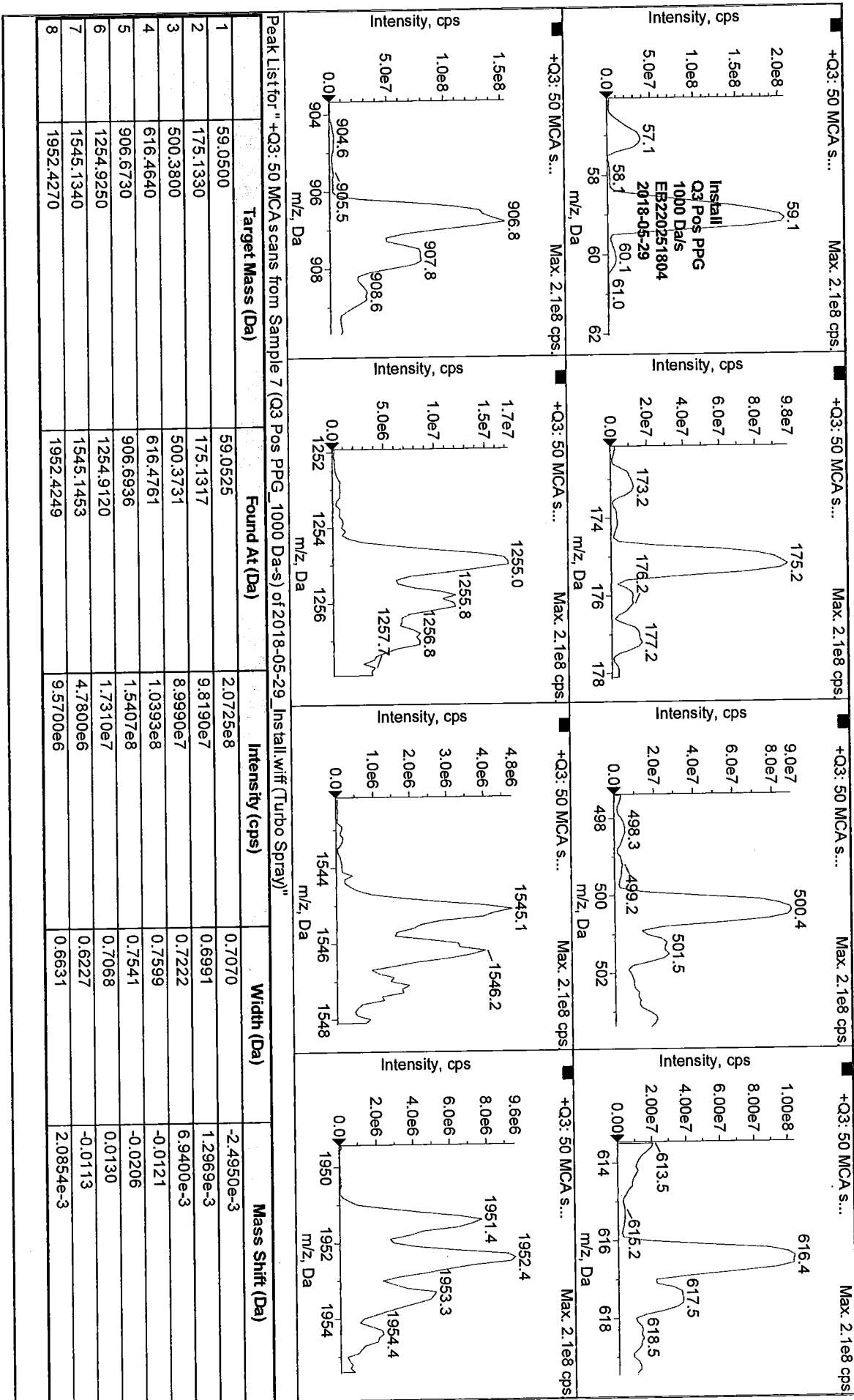
Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CR): 5500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TEM): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 10.0  
 Distance Potential (EP): 10.0

Period 1:  
 Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1

Period 1 Experiment 1:  
 Scan Type: Q3 MS (Q3)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q3: Unit

Q3 Resolution: Unit  
 Ion Energy 3 (IE3): 1.0  
 CM (CEM): 1800.0



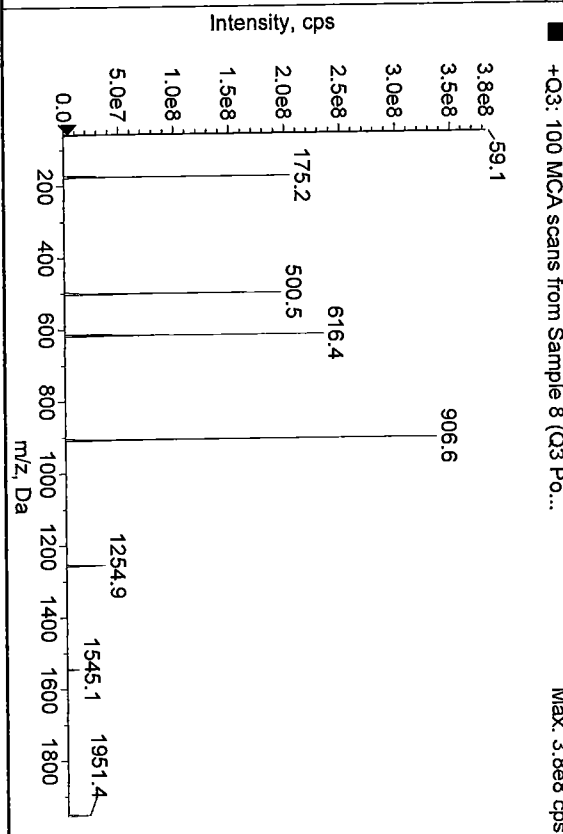
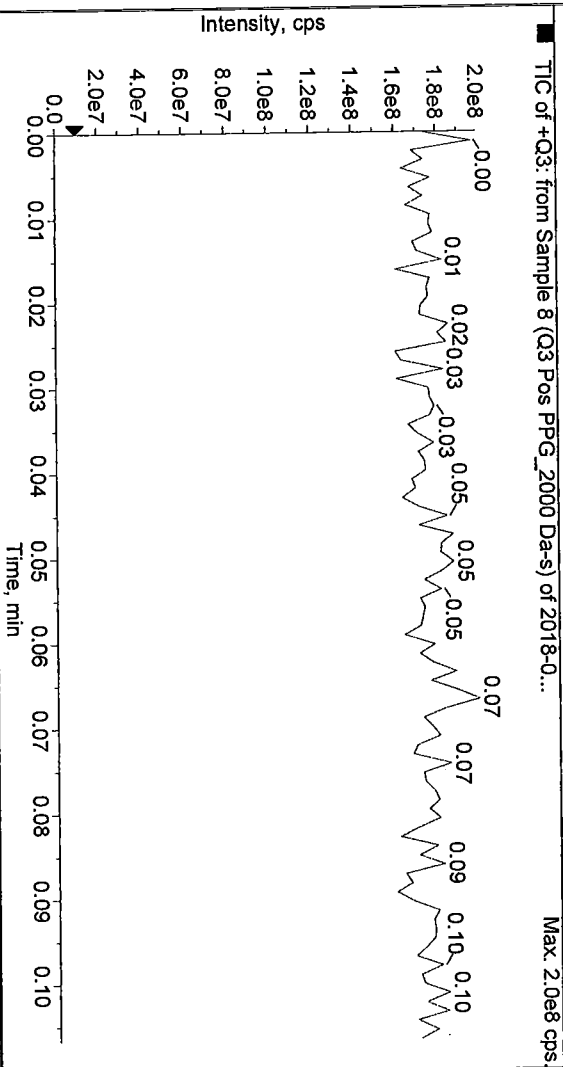


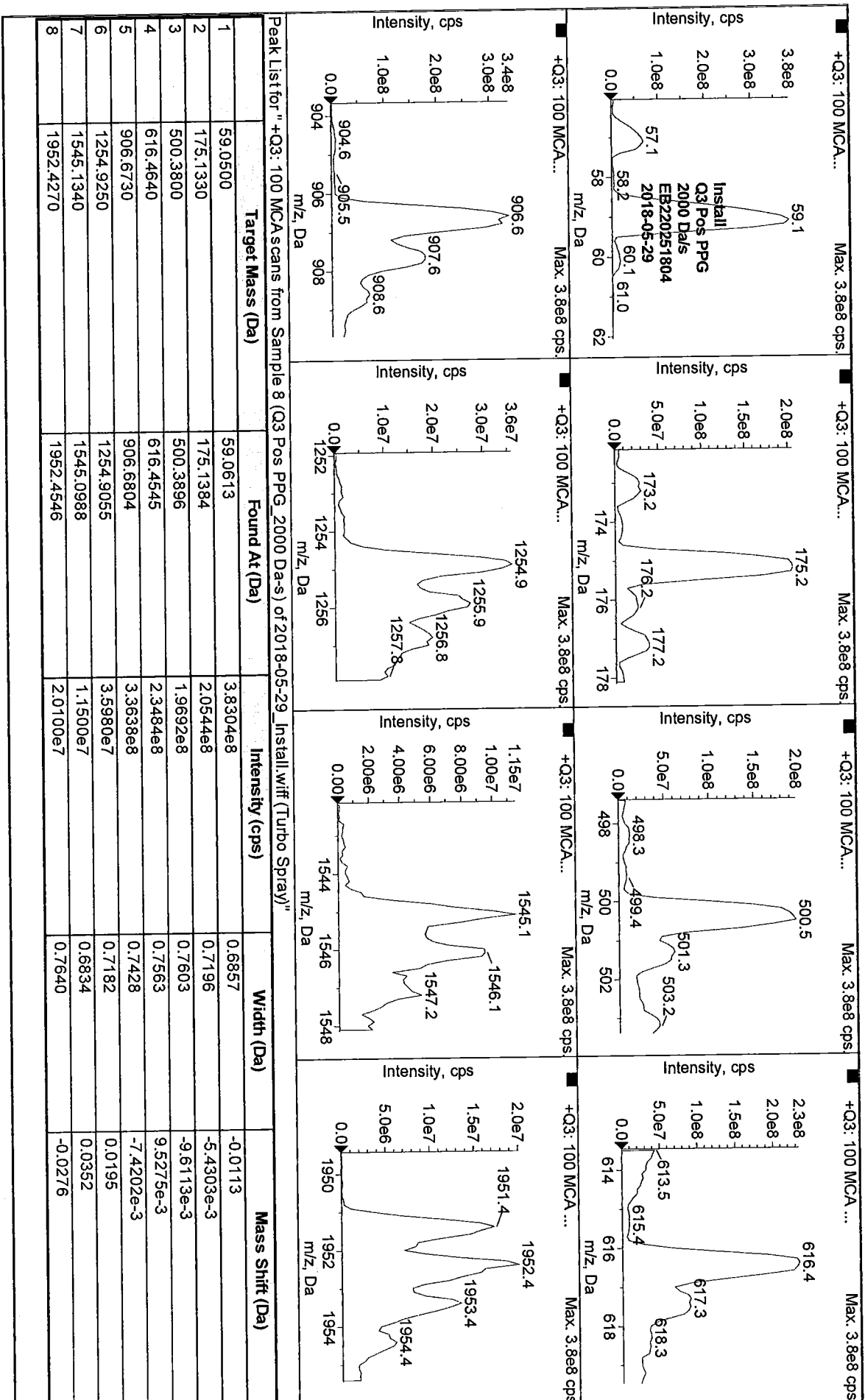


State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CUR): 5900.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TBM): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 10.0  
 Distance Potential (EP): 10.0  
 Period 1:  
 Scans in Period: 100  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1  
 Period 1 Experiment 1:  
 Scan Type: Q3 MS (Q3)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q3: Unit





Peak List for "+Q3: 100 MCA scans from Sample 8 (Q3 Pos PPG 2000 Das) of 2018-05-29 Install.wif (Turbo Spray)"

Peak	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0613	3.8304e8	0.6857	-0.0113
2	175.1330	175.1384	2.0544e8	0.7196	-5.4303e-3
3	500.3800	500.3896	1.9692e8	0.7603	-9.6113e-3
4	616.4640	616.4545	2.3484e8	0.7563	9.5275e-3
5	906.6730	906.6804	3.3638e8	0.7428	-7.4202e-3
6	1254.9250	1254.9055	3.5980e7	0.7182	0.0195
7	1545.1340	1545.0988	1.1500e7	0.6834	0.0352
8	1952.4270	1952.4546	2.0100e7	0.7640	-0.0276

State Parameter Editor

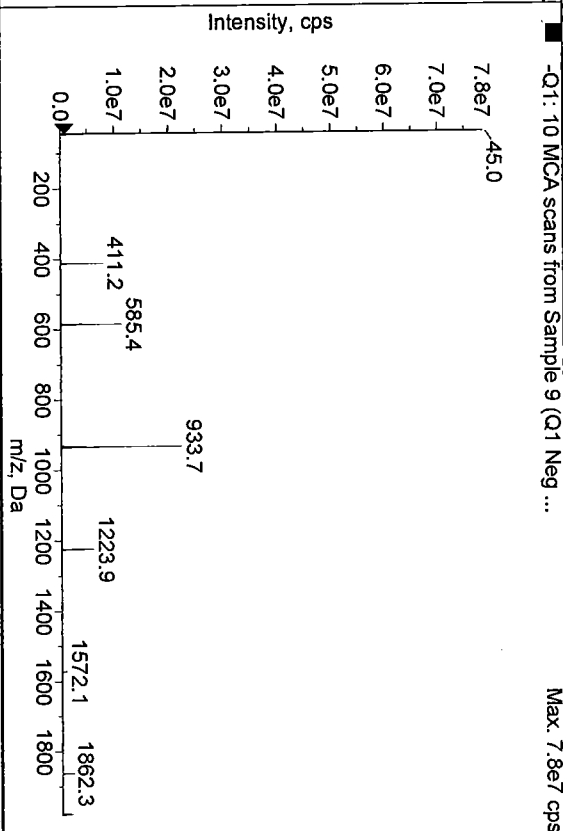
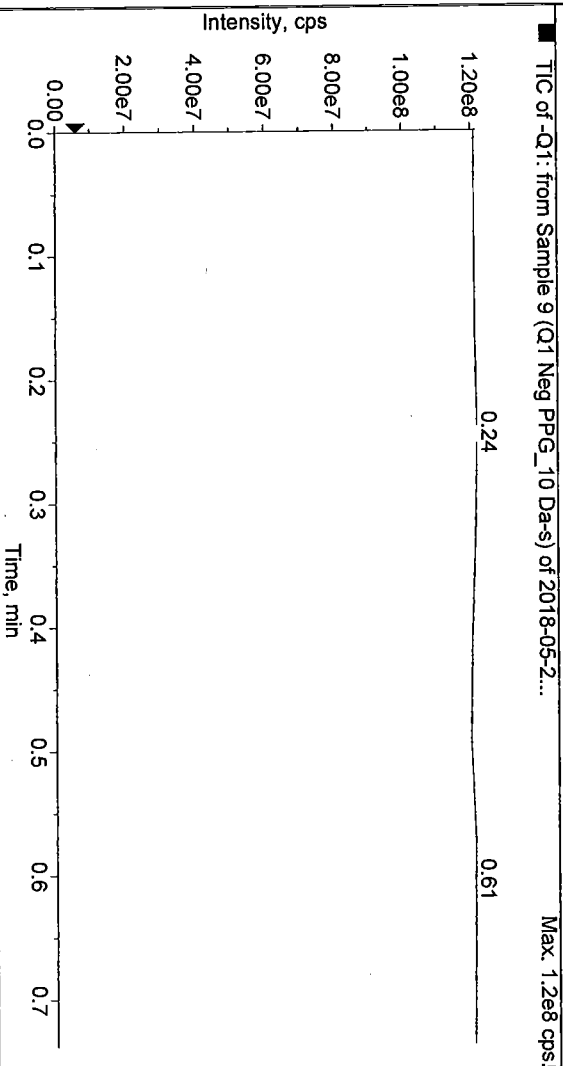
Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CBM): 10.0  
 Ion Spray Voltage (IS): -4500.0  
 Temperature (TM): 0.0  
 Ion Source Gas 1 (GS1): 17.0  
 Ion Source Gas 2 (GS2): 0.0  
 Distance Potential (EP): -10.0

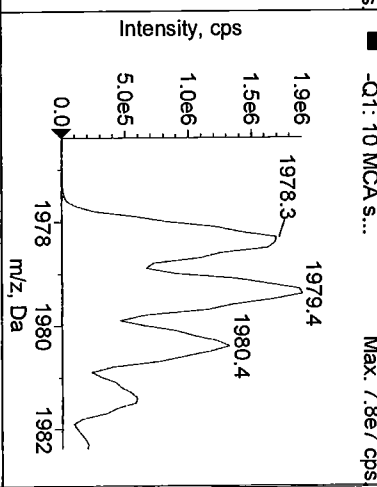
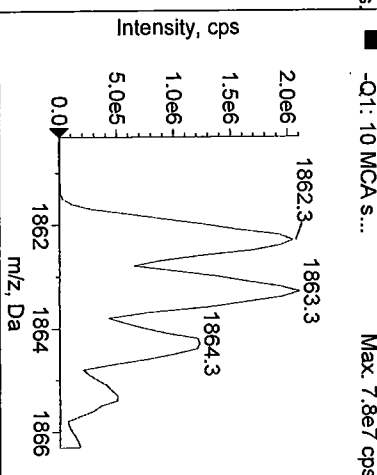
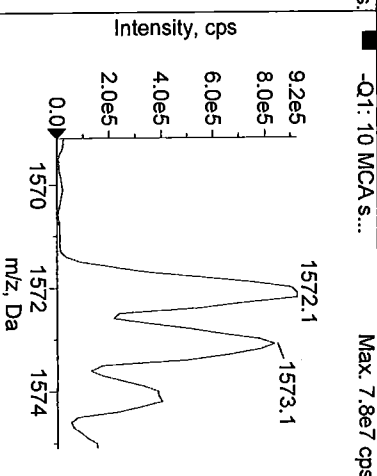
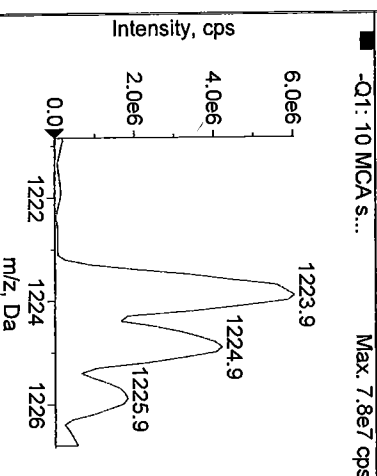
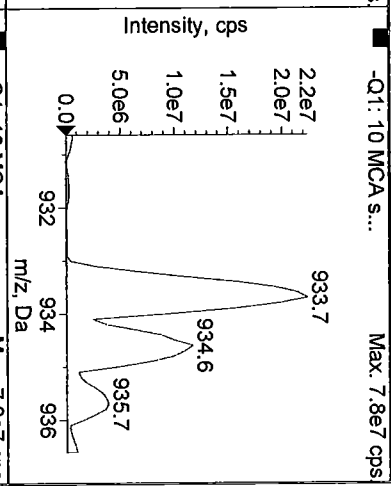
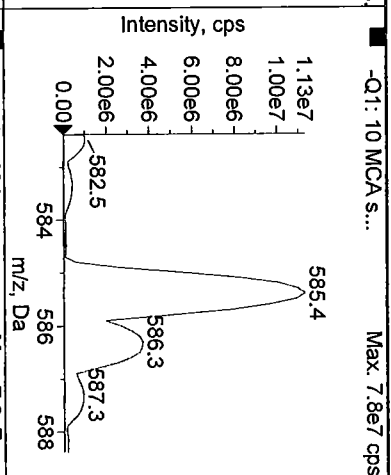
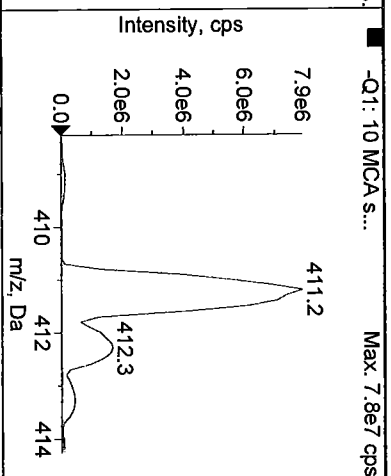
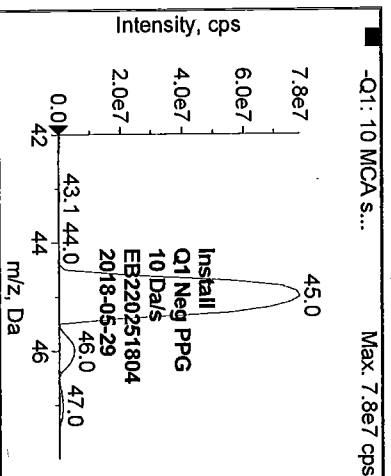
Period 1:  
 Scans in Period: 10  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1

Period 1 Experiment 1:  
 Scan Type: Q1 MS (Q1)  
 Polarity: Negative  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit

Q1 Resolution: Unit  
 Ion Spray 1 (IS1): -1.0  
 CM (CBM): 1900.0



Peak List for "-Q1: 10 MCA scans from Sample 9 (Q1 Neg PPG_10 Das) of 2018-05-29_Install.wiff (Turbo Spray)"	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9947	7.8484e7	0.6977	3.3302e-3
2	411.2590	411.2640	7.9184e6	0.7009	-4.9843e-3
3	585.3850	585.3944	1.1318e7	0.7674	-9.3834e-3
4	933.6360	933.6513	2.2378e7	0.6638	-0.0153
5	1223.8450	1223.8605	6.0413e6	0.7621	-0.0155
6	1572.0970	1572.0967	9.2320e5	0.6727	2.8078e-4
7	1863.3060	1863.2949	2.1046e6	0.7369	0.0111
8	1979.3890	1979.3655	1.8985e6	0.7323	0.0235



State Parameter Editor

Mass Spectrometer Method Properties

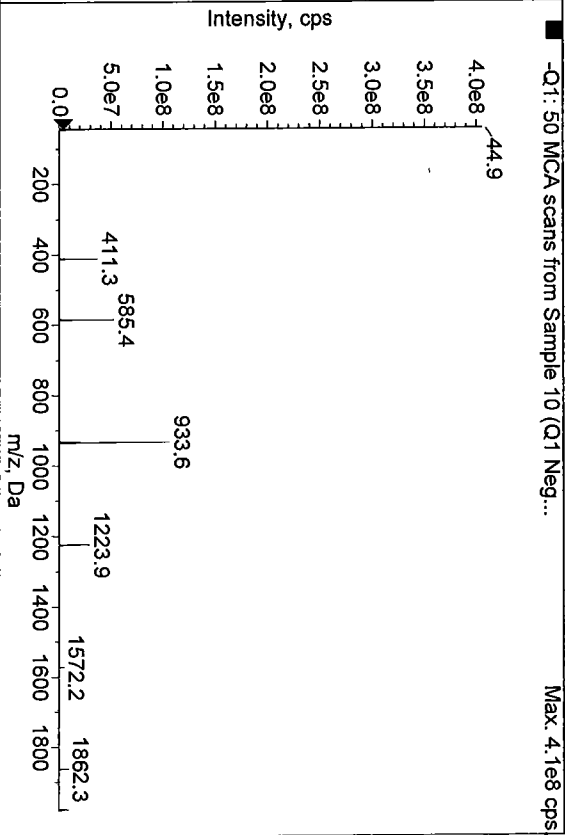
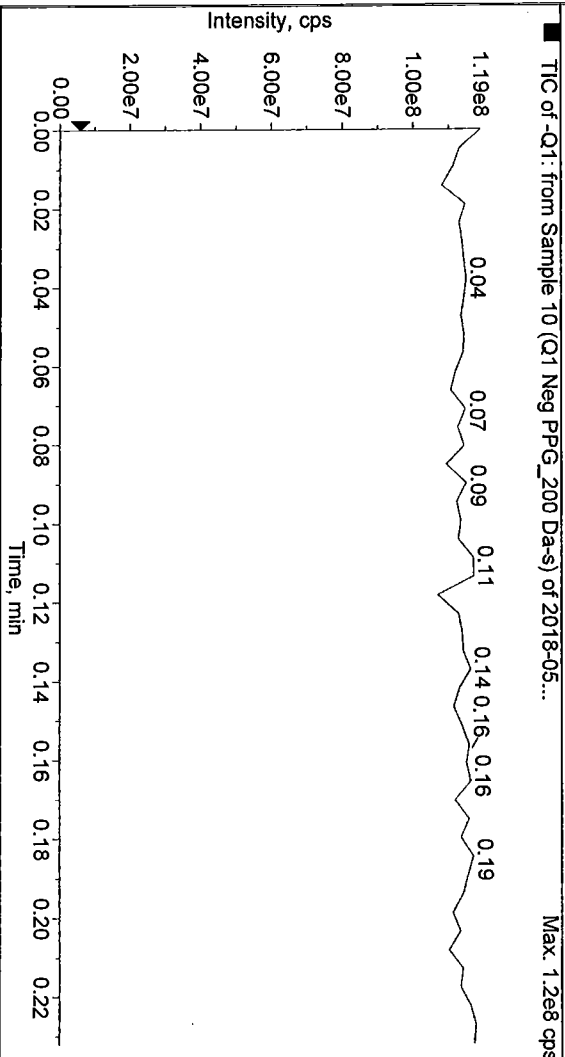
Ion Source: Turbo Spray  
 Ion Source Temperature Reached  
 Curtain Gas (CGM): 10.0  
 Ion Spray Voltage (ISV): -4500.0  
 Temperature (TBM): 0.0  
 Ion Source Gas 1 (GS1): 17.0  
 Ion Source Gas 2 (GS2): 0.0  
 Distance Potential (EP): -10.0

Period 1:

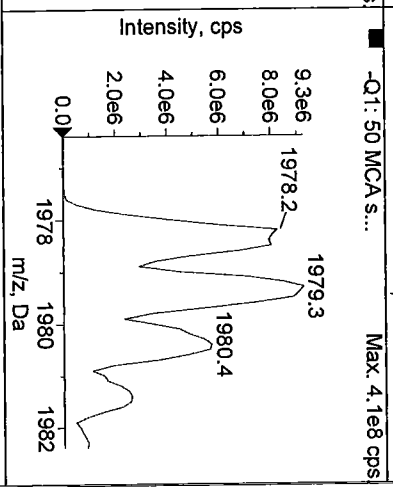
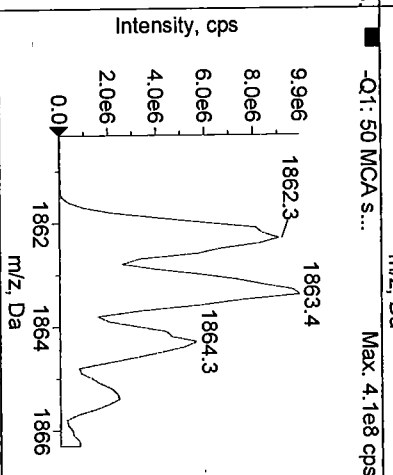
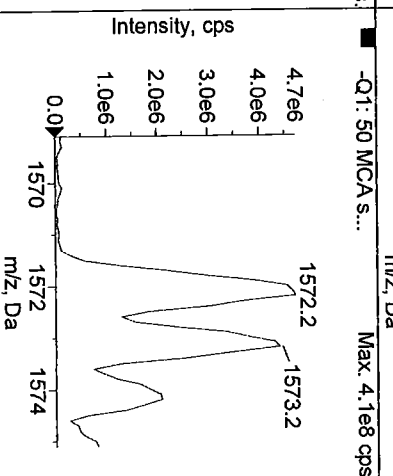
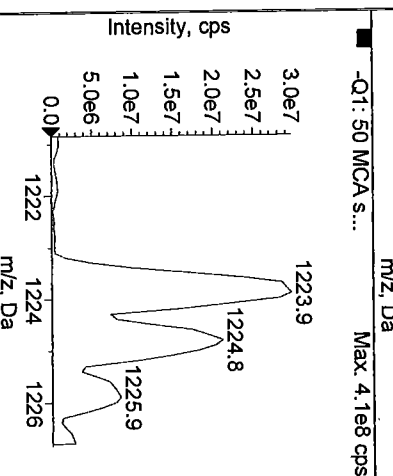
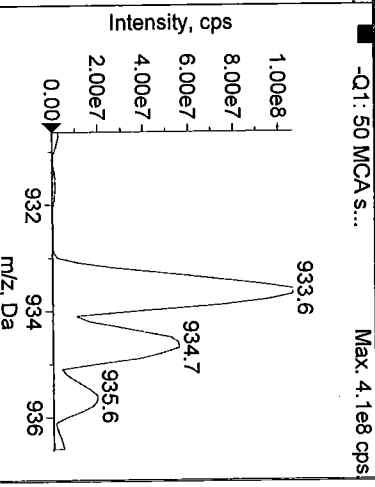
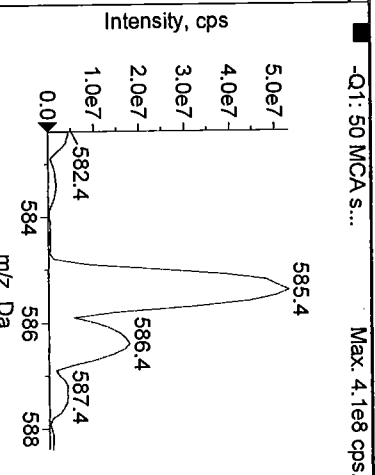
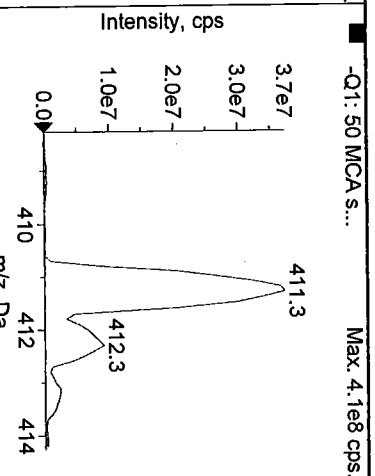
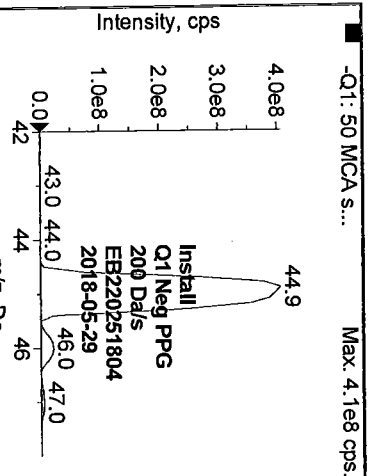
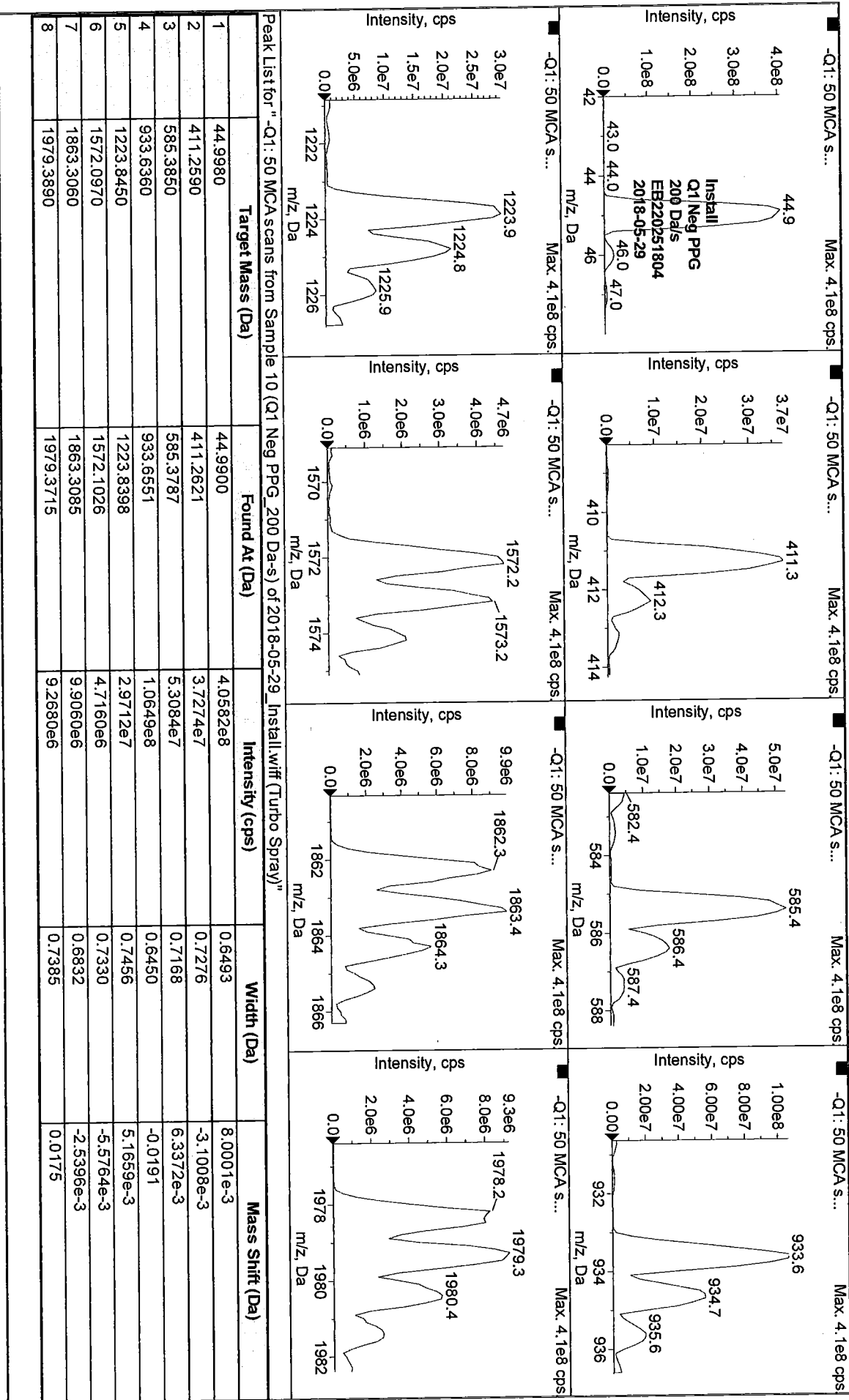
Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1  
 Period 1 Experiment 1:

Scan Type: Q1 MS (Q1)  
 Polarity: Negative  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit

Q1 Resolution: Unit  
 Ion Beam 1 (IB1): -1.0  
 GM (GEM): 1900.0



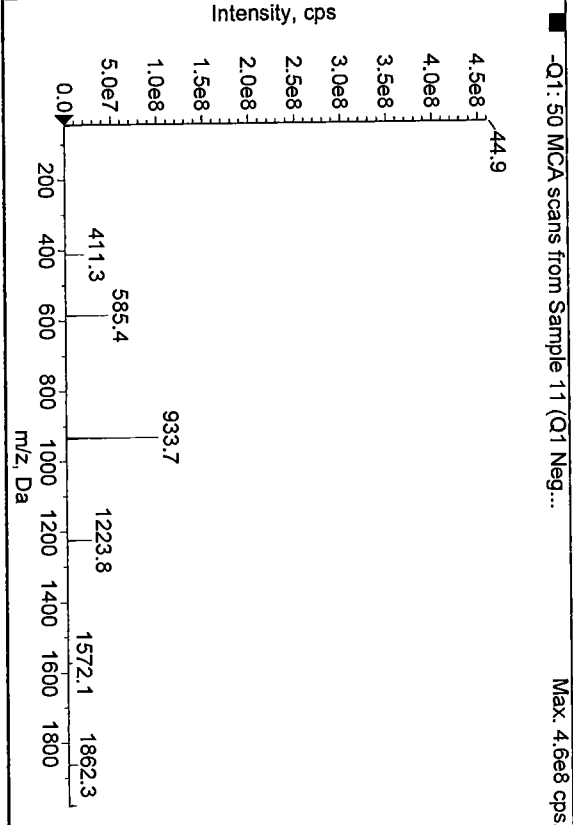
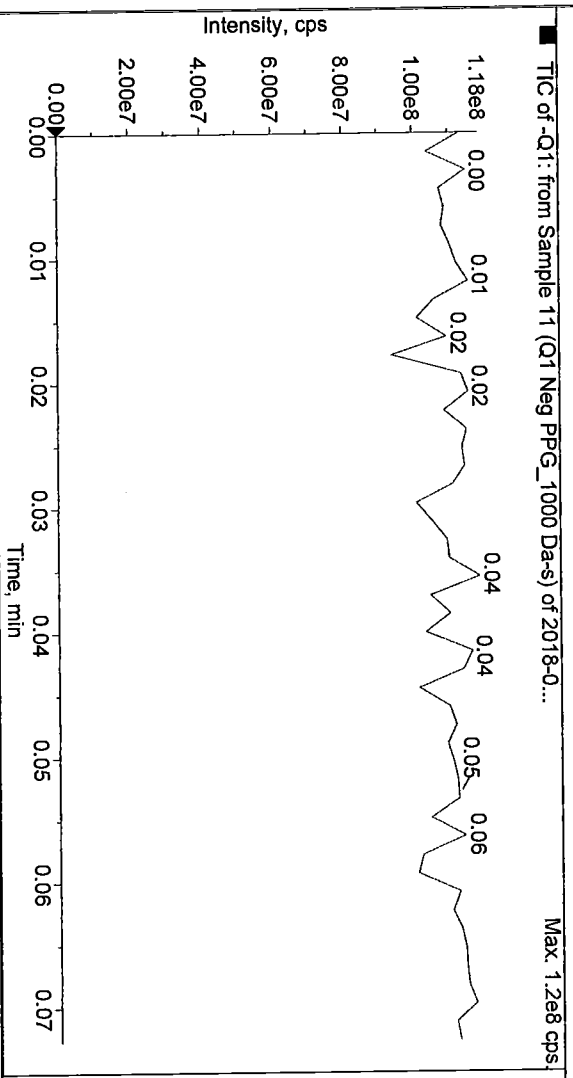


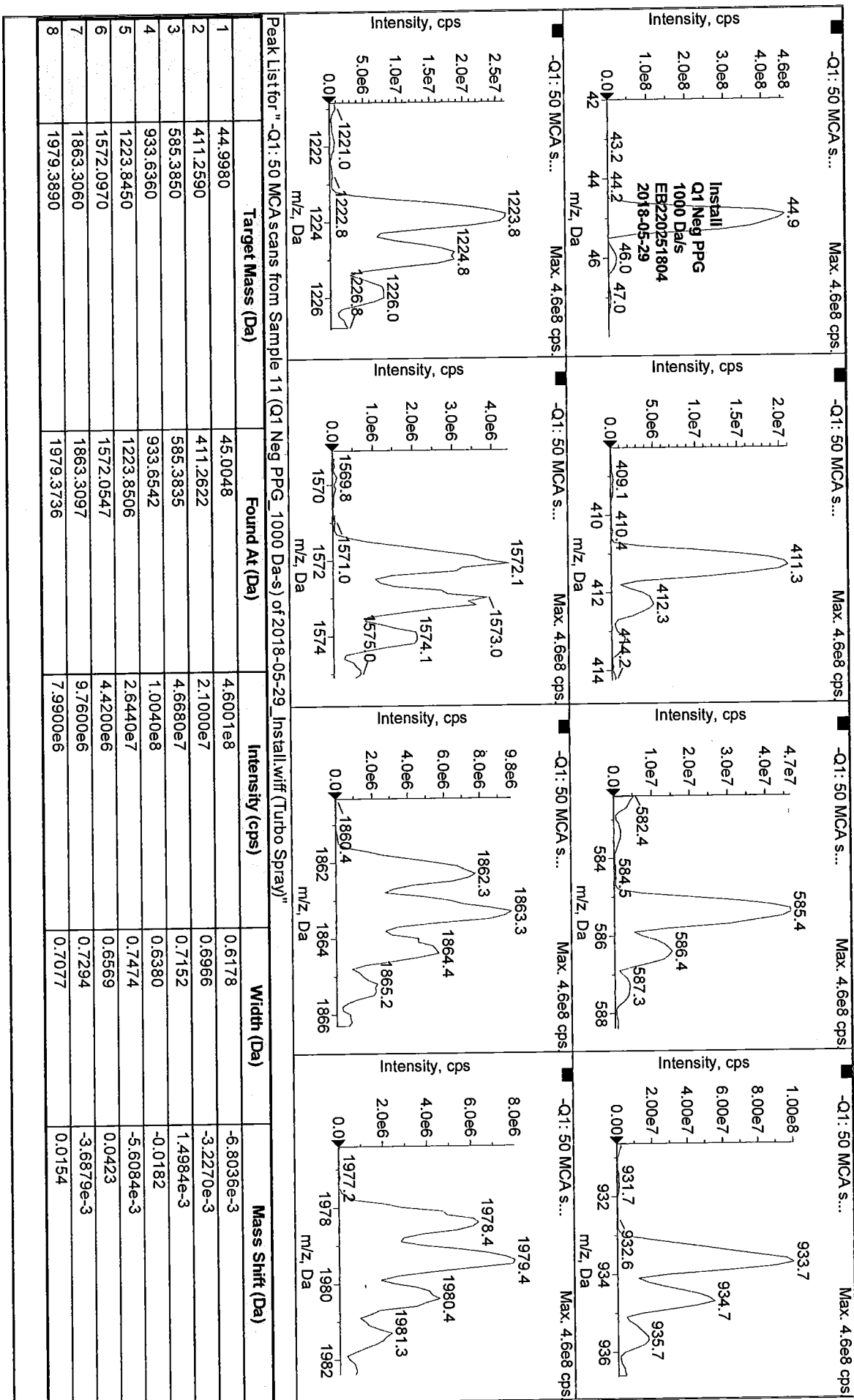


State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Outrain Gas (DIR): -500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TMS): 17.0  
 Ion Source Gas 1 (ESI): 0.0  
 Ion Source Gas 2 (ESI): -10.0  
 Distance Potential (EP): -10.0  
 Period 1:  
 Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: OFF  
 Experiments in Period: 1  
 Period 1 Experiment 1:  
 Scan Type: Q1 MS (Q1)  
 Polarity: Negative  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit





Site Parameter Editor

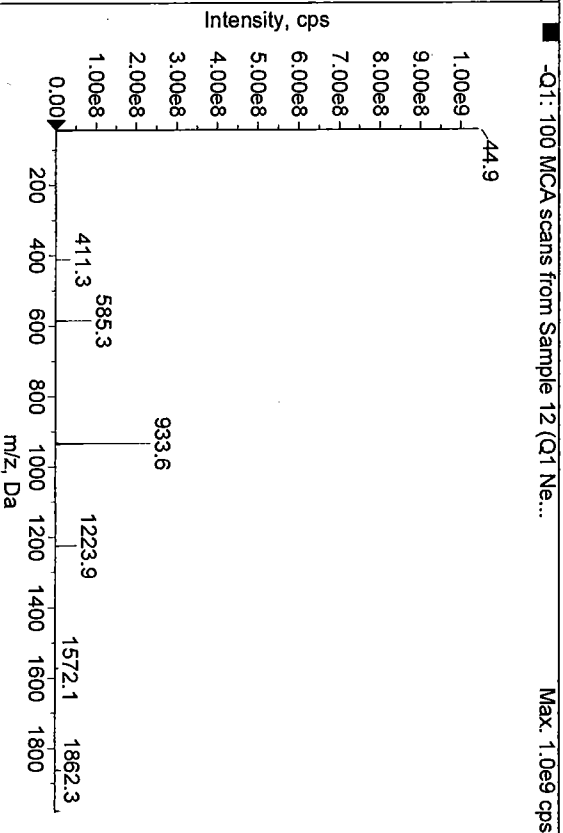
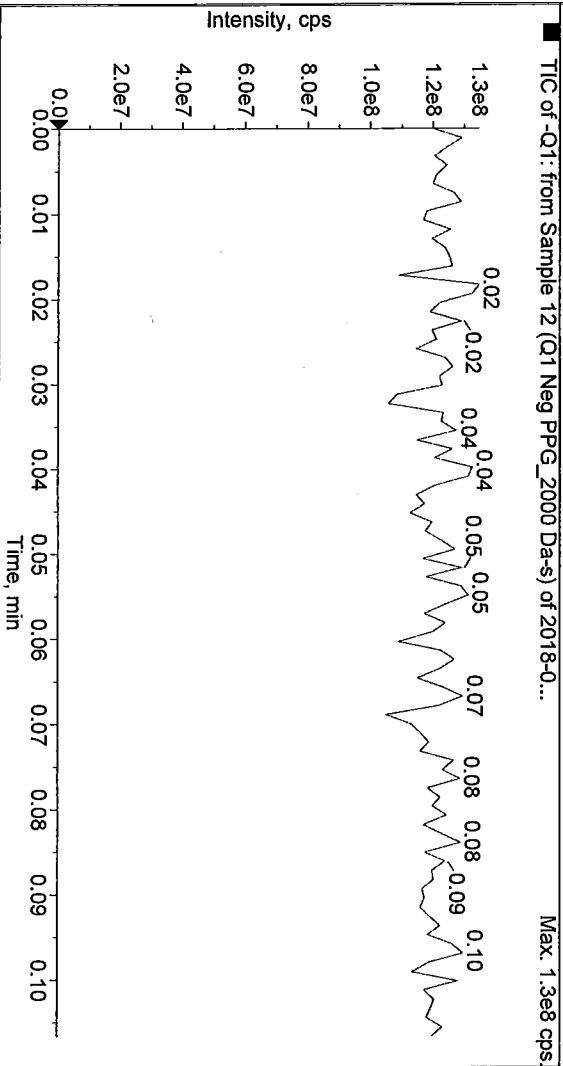
Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (Q1R): -4500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TSP): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 0.0  
 Distance Potential (EP): -10.0

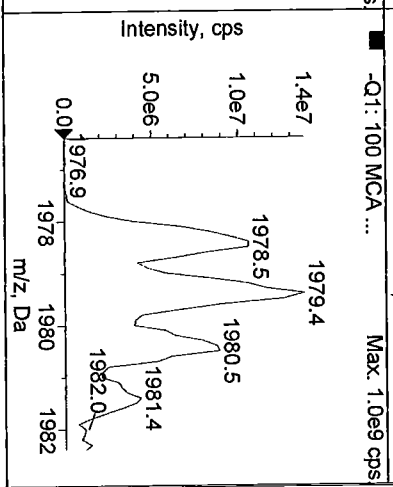
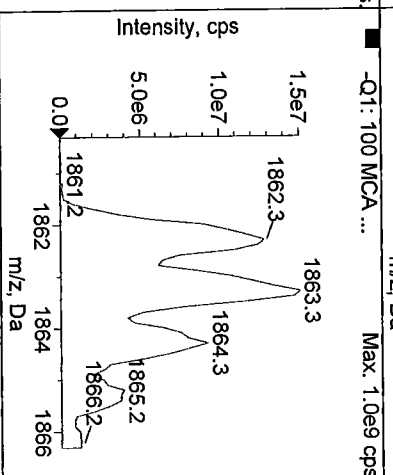
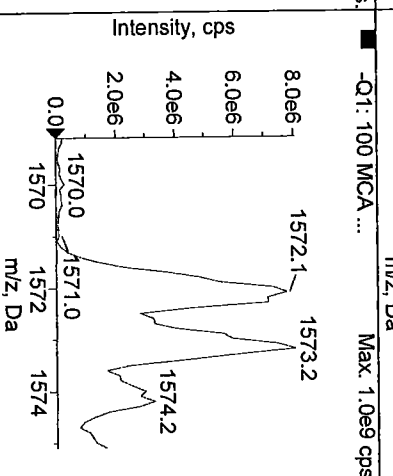
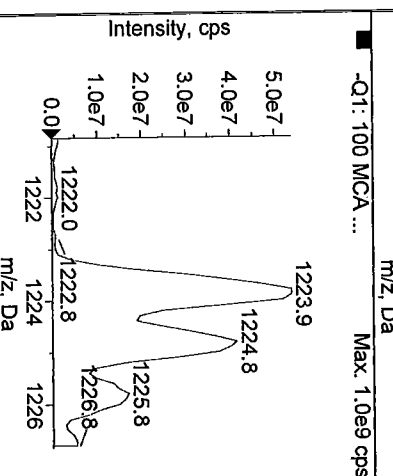
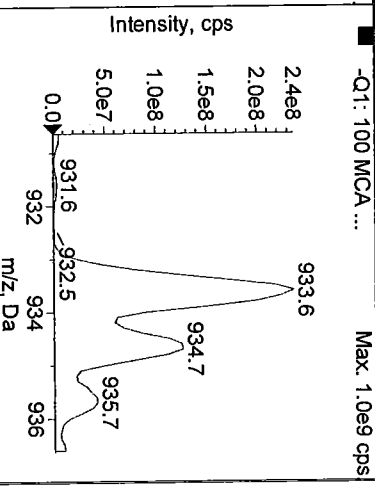
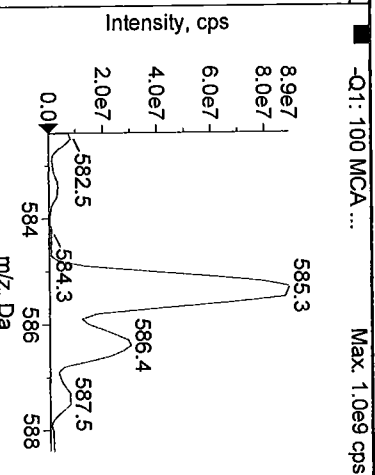
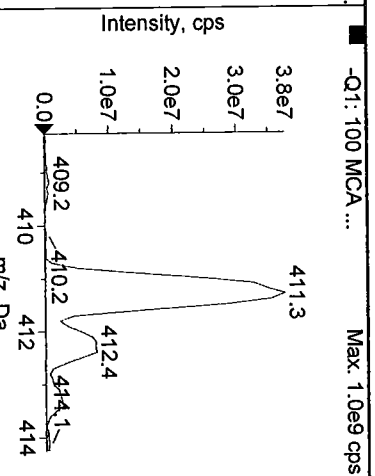
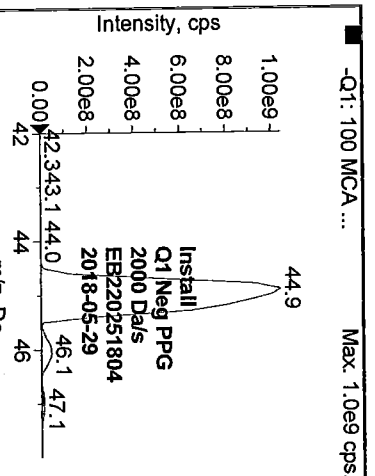
Period 1:  
 Scans in Period: 100  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1

Period 1 Experiment 1:  
 Scan Type: Q1 MS (Q1)  
 Polarity: Negative  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit

Q1 Resolution: Unit  
 Ion Energy 1 (IE1): -1.0  
 CM (CM): 1900.0



Peak List for "-Q1: 100 MCA scans from Sample 12 (Q1 Neg PPG 2000 Da-s) of 2018-05-29_Install.wiff (Turbo Spray)"	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9988	1.0432e9	0.6290	-7.8776e-4
2	411.2590	411.2681	3.7700e7	0.6335	-9.0706e-3
3	585.3850	585.3670	8.9260e7	0.6465	0.0180
4	933.6360	933.6310	2.3632e8	0.6639	4.9633e-3
5	1223.8450	1223.8469	5.3740e7	0.7138	-1.8551e-3
6	1572.0970	1572.1139	7.7800e6	0.7223	-0.0169
7	1863.3060	1863.2638	1.5060e7	0.7553	0.0422
8	1979.3890	1979.3750	1.3800e7	0.6556	0.0140





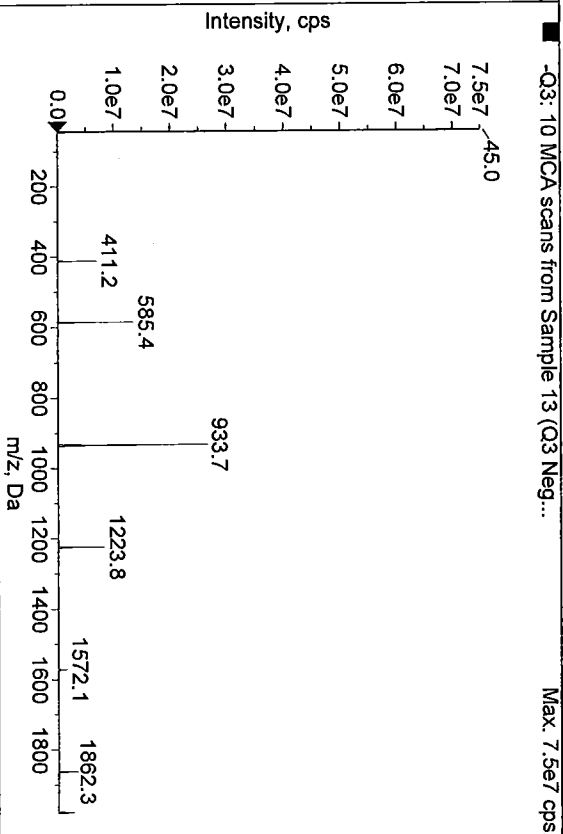
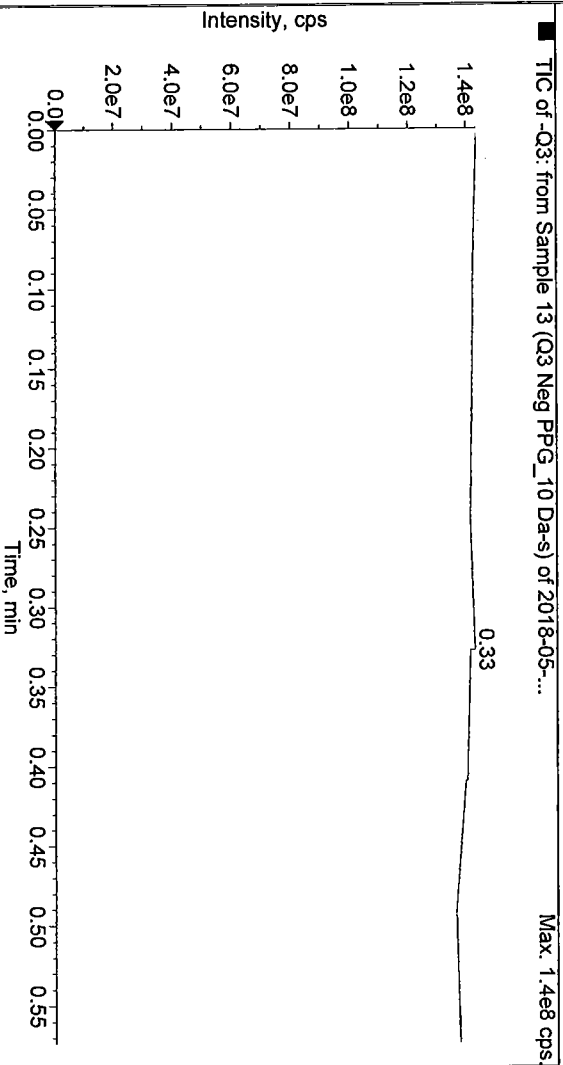
State Parameter Editor

Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
Ion Source Temperature Reached: 10.0  
Curtain Gas (CUR): -450.0  
Temperature (TS): 0.0  
Temperature (TM): 17.0  
Ion Source Gas 1 (GS1): 0.0  
Ion Source Gas 2 (GS2): 0.0  
Distance Potential (EP): -10.0

Period 1:  
Scans in Period: 10  
Relative Start Time: 0.00 msec  
Scheduled Ionization: Off  
Experiments in Period: 1  
Period 1 Experiment 1:

Q3 Resolution: Unit  
Ion Energy 3 (IE3): -1.5  
Scan Type: Q3 MS (Q3)  
Polarity: Negative  
Scan Mode: Profile  
Ion Source: Turbo Spray  
# Scans to Sum: 1  
Resolution Q3: Unit  
CSM (CSM): 1900.0



Peak List for "-Q3: 10 MCA scans from Sample 13 (Q3 Neg PPG_10 Da-s) of 2018-05-29_Install.wiff (Turbo Spray)"	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9972	7.5007e7	0.7320	7.7711e-4
2	411.2590	411.2344	7.1361e6	0.7370	0.0246
3	585.3850	585.3868	1.3657e7	0.7362	-1.8161e-3
4	933.6360	933.6384	2.6621e7	0.7288	-2.4244e-3
5	1223.8450	1223.8430	8.4746e6	0.7528	1.9856e-3
6	1572.0970	1572.0927	1.6606e6	0.6651	4.2840e-3
7	1863.3060	1863.3066	3.5734e6	0.7033	-6.4400e-4
8	1979.3890	1979.4384	2.8091e6	0.7513	-0.0494

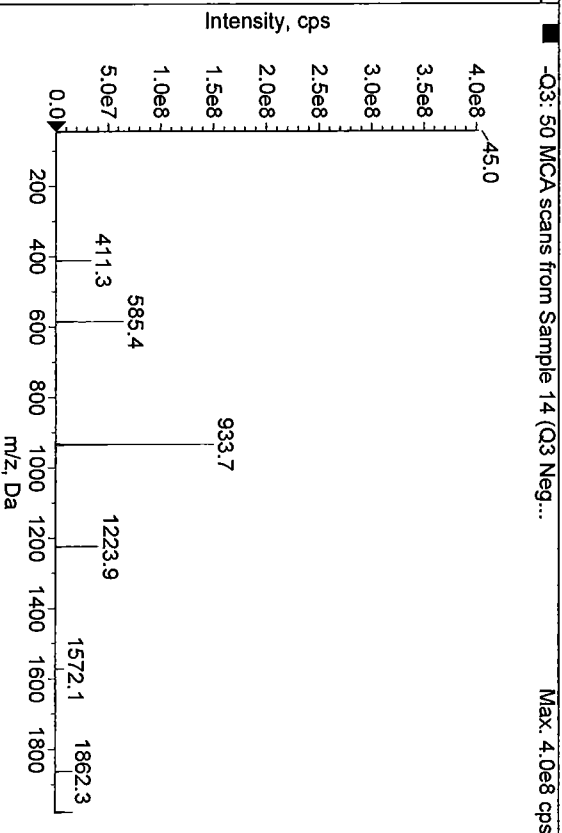
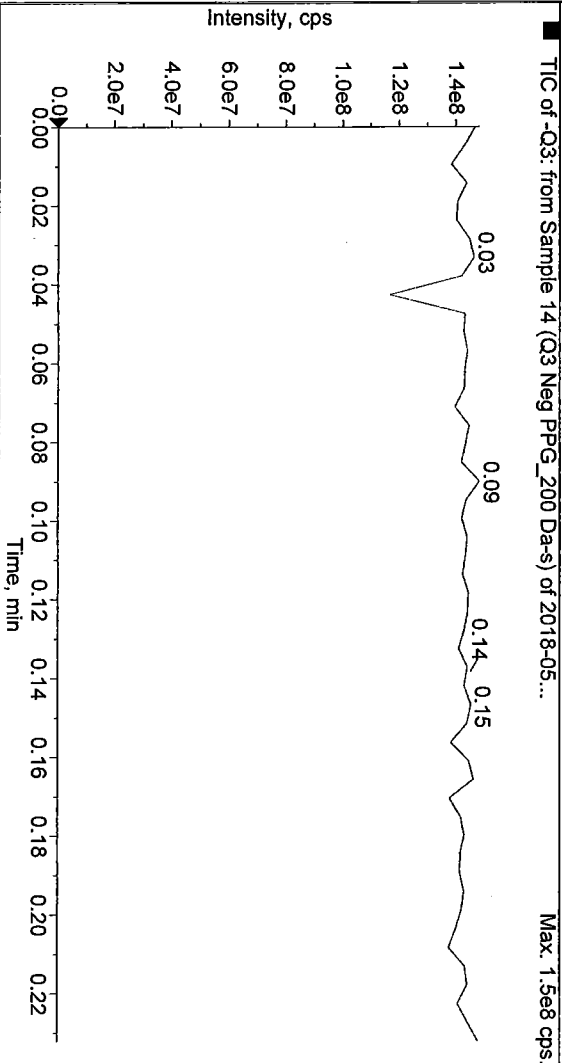
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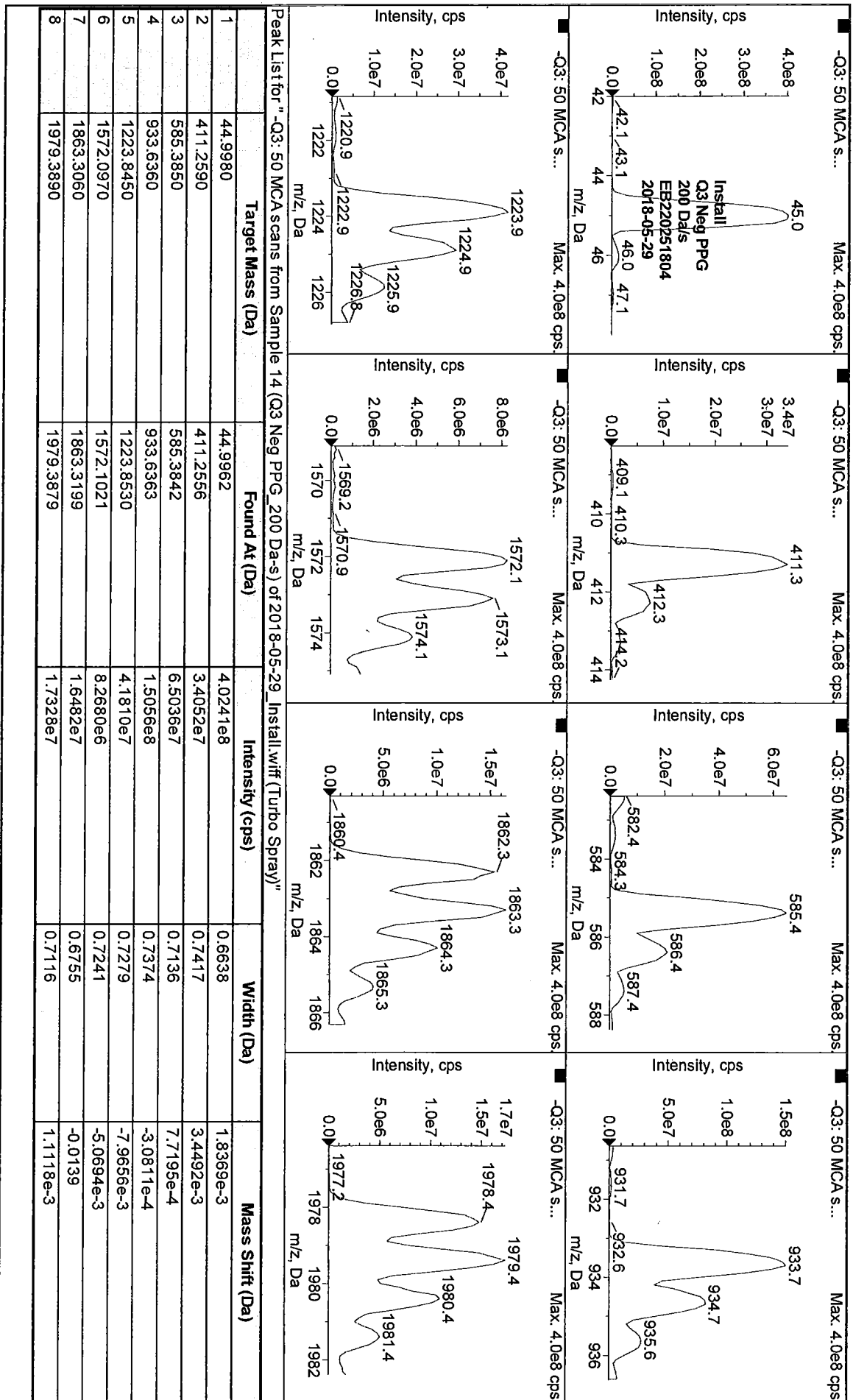
Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached  
 Curtain Gas (CUR): 10.0  
 Injektor Valve (IS): -4500.0  
 Temperature (TSM): 0.0  
 Ion Source Gas 1 (GS1): 17.0  
 Ion Source Gas 2 (GS2): 0.0  
 Distance Potential (EP): -10.0

Period 1:  
 Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: OFF  
 Experiments in Period: 1  
 Period 1 Experiment 1:

Q3 Resolution: Unit  
 Ion Energy 3 (IE3): -1.5  
 CM (CM): 1900.0  
 Scan Type: Q3 MS (Q3)  
 Polarity: Negative  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q3: Unit





State Parameter Editor

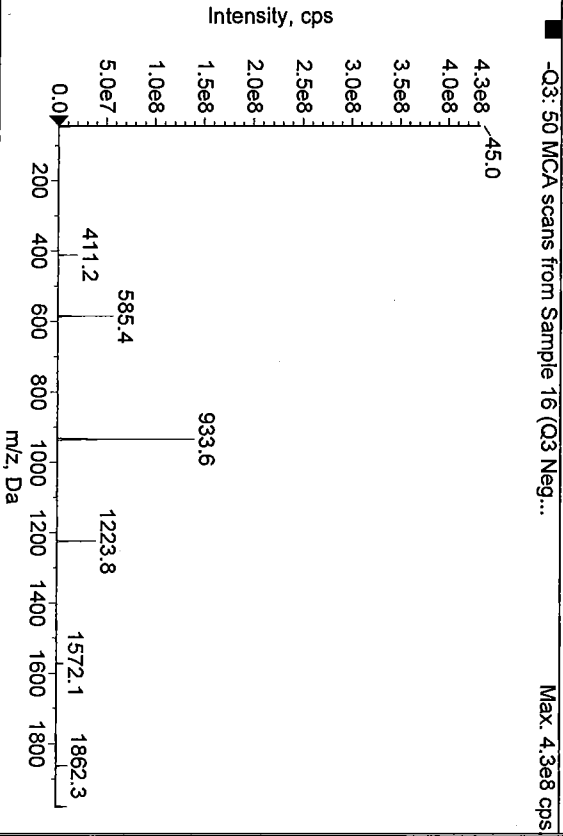
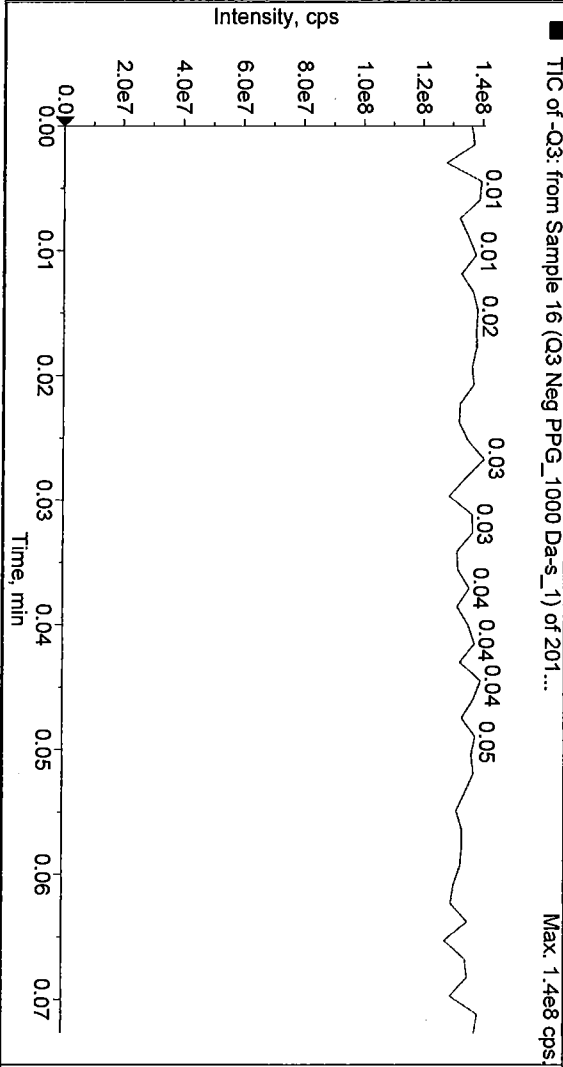
Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 10.0  
 Curtain Gas (CIR): -4500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TP): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): -10.0  
 Distance Potential (EP): -10.0

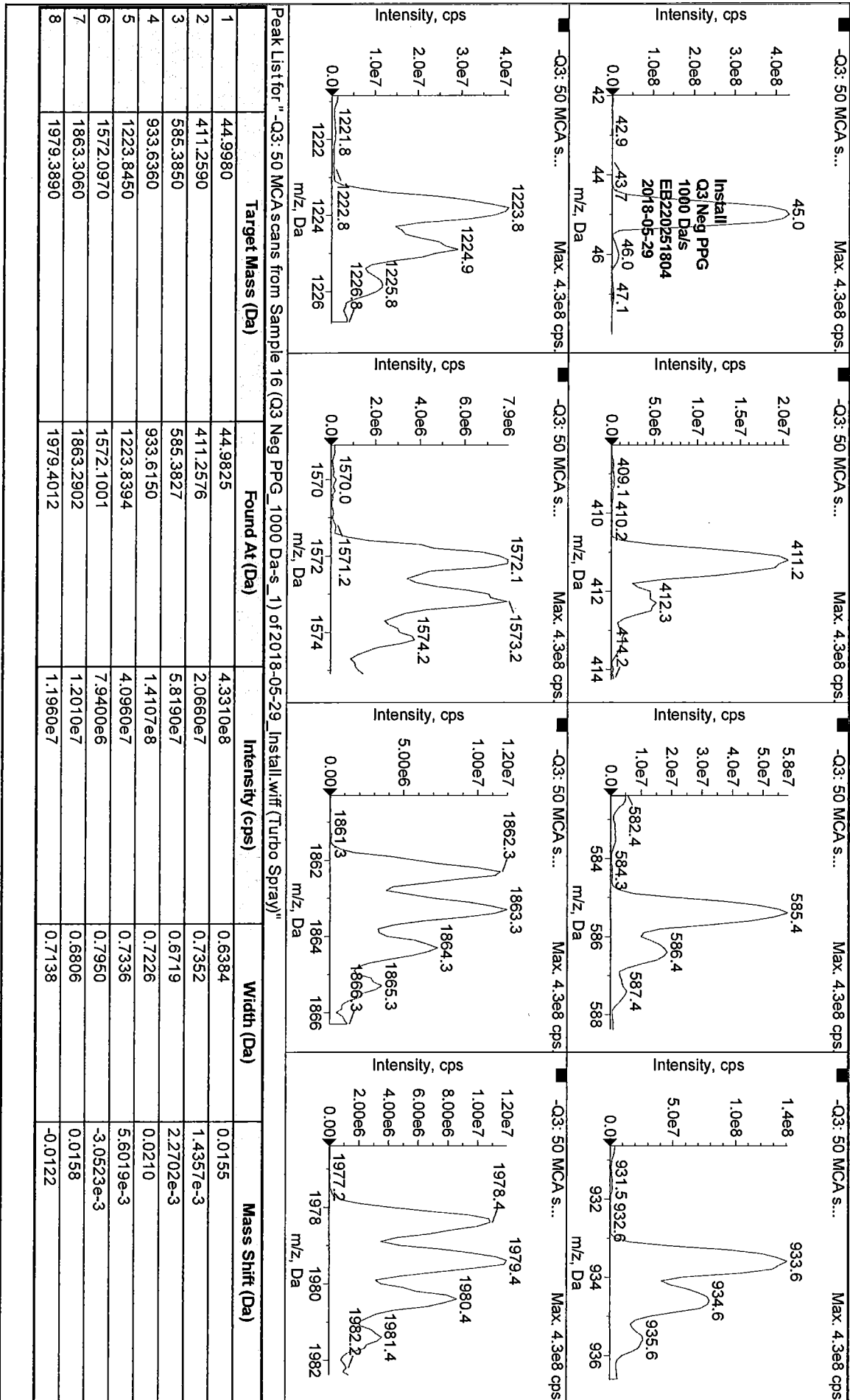
Period 1:  
 Scans in Period: 50  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: OFF  
 Experiments in Period: 1

Period 1 Experiment 1:  
 Scan Type: Q3 MS (Q3)  
 Polarity: Negative  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q3: Unit

Q3 Resolution: Unit  
 Ion Energy 3 (IE3): -1.5  
 EM (EM): 1300.0



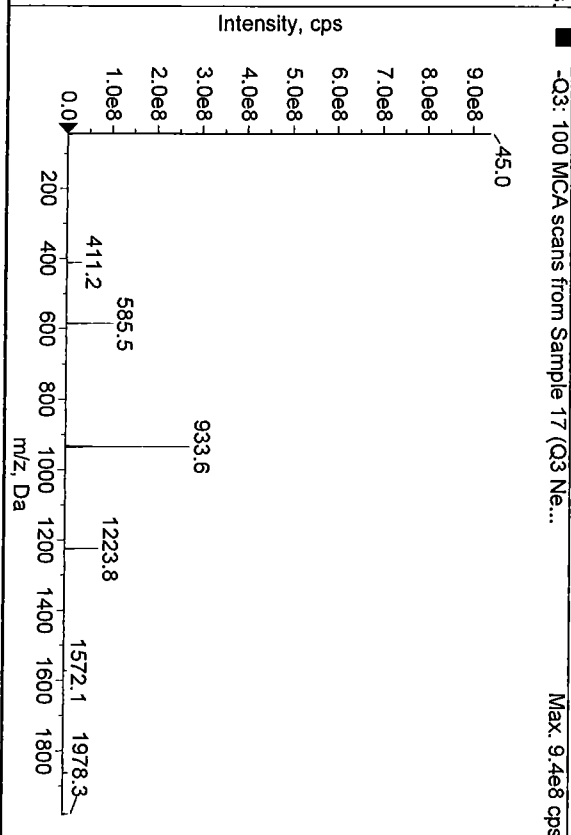
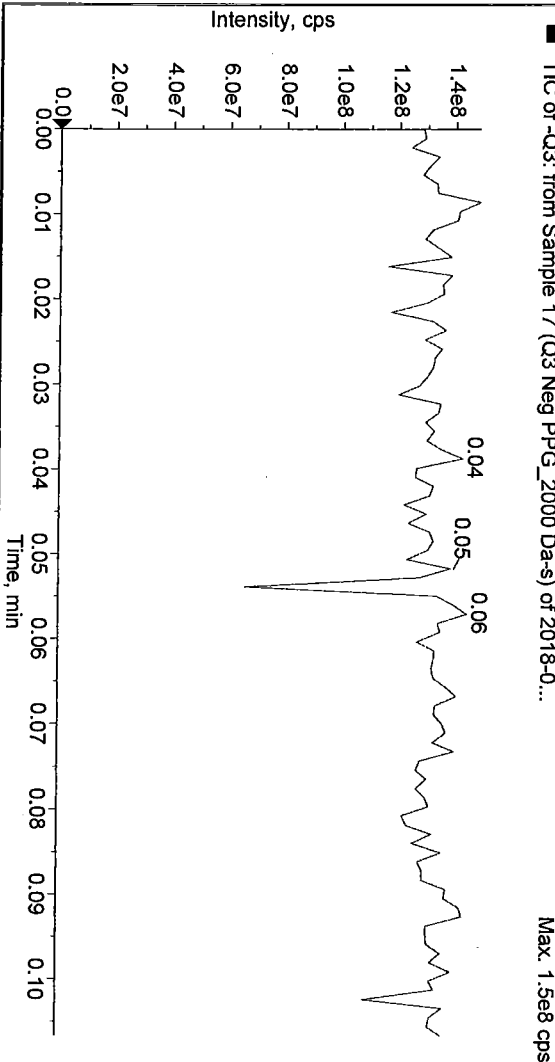


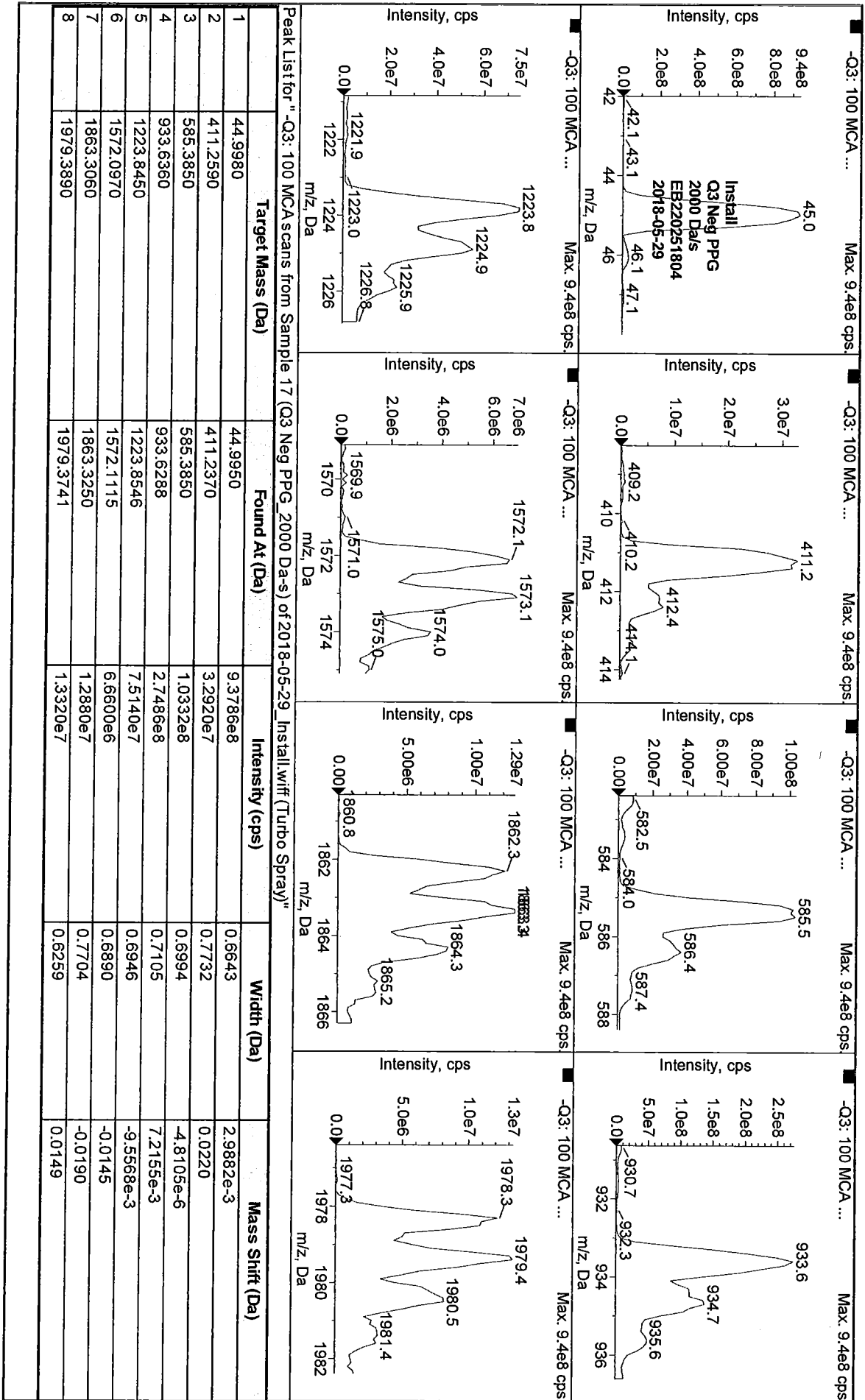


State Parameter Editor

Mass Spectrometer Method Properties

Ion Source:	Turbo Spray	Period 1:	
Ion Source Temperature Reached:		Scans in Period:	100
Carrier Gas (Q1R):	10.0	Relative Start Time:	0.00 msec
Temperature (Q1R):	-4500.0	Scheduled Ionization:	OFF
Temperature (Q2M):	0.0	Experiments in Period:	1
Ion Source Gas 1 (GS1):	17.0	Period 1 Experiment:	1:
Ion Source Gas 2 (GS2):	0.0	Scan Type:	Q3 MS (Q3)
Distance Potential (EP):	-10.0	Polarity:	Negative
Q3 Resolution:	Unit	Scan Mode:	Profile
Ion Beam 3 (IB3):	-1.5	Ion Source:	Turbo Spray
Q3M (Q3M):	1000.0	# Scans to Sum:	1
		Resolution Q3:	Unit

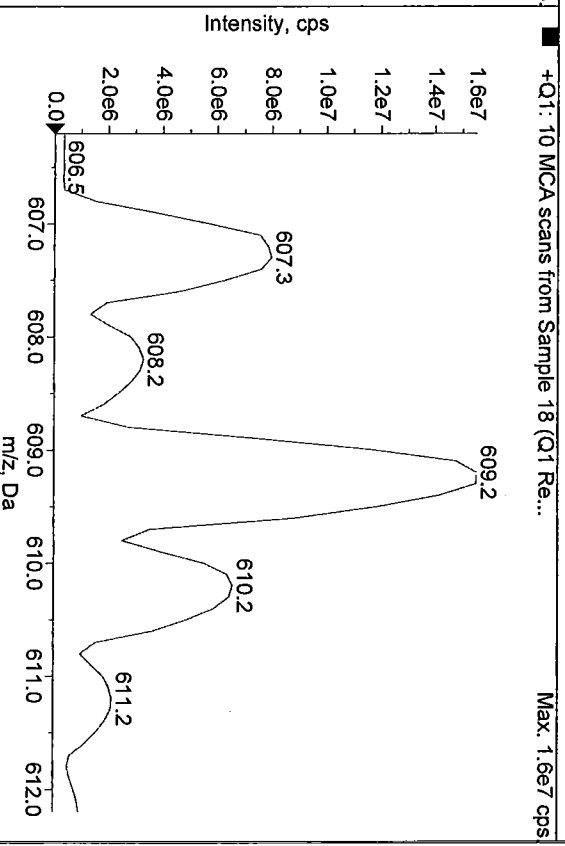
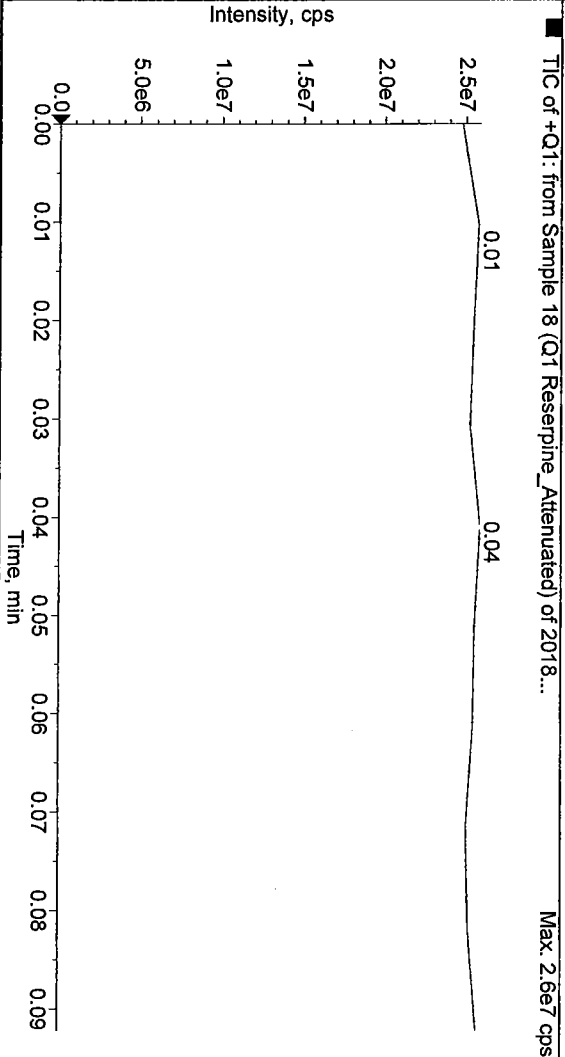




Site Parameter Editor

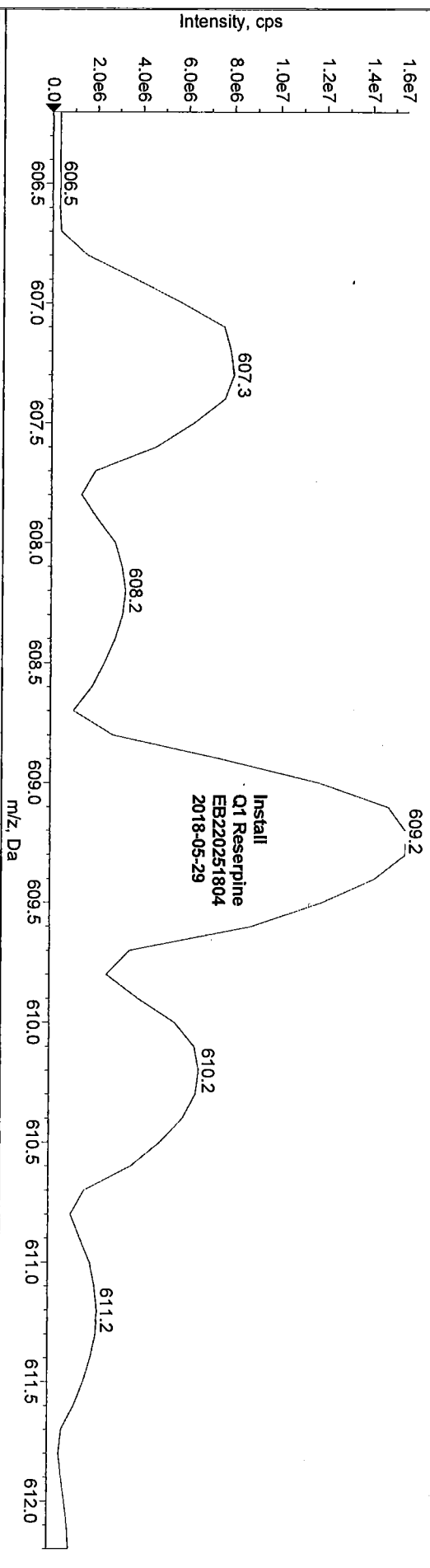
Mass Spectrometer Method Properties

Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 28.0  
 Curtain Gas (Q1R): 5500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TSP): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 0.0  
 Deblasting Potential (DP): 135.0  
 Filtration Potential (EP): 10.0  
 Q1 Resolution: Unit  
 Ion Beam 1 (IB1): 1.2  
 QM (QM): 1800.0  
 Period 1:  
 Scans in Period: 10  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: Off  
 Experiments in Period: 1  
 Period 1 Experiment: 1:  
 Scan Type: Q1 MS (Q1)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Resolution Q1: Unit



+Q1: 10 MCA scans from Sample 18 (Q1 Reserpine\_Atenuated) of 2018-05-29\_Install.wiff (Turbo Spray)

Max: 1.6e7 cps



Peak List for "+Q1: 10 MCA scans from Sample 18 (Q1 Reserpine\_Atenuated) of 2018-05-29\_Install.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	195.1000	n/a	n/a	n/a	n/a
2	609.2810	609.2580	1.5520e7	0.7138	0.0230



State Parameter Editor

Mass Spectrometer Method Properties

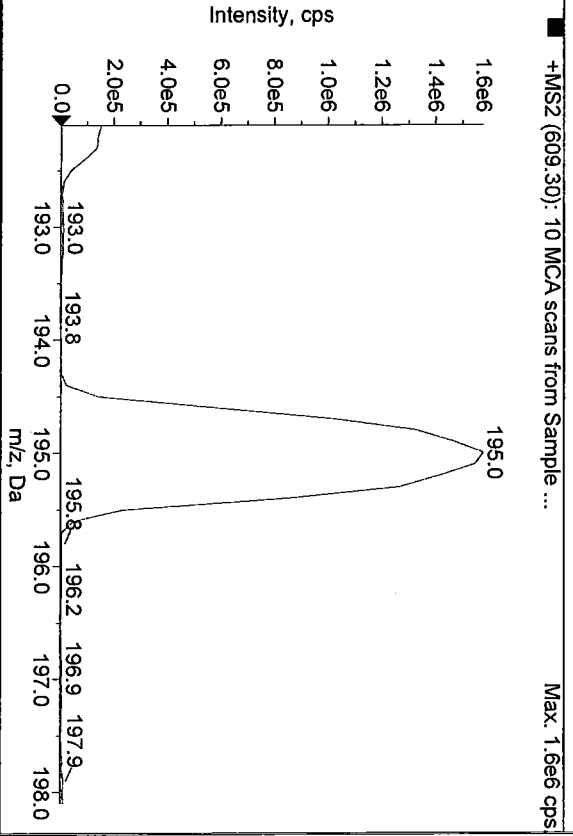
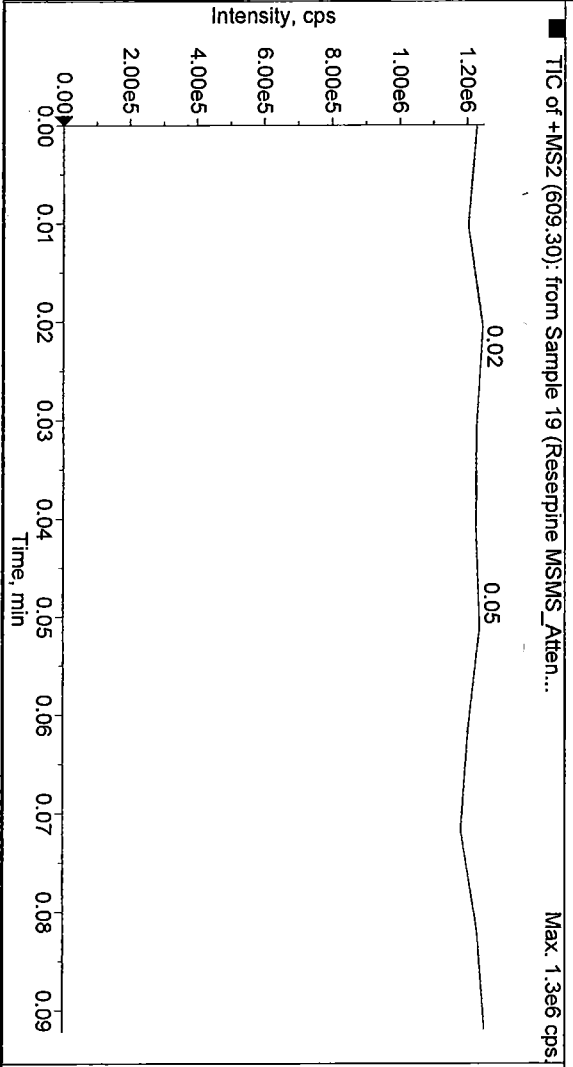
Ion Source: Turbo Spray  
 Ion Source Temperature Reached: 28.0  
 Curtain Gas (CG): 9  
 Collision Gas (CG2): 500.0  
 Ion Spray Voltage (IS): 0.0  
 Temperature (TM): 17.0  
 Ion Source Gas 1 (GS1): 0.0  
 Ion Source Gas 2 (GS2): 0.0

Declustering Potential (DP): 135.0  
 Distance Potential (DP): 10.0  
 Collision Energy (CE): 44.5  
 Collision Cell Bias Potential (CBP): 6.2

Q1 Resolution: 10000 Resolution: Unit  
 Ion Energy 1 (IE1): 1.2

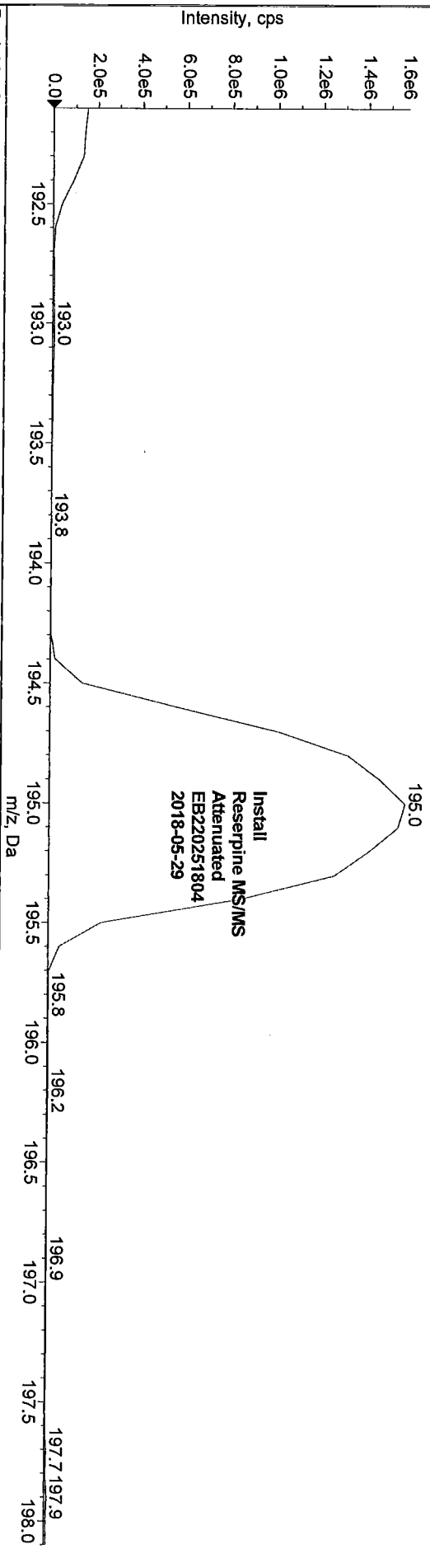
Period 1 Experiment 1:  
 Scans in Period: 10  
 Relative Start Time: 0.00 msec  
 Scheduled Ionization: OFF  
 Experiments in Period: 1

Scan Type: Product Ion (MS2)  
 Polarity: Positive  
 Scan Mode: Profile  
 Ion Source: Turbo Spray  
 # Scans to Sum: 1  
 Product Of: 609.30 Da



+MS2 (609.30): 10 MCA scans from Sample 19 (Reserpine MSMS\_Attenuated) of 2018-05-29\_Install.wif (Turbo Spray)

Max: 1.6e6 cps



Peak List for: "+MS2 (609.30): 10 MCA scans from Sample 19 (Reserpine MSMS\_Attenuated) of 2018-05-29\_Install.wif (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	195.1000	195.0306	1.5772e6	0.7615	0.0694
2	609.2810	n/a	n/a	n/a	n/a

**Raw QC Data**

**PFAS by LC/MS/MS**

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	BLK343003	Data File:	18DEC11D-03.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003	Acquis Date:	2018-12-11T05:17:10
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	23	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.25000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	947089.6	953492.0	-1	50	
13C2-PFOA	5.0	508878.6	500971.3	2	50	
13C4-PFOS	4.8	289676.6	310746.2	-7	50	
13C2-PFDA	5.0	391317.4	419040.9	-7	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	855695.6	13C3-PFBA	947089.6	0.904	20.000	15.995	80	50-150	
E13C5-PFPeA	822228.4	13C3-PFBA	947089.6	0.868	20.000	16.493	82	50-150	
E13C3-PFBS	351100.1	13C3-PFBA	947089.6	0.371	18.600	12.569	68	50-150	
E13C2-4:2-FTS	52880.8	13C2-PFOA	508878.6	0.104	18.680	16.288	87	50-150	
E13C5-PFHxA	555834.2	13C2-PFOA	508878.6	1.092	20.000	14.669	73	50-150	
E13C3-PFHxS	277452.6	13C2-PFOA	508878.6	0.545	18.920	13.988	74	50-150	
E13C4-PFHpA	464712.5	13C2-PFOA	508878.6	0.913	20.000	15.529	78	50-150	
E13C2-6:2-FTS	52403.7	13C2-PFOA	508878.6	0.103	19.000	25.518	134	50-150	
E13C8-PFOA	752781.9	13C2-PFOA	508878.6	1.479	20.000	16.726	84	50-150	
E13C8-PFOS	267455.5	13C4-PFOS	289676.6	0.923	19.120	16.574	87	50-150	
E13C9-PFNA	504981.7	13C4-PFOS	289676.6	1.743	20.000	19.704	99	50-150	
E13C6-PFDA	584229.8	13C2-PFDA	391317.4	1.493	20.000	15.826	79	50-150	
E13C2-8:2-FTS	28685.3	13C2-PFDA	391317.4	0.073	19.160	19.143	100	50-150	
E13C8-PFOSA	564969.1	13C2-PFDA	391317.4	1.444	20.000	13.659	68	50-150	
Ed3-NMeFOSAA	116053.3	13C2-PFDA	391317.4	0.297	20.000	21.023	105	50-150	
E13C7-PFUnDA	351236.7	13C2-PFDA	391317.4	0.898	20.000	17.612	88	50-150	
Ed5-NEtFOSAA	67161.9	13C2-PFDA	391317.4	0.172	20.000	15.155	76	50-150	
E13C2-PFDoDA	642174.1	13C2-PFDA	391317.4	1.641	20.000	13.775	69	50-150	
Ed7-NMePFOSAE	188387.5	13C2-PFDA	391317.4	0.481	20.000	11.093	55	50-150	
Ed3-NMePFOSA	57796.6	13C2-PFDA	391317.4	0.148	20.000	10.765	54	50-150	
Ed9-NEtPFOSAE	150640.3	13C2-PFDA	391317.4	0.385	20.000	10.618	53	50-150	
Ed5-NEtPFOSA	47537.9	13C2-PFDA	391317.4	0.121	20.000	10.936	55	50-150	
E13C2-PFTeDA	392771.5	13C2-PFDA	391317.4	1.004	20.000	11.916	60	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

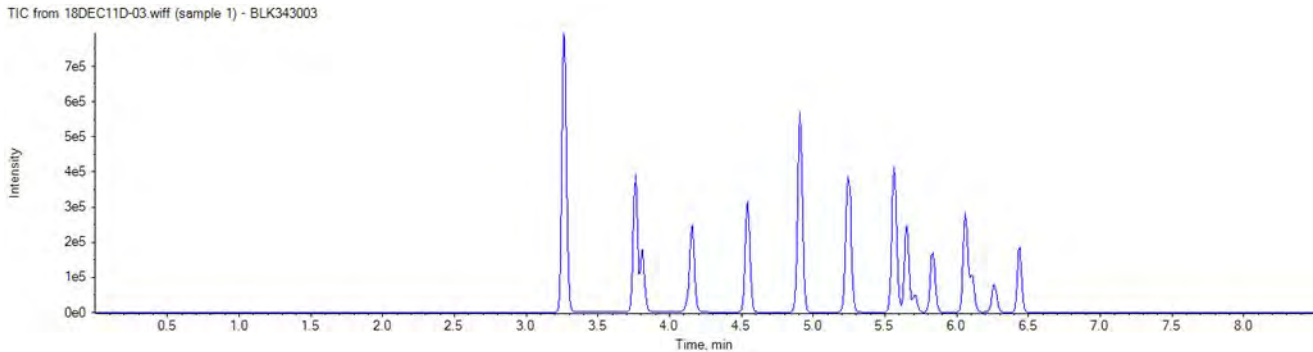
**Analyte Quantitation Peak Table**

Sample Name: BLK343003 Instrument Name: LM27631 File Name: 18DEC11D-03.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.25000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBA	3.27	1.000	16554.5		A	13C4-PFBA	3.26	855695.6	0.019	0.427
PFPeA	N/A	N/A	N/A		A	13C5-PFPeA	3.76	822228.4	N/A	
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.81	351100.1	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.12	52880.8	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	555834.2	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.81	351100.1	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.54	464712.5	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.54	277452.6	N/A	
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.90	52403.7	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.54	277452.6	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	752781.9	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	267455.5	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.25	504981.7	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.24	267455.5	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.56	584229.8	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	28685.3	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.65	564969.1	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.71	116053.3	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.24	267455.5	N/A	
PfUnDA	N/A	N/A	N/A		A	13C7-PfUnDA	5.83	351236.7	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.84	67161.9	N/A	
PFDaDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.06	642174.1	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.57	28685.3	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.10	188387.5	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.12	57796.7	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.24	267455.5	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.26	150640.3	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.27	47537.9	N/A	
PFTrDA	N/A	N/A	N/A		A	13C2-PFDaDA	6.06	642174.1	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	392771.5	N/A	
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	392771.5	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.44	392771.5	N/A	

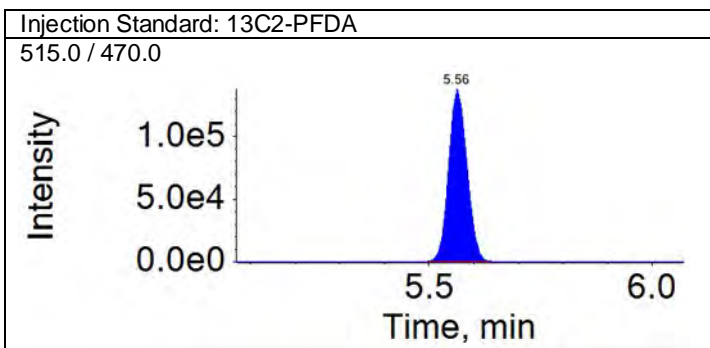
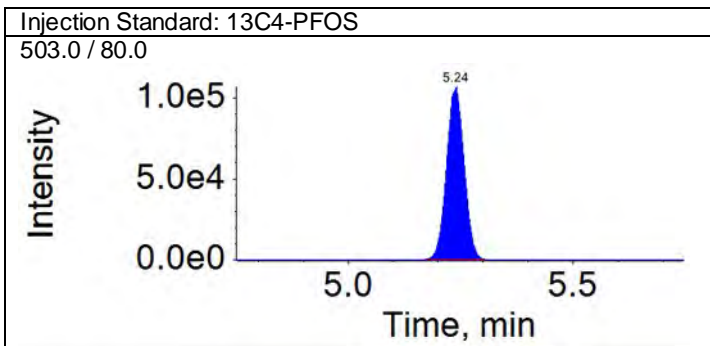
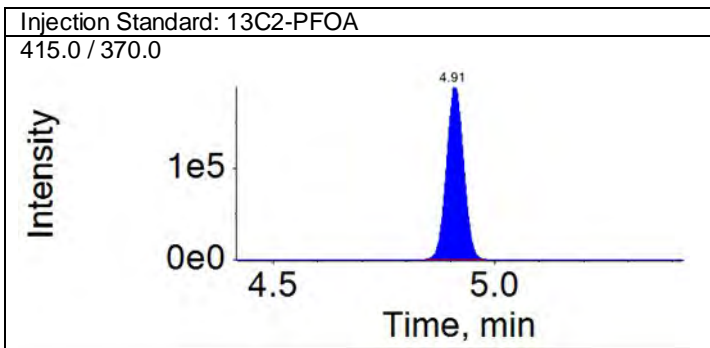
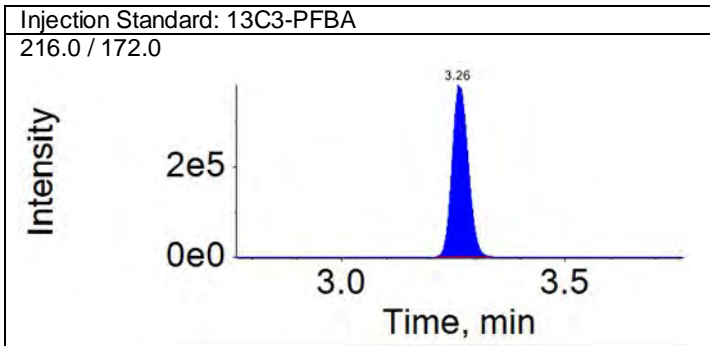
**Total Ion Chromatogram**





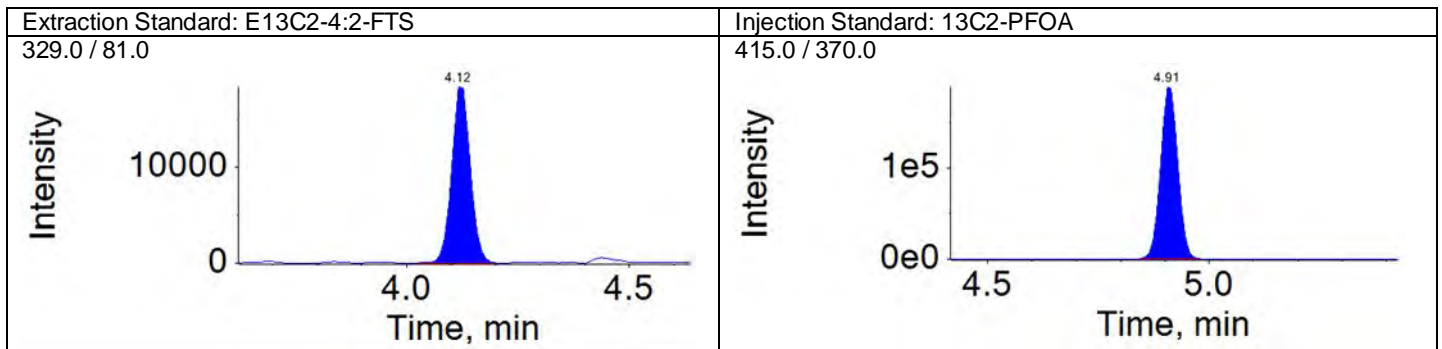
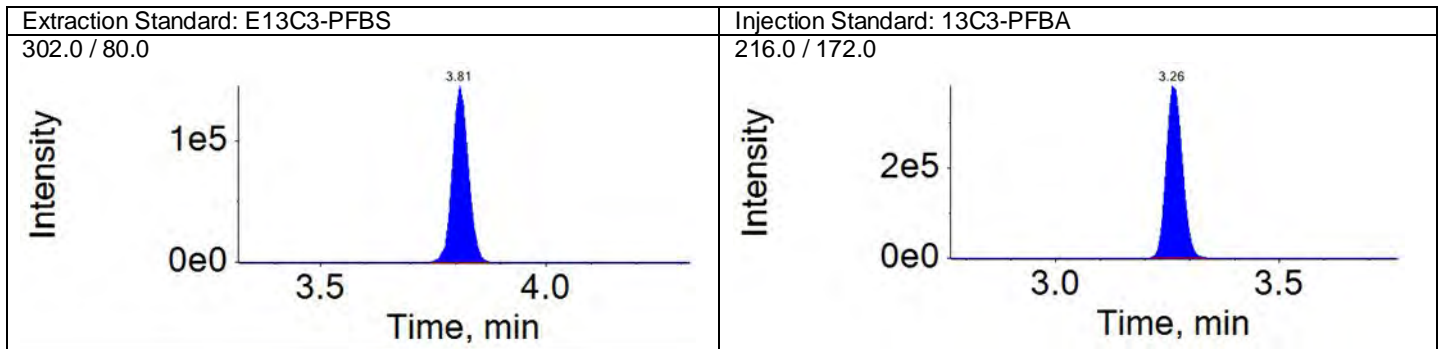
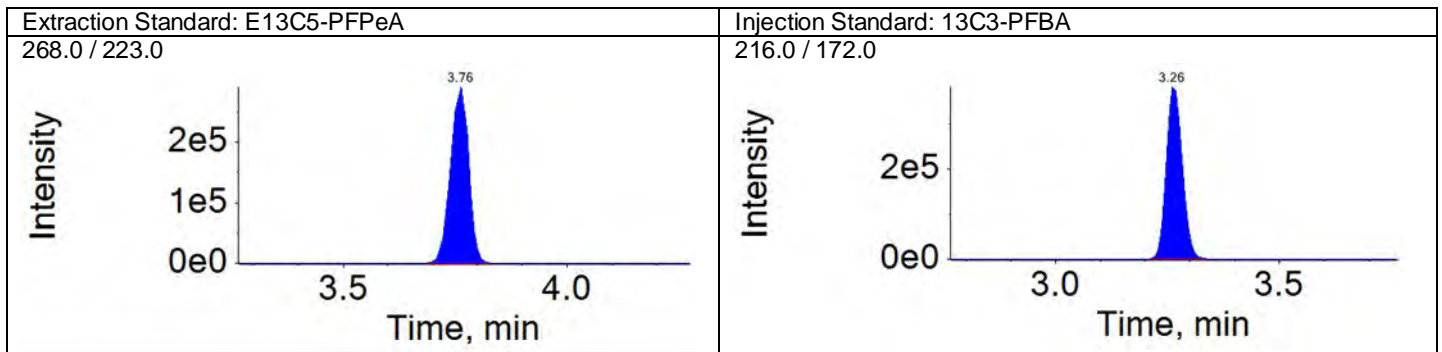
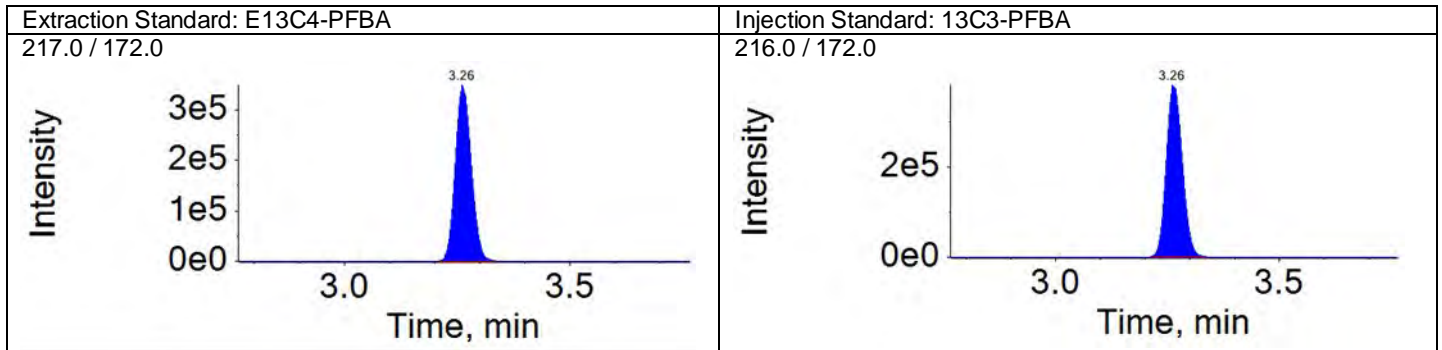
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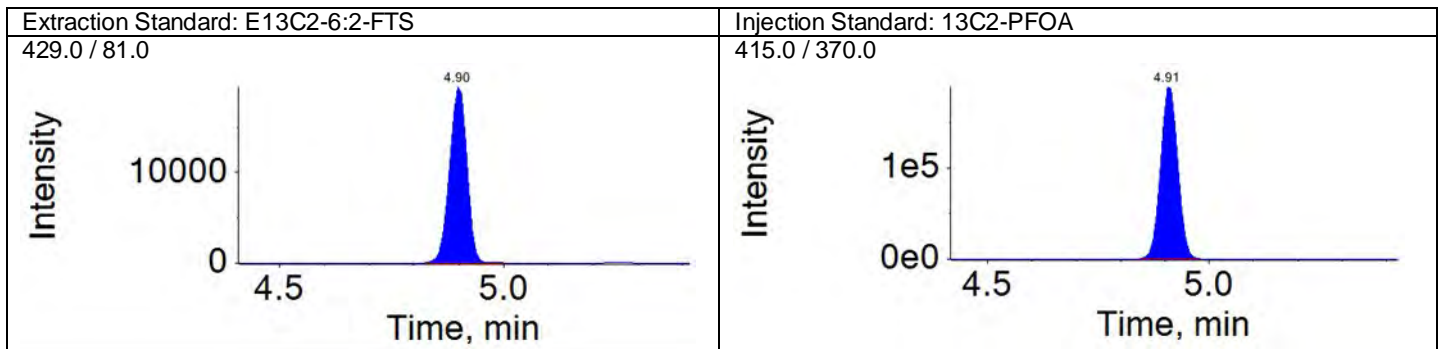
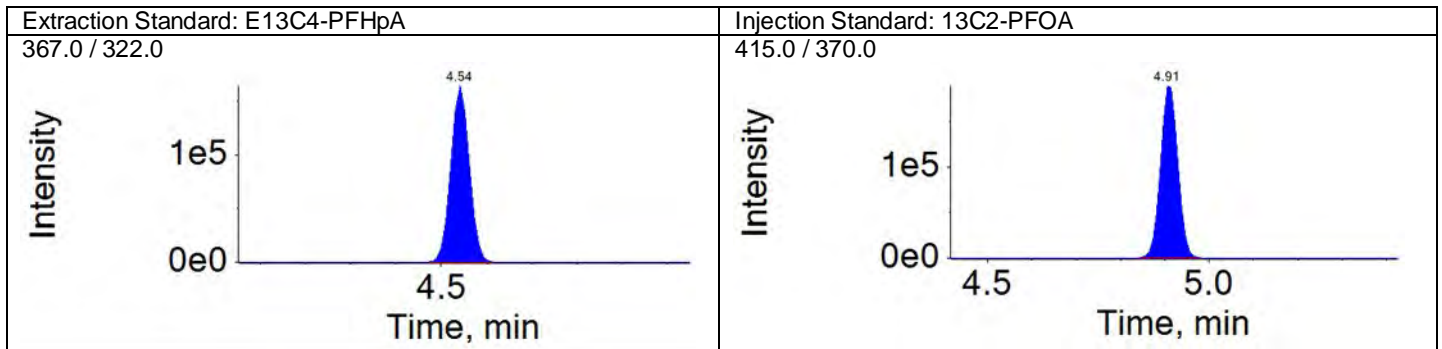
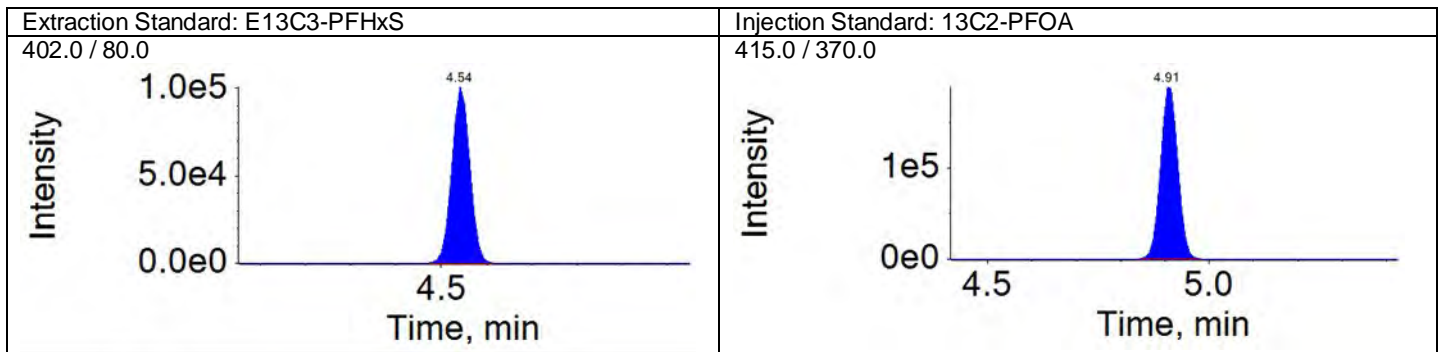
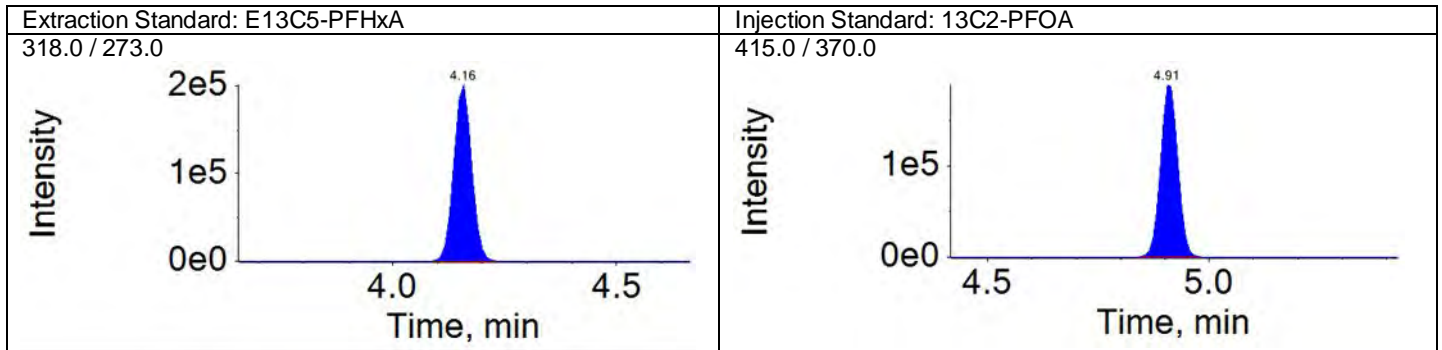
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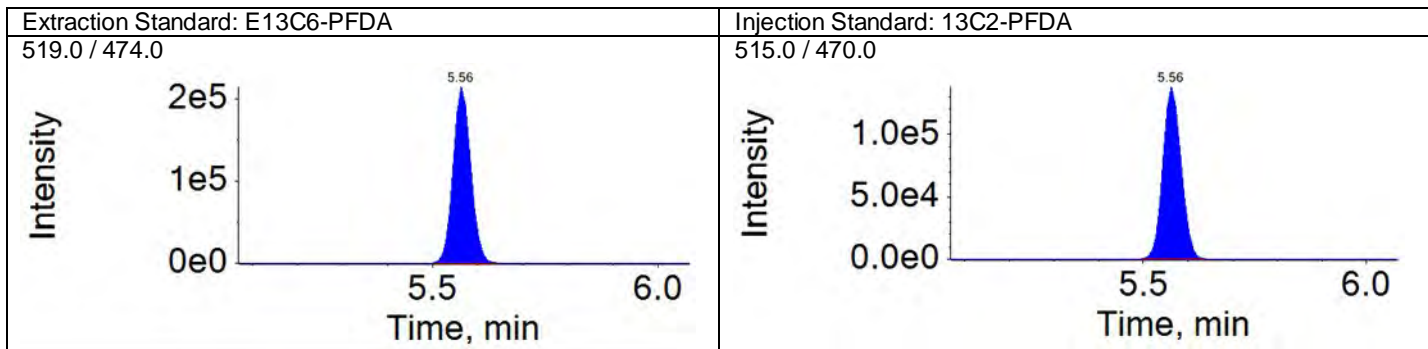
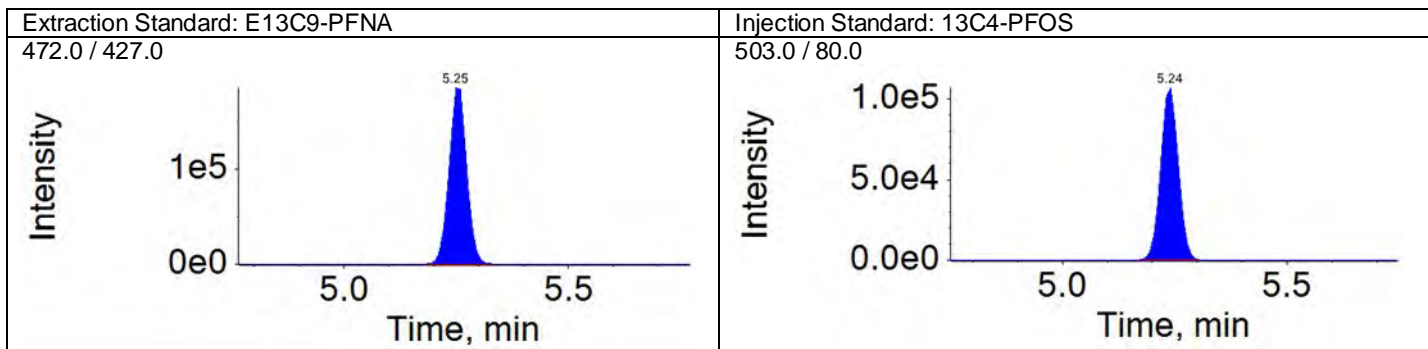
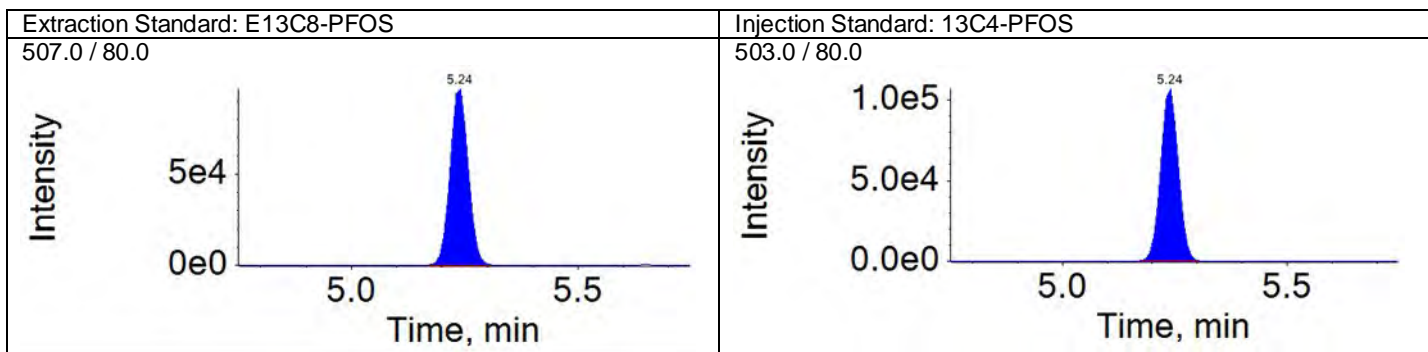
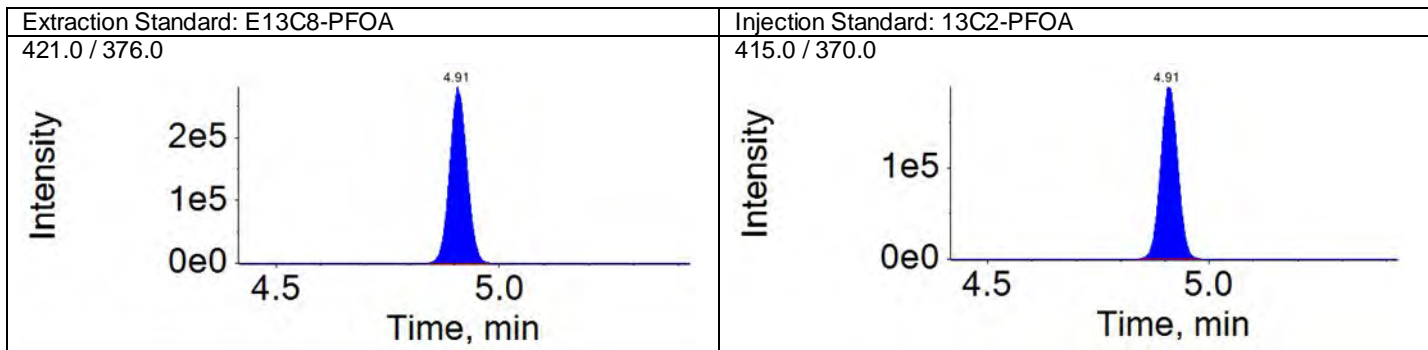
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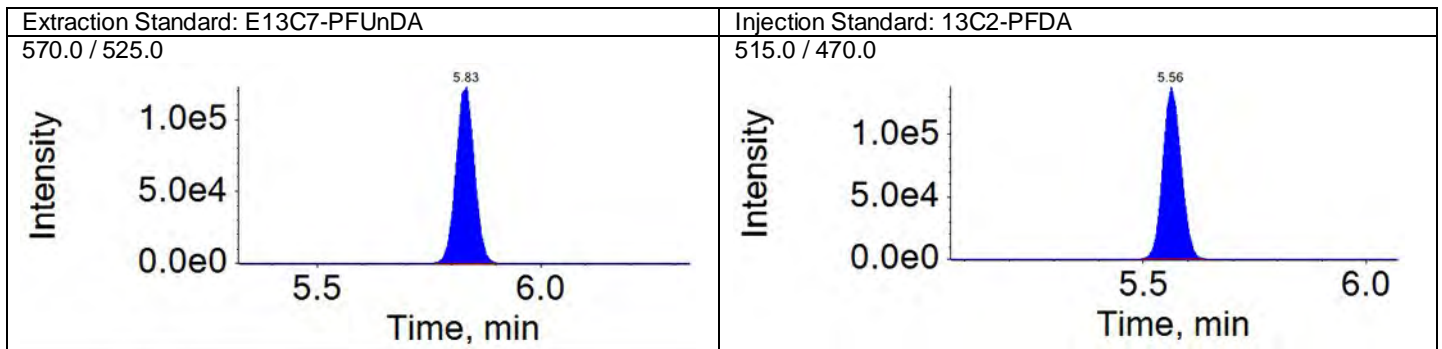
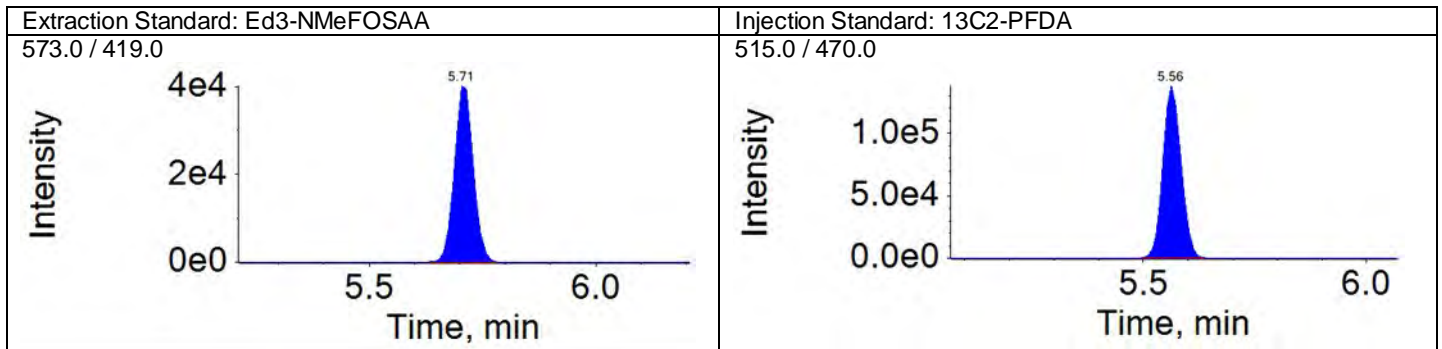
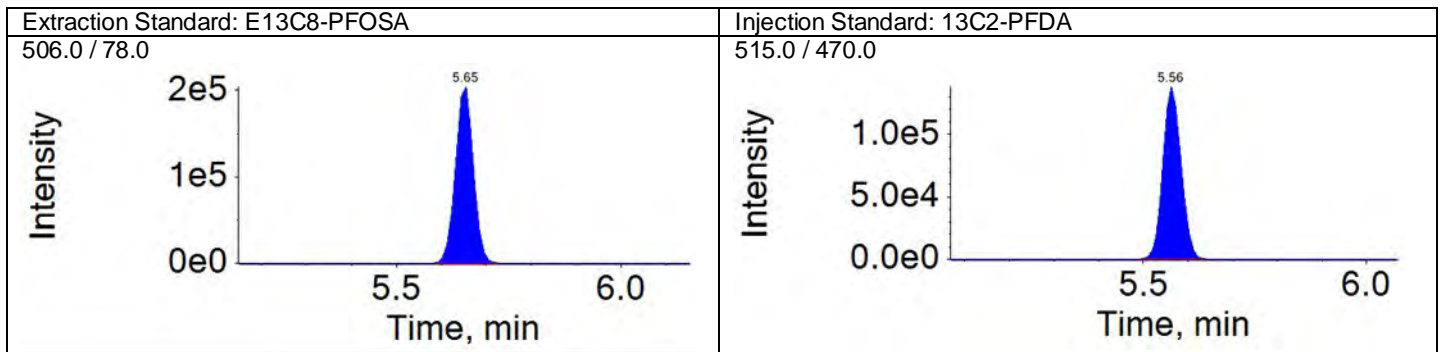
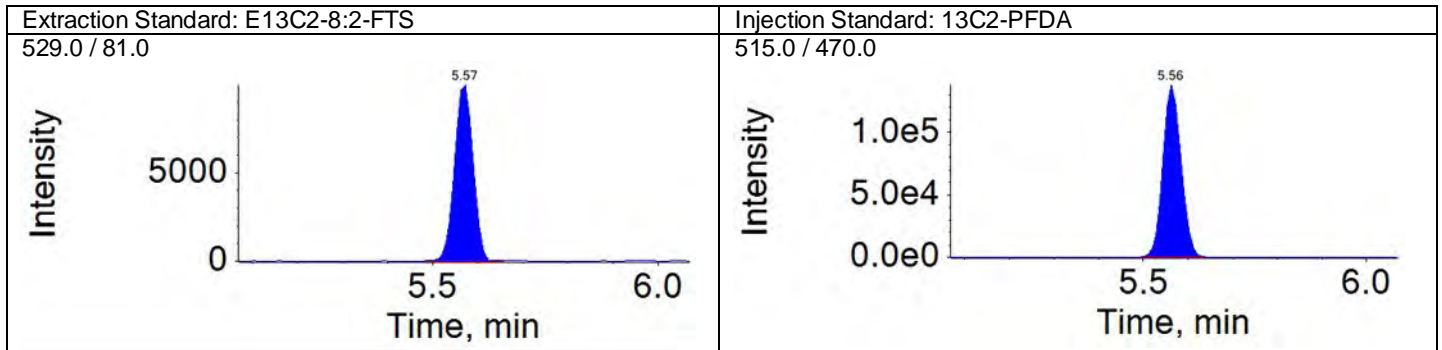
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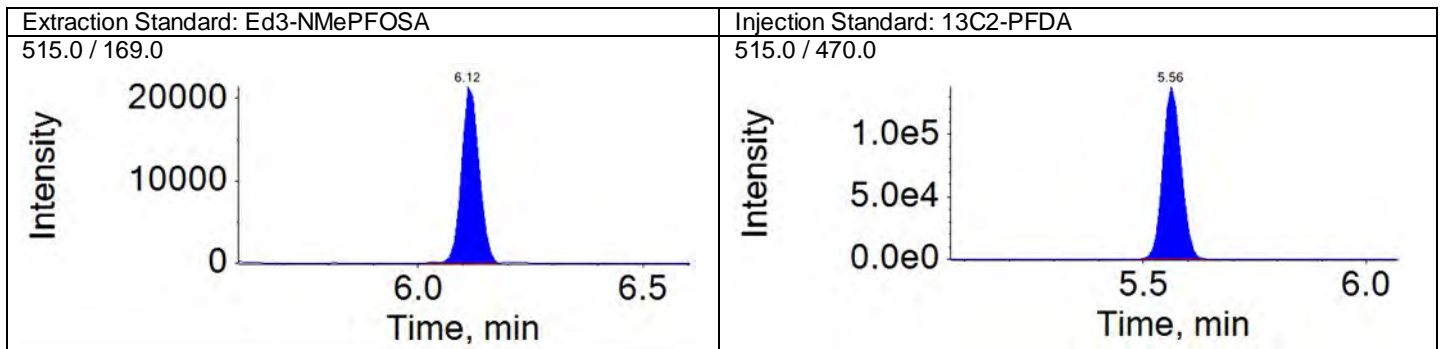
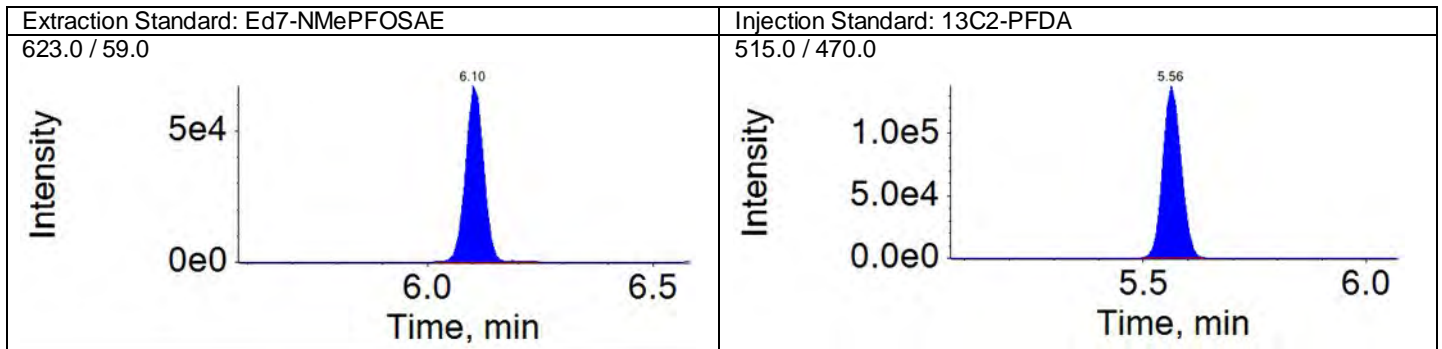
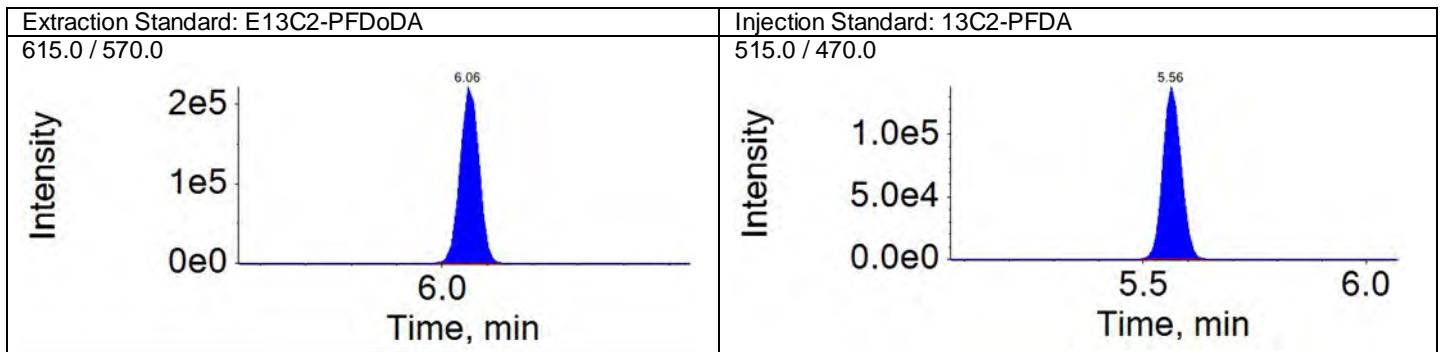
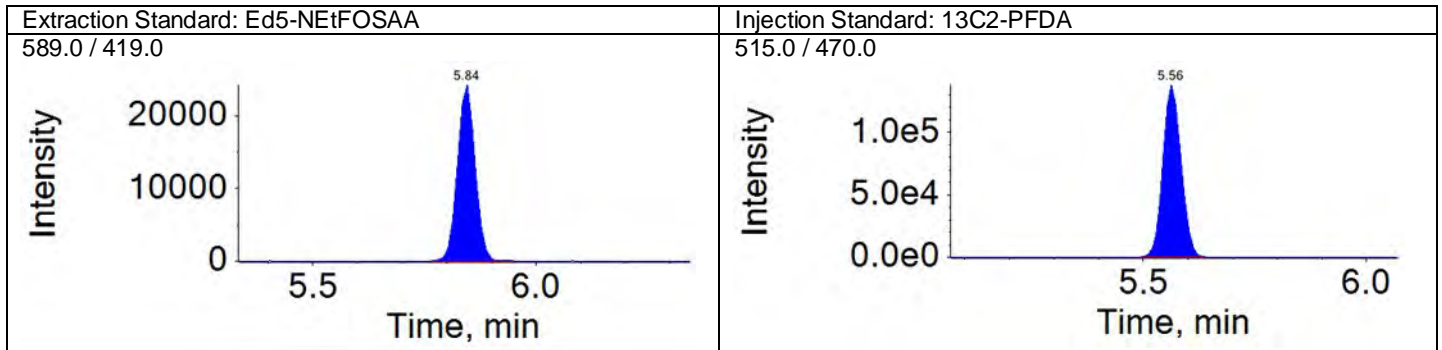
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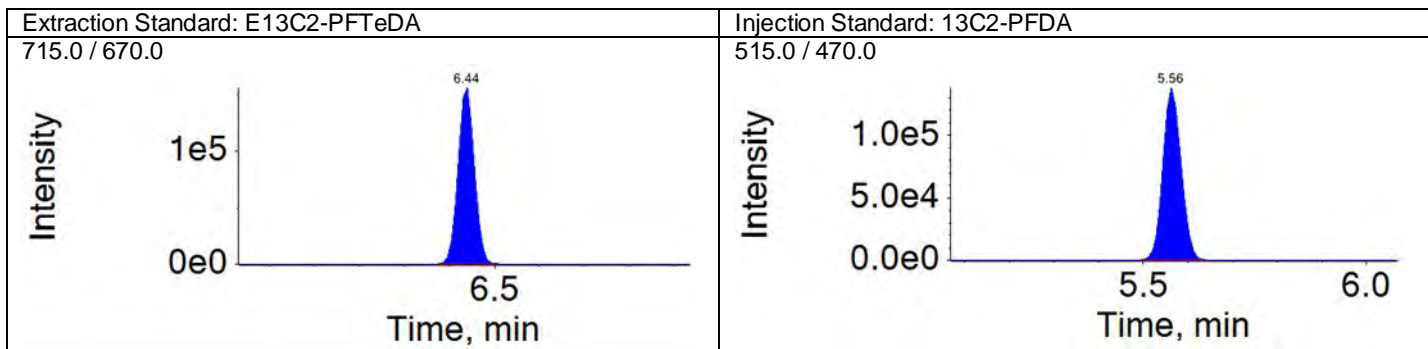
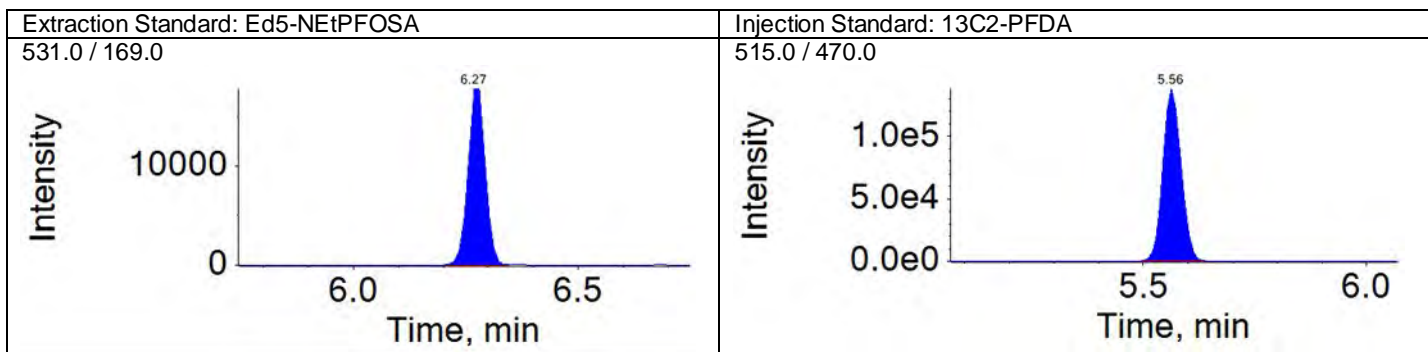
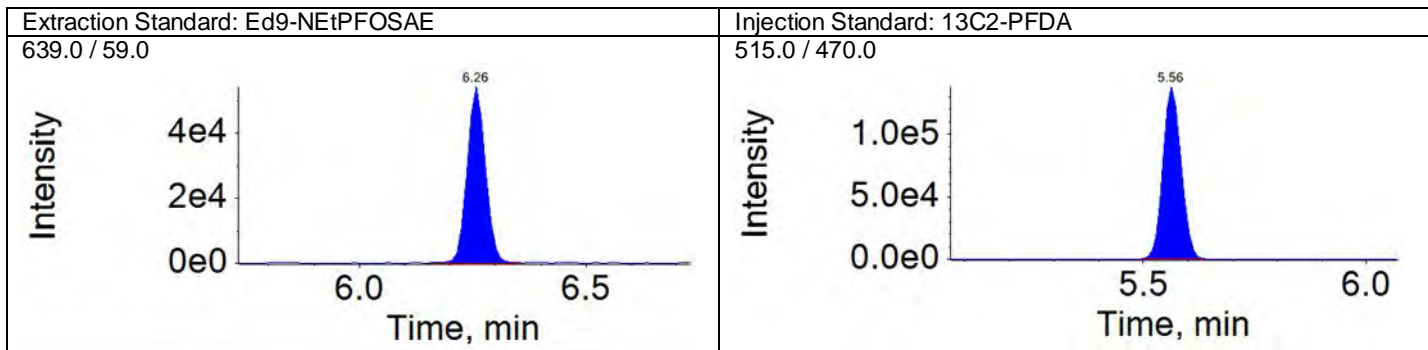
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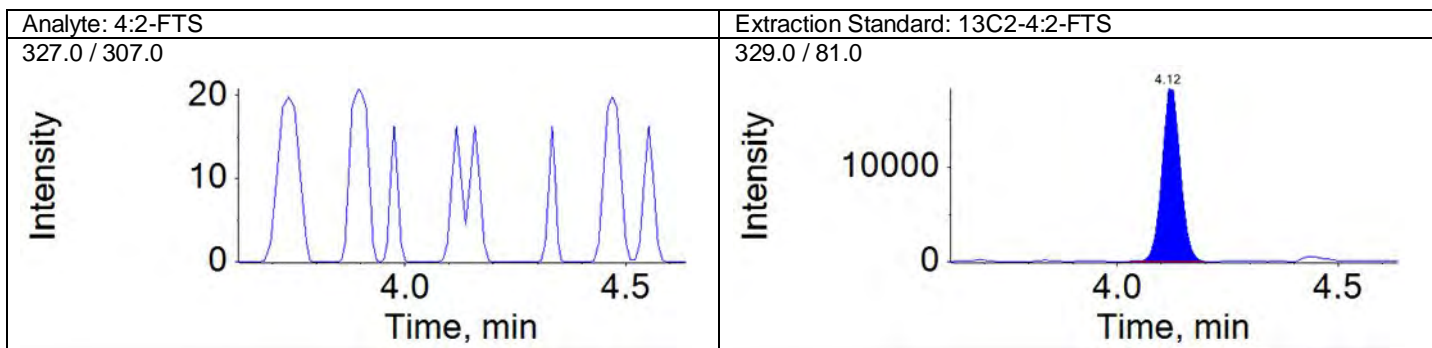
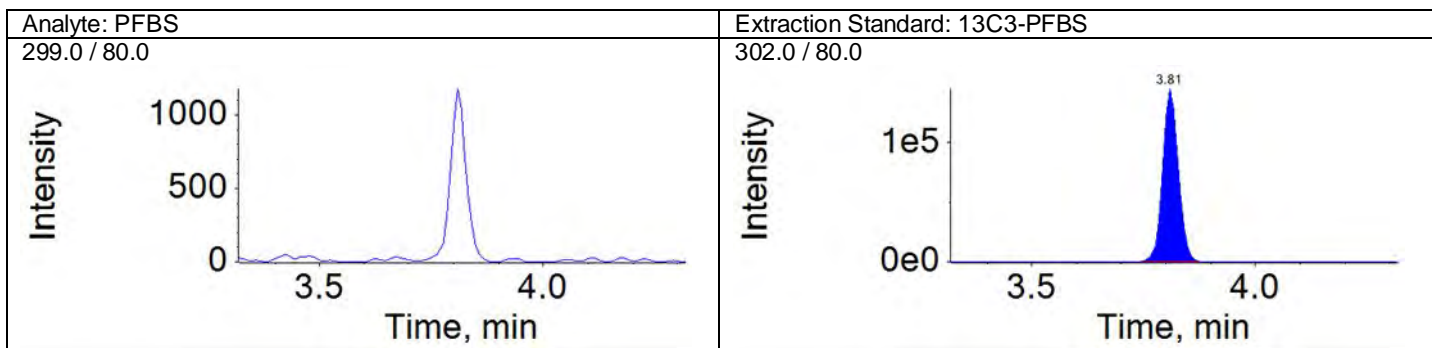
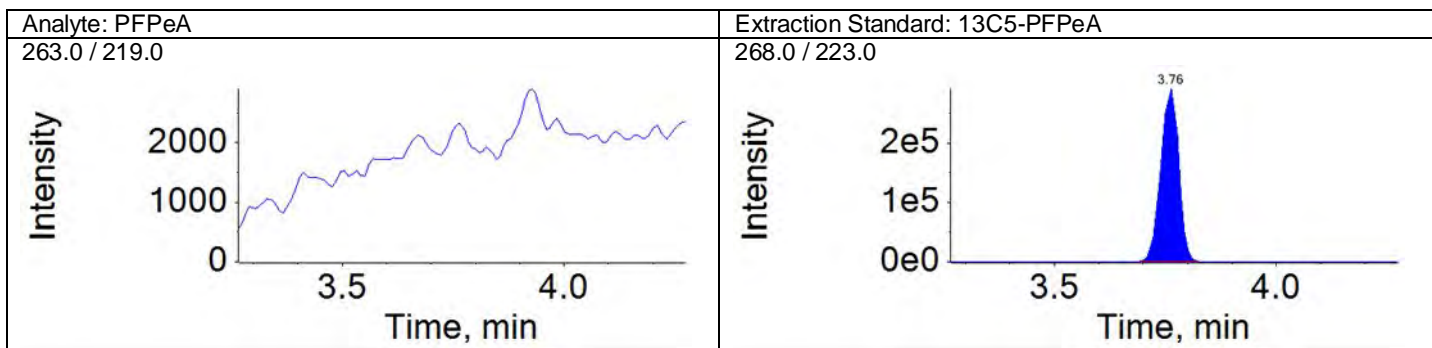
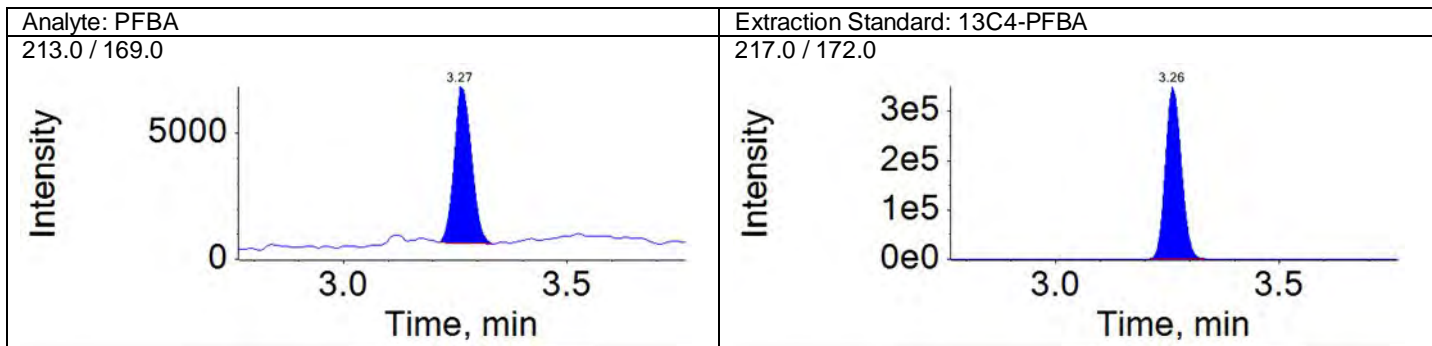
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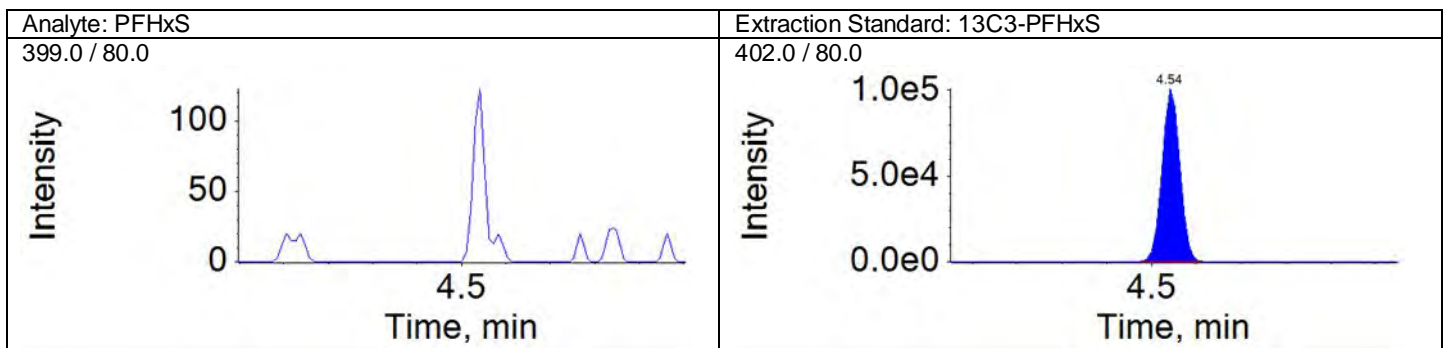
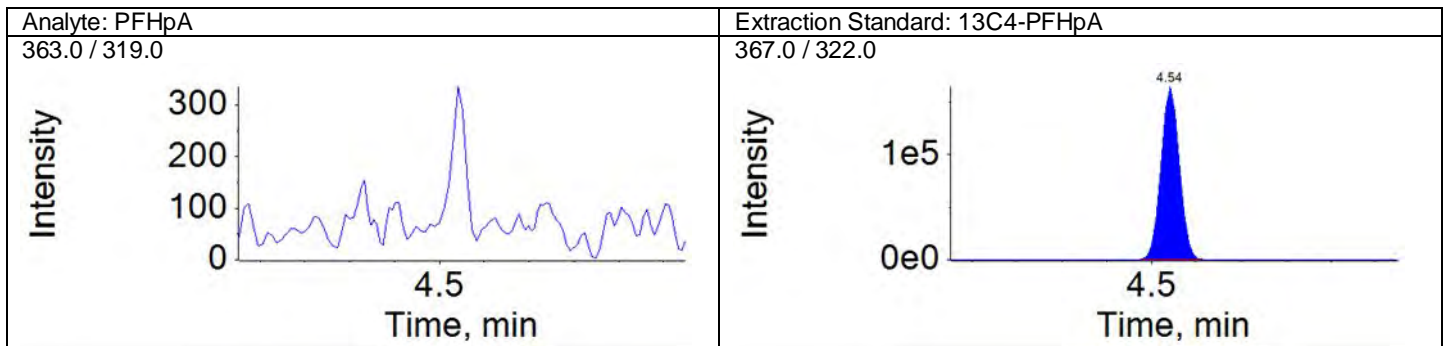
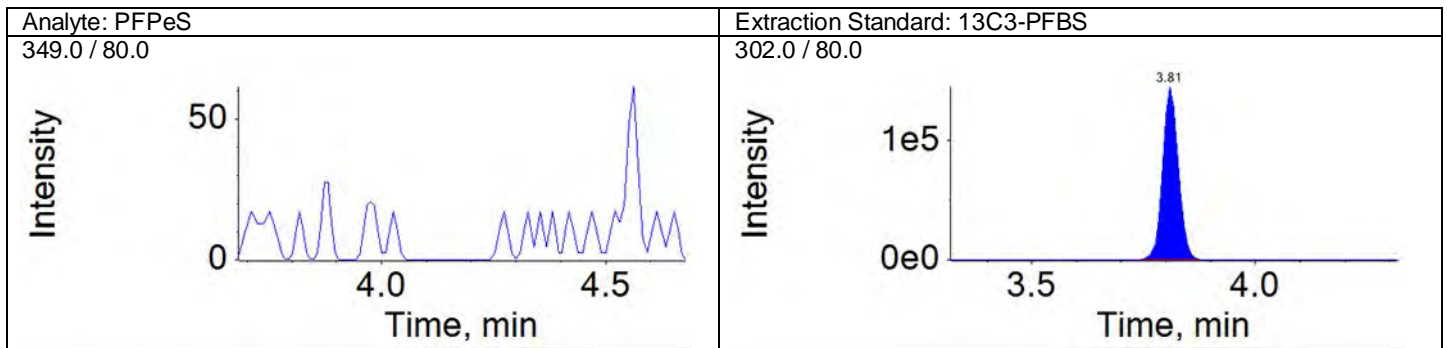
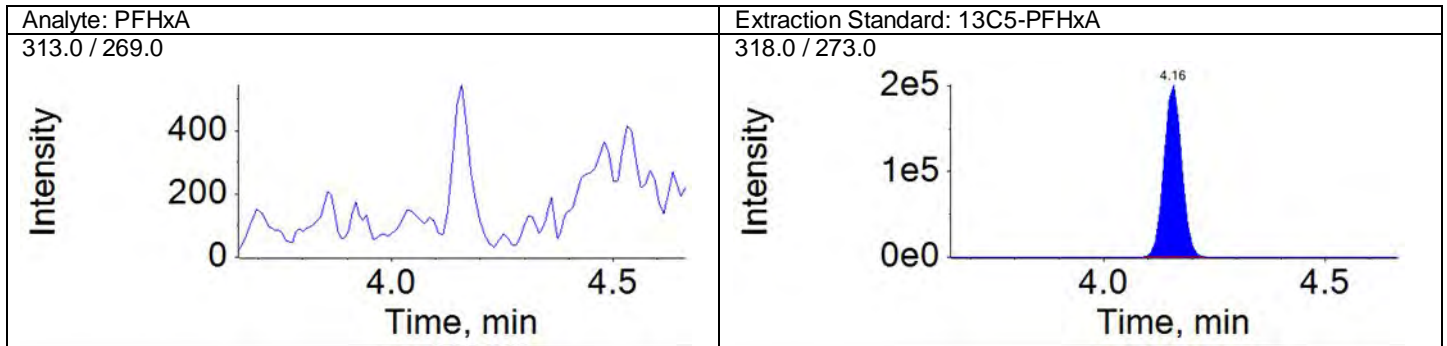
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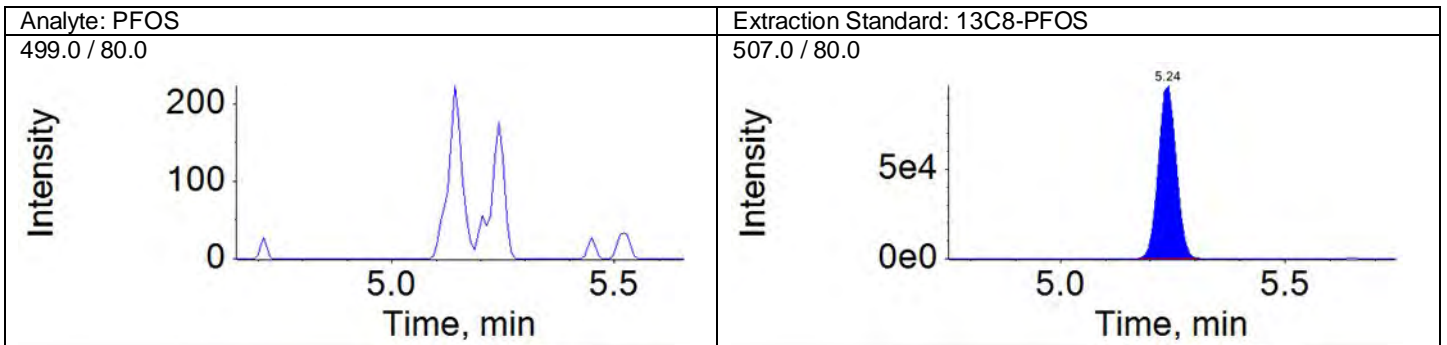
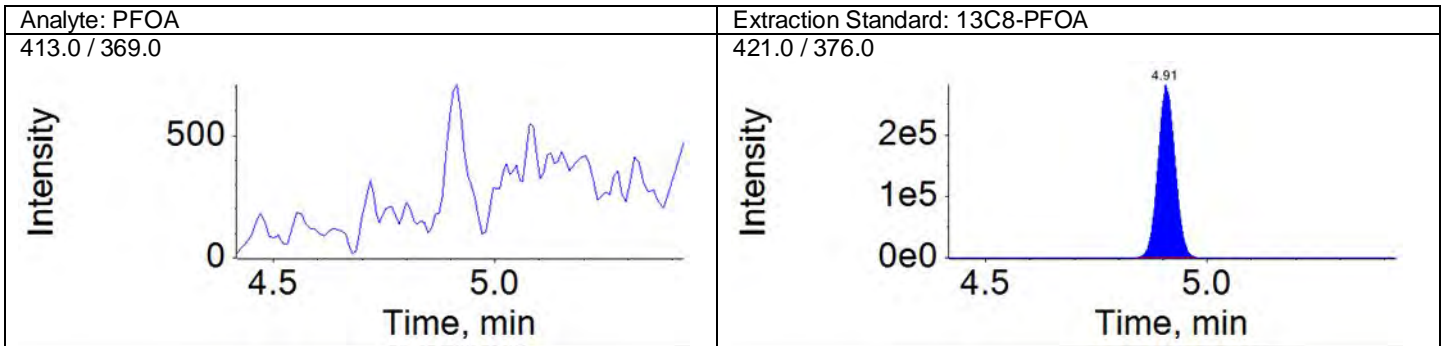
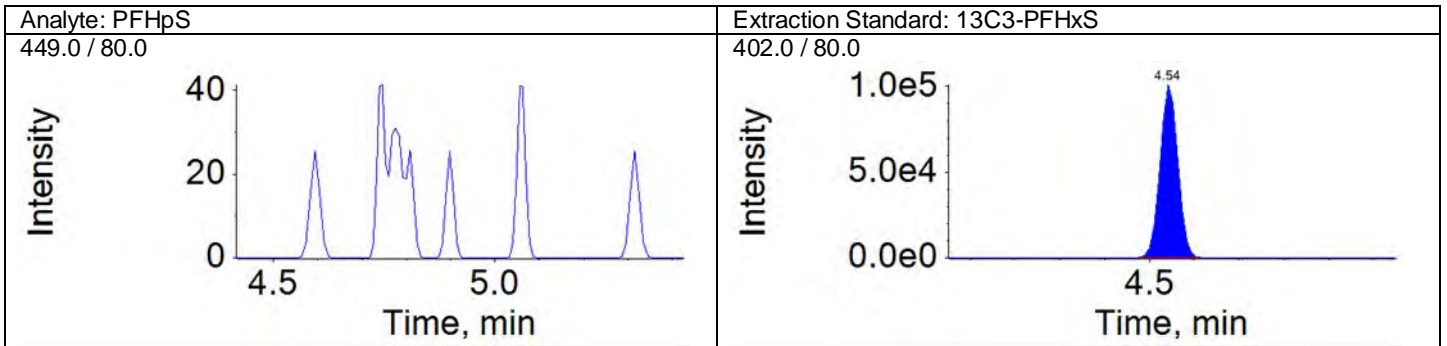
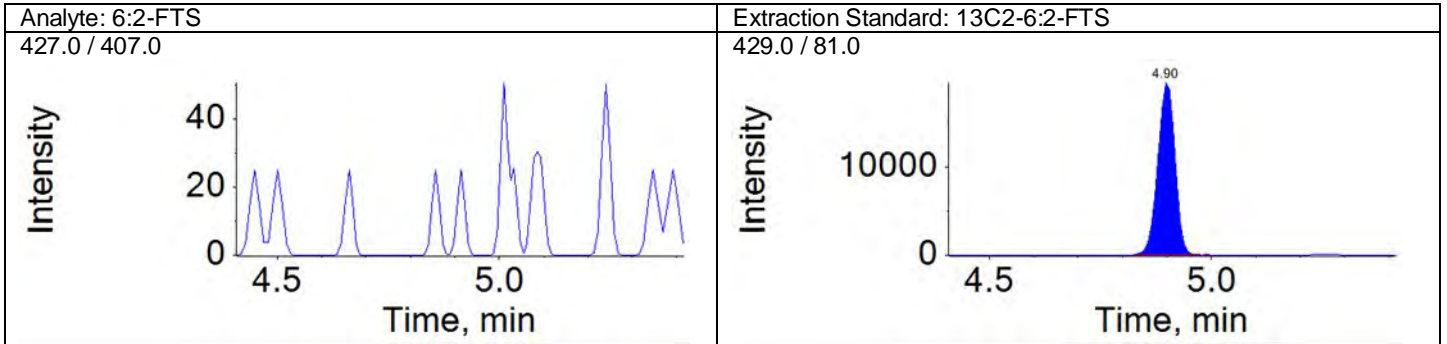
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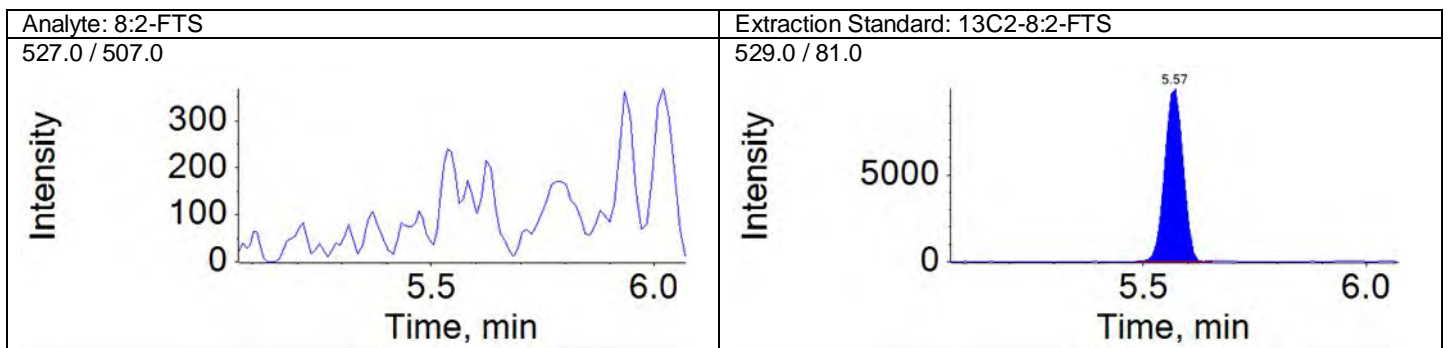
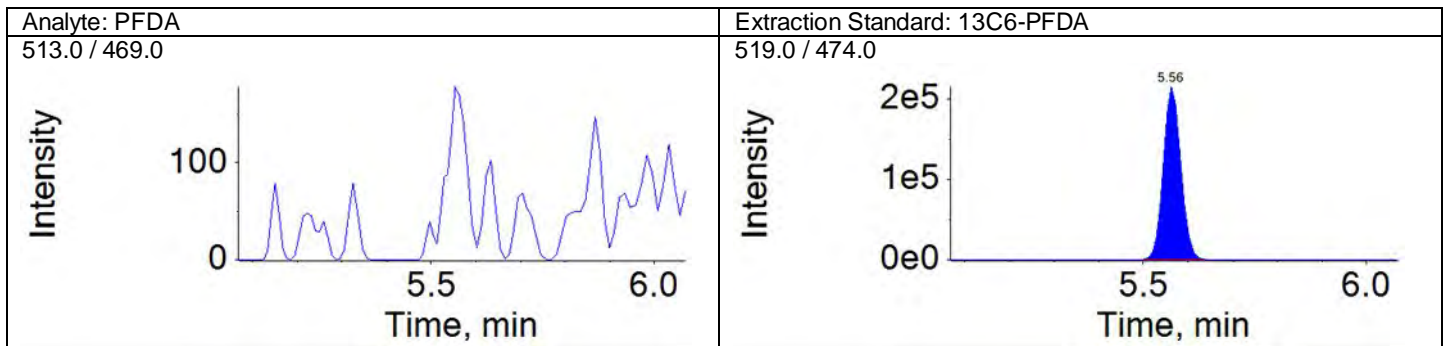
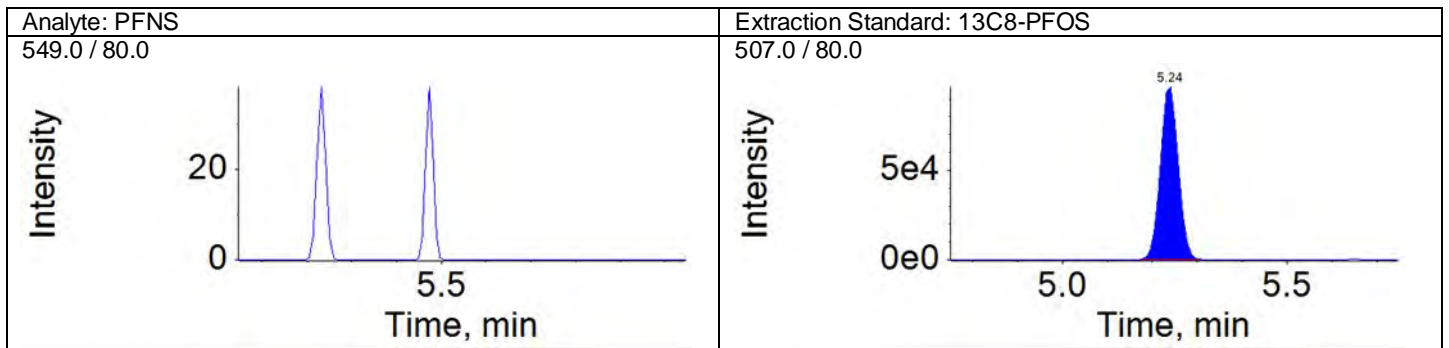
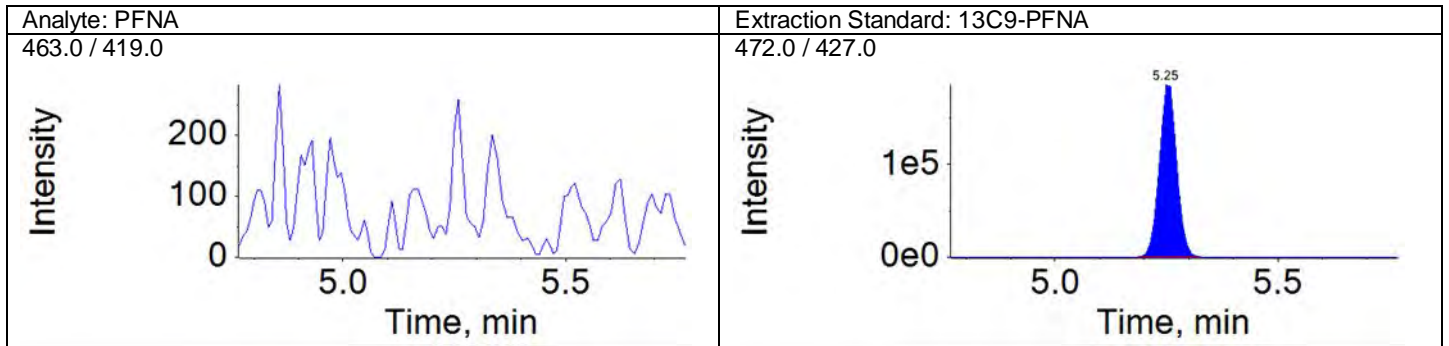
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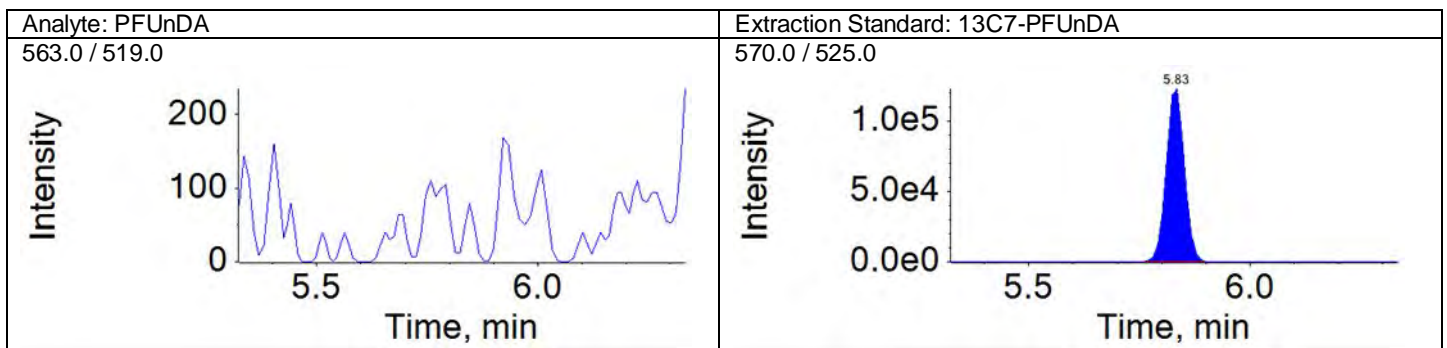
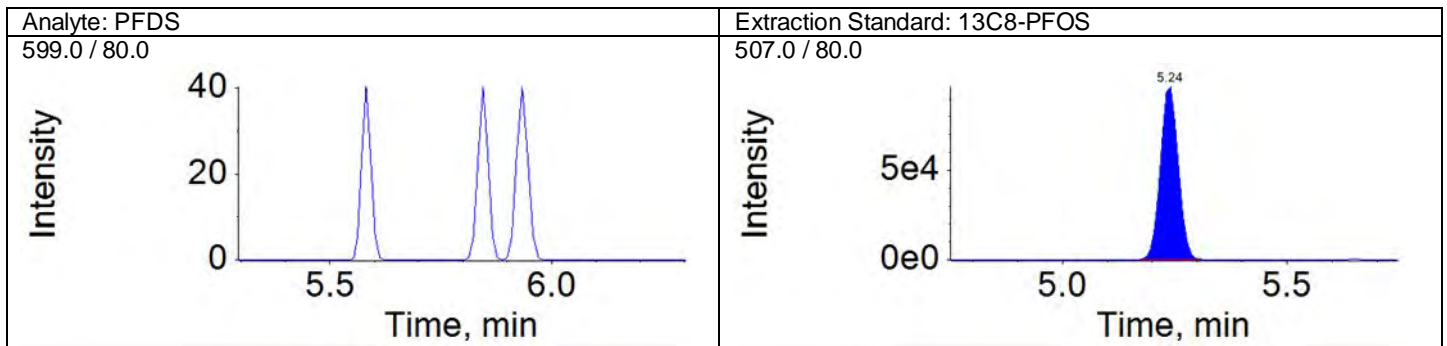
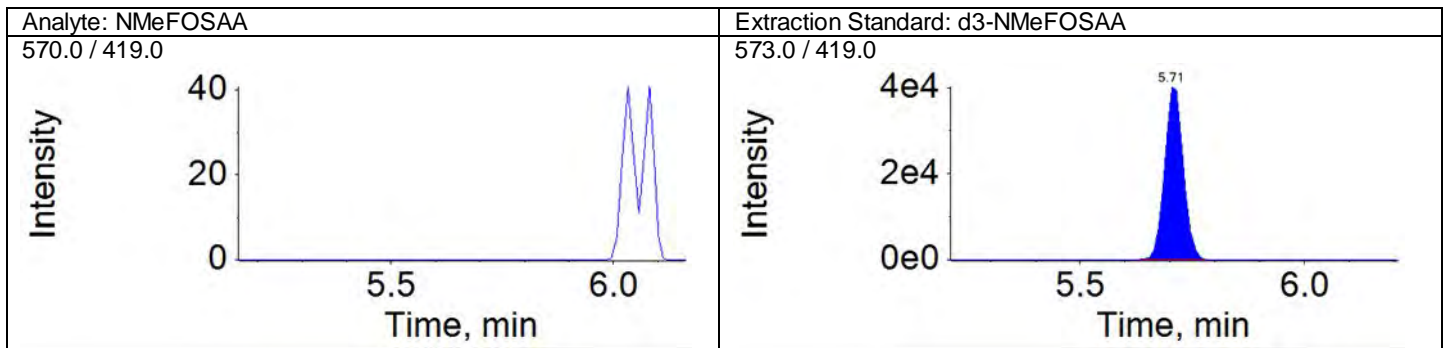
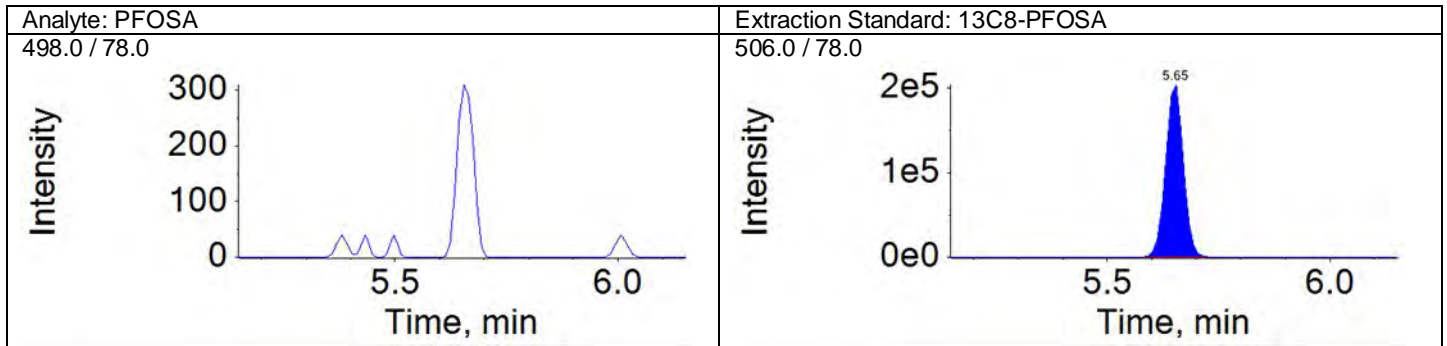
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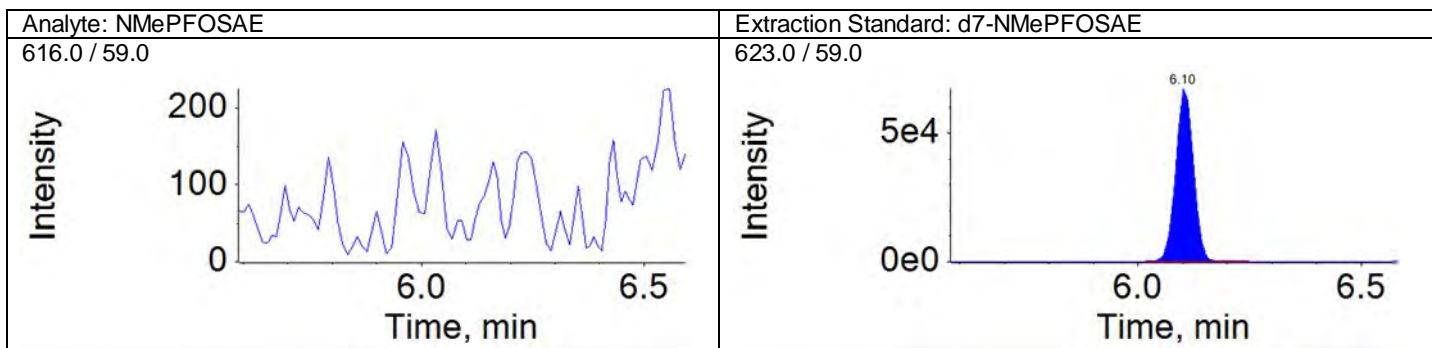
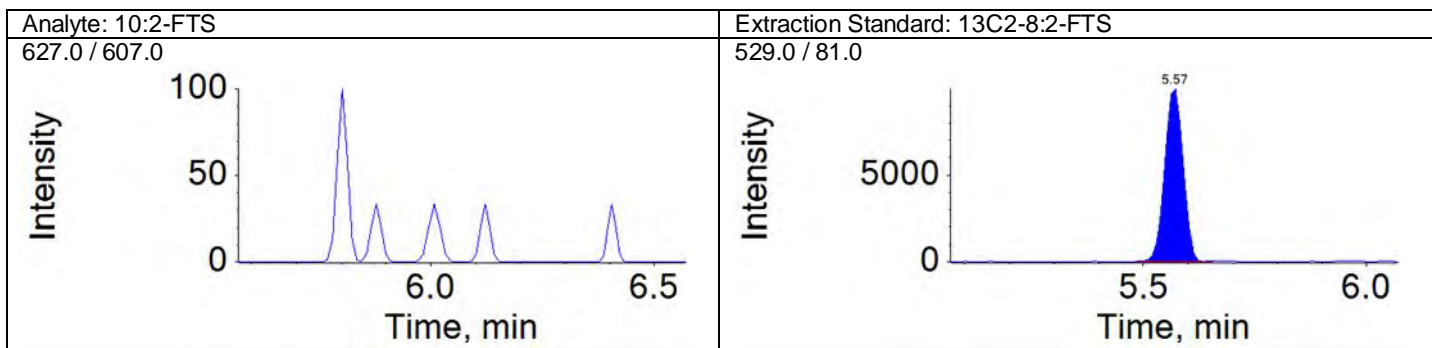
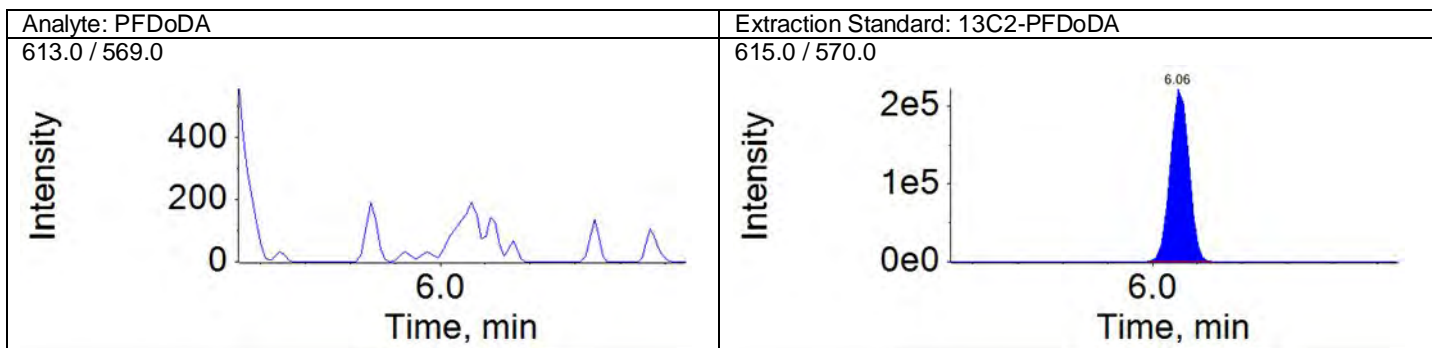
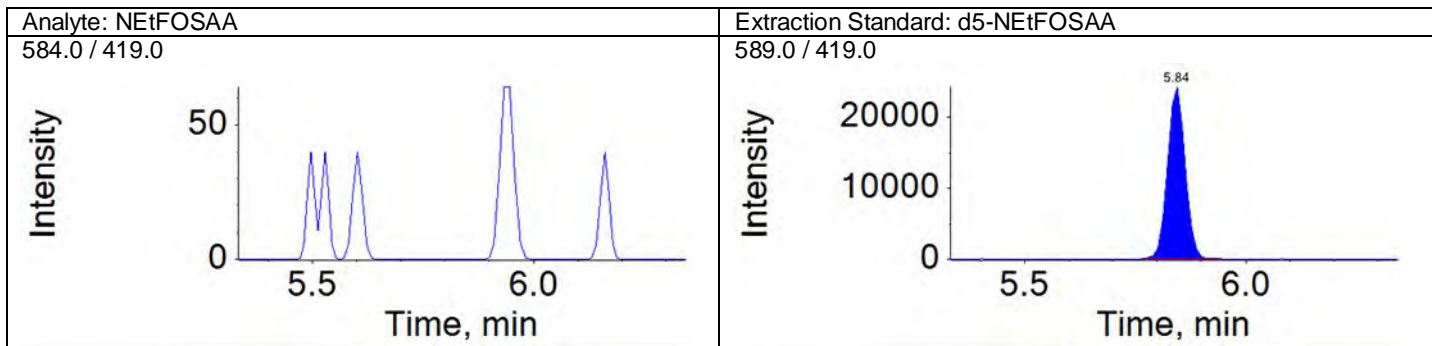
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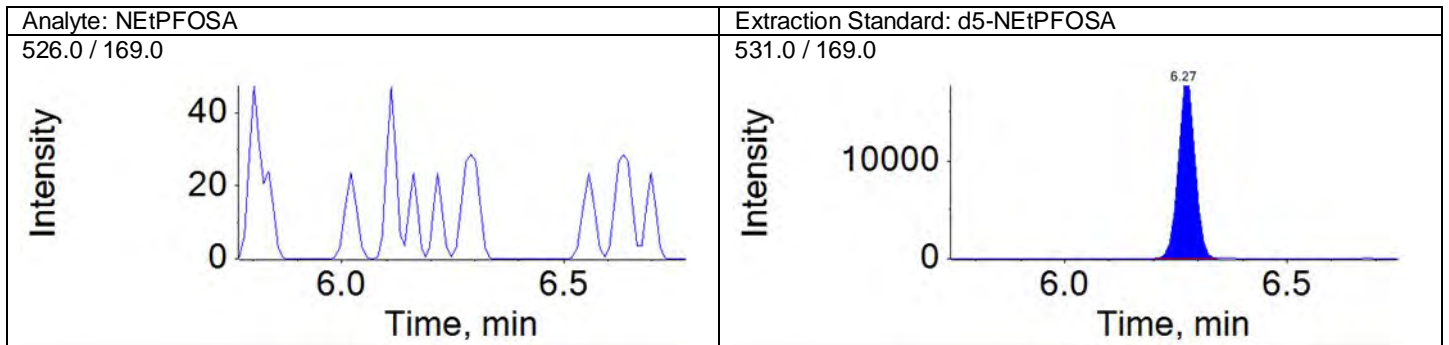
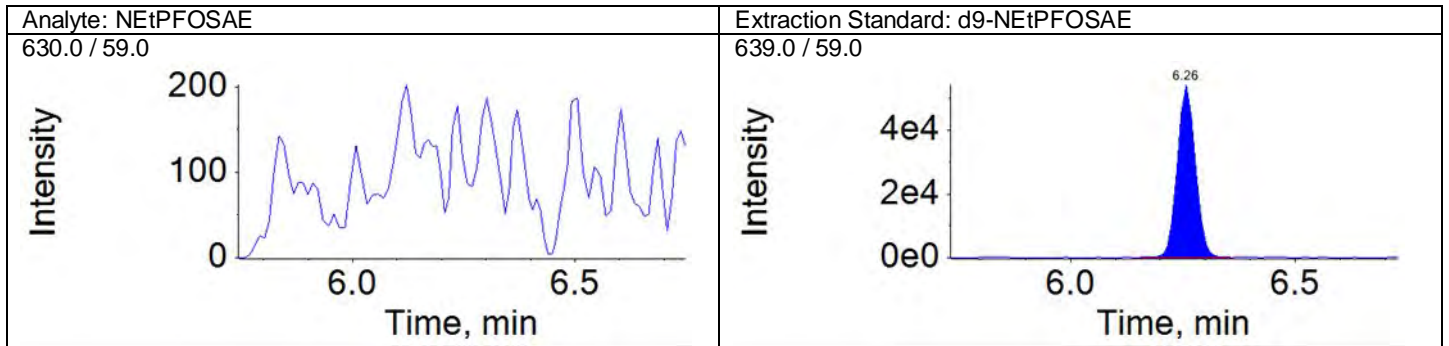
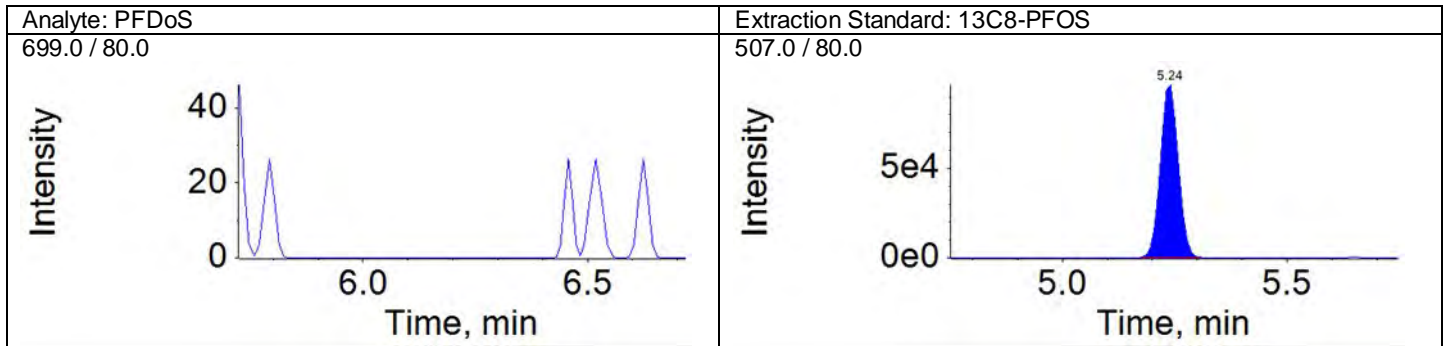
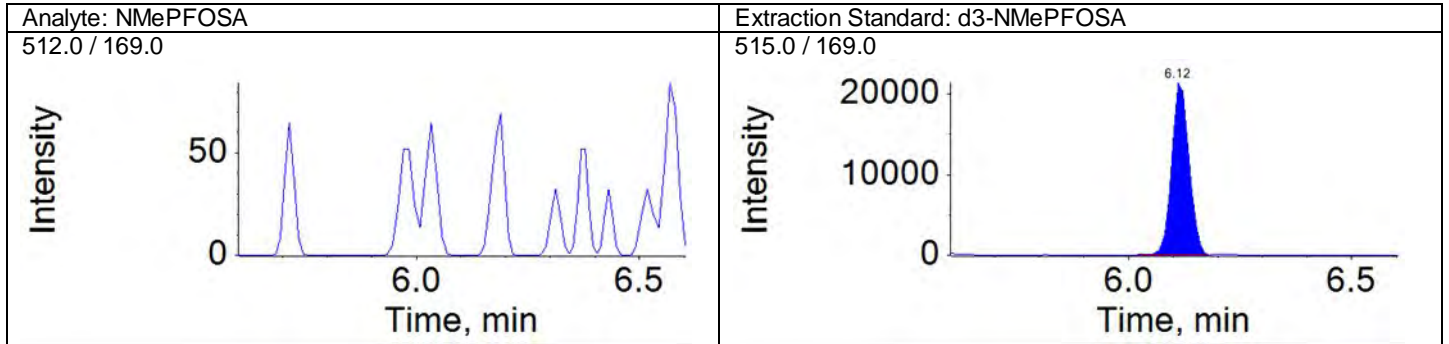
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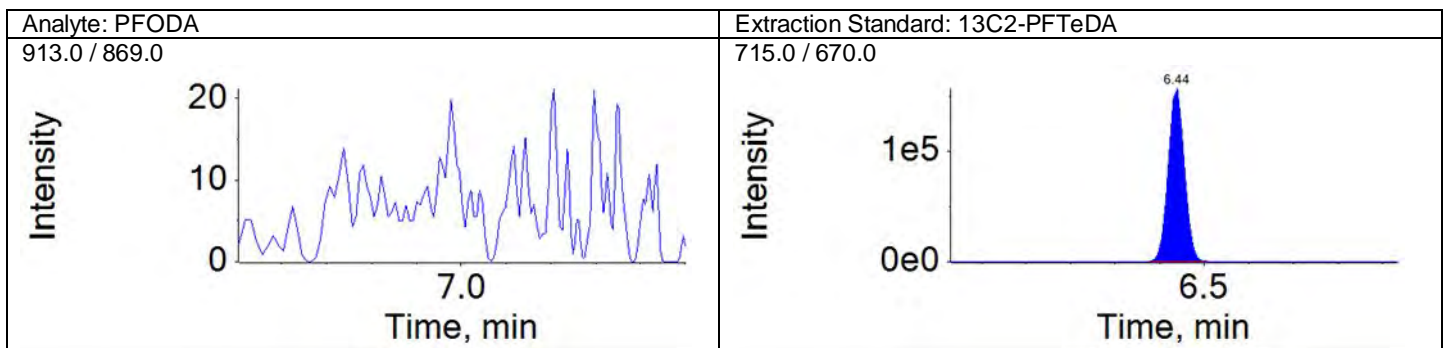
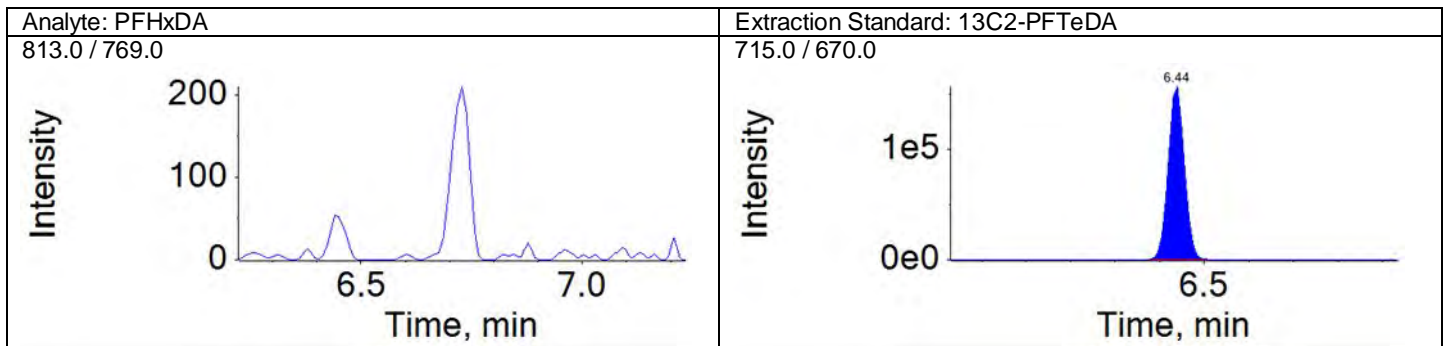
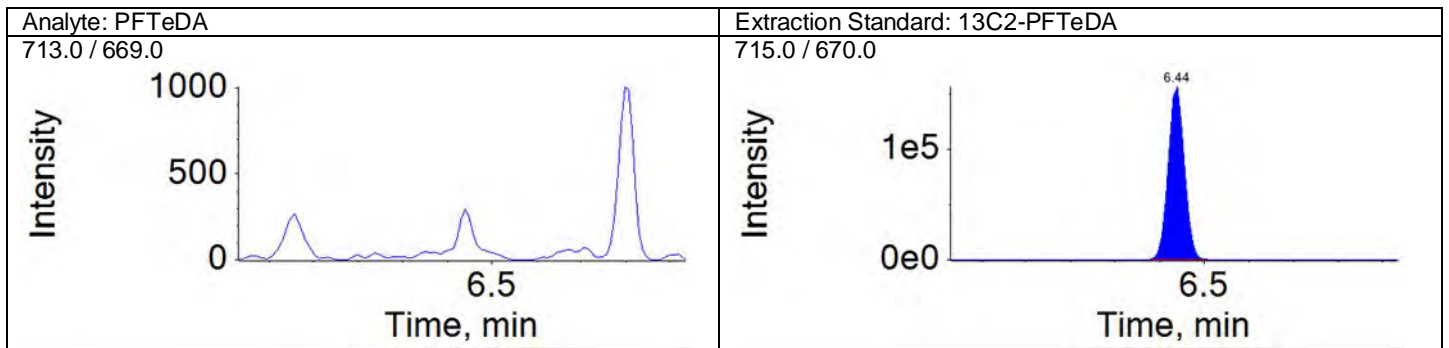
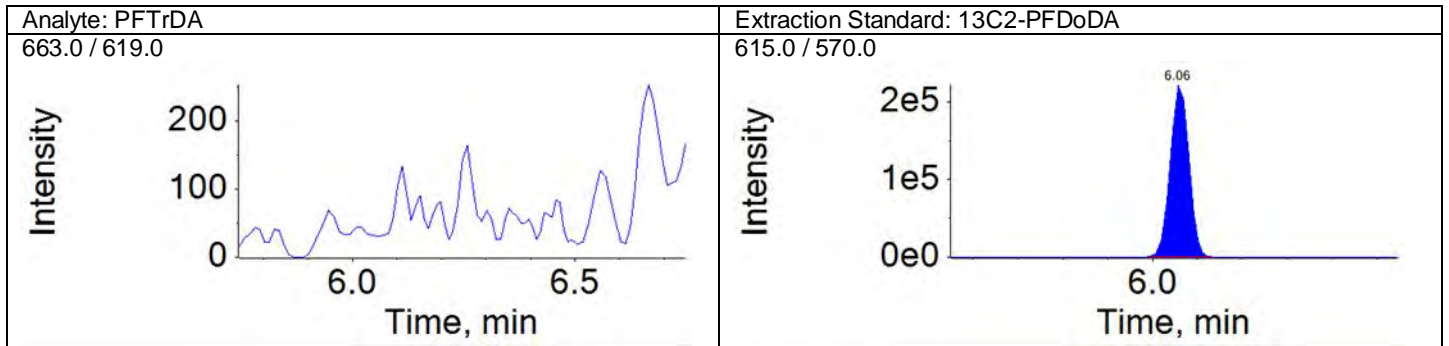
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Ion Ratio Report

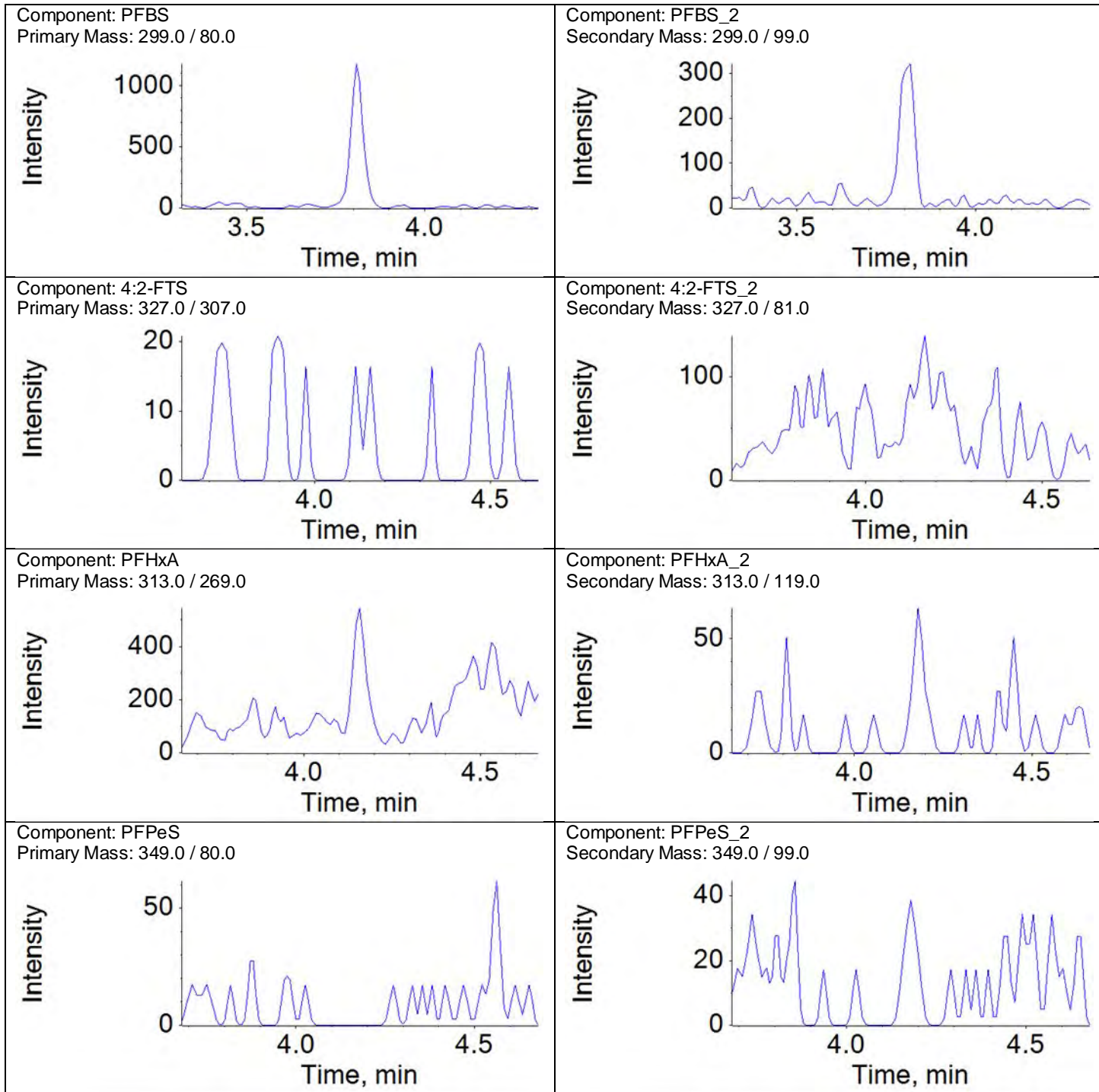
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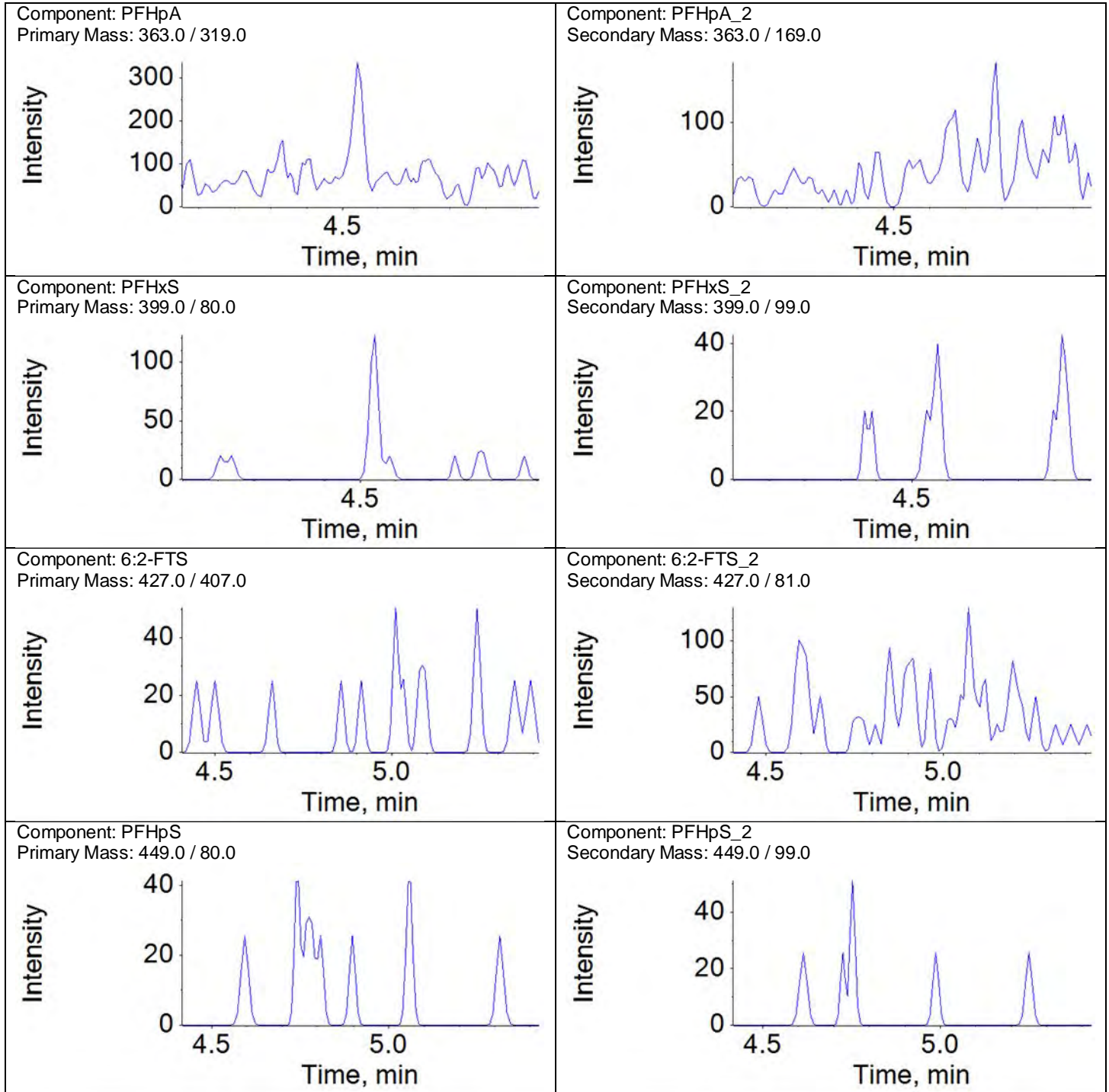
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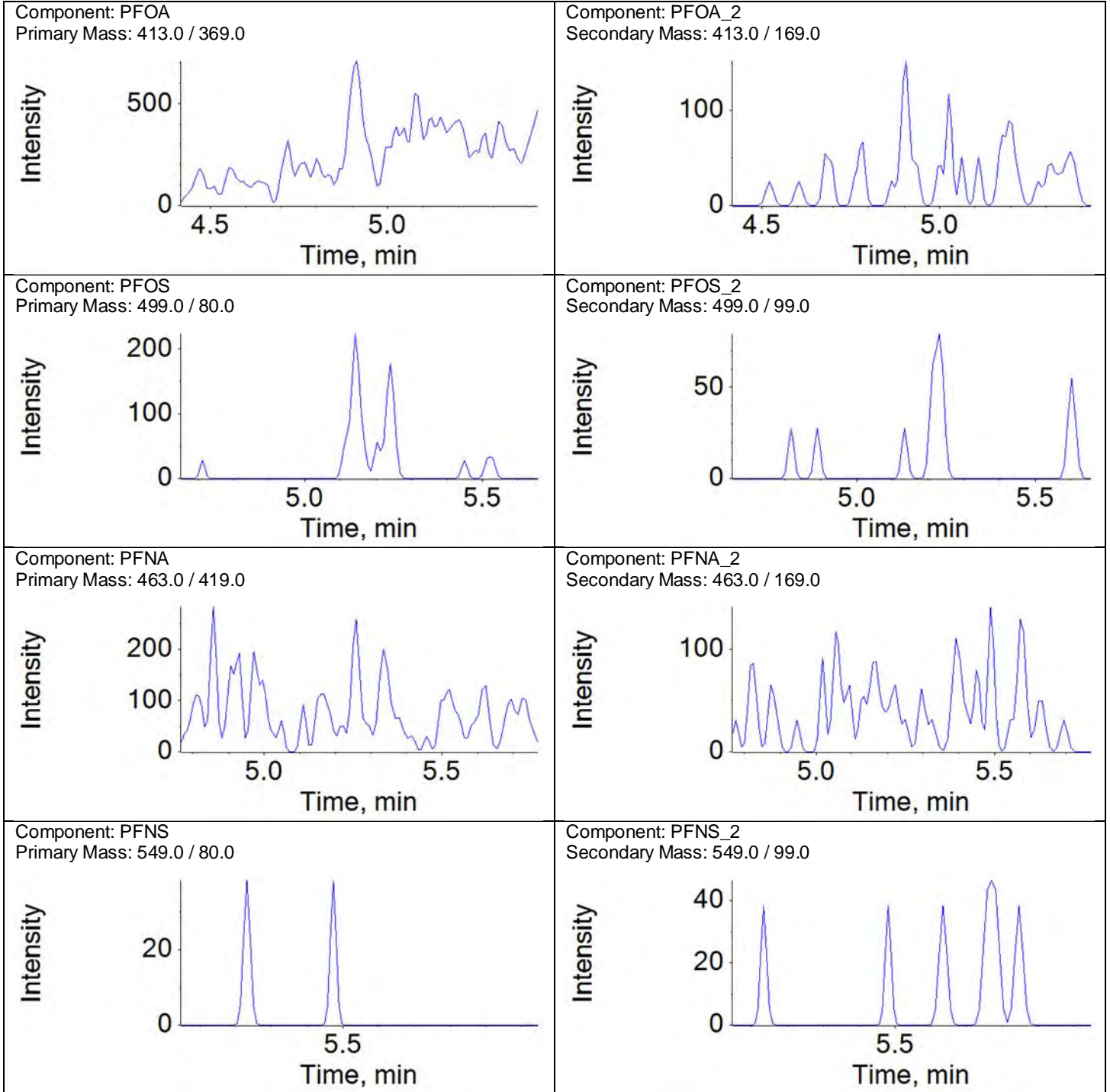
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PFBS	N/A	N/A	N/A	A	N/A	N/A			
PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFPeS	N/A	N/A	N/A	A	N/A	N/A			
PFPeS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
6:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpS	N/A	N/A	N/A	A	N/A	N/A			
PFHpS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNS	N/A	N/A	N/A	A	N/A	N/A			
PFNS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDS	N/A	N/A	N/A	A	N/A	N/A			
PFDS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDODA	N/A	N/A	N/A	A	N/A	N/A			
PFDODA_2	N/A	N/A	N/A	A	N/A	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTrDA	N/A	N/A	N/A	A	N/A	N/A			
PFTrDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFTeDA	N/A	N/A	N/A	A	N/A	N/A			
PFTeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxDA	N/A	N/A	N/A	A	N/A	N/A			
PFHxDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
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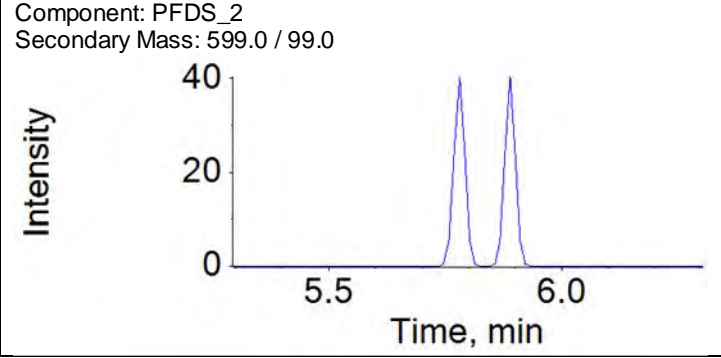
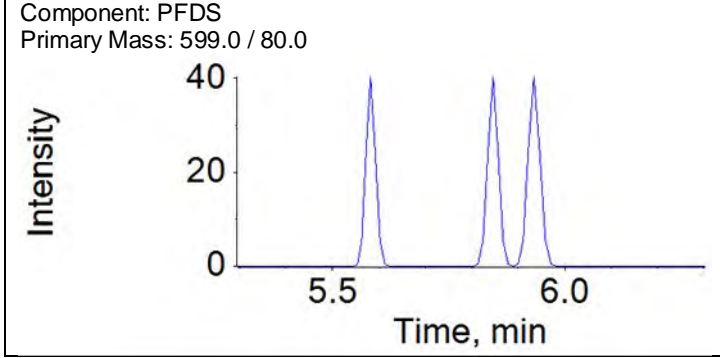
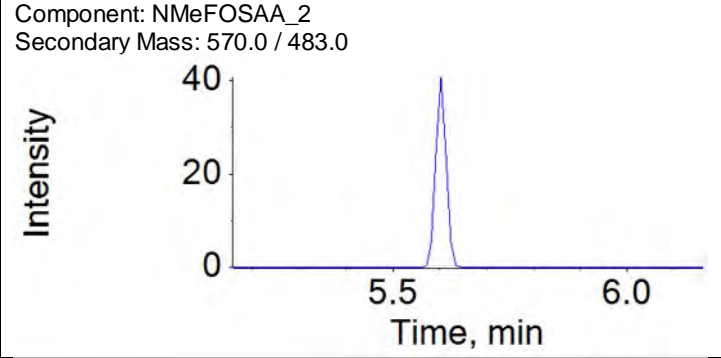
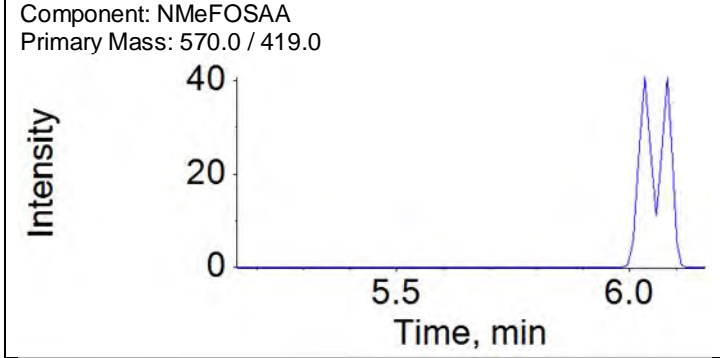
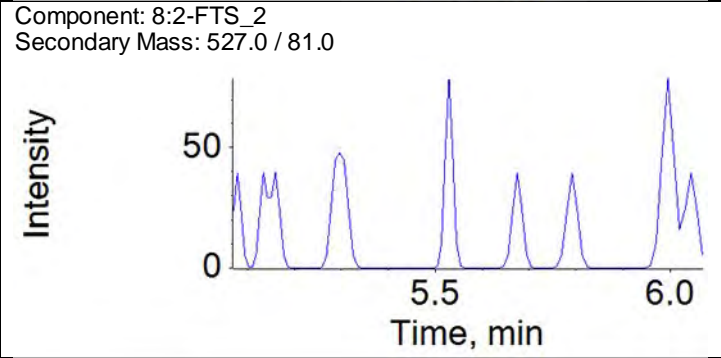
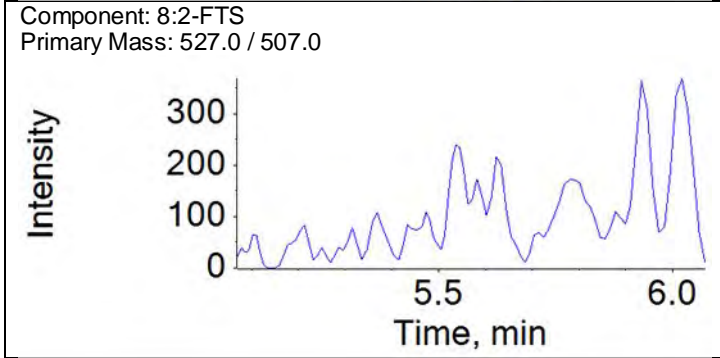
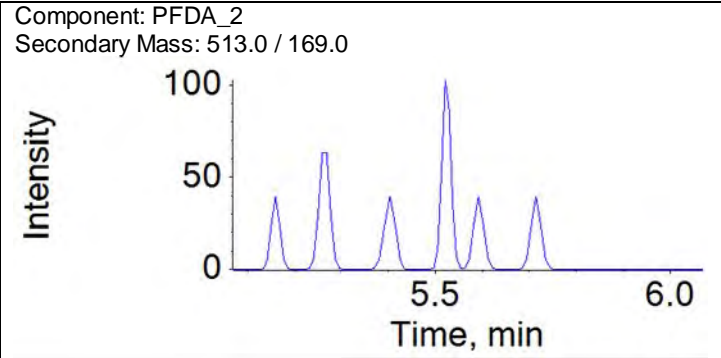
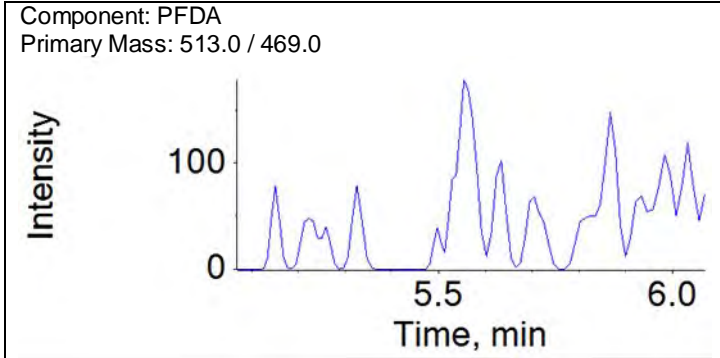




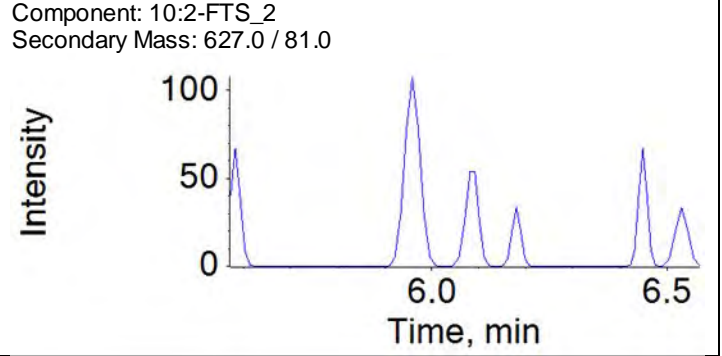
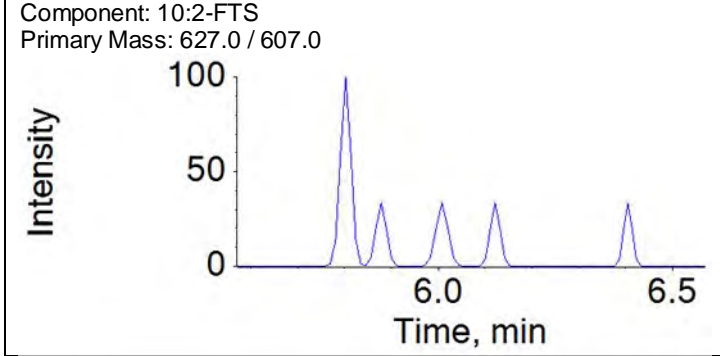
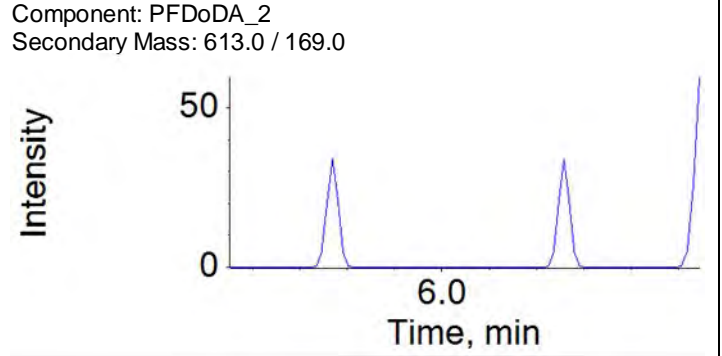
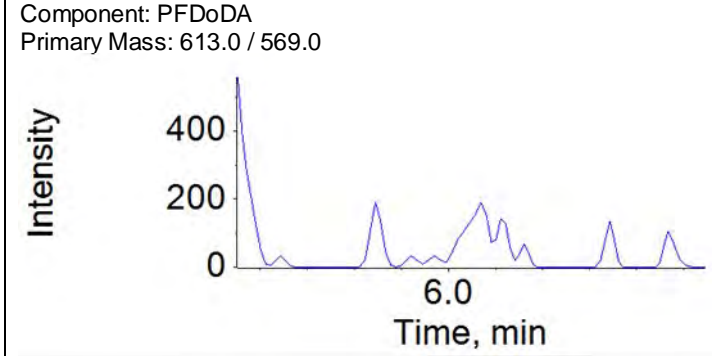
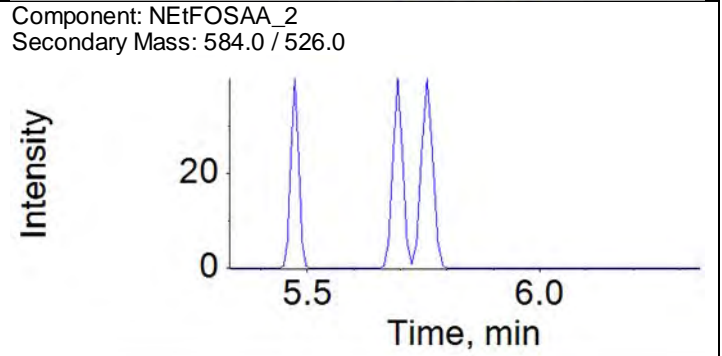
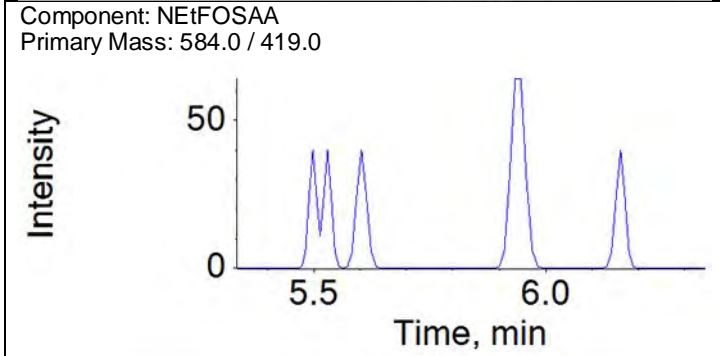
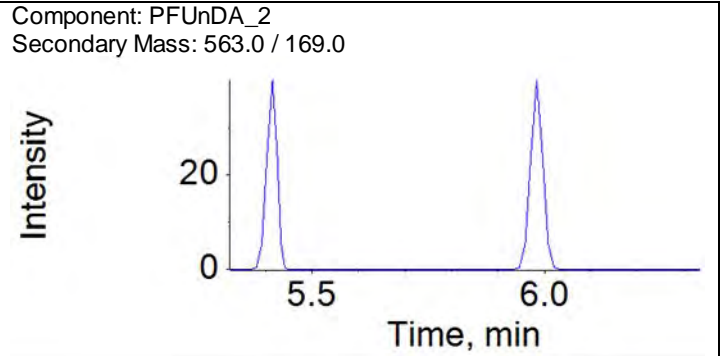
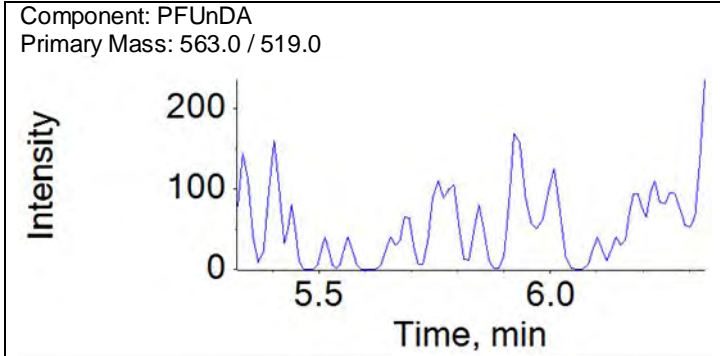


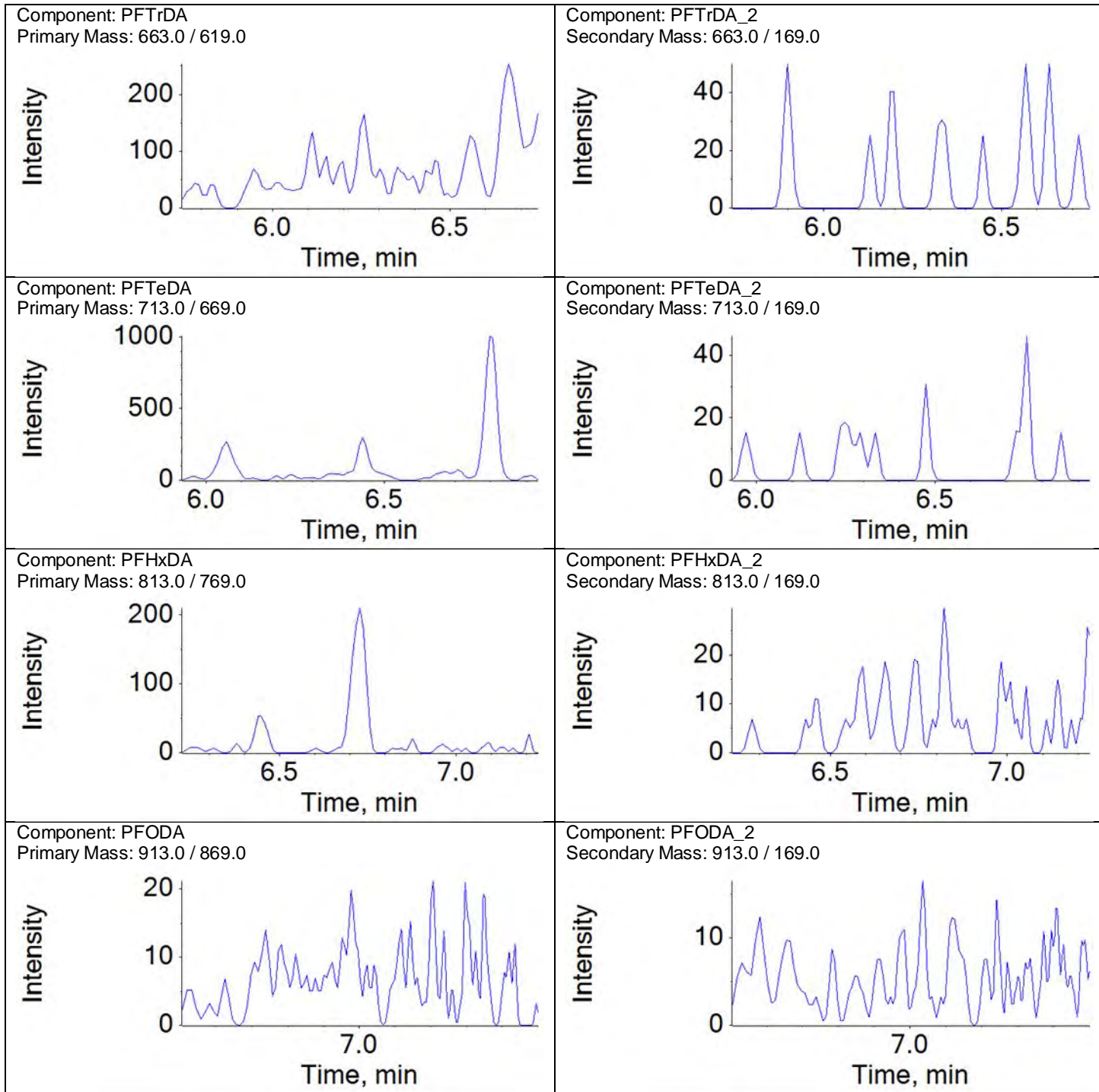












ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	BLK348012	Data File:	18DEC19D-23.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18348012	Acquis Date:	2018-12-19T13:26:08
Sample Type:	Unknown	Instrument:	LM27631
Vial Position:	74	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18348012
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	18348012	Operator:	MM26157
Sample Wt.:	0.25000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	941733.1	942675.8	0	50	
13C2-PFOA	5.0	493649.9	520268.5	-5	50	
13C4-PFOS	4.8	300947.0	307968.9	-2	50	
13C2-PFDA	5.0	485985.4	487375.3	0	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	1002831.0	13C3-PFBA	941733.1	1.065	20.000	18.862	94	50-150	
E13C5-PFPeA	943622.0	13C3-PFBA	941733.1	1.002	20.000	18.690	93	50-150	
E13C3-PFBS	398483.0	13C3-PFBA	941733.1	0.423	18.600	16.481	89	50-150	
E13C2-4:2-FTS	57207.7	13C2-PFOA	493649.9	0.116	18.680	17.605	94	50-150	
E13C5-PFHxA	662276.8	13C2-PFOA	493649.9	1.342	20.000	19.195	96	50-150	
E13C3-PFHxS	315483.7	13C2-PFOA	493649.9	0.639	18.920	19.344	102	50-150	
E13C4-PFHpA	524520.2	13C2-PFOA	493649.9	1.063	20.000	18.358	92	50-150	
E13C2-6:2-FTS	45338.3	13C2-PFOA	493649.9	0.092	19.000	18.484	97	50-150	
E13C8-PFOA	939645.9	13C2-PFOA	493649.9	1.903	20.000	20.936	105	50-150	
E13C8-PFOS	293964.4	13C4-PFOS	300947.0	0.977	19.120	17.473	91	50-150	
E13C9-PFNA	614647.9	13C4-PFOS	300947.0	2.042	20.000	18.585	93	50-150	
E13C6-PFDA	837156.6	13C2-PFDA	485985.4	1.723	20.000	19.627	98	50-150	
E13C2-8:2-FTS	44629.7	13C2-PFDA	485985.4	0.092	19.160	18.932	99	50-150	
E13C8-PFOSA	537413.9	13C2-PFDA	485985.4	1.106	20.000	17.225	86	50-150	
Ed3-NMeFOSAA	197160.8	13C2-PFDA	485985.4	0.406	20.000	17.853	89	50-150	
E13C7-PFUnDA	572218.2	13C2-PFDA	485985.4	1.177	20.000	19.714	99	50-150	
Ed5-NetFOSAA	152244.4	13C2-PFDA	485985.4	0.313	20.000	18.461	92	50-150	
E13C2-PFDoDA	1103766.2	13C2-PFDA	485985.4	2.271	20.000	19.113	96	50-150	
Ed7-NMePFOSAE	182615.5	13C2-PFDA	485985.4	0.376	20.000	13.430	67	50-150	
Ed3-NMePFOSA	29439.4	13C2-PFDA	485985.4	0.061	20.000	6.658	33	50-150	OOS
Ed9-NetPFOSAE	148527.8	13C2-PFDA	485985.4	0.306	20.000	12.498	62	50-150	
Ed5-NetPFOSA	22458.6	13C2-PFDA	485985.4	0.046	20.000	6.411	32	50-150	OOS
E13C2-PFTeDA	744838.0	13C2-PFDA	485985.4	1.533	20.000	17.276	86	50-150	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

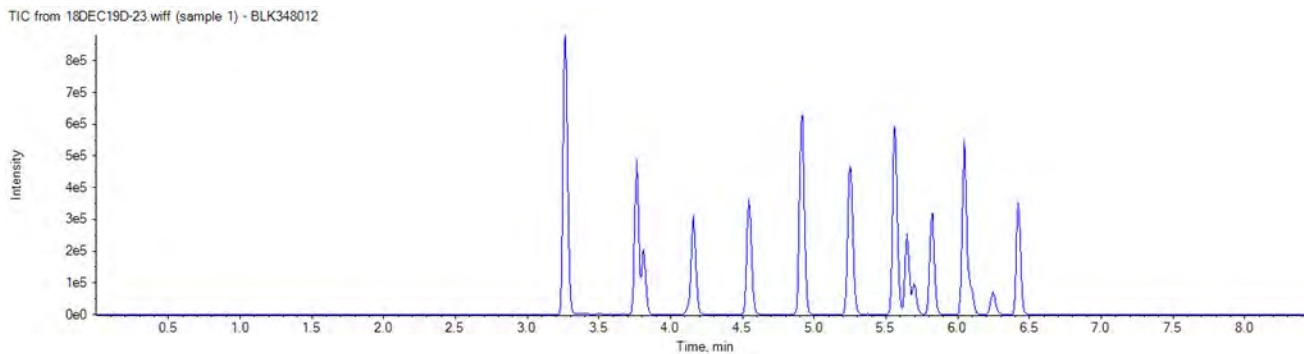
**Analyte Quantitation Peak Table**

Sample Name: BLK348012 Instrument Name: LM27631 File Name: 18DEC19D-23.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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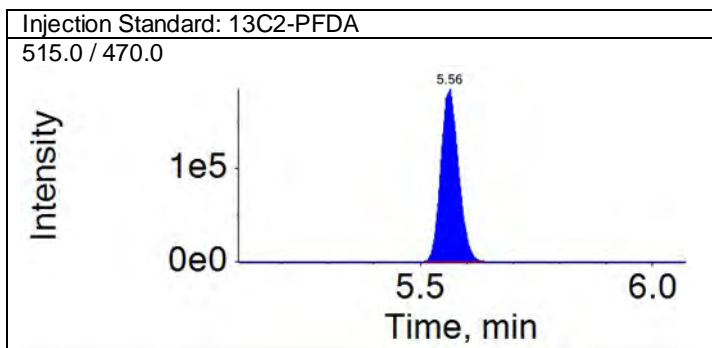
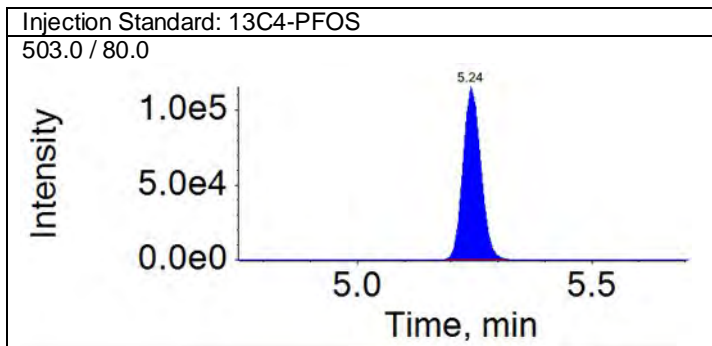
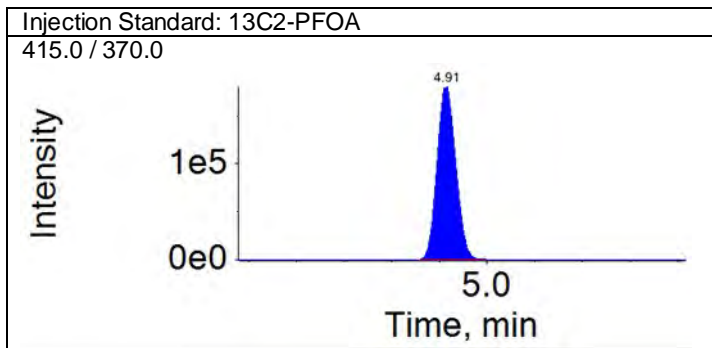
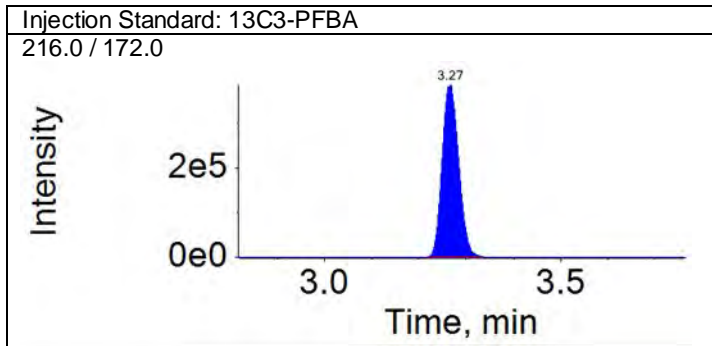
Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBA	3.27	1.000	23006.9		A	13C4-PFBA	3.26	1002831.0	0.023	0.487
PFPeA	N/A	N/A	N/A		A	13C5-PFPeA	3.76	943622.0	N/A	
PFBS	N/A	N/A	N/A		A	13C3-PFBS	3.81	398483.0	N/A	
4:2-FTS	N/A	N/A	N/A		A	13C2-4:2-FTS	4.12	57207.7	N/A	
PFHxA	N/A	N/A	N/A		A	13C5-PFHxA	4.16	662276.8	N/A	
PFPeS	N/A	N/A	N/A		A	13C3-PFBS	3.81	398483.0	N/A	
PFHpA	N/A	N/A	N/A		A	13C4-PFHpA	4.55	524520.2	N/A	
PFHxS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	315483.7	N/A	
6:2-FTS	N/A	N/A	N/A		A	13C2-6:2-FTS	4.90	45338.3	N/A	
PFHpS	N/A	N/A	N/A		A	13C3-PFHxS	4.55	315483.7	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	939645.9	N/A	
PFOS	N/A	N/A	N/A		A	13C8-PFOS	5.24	293964.4	N/A	
PFNA	N/A	N/A	N/A		A	13C9-PFNA	5.26	614647.9	N/A	
PFNS	N/A	N/A	N/A		A	13C8-PFOS	5.24	293964.4	N/A	
PFDA	N/A	N/A	N/A		A	13C6-PFDA	5.56	837156.6	N/A	
8:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.56	44629.7	N/A	
PFOSA	N/A	N/A	N/A		A	13C8-PFOSA	5.65	537413.9	N/A	
NMeFOSAA	N/A	N/A	N/A		A	d3-NMeFOSAA	5.70	197160.8	N/A	
PFDS	N/A	N/A	N/A		A	13C8-PFOS	5.24	293964.4	N/A	
PFOA	N/A	N/A	N/A		A	13C8-PFOA	4.91	939645.9	N/A	
NEtFOSAA	N/A	N/A	N/A		A	d5-NEtFOSAA	5.83	152244.4	N/A	
PFDoDA	N/A	N/A	N/A		A	13C2-PFDoDA	6.05	1103766.2	N/A	
10:2-FTS	N/A	N/A	N/A		A	13C2-8:2-FTS	5.56	44629.7	N/A	
NMePFOSAE	N/A	N/A	N/A		A	d7-NMePFOSAE	6.09	182615.5	N/A	
NMePFOSA	N/A	N/A	N/A		A	d3-NMePFOSA	6.11	29439.4	N/A	
PFDoS	N/A	N/A	N/A		A	13C8-PFOS	5.24	293964.4	N/A	
NEtPFOSAE	N/A	N/A	N/A		A	d9-NEtPFOSAE	6.24	148527.8	N/A	
NEtPFOSA	N/A	N/A	N/A		A	d5-NEtPFOSA	6.27	22458.6	N/A	
PFTeDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	744838.0	N/A	
PFHxDA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	744838.0	N/A	
PFOA	N/A	N/A	N/A		A	13C2-PFTeDA	6.42	744838.0	N/A	

**Total Ion Chromatogram**



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

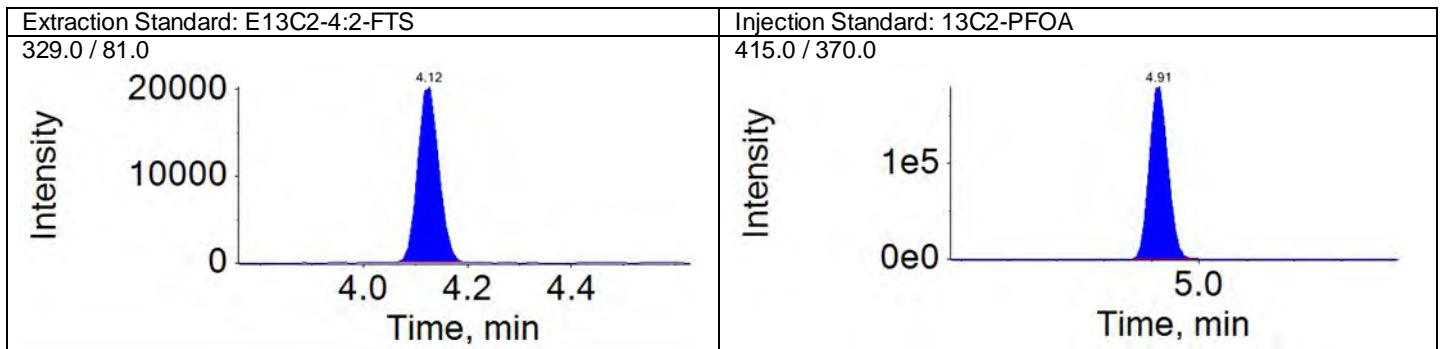
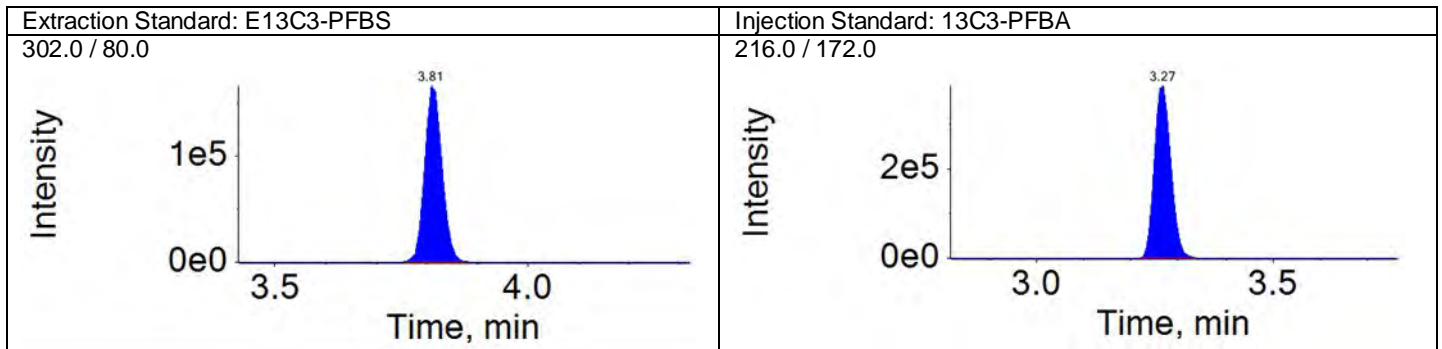
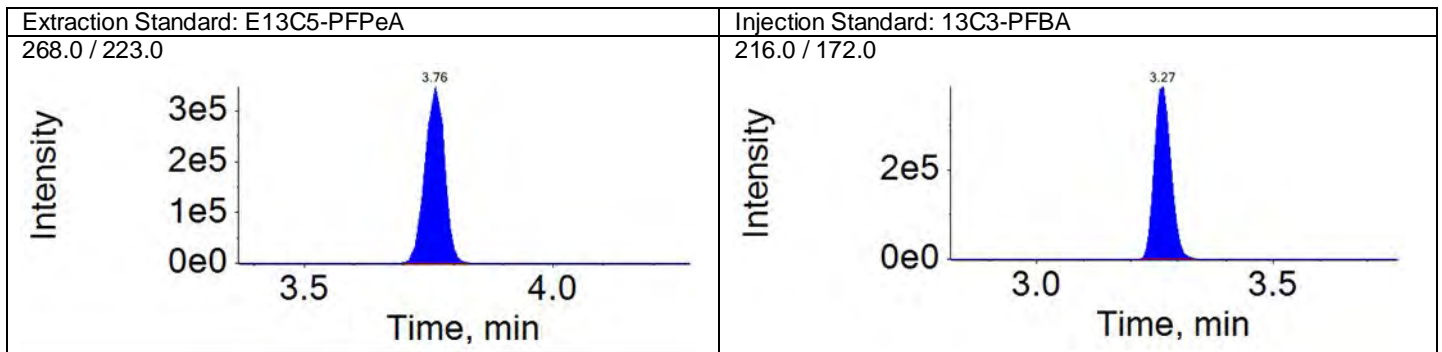
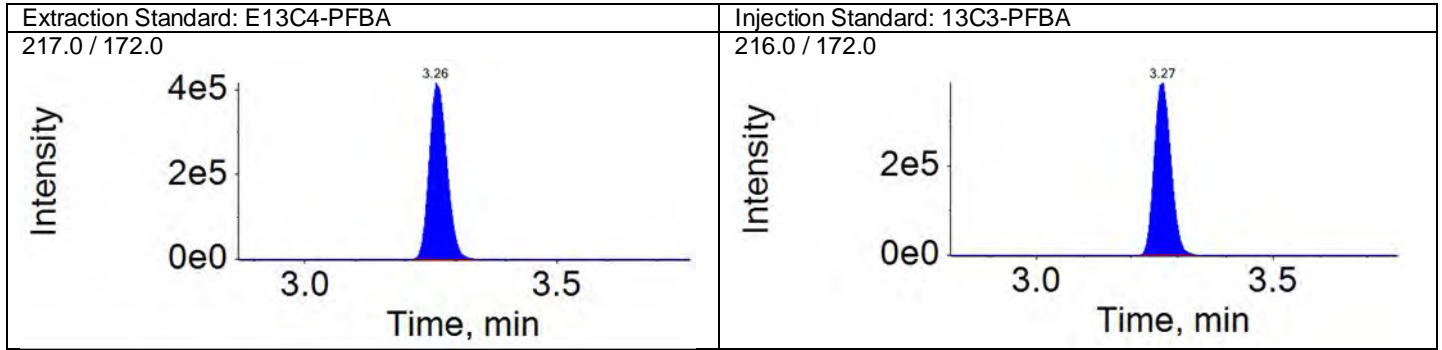
Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam





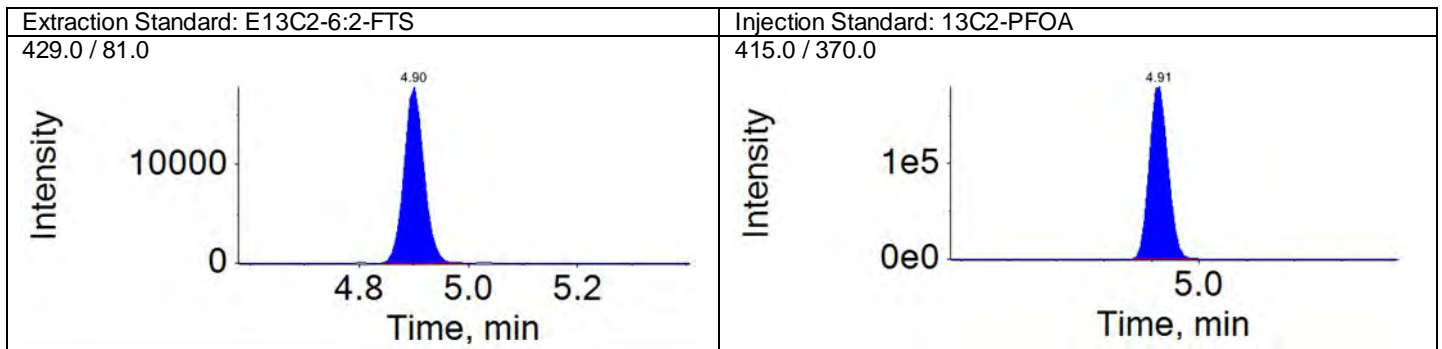
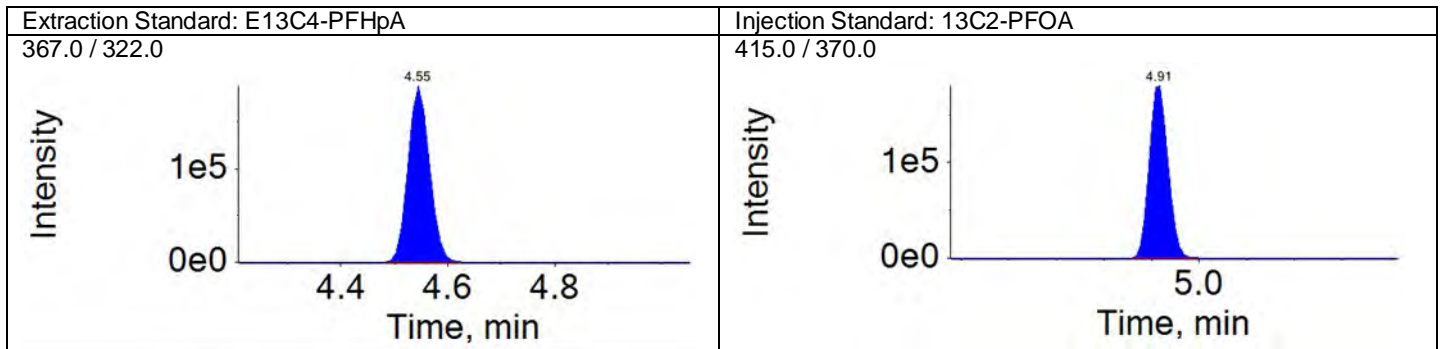
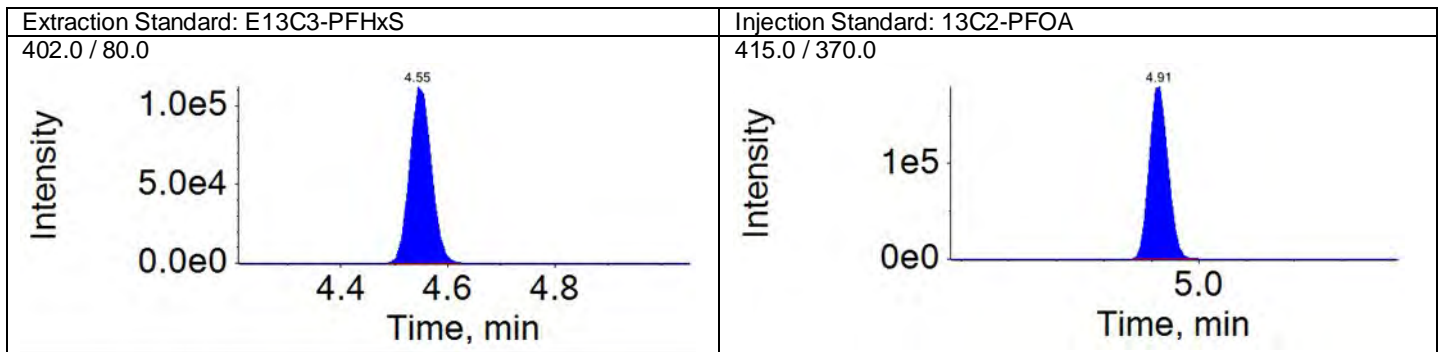
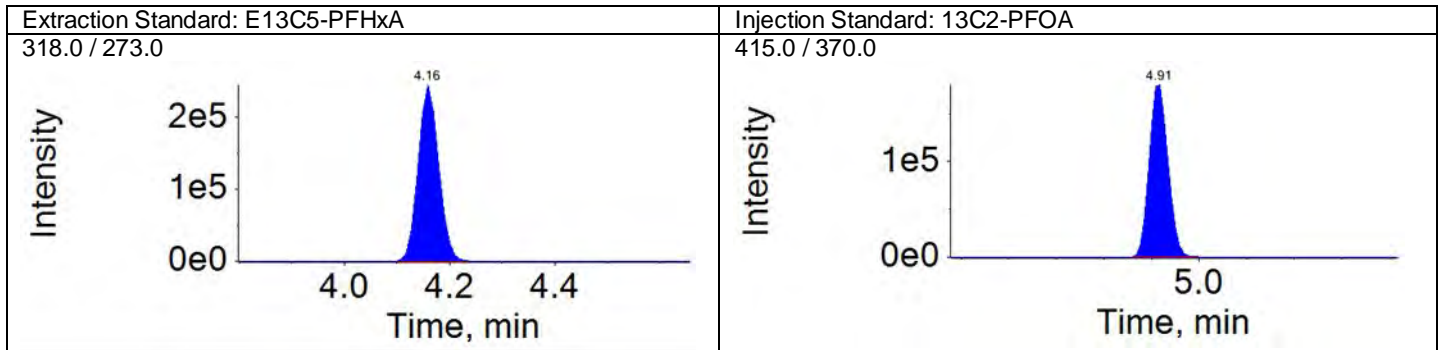
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
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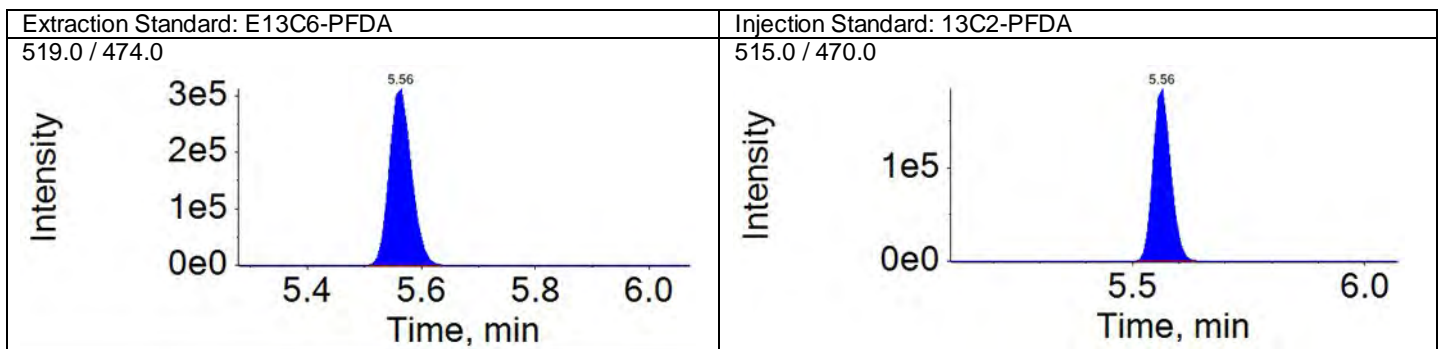
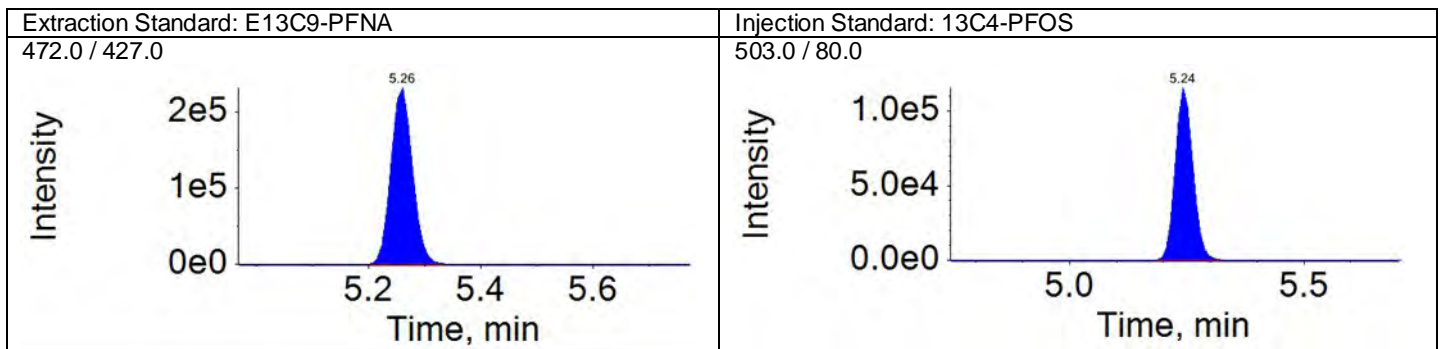
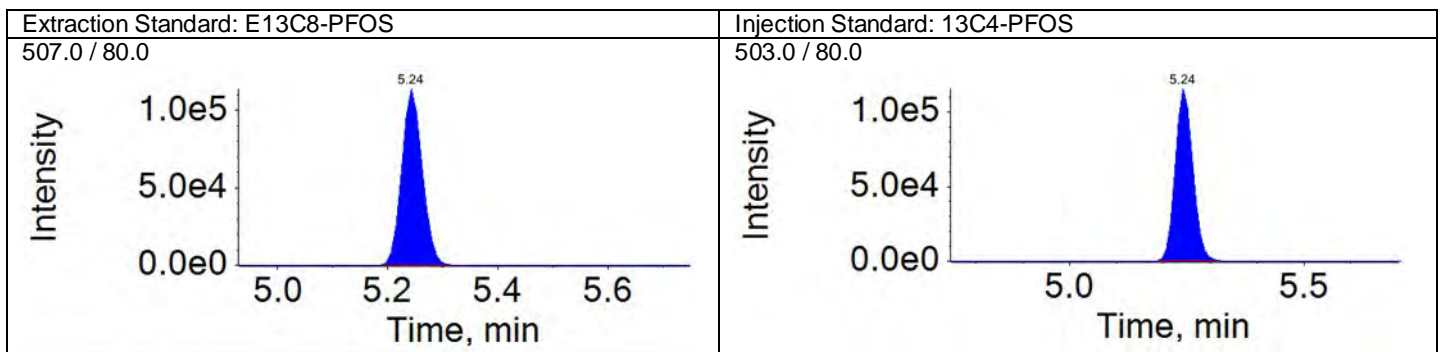
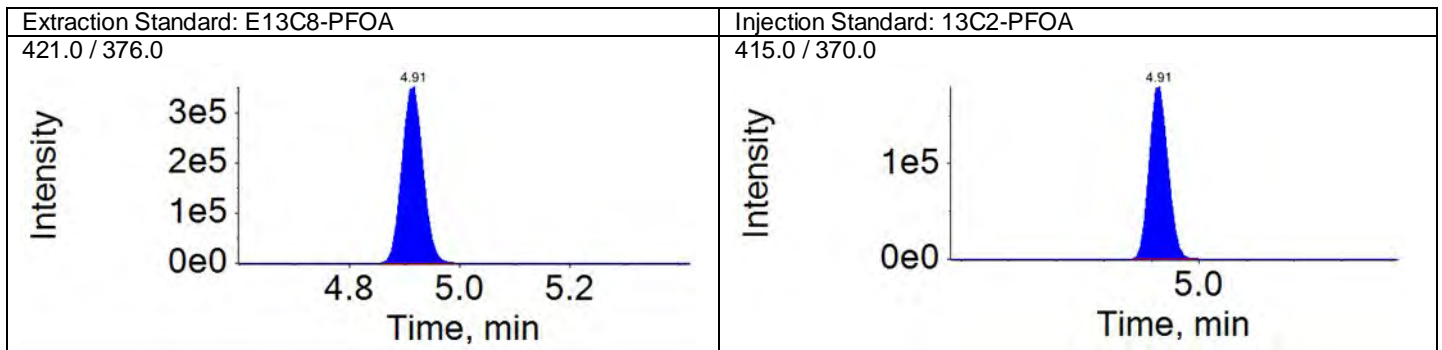
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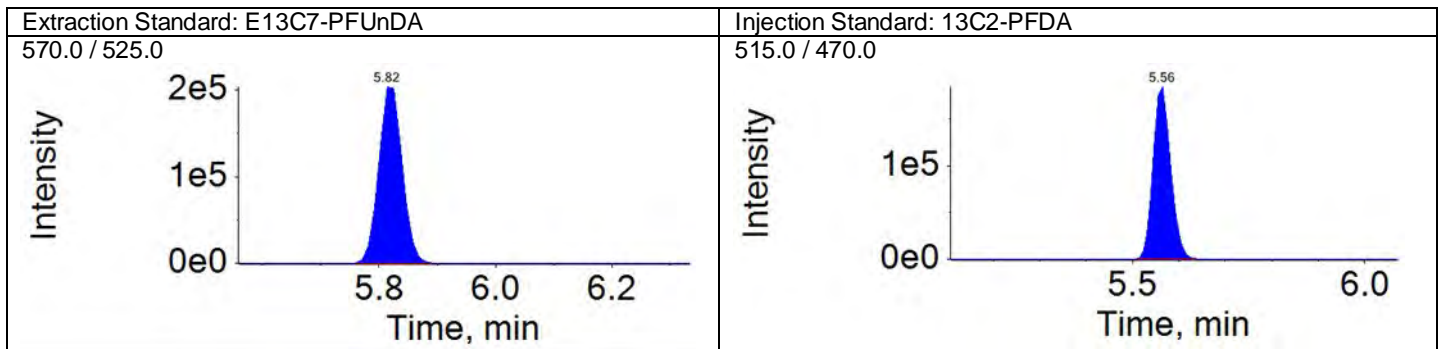
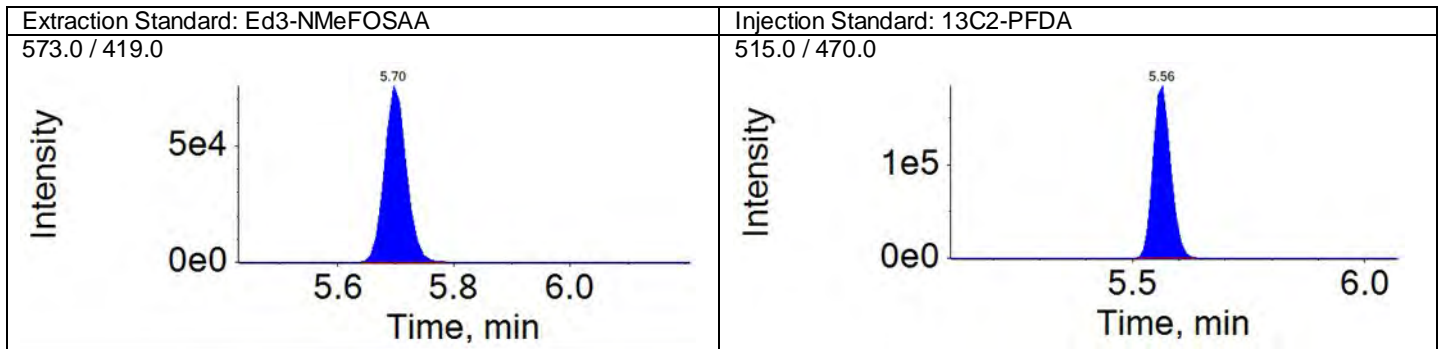
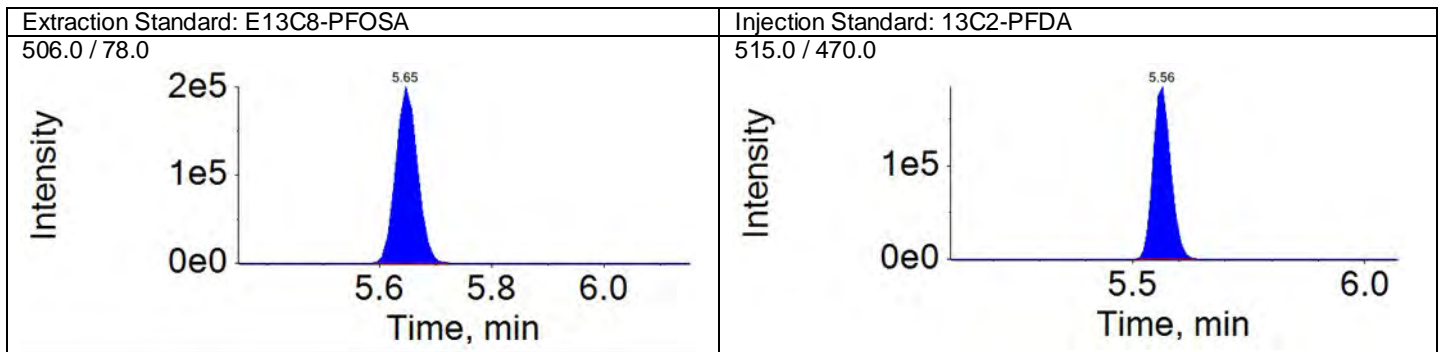
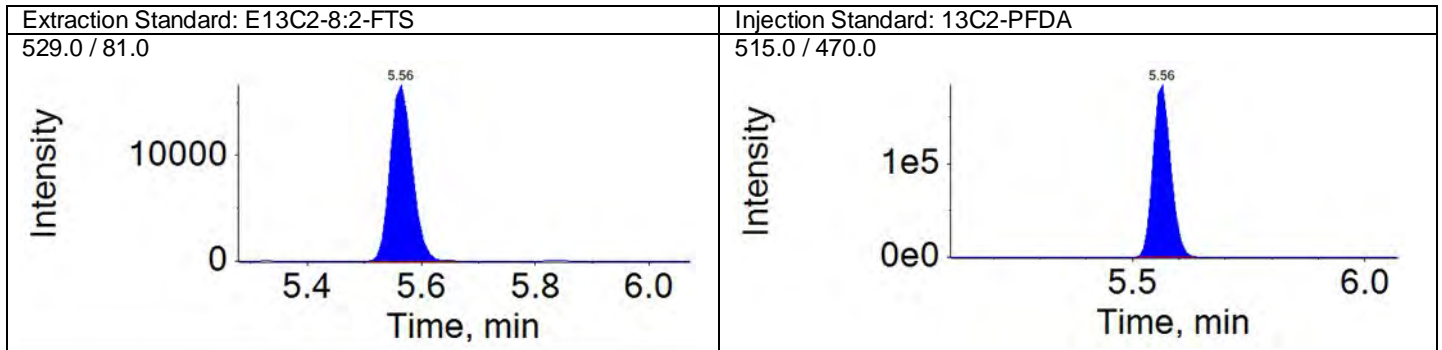
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ICAL Name: 18DEC18DCAL  
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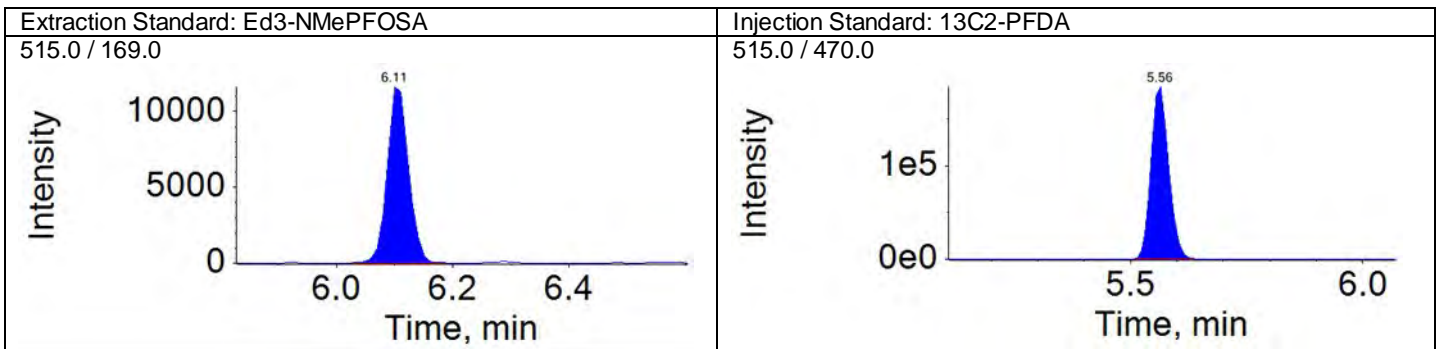
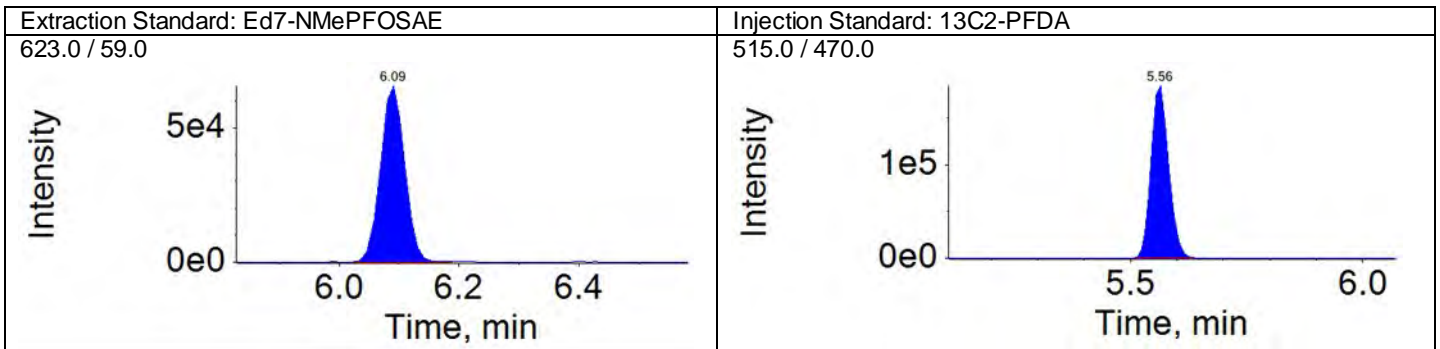
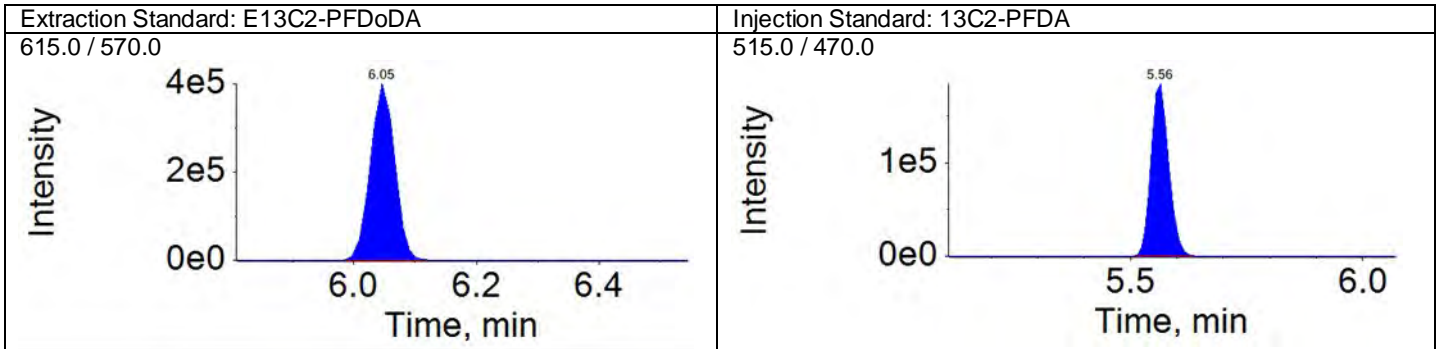
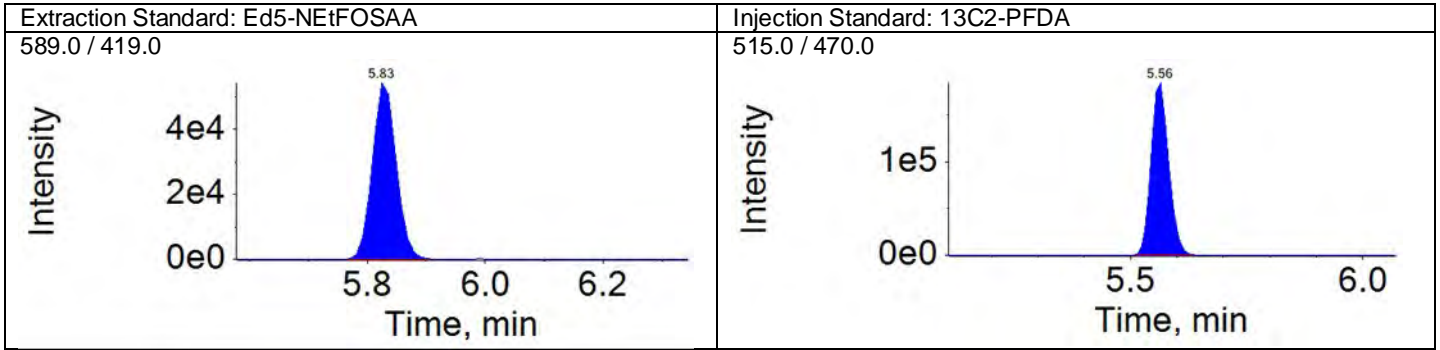
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

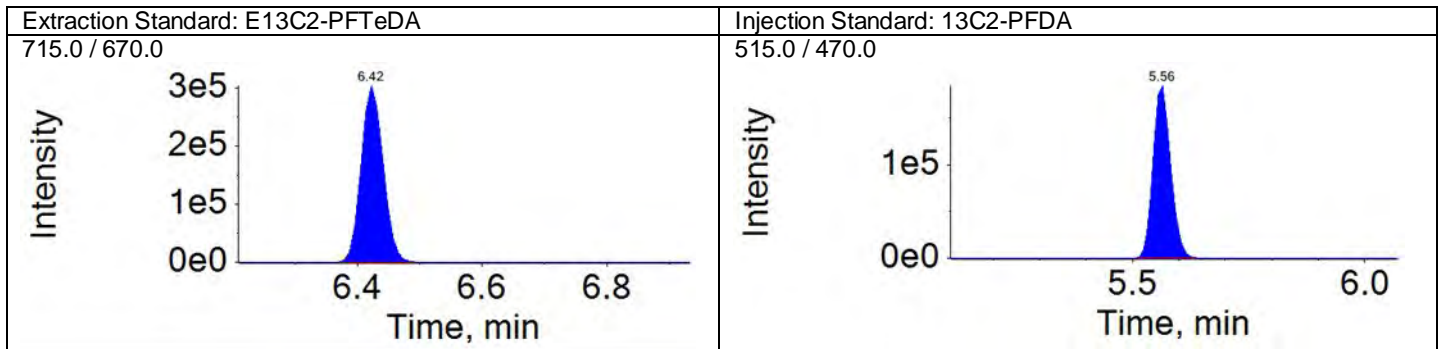
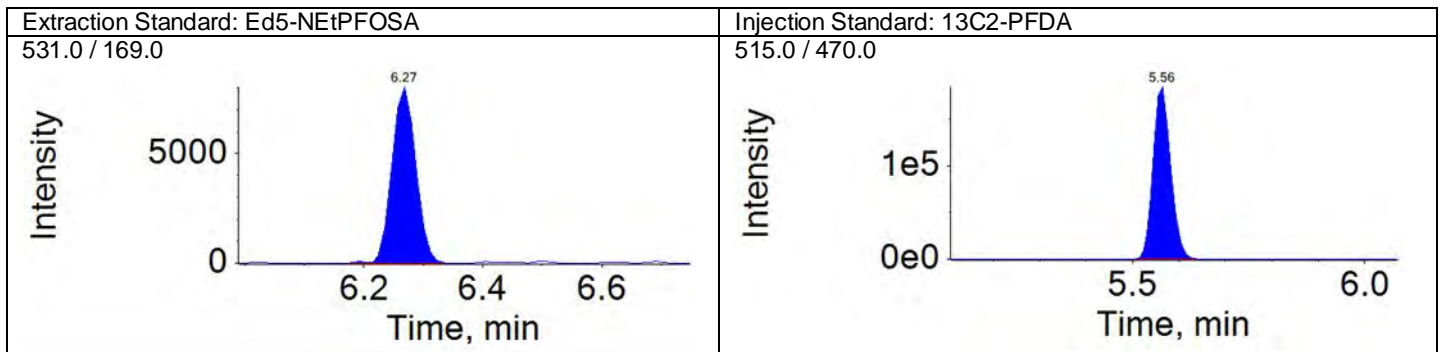
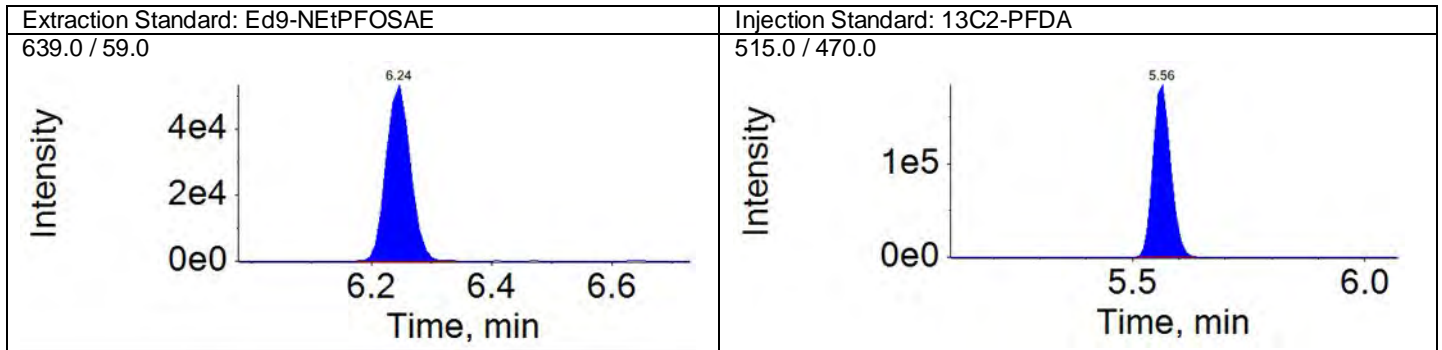
Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam





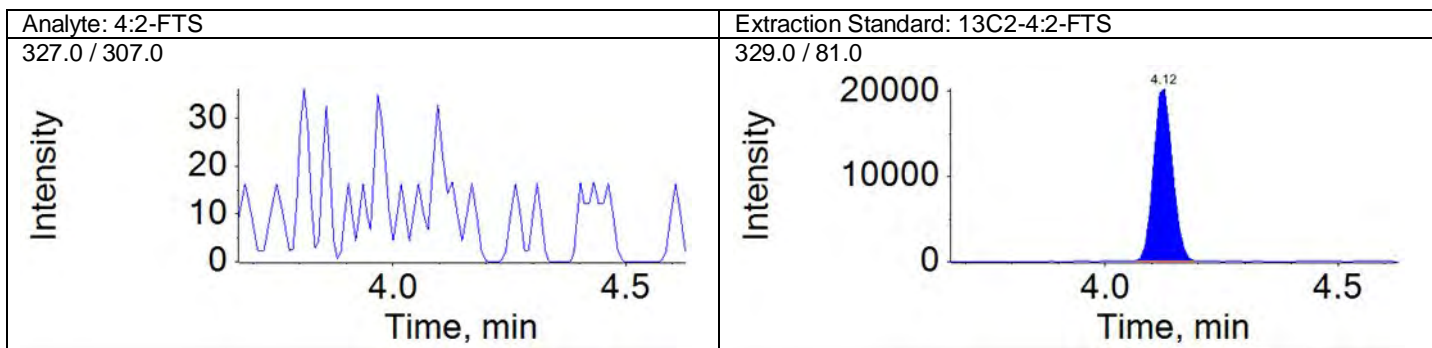
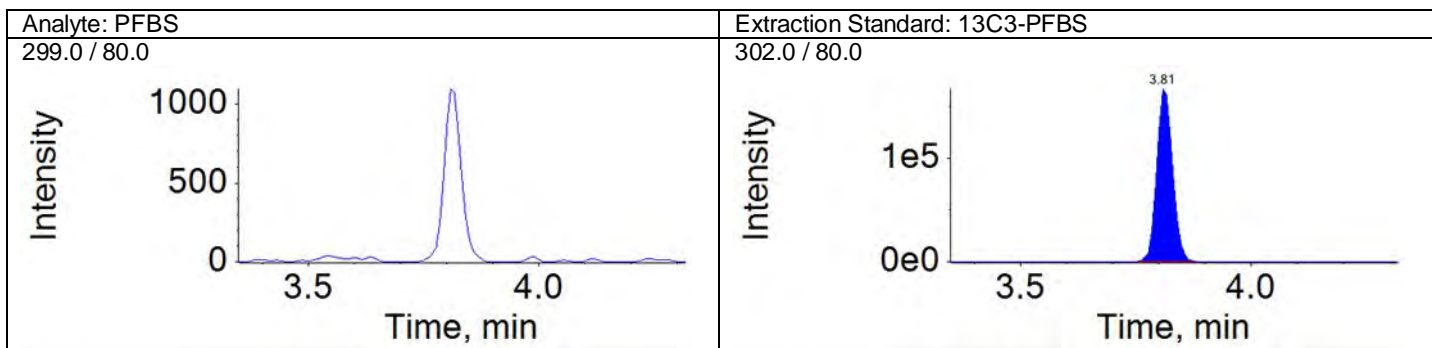
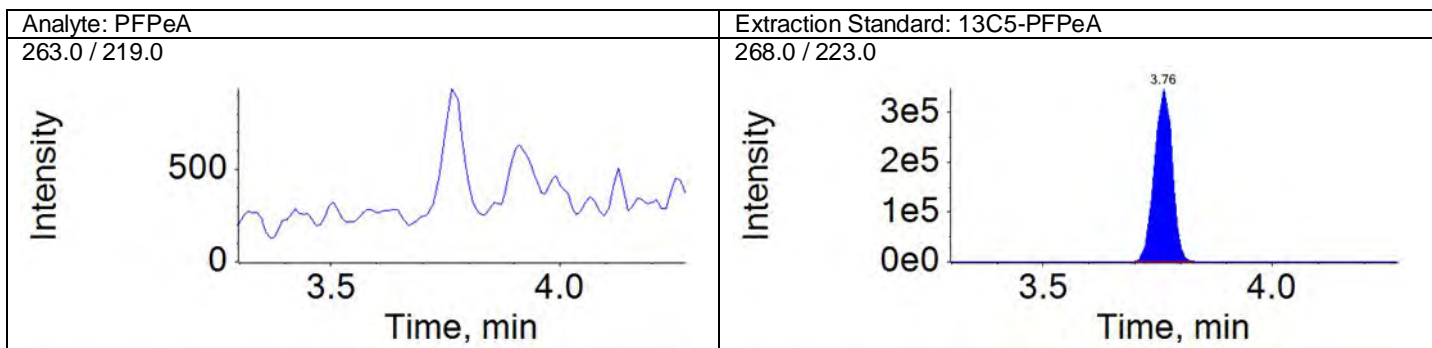
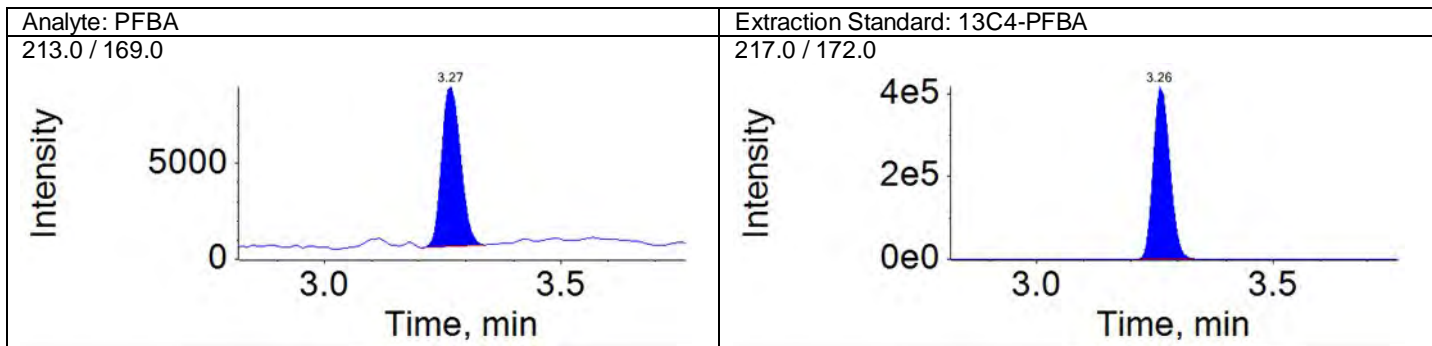
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



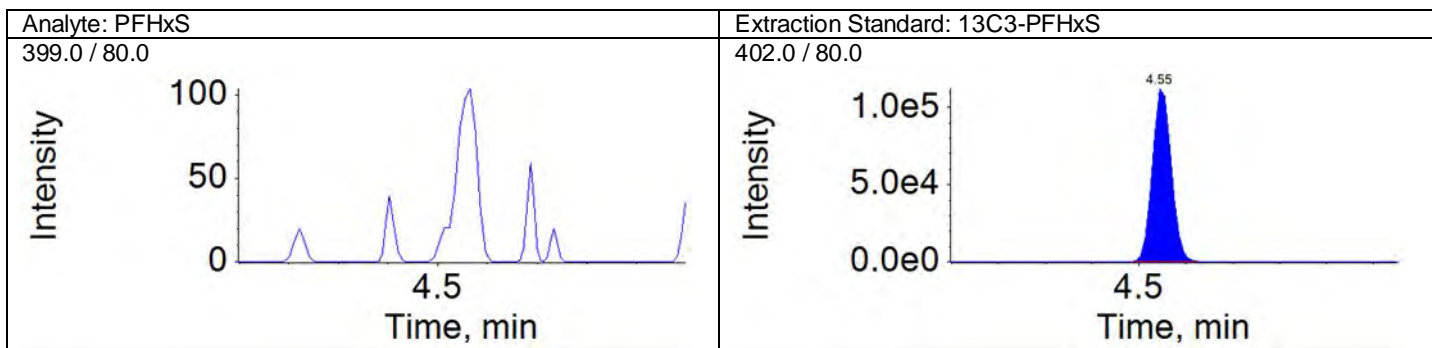
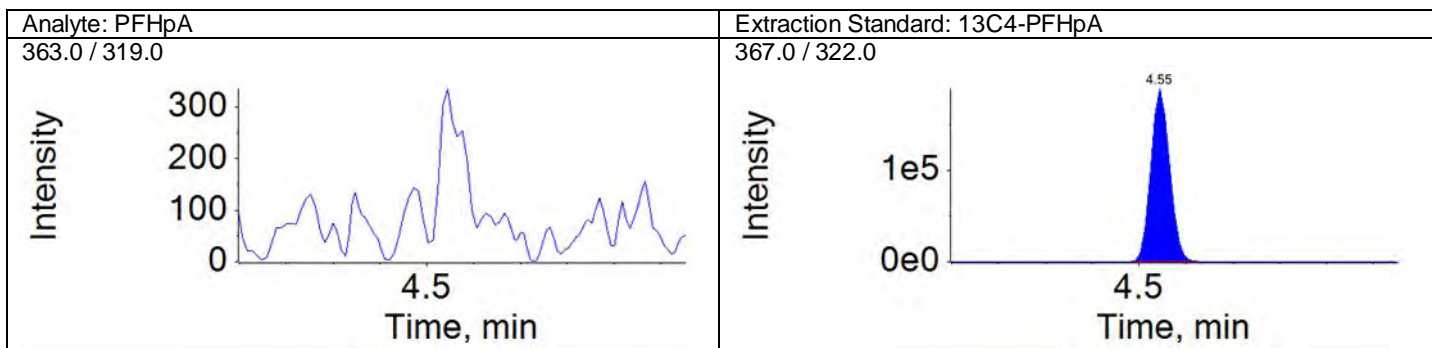
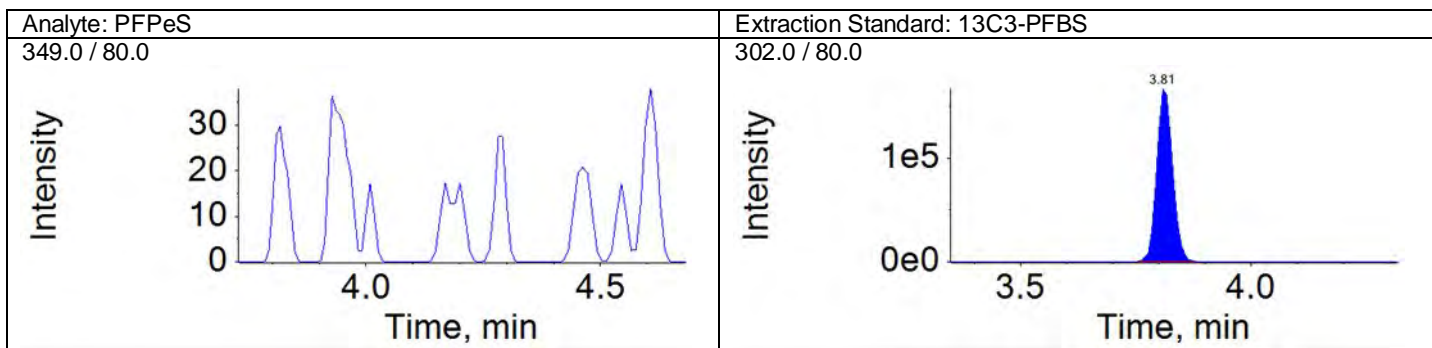
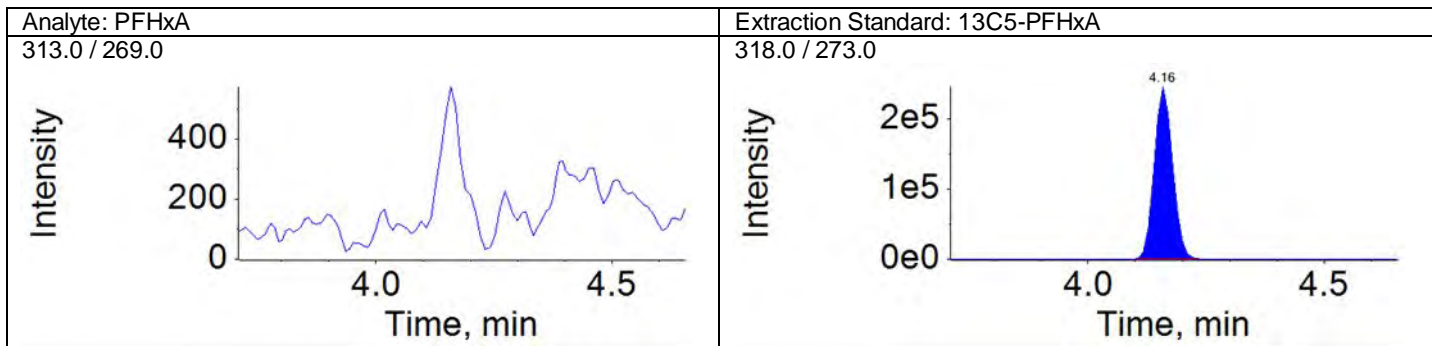
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



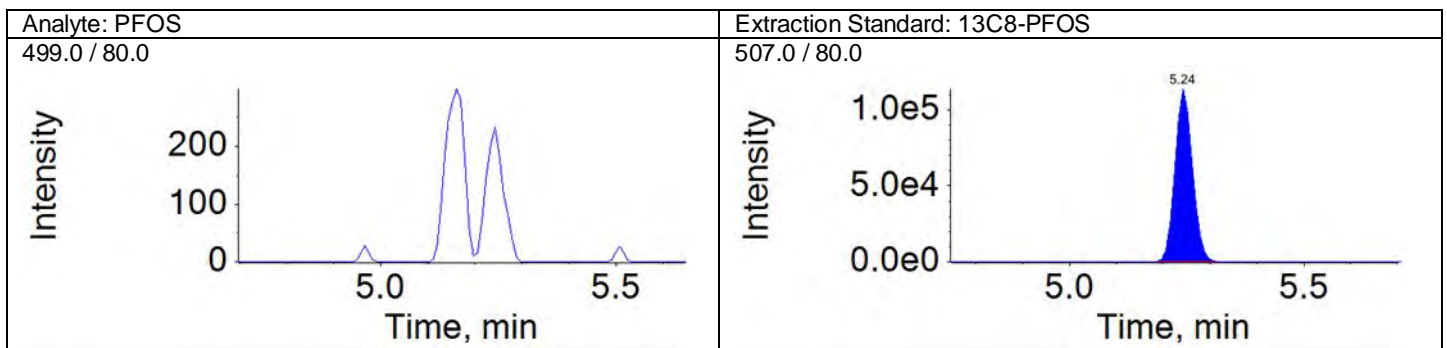
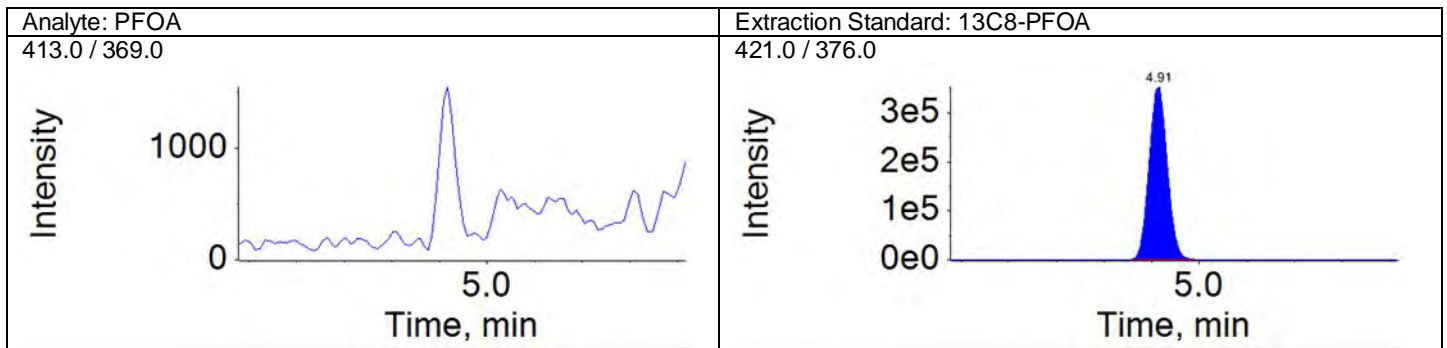
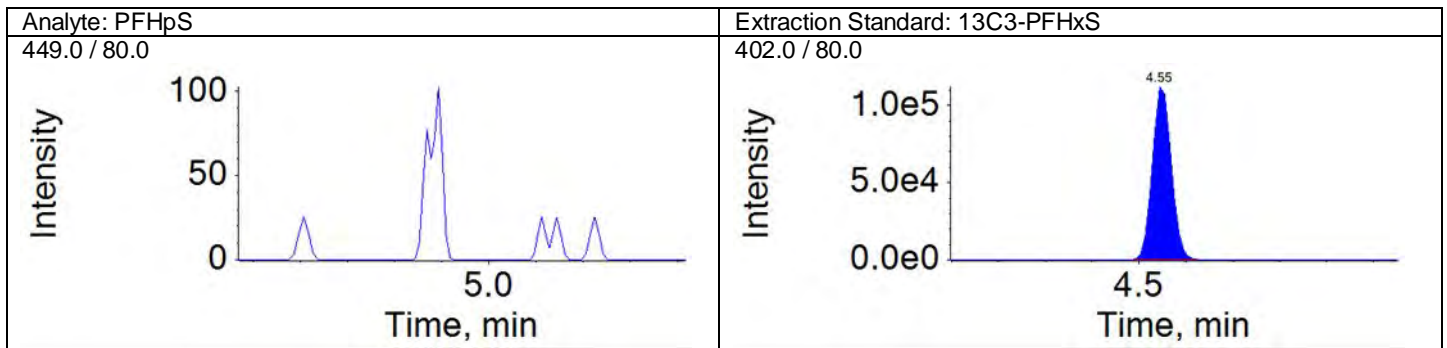
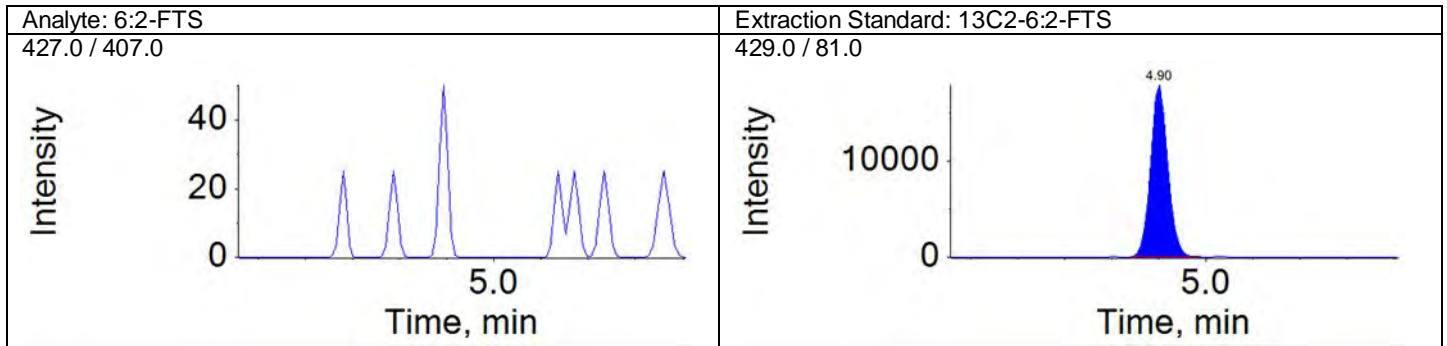
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QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



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QMethod Name: 18AUG20QM

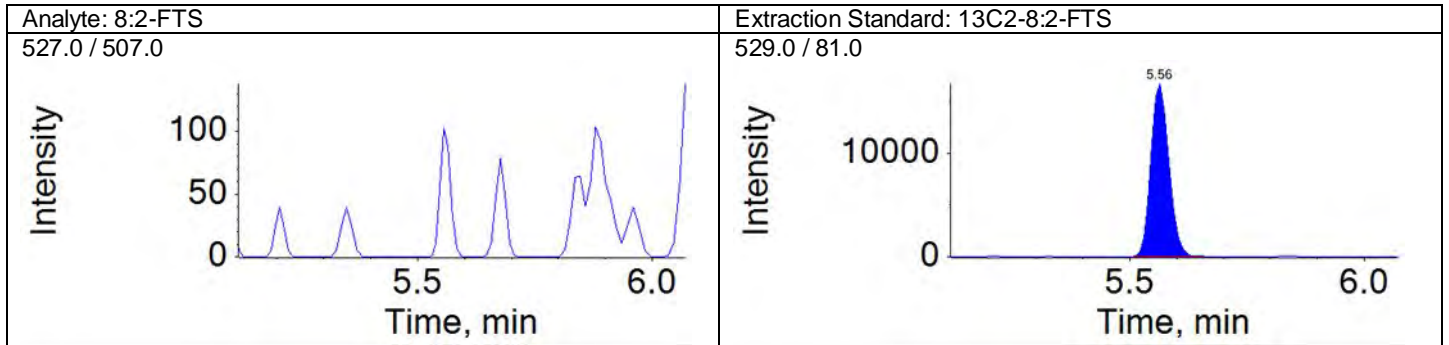
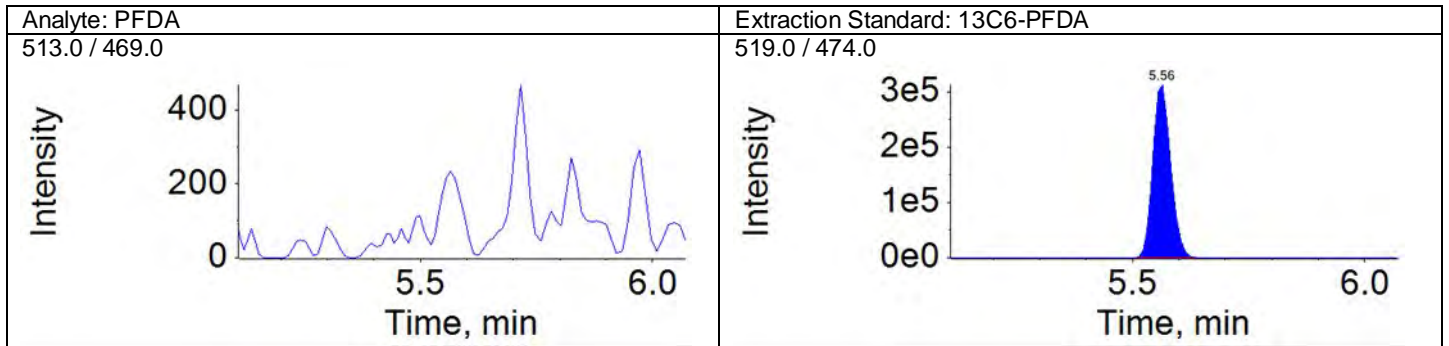
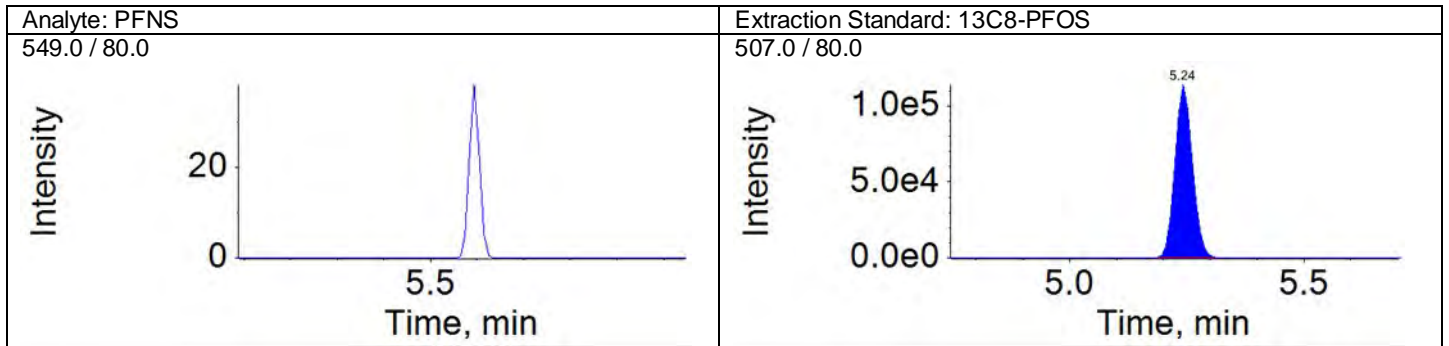
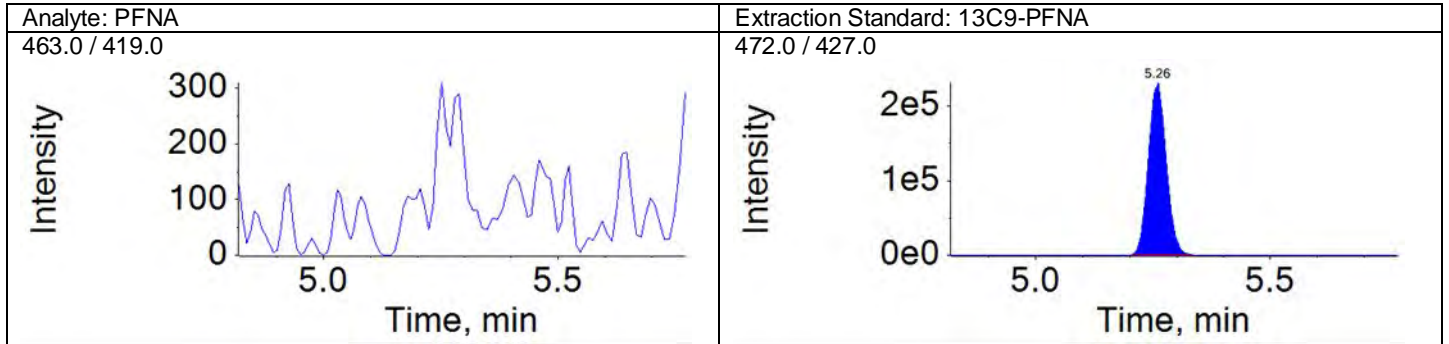
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

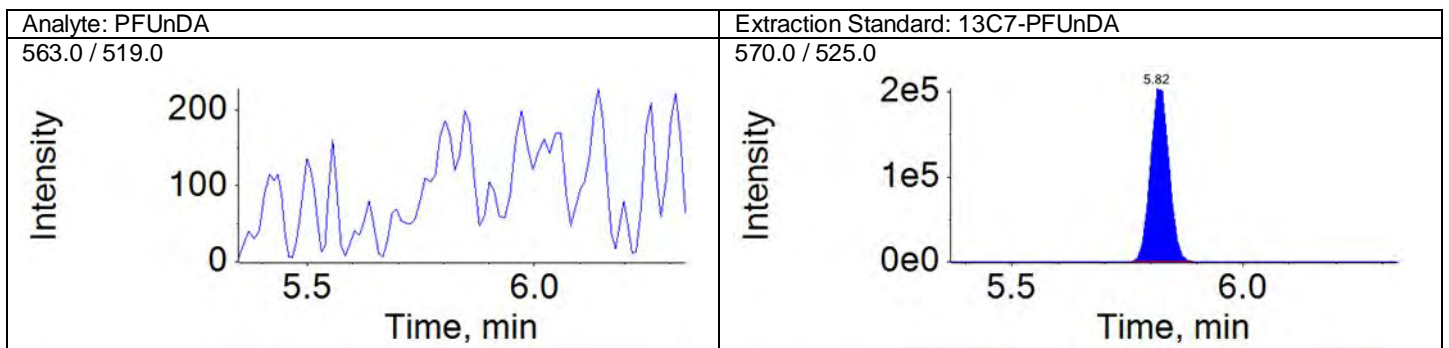
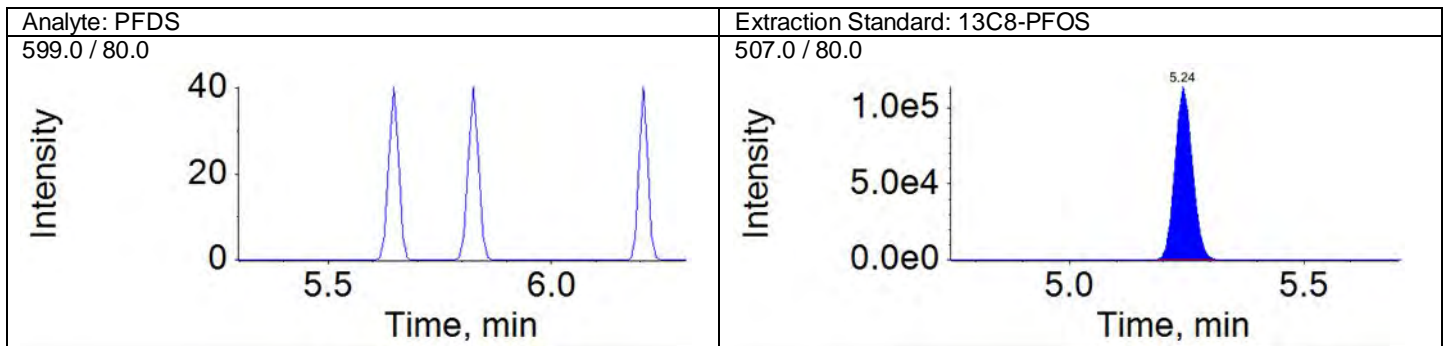
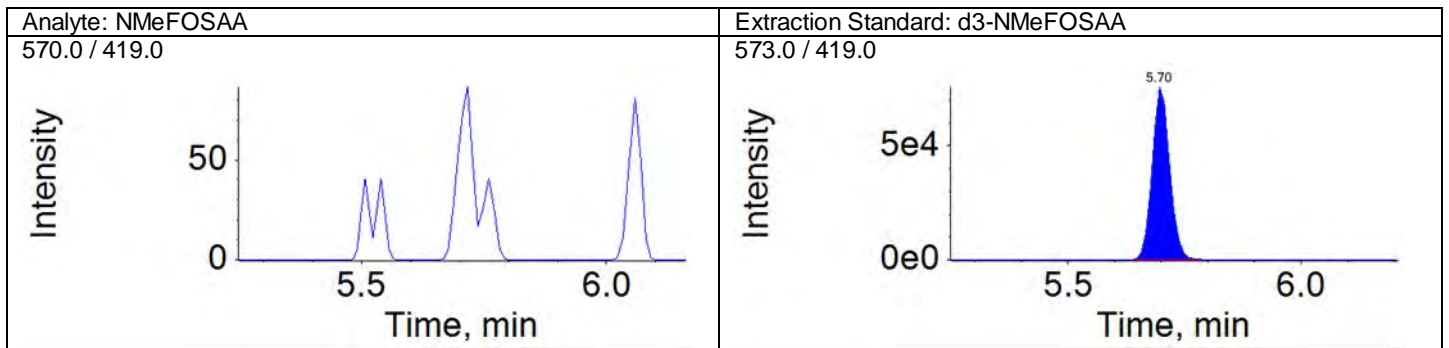
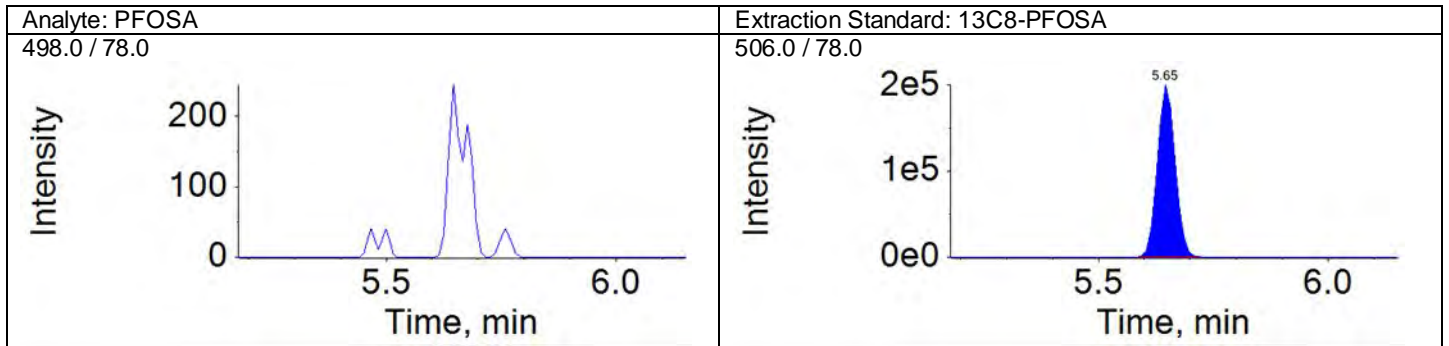
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Acquisition Method: 18AUG13\_3uL.dam





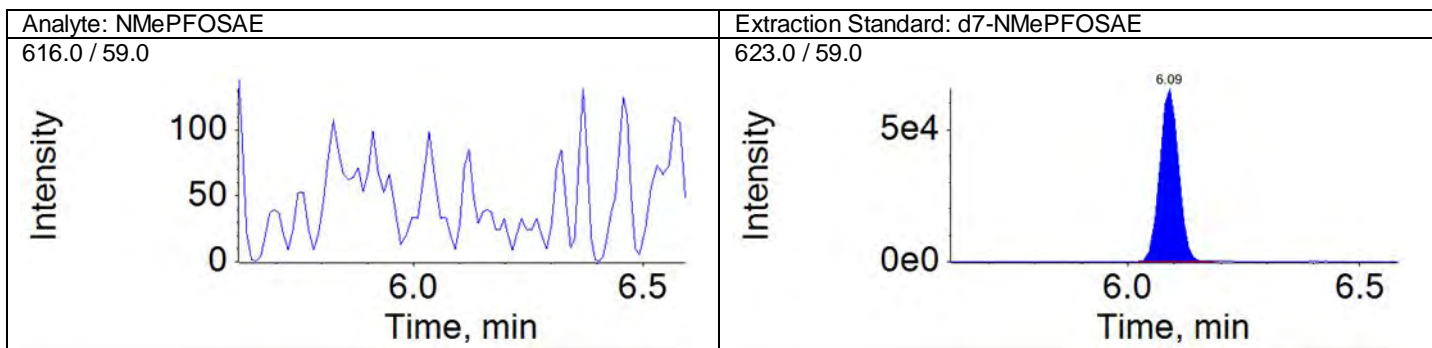
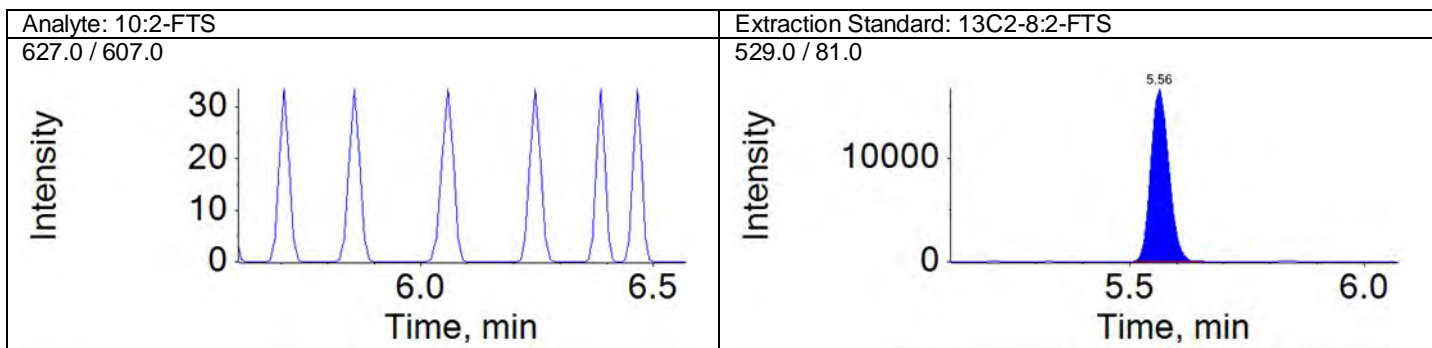
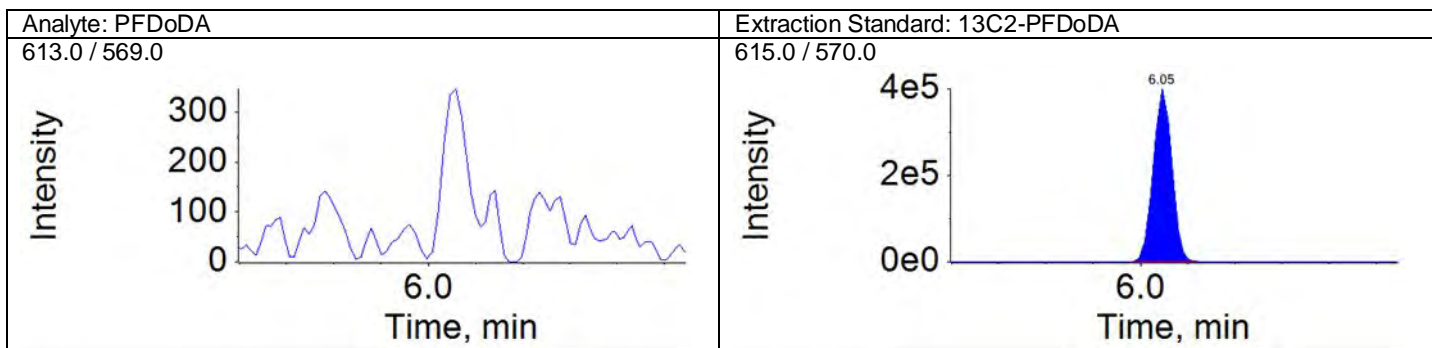
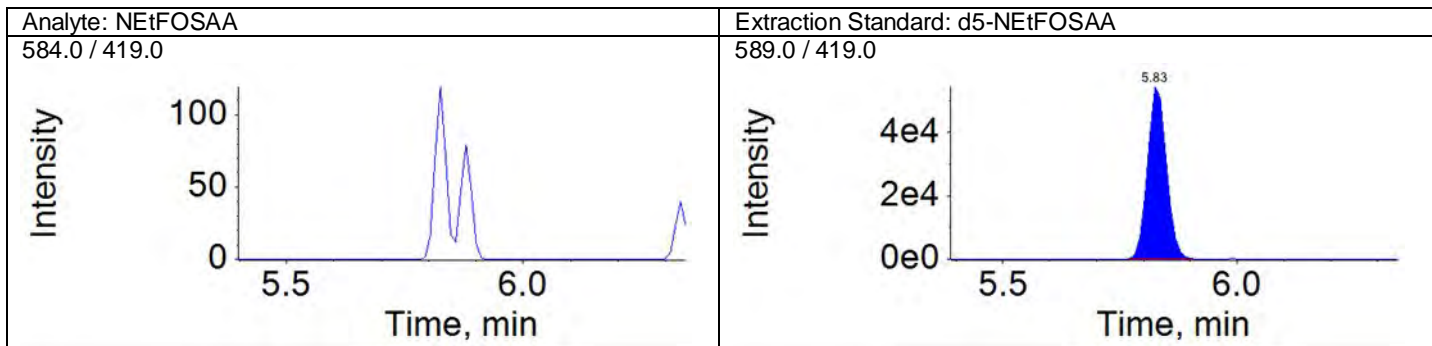
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QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
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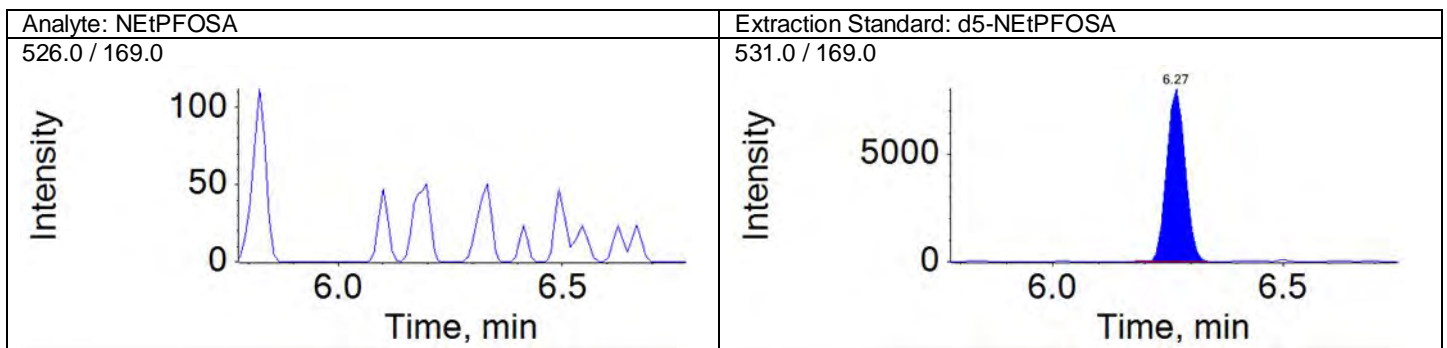
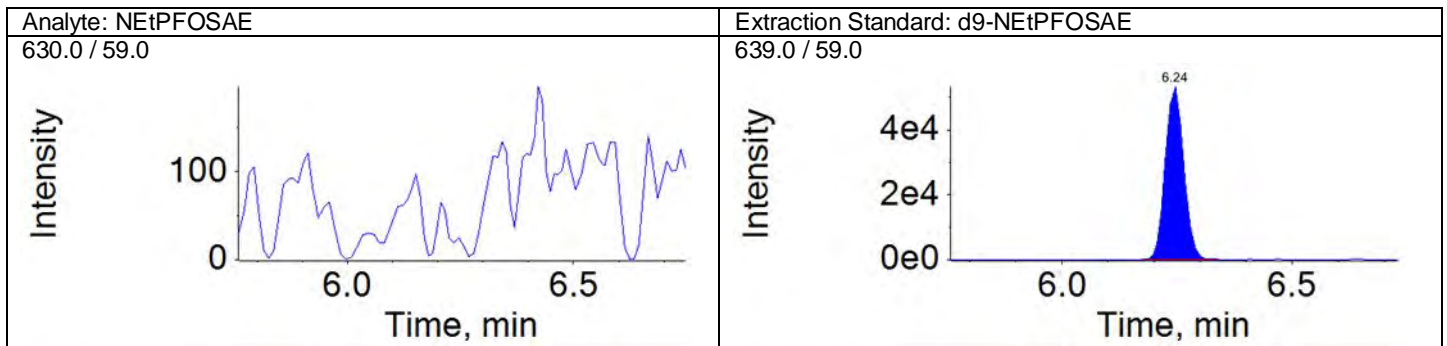
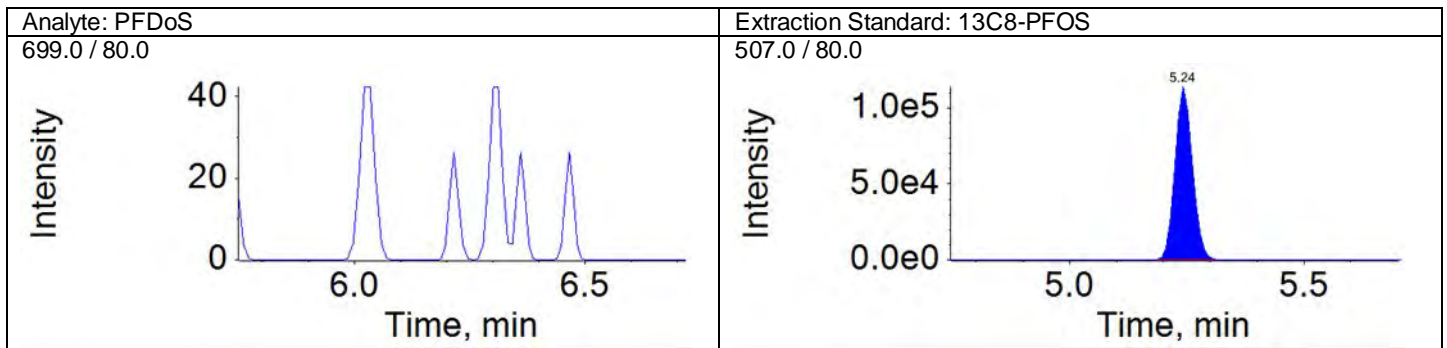
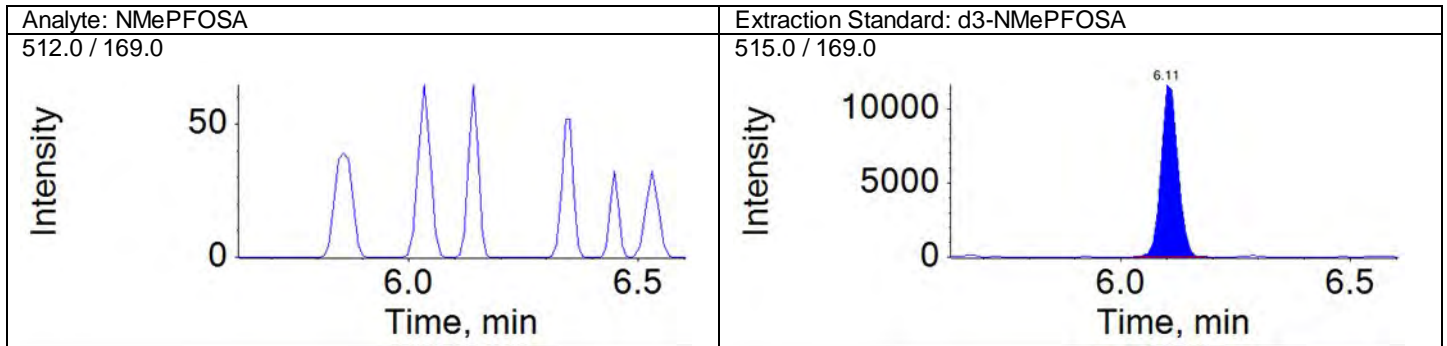
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QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



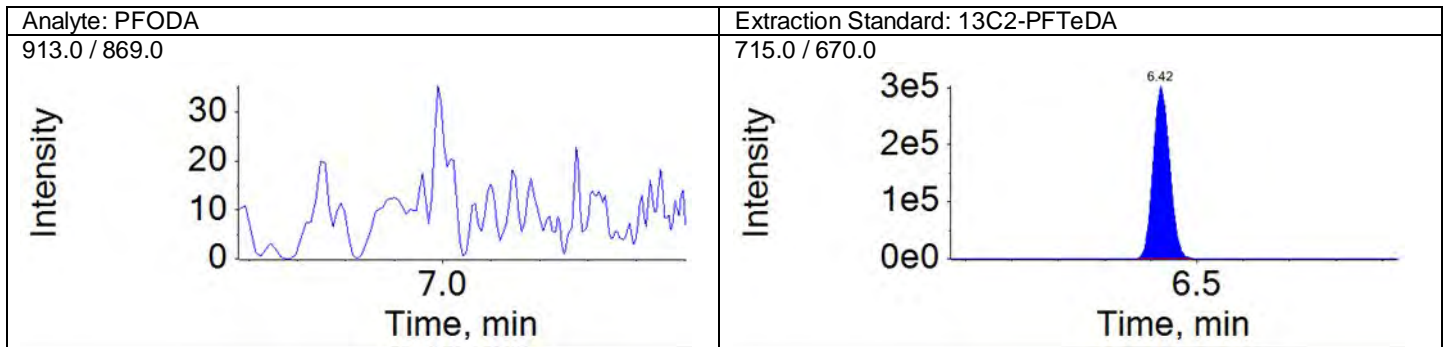
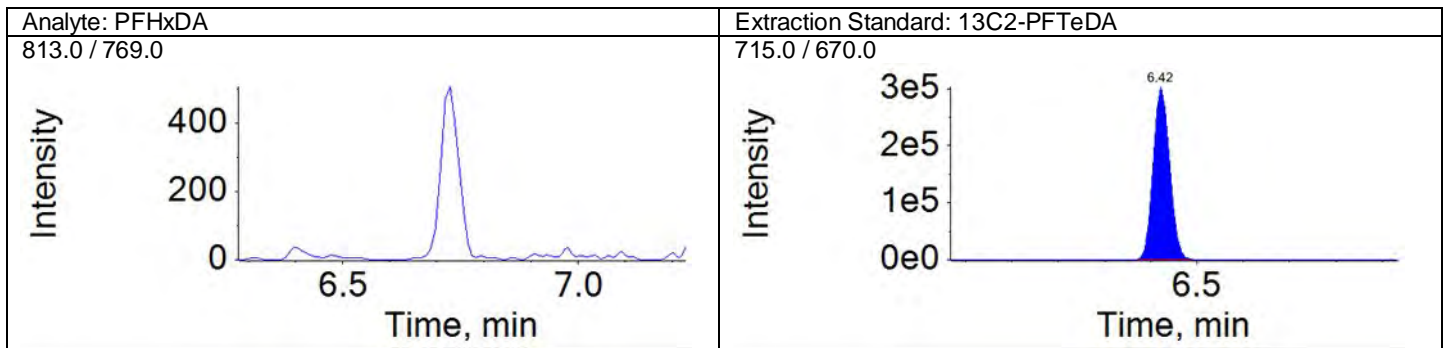
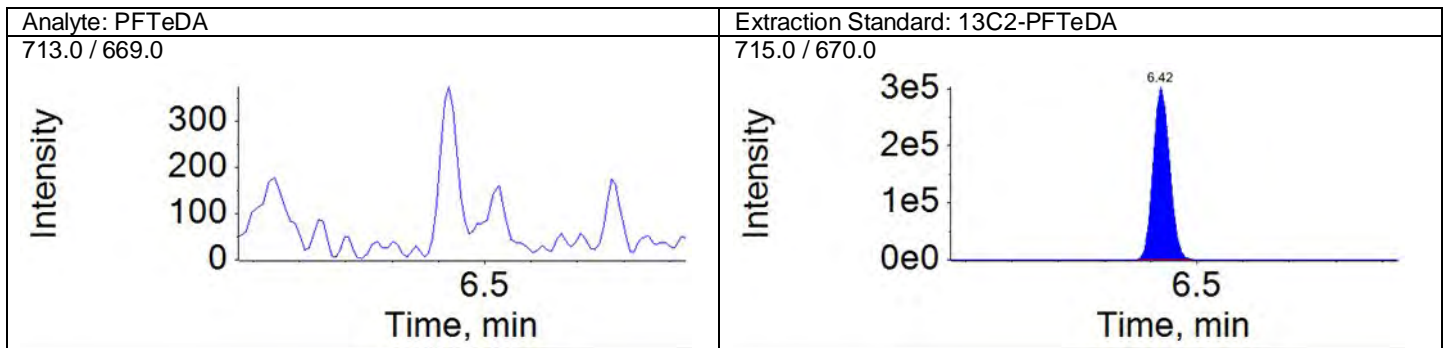
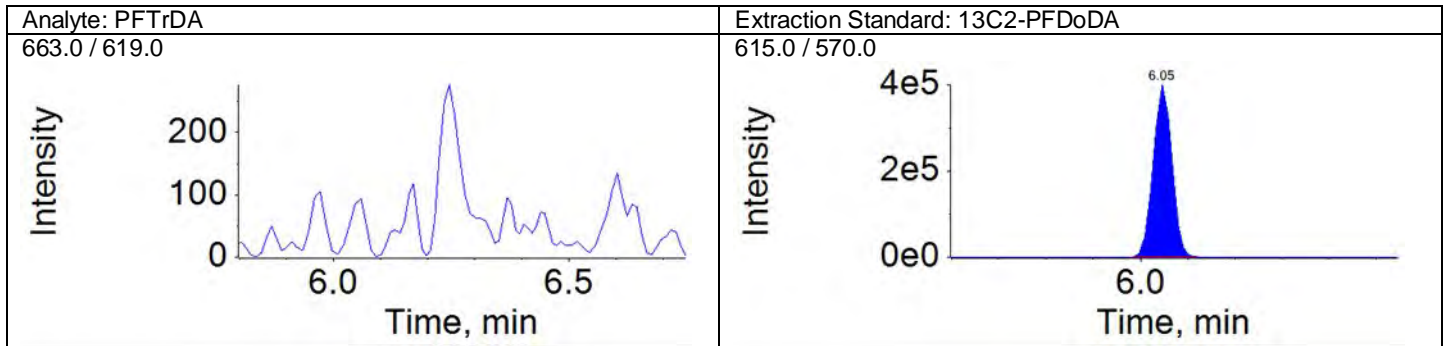
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QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam





Ion Ratio Report

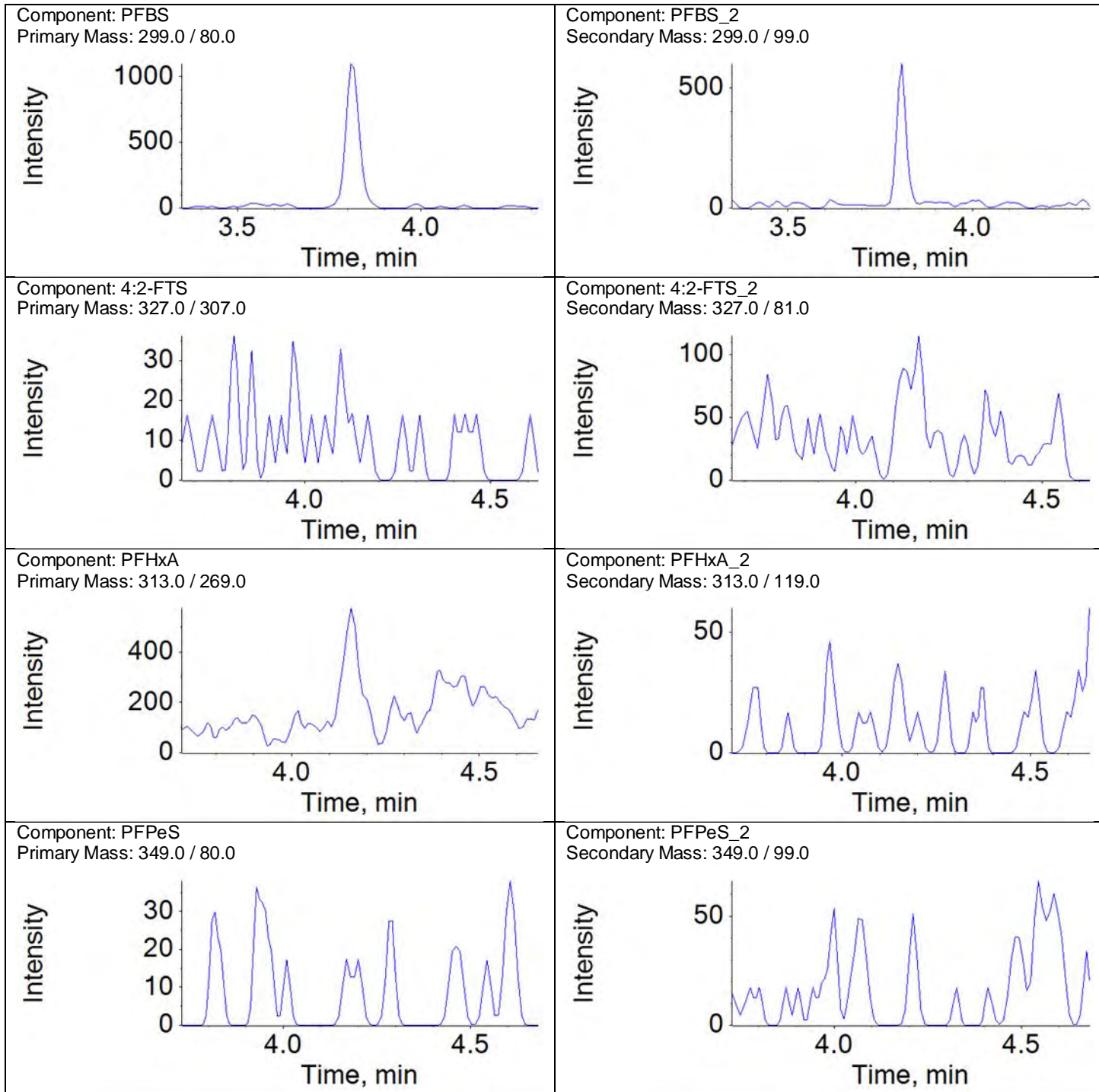
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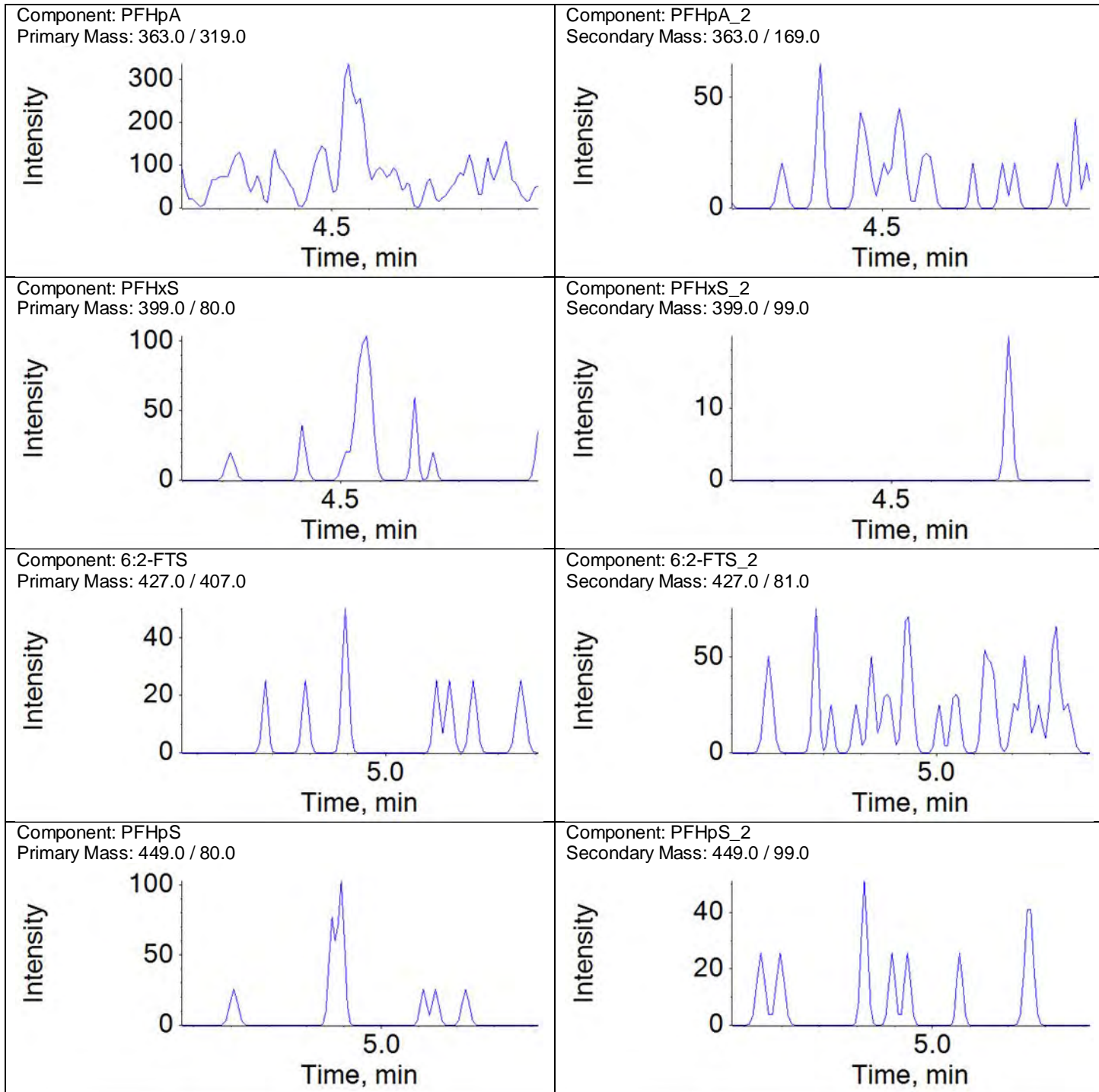
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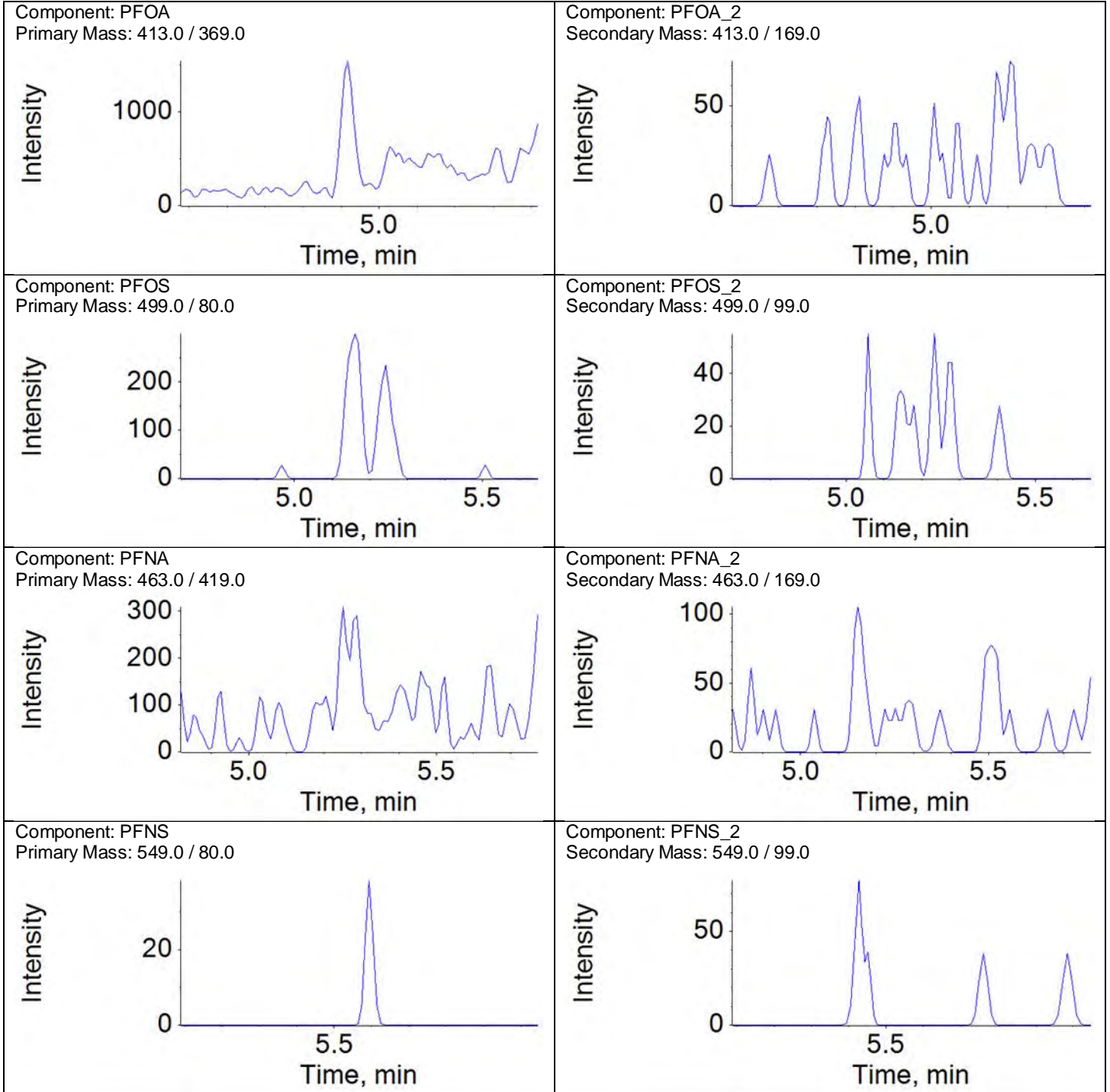
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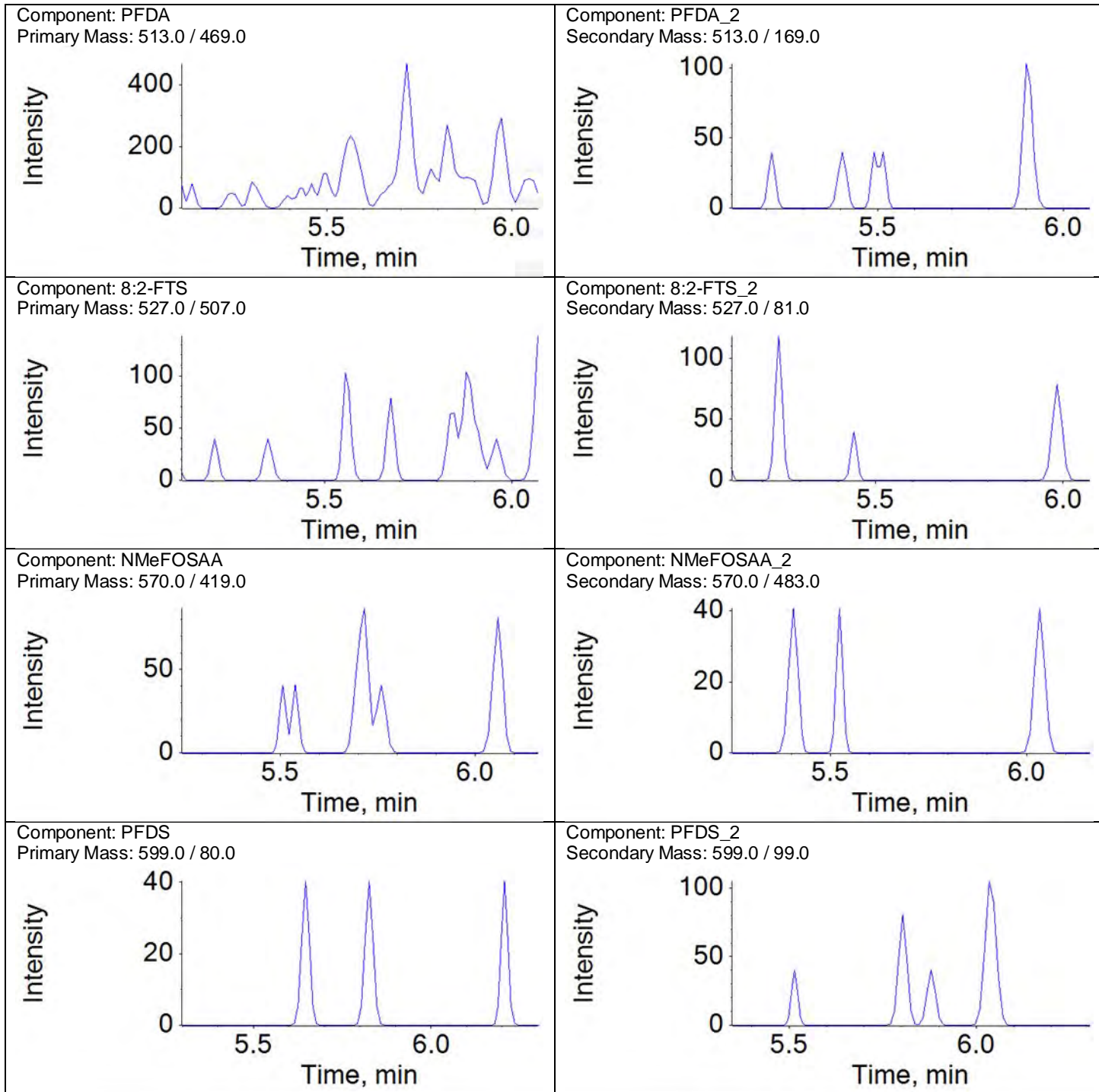
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	N/A	N/A	N/A	A	N/A	N/A			
PFBS_2	N/A	N/A	N/A	A	N/A	N/A		50	
4:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
4:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxA	N/A	N/A	N/A	A	N/A	N/A			
PFHxA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFPeS	N/A	N/A	N/A	A	N/A	N/A			
PFPeS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpA	N/A	N/A	N/A	A	N/A	N/A			
PFHpA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxS	N/A	N/A	N/A	A	N/A	N/A			
PFHxS_2	N/A	N/A	N/A	A	N/A	N/A		50	
6:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
6:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHpS	N/A	N/A	N/A	A	N/A	N/A			
PFHpS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOS	N/A	N/A	N/A	A	N/A	N/A			
PFOS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNA	N/A	N/A	N/A	A	N/A	N/A			
PFNA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFNS	N/A	N/A	N/A	A	N/A	N/A			
PFNS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDA	N/A	N/A	N/A	A	N/A	N/A			
PFDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
8:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
8:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
NMeFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NMeFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFDS	N/A	N/A	N/A	A	N/A	N/A			
PFDS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAUnDA	N/A	N/A	N/A	A	N/A	N/A			
PFAUnDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
NEtFOSAA	N/A	N/A	N/A	A	N/A	N/A			
NEtFOSAA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAoDA	N/A	N/A	N/A	A	N/A	N/A			
PFAoDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
10:2-FTS	N/A	N/A	N/A	A	N/A	N/A			
10:2-FTS_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFArDA	N/A	N/A	N/A	A	N/A	N/A			
PFArDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFAeDA	N/A	N/A	N/A	A	N/A	N/A			
PFAeDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFHxDA	N/A	N/A	N/A	A	N/A	N/A			
PFHxDA_2	N/A	N/A	N/A	A	N/A	N/A		50	
PFOA	N/A	N/A	N/A	A	N/A	N/A			
PFOA_2	N/A	N/A	N/A	A	N/A	N/A		50	



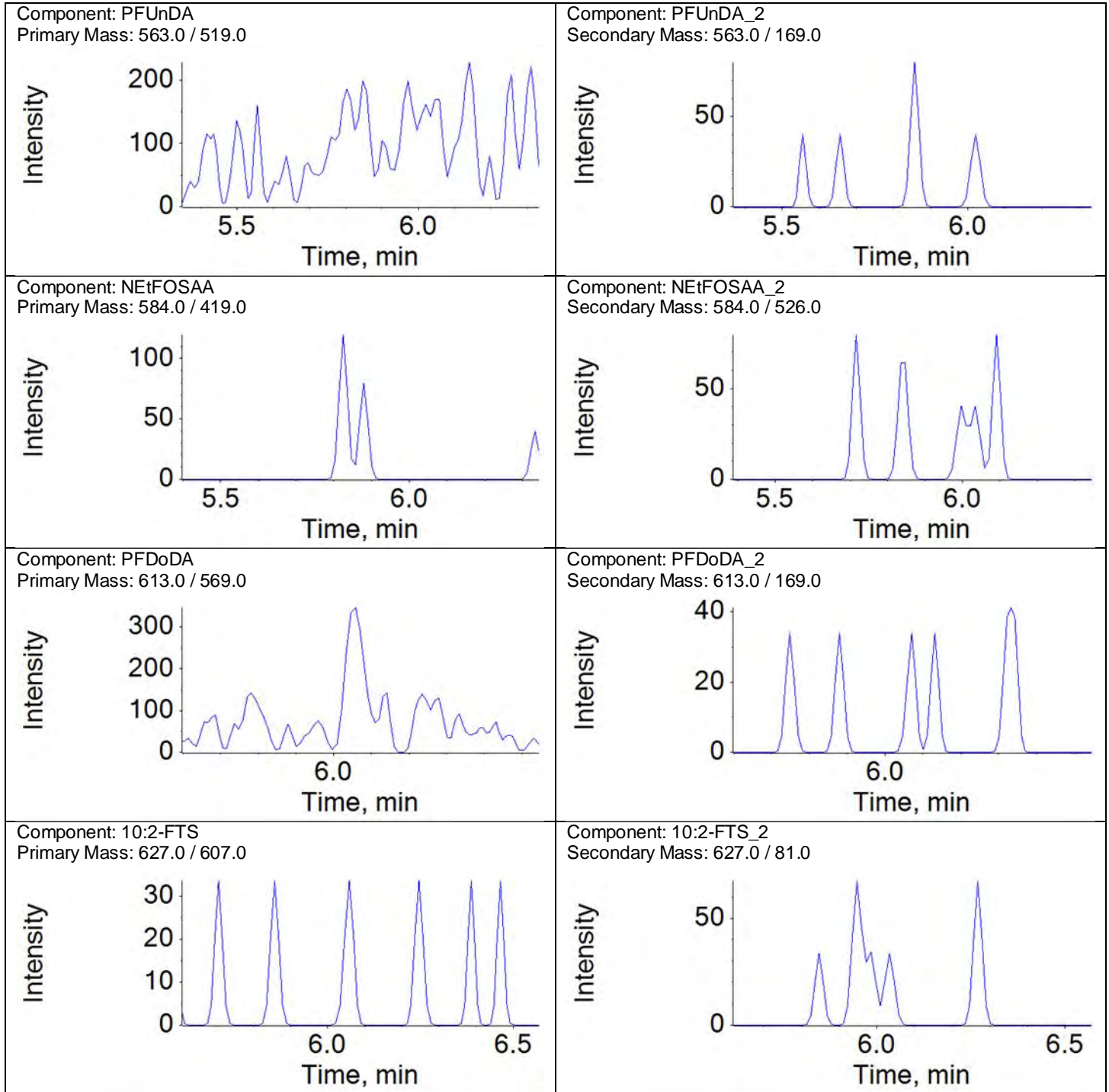




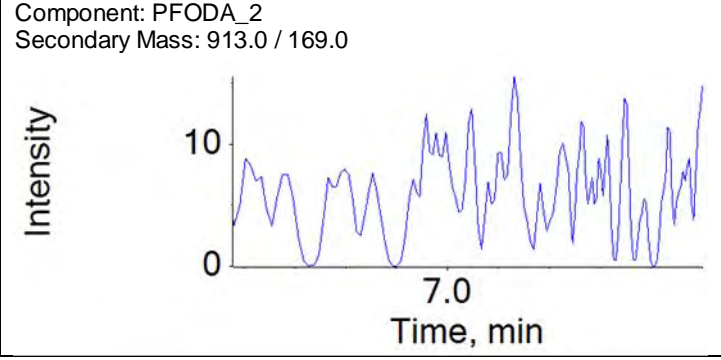
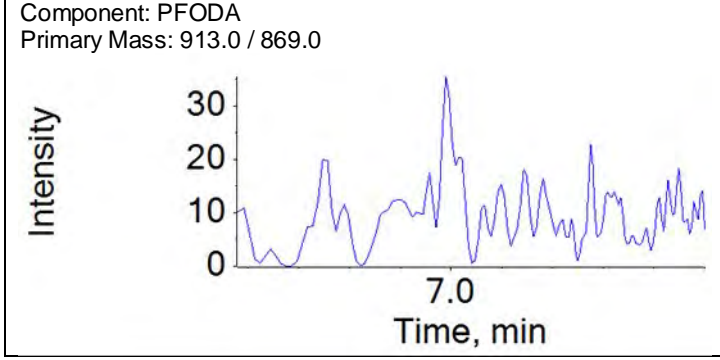
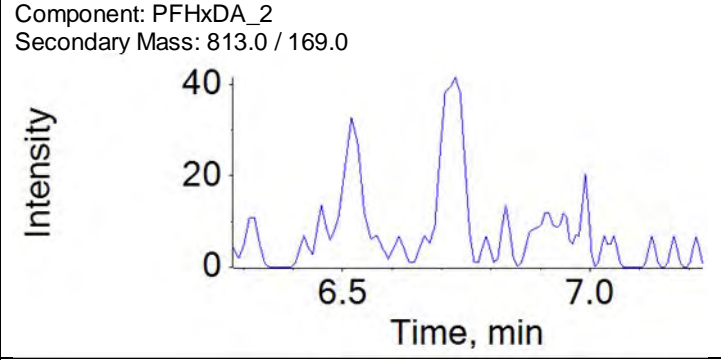
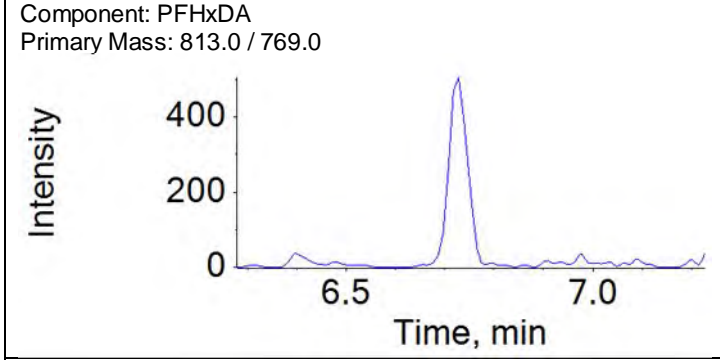
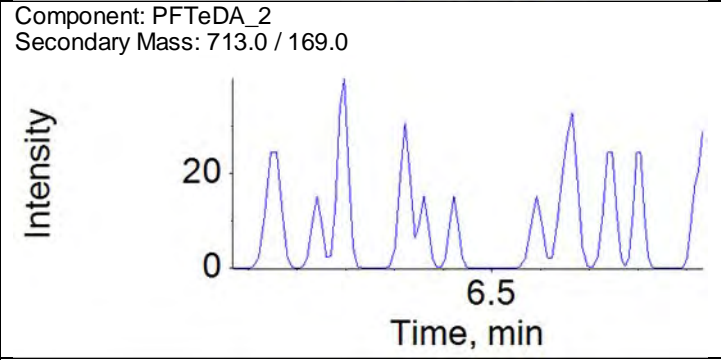
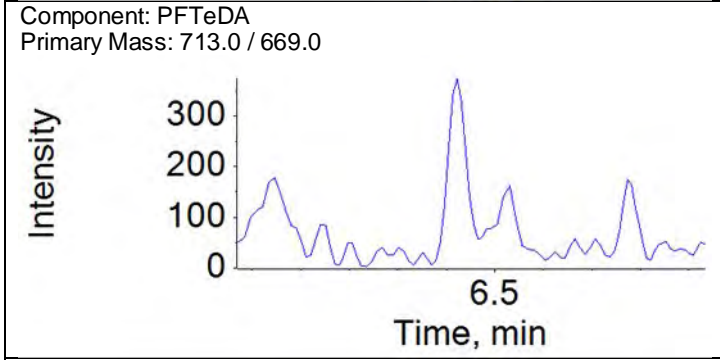
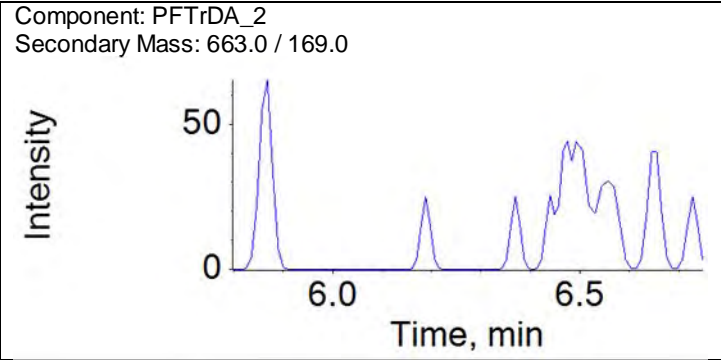
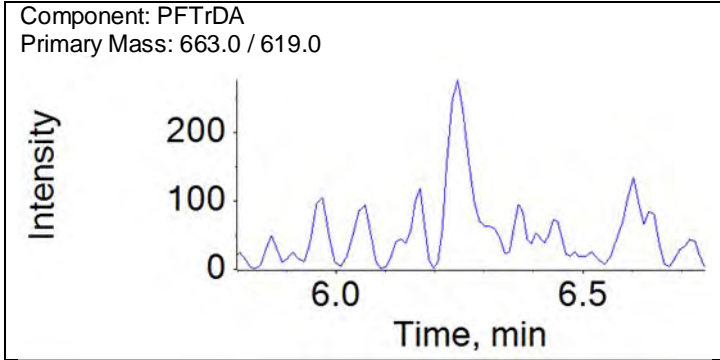












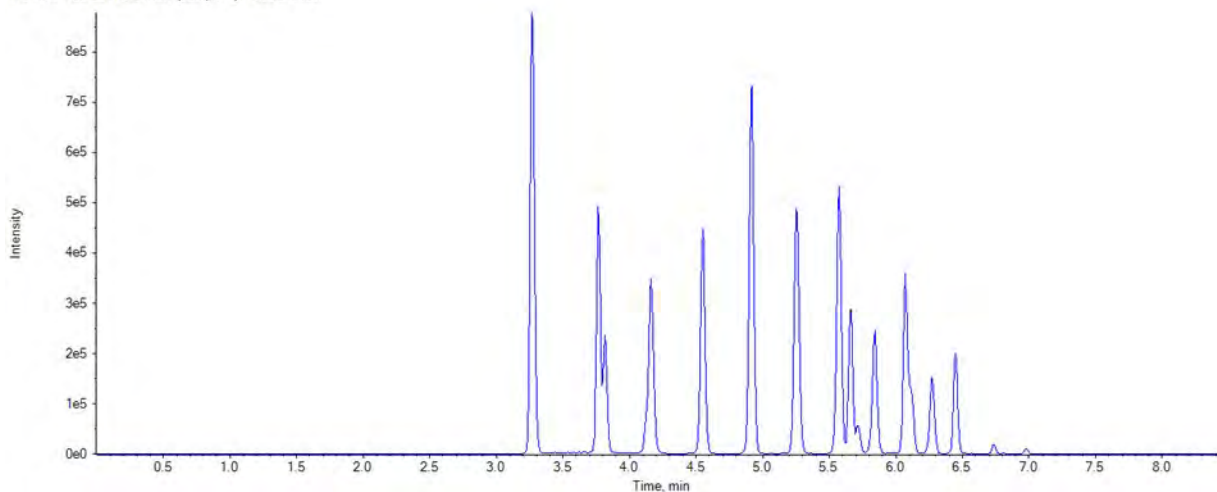
Lab Control Sample Recovery

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:19:33 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCS343003	EPA 537 mod QSM 5.1 table B-15 18343003	18DEC11D-04.wiff	2018-12-11T05:26:13

TIC from 18DEC11D-04.wiff (sample 1) - LCS343003



Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.00	921292.4	953492.0	-3	50	
13C2-PFOA	5.00	502206.9	500971.3	0	50	
13C4-PFOS	4.78	283243.3	310746.2	-9	50	
13C2-PFDA	5.00	392473.0	419040.9	-6	50	

**Lab Control Sample Recovery**

ICAL Name: 18DEC06DCAL      Result Table: 18343003 12/13/2018 5:19:33 PM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCS343003	EPA 537 mod QSM 5.1 table B-15 18343003	18DEC11D-04.wiff	2018-12-11T05:26:13

Analyte Name	Analyte Area	Ext Std Area	Area Ratio	Adj Actual Conc	Sample Result	%REC	% REC Limit	%REC OOS
PFBA	226888.8	863766.2	0.263	5.440	5.797	107	70-130	
PFPeA	202467.1	820307.7	0.247	5.440	5.194	95	70-130	
PFBS	85030.6	350412.5	0.243	4.812	4.811	100	72-127	
4:2-FTS	61471.1	52794.4	1.164	14.944	12.483	84	70-130	
PFHxA	192178.6	553145.3	0.347	5.440	6.056	111	77-132	
PFPeS	43589.2	350412.5	0.124	5.104	4.927	97	70-130	
PFHpA	201489.0	465714.9	0.433	5.440	5.698	105	75-139	
PFHxS	69770.0	278731.9	0.250	5.144	4.744	92	71-130	
6:2-FTS	54717.7	48155.2	1.136	15.168	11.286	74	70-130	
PFHpS	64617.5	278731.9	0.232	5.176	5.090	98	70-130	
PFOA	192362.3	774257.5	0.248	5.440	5.431	100	76-136	
PFOS	63704.9	255491.6	0.249	5.200	4.137	80	67-134	
PFNA	165491.6	509076.6	0.325	5.440	4.792	88	73-144	
PFNS	47097.4	255491.6	0.184	5.224	4.745	91	70-130	
PFDA	143896.7	587592.7	0.245	5.440	5.514	101	67-141	
8:2-FTS	46365.3	31169.2	1.488	15.328	12.892	84	70-130	
PFOSA	130220.4	538179.7	0.242	5.440	5.021	92	70-130	
NMeFOSAA	16428.9	107936.6	0.152	5.440	4.027	74	67-124	
PFDS	34796.1	255491.6	0.136	5.240	4.405	84	70-130	
PFUnDA	132657.2	334801.2	0.396	5.440	4.853	89	83-132	
NEtFOSAA	14621.6	65247.0	0.224	5.440	4.530	83	60-131	
PFDoDA	151891.6	601221.2	0.253	5.440	5.320	98	72-137	
10:2-FTS	30130.9	31169.2	0.967	15.424	10.243	66	70-130	OOS
NMePFOSAE	46446.9	180947.0	0.257	5.440	4.462	82	70-130	
NMePFOSA	9482.5	46593.6	0.204	5.440	4.107	76	70-130	
PFDoS	14420.4	255491.6	0.056	5.280	3.442	65	70-130	OOS
NEtPFOSAE	49854.5	130475.6	0.382	5.440	5.121	94	70-130	
NEtPFOSA	9841.8	43377.6	0.227	5.440	4.345	80	70-130	
PFTrDA	125936.6	601221.2	0.209	5.440	5.488	101	57-137	
PFTeDA	84157.1	364731.5	0.231	5.440	5.278	97	70-142	
PFHxDA	35398.4	364731.5	0.097	5.440	4.862	89	70-130	
PFODA	23351.5	364731.5	0.064	5.440	4.111	76	70-130	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

**Lab Control Sample Recovery**

Result Table: 18343003 12/13/2018 5:19:33 PM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MCD at 5:30 pm, 12/13/18

**REVIEWED**  
By umar at 11:17 am, 12/16/18

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	LCS343003	Data File:	18DEC11D-04.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003	Acquis Date:	2018-12-11T05:26:13
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	24	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.25000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	921292.4	953492.0	-3	50	
13C2-PFOA	5.0	502206.9	500971.3	0	50	
13C4-PFOS	4.8	283243.3	310746.2	-9	50	
13C2-PFDA	5.0	392473.0	419040.9	-6	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	863766.2	13C3-PFBA	921292.4	0.938	20.000	16.598	83	50-150	
E13C5-PFPeA	820307.7	13C3-PFBA	921292.4	0.890	20.000	16.915	85	50-150	
E13C3-PFBS	350412.5	13C3-PFBA	921292.4	0.380	18.600	12.896	69	50-150	
E13C2-4:2-FTS	52794.4	13C2-PFOA	502206.9	0.105	18.680	16.477	88	50-150	
E13C5-PFHxA	553145.3	13C2-PFOA	502206.9	1.101	20.000	14.792	74	50-150	
E13C3-PFHxS	278731.9	13C2-PFOA	502206.9	0.555	18.920	14.240	75	50-150	
E13C4-PFHpA	465714.9	13C2-PFOA	502206.9	0.927	20.000	15.769	79	50-150	
E13C2-6:2-FTS	48155.2	13C2-PFOA	502206.9	0.096	19.000	23.761	125	50-150	
E13C8-PFOA	774257.5	13C2-PFOA	502206.9	1.542	20.000	17.432	87	50-150	
E13C8-PFOS	255491.6	13C4-PFOS	283243.3	0.902	19.120	16.192	85	50-150	
E13C9-PFNA	509076.6	13C4-PFOS	283243.3	1.797	20.000	20.315	102	50-150	
E13C6-PFDA	587592.7	13C2-PFDA	392473.0	1.497	20.000	15.870	79	50-150	
E13C2-8:2-FTS	31169.2	13C2-PFDA	392473.0	0.079	19.160	20.740	108	50-150	
E13C8-PFOSA	538179.7	13C2-PFDA	392473.0	1.371	20.000	12.973	65	50-150	
Ed3-NMeFOSAA	107936.6	13C2-PFDA	392473.0	0.275	20.000	19.495	97	50-150	
E13C7-PFUnDA	334801.2	13C2-PFDA	392473.0	0.853	20.000	16.738	84	50-150	
Ed5-NEtFOSAA	65247.0	13C2-PFDA	392473.0	0.166	20.000	14.680	73	50-150	
E13C2-PFDoDA	601221.2	13C2-PFDA	392473.0	1.532	20.000	12.859	64	50-150	
Ed7-NMePFOSAE	180947.0	13C2-PFDA	392473.0	0.461	20.000	10.624	53	50-150	
Ed3-NMePFOSA	46593.6	13C2-PFDA	392473.0	0.119	20.000	8.652	43	50-150	OOS
Ed9-NEtPFOSAE	130475.6	13C2-PFDA	392473.0	0.332	20.000	9.170	46	50-150	OOS
Ed5-NEtPFOSA	43377.6	13C2-PFDA	392473.0	0.111	20.000	9.949	50	50-150	
E13C2-PFTeDA	364731.5	13C2-PFDA	392473.0	0.929	20.000	11.033	55	50-150	



ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

**Analyte Quantitation Peak Table**

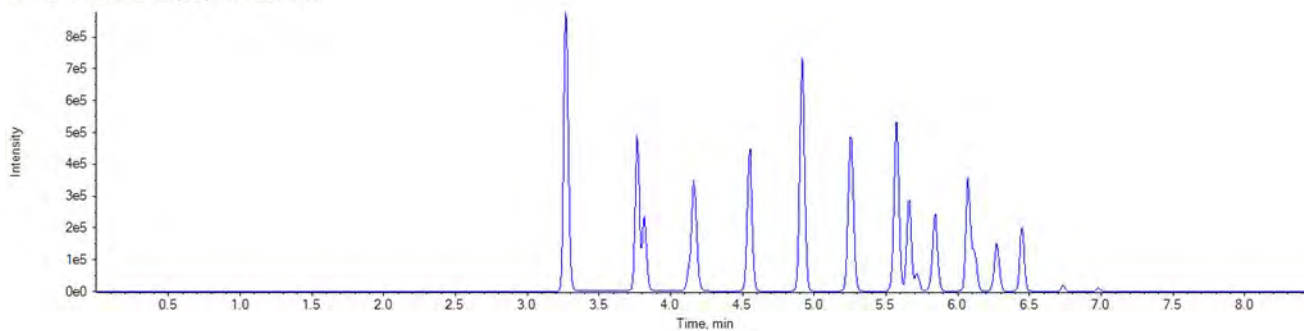
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Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.25000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBA	3.27	1.000	226888.8		A	13C4-PFBA	3.27	863766.2	0.263	5.797
PFPeA	3.77	1.000	202467.1		A	13C5-PFPeA	3.77	820307.7	0.247	5.194
PFBS	3.82	1.000	85030.6		A	13C3-PFBS	3.82	350412.5	0.243	4.811
4:2-FTS	4.13	1.000	61471.1		A	13C2-4:2-FTS	4.13	52794.4	1.164	12.483
PFHxA	4.16	1.000	192178.6		A	13C5-PFHxA	4.16	553145.3	0.347	6.056
PFPeS	4.18	1.100	43589.2		A	13C3-PFBS	3.82	350412.5	0.124	4.927
PFHpA	4.55	1.000	201489.0		A	13C4-PFHpA	4.55	465714.9	0.433	5.698
PFHxS	4.55	1.000	69770.0		A	13C3-PFHxS	4.55	278731.9	0.250	4.744
6:2-FTS	4.91	1.000	54717.7		A	13C2-6:2-FTS	4.91	48155.2	1.136	11.286
PFHpS	4.91	1.080	64617.5		A	13C3-PFHxS	4.55	278731.9	0.232	5.090
PFOA	4.92	1.000	192362.3		A	13C8-PFOA	4.92	774257.5	0.248	5.431
PFOS	5.25	1.000	63704.9		A	13C8-PFOS	5.25	255491.6	0.249	4.137
PFNA	5.26	1.000	165491.6		A	13C9-PFNA	5.26	509076.6	0.325	4.792
PFNS	5.55	1.060	47097.4		A	13C8-PFOS	5.25	255491.6	0.184	4.745
PFDA	5.57	1.000	143896.7		A	13C6-PFDA	5.57	587592.7	0.245	5.514
8:2-FTS	5.58	1.000	46365.3		A	13C2-8:2-FTS	5.58	31169.2	1.488	12.892
PFOSA	5.66	1.000	130220.4		A	13C8-PFOSA	5.66	538179.7	0.242	5.021
NMeFOSAA	5.72	1.000	16428.9		A	d3-NMeFOSAA	5.72	107936.6	0.152	4.027
PFDS	5.82	1.110	34796.1		A	13C8-PFOS	5.25	255491.6	0.136	4.405
PUnDA	5.84	1.000	132657.2		A	13C7-PUnDA	5.84	334801.2	0.396	4.853
NEtFOSAA	5.86	1.000	14621.6		A	d5-NEtFOSAA	5.85	65247.0	0.224	4.530
PFDoDA	6.07	1.000	151891.6		A	13C2-PFDoDA	6.07	601221.2	0.253	5.320
10:2-FTS	6.09	1.090	30130.9		A	13C2-8:2-FTS	5.58	31169.2	0.967	10.243
NMePFOSAE	6.12	1.000	46446.9		A	d7-NMePFOSAE	6.11	180947.0	0.257	4.462
NMePFOSA	6.13	1.000	9482.5		A	d3-NMePFOSA	6.13	46593.6	0.204	4.107
PFDoS	6.24	1.190	14420.4		A	13C8-PFOS	5.25	255491.6	0.056	3.442
NEtPFOSAE	6.28	1.000	49854.5		A	d9-NEtPFOSAE	6.27	130475.6	0.382	5.121
NEtPFOSA	6.29	1.000	9841.8		A	d5-NEtPFOSA	6.29	43377.6	0.227	4.345
PFTTrDA	6.27	1.030	125936.6		A	13C2-PFDoDA	6.07	601221.2	0.209	5.488
PFTeDA	6.45	1.000	84157.1		A	13C2-PFTeDA	6.45	364731.5	0.231	5.278
PFHxDA	6.74	1.040	35398.4		A	13C2-PFTeDA	6.45	364731.5	0.097	4.862
PFOA	6.98	1.080	23351.5		A	13C2-PFTeDA	6.45	364731.5	0.064	4.111

**Total Ion Chromatogram**

TIC from 18DEC11D-04.wiff (sample 1) - LCS343003

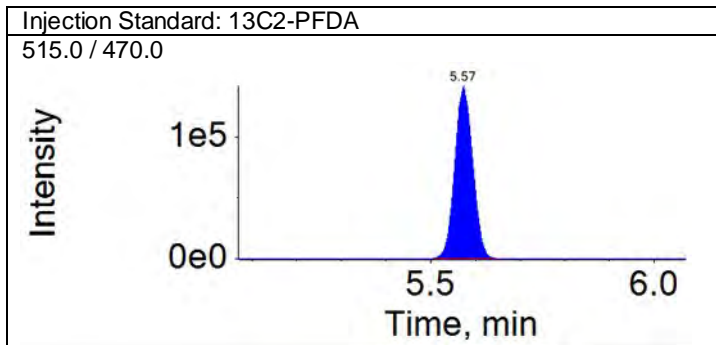
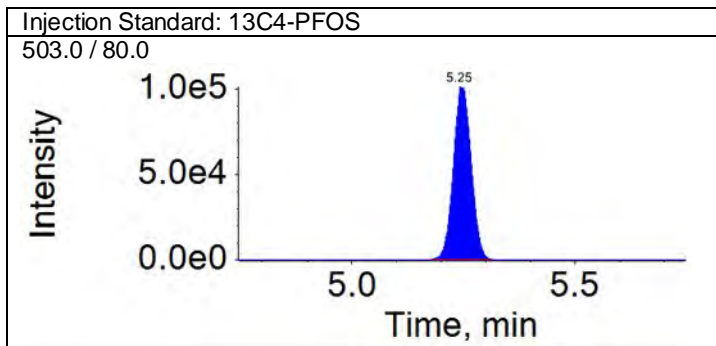
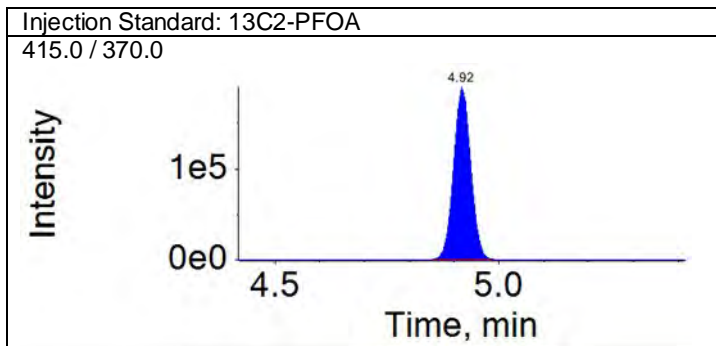
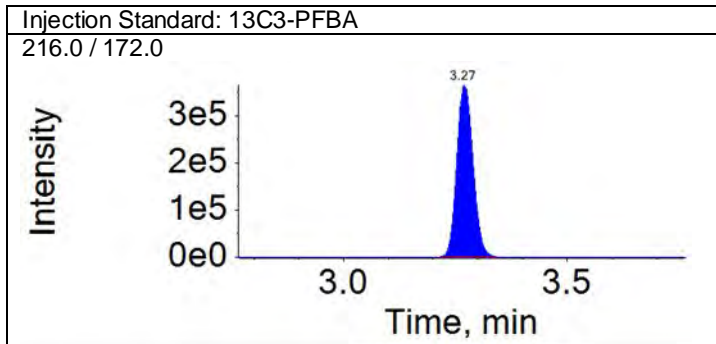


**APPROVED**  
By MCD at 5:30 pm, 12/13/18

**REVIEWED**  
By umar at 11:17 am, 12/16/18

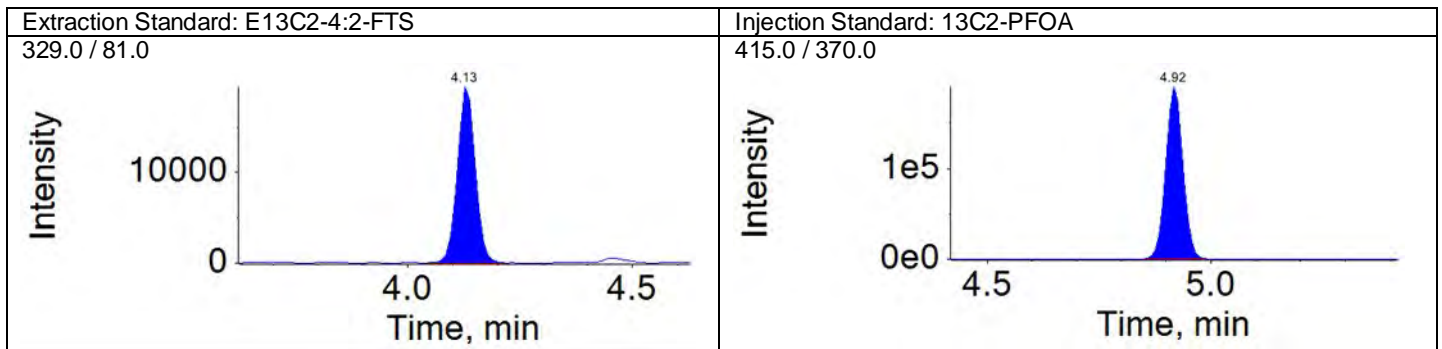
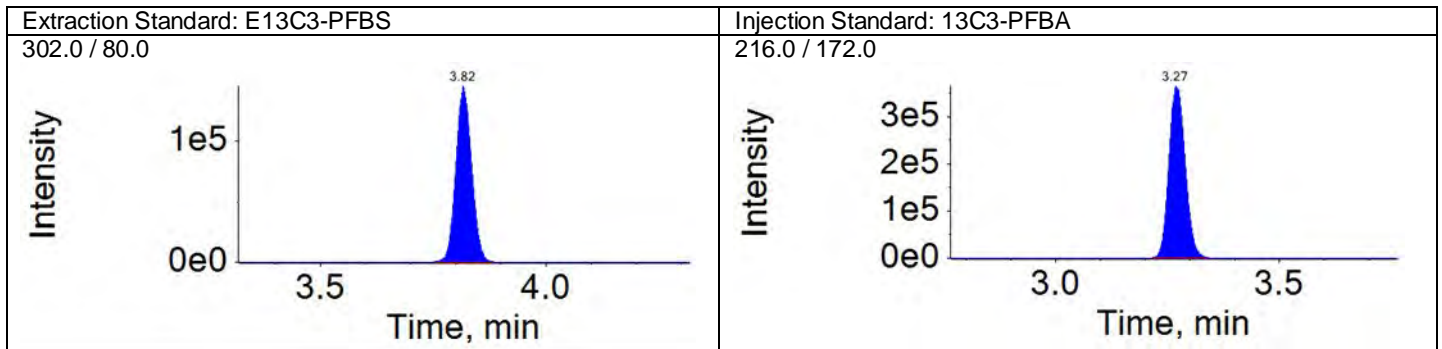
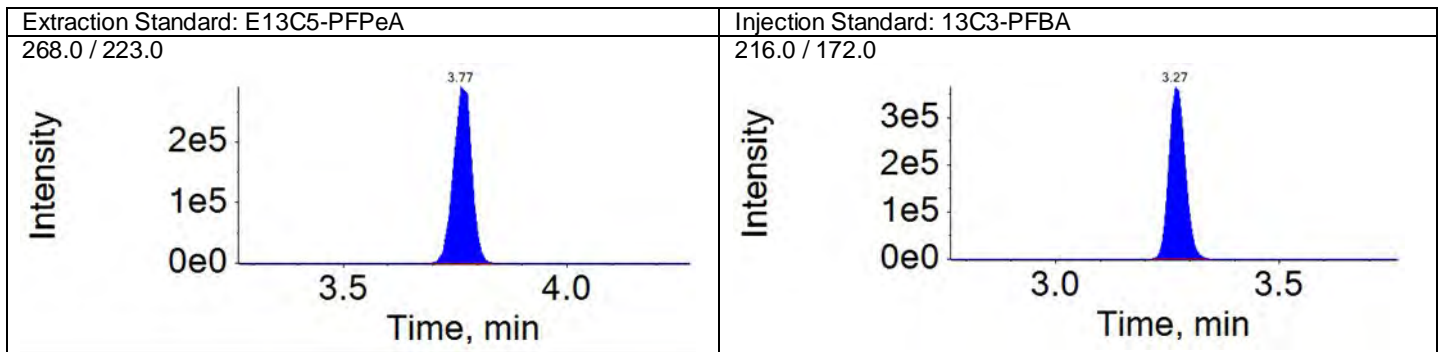
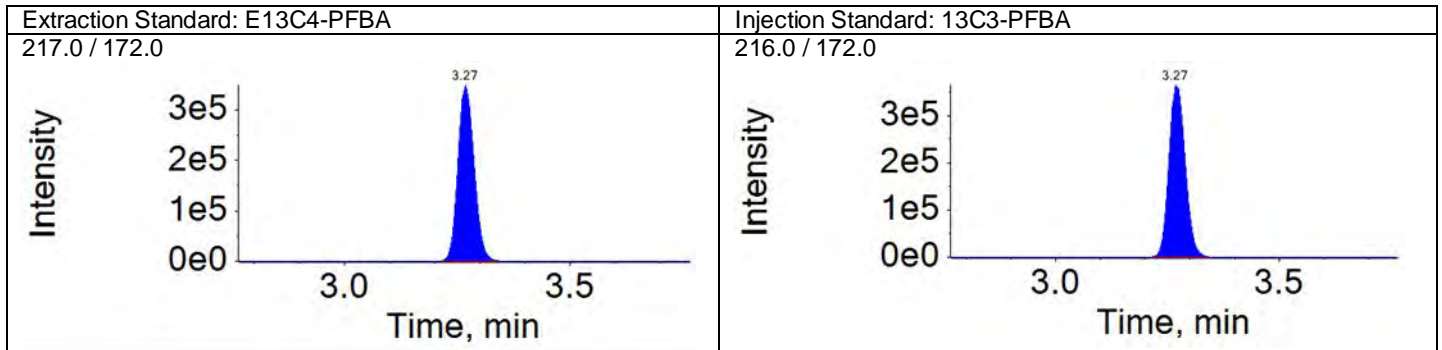
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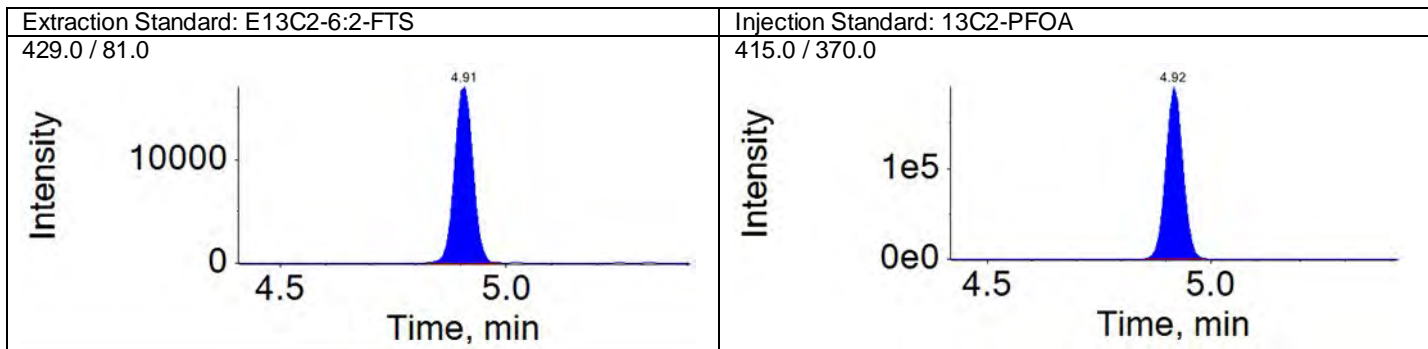
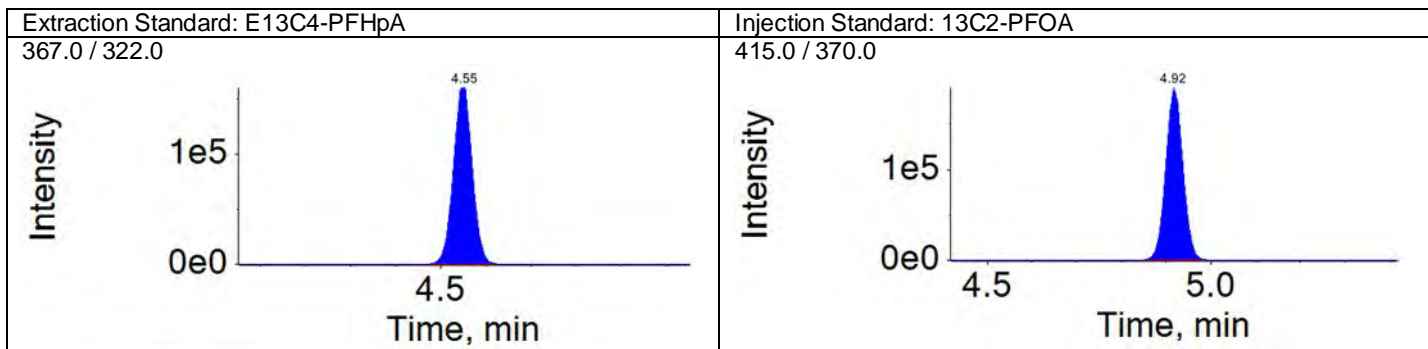
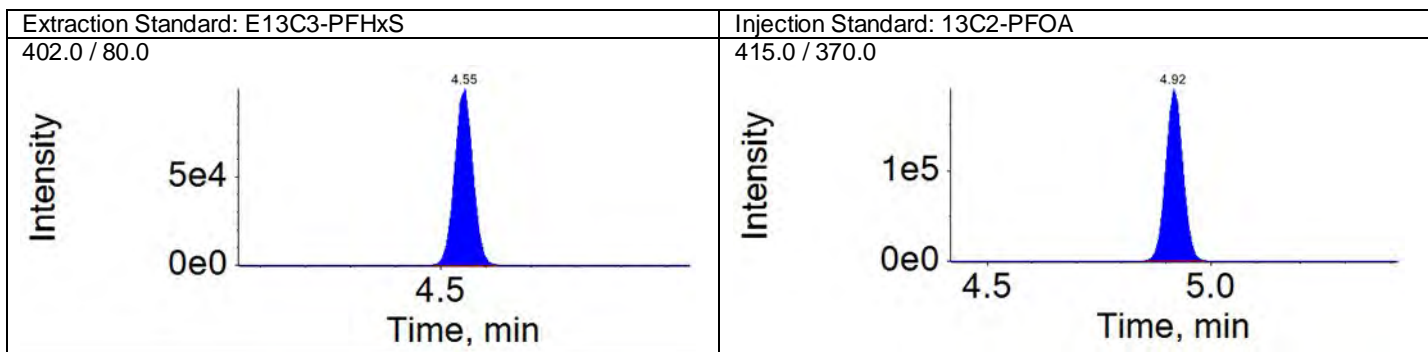
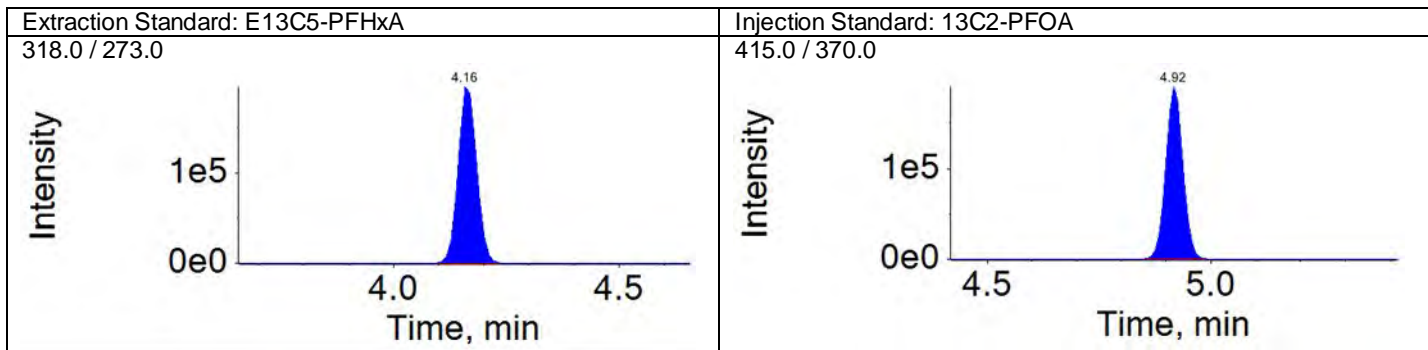
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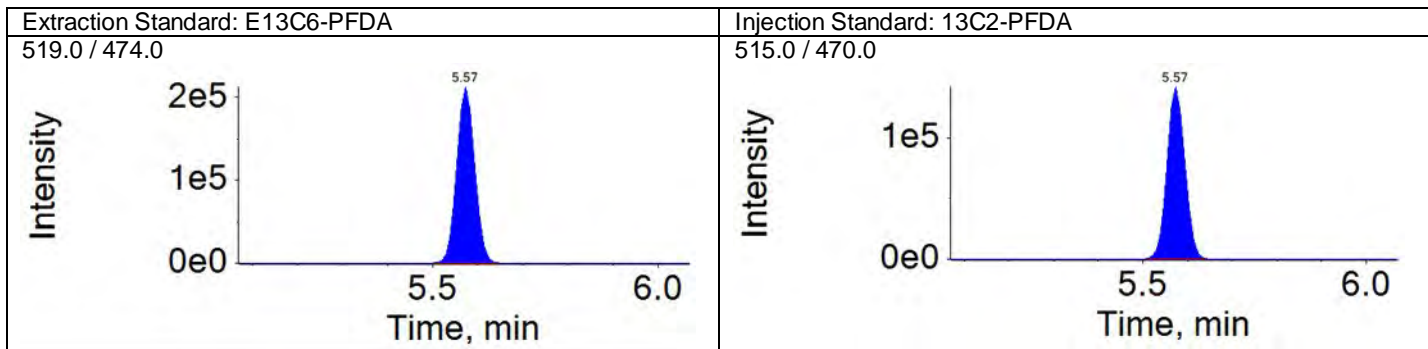
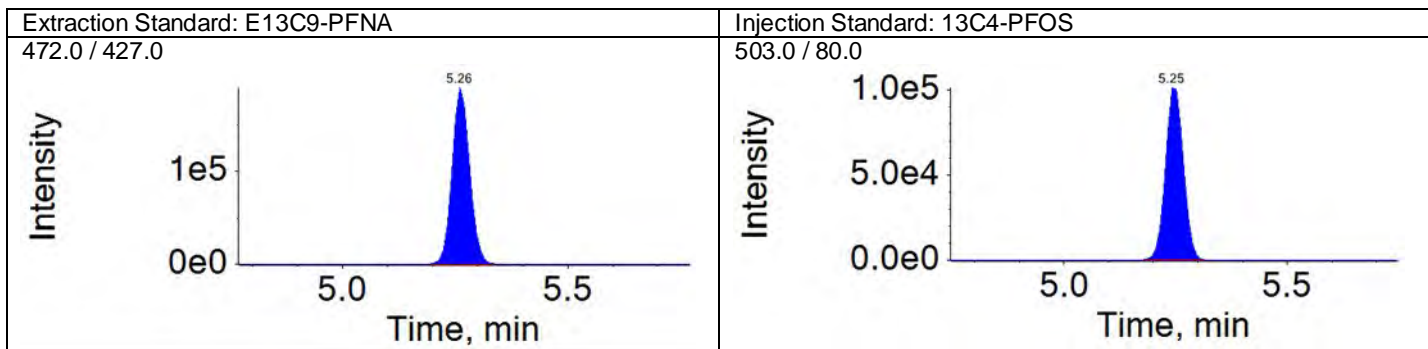
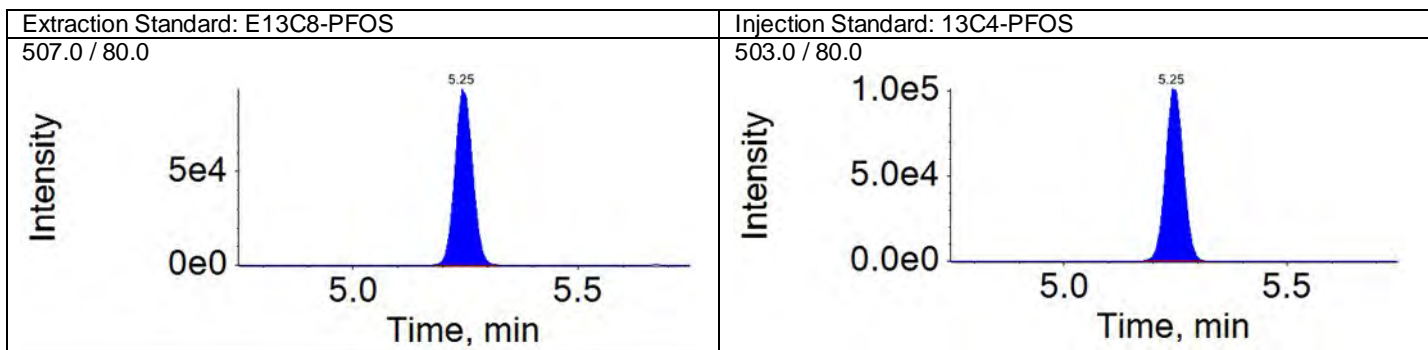
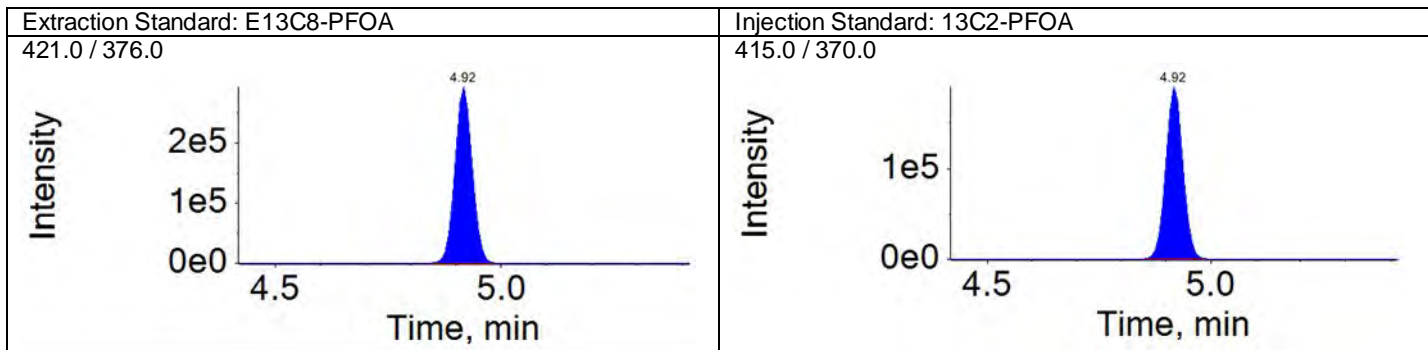
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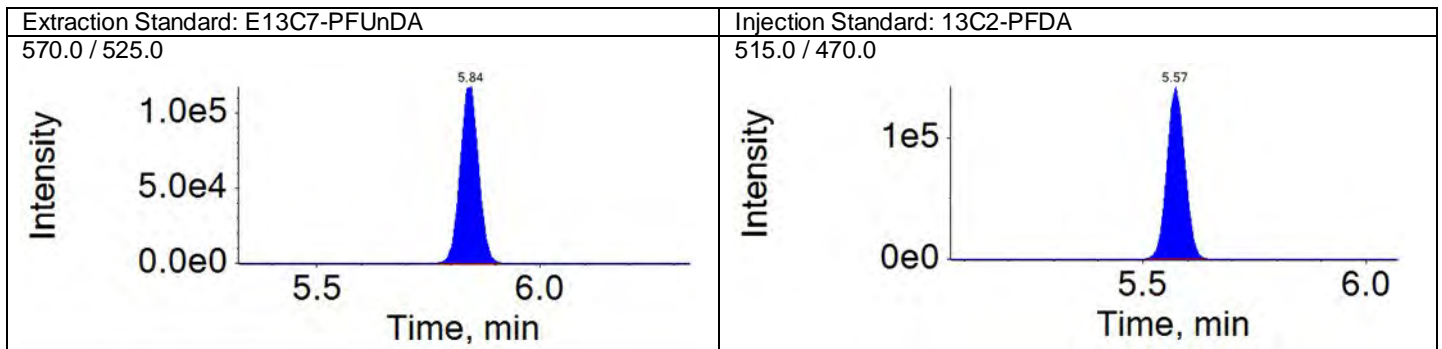
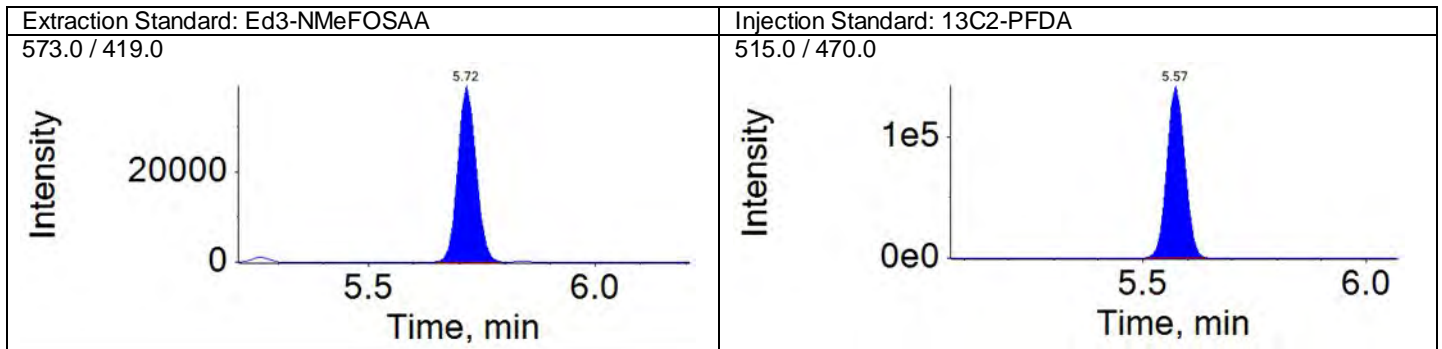
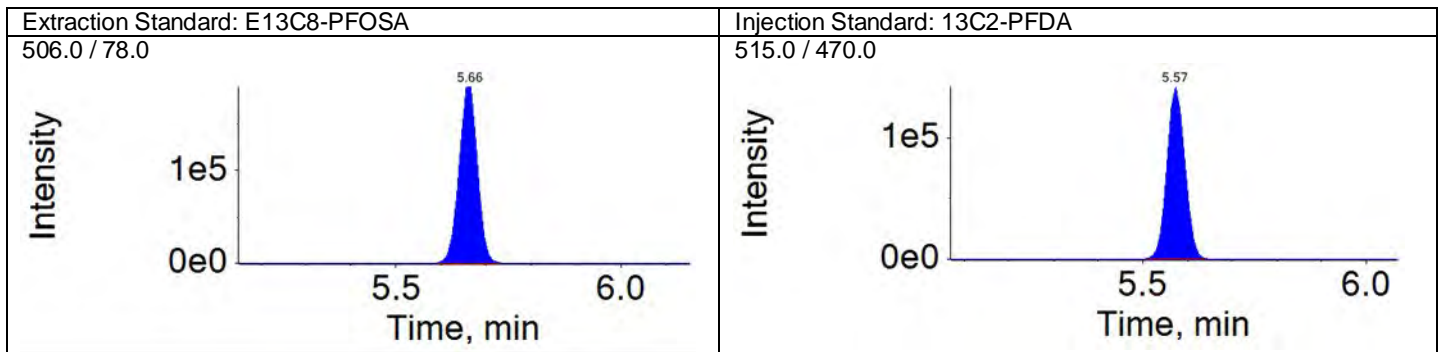
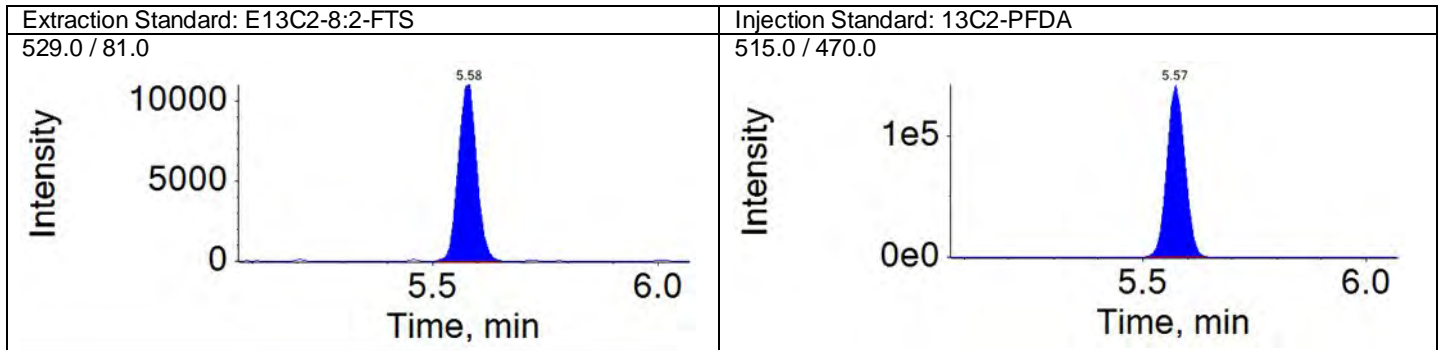
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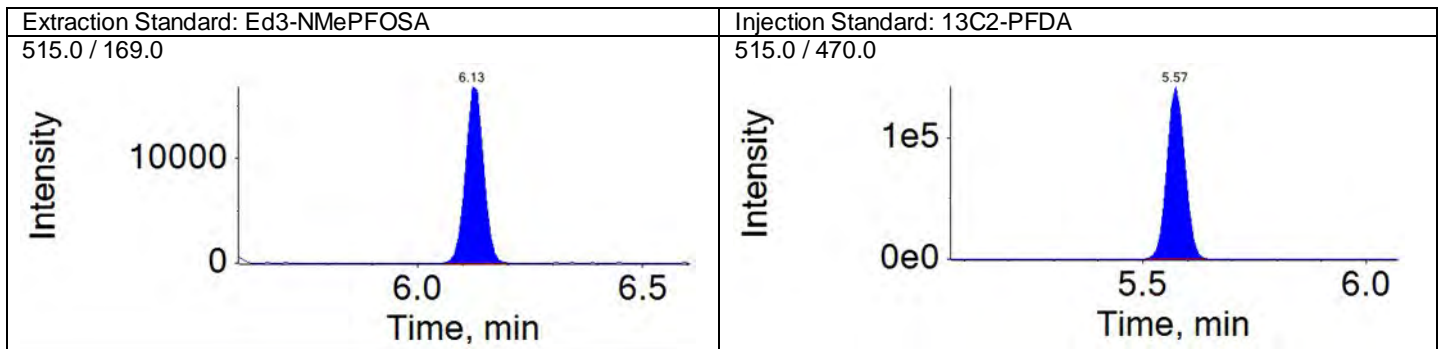
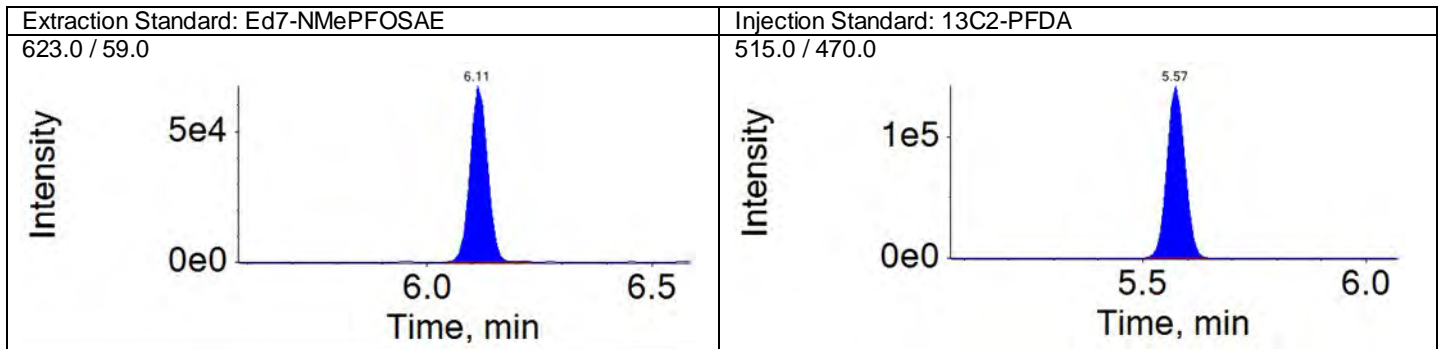
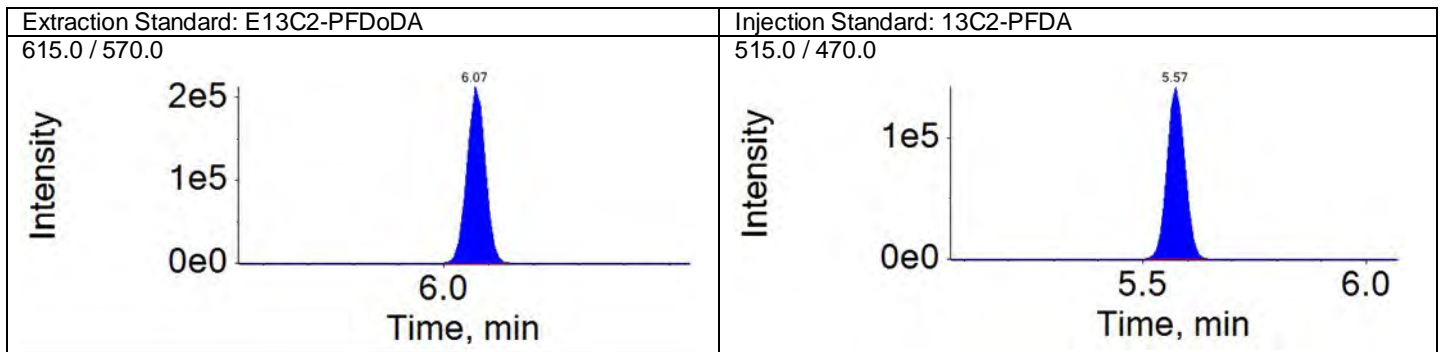
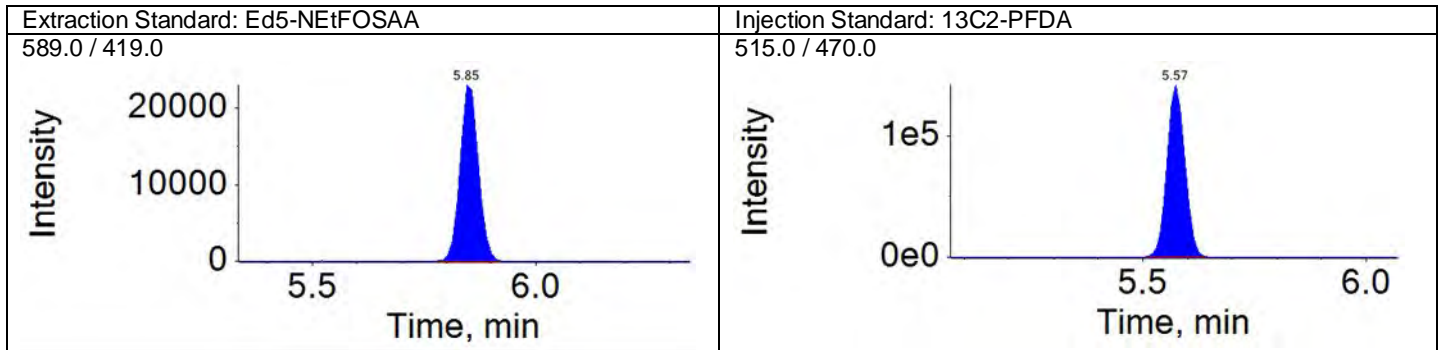
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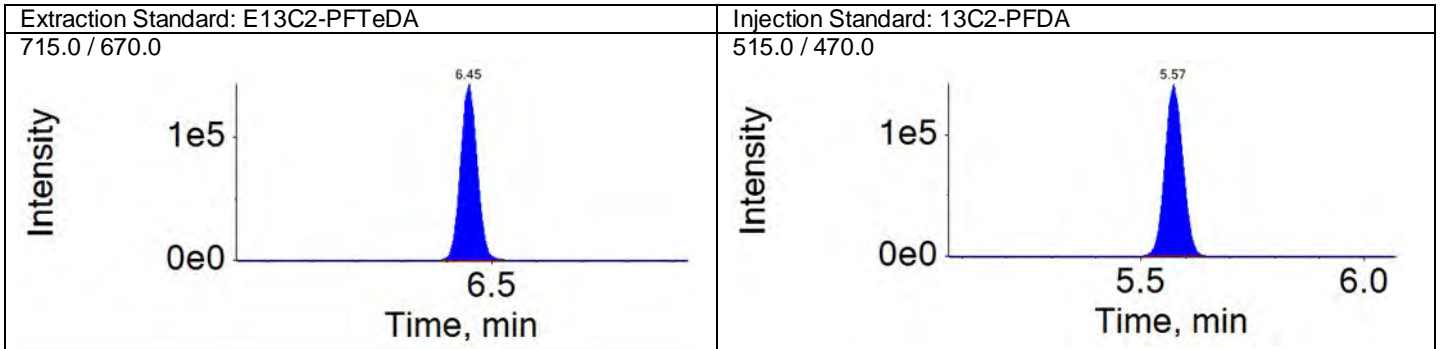
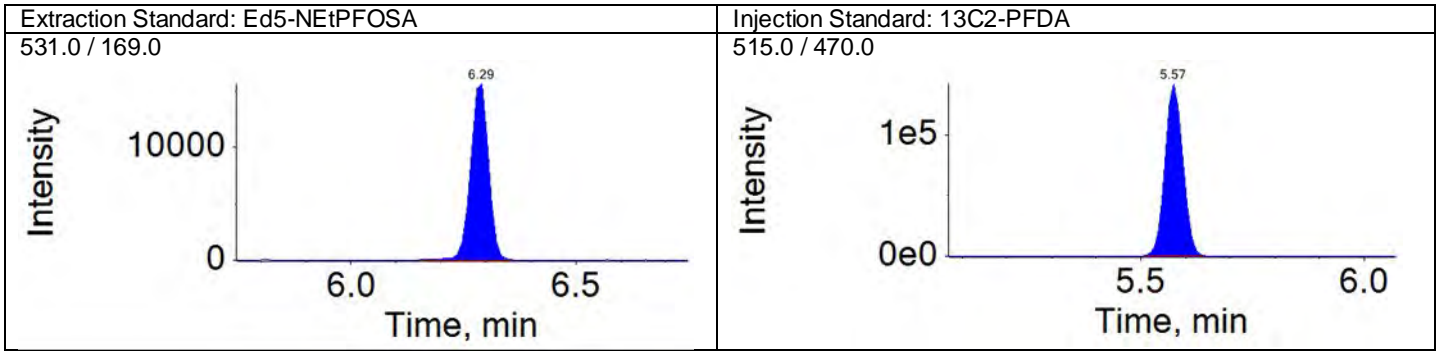
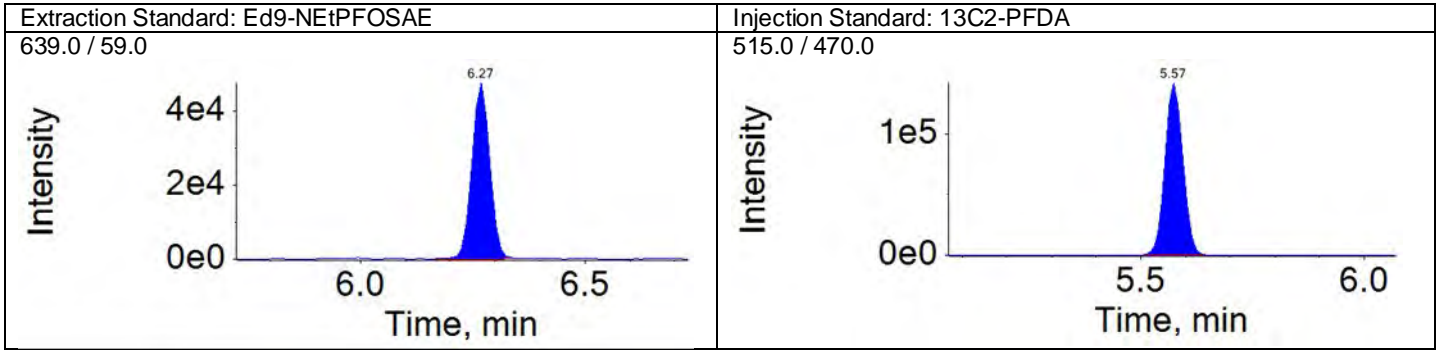
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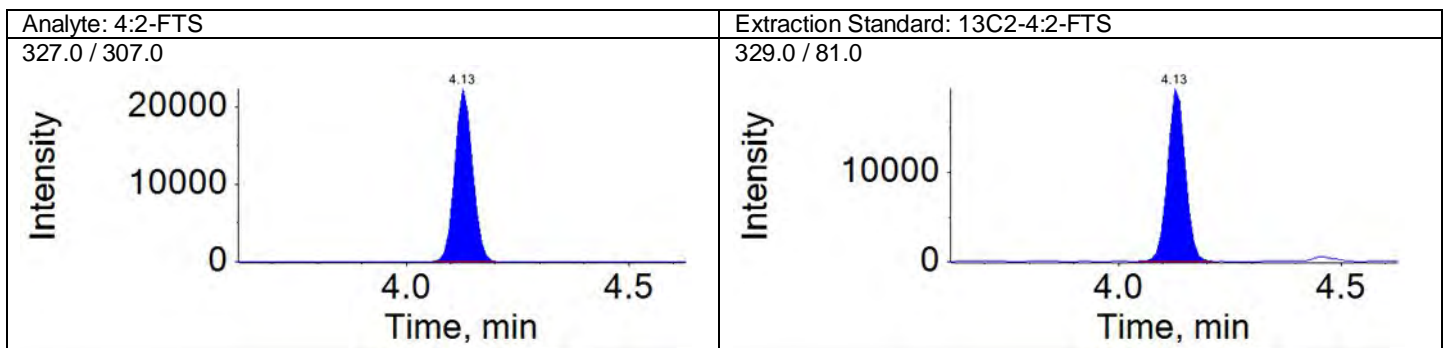
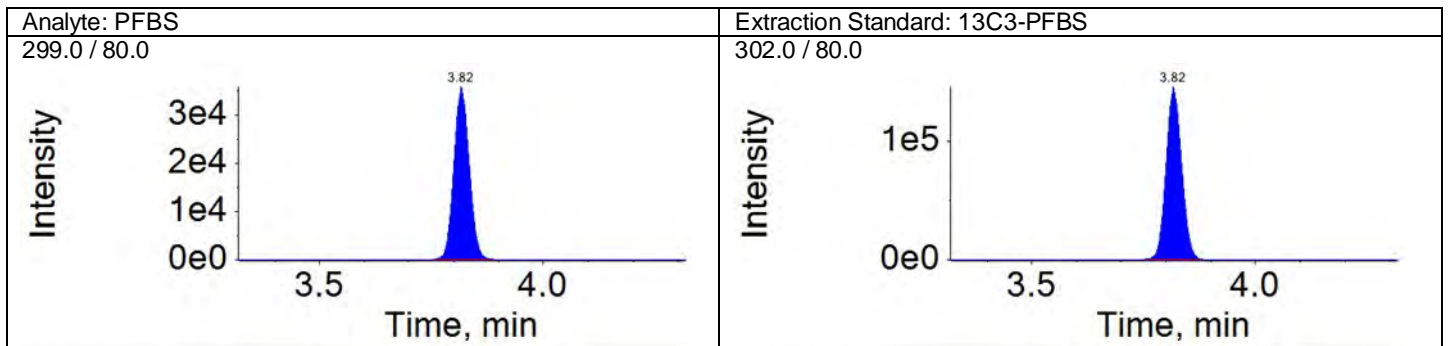
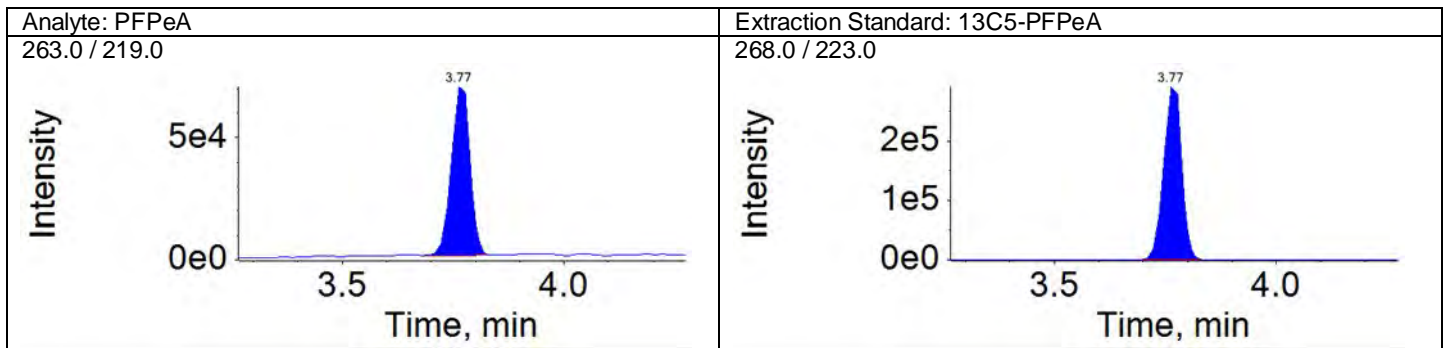
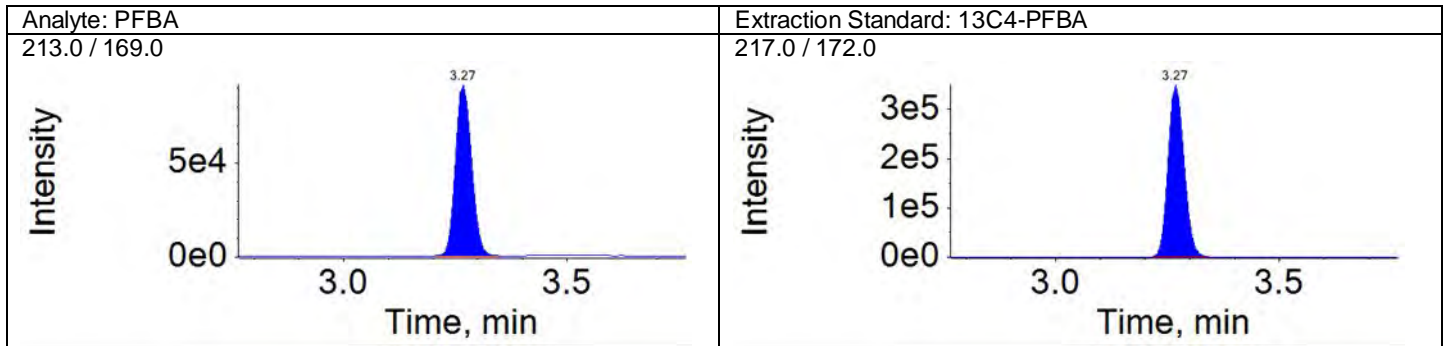
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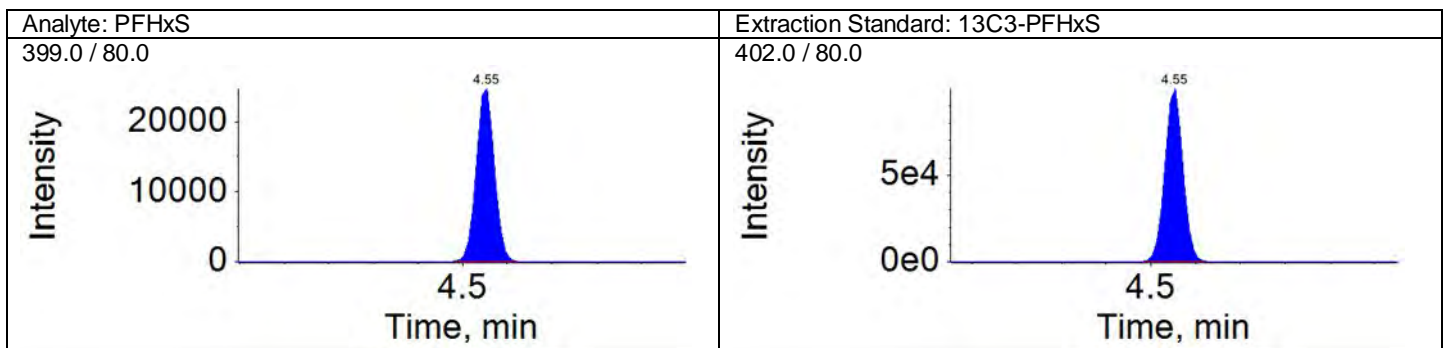
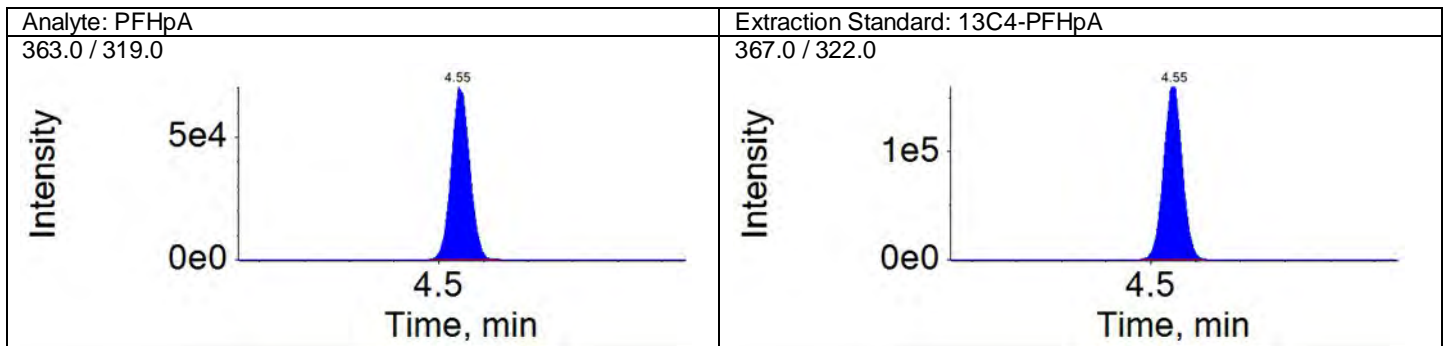
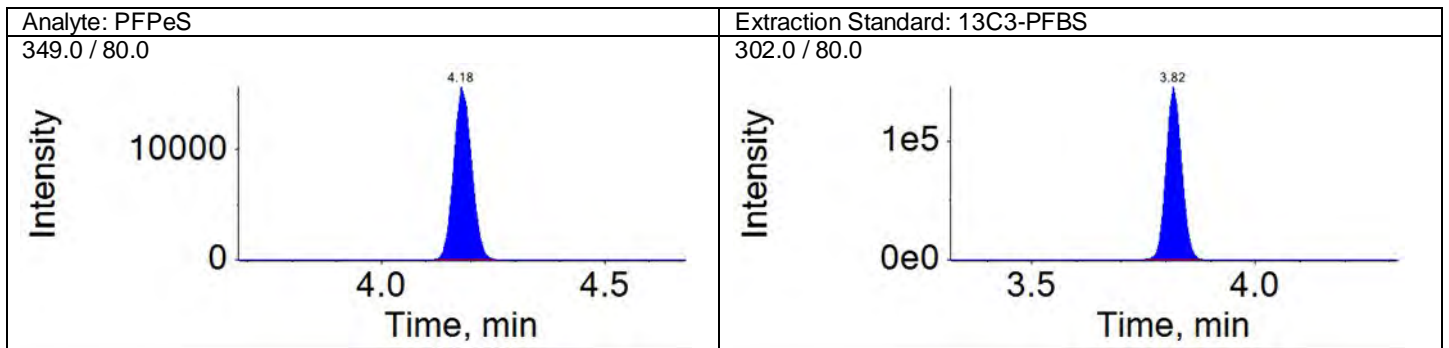
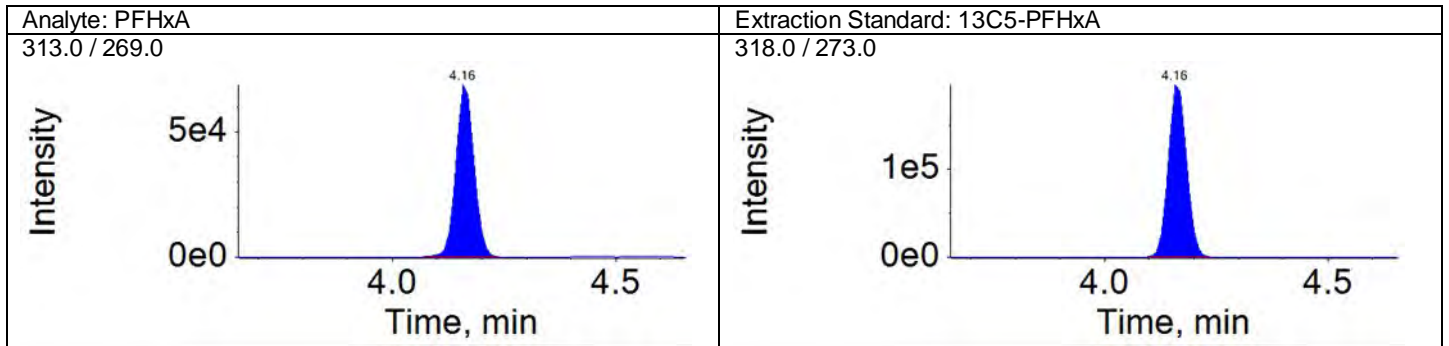
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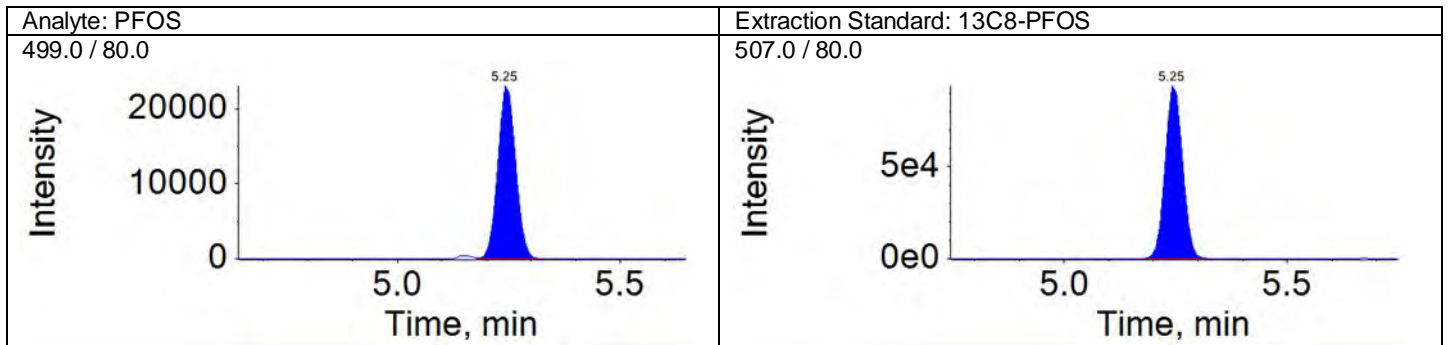
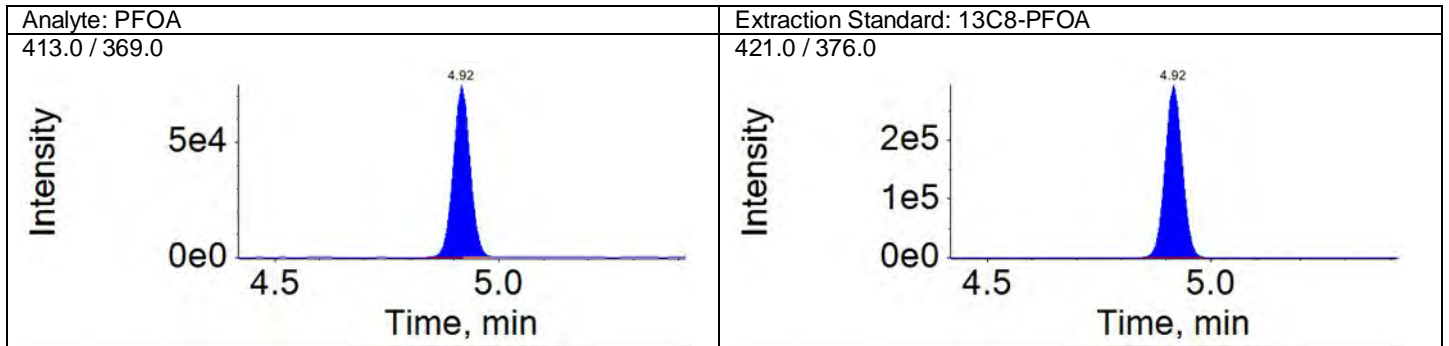
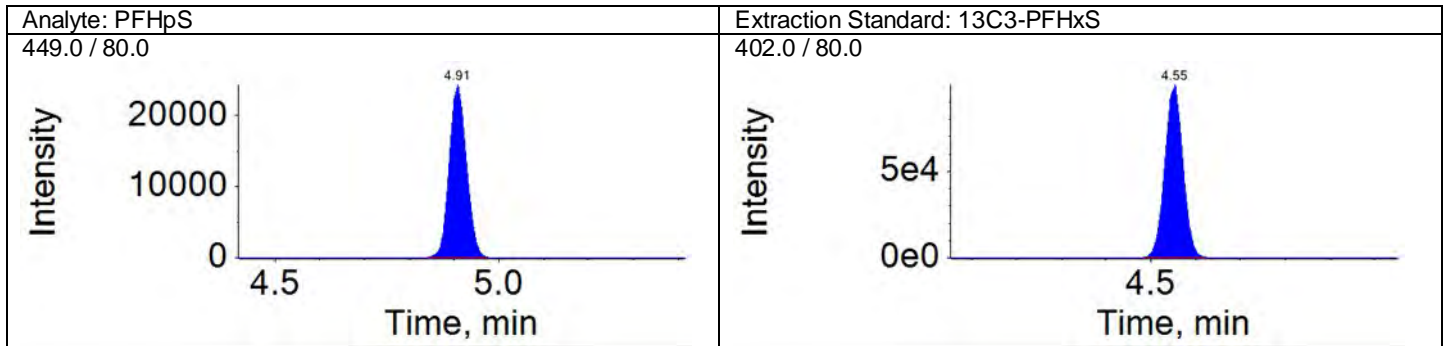
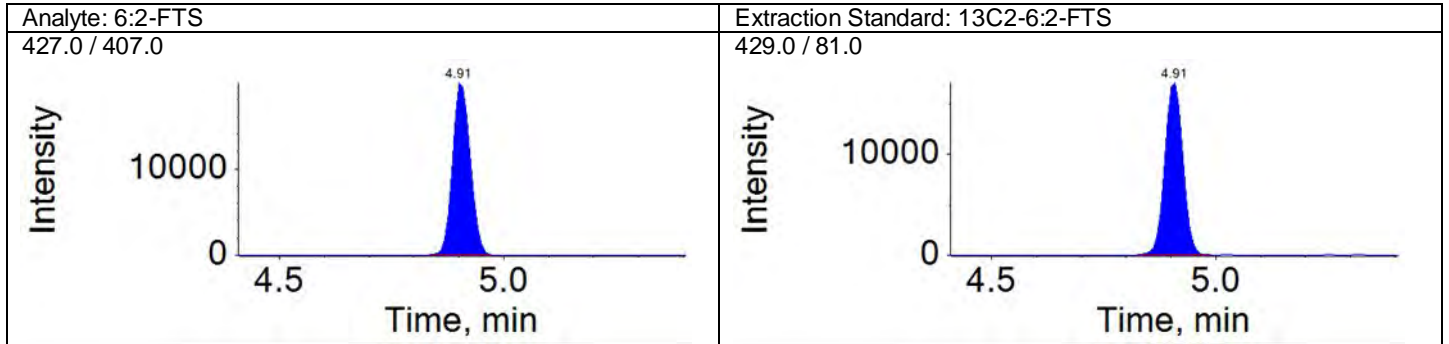
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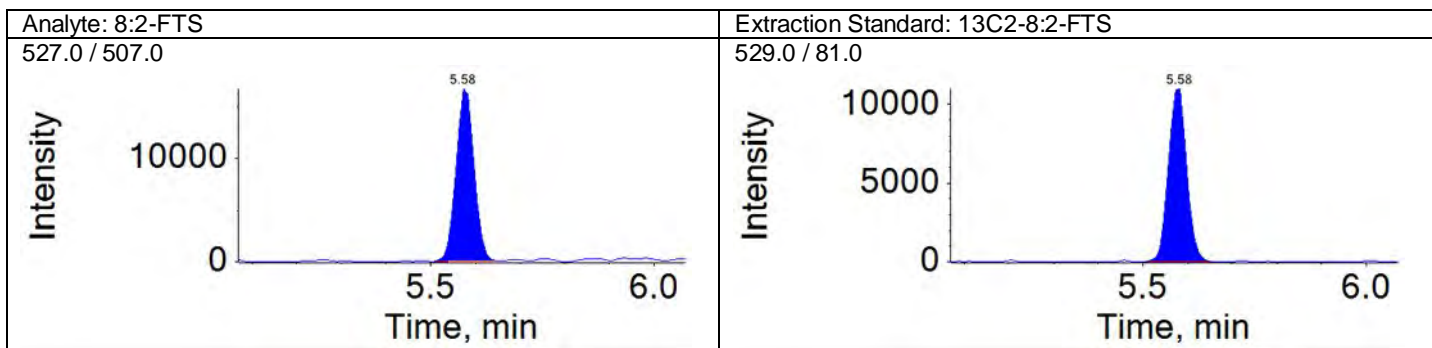
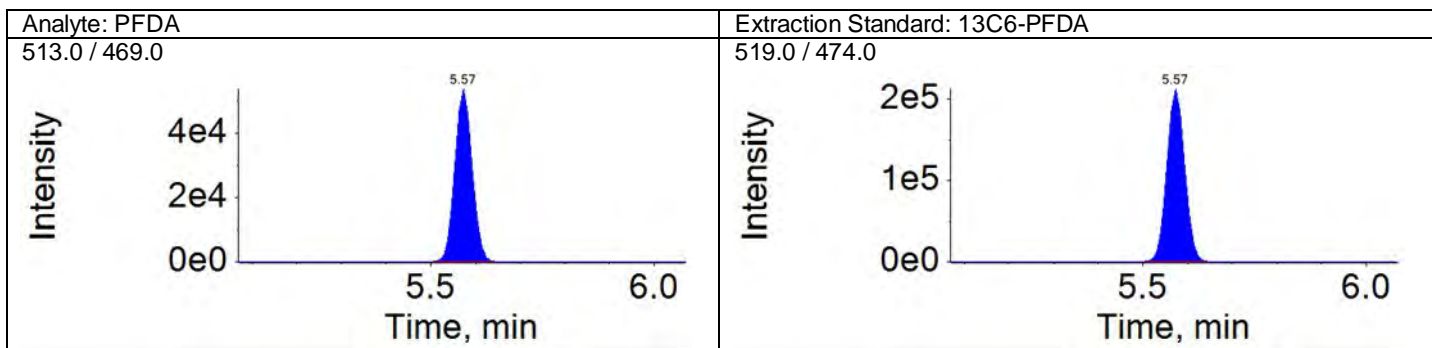
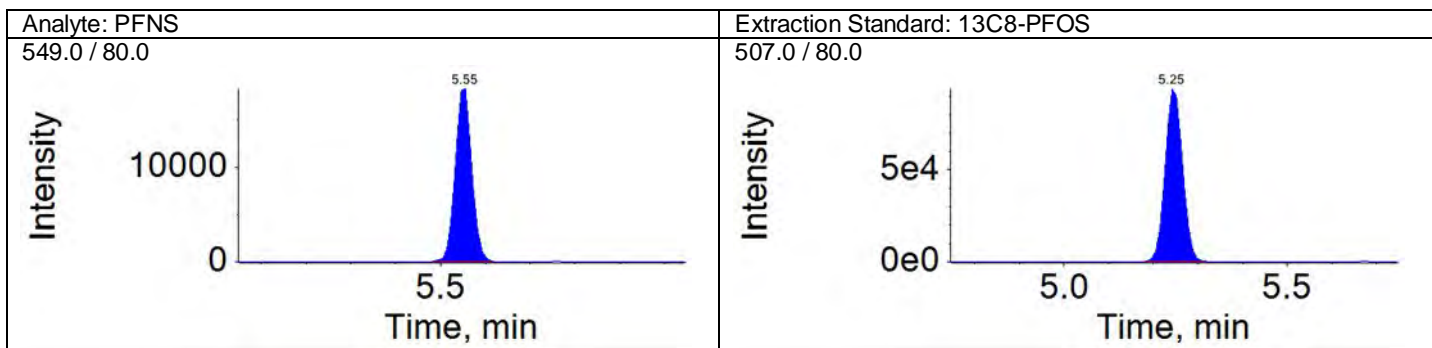
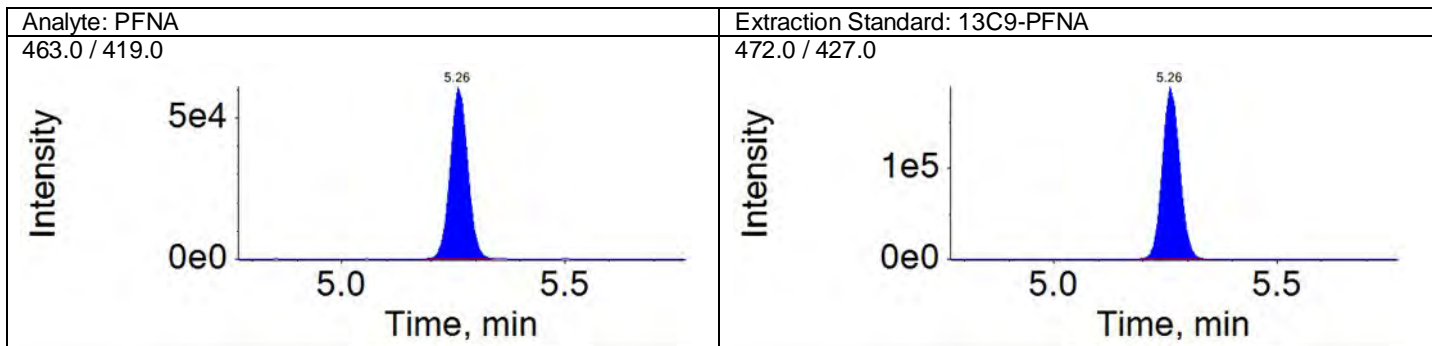
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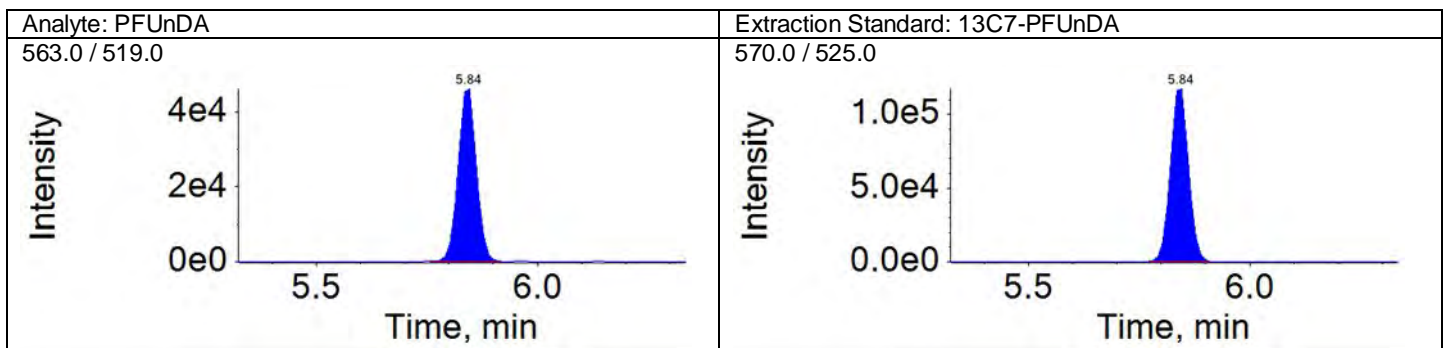
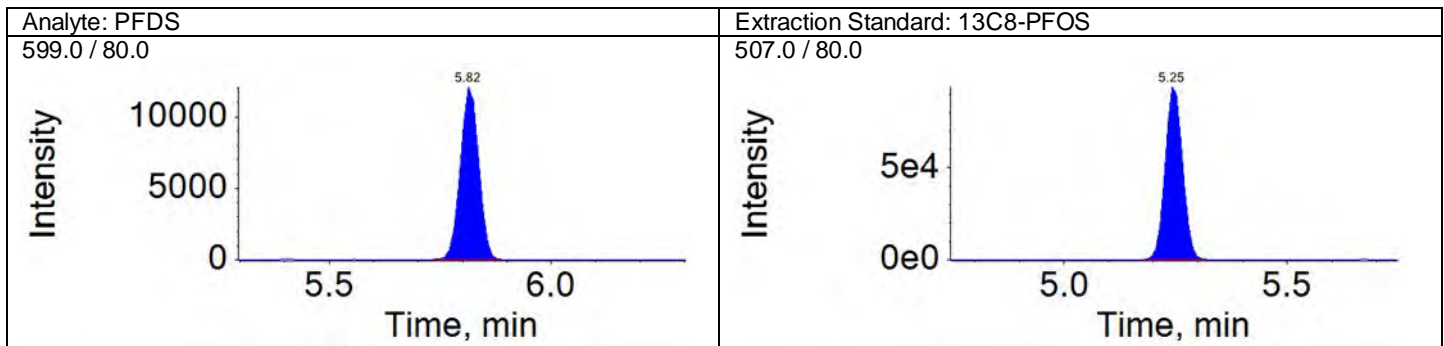
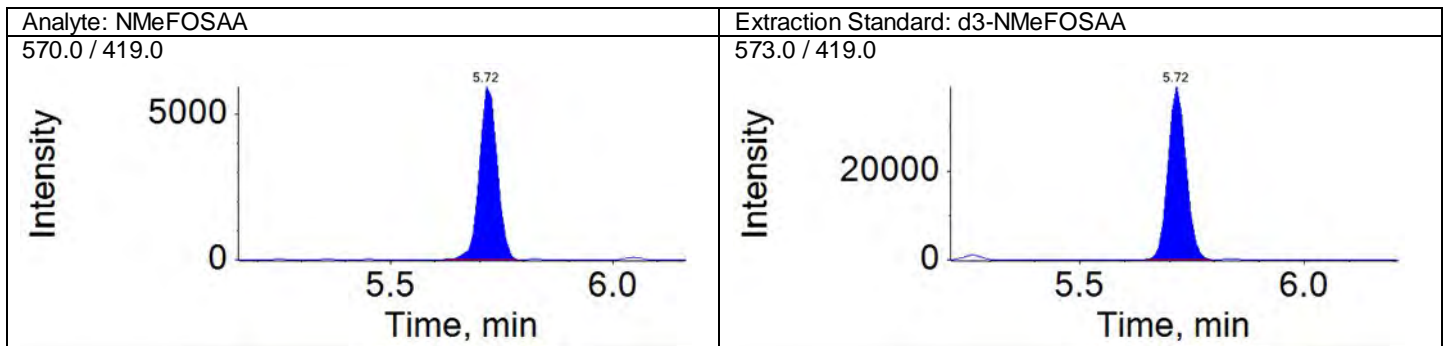
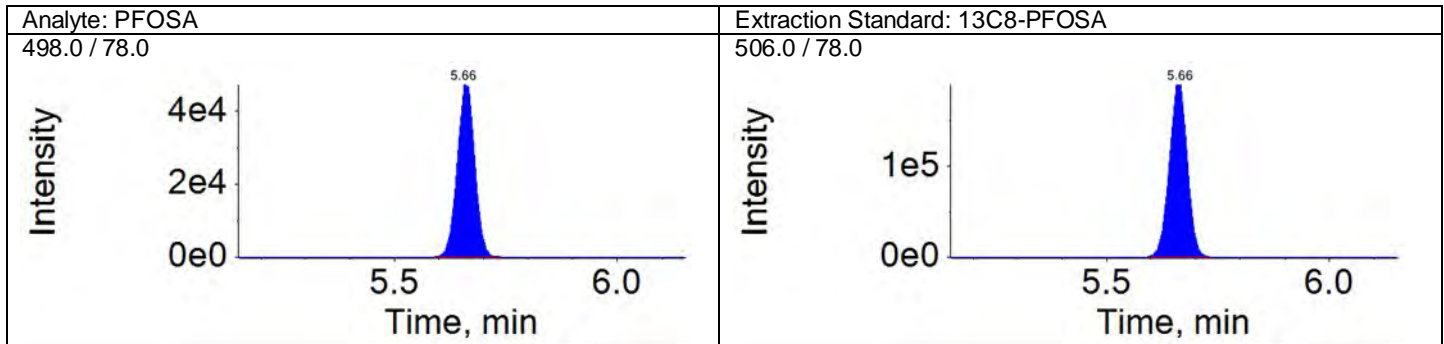
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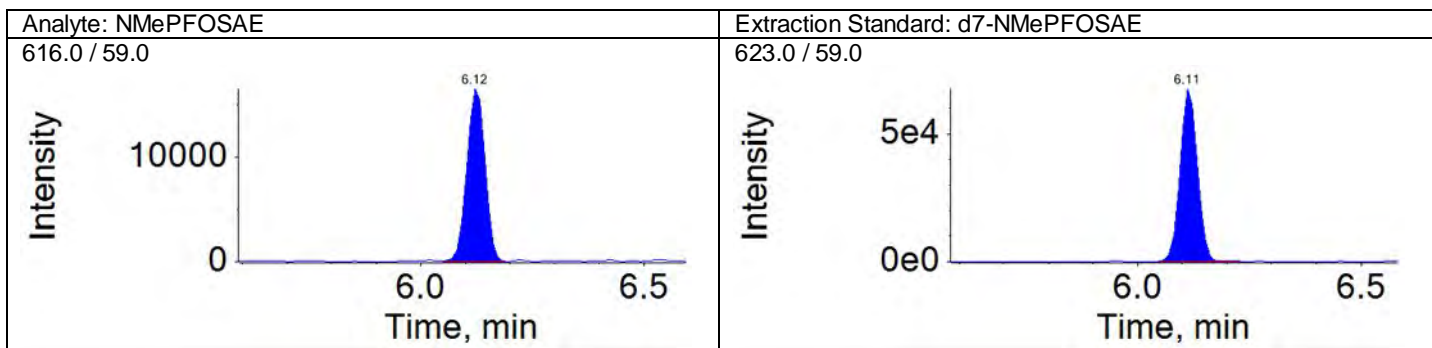
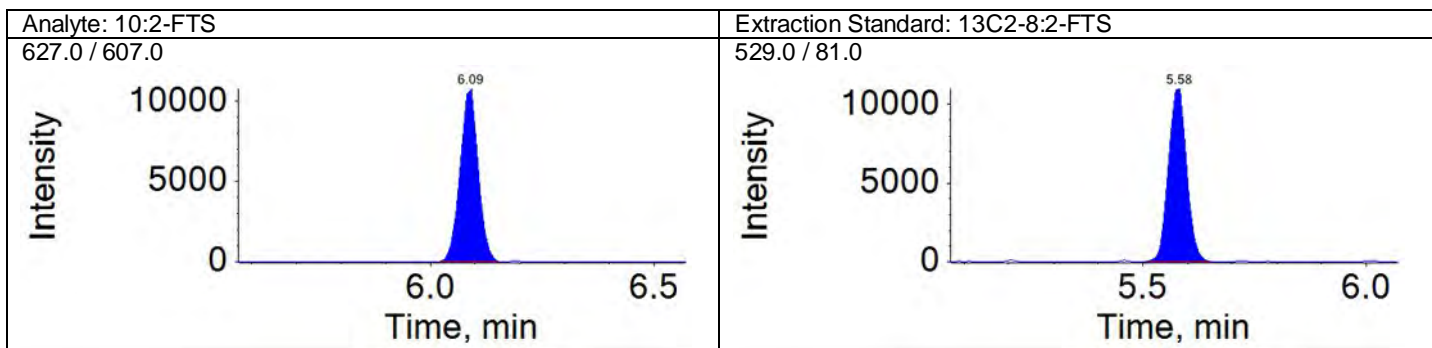
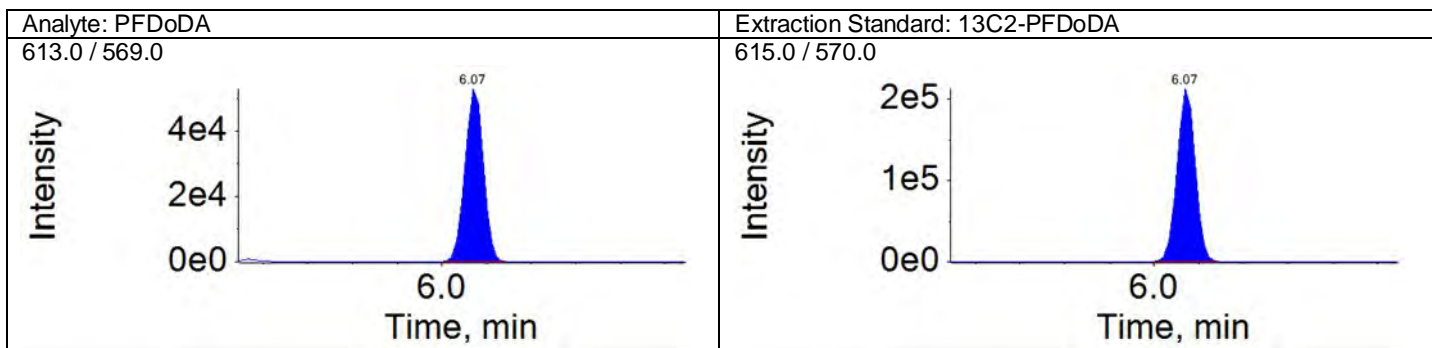
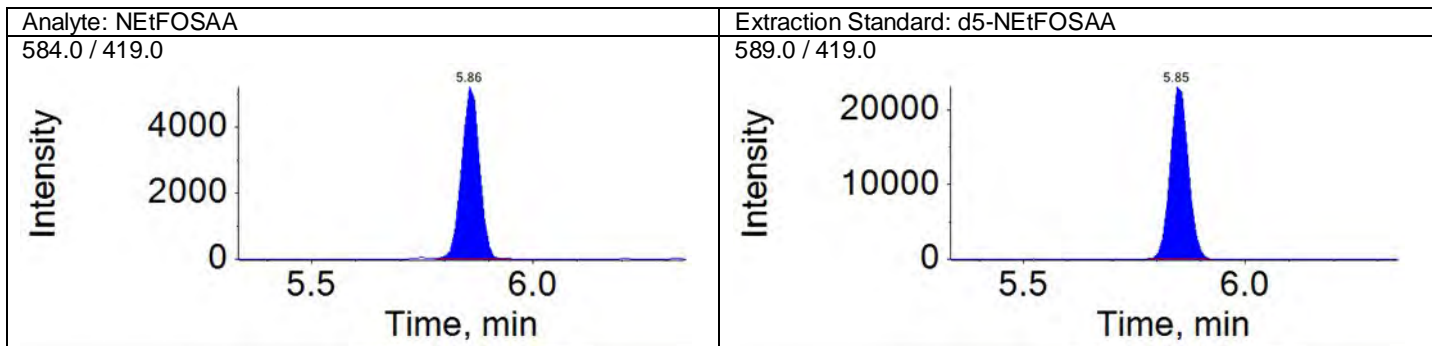
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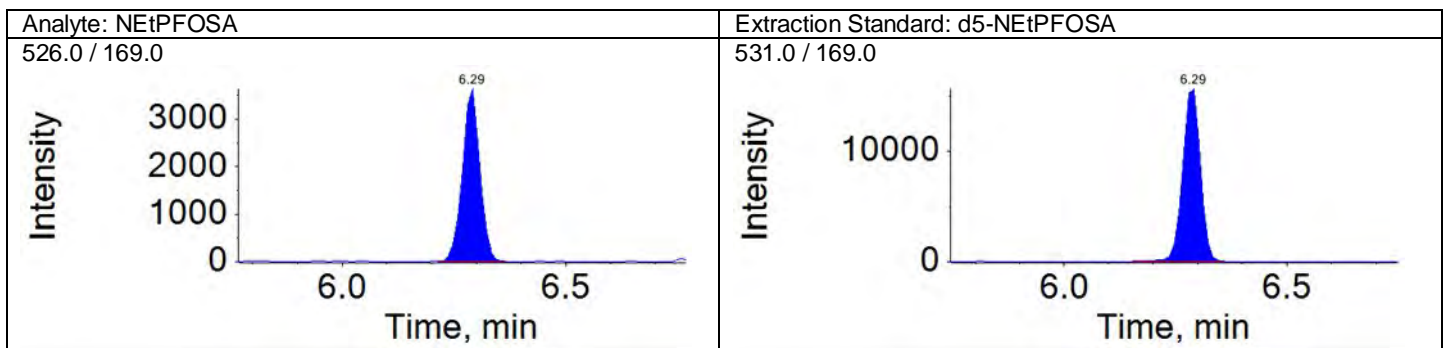
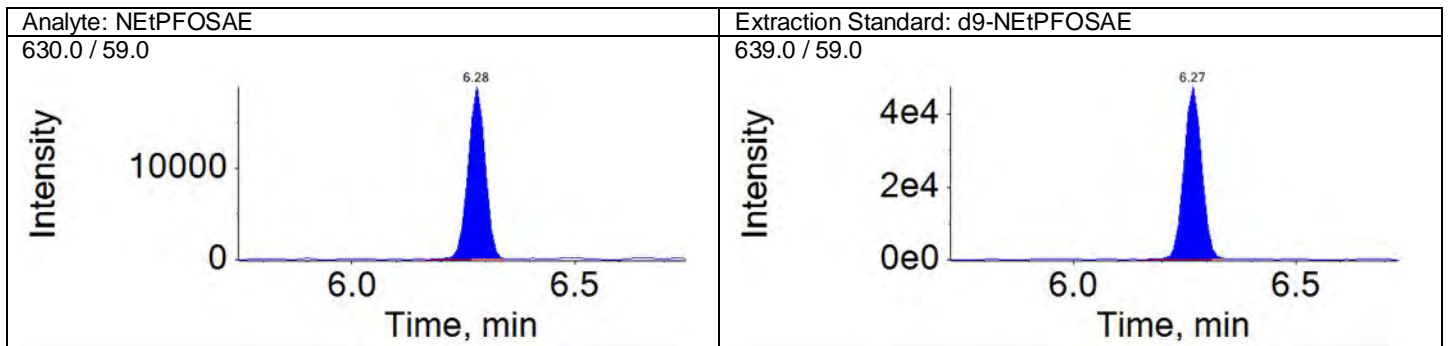
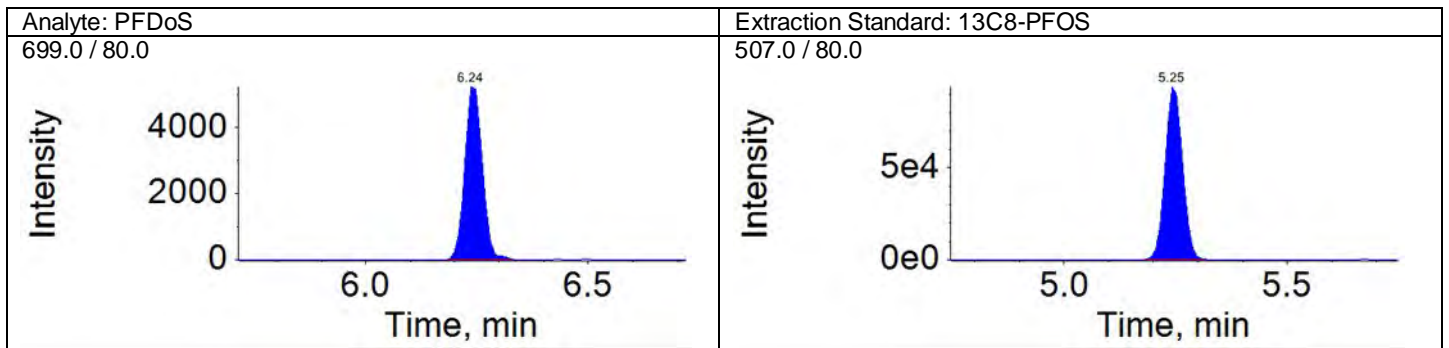
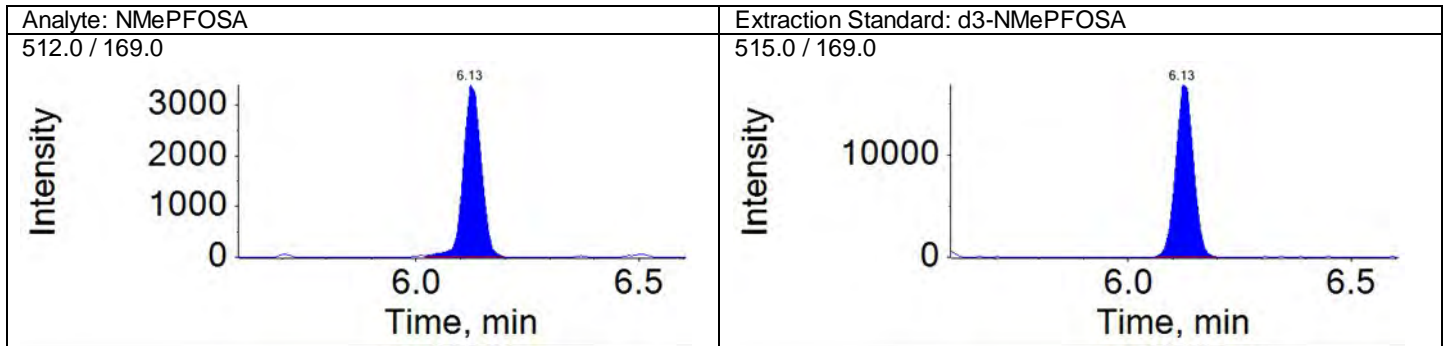
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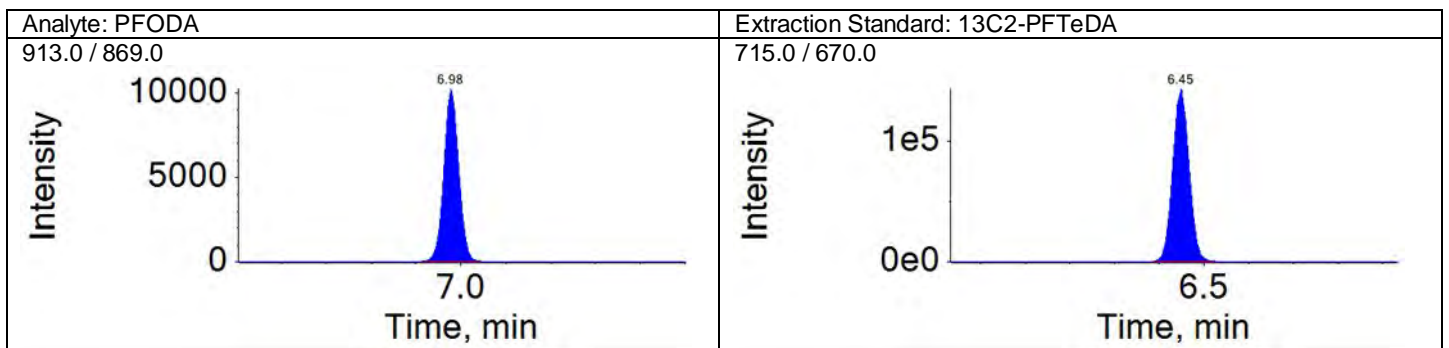
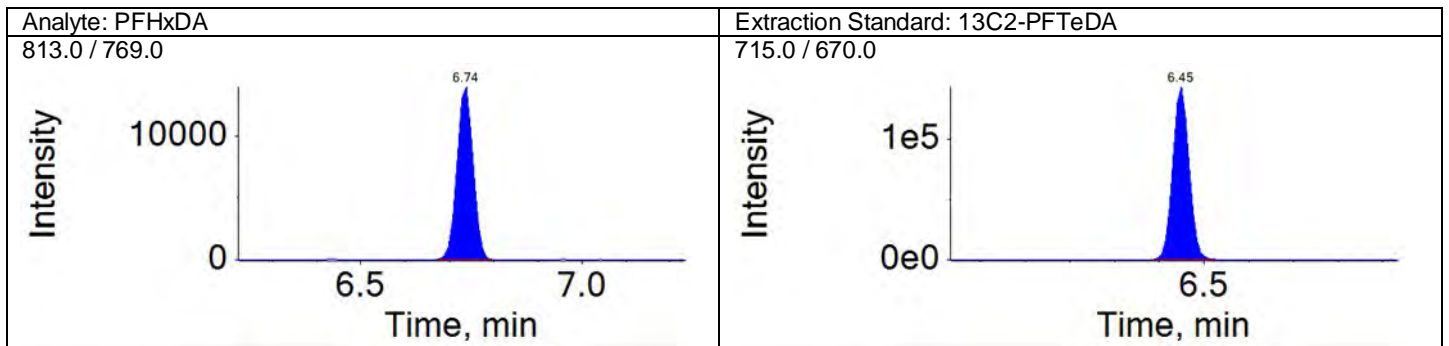
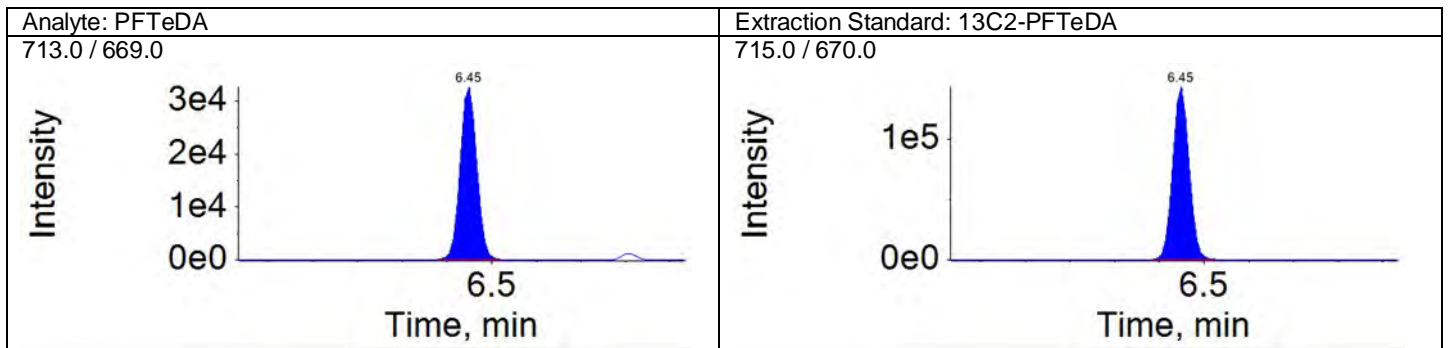
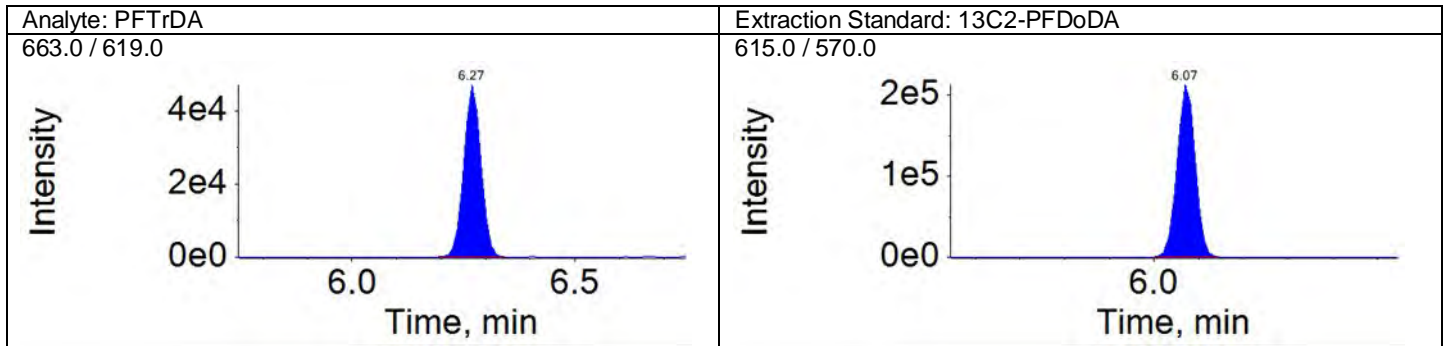
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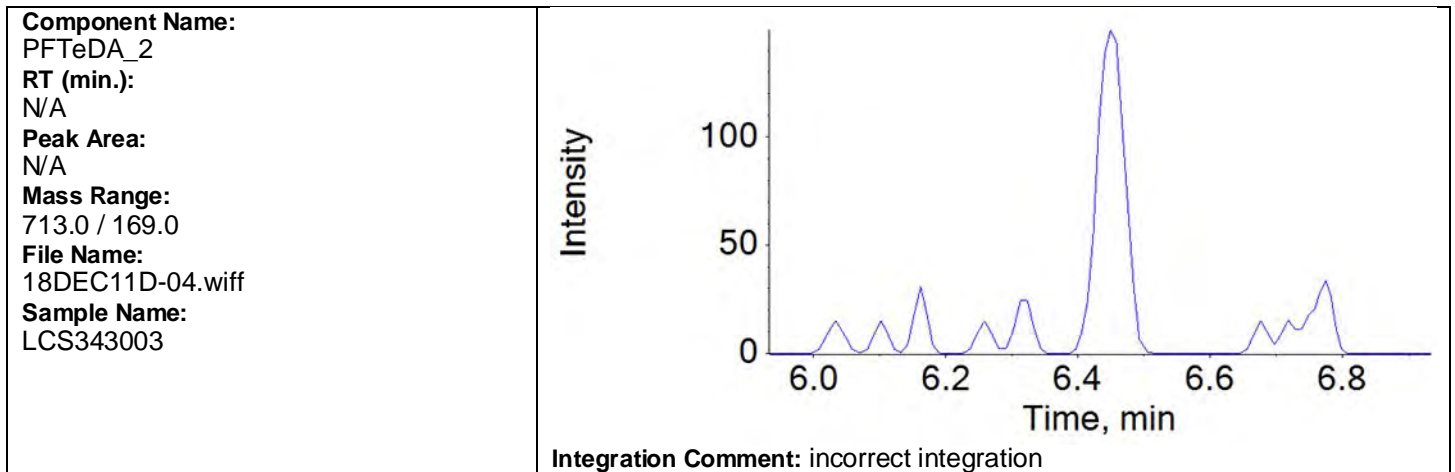
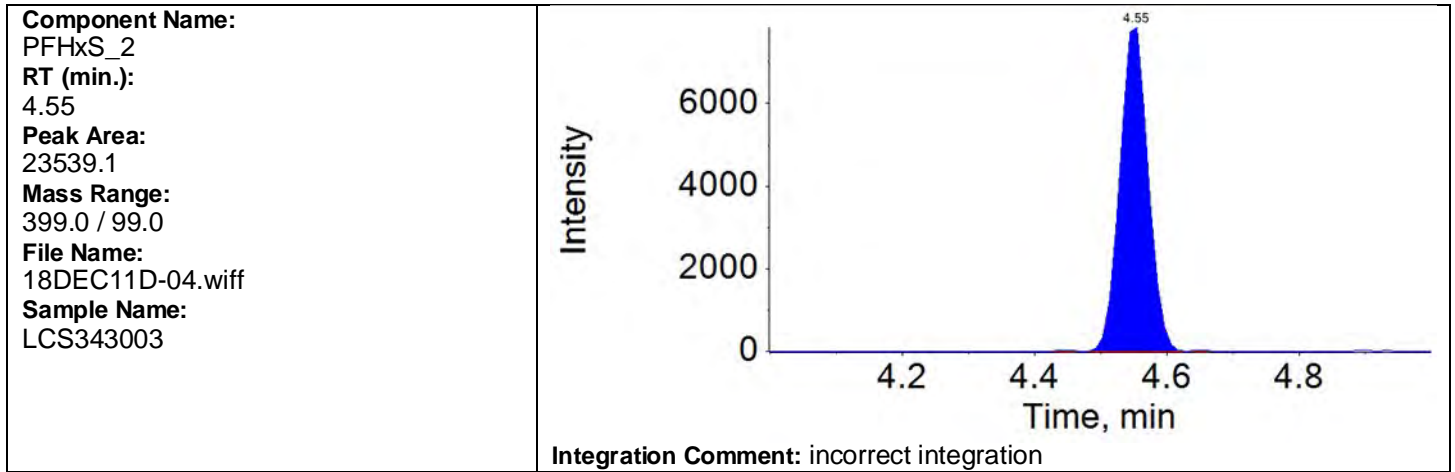
ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM



**Results Table Name:** 18343003  
**Results Table Date:** 12/13/2018 5:21:28 PM

**Acquisition Method:** 18AUG13\_3uL.dam  
**QMethod File:** 18AUG20QM

**APPROVED**  
*By MCD at 5:30 pm, 12/13/18*

**REVIEWED**  
*By umar at 11:17 am, 12/16/18*

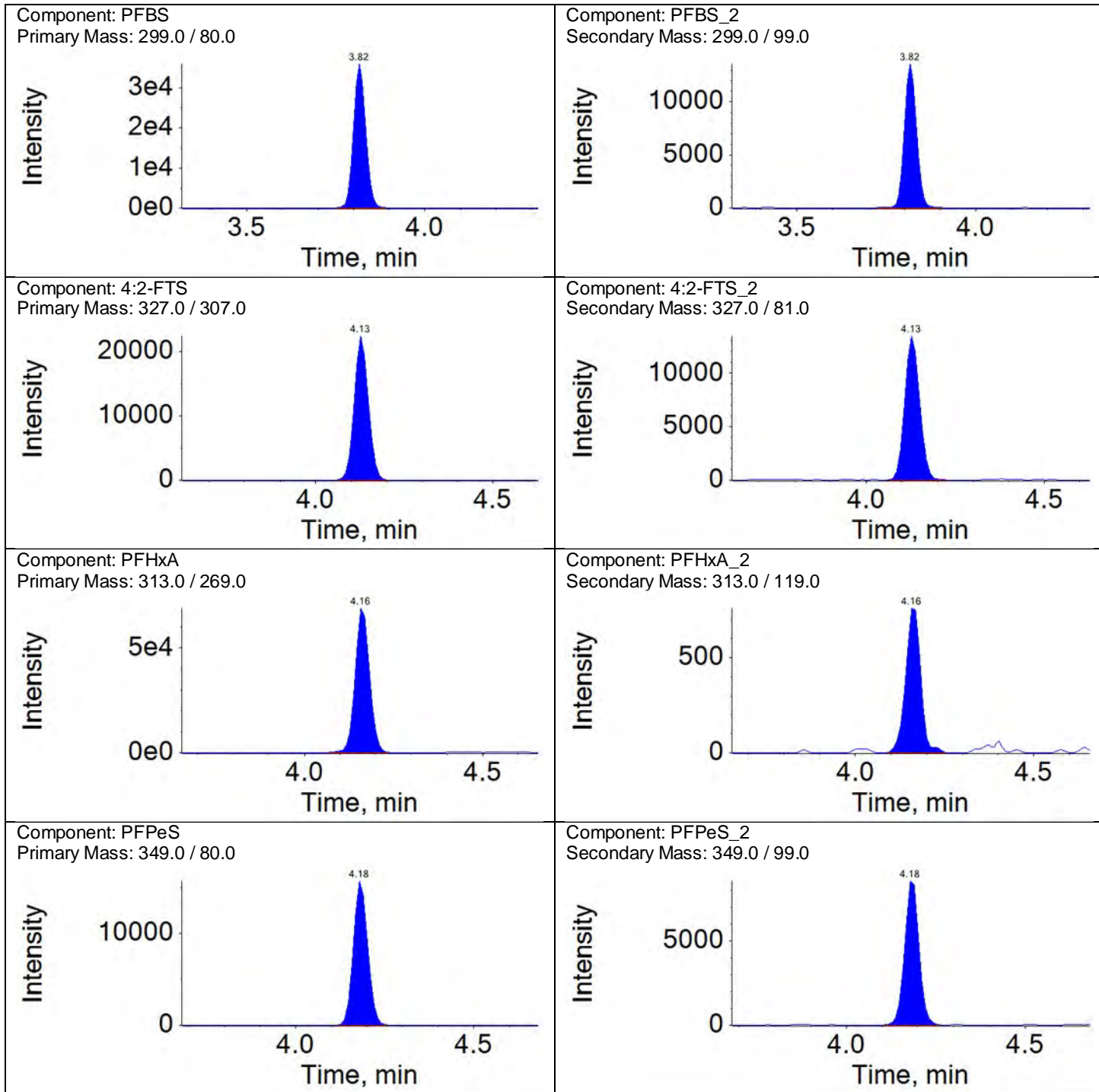
Ion Ratio Report

Sample Name: LCS343003

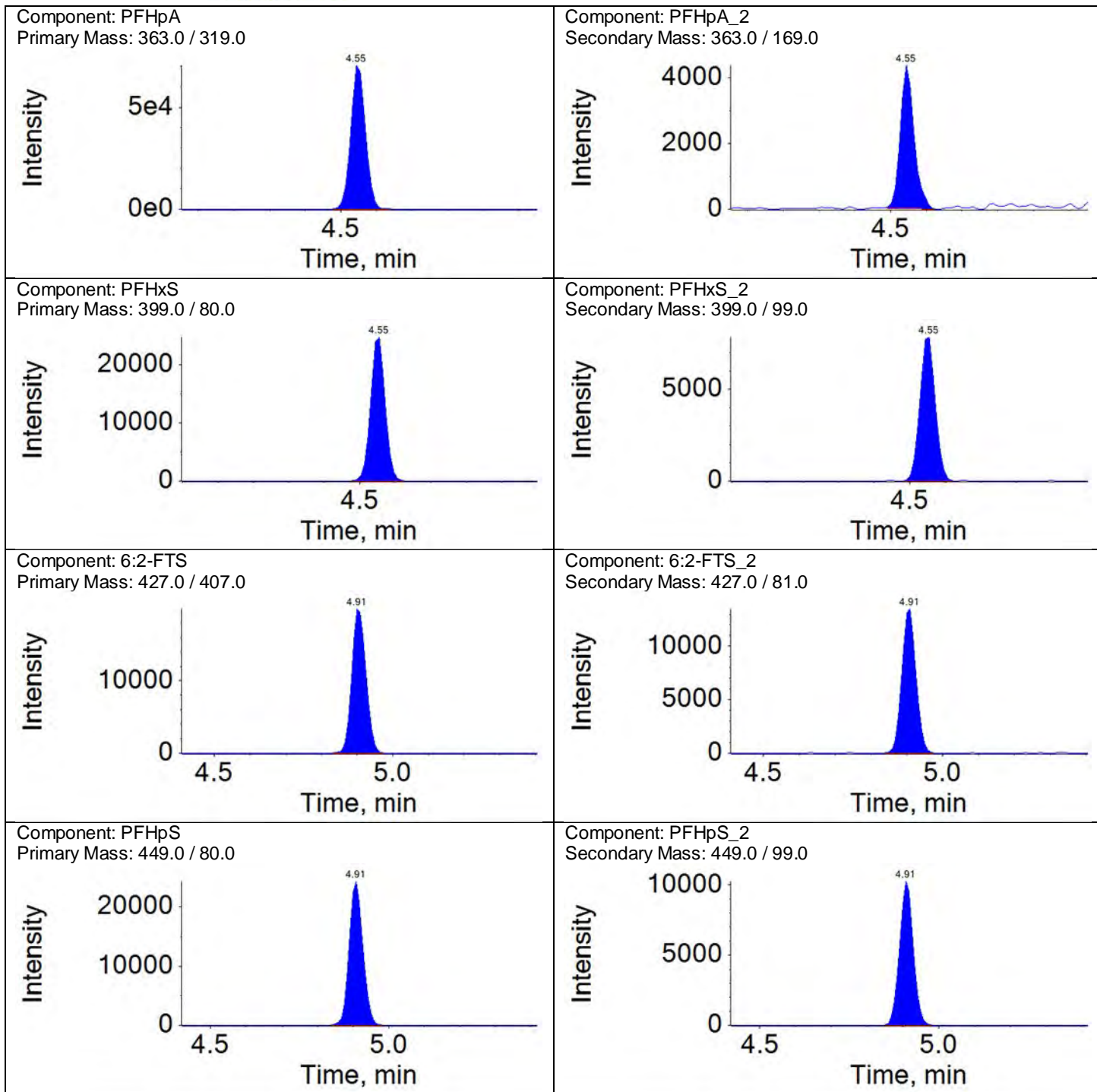
Instrument Name: LM27631

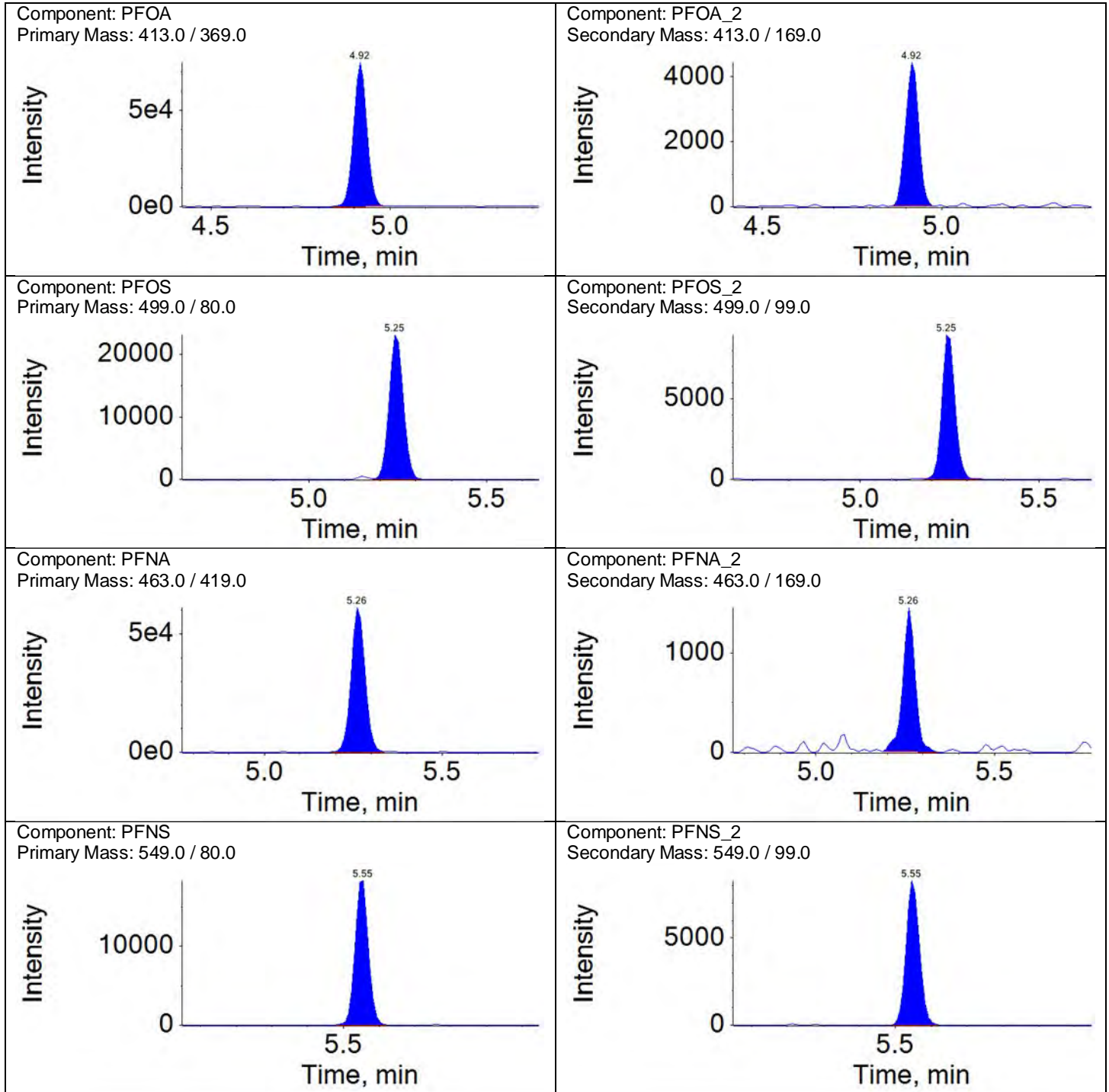
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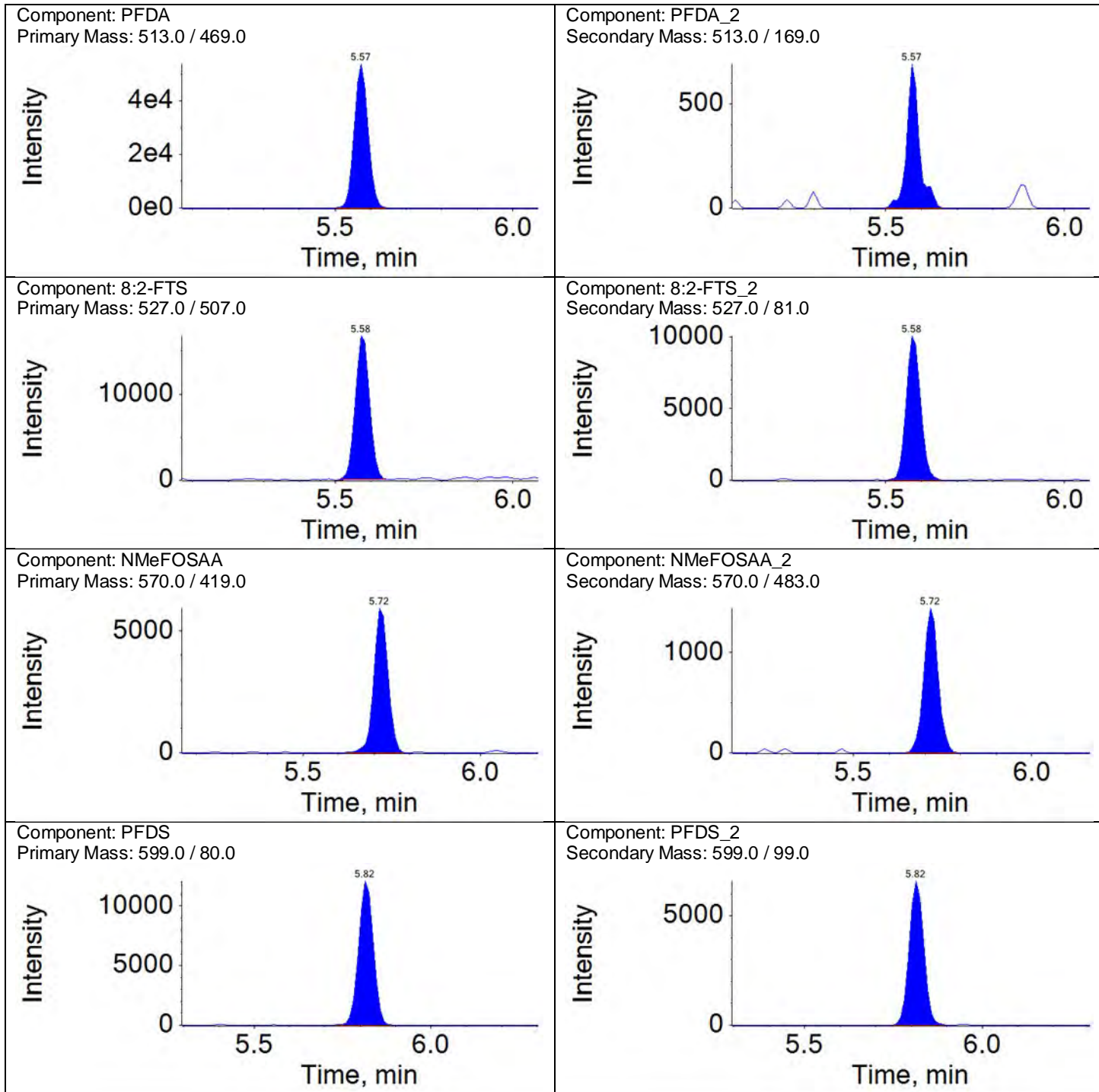
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.82	1.00	85030.6	A	N/A	0.3777			
PFBS_2	3.82	1.00	32117.8	A	N/A	0.3777	5	50	
4:2-FTS	4.13	1.00	61471.1	A	N/A	0.6372			
4:2-FTS_2	4.13	1.00	39169.0	A	N/A	0.6372	-4	50	
PFHxA	4.16	1.00	192178.6	A	N/A	0.0117			
PFHxA_2	4.16	1.00	2244.9	A	N/A	0.0117	31	50	
PFPeS	4.18	1.10	43589.2	A	N/A	0.5507			
PFPeS_2	4.18	1.10	24002.7	A	N/A	0.5507	4	50	
PFHpA	4.55	1.00	201489.0	A	N/A	0.0577			
PFHpA_2	4.55	1.00	11633.2	A	N/A	0.0577	3	50	
PFHxS	4.55	1.00	69770.0	A	N/A	0.3357			
PFHxS_2	4.55	1.00	23422.8	M	N/A	0.3357	-9	50	
6:2-FTS	4.91	1.00	54717.7	A	N/A	0.6743			
6:2-FTS_2	4.91	1.00	36896.4	A	N/A	0.6743	9	50	
PFHpS	4.91	1.08	64617.5	A	N/A	0.4193			
PFHpS_2	4.91	1.08	27095.3	A	N/A	0.4193	0	50	
PFOA	4.92	1.00	192362.3	A	N/A	0.0587			
PFOA_2	4.92	1.00	11297.5	A	N/A	0.0587	-5	50	
PFOS	5.25	1.00	63704.9	A	N/A	0.3592			
PFOS_2	5.25	1.00	22884.7	A	N/A	0.3592	19	50	
PFNA	5.26	1.00	165491.6	A	N/A	0.0212			
PFNA_2	5.26	1.00	3511.8	A	N/A	0.0212	13	50	
PFNS	5.55	1.06	47097.4	A	N/A	0.4517			
PFNS_2	5.55	1.06	21275.1	A	N/A	0.4517	-9	50	
PFDA	5.57	1.00	143896.7	A	N/A	0.0118			
PFDA_2	5.57	1.00	1694.9	A	N/A	0.0118	12	50	
8:2-FTS	5.58	1.00	46365.3	A	N/A	0.6038			
8:2-FTS_2	5.58	1.00	27995.2	A	N/A	0.6038	-4	50	
NMeFOSAA	5.72	1.00	16428.9	A	N/A	0.2472			
NMeFOSAA_2	5.72	1.00	4061.6	A	N/A	0.2472	-6	50	
PFDS	5.82	1.11	34796.1	A	N/A	0.5374			
PFDS_2	5.82	1.11	18700.6	A	N/A	0.5374	8	50	
PFUnDA	5.84	1.00	132657.2	A	N/A	0.0039			
PFUnDA_2	5.85	1.00	519.1	A	N/A	0.0039	-6	50	
NEtFOSAA	5.86	1.00	14621.6	A	N/A	0.6148			
NEtFOSAA_2	5.85	1.00	8988.9	A	N/A	0.6148	-9	50	
PFDODA	6.07	1.00	151891.6	A	N/A	0.0100			
PFDODA_2	6.07	1.00	1514.2	A	N/A	0.0100	-25	50	
10:2-FTS	6.09	1.09	30130.9	A	N/A	0.7282			
10:2-FTS_2	6.09	1.09	21940.1	A	N/A	0.7282	5	50	
PFTrDA	6.27	1.03	125936.6	A	N/A	0.0060			
PFTrDA_2	6.27	1.03	756.4	A	N/A	0.0060	-13	50	
PFTeDA	6.45	1.00	84157.1	A	N/A	0.0053			
PFTeDA_2	6.45	1.00	442.1	M	N/A	0.0053	-21	50	
PFHxDA	6.74	1.04	35398.4	A	N/A	0.0652			
PFHxDA_2	6.74	1.04	2307.5	A	N/A	0.0652	8	50	
PFODA	6.98	1.08	23351.5	A	N/A	0.0241			
PFODA_2	6.98	1.08	563.6	A	N/A	0.0241	-12	50	

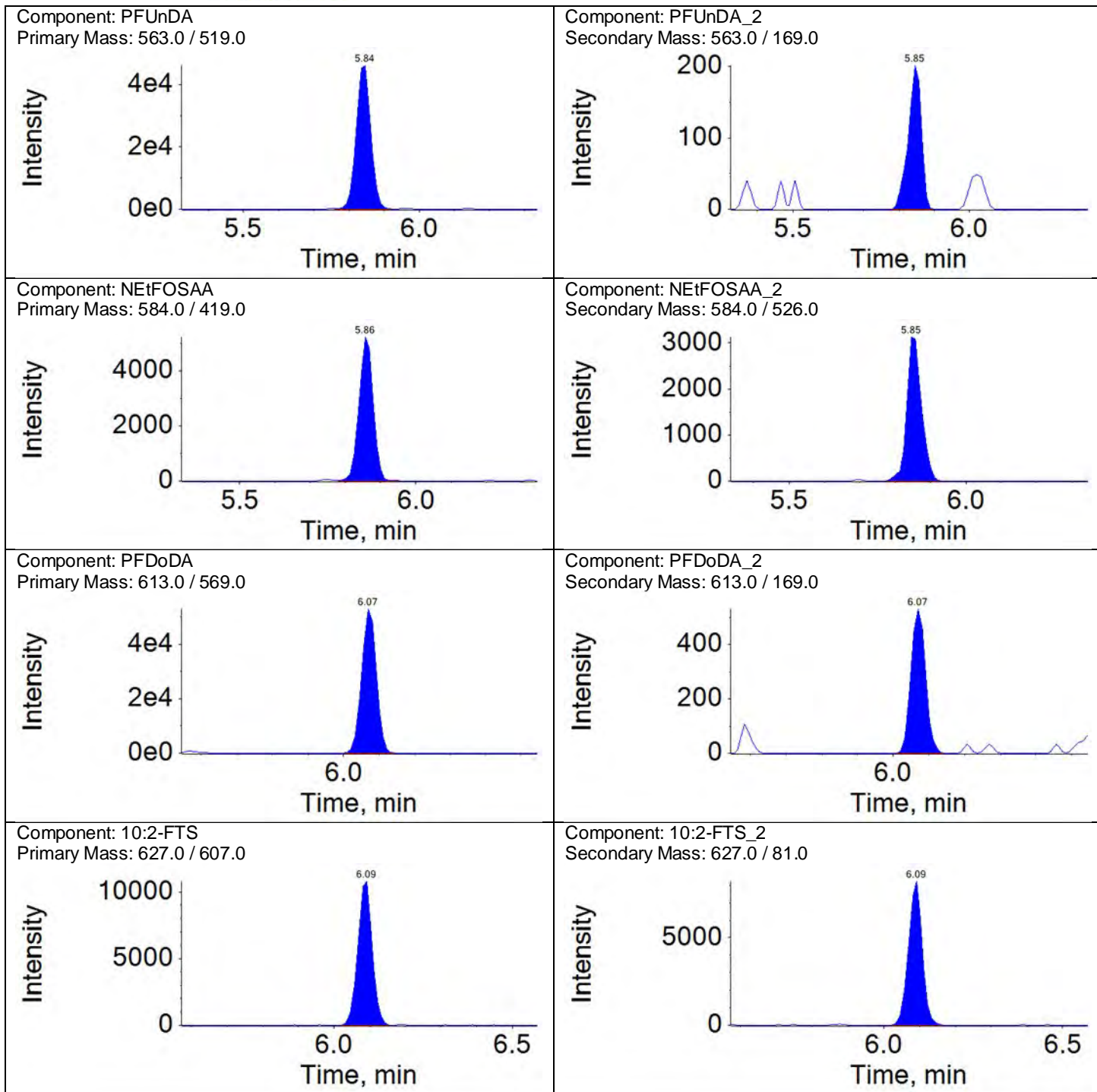




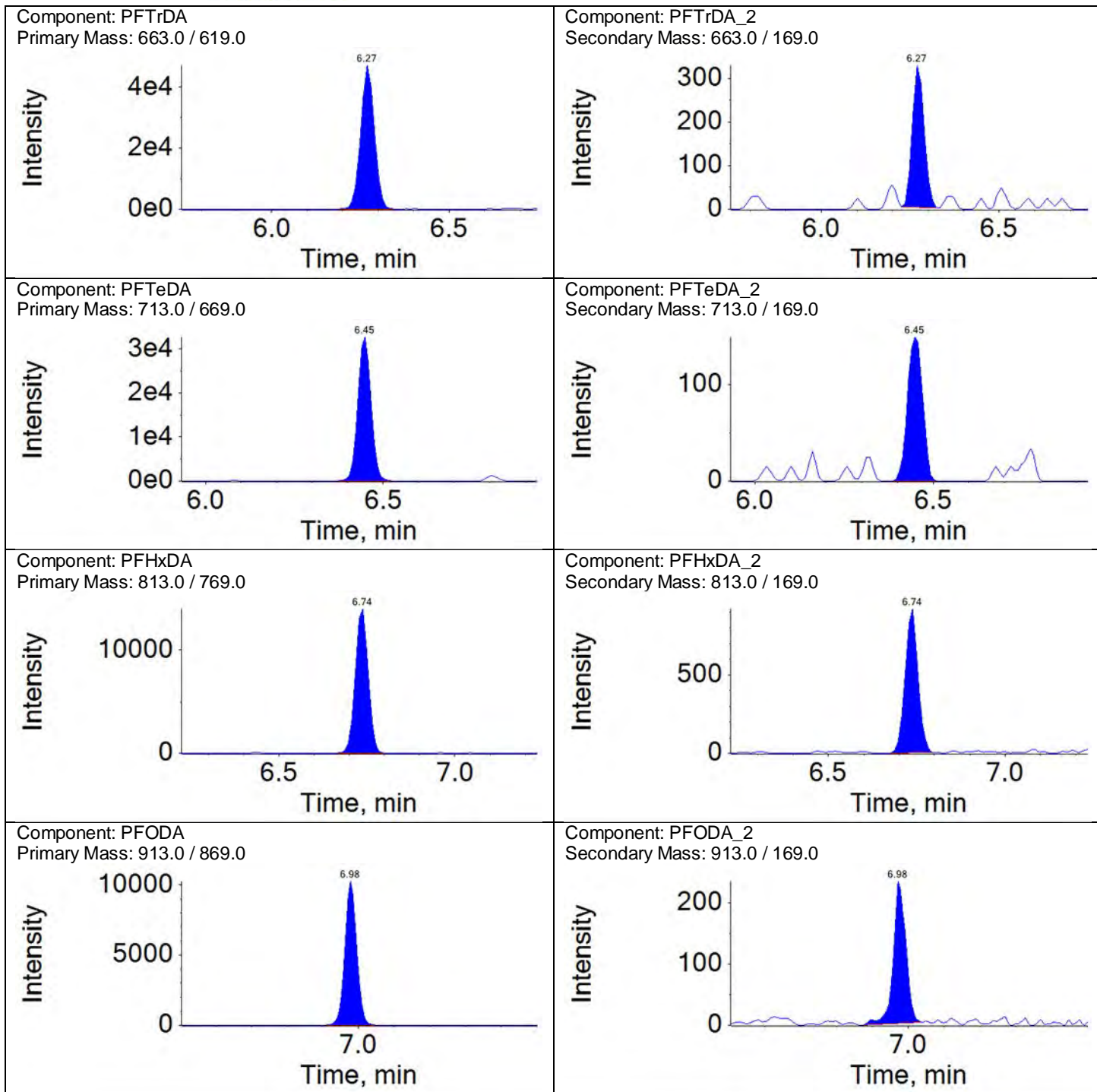














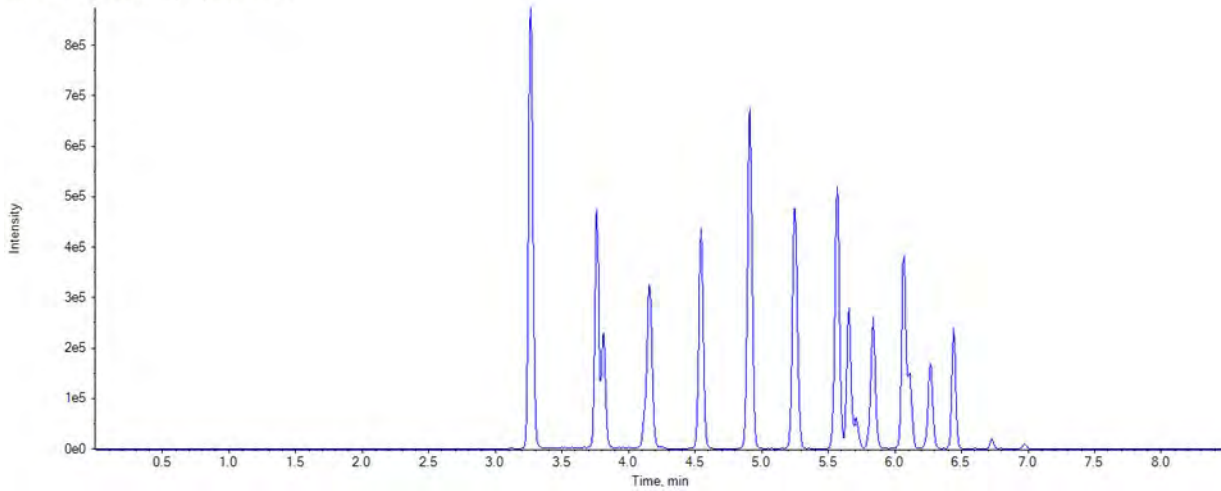
Lab Control Sample Recovery

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:19:33 PM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCSDA	EPA 537 mod QSM 5.1 table B-15 18343003	18DEC11D-05.wiff	2018-12-11T05:35:13

TIC from 18DEC11D-05.wiff (sample 1) - LCSDA



Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.00	931346.7	953492.0	-2	50	
13C2-PFOA	5.00	470005.7	500971.3	-6	50	
13C4-PFOS	4.78	291751.7	310746.2	-6	50	
13C2-PFDA	5.00	397883.3	419040.9	-5	50	

**Lab Control Sample Recovery**

ICAL Name: 18DEC06DCAL      Result Table: 18343003 12/13/2018 5:19:33 PM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCSDA	EPA 537 mod QSM 5.1 table B-15 18343003	18DEC11D-05.wiff	2018-12-11T05:35:13

Analyte Name	Analyte Area	Ext Std Area	Area Ratio	Adj Actual Conc	Sample Result	%REC	% REC Limit	%REC OOS
PFBA	228221.3	852456.4	0.268	5.440	5.908	109	70-130	
PFPeA	202099.4	771331.3	0.262	5.440	5.513	101	70-130	
PFBS	84321.4	350632.5	0.240	4.812	4.768	99	72-127	
4:2-FTS	60676.2	50922.2	1.192	14.944	12.775	85	70-130	
PFHxA	184665.9	557036.3	0.332	5.440	5.778	106	77-132	
PFPeS	42539.0	350632.5	0.121	5.104	4.805	94	70-130	
PFHpA	195107.6	451866.8	0.432	5.440	5.687	105	75-139	
PFHxS	70084.9	274012.1	0.256	5.144	4.847	94	71-130	
6:2-FTS	57483.3	54225.8	1.060	15.168	10.529	69	70-130	OOS
PFHpS	64196.9	274012.1	0.234	5.176	5.144	99	70-130	
PFOA	192269.3	707022.2	0.272	5.440	5.945	109	76-136	
PFOS	62546.5	249974.6	0.250	5.200	4.151	80	67-134	
PFNA	159190.9	487904.5	0.326	5.440	4.810	88	73-144	
PFNS	43802.9	249974.6	0.175	5.224	4.510	86	70-130	
PFDA	130541.9	585332.8	0.223	5.440	5.021	92	67-141	
8:2-FTS	45593.9	25696.8	1.774	15.328	15.378	100	70-130	
PFOSA	120611.9	524953.8	0.230	5.440	4.768	88	70-130	
NMeFOSAA	17914.3	109246.1	0.164	5.440	4.339	80	67-124	
PFDS	36858.9	249974.6	0.147	5.240	4.769	91	70-130	
PFUnDA	134538.3	334414.9	0.402	5.440	4.927	91	83-132	
NEtFOSAA	18504.8	70370.5	0.263	5.440	5.316	98	60-131	
PFDoDA	170254.2	651735.6	0.261	5.440	5.500	101	72-137	
10:2-FTS	34528.2	25696.8	1.344	15.424	14.237	92	70-130	
NMePFOSAE	51425.6	196200.0	0.262	5.440	4.556	84	70-130	
NMePFOSA	11209.8	56822.5	0.197	5.440	3.982	73	70-130	
PFDoS	16307.4	249974.6	0.065	5.280	3.978	75	70-130	
NEtPFOSAE	50563.4	148831.0	0.340	5.440	4.553	84	70-130	
NEtPFOSA	9079.2	47730.7	0.190	5.440	3.642	67	70-130	OOS
PFTrDA	144307.3	651735.6	0.221	5.440	5.801	107	57-137	
PFTeDA	94471.4	397479.3	0.238	5.440	5.437	100	70-142	
PFHxDA	35560.5	397479.3	0.089	5.440	4.482	82	70-130	
PFODA	19993.0	397479.3	0.050	5.440	3.230	59	70-130	OOS

**ICAL Name:** 18DEC06DCAL  
**QMethod Name:** 18AUG20QM

**Lab Control Sample Recovery**

**Result Table:** 18343003 12/13/2018 5:19:33 PM  
**Acquisition Method:** 18AUG13\_3uL.dam

**APPROVED**  
*By MCD at 5:30 pm, 12/13/18*

**REVIEWED**  
*By umar at 11:17 am, 12/16/18*

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	LCSDA	Data File:	18DEC11D-05.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18343003	Acquis Date:	2018-12-11T05:35:13
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	25	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18343003
QMethod File:	18AUG20QM	ICAL Name:	18DEC06DCAL
Batch Number:	18343003	Operator:	MCD7824
Sample Wt.:	0.25000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC11D-01

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	931346.7	953492.0	-2	50	
13C2-PFOA	5.0	470005.7	500971.3	-6	50	
13C4-PFOS	4.8	291751.7	310746.2	-6	50	
13C2-PFDA	5.0	397883.3	419040.9	-5	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	852456.4	13C3-PFBA	931346.7	0.915	20.000	16.203	81	50-150	
E13C5-PFPeA	771331.3	13C3-PFBA	931346.7	0.828	20.000	15.733	79	50-150	
E13C3-PFBS	350632.5	13C3-PFBA	931346.7	0.376	18.600	12.765	69	50-150	
E13C2-4:2-FTS	50922.2	13C2-PFOA	470005.7	0.108	18.680	16.981	91	50-150	
E13C5-PFHxA	557036.3	13C2-PFOA	470005.7	1.185	20.000	15.917	80	50-150	
E13C3-PFHxS	274012.1	13C2-PFOA	470005.7	0.583	18.920	14.958	79	50-150	
E13C4-PFHpA	451866.8	13C2-PFOA	470005.7	0.961	20.000	16.349	82	50-150	
E13C2-6:2-FTS	54225.8	13C2-PFOA	470005.7	0.115	19.000	28.589	150	50-150	
E13C8-PFOA	707022.2	13C2-PFOA	470005.7	1.504	20.000	17.009	85	50-150	
E13C8-PFOS	249974.6	13C4-PFOS	291751.7	0.857	19.120	15.381	80	50-150	
E13C9-PFNA	487904.5	13C4-PFOS	291751.7	1.672	20.000	18.903	95	50-150	
E13C6-PFDA	585332.8	13C2-PFDA	397883.3	1.471	20.000	15.594	78	50-150	
E13C2-8:2-FTS	25696.8	13C2-PFDA	397883.3	0.065	19.160	16.866	88	50-150	
E13C8-PFOSA	524953.8	13C2-PFDA	397883.3	1.319	20.000	12.482	62	50-150	
Ed3-NMeFOSAA	109246.1	13C2-PFDA	397883.3	0.275	20.000	19.463	97	50-150	
E13C7-PFUnDA	334414.9	13C2-PFDA	397883.3	0.840	20.000	16.492	82	50-150	
Ed5-NEtFOSAA	70370.5	13C2-PFDA	397883.3	0.177	20.000	15.617	78	50-150	
E13C2-PFDoDA	651735.6	13C2-PFDA	397883.3	1.638	20.000	13.750	69	50-150	
Ed7-NMePFOSAE	196200.0	13C2-PFDA	397883.3	0.493	20.000	11.362	57	50-150	
Ed3-NMePFOSA	56822.5	13C2-PFDA	397883.3	0.143	20.000	10.409	52	50-150	
Ed9-NEtPFOSAE	148831.0	13C2-PFDA	397883.3	0.374	20.000	10.318	52	50-150	
Ed5-NEtPFOSA	47730.7	13C2-PFDA	397883.3	0.120	20.000	10.799	54	50-150	
E13C2-PFTeDA	397479.3	13C2-PFDA	397883.3	0.999	20.000	11.860	59	50-150	

ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam

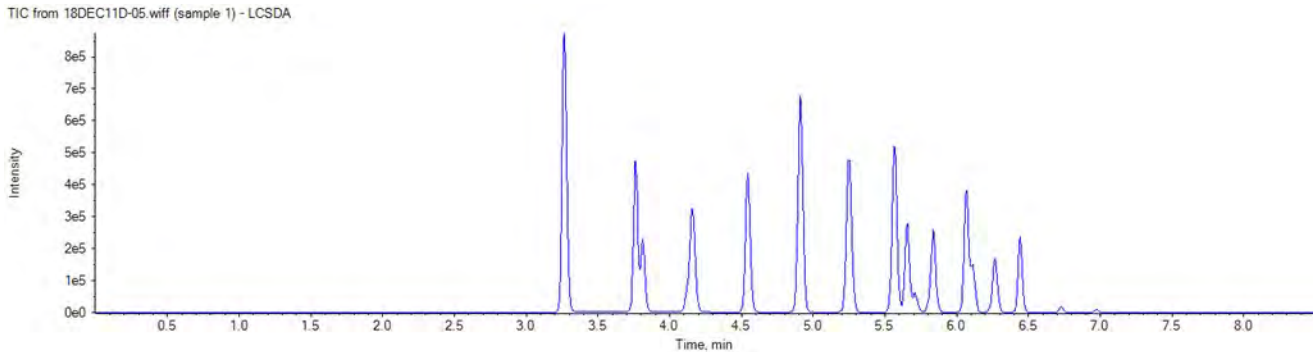
**Analyte Quantitation Peak Table**

Sample Name: LCSDA Instrument Name: LM27631 File Name: 18DEC11D-05.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.25000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBA	3.26	1.000	228221.3		A	13C4-PFBA	3.26	852456.4	0.268	5.908
PFPeA	3.77	1.000	202099.4		A	13C5-PFPeA	3.76	771331.3	0.262	5.513
PFBS	3.81	1.000	84321.4		A	13C3-PFBS	3.81	350632.5	0.240	4.768
4:2-FTS	4.12	1.000	60676.2		A	13C2-4:2-FTS	4.12	50922.2	1.192	12.775
PFHxA	4.16	1.000	184665.9		A	13C5-PFHxA	4.16	557036.3	0.332	5.778
PFPeS	4.18	1.100	42539.0		A	13C3-PFBS	3.81	350632.5	0.121	4.805
PFHpA	4.54	1.000	195107.6		A	13C4-PFHpA	4.54	451866.8	0.432	5.687
PFHxS	4.55	1.000	70084.9		A	13C3-PFHxS	4.55	274012.1	0.256	4.847
6:2-FTS	4.90	1.000	57483.3		A	13C2-6:2-FTS	4.90	54225.8	1.060	10.529
PFHpS	4.90	1.080	64196.9		A	13C3-PFHxS	4.55	274012.1	0.234	5.144
PFOA	4.91	1.000	192269.3		A	13C8-PFOA	4.91	707022.2	0.272	5.945
PFOS	5.24	1.000	62546.5		A	13C8-PFOS	5.24	249974.6	0.250	4.151
PFNA	5.26	1.000	159190.9		A	13C9-PFNA	5.26	487904.5	0.326	4.810
PFNS	5.54	1.060	43802.9		A	13C8-PFOS	5.24	249974.6	0.175	4.510
PFDA	5.57	1.000	130541.9		A	13C6-PFDA	5.57	585332.8	0.223	5.021
8:2-FTS	5.57	1.000	45593.9		A	13C2-8:2-FTS	5.57	25696.8	1.774	15.378
PFOSA	5.65	1.000	120611.9		A	13C8-PFOSA	5.65	524953.8	0.230	4.768
NMeFOSAA	5.71	1.000	17914.3		A	d3-NMeFOSAA	5.71	109246.1	0.164	4.339
PFDS	5.81	1.110	36858.9		A	13C8-PFOS	5.24	249974.6	0.147	4.769
PfUnDA	5.84	1.000	134538.3		A	13C7-PFUnDA	5.84	334414.9	0.402	4.927
NEtFOSAA	5.85	1.000	18504.8		M	d5-NEtFOSAA	5.85	70370.5	0.263	5.316
PFDaDA	6.07	1.000	170254.2		A	13C2-PFDaDA	6.07	651735.6	0.261	5.500
10:2-FTS	6.08	1.090	34528.2		A	13C2-8:2-FTS	5.57	25696.8	1.344	14.237
NMePFOSAE	6.12	1.000	51425.6		A	d7-NMePFOSAE	6.11	196200.0	0.262	4.556
NMePFOSA	6.13	1.000	11209.8		A	d3-NMePFOSA	6.12	56822.5	0.197	3.982
PFDoS	6.23	1.190	16307.4		A	13C8-PFOS	5.24	249974.6	0.065	3.978
NEtPFOSAE	6.27	1.000	50563.4		A	d9-NEtPFOSAE	6.26	148831.0	0.340	4.553
NEtPFOSA	6.28	1.000	9079.2		A	d5-NEtPFOSA	6.28	47730.7	0.190	3.642
PFTTrDA	6.26	1.030	144307.3		A	13C2-PFDaDA	6.07	651735.6	0.221	5.801
PFTeDA	6.44	1.000	94471.4		A	13C2-PFTeDA	6.44	397479.3	0.238	5.437
PFHxDA	6.73	1.040	35560.5		A	13C2-PFTeDA	6.44	397479.3	0.089	4.482
PFOA	6.97	1.080	19993.0		A	13C2-PFTeDA	6.44	397479.3	0.050	3.230

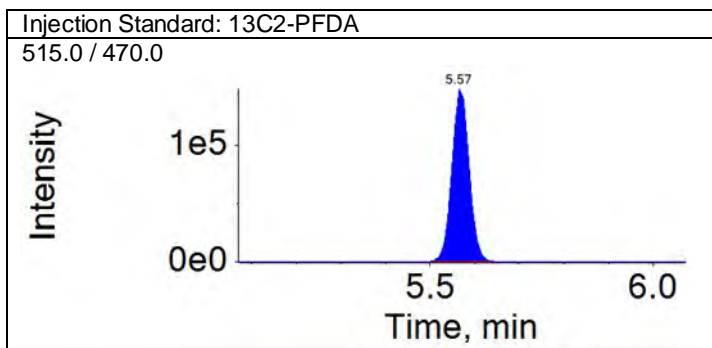
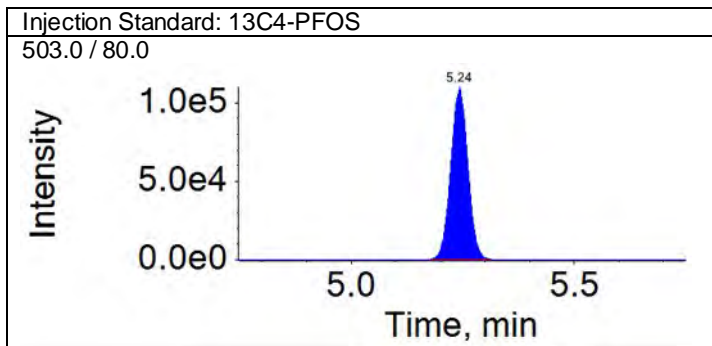
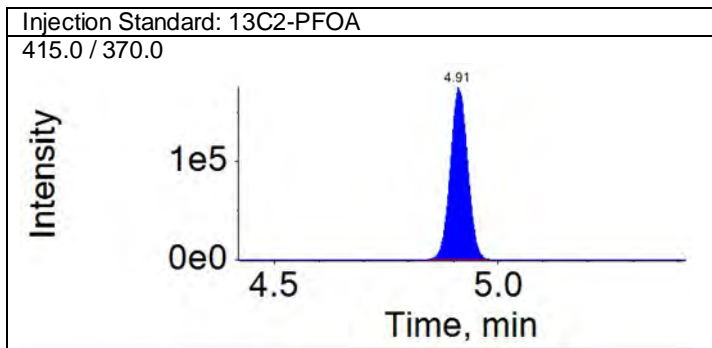
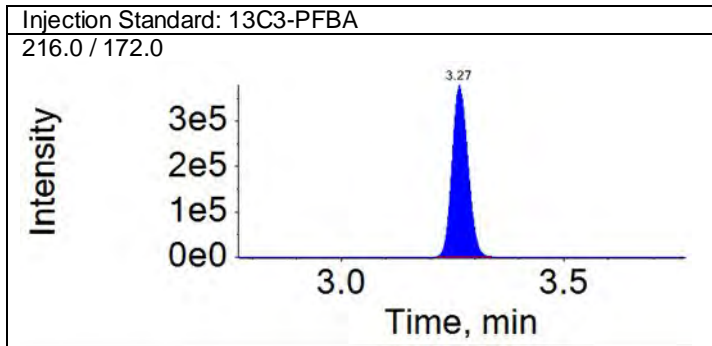
**Total Ion Chromatogram**





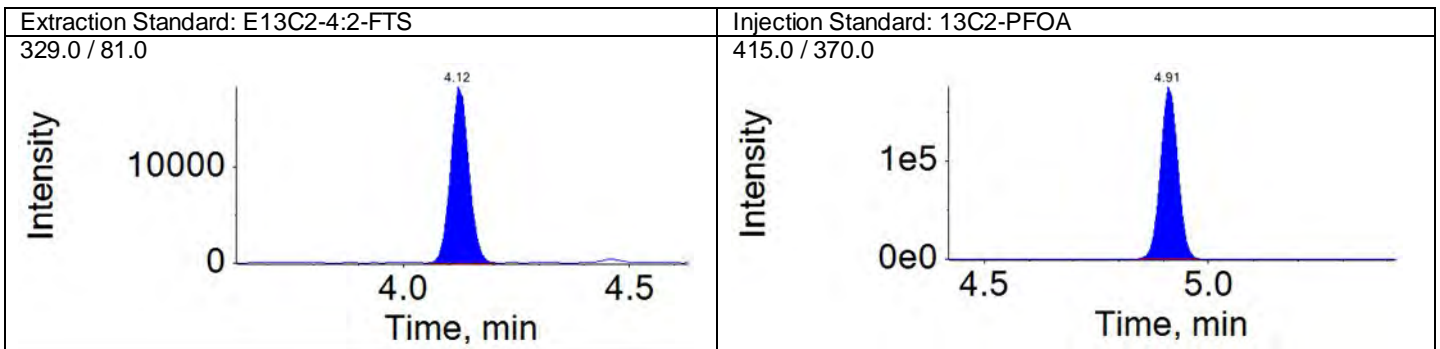
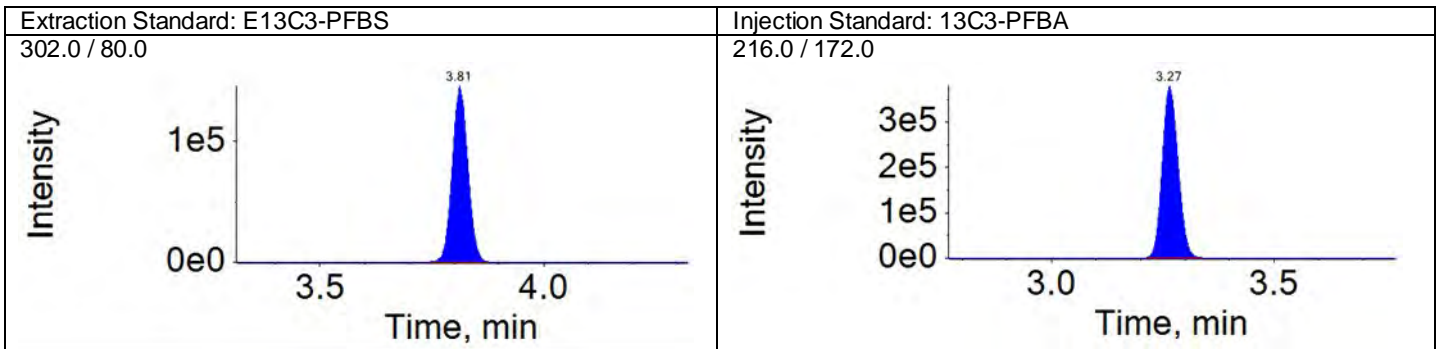
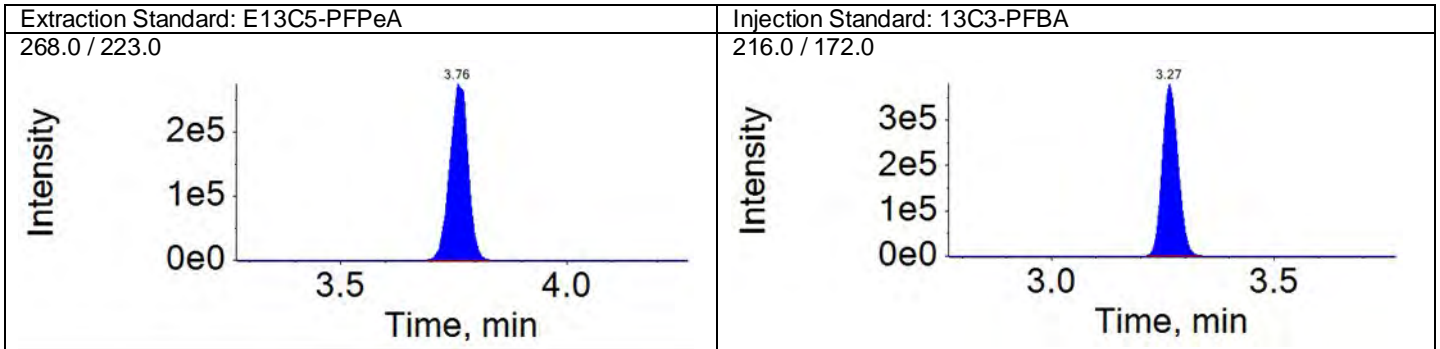
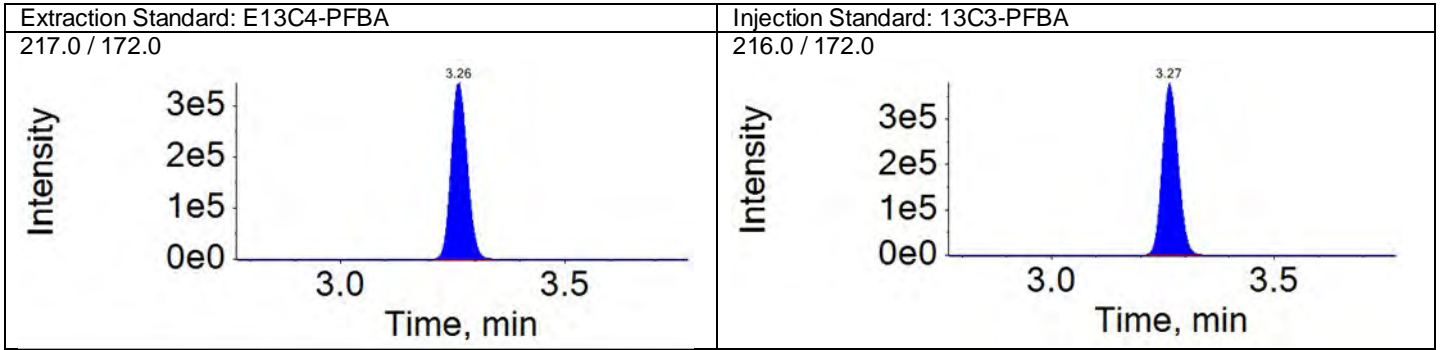
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QMethod Name: 18AUG20QM

Result Table: 18343003 12/13/2018 5:21:28 PM  
Acquisition Method: 18AUG13\_3uL.dam



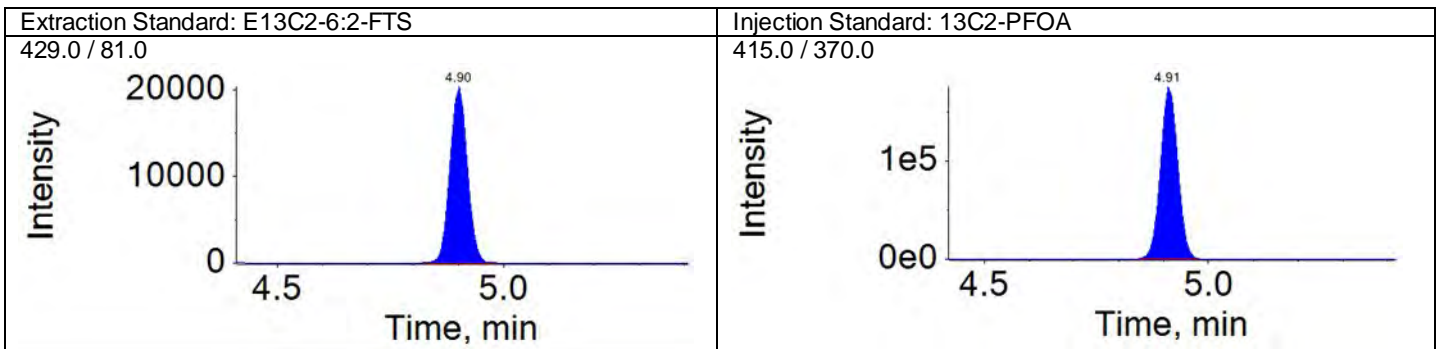
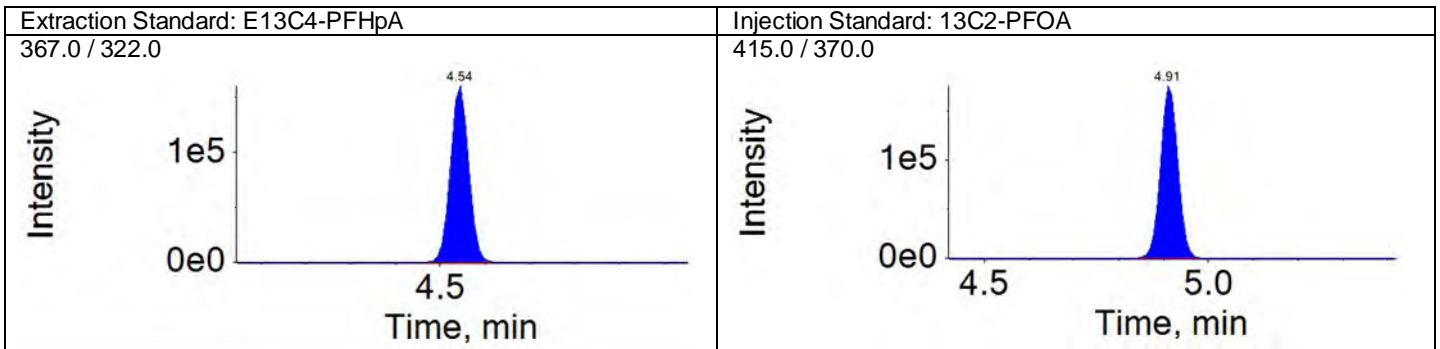
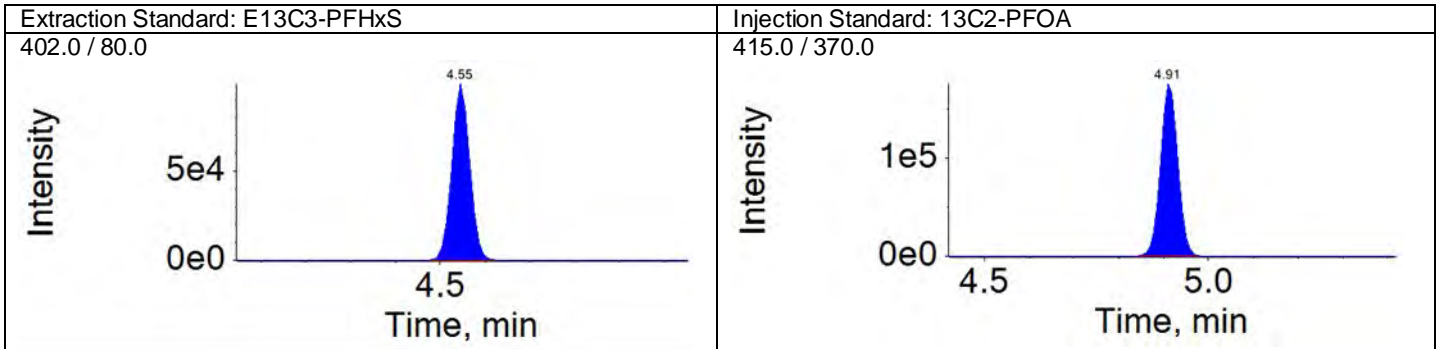
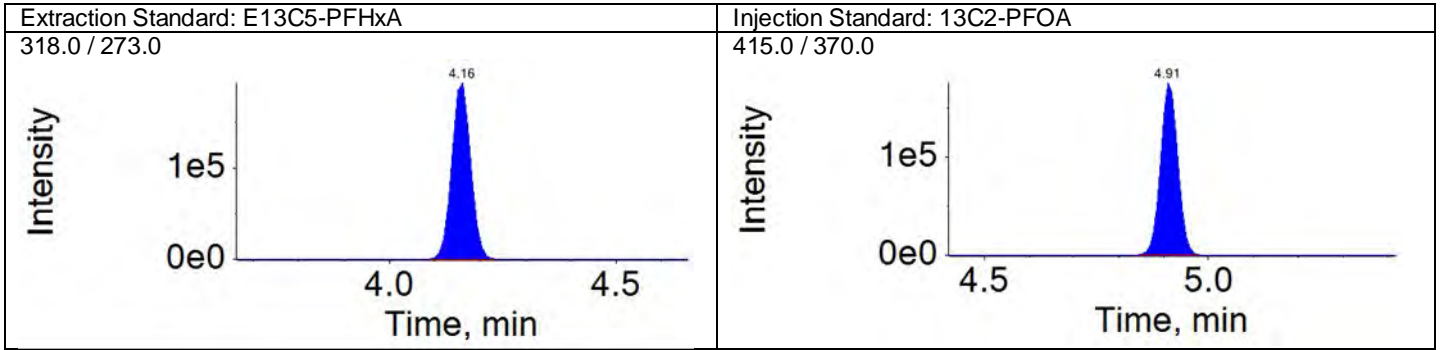
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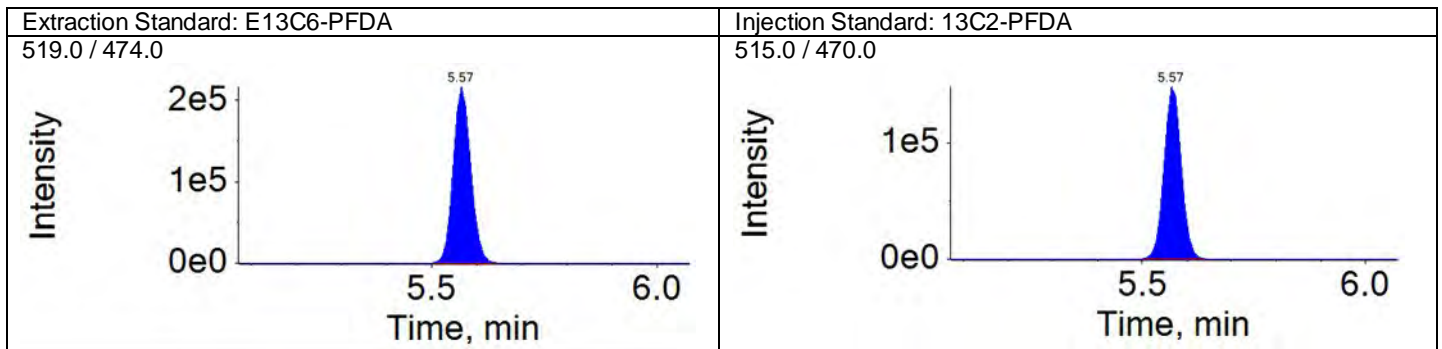
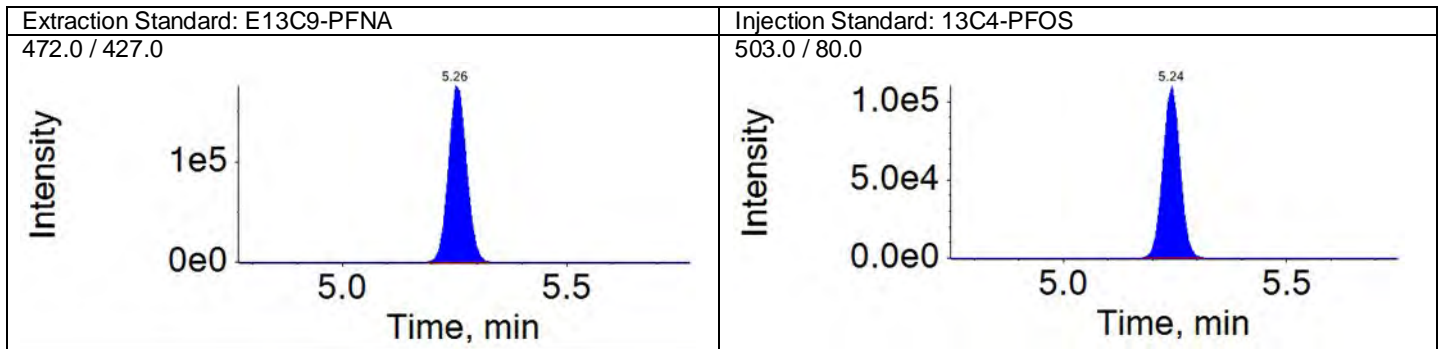
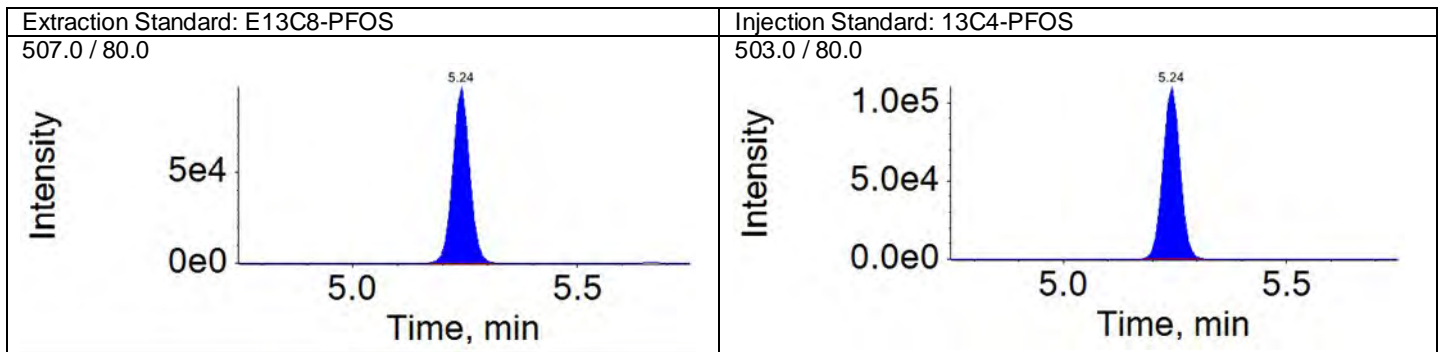
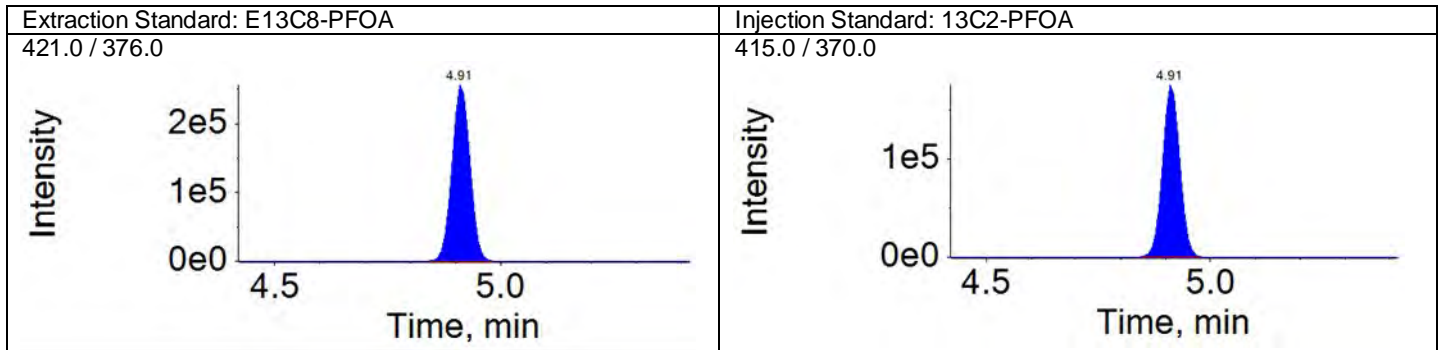
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

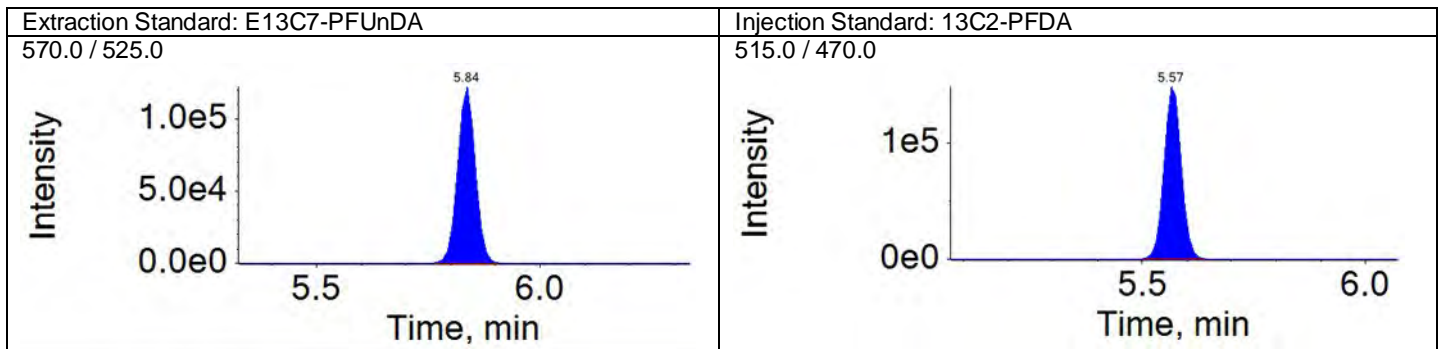
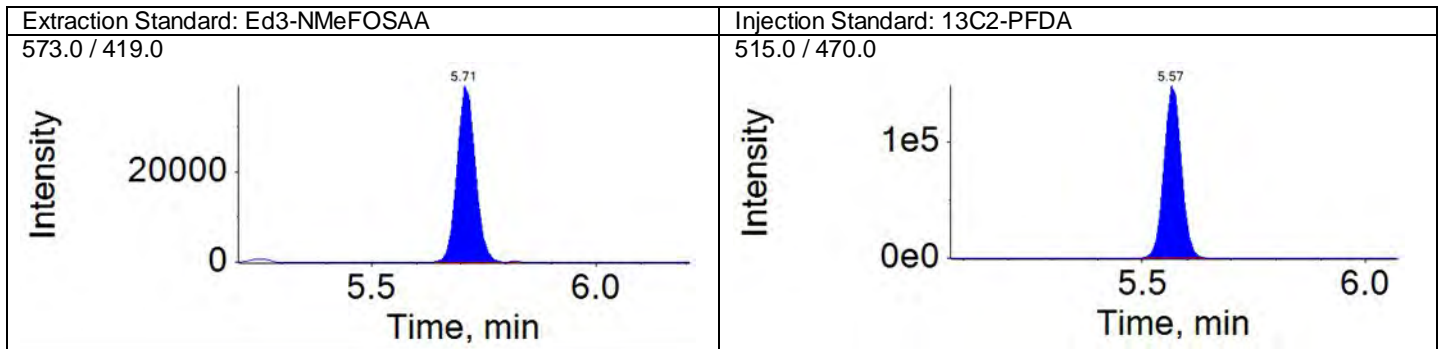
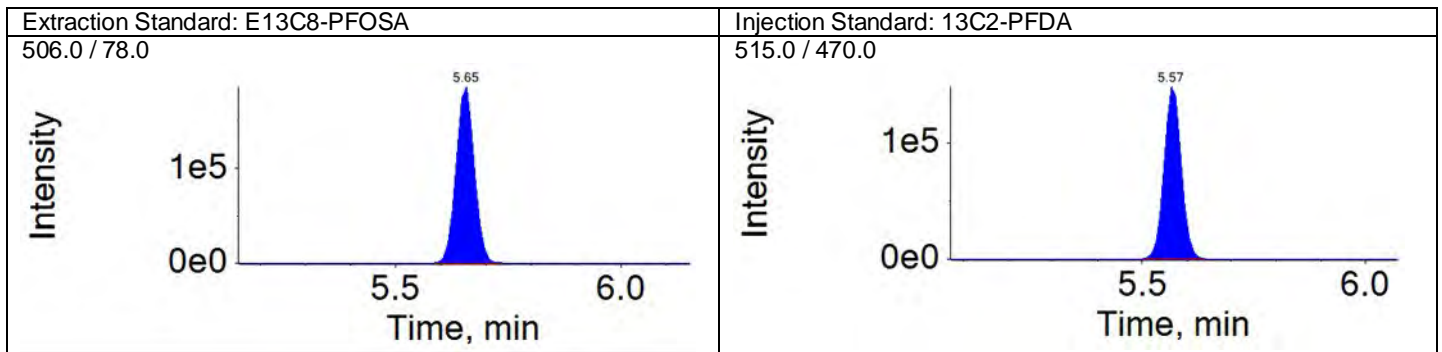
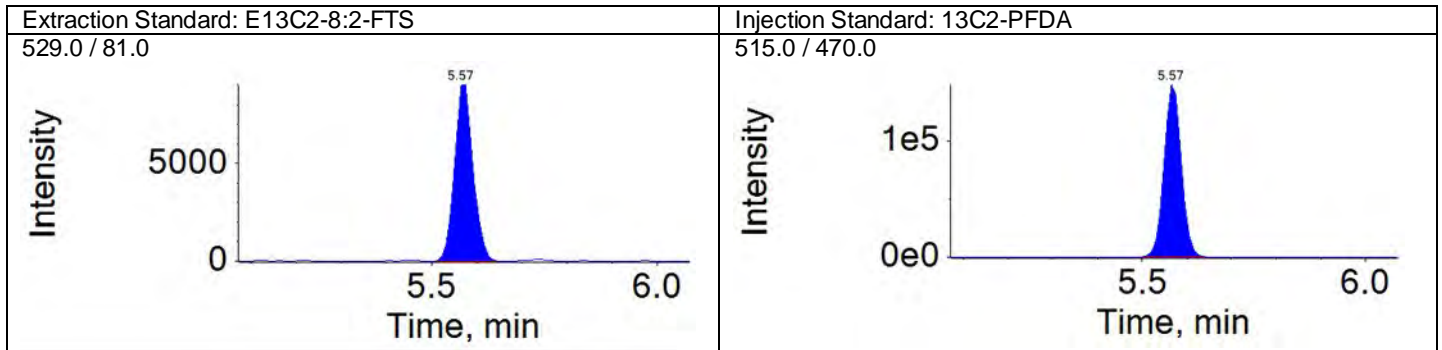
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ICAL Name: 18DEC06DCAL  
QMethod Name: 18AUG20QM

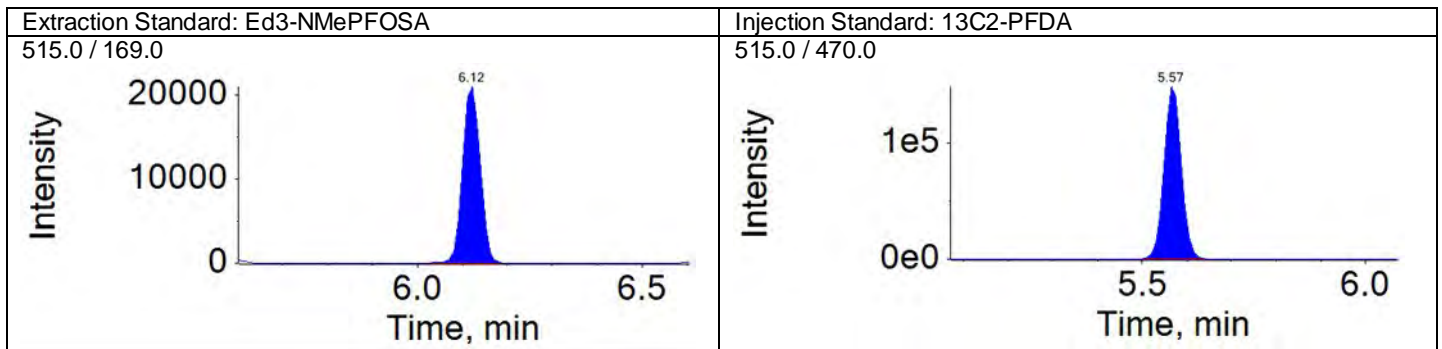
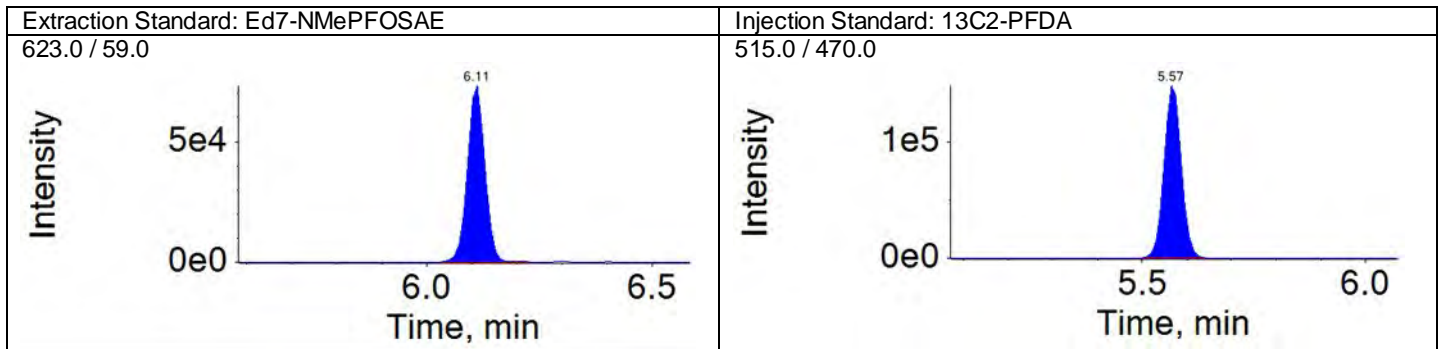
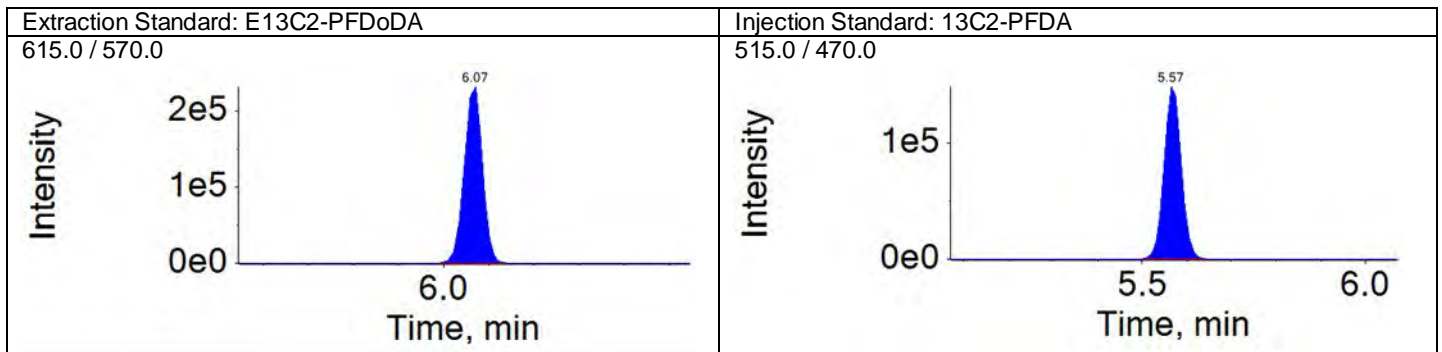
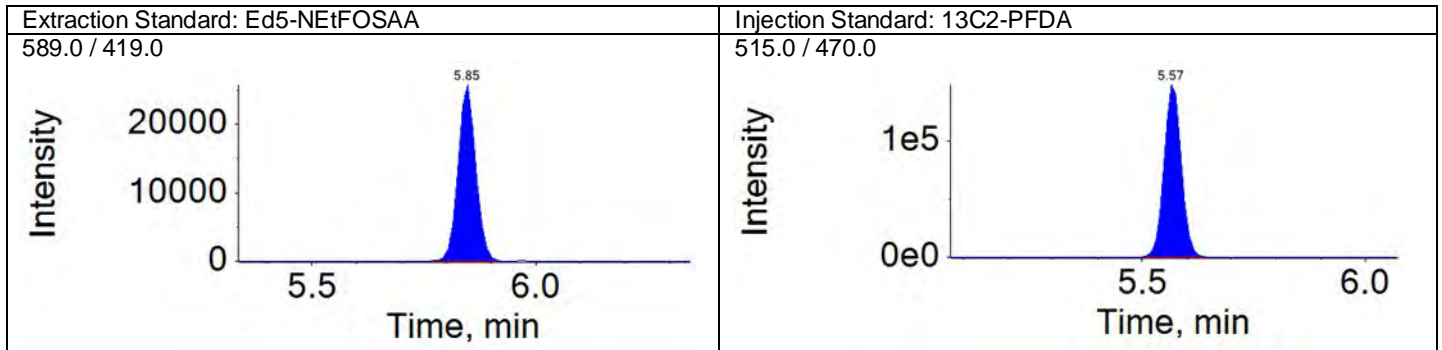
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Acquisition Method: 18AUG13\_3uL.dam





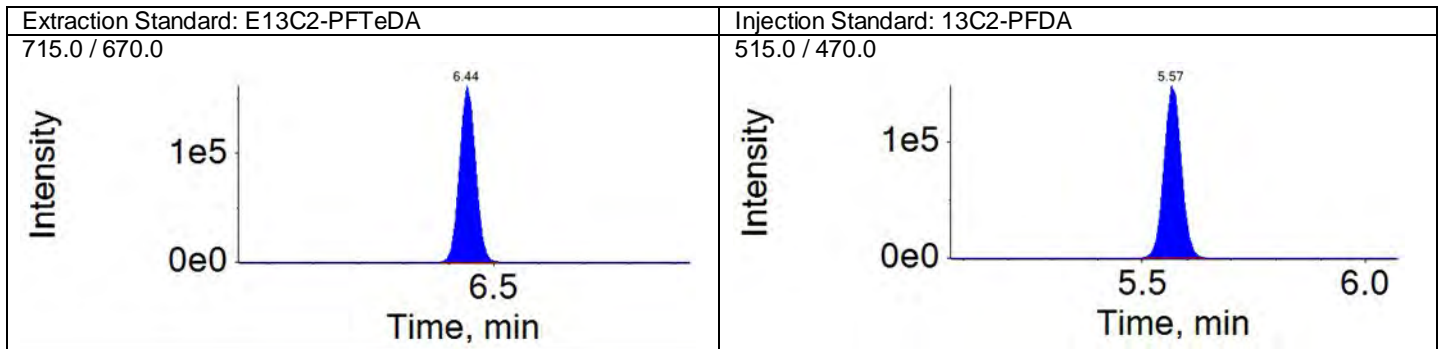
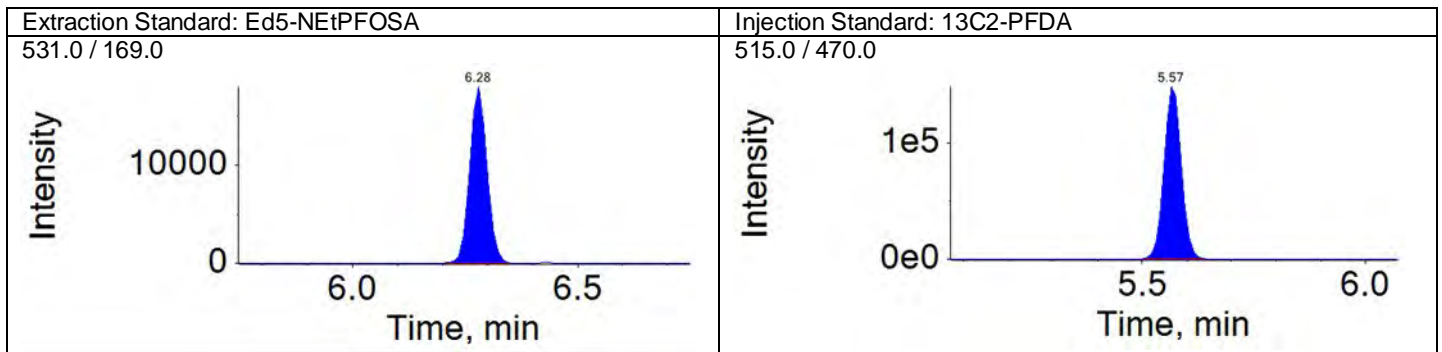
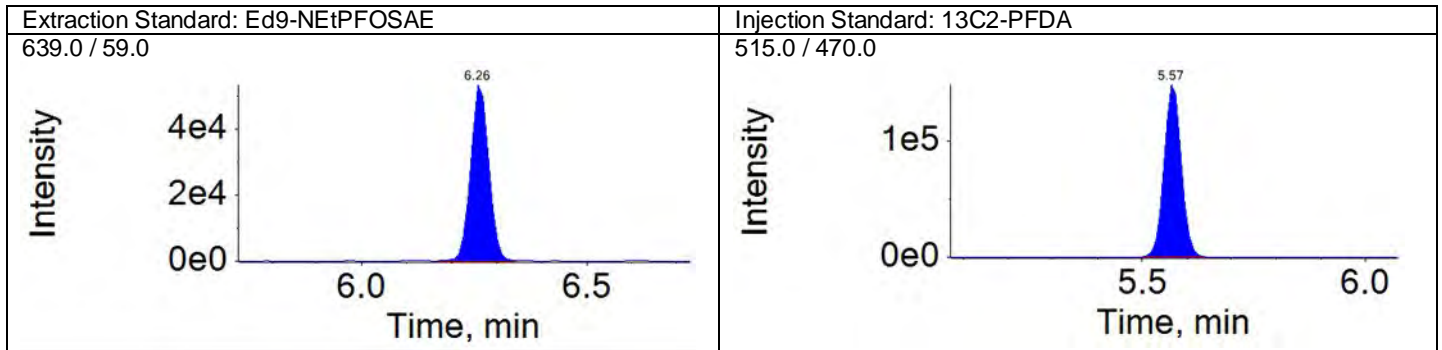
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Result Table: 18343003 12/13/2018 5:21:28 PM  
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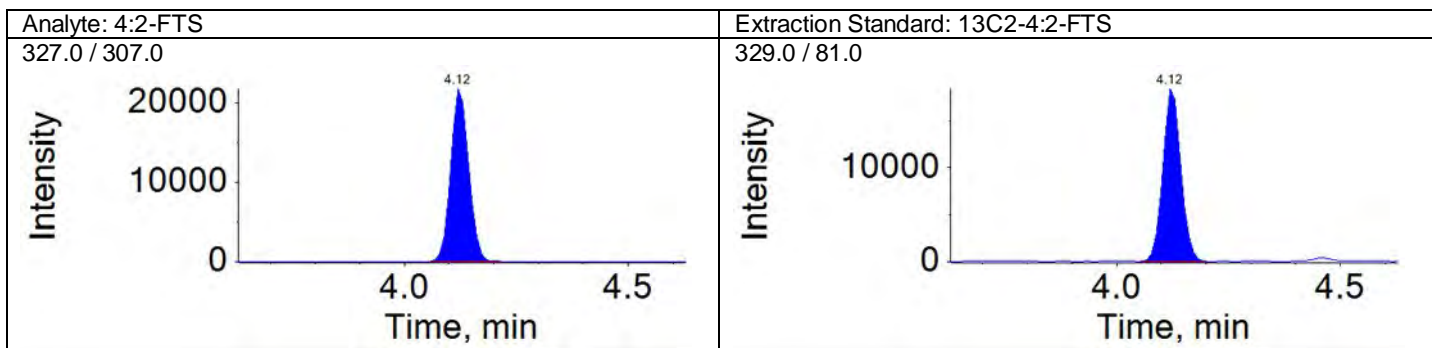
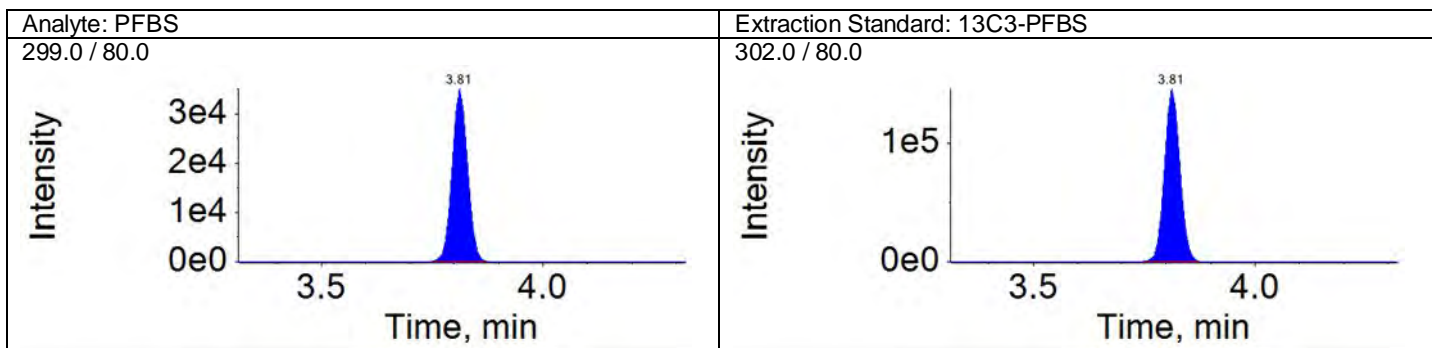
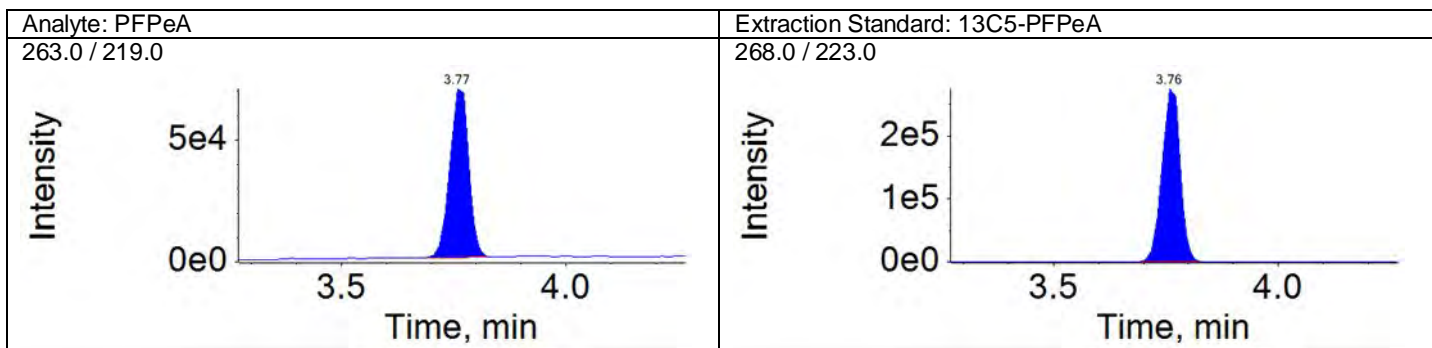
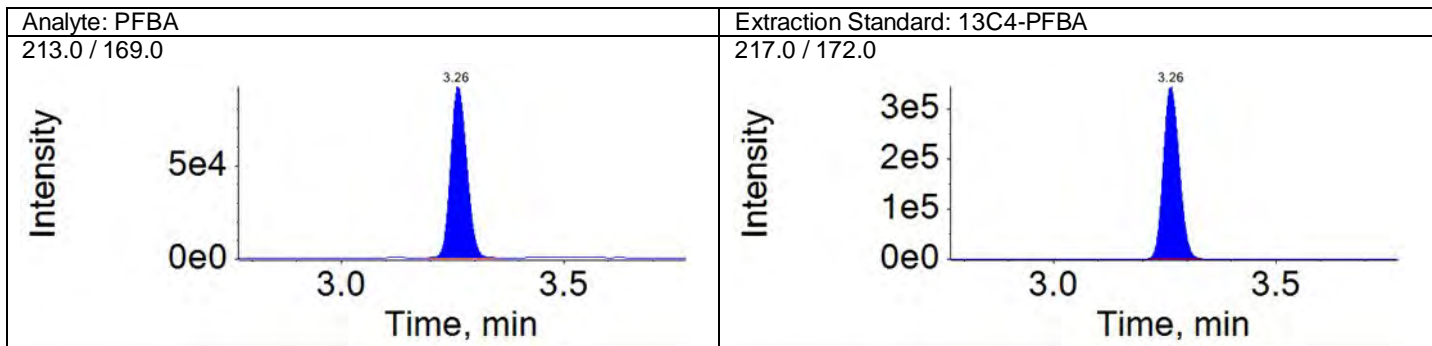
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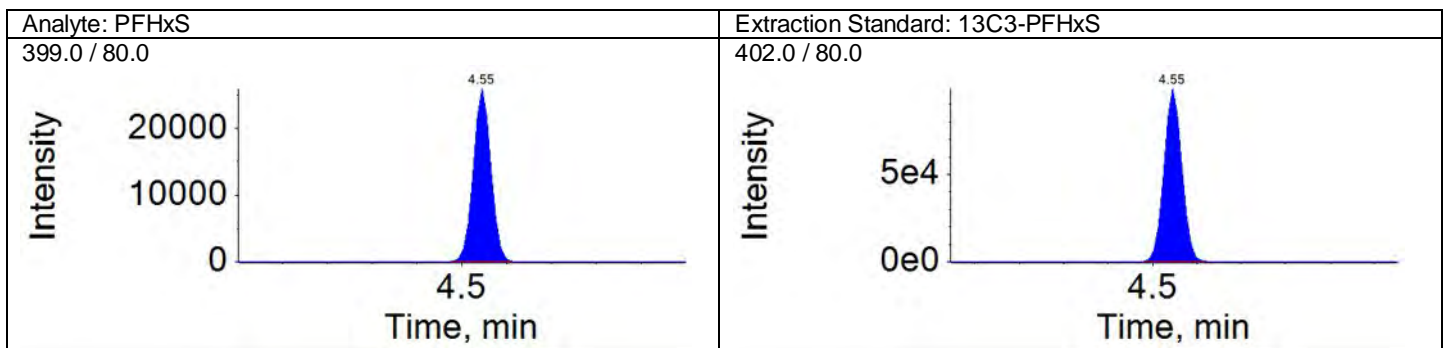
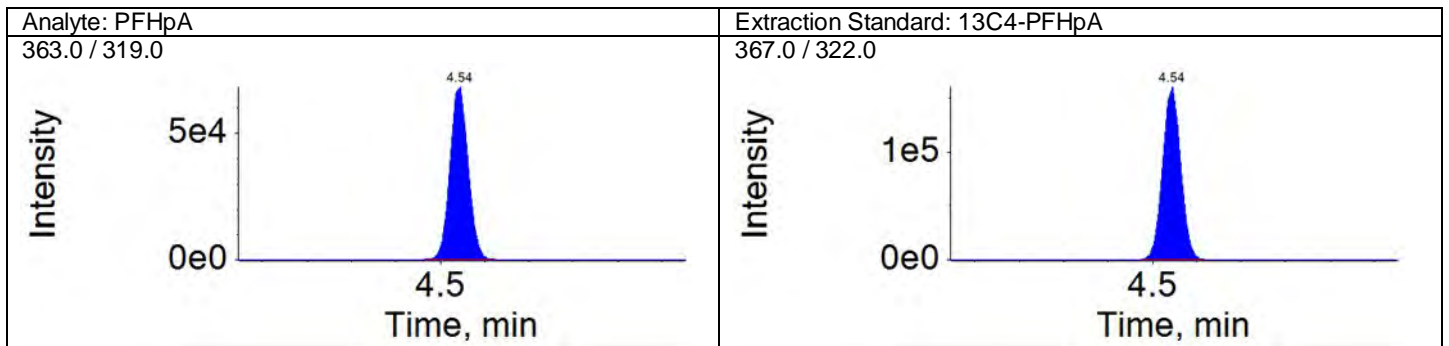
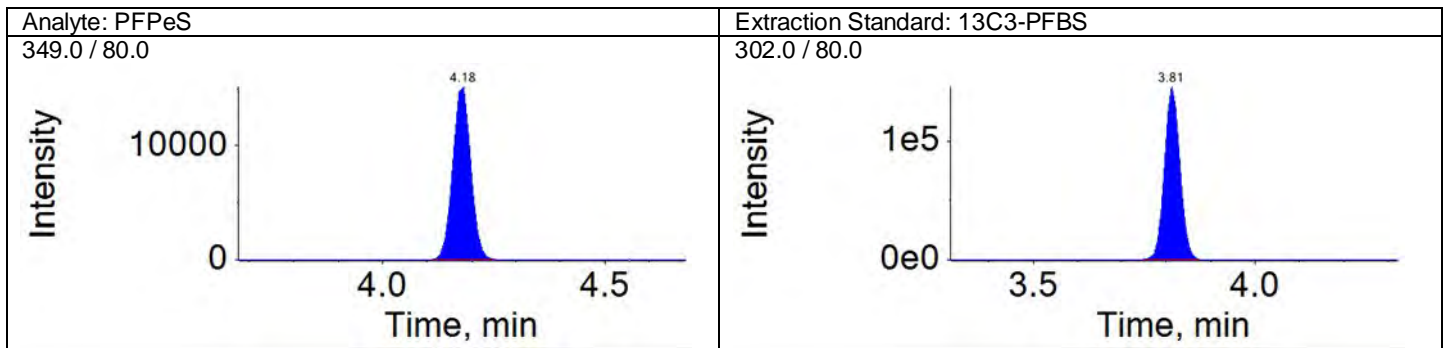
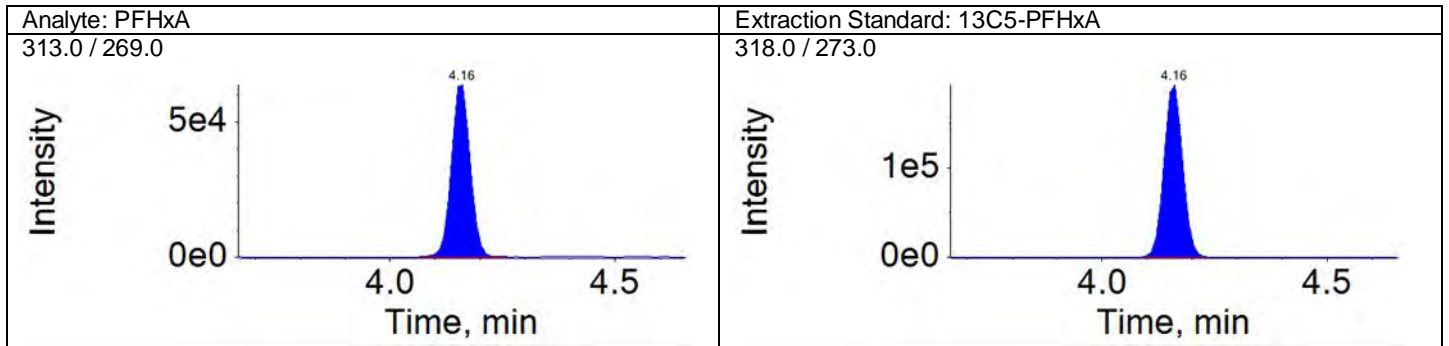
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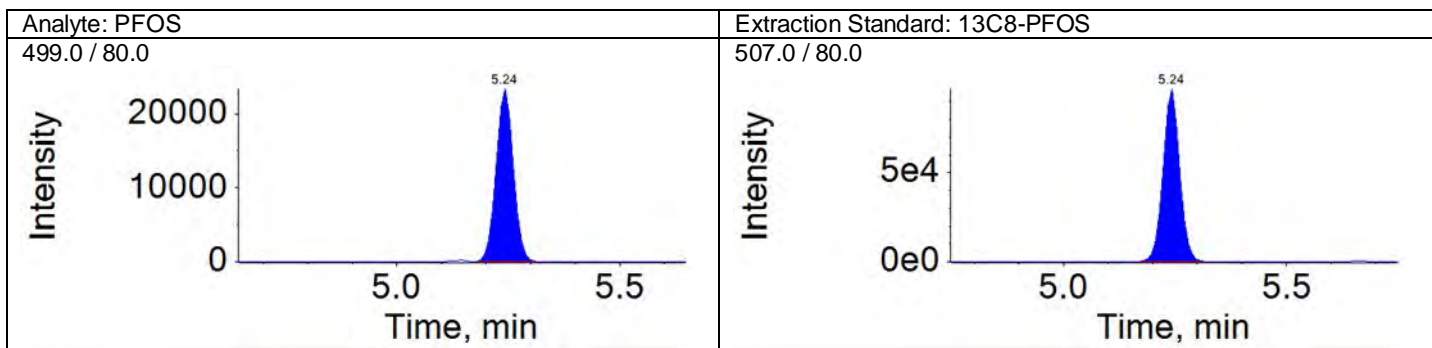
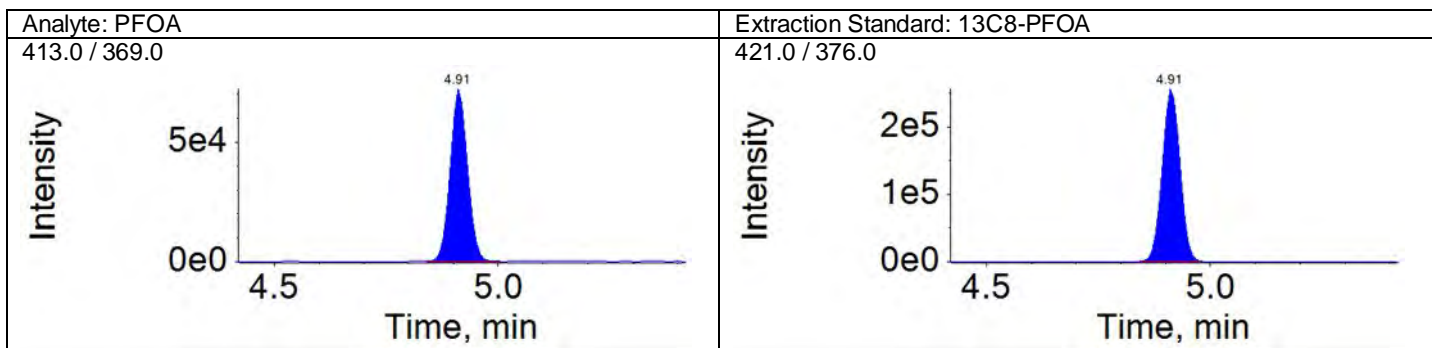
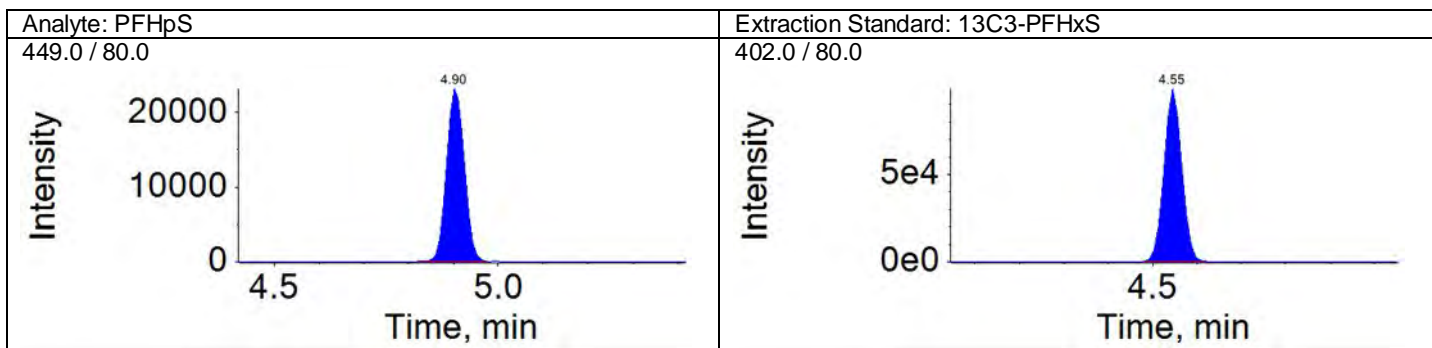
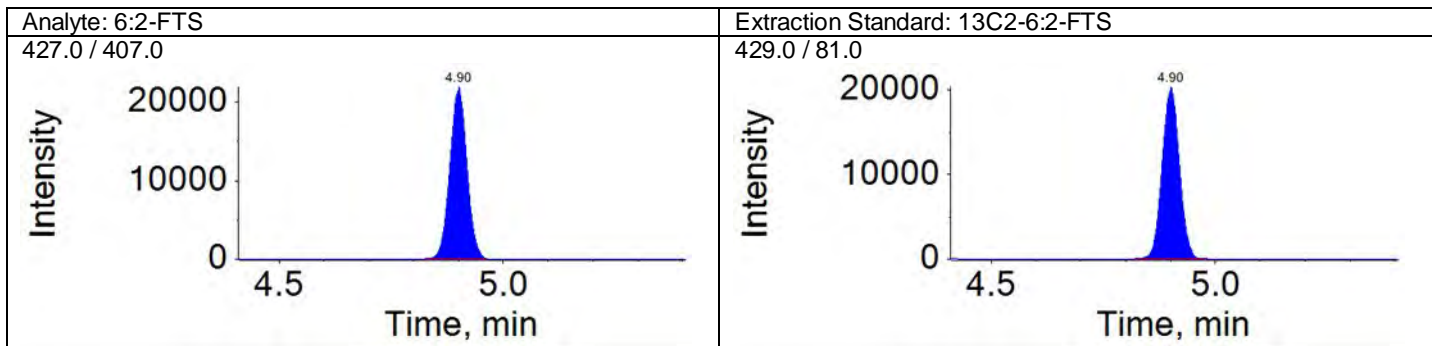
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ICAL Name: 18DEC06DCAL  
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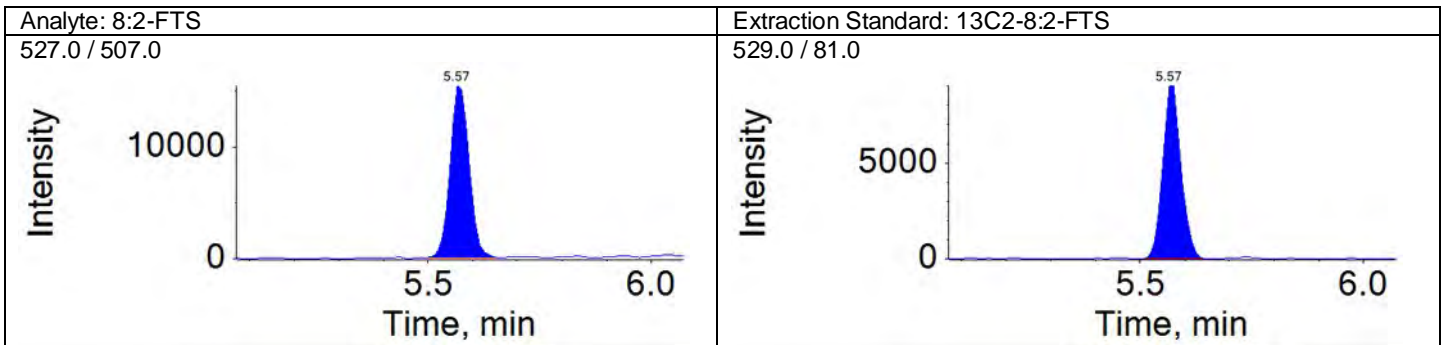
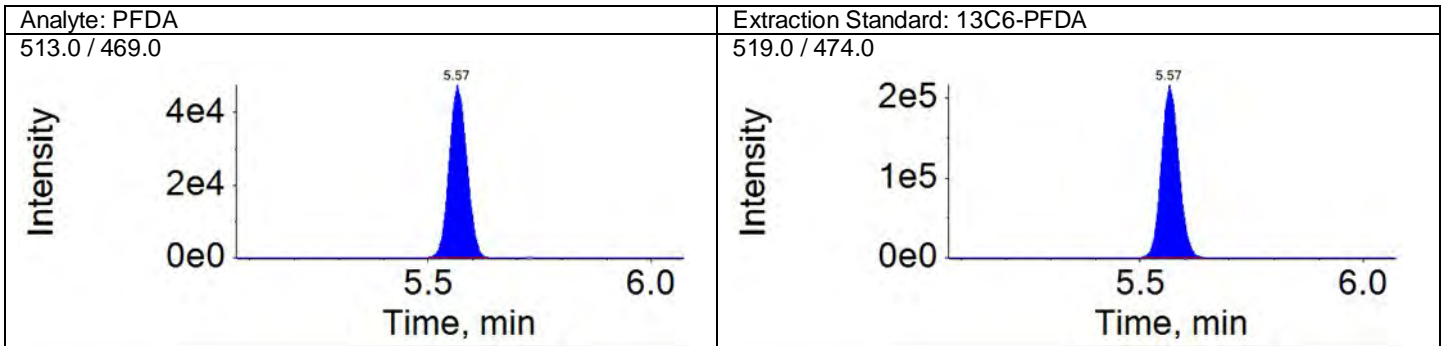
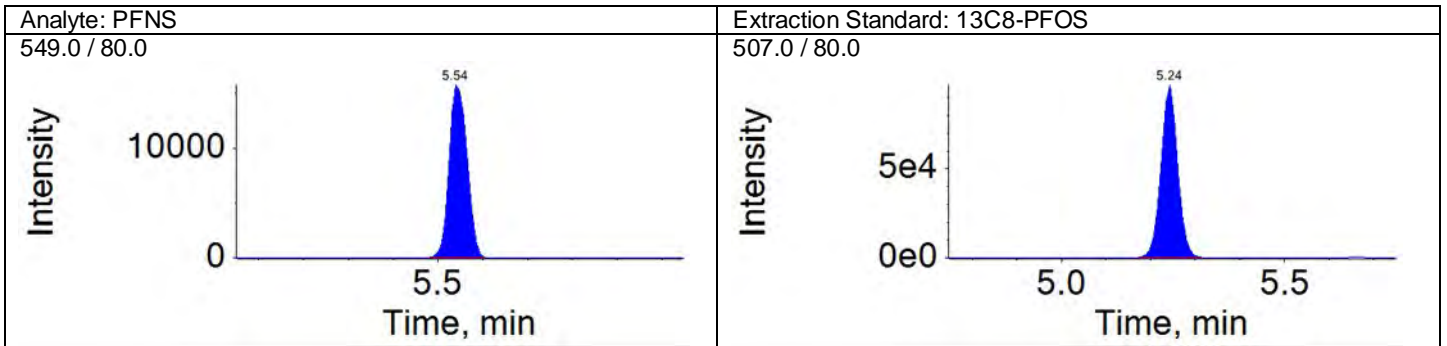
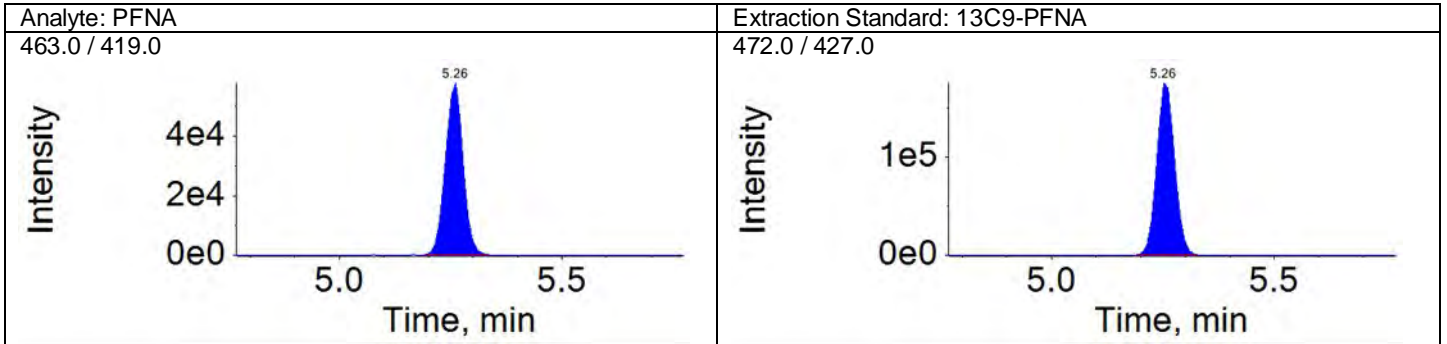
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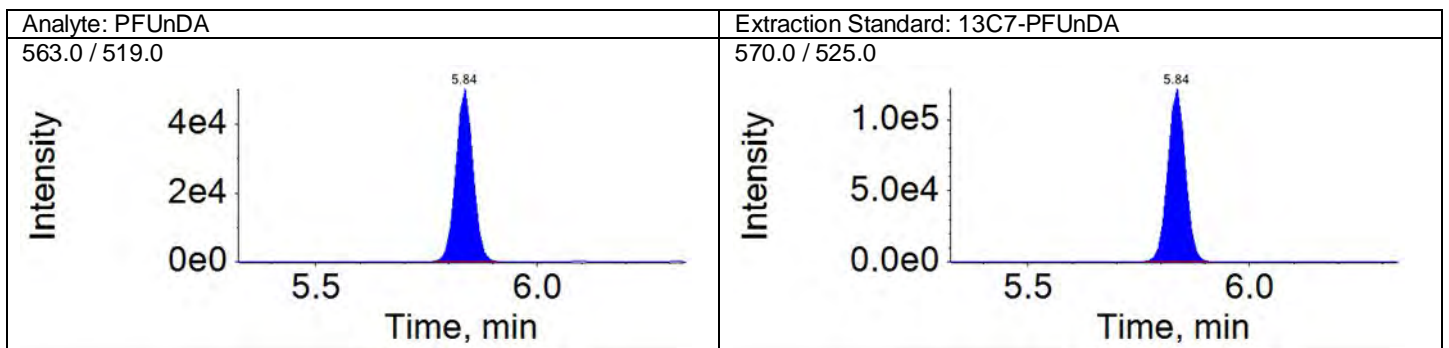
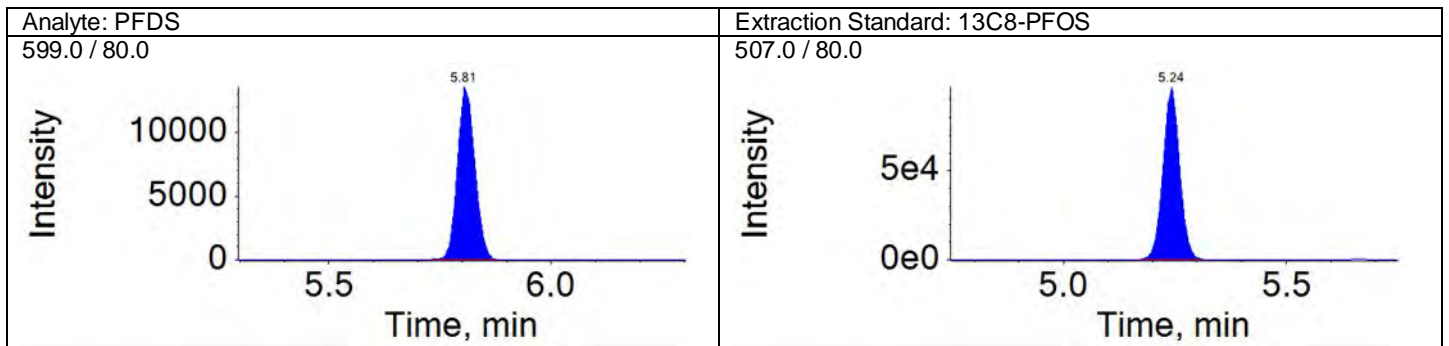
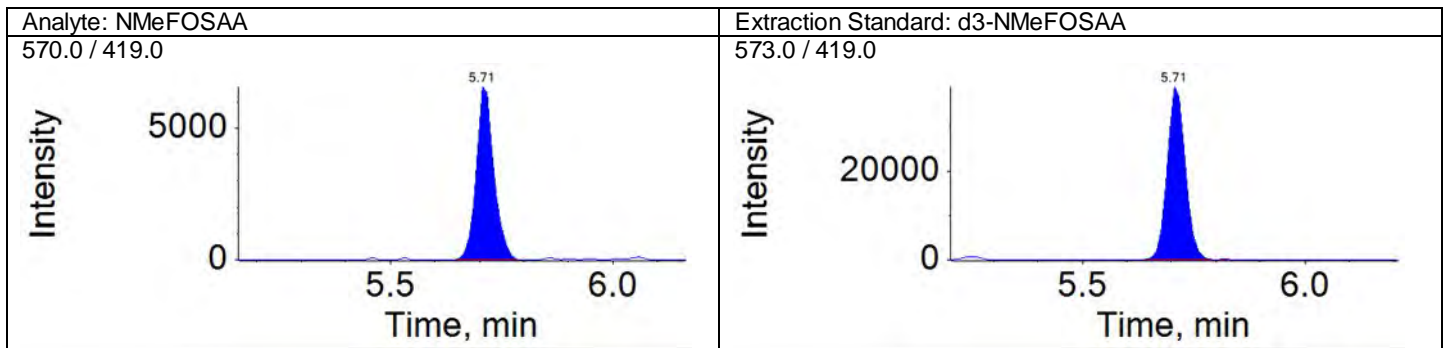
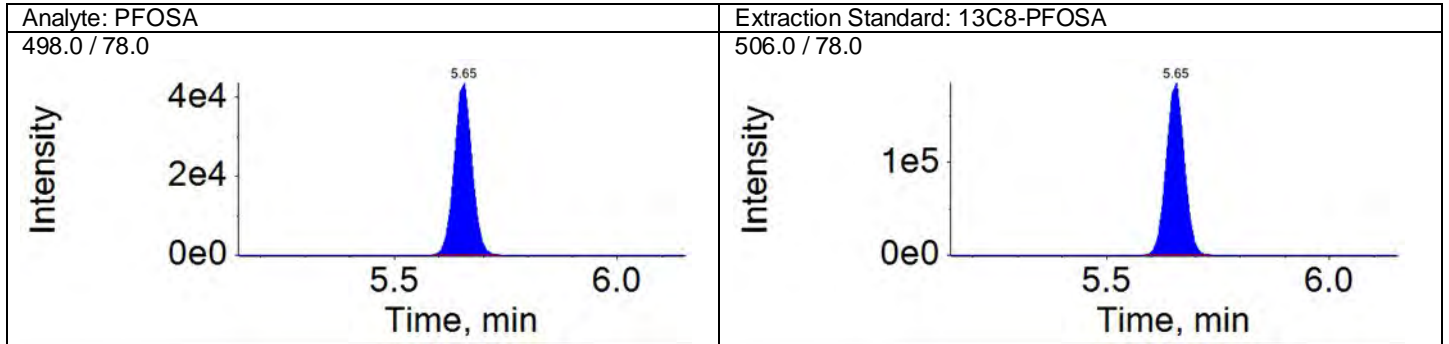
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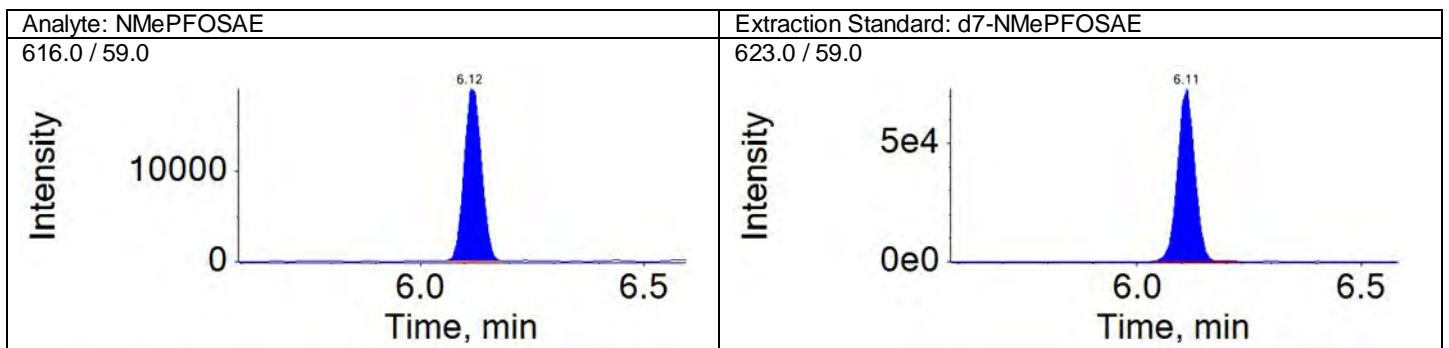
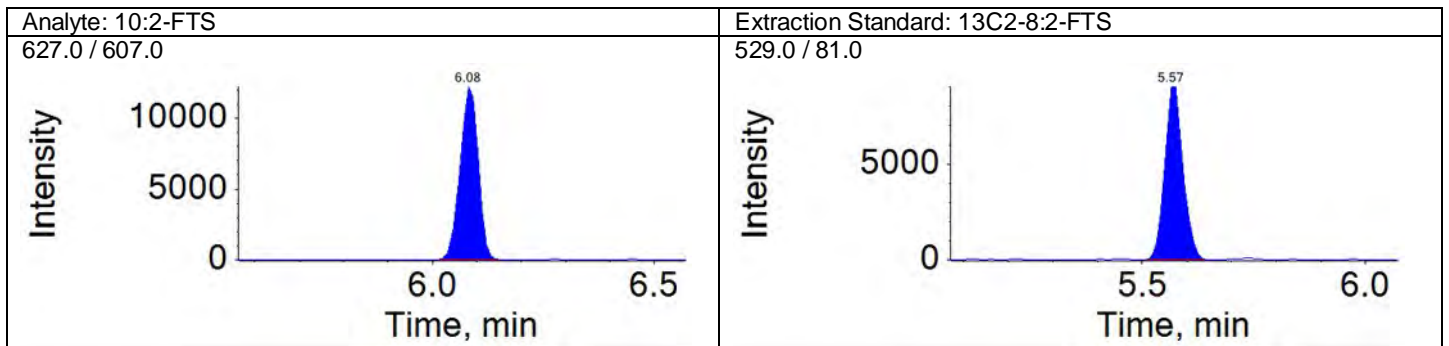
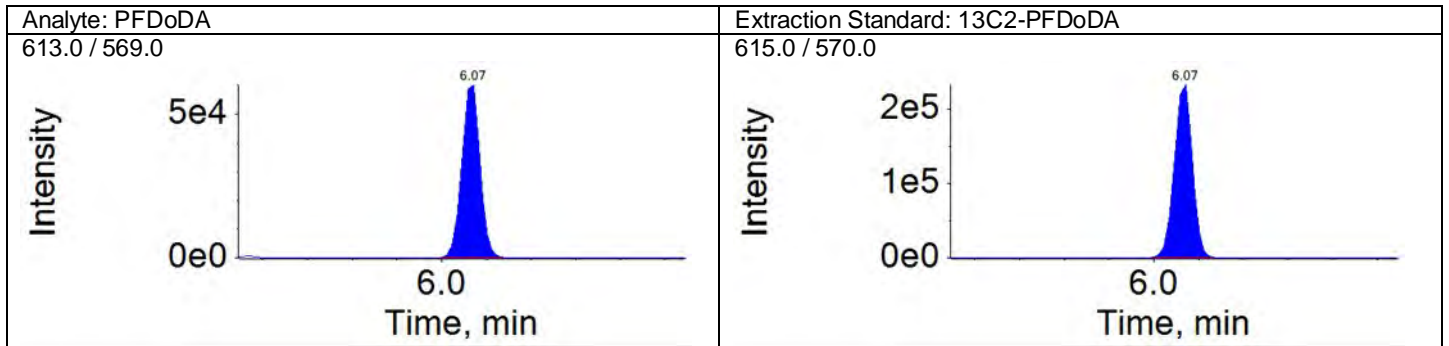
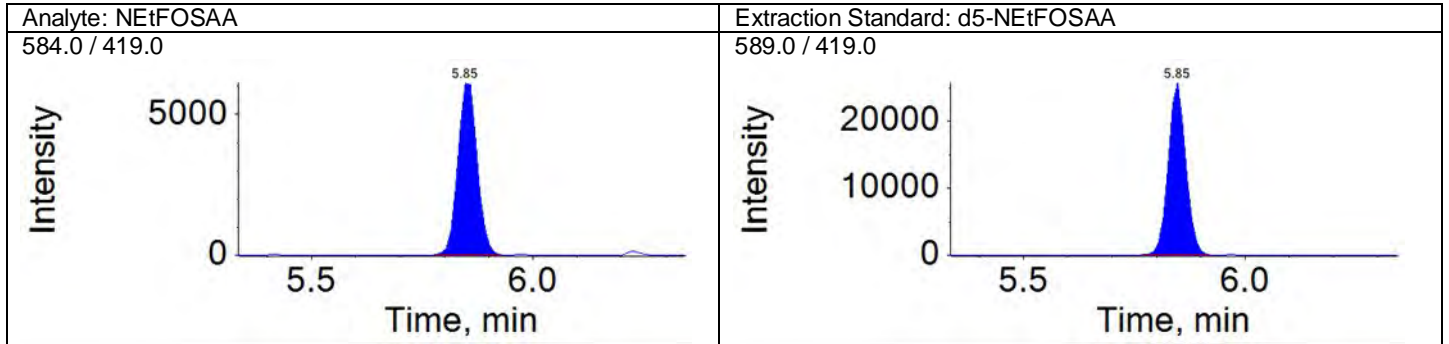
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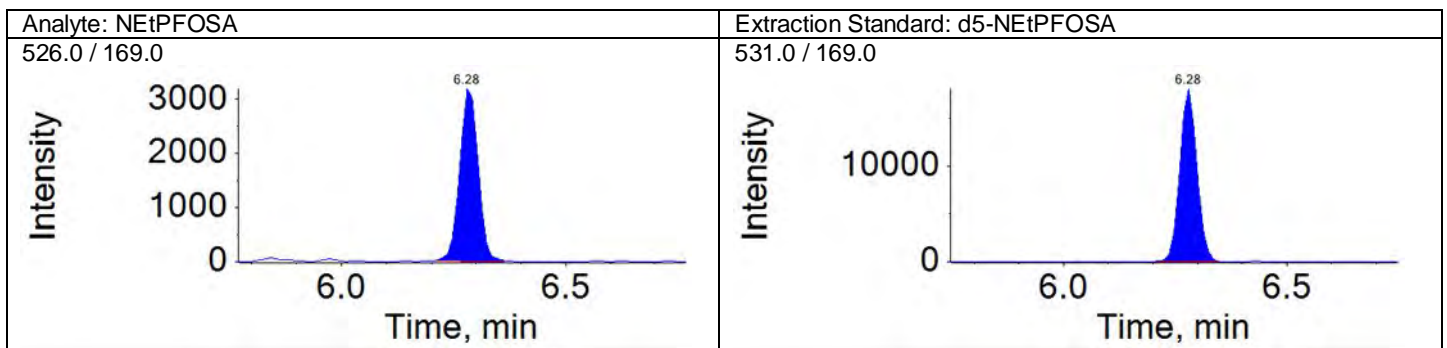
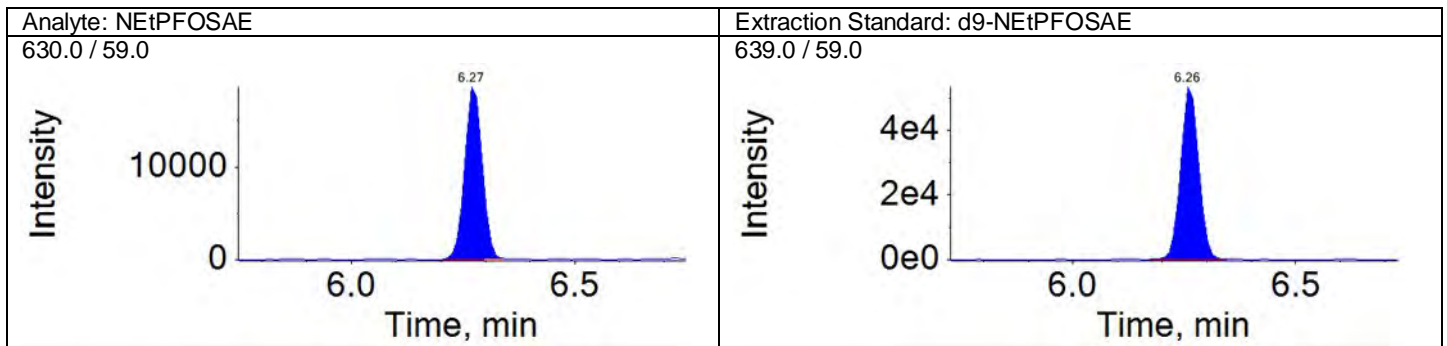
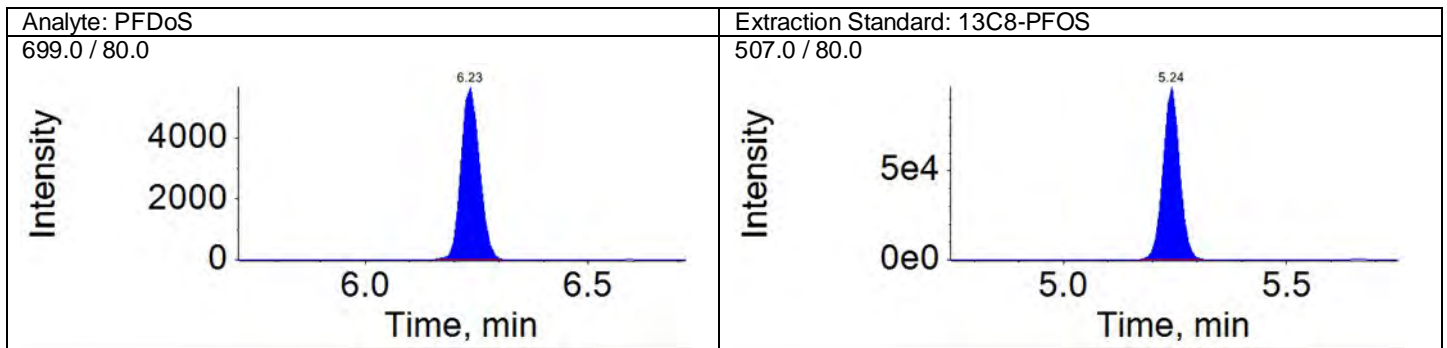
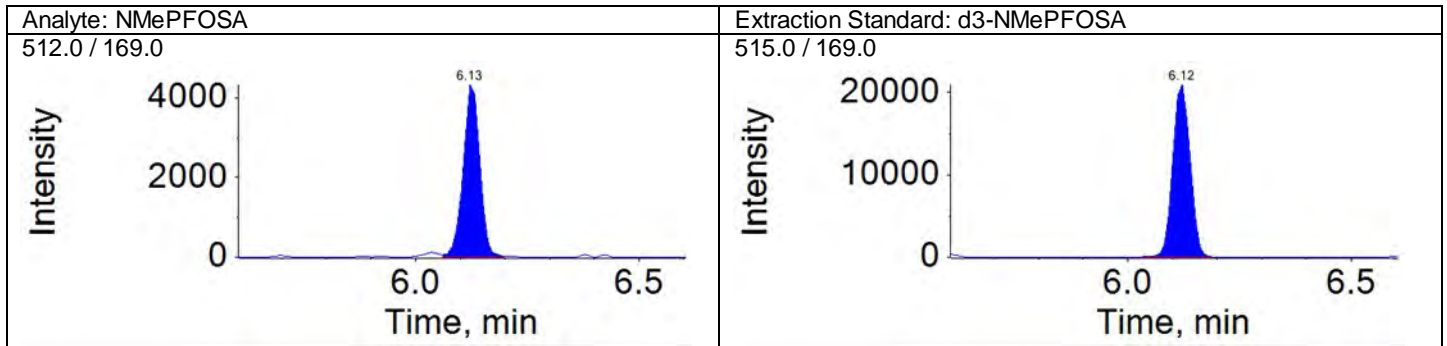
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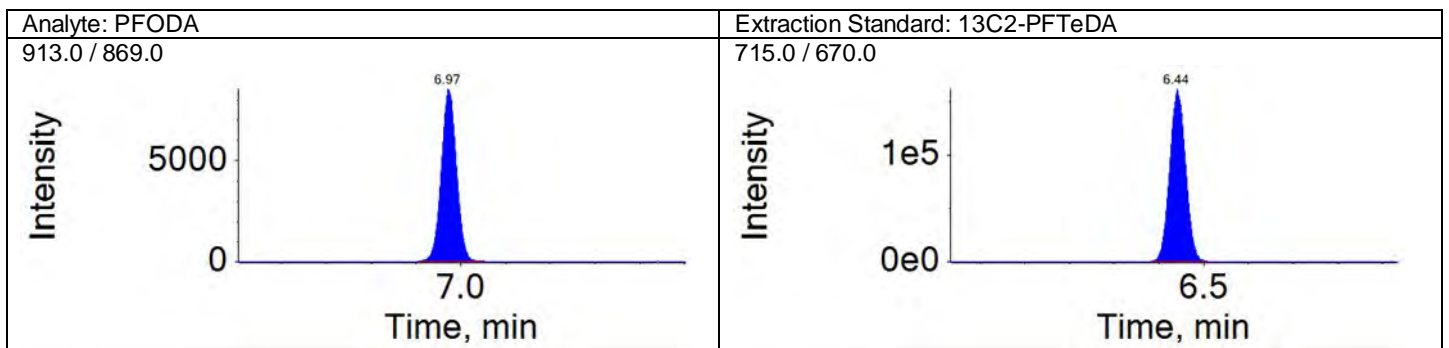
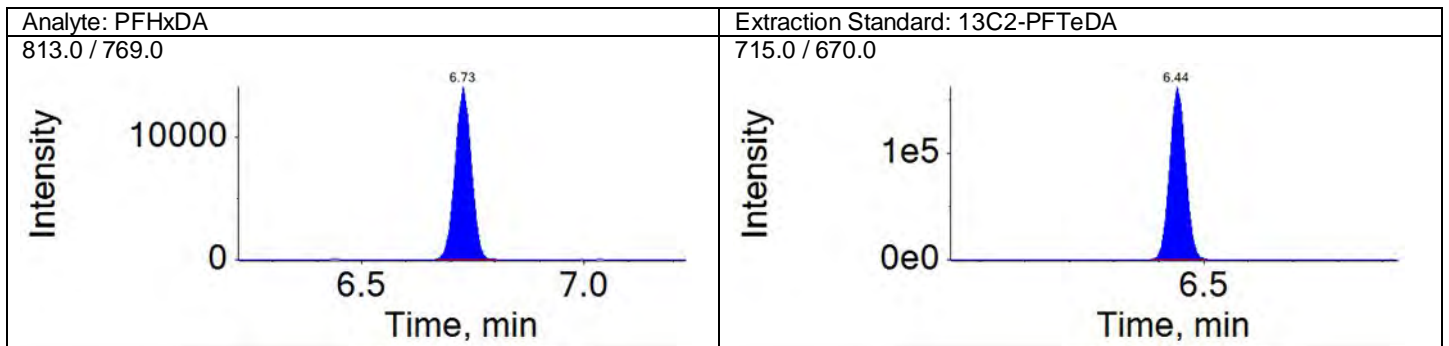
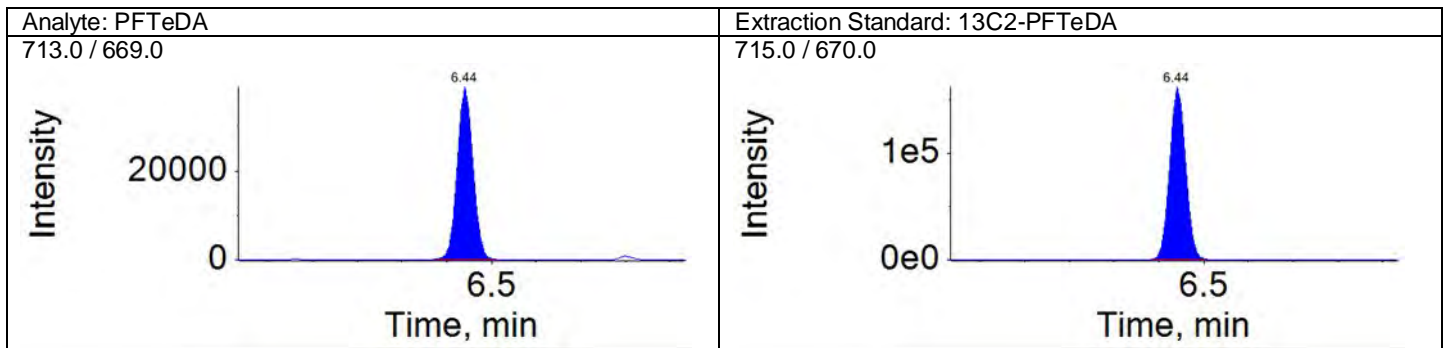
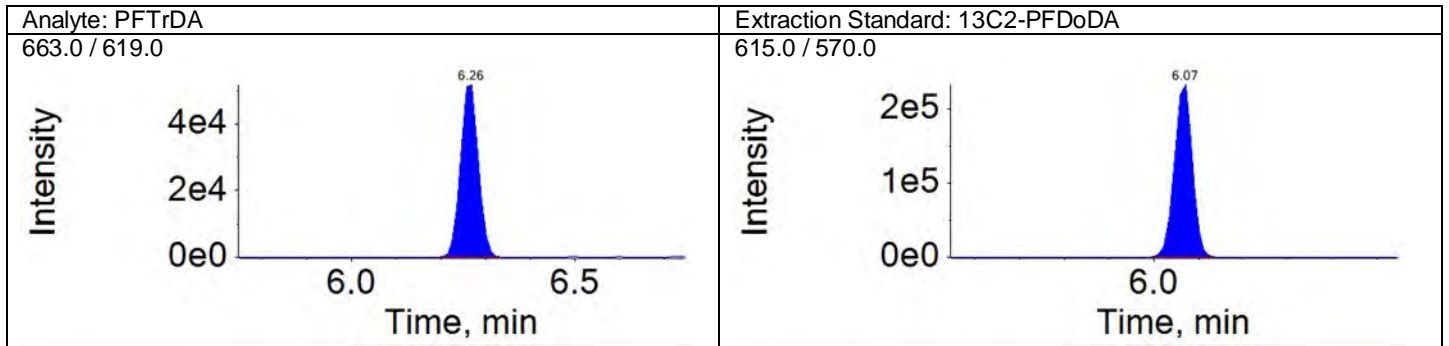
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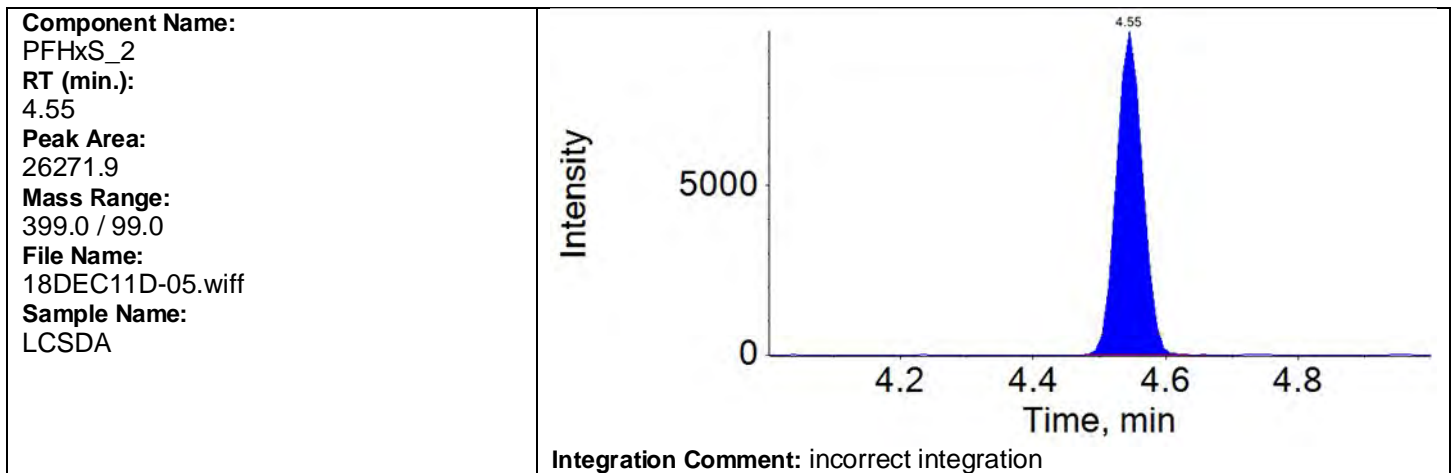
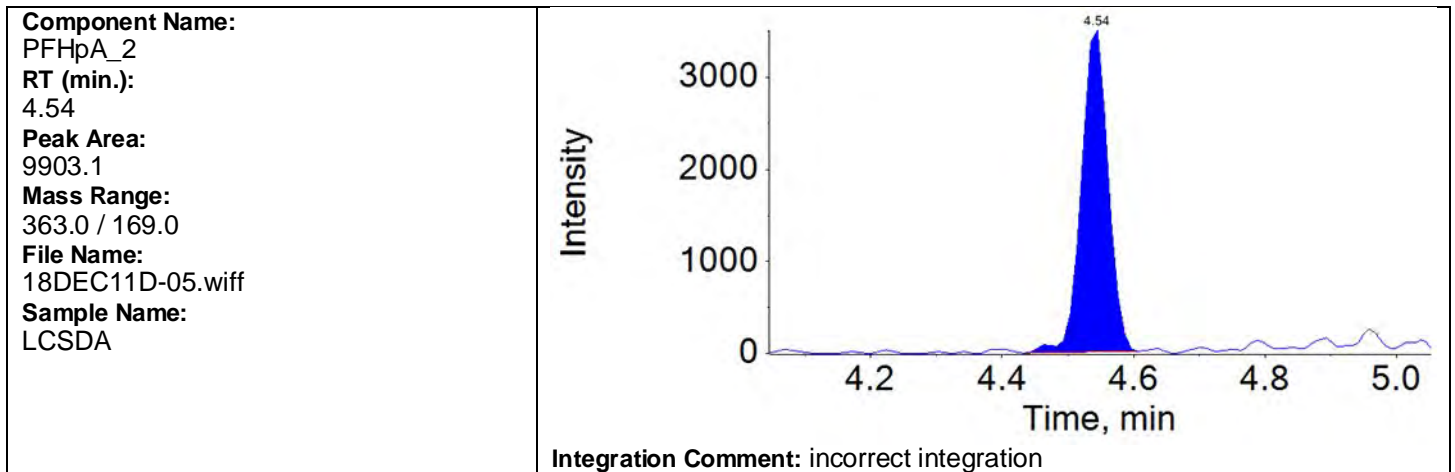
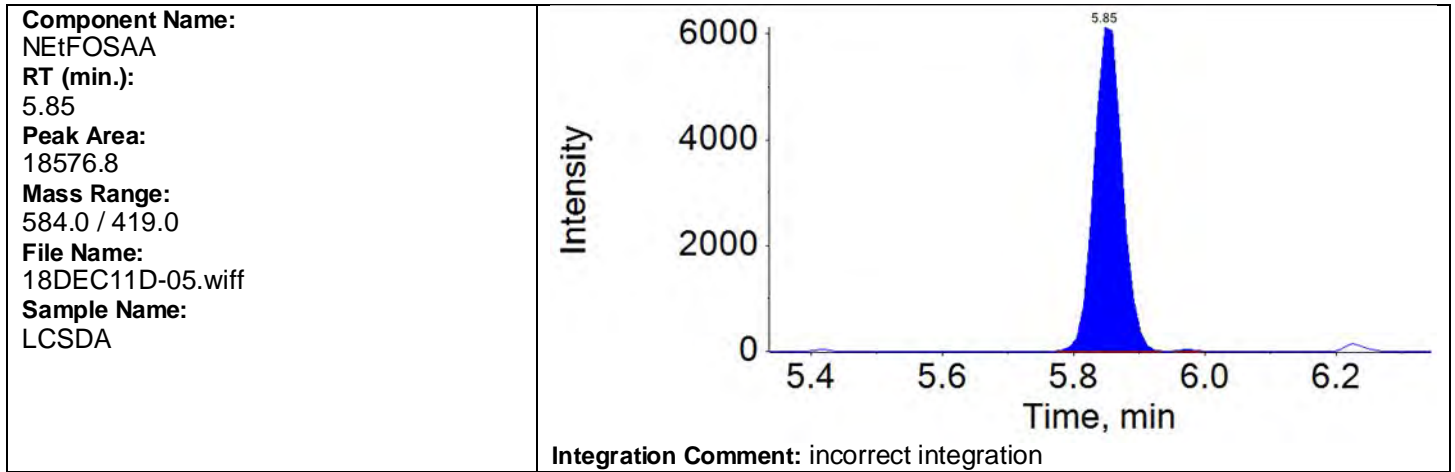
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Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

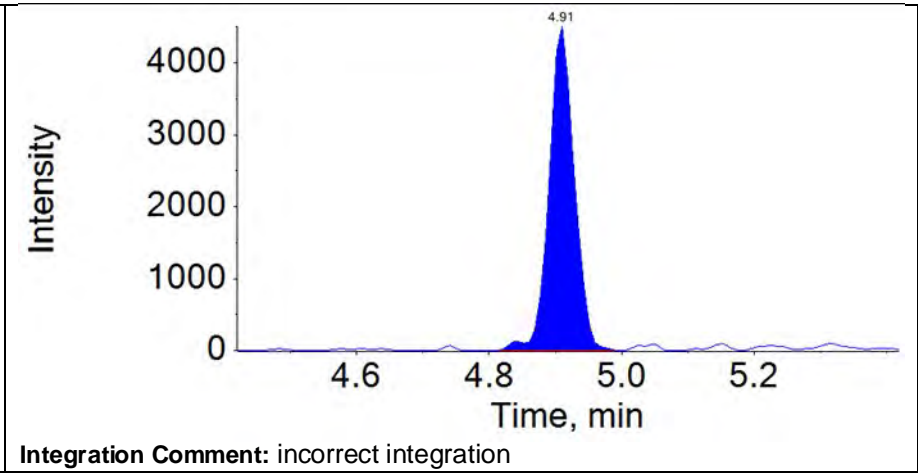
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Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

**Component Name:**  
PFOA\_2  
**RT (min.):**  
4.91  
**Peak Area:**  
11950.8  
**Mass Range:**  
413.0 / 169.0  
**File Name:**  
18DEC11D-05.wiff  
**Sample Name:**  
LCSDA



Results Table Name: 18343003  
Results Table Date: 12/13/2018 5:21:28 PM

Acquisition Method: 18AUG13\_3uL.dam  
QMethod File: 18AUG20QM

Ion Ratio Report

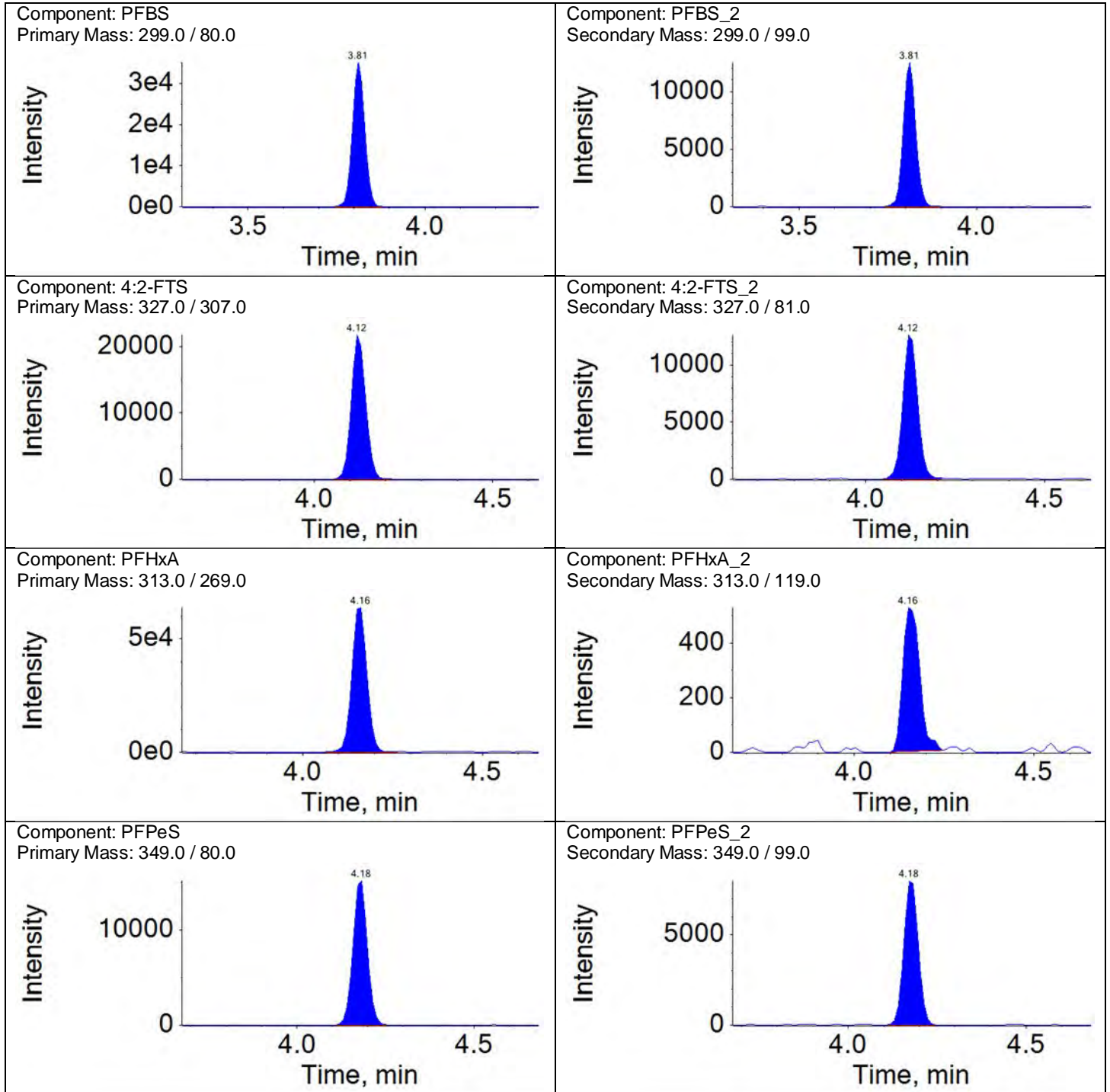
Sample Name: LCSDA

Instrument Name: LM27631

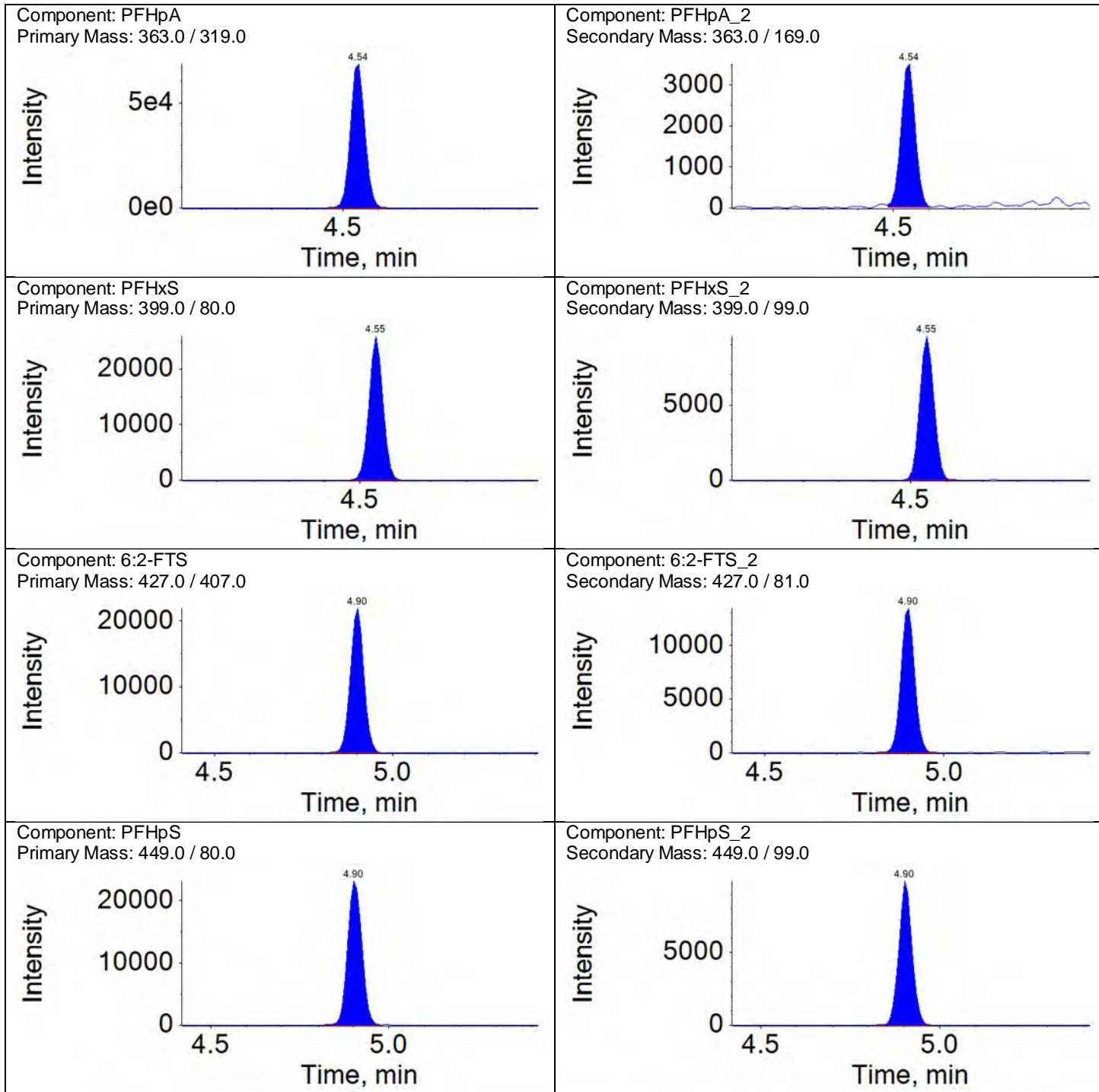
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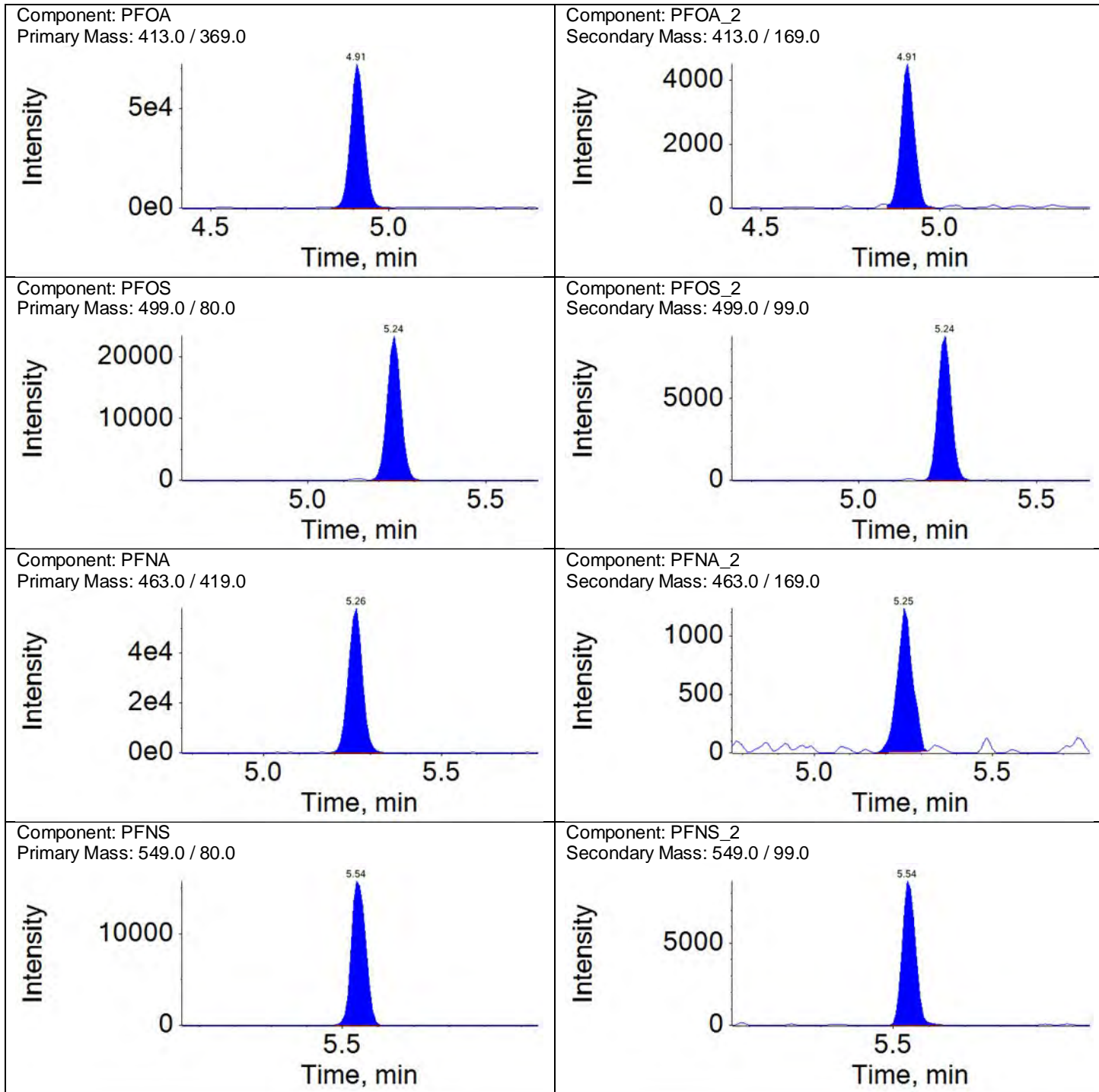
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	84321.4	A	N/A	0.3610			
PFBS_2	3.81	1.00	30437.6	A	N/A	0.3610	0	50	
4:2-FTS	4.12	1.00	60676.2	A	N/A	0.6015			
4:2-FTS_2	4.12	1.00	36498.7	A	N/A	0.6015	-9	50	
PFHxA	4.16	1.00	184665.9	A	N/A	0.0094			
PFHxA_2	4.16	1.00	1735.4	A	N/A	0.0094	5	50	
PFPeS	4.18	1.10	42539.0	A	N/A	0.5286			
PFPeS_2	4.18	1.10	22488.2	A	N/A	0.5286	0	50	
PFHpA	4.54	1.00	195107.6	A	N/A	0.0500			
PFHpA_2	4.54	1.00	9749.2	M	N/A	0.0500	-11	50	
PFHxS	4.55	1.00	70084.9	A	N/A	0.3745			
PFHxS_2	4.55	1.00	26245.5	M	N/A	0.3745	1	50	
6:2-FTS	4.90	1.00	57483.3	A	N/A	0.6241			
6:2-FTS_2	4.90	1.00	35876.5	A	N/A	0.6241	1	50	
PFHpS	4.90	1.08	64196.9	A	N/A	0.3929			
PFHpS_2	4.90	1.08	25220.4	A	N/A	0.3929	-6	50	
PFOA	4.91	1.00	192269.3	A	N/A	0.0612			
PFOA_2	4.91	1.00	11766.6	M	N/A	0.0612	-1	50	
PFOS	5.24	1.00	62546.5	A	N/A	0.3666			
PFOS_2	5.24	1.00	22927.1	A	N/A	0.3666	21	50	
PFNA	5.26	1.00	159190.9	A	N/A	0.0231			
PFNA_2	5.25	1.00	3674.8	A	N/A	0.0231	23	50	
PFNS	5.54	1.06	43802.9	A	N/A	0.5110			
PFNS_2	5.54	1.06	22384.8	A	N/A	0.5110	3	50	
PFDA	5.57	1.00	130541.9	A	N/A	0.0066			
PFDA_2	5.57	1.00	860.1	A	N/A	0.0066	-38	50	
8:2-FTS	5.57	1.00	45593.9	A	N/A	0.6525			
8:2-FTS_2	5.57	1.00	29752.3	A	N/A	0.6525	4	50	
NMeFOSAA	5.71	1.00	17914.3	A	N/A	0.2091			
NMeFOSAA_2	5.72	1.00	3745.7	A	N/A	0.2091	-21	50	
PFDS	5.81	1.11	36858.9	A	N/A	0.5331			
PFDS_2	5.81	1.11	19649.8	A	N/A	0.5331	7	50	
PFOA_2	5.84	1.00	134538.3	A	N/A	0.0034			
PFOA_2	5.83	1.00	454.9	A	N/A	0.0034	-19	50	
NEtFOSAA	5.85	1.00	18504.8	M	N/A	0.5979			
NEtFOSAA_2	5.85	1.00	11064.6	A	N/A	0.5979	-12	50	
PFOA_2	6.07	1.00	170254.2	A	N/A	0.0141			
PFOA_2	6.06	1.00	2396.5	A	N/A	0.0141	5	50	
10:2-FTS	6.08	1.09	34528.2	A	N/A	0.6220			
10:2-FTS_2	6.08	1.09	21478.2	A	N/A	0.6220	-10	50	
PFOA_2	6.26	1.03	144307.3	A	N/A	0.0085			
PFOA_2	6.26	1.03	1230.9	A	N/A	0.0085	24	50	
PFOA_2	6.44	1.00	94471.4	A	N/A	0.0070			
PFOA_2	6.45	1.00	660.9	A	N/A	0.0070	5	50	
PFOA_2	6.73	1.04	35560.5	A	N/A	0.0581			
PFOA_2	6.73	1.04	2066.0	A	N/A	0.0581	-4	50	
PFOA_2	6.97	1.08	19993.0	A	N/A	0.0270			
PFOA_2	6.97	1.08	540.4	A	N/A	0.0270	-2	50	

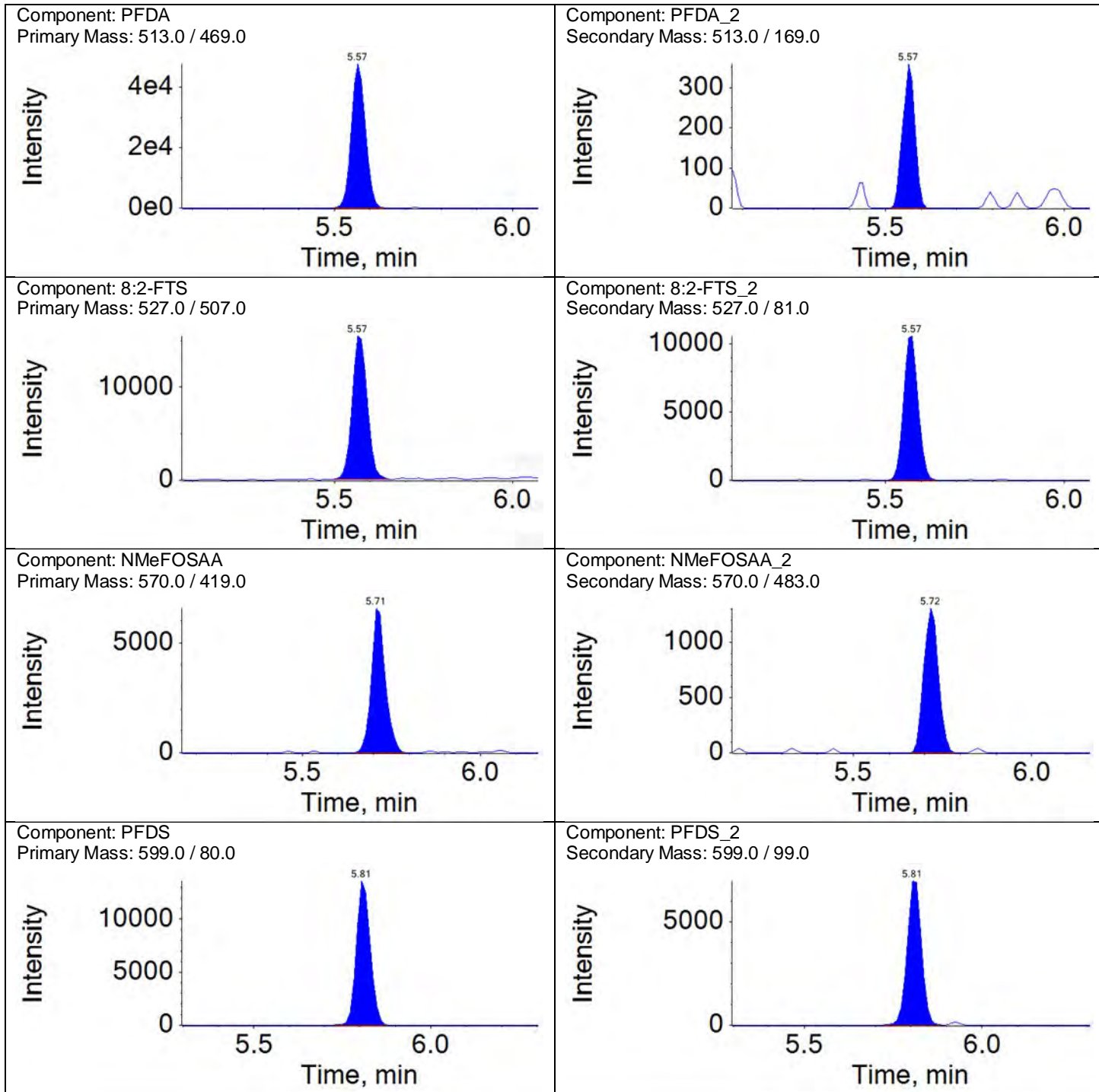


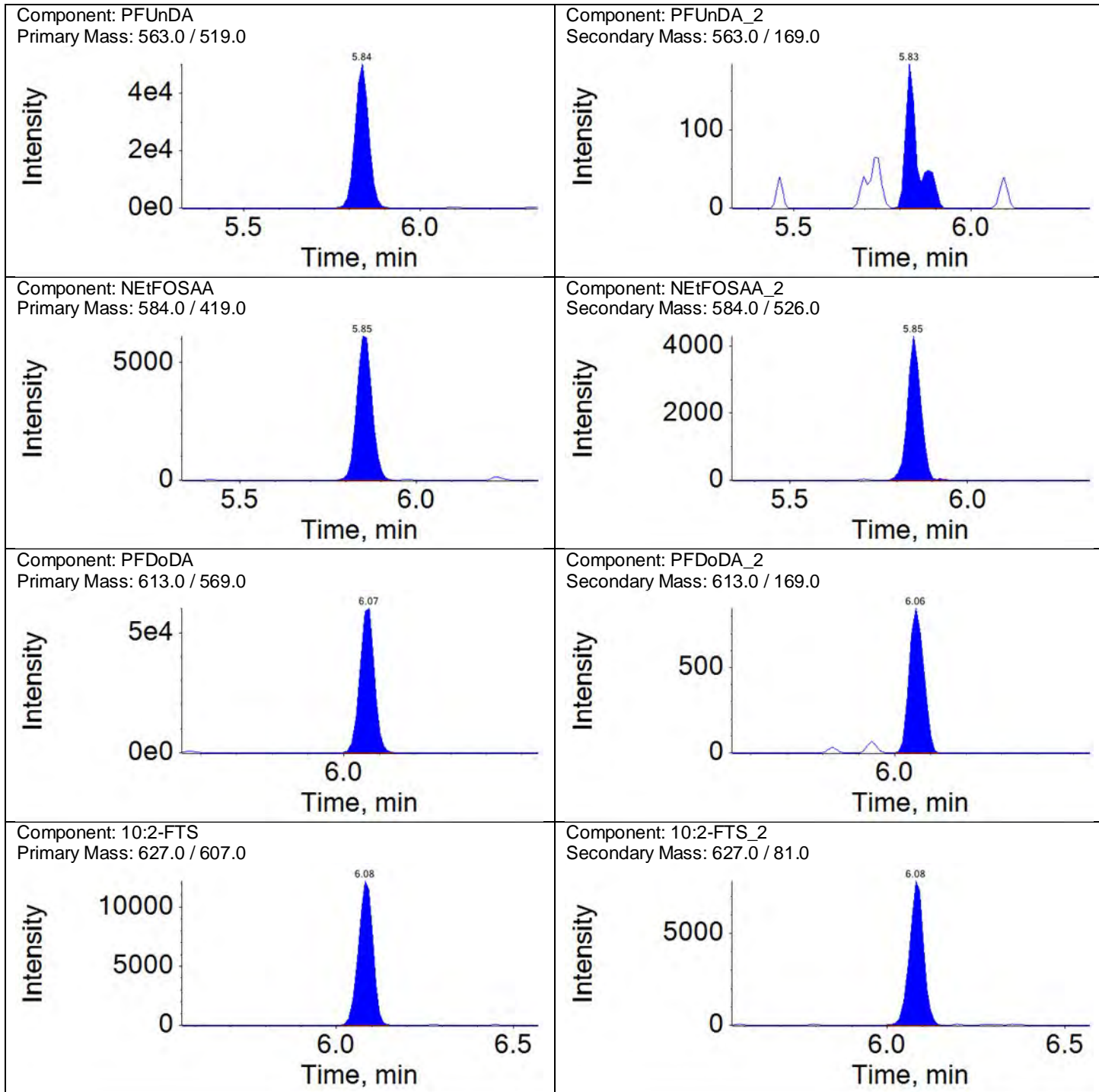




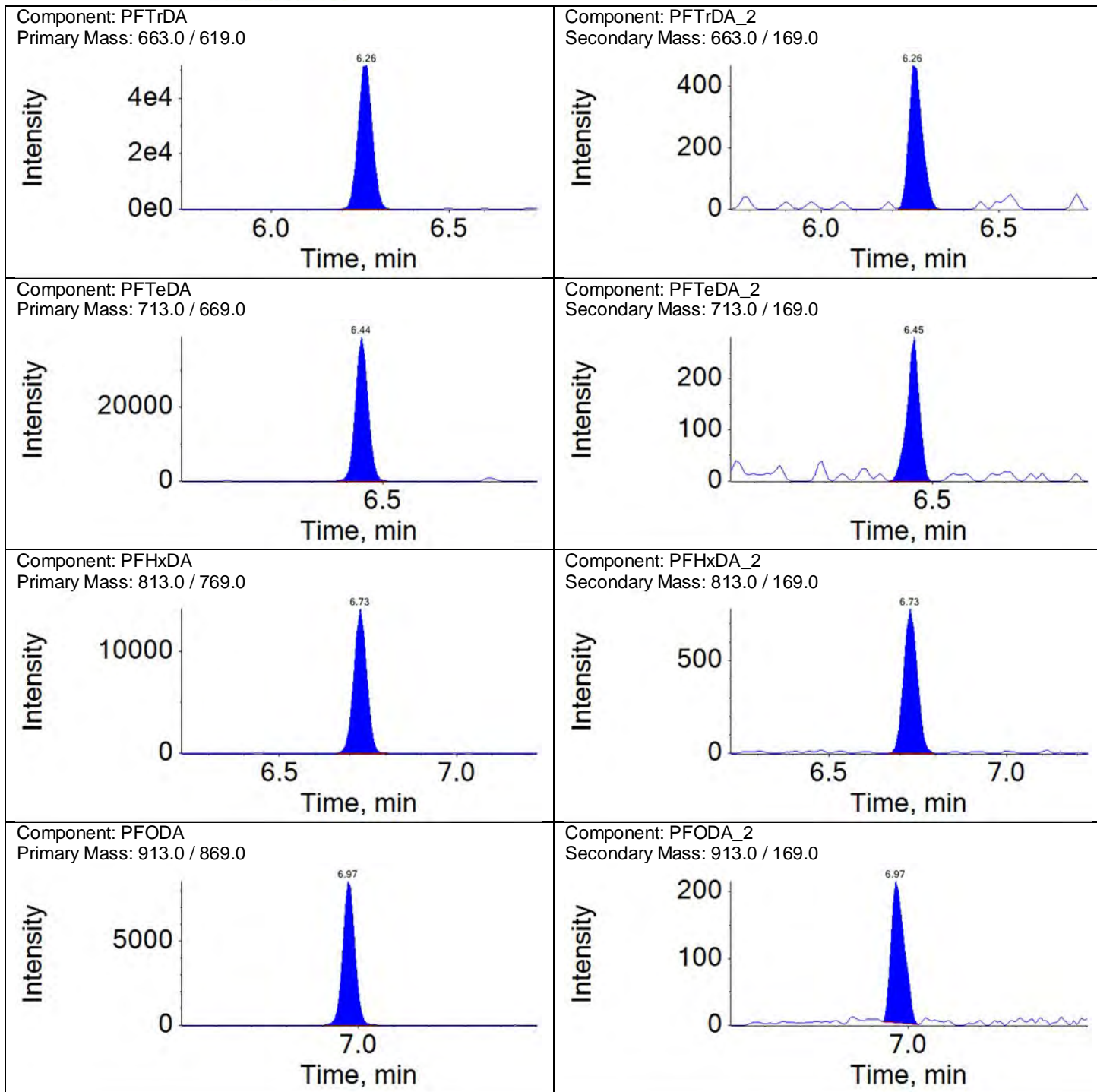














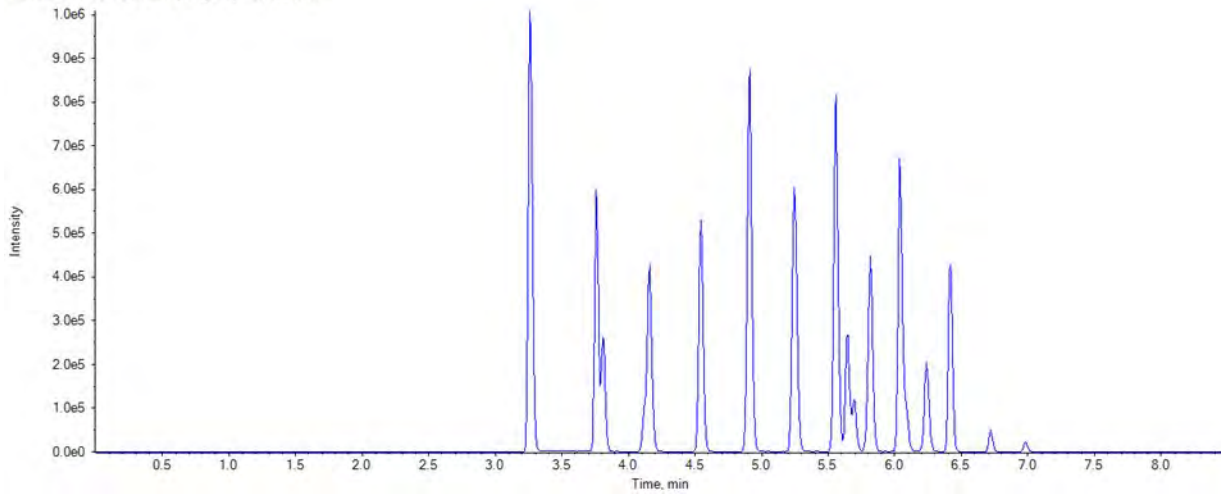
Lab Control Sample Recovery

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCS348012	EPA 537 mod QSM 5.1 table B-15 18348012	18DEC19D-24.wiff	2018-12-19T13:35:08

TIC from 18DEC19D-24.wiff (sample 1) - LCS348012



Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.00	974508.2	942675.8	3	50	
13C2-PFOA	5.00	525286.0	520268.5	1	50	
13C4-PFOS	4.78	316213.2	307968.9	3	50	
13C2-PFDA	5.00	502427.7	487375.3	3	50	

Lab Control Sample Recovery

ICAL Name: 18DEC18DCAL      Result Table: 18348012 12/20/2018 9:25:03 AM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCS348012	EPA 537 mod QSM 5.1 table B-15 18348012	18DEC19D-24.wiff	2018-12-19T13:35:08

Analyte Name	Analyte Area	Ext Std Area	Area Ratio	Adj Actual Conc	Sample Result	%REC	% REC Limit	%REC OOS
PFBA	263267.7	969608.1	0.272	5.440	5.767	106	70-130	
PFPeA	257897.4	929635.2	0.277	5.440	5.728	105	70-130	
PFBS	105456.3	386100.5	0.273	4.812	5.393	112	72-127	
4:2-FTS	96727.1	59616.9	1.622	14.944	17.027	114	70-130	
PFHxA	236169.5	646437.1	0.365	5.440	6.020	111	77-132	
PFPeS	53174.2	386100.5	0.138	5.104	5.608	110	70-130	
PFHpA	253234.8	530602.1	0.477	5.440	6.330	116	75-139	
PFHxS	72445.9	318230.0	0.228	5.144	4.429	86	71-130	
6:2-FTS	84540.1	45304.7	1.866	15.168	18.581	123	70-130	
PFHpS	82489.3	318230.0	0.259	5.176	5.485	106	70-130	
PFOA	248033.9	897885.3	0.276	5.440	5.854	108	76-136	
PFOS	77623.8	293942.8	0.264	5.200	4.625	89	67-134	
PFNA	222727.1	620557.6	0.359	5.440	5.706	105	73-144	
PFNS	58095.8	293942.8	0.198	5.224	5.027	96	70-130	
PFDA	218633.8	843769.8	0.259	5.440	5.353	98	67-141	
8:2-FTS	88205.2	45389.0	1.943	15.328	15.645	102	70-130	
PFOSA	124620.4	484575.7	0.257	5.440	5.145	95	70-130	
NMeFOSAA	51992.2	196381.7	0.265	5.440	6.582	121	67-124	
PFDS	52602.9	293942.8	0.179	5.240	5.876	112	70-130	
PFUnDA	233758.8	539257.7	0.433	5.440	5.743	106	83-132	
NEtFOSAA	48760.3	149255.8	0.327	5.440	6.660	122	60-131	
PFDoDA	296287.7	1021767.7	0.290	5.440	5.843	107	72-137	
10:2-FTS	75083.7	45389.0	1.654	15.424	13.476	87	70-130	
NMePFOSAE	43767.6	133732.7	0.327	5.440	5.776	106	70-130	
NMePFOSA	6699.4	14683.9	0.456	5.440	9.213	169	70-130	OOS
PFDoS	21927.5	293942.8	0.075	5.280	4.521	86	70-130	
NEtPFOSAE	46263.8	117553.5	0.394	5.440	5.143	95	70-130	
NEtPFOSA	4634.5	14402.3	0.322	5.440	6.021	111	70-130	
PFTrDA	291026.2	1021767.7	0.285	5.440	5.845	107	57-137	
PFTeDA	198393.6	745824.5	0.266	5.440	5.730	105	70-142	
PFHxDA	94333.2	745824.5	0.126	5.440	5.556	102	70-130	
PFODA	46758.9	745824.5	0.063	5.440	3.603	66	70-130	OOS

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

**Lab Control Sample Recovery**

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MSM at 10:14 am, 12/20/18

**REVIEWED**  
By umar at 4:41 pm, 12/28/18

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	LCS348012	Data File:	18DEC19D-24.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18348012	Acquis Date:	2018-12-19T13:35:08
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	75	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18348012
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	18348012	Operator:	MM26157
Sample Wt.:	0.25000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	974508.2	942675.8	3	50	
13C2-PFOA	5.0	525286.0	520268.5	1	50	
13C4-PFOS	4.8	316213.2	307968.9	3	50	
13C2-PFDA	5.0	502427.7	487375.3	3	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	969608.1	13C3-PFBA	974508.2	0.995	20.000	17.624	88	50-150	
E13C5-PFPeA	929635.2	13C3-PFBA	974508.2	0.954	20.000	17.794	89	50-150	
E13C3-PFBS	386100.5	13C3-PFBA	974508.2	0.396	18.600	15.431	83	50-150	
E13C2-4:2-FTS	59616.8	13C2-PFOA	525286.0	0.113	18.680	17.242	92	50-150	
E13C5-PFHxA	646437.1	13C2-PFOA	525286.0	1.231	20.000	17.608	88	50-150	
E13C3-PFHxS	318230.0	13C2-PFOA	525286.0	0.606	18.920	18.337	97	50-150	
E13C4-PFHpA	530602.1	13C2-PFOA	525286.0	1.010	20.000	17.453	87	50-150	
E13C2-6:2-FTS	45304.7	13C2-PFOA	525286.0	0.086	19.000	17.358	91	50-150	
E13C8-PFOA	897885.3	13C2-PFOA	525286.0	1.709	20.000	18.801	94	50-150	
E13C8-PFOS	293942.8	13C4-PFOS	316213.2	0.930	19.120	16.628	87	50-150	
E13C9-PFNA	620557.6	13C4-PFOS	316213.2	1.962	20.000	17.858	89	50-150	
E13C6-PFDA	843769.8	13C2-PFDA	502427.7	1.679	20.000	19.135	96	50-150	
E13C2-8:2-FTS	45389.0	13C2-PFDA	502427.7	0.090	19.160	18.624	97	50-150	
E13C8-PFOSA	484575.7	13C2-PFDA	502427.7	0.964	20.000	15.023	75	50-150	
Ed3-NMeFOSAA	196381.7	13C2-PFDA	502427.7	0.391	20.000	17.201	86	50-150	
E13C7-PFUoDA	539257.7	13C2-PFDA	502427.7	1.073	20.000	17.971	90	50-150	
Ed5-NEtFOSAA	149255.8	13C2-PFDA	502427.7	0.297	20.000	17.506	88	50-150	
E13C2-PFDoDA	1021767.7	13C2-PFDA	502427.7	2.034	20.000	17.114	86	50-150	
Ed7-NMePFOSAE	133732.7	13C2-PFDA	502427.7	0.266	20.000	9.513	48	50-150	OOS
Ed3-NMePFOSA	14683.9	13C2-PFDA	502427.7	0.029	20.000	3.212	16	50-150	OOS
Ed9-NEtPFOSAE	117553.5	13C2-PFDA	502427.7	0.234	20.000	9.568	48	50-150	OOS
Ed5-NEtPFOSA	14402.3	13C2-PFDA	502427.7	0.029	20.000	3.977	20	50-150	OOS
E13C2-PFTeDA	745824.5	13C2-PFDA	502427.7	1.484	20.000	16.733	84	50-150	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

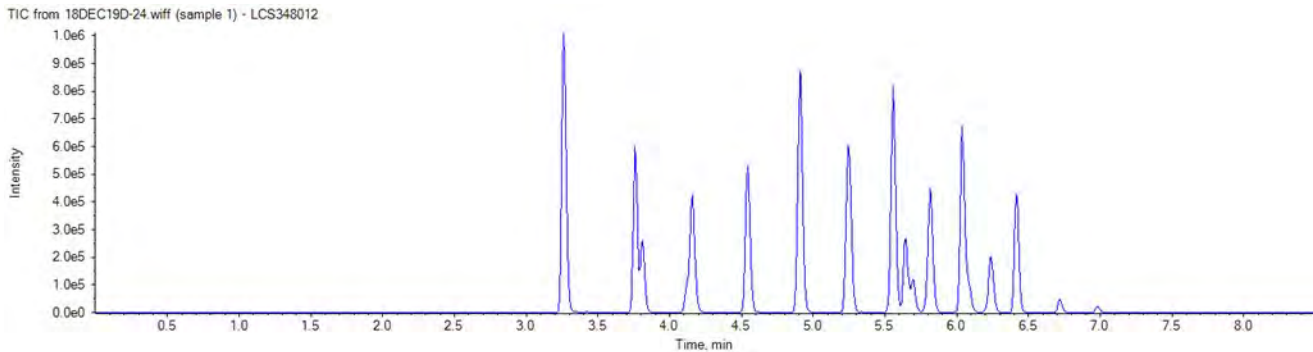
**Analyte Quantitation Peak Table**

Sample Name: LCS348012 Instrument Name: LM27631 File Name: 18DEC19D-24.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
0.25000	1.000	1.00	1.000

Analyte Name	RT	RRT	Analyte Area Response	E	Int Typ	ES Name	ES RT	ES Area Response	Area Ratio	Sample Result (ng/L)
PFBA	3.26	1.000	263267.7		A	13C4-PFBA	3.26	969608.1	0.272	5.767
PFPeA	3.76	1.000	257897.4		A	13C5-PFPeA	3.76	929635.2	0.277	5.728
PFBS	3.81	1.000	105456.3		A	13C3-PFBS	3.81	386100.5	0.273	5.393
4:2-FTS	4.12	1.000	96727.1		A	13C2-4:2-FTS	4.12	59616.9	1.622	17.027
PFHxA	4.16	1.000	236169.5		A	13C5-PFHxA	4.16	646437.1	0.365	6.020
PFPeS	4.18	1.100	53174.2		A	13C3-PFBS	3.81	386100.5	0.138	5.608
PFHpA	4.54	1.000	253234.8		A	13C4-PFHpA	4.54	530602.1	0.477	6.330
PFHxS	4.55	1.000	72445.9		A	13C3-PFHxS	4.55	318230.0	0.228	4.429
6:2-FTS	4.90	1.000	84540.1		A	13C2-6:2-FTS	4.90	45304.7	1.866	18.581
PFHpS	4.90	1.080	82489.3		A	13C3-PFHxS	4.55	318230.0	0.259	5.485
PFOA	4.91	1.000	248033.9		A	13C8-PFOA	4.91	897885.3	0.276	5.854
PFOS	5.24	1.000	77623.8		A	13C8-PFOS	5.24	293942.8	0.264	4.625
PFNA	5.25	1.000	222727.1		A	13C9-PFNA	5.25	620557.6	0.359	5.706
PFNS	5.54	1.060	58095.8		A	13C8-PFOS	5.24	293942.8	0.198	5.027
PFDA	5.56	1.000	218633.8		A	13C6-PFDA	5.56	843769.8	0.259	5.353
8:2-FTS	5.56	1.000	88205.2		A	13C2-8:2-FTS	5.56	45389.0	1.943	15.645
PFOSA	5.64	1.000	124620.4		A	13C8-PFOSA	5.64	484575.7	0.257	5.145
NMeFOSAA	5.70	1.000	51992.2		A	d3-NMeFOSAA	5.69	196381.7	0.265	6.582
PFDS	5.79	1.110	52602.9		A	13C8-PFOS	5.24	293942.8	0.179	5.876
PfUnDA	5.81	1.000	233758.8		A	13C7-PfUnDA	5.82	539257.7	0.433	5.743
NEtFOSAA	5.83	1.000	48760.3		A	d5-NEtFOSAA	5.83	149255.8	0.327	6.660
PFDaDA	6.04	1.000	296287.7		A	13C2-PFDaDA	6.04	1021767.7	0.290	5.843
10:2-FTS	6.06	1.090	75083.7		A	13C2-8:2-FTS	5.56	45389.0	1.654	13.476
NMePFOSAE	6.09	1.000	43767.6		A	d7-NMePFOSAE	6.08	133732.7	0.327	5.776
NMePFOSA	6.10	1.000	6699.4		A	d3-NMePFOSA	6.10	14683.9	0.456	9.213
PFDoS	6.21	1.190	21927.5		A	13C8-PFOS	5.24	293942.8	0.075	4.521
NEtPFOSAE	6.25	1.000	46263.8		A	d9-NEtPFOSAE	6.24	117553.5	0.394	5.143
NEtPFOSA	6.26	1.000	4634.5		A	d5-NEtPFOSA	6.26	14402.3	0.322	6.021
PFTrDA	6.24	1.030	291026.2		A	13C2-PFDaDA	6.04	1021767.7	0.285	5.845
PFTeDA	6.42	1.000	198393.6		A	13C2-PFTeDA	6.42	745824.5	0.266	5.730
PFHxDA	6.72	1.050	94333.2		A	13C2-PFTeDA	6.42	745824.5	0.126	5.556
PFOA	6.98	1.090	46758.9		A	13C2-PFTeDA	6.42	745824.5	0.063	3.603

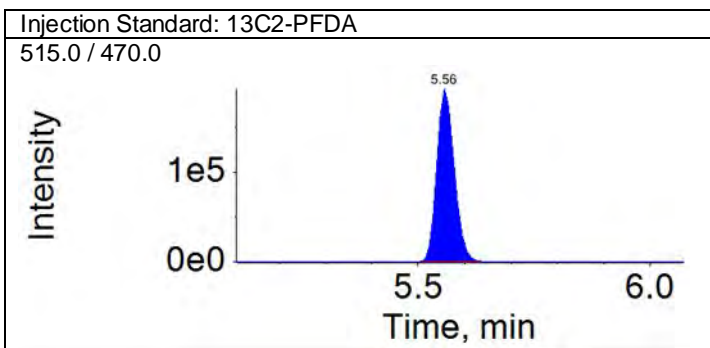
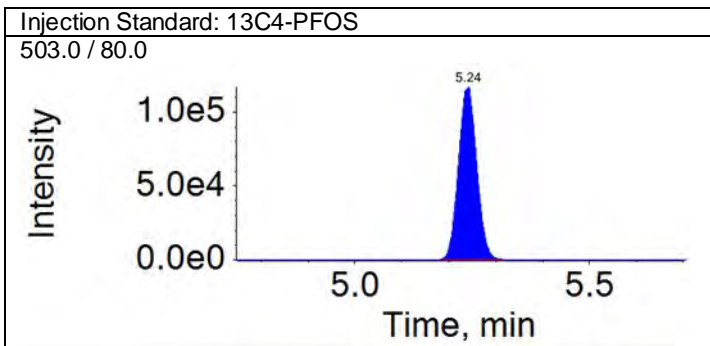
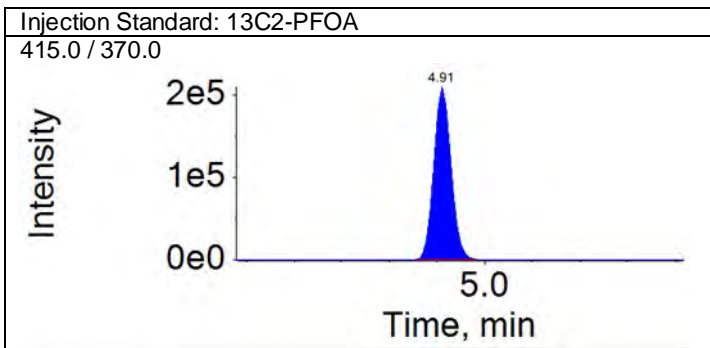
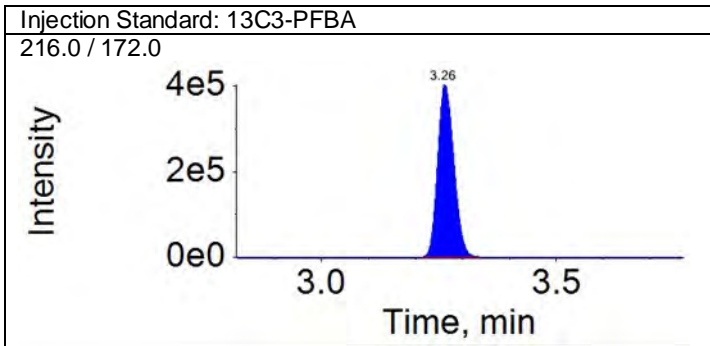
**Total Ion Chromatogram**





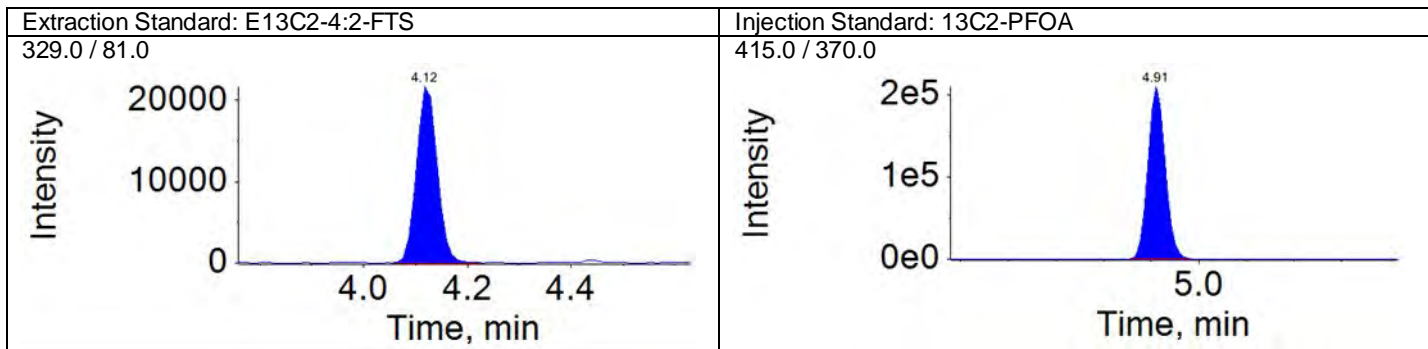
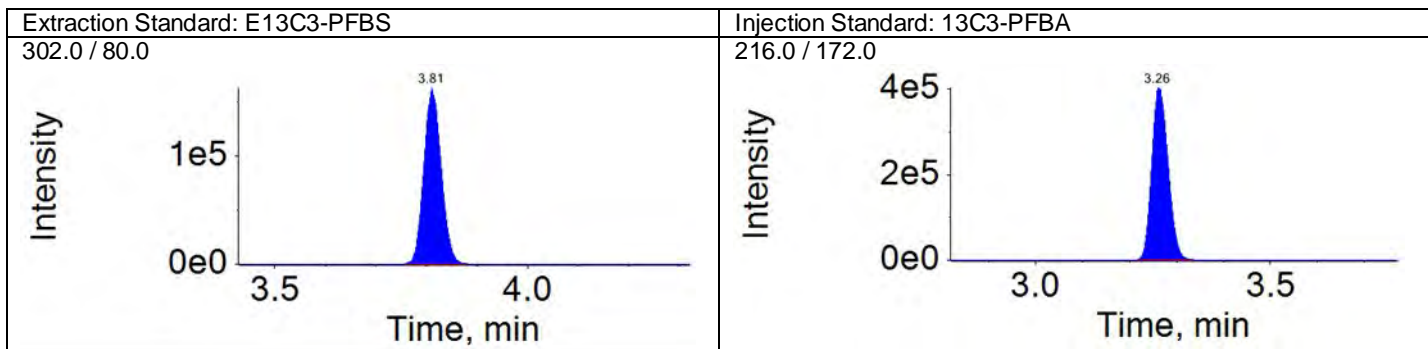
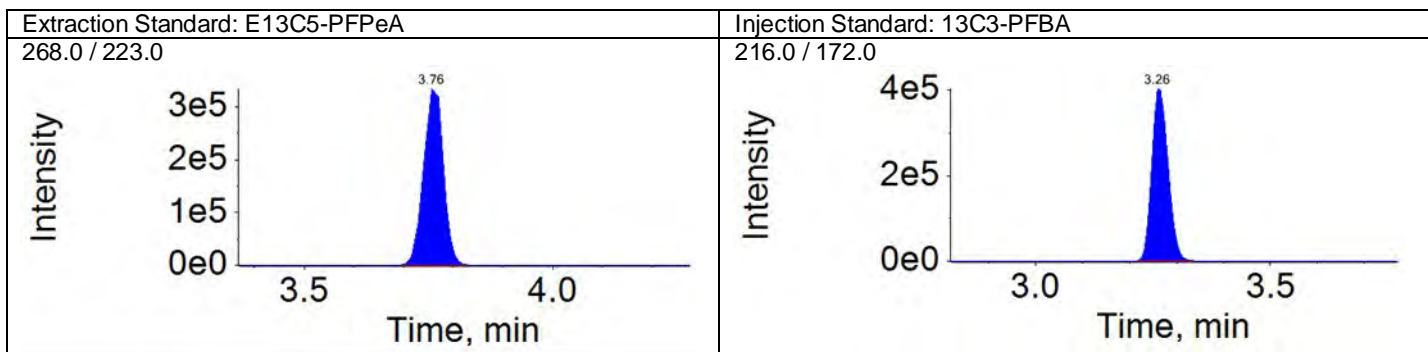
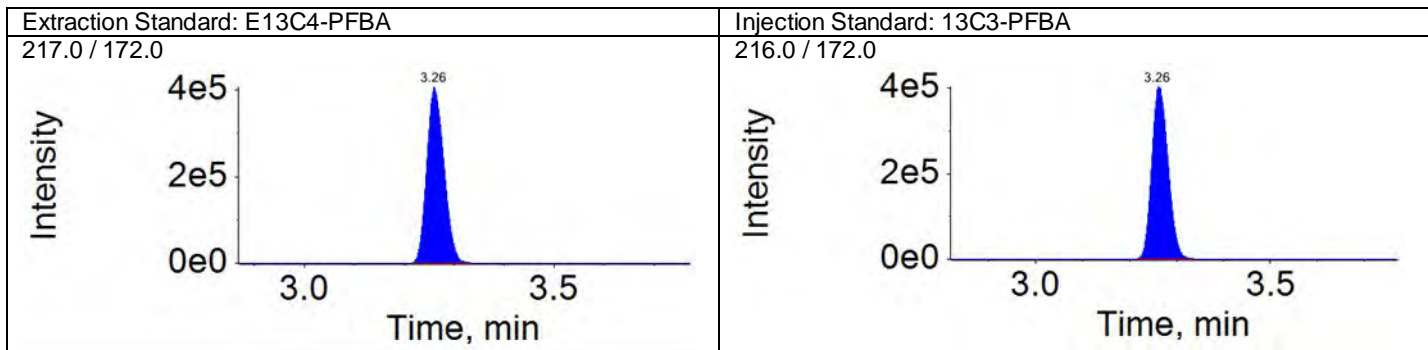
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QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



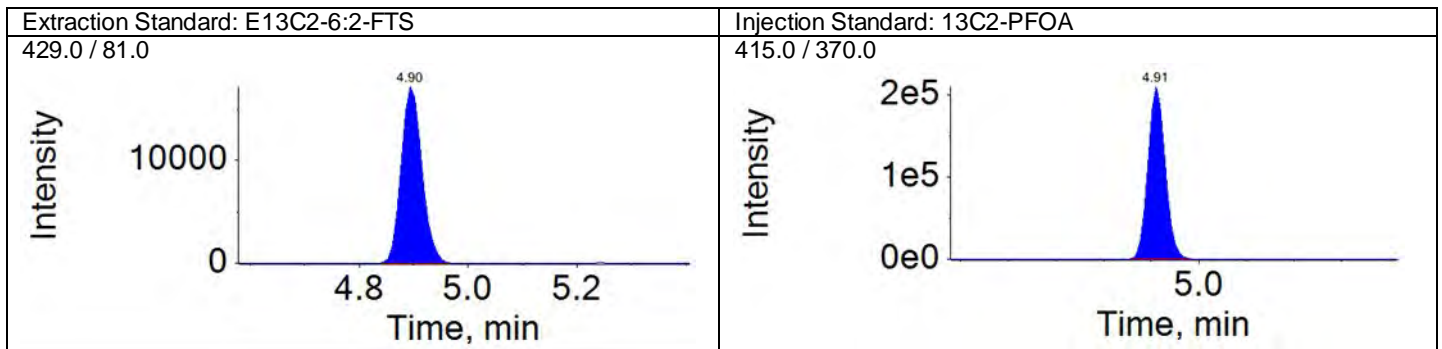
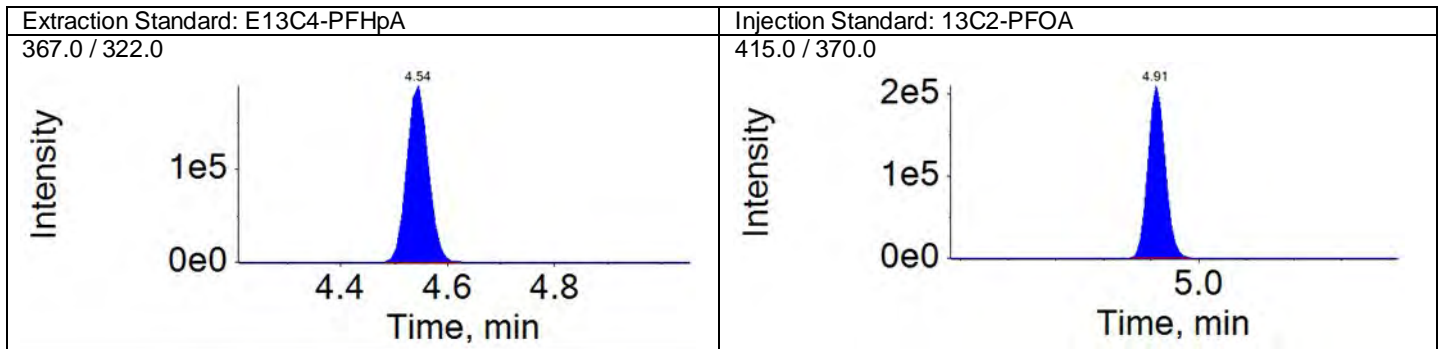
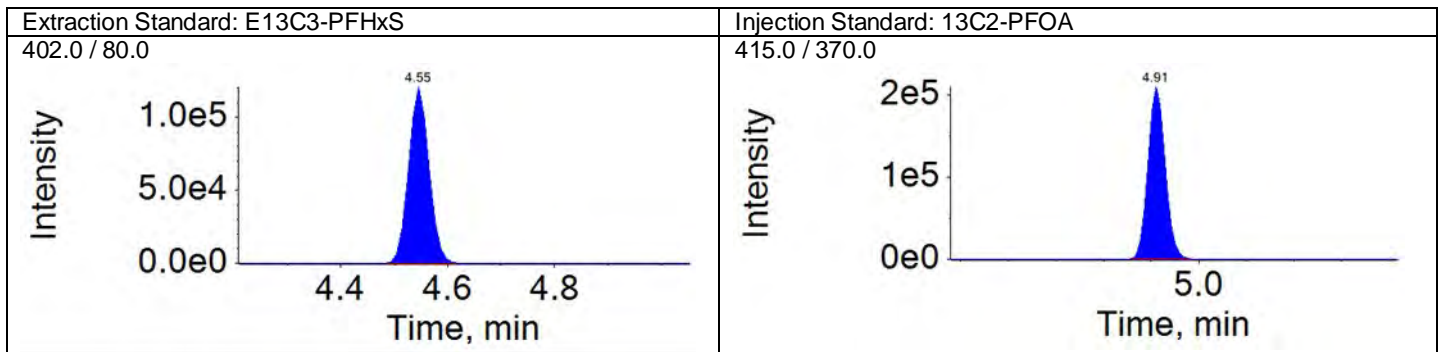
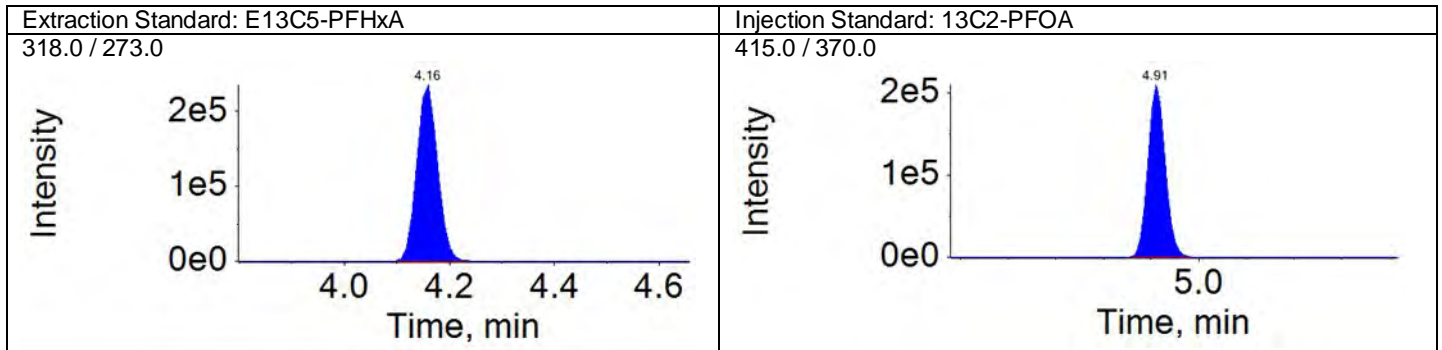
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



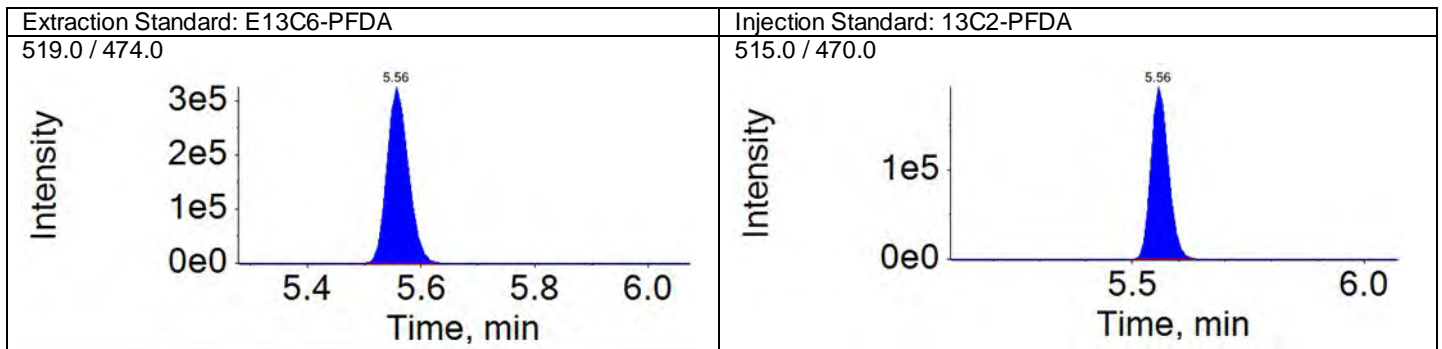
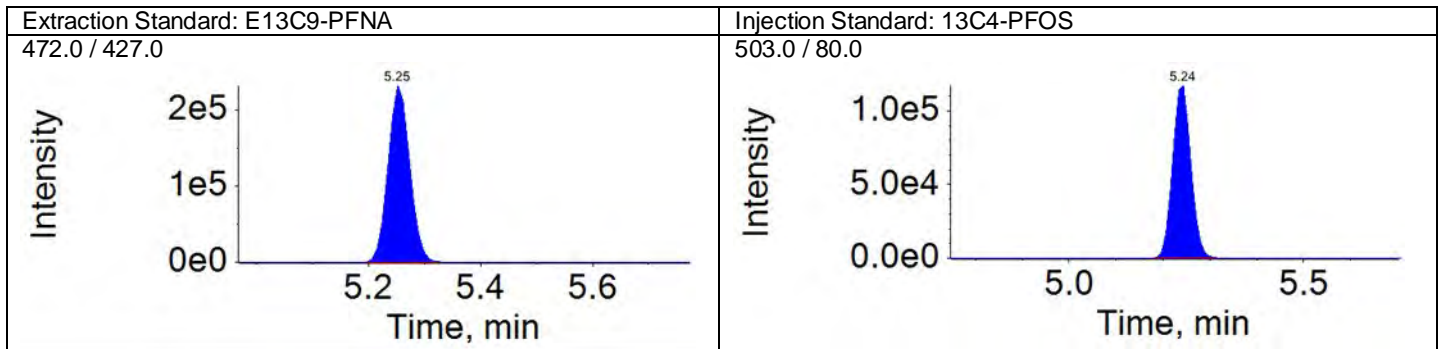
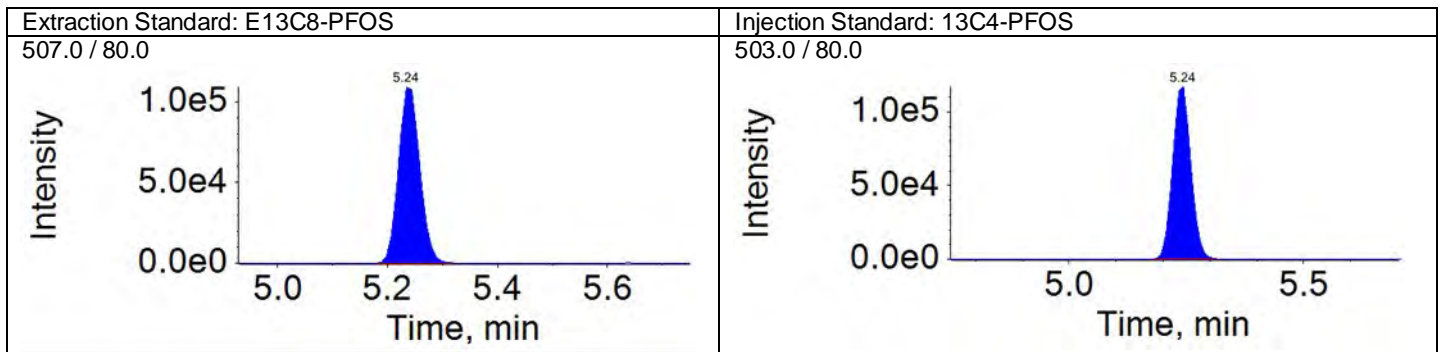
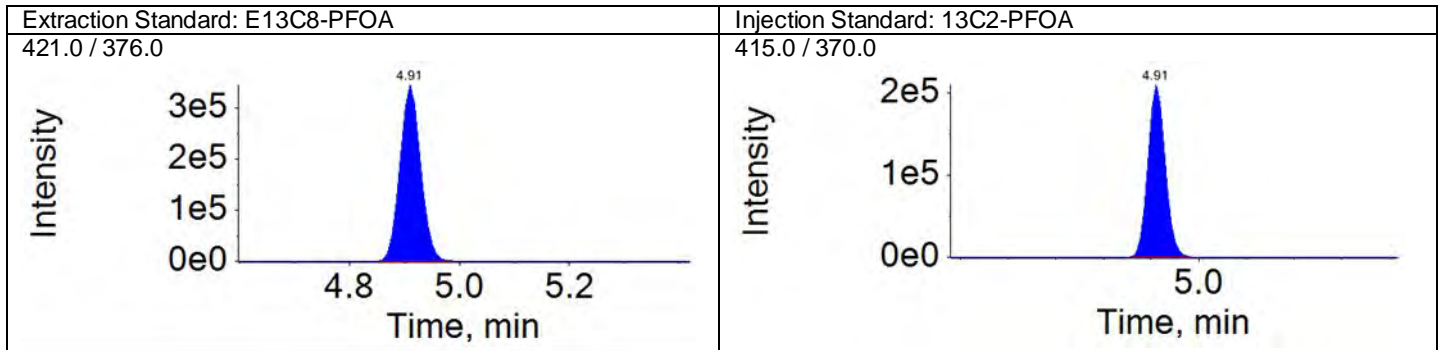
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

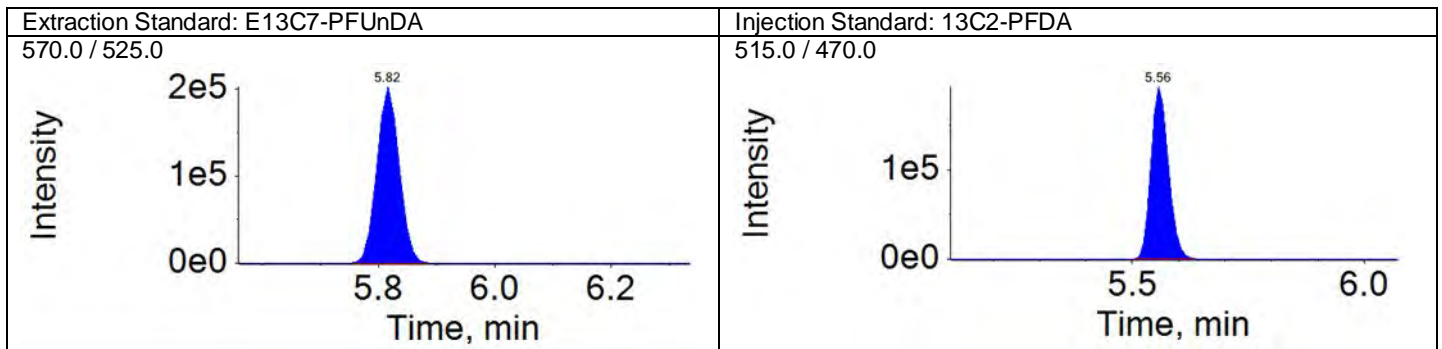
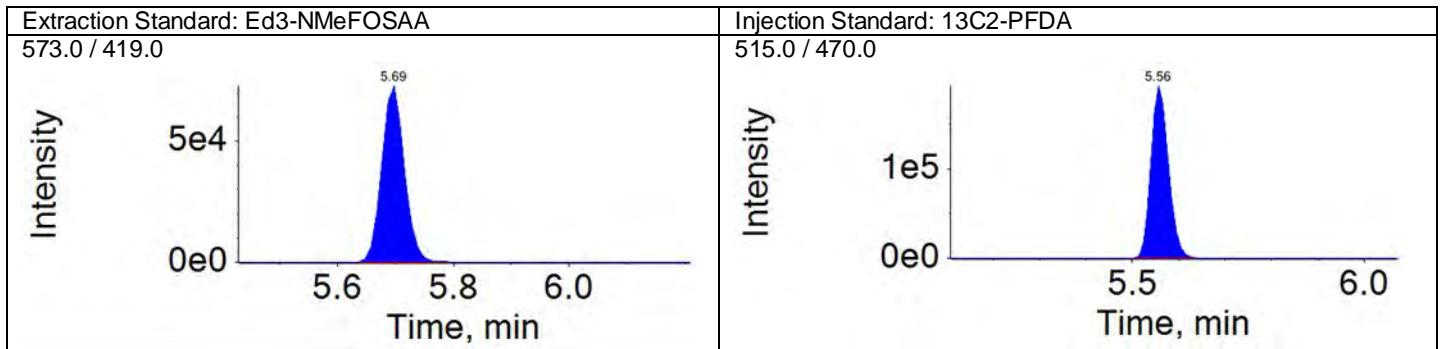
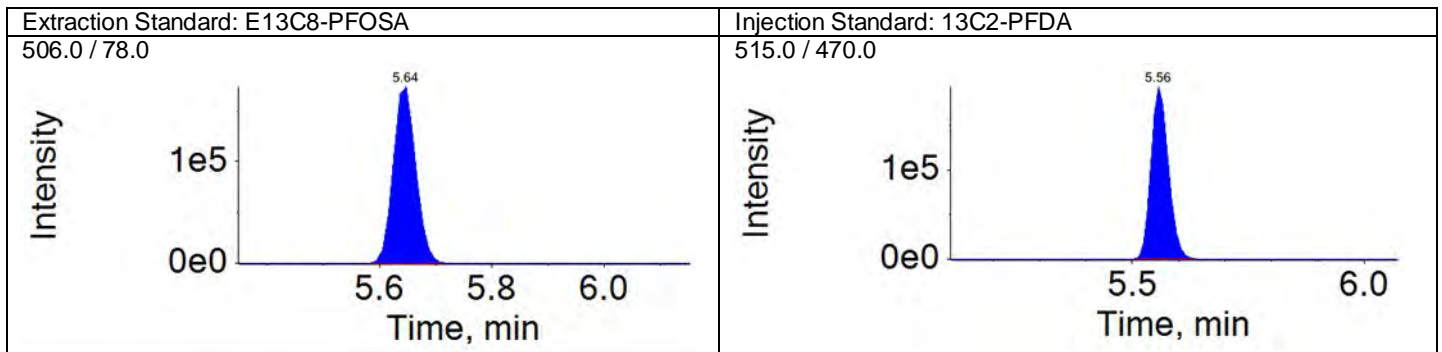
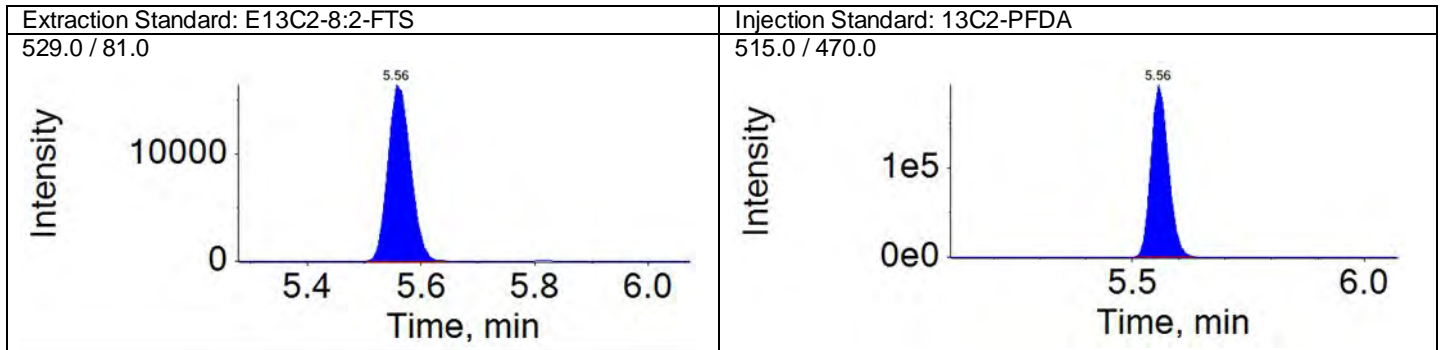
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ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

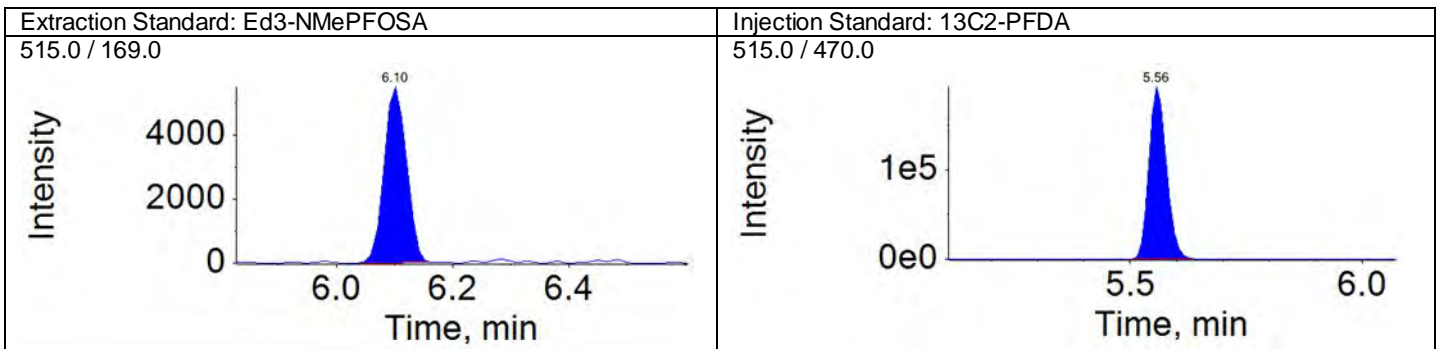
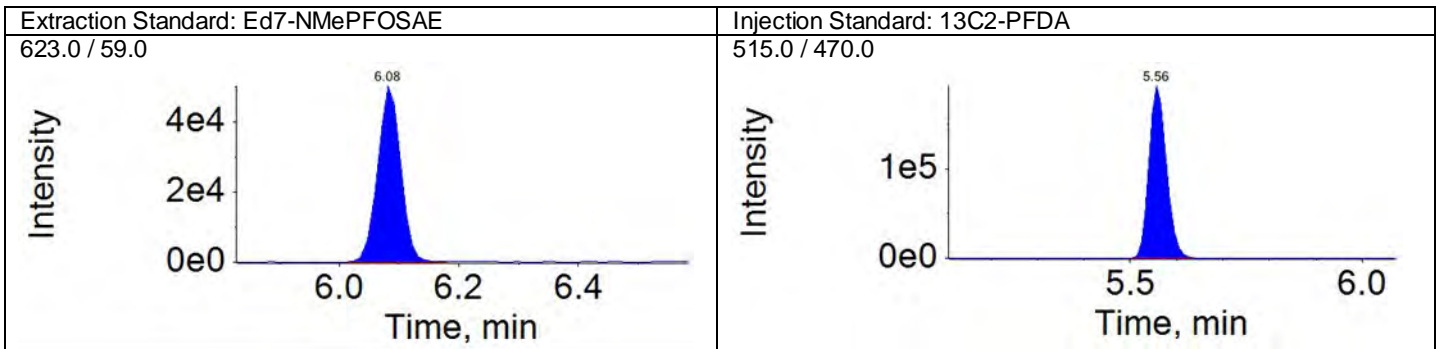
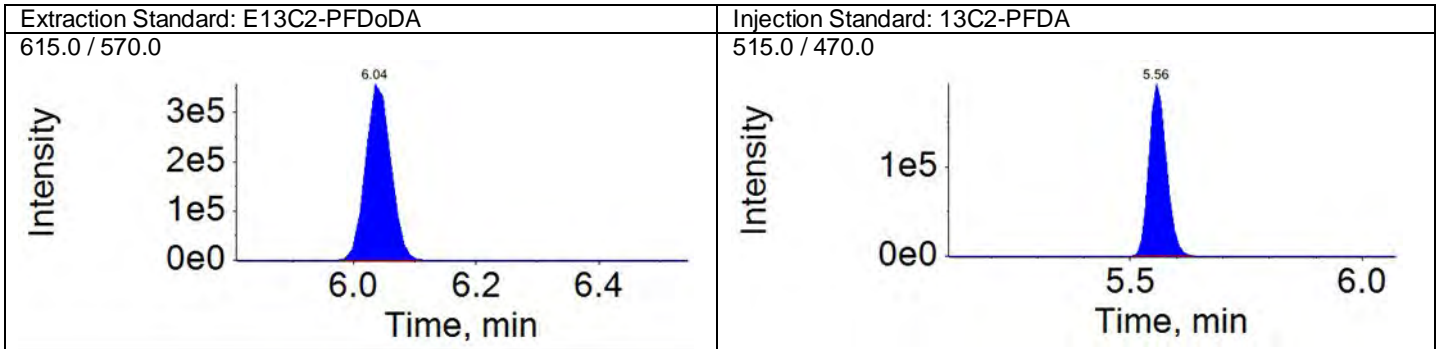
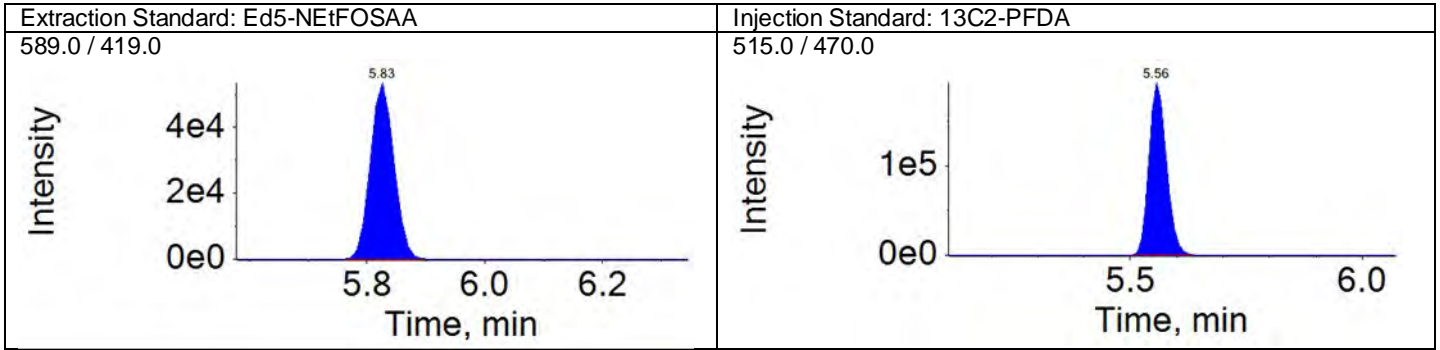
Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam





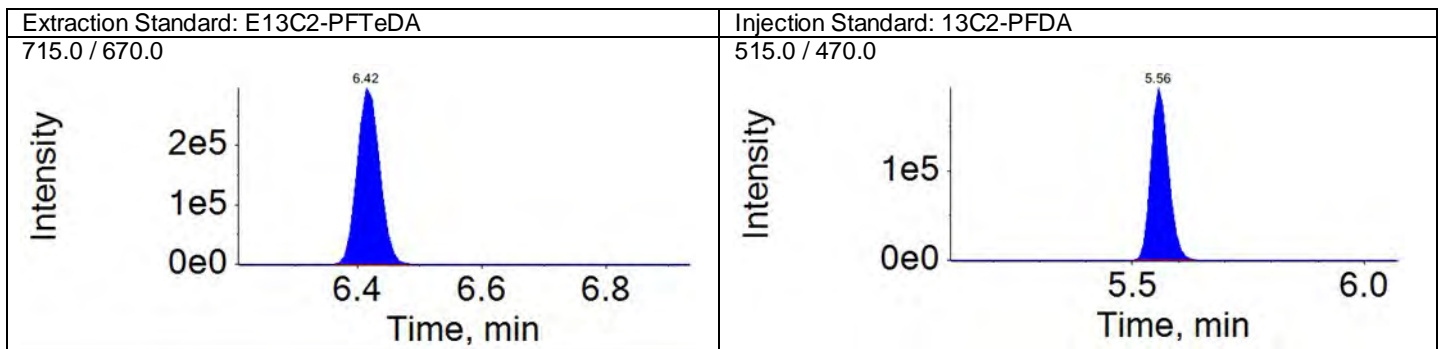
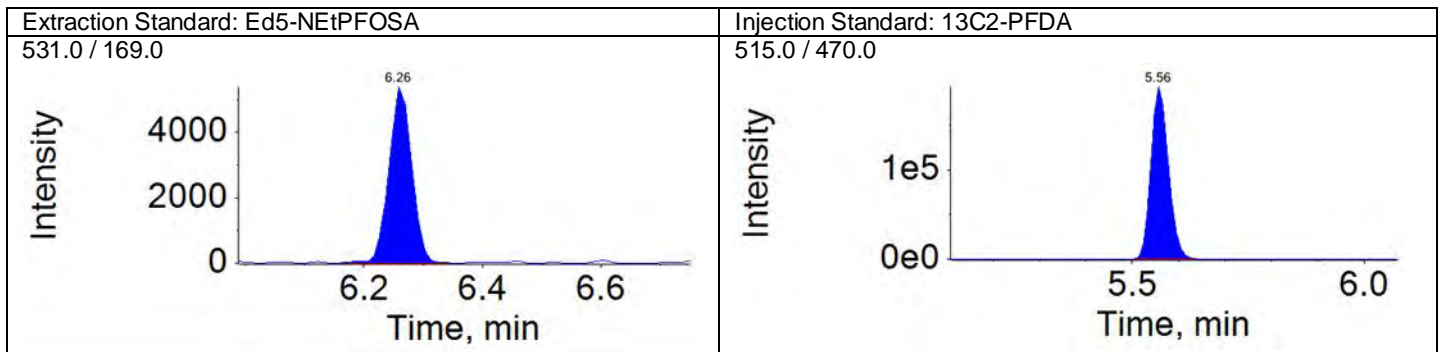
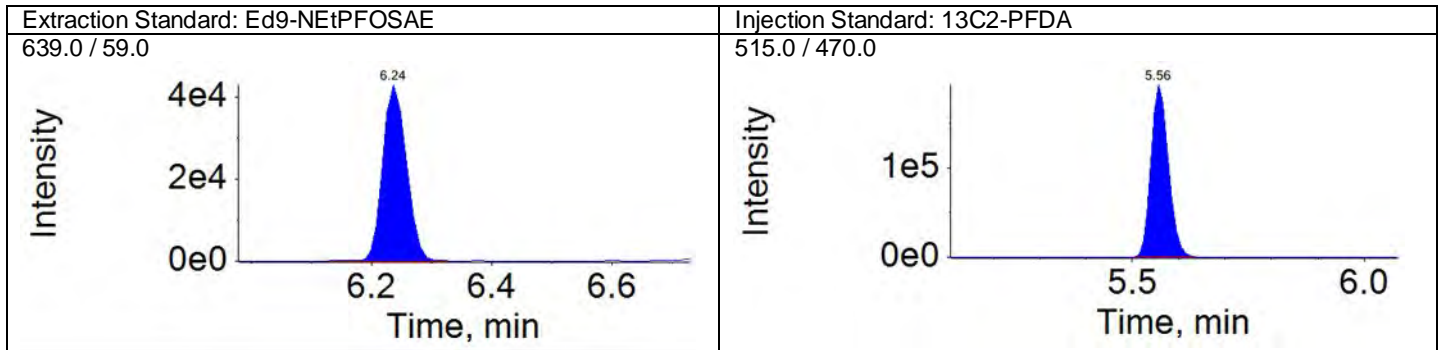
ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



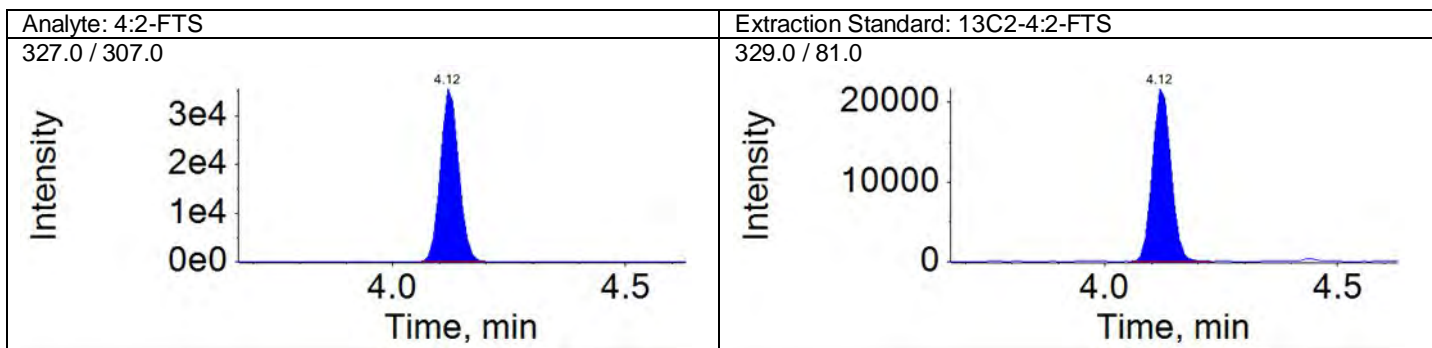
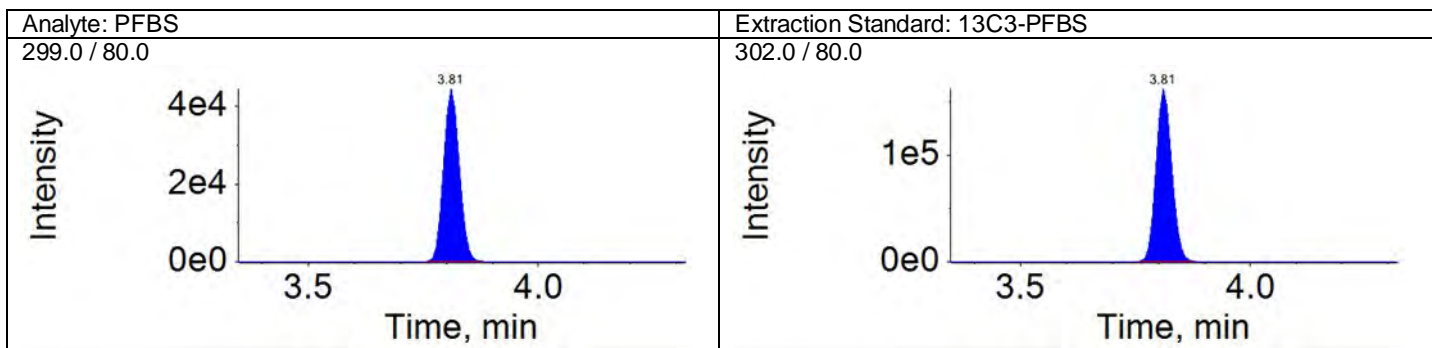
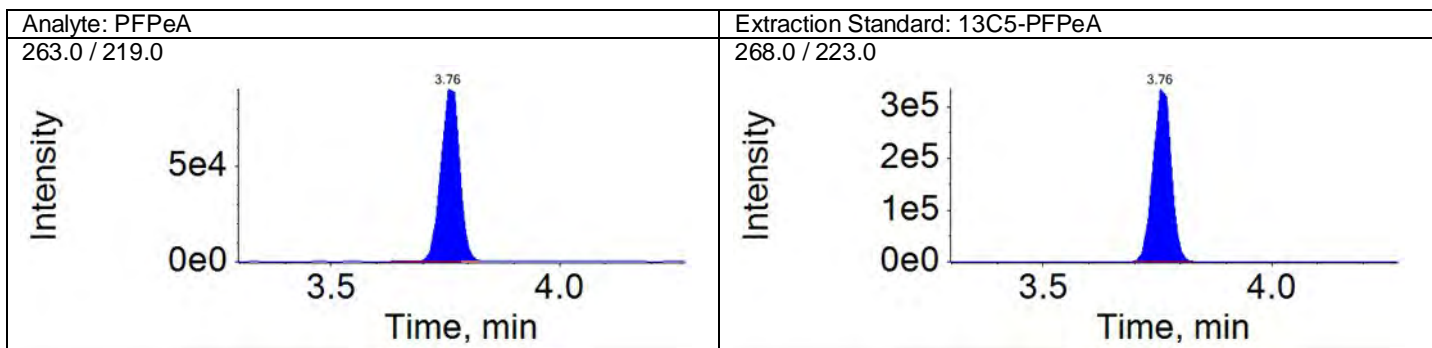
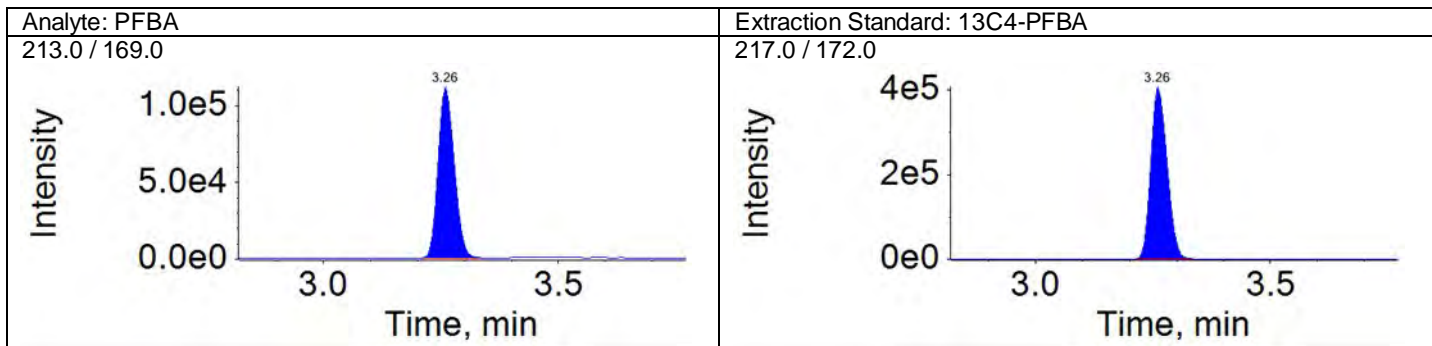
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Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



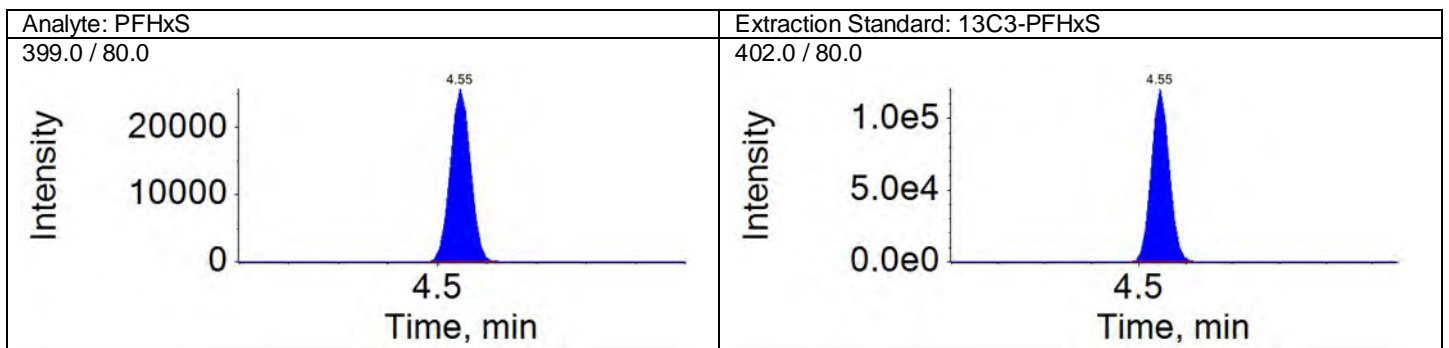
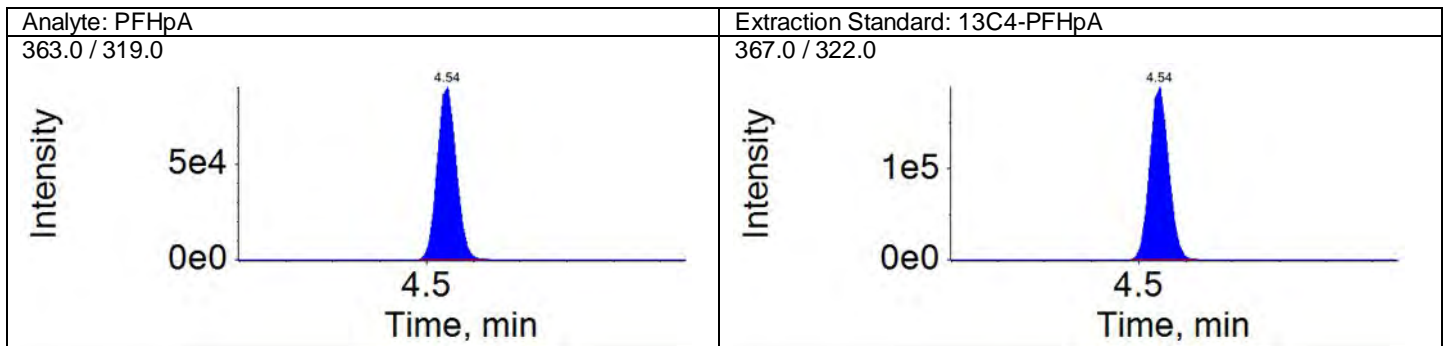
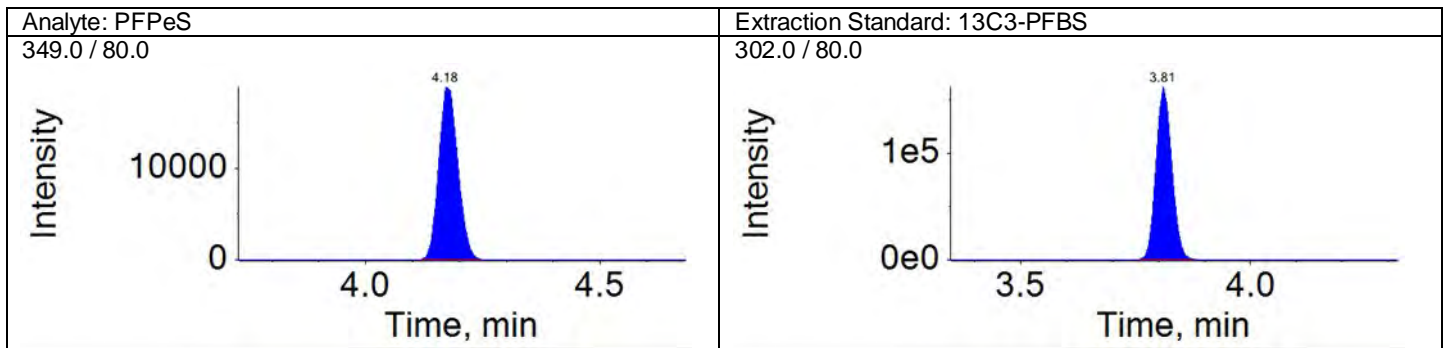
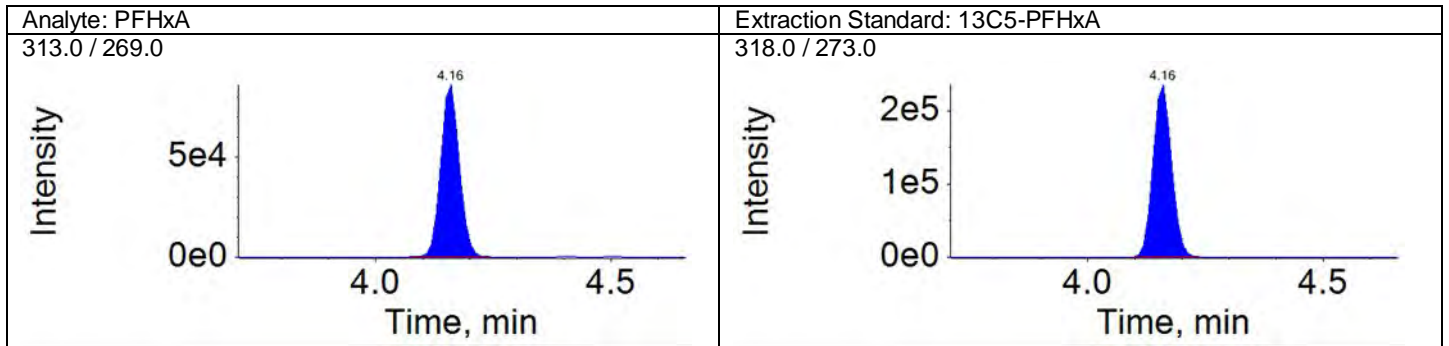
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QMethod Name: 18AUG20QM

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Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

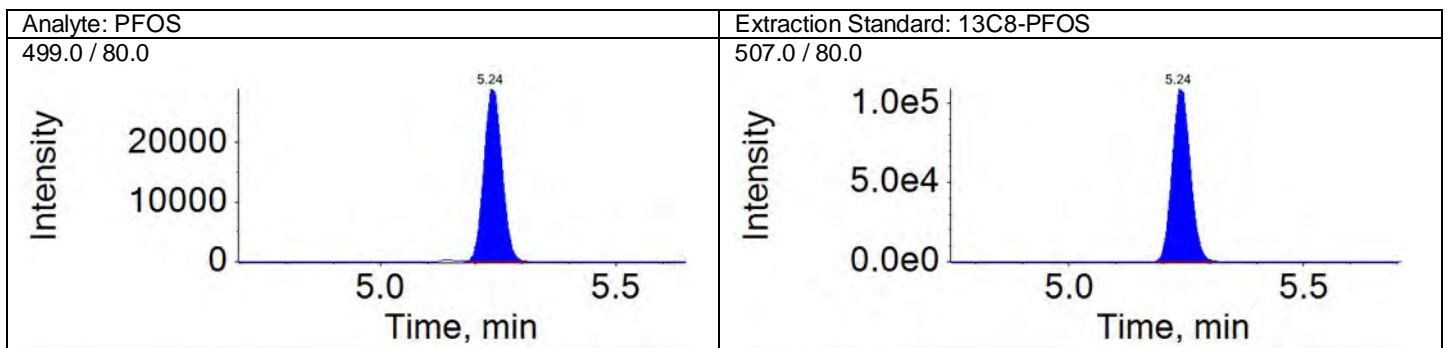
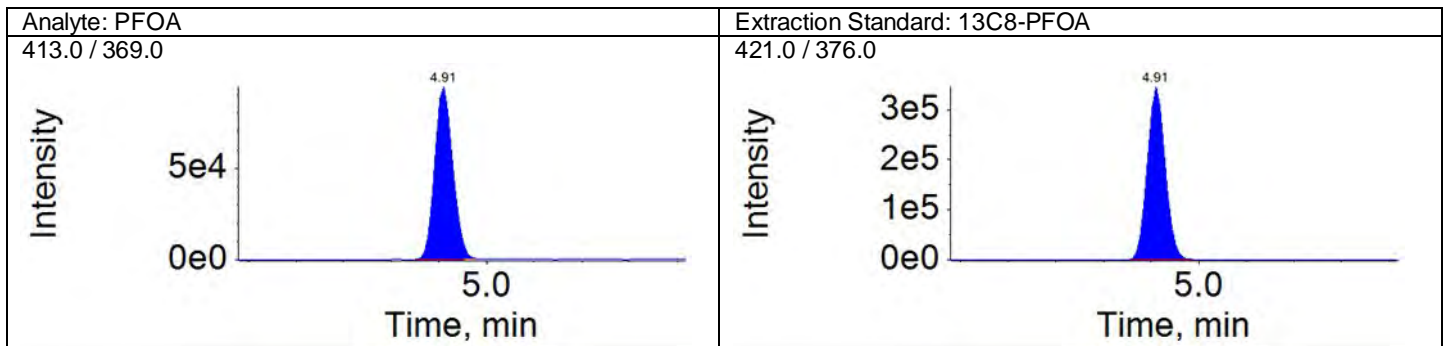
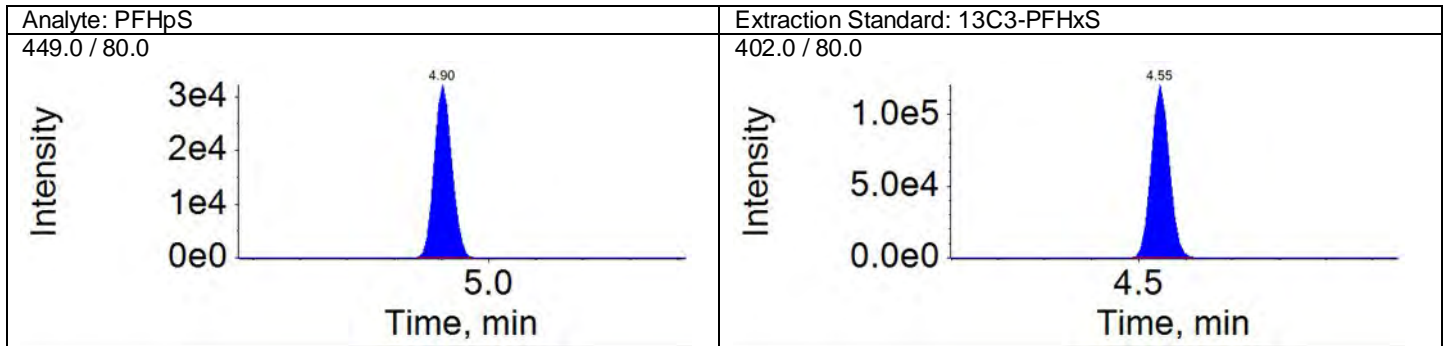
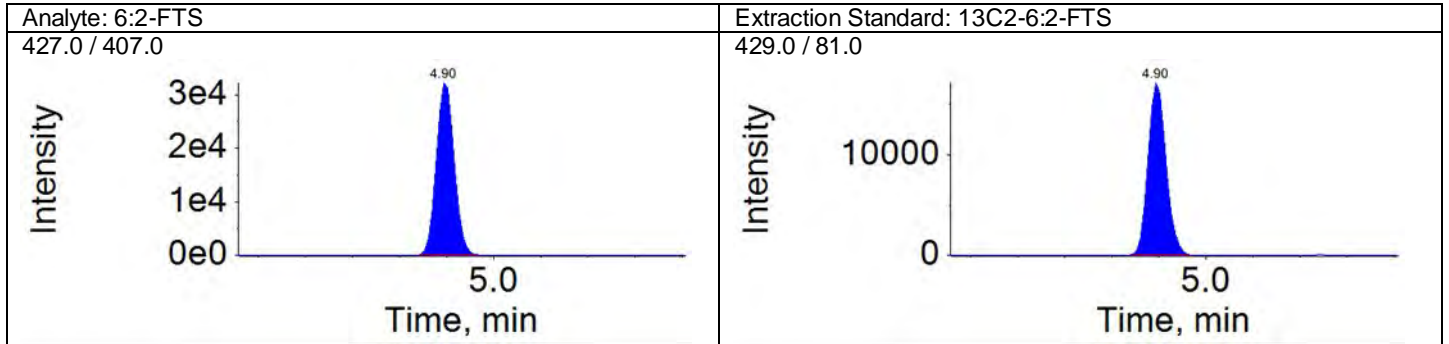
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

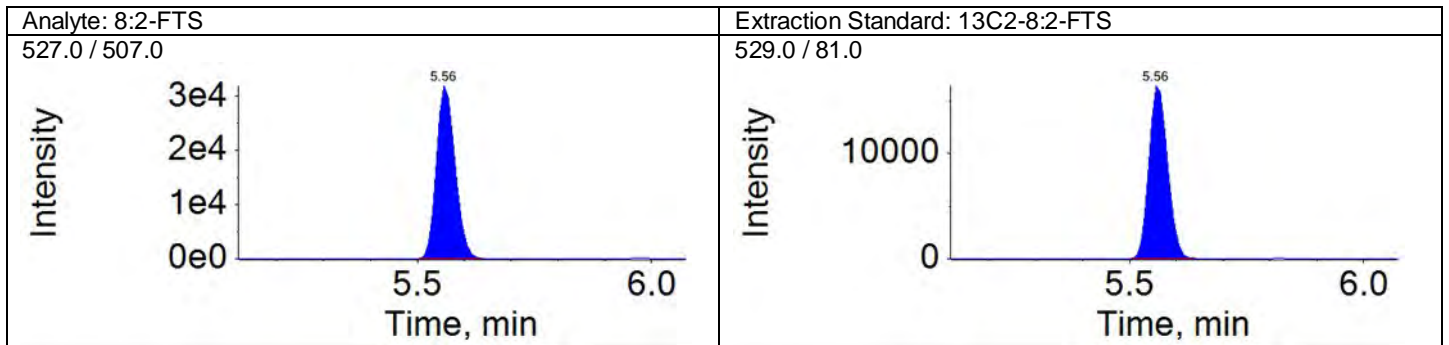
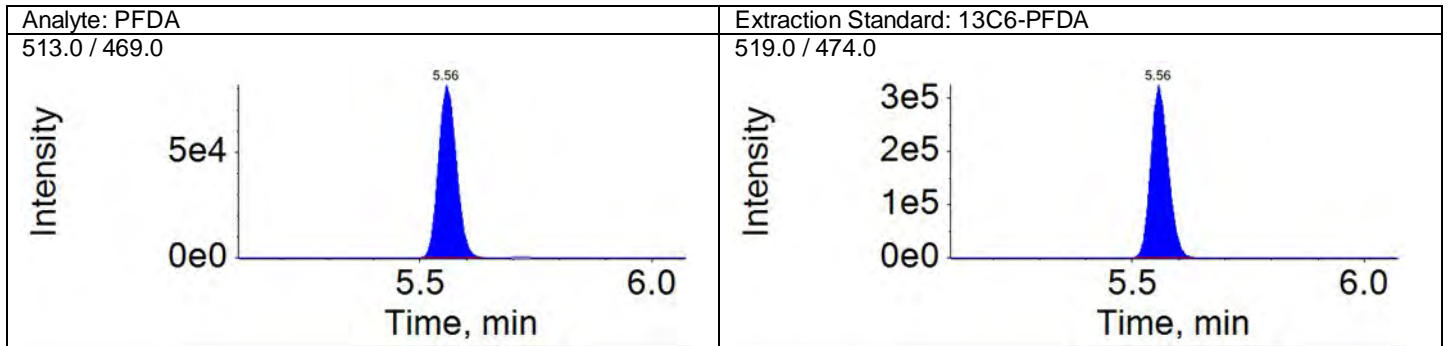
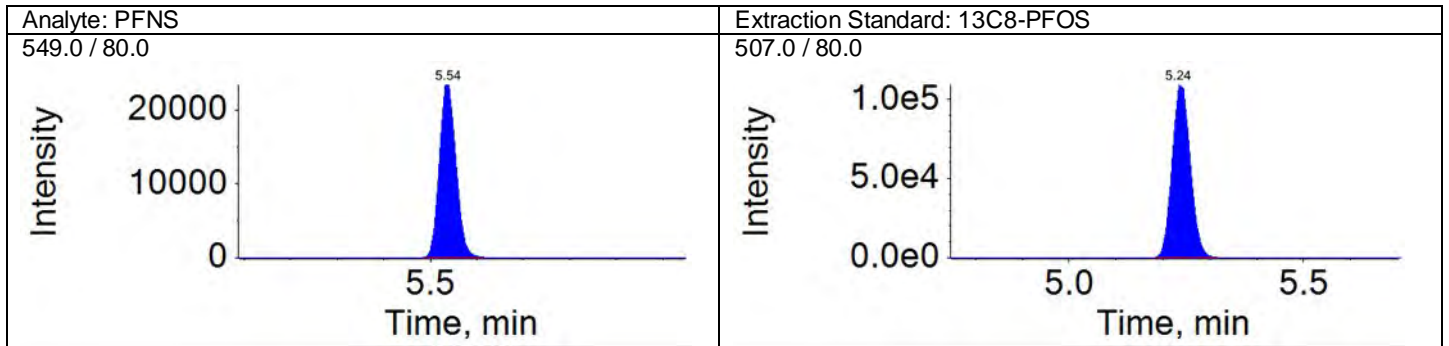
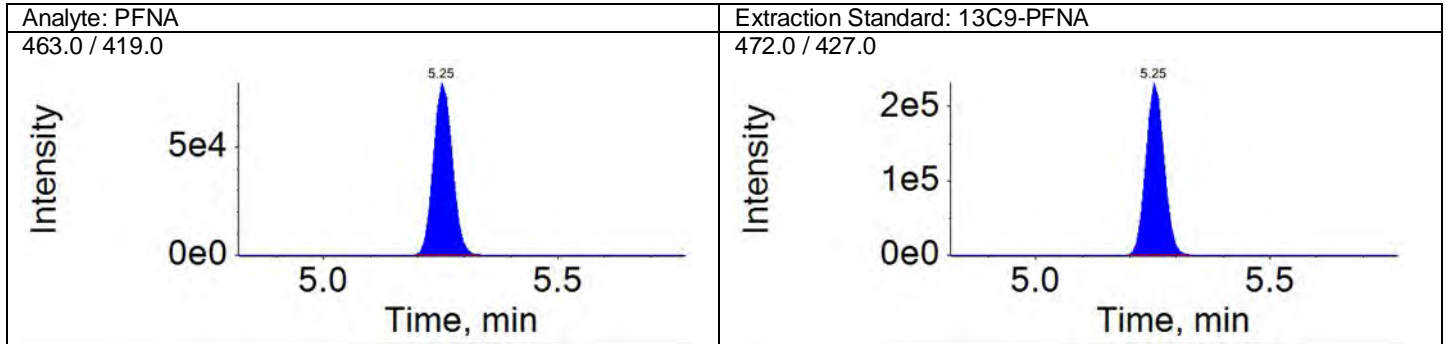
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Acquisition Method: 18AUG13\_3uL.dam





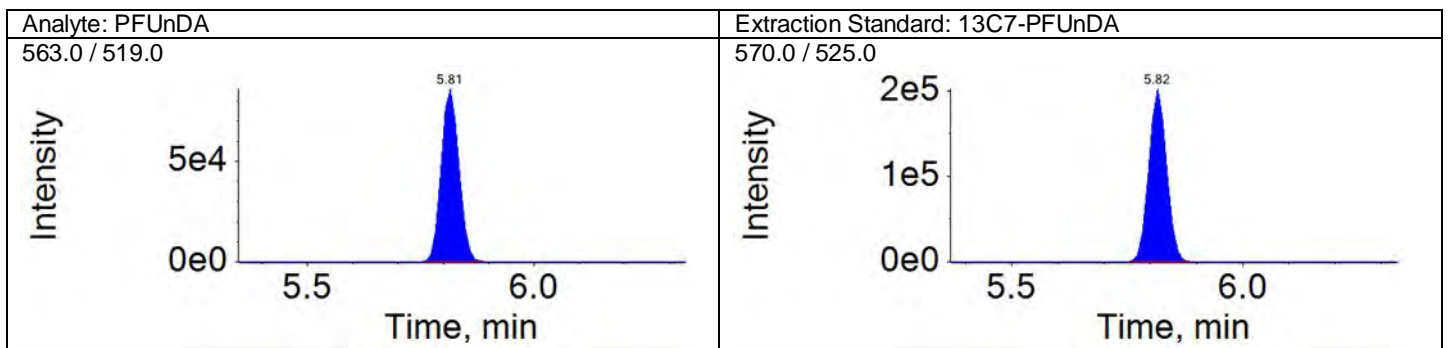
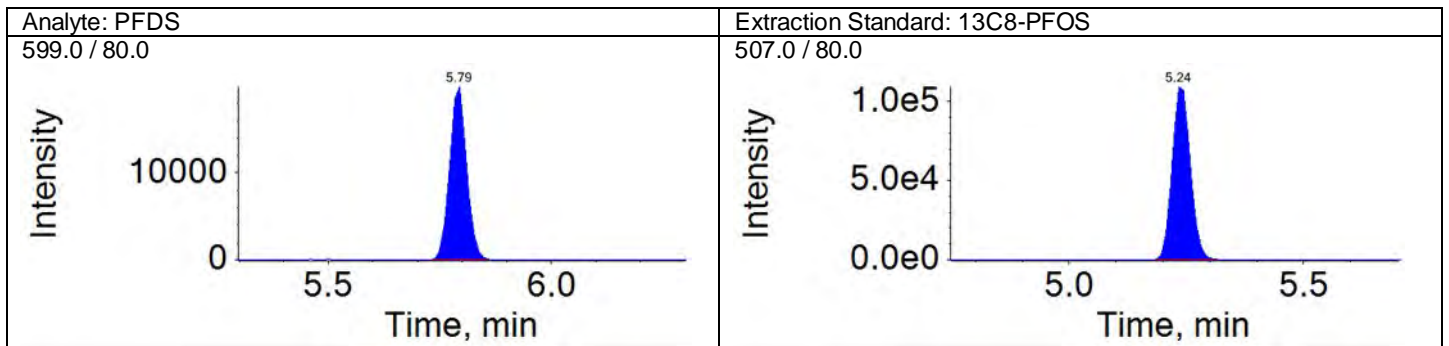
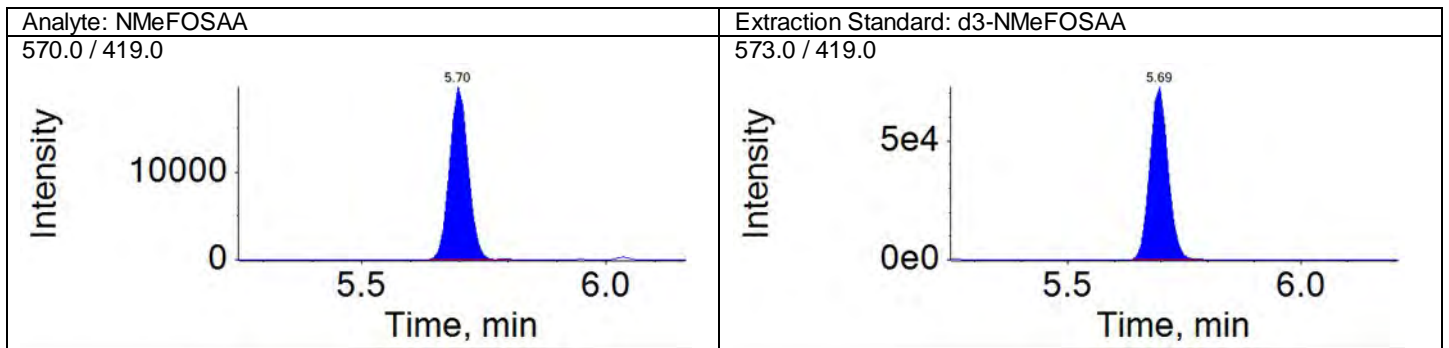
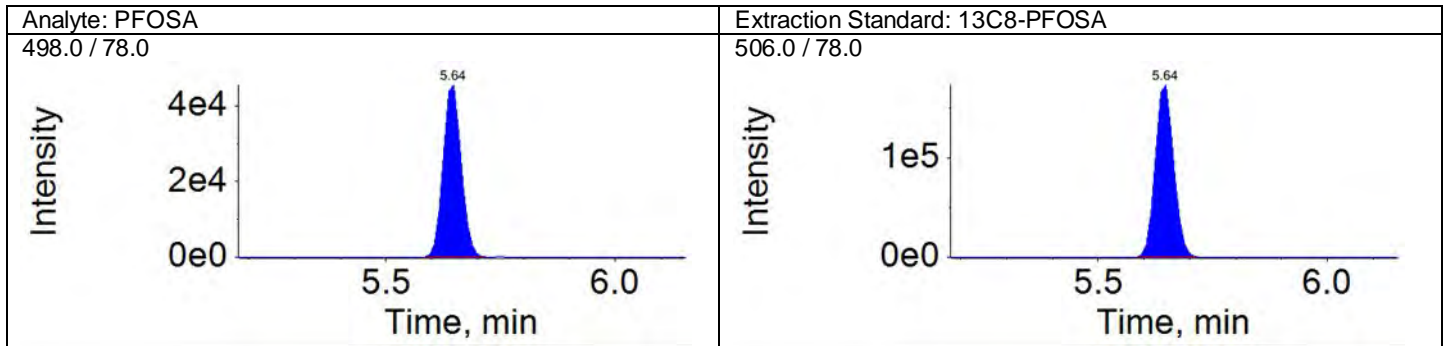
ICAL Name: 18DEC18DCAL  
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Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



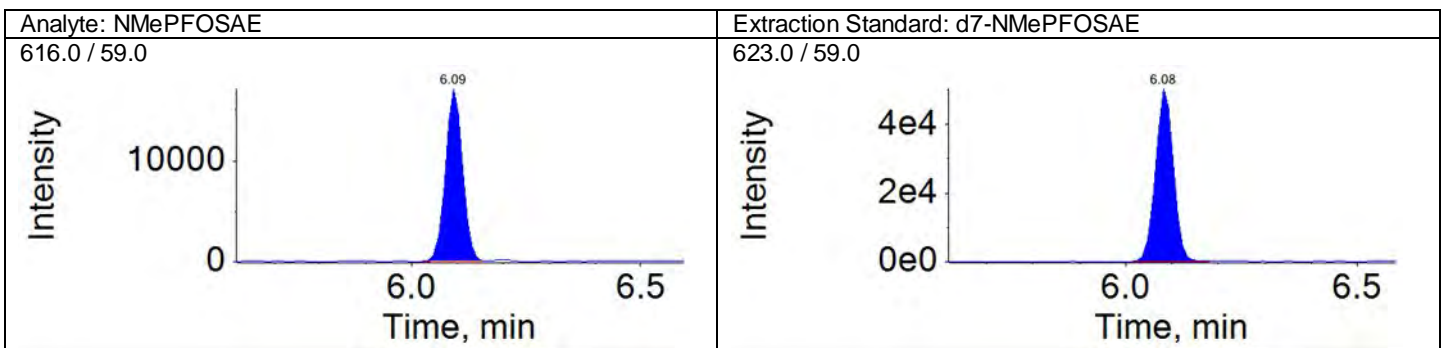
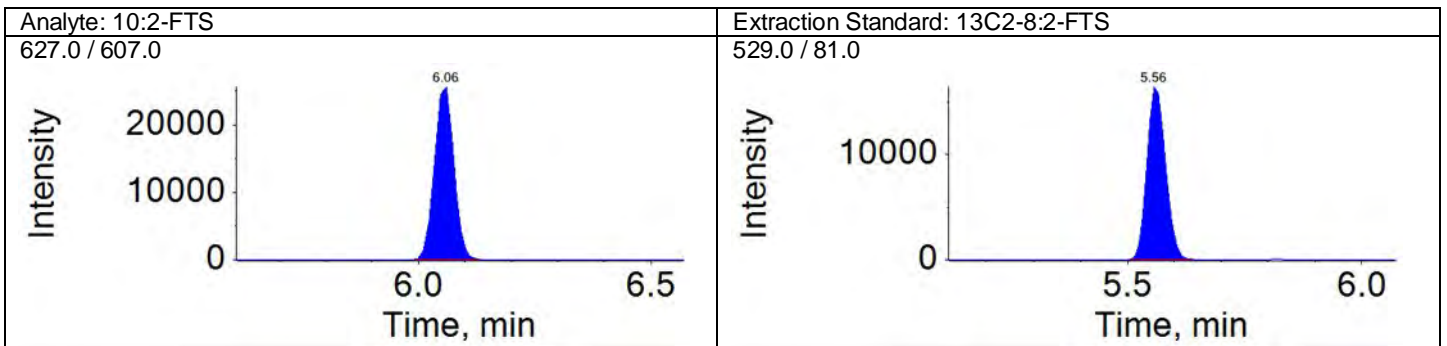
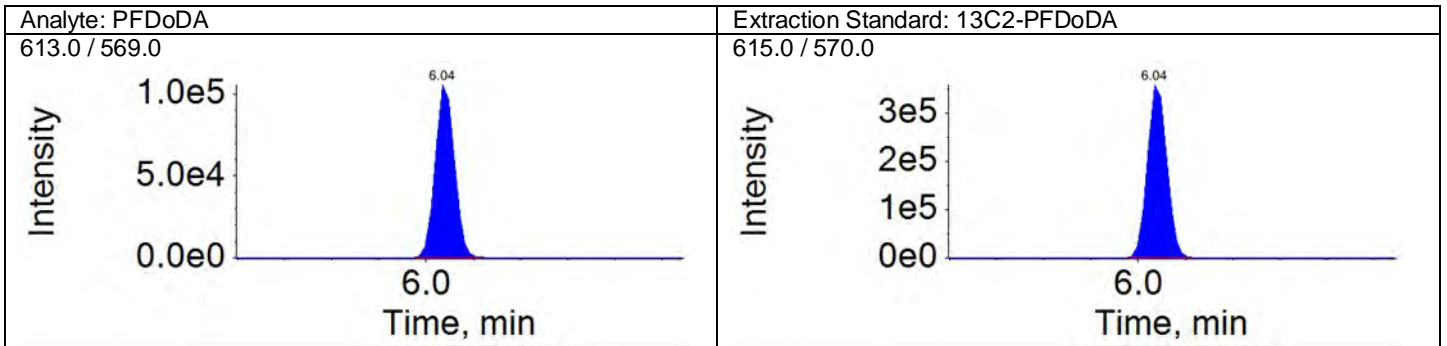
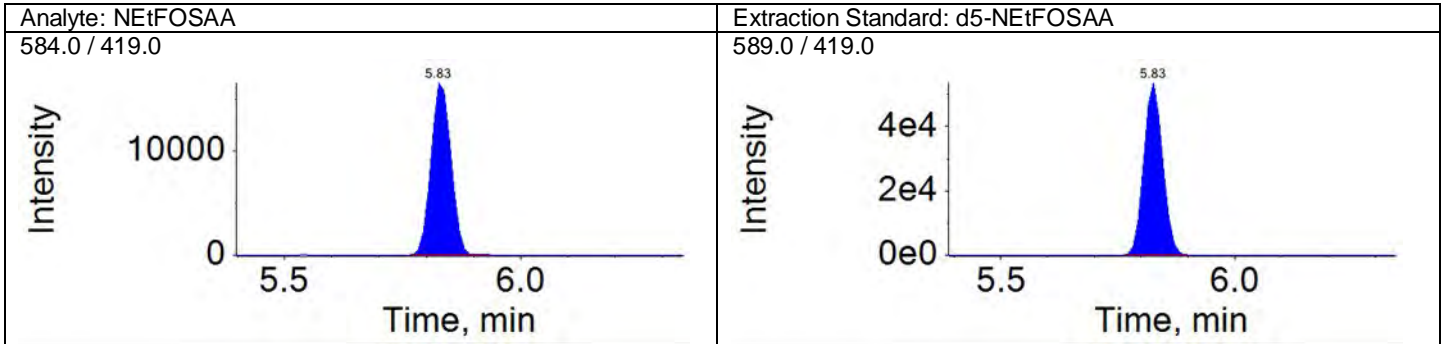
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Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



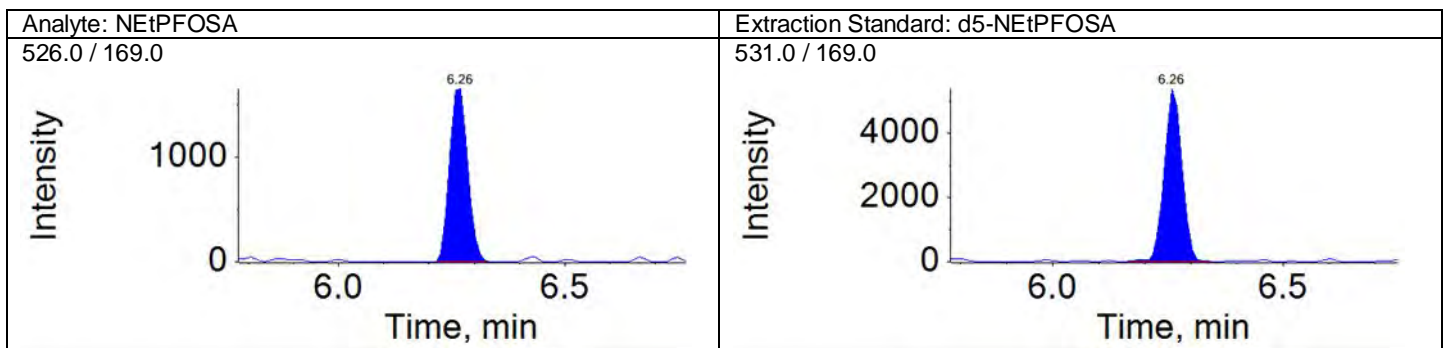
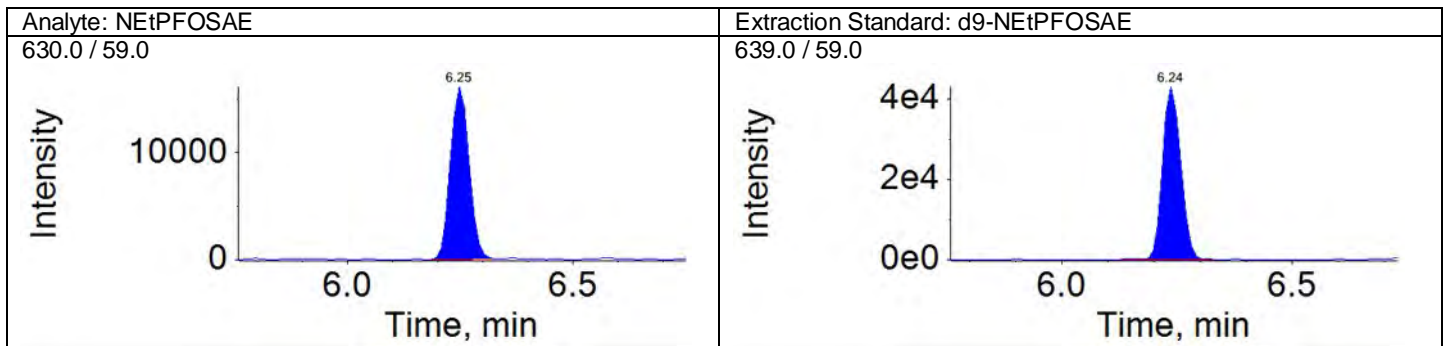
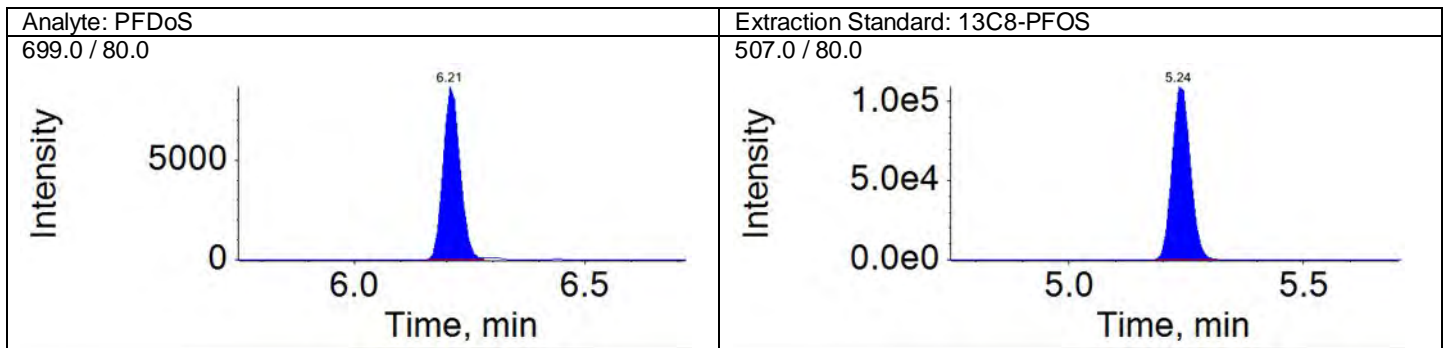
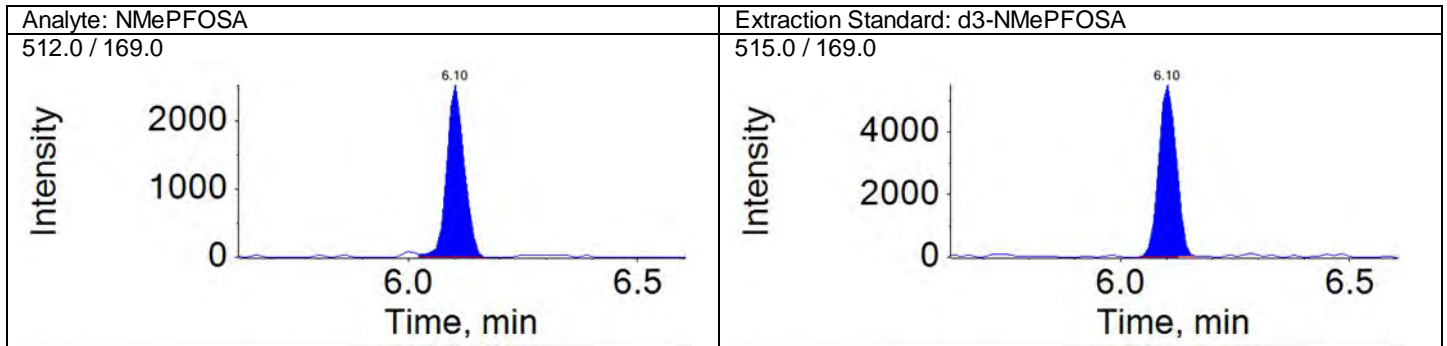
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QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

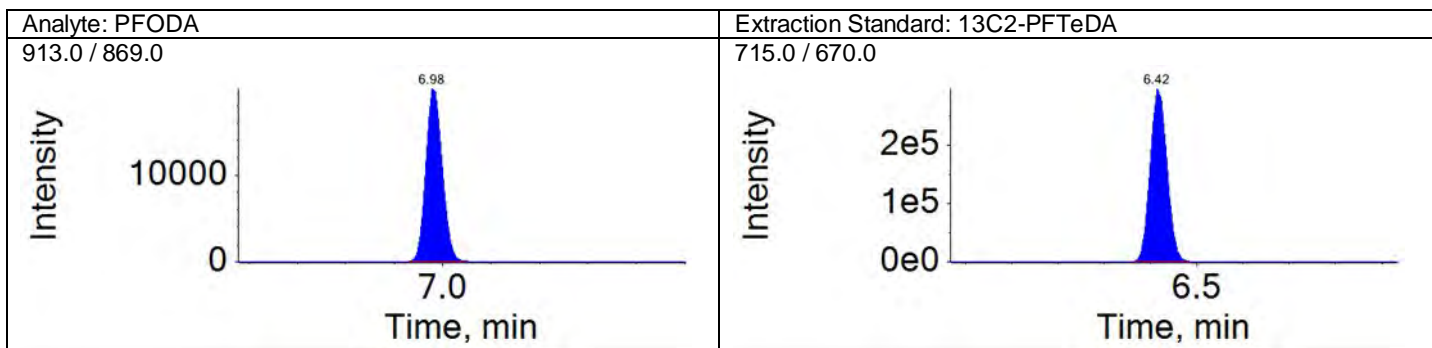
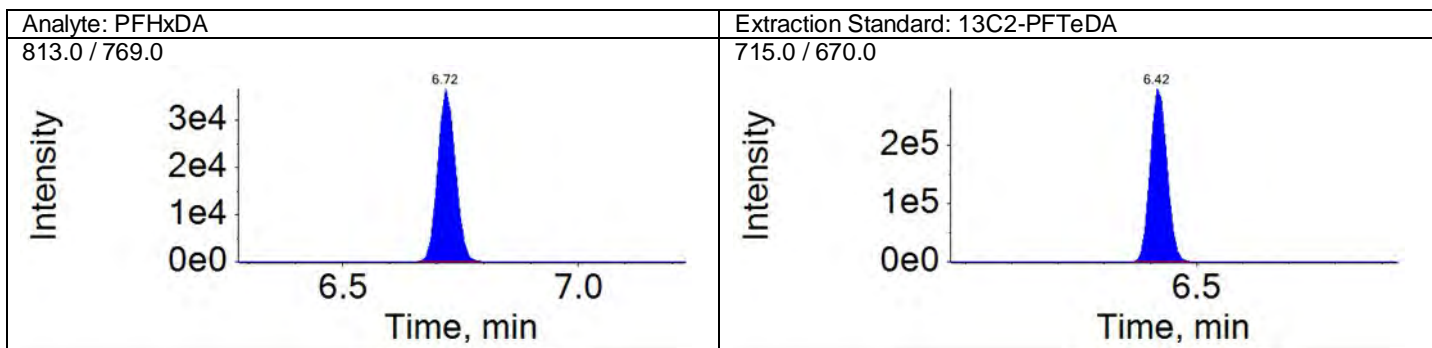
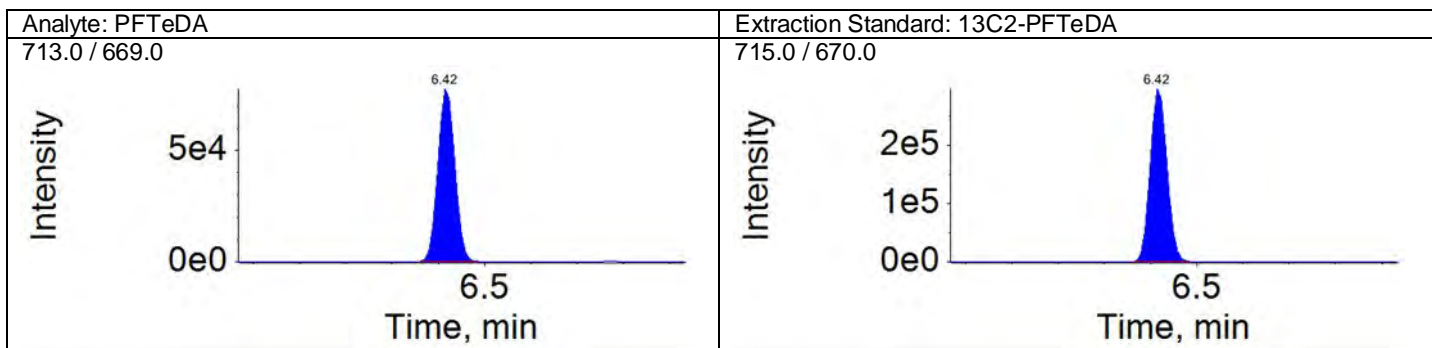
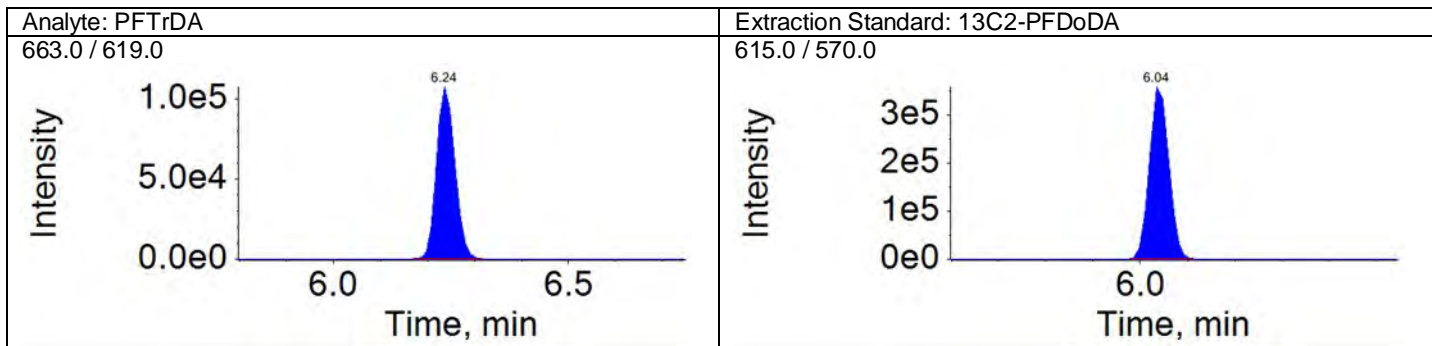
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Acquisition Method: 18AUG13\_3uL.dam





ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam





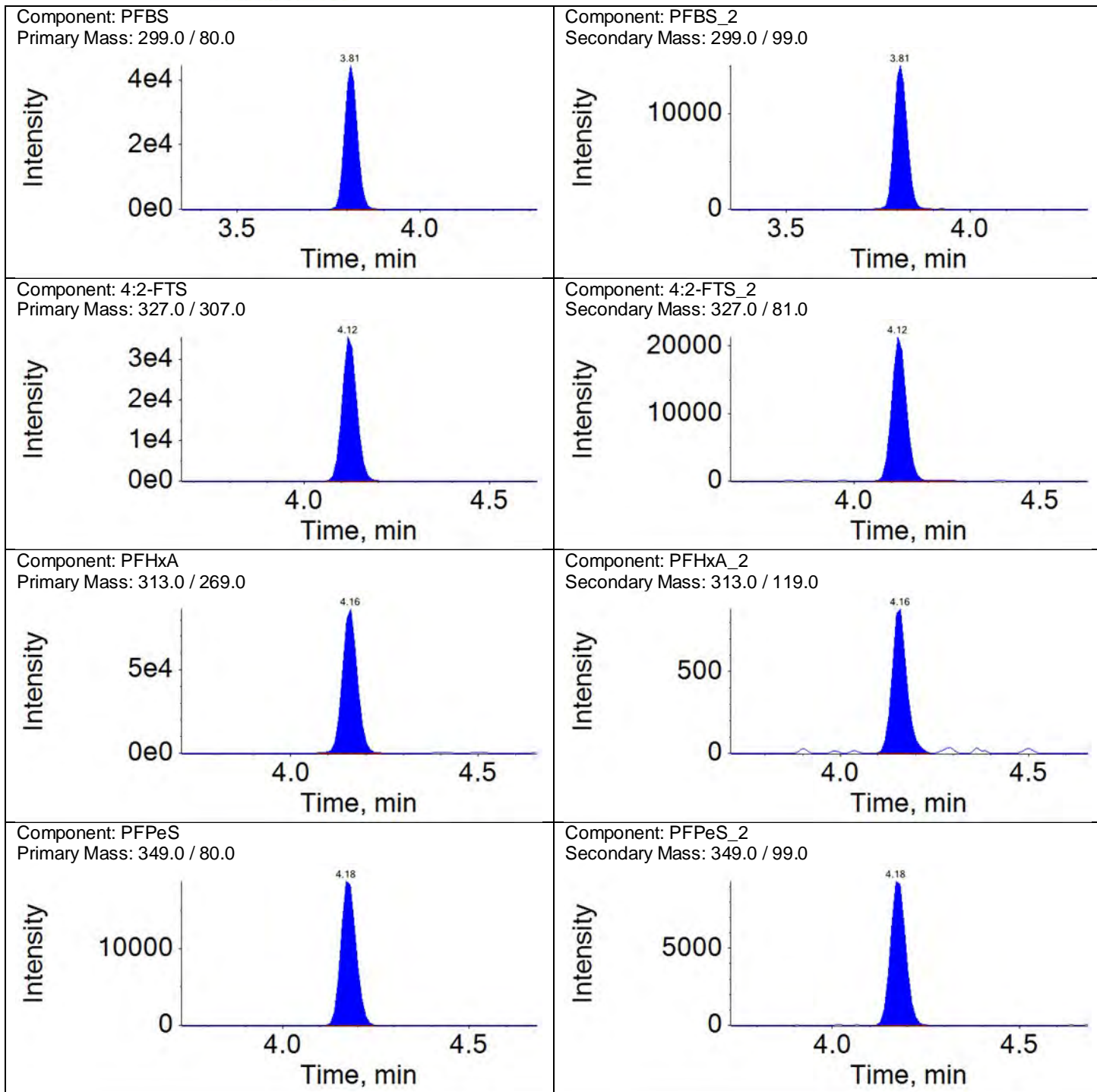
Ion Ratio Report

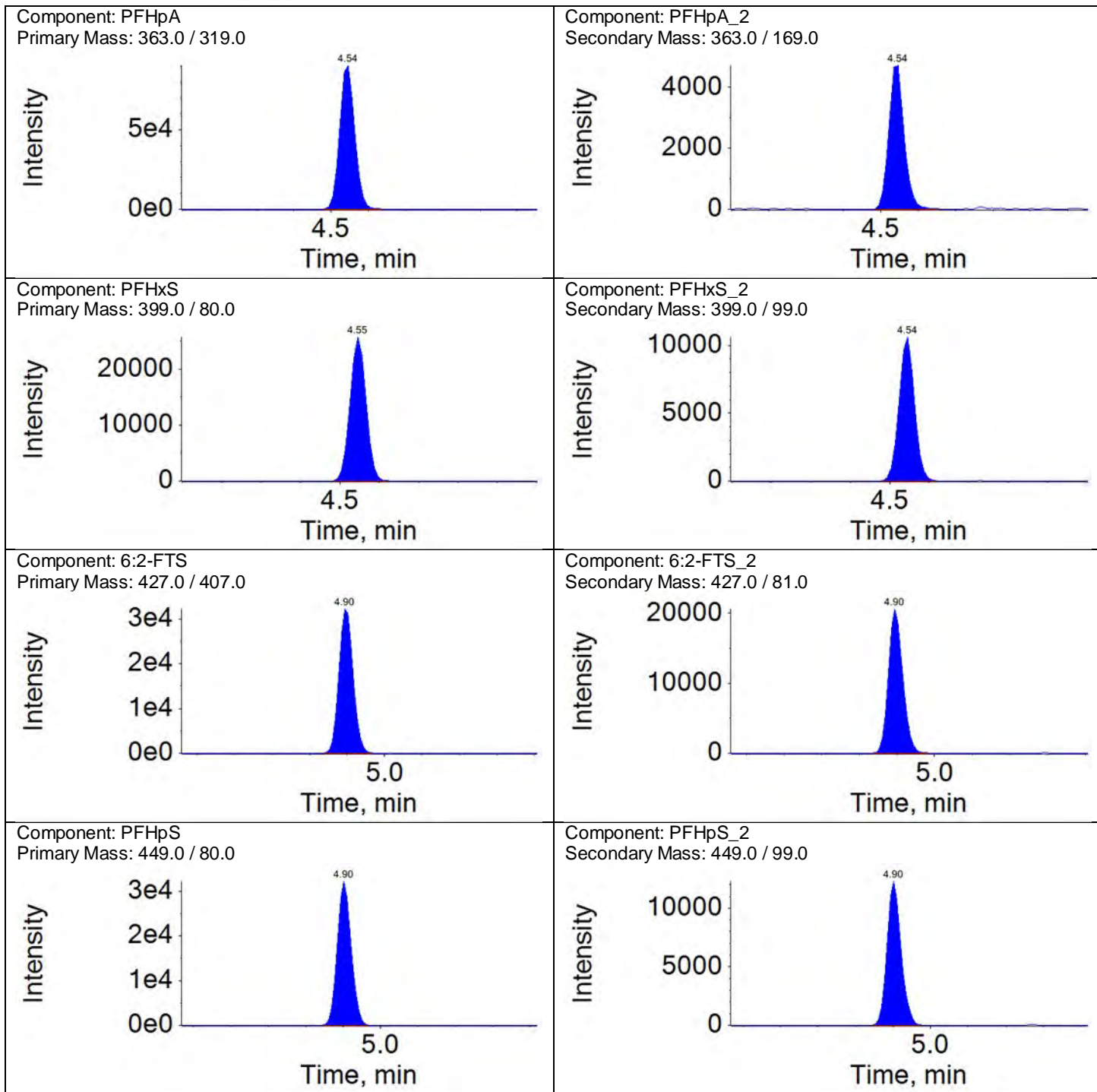
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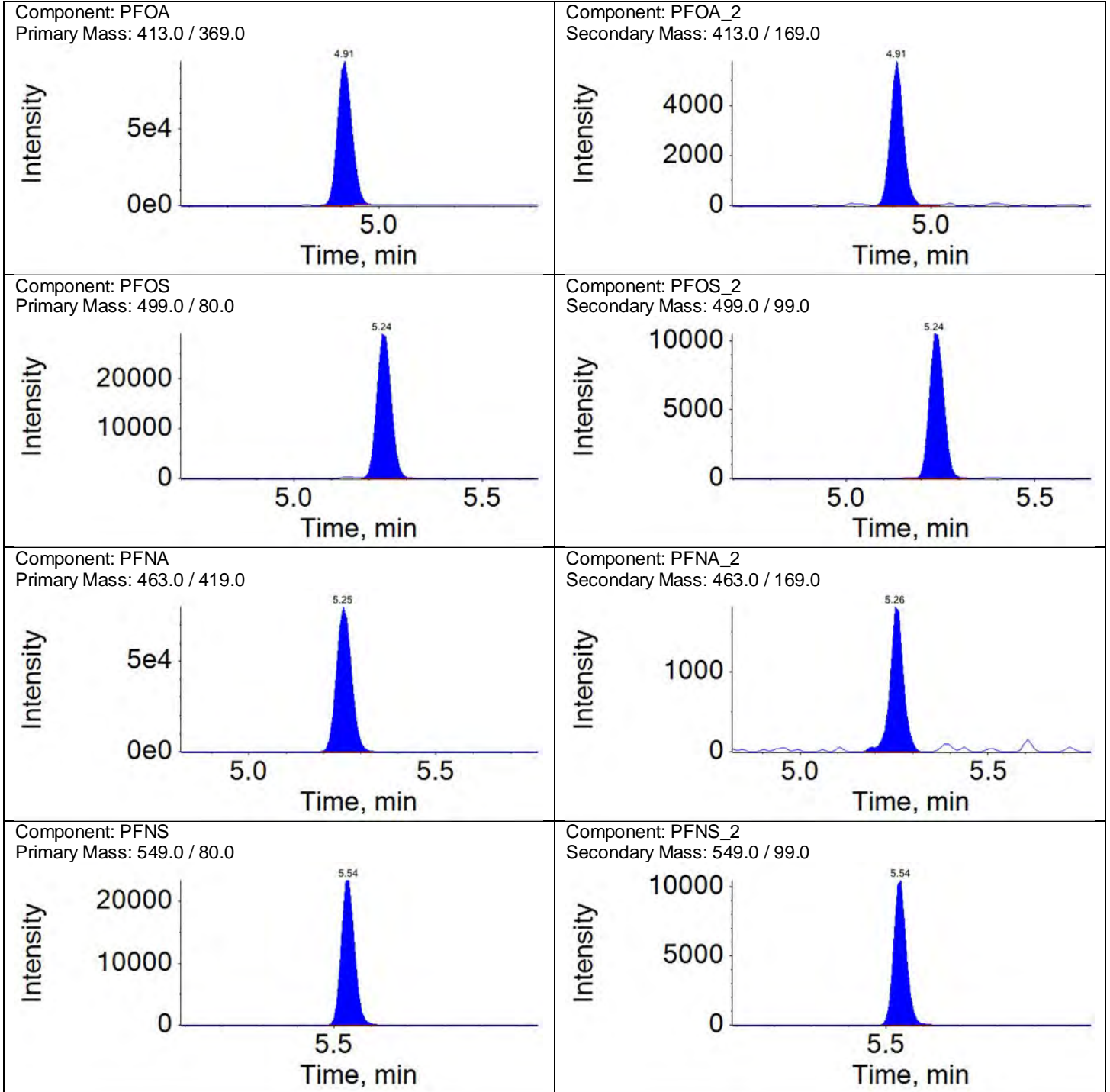
Instrument Name: LM27631

File Name: 18DEC19D-24.wiff

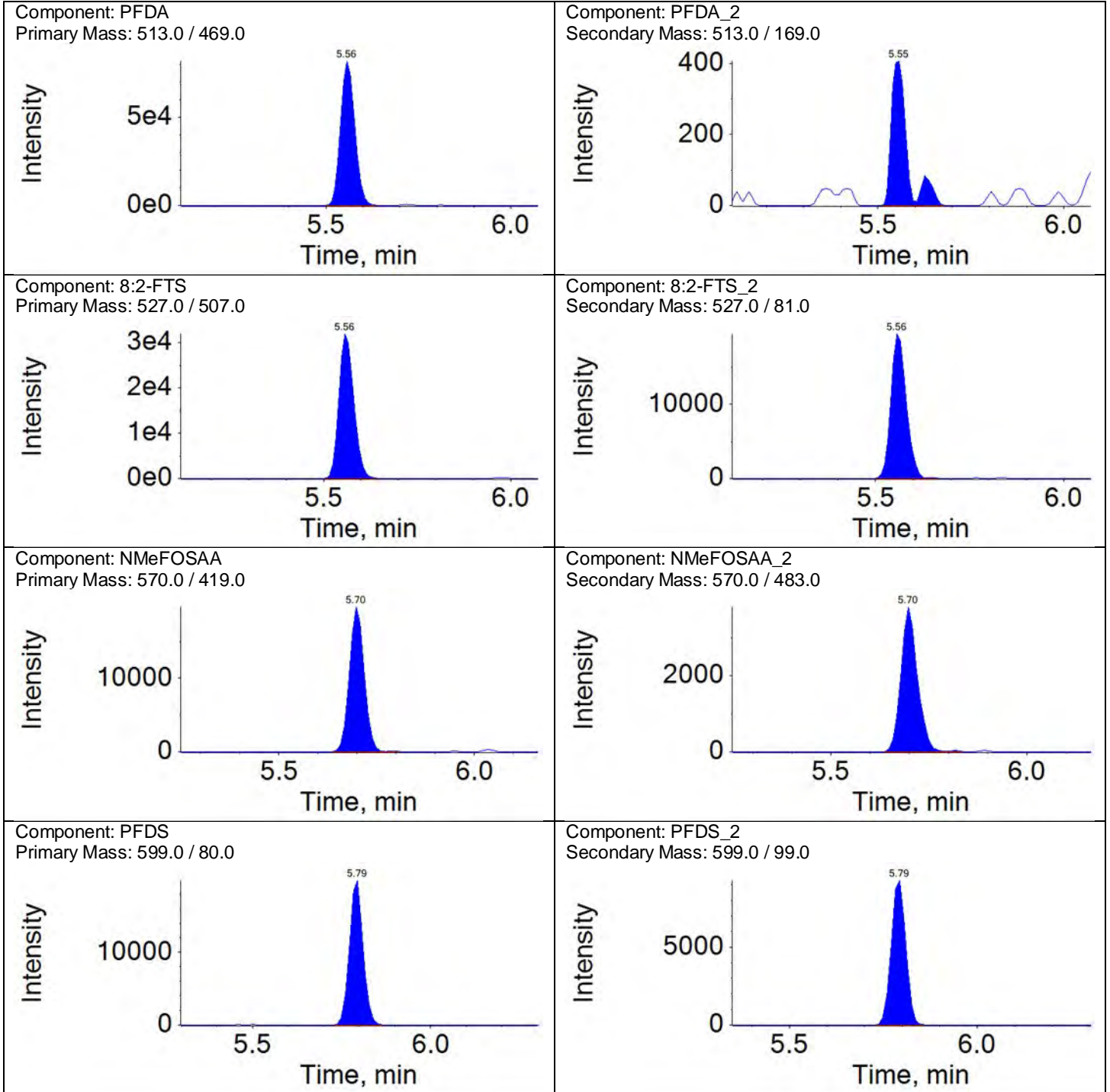
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	105456.3	A	N/A	1.0000			
PFBS_2	3.81	1.00	37153.4	A	N/A	0.3523	-4	50	
4:2-FTS	4.12	1.00	96727.1	A	N/A	1.0000			
4:2-FTS_2	4.12	1.00	57949.9	A	N/A	0.5991	-2	50	
PFHxA	4.16	1.00	236169.5	A	N/A	1.0000			
PFHxA_2	4.16	1.00	2400.5	A	N/A	0.0102	-11	50	
PFPeS	4.18	1.10	53174.2	A	N/A	1.0000			
PFPeS_2	4.18	1.10	26455.0	A	N/A	0.4975	-5	50	
PFHpA	4.54	1.00	253234.8	A	N/A	1.0000			
PFHpA_2	4.54	1.00	13493.4	A	N/A	0.0533	-3	50	
PFHxS	4.55	1.00	72445.9	A	N/A	1.0000			
PFHxS_2	4.54	1.00	28852.6	A	N/A	0.3983	19	50	
6:2-FTS	4.90	1.00	84540.1	A	N/A	1.0000			
6:2-FTS_2	4.90	1.00	54226.4	A	N/A	0.6414	1	50	
PFHpS	4.90	1.08	82489.3	A	N/A	1.0000			
PFHpS_2	4.90	1.08	31712.3	A	N/A	0.3844	-6	50	
PFOA	4.91	1.00	248033.9	A	N/A	1.0000			
PFOA_2	4.91	1.00	13761.2	A	N/A	0.0555	-6	50	
PFOS	5.24	1.00	77623.8	A	N/A	1.0000			
PFOS_2	5.24	1.00	28088.0	A	N/A	0.3618	21	50	
PFNA	5.25	1.00	222727.1	A	N/A	1.0000			
PFNA_2	5.26	1.00	4484.6	A	N/A	0.0201	-6	50	
PFNS	5.54	1.06	58095.8	A	N/A	1.0000			
PFNS_2	5.54	1.06	24467.6	A	N/A	0.4212	-9	50	
PFDA	5.56	1.00	218633.8	A	N/A	1.0000			
PFDA_2	5.55	1.00	1214.3	A	N/A	0.0056	-13	50	
8:2-FTS	5.56	1.00	88205.2	A	N/A	1.0000			
8:2-FTS_2	5.56	1.00	55459.2	A	N/A	0.6288	7	50	
NMeFOSAA	5.70	1.00	51992.2	A	N/A	1.0000			
NMeFOSAA_2	5.70	1.00	11195.5	A	N/A	0.2153	-18	50	
PFDS	5.79	1.11	52602.9	A	N/A	1.0000			
PFDS_2	5.79	1.11	24938.5	A	N/A	0.4741	-4	50	
PFOA_2	5.81	1.00	233758.8	A	N/A	1.0000			
PFOA_2_2	5.82	1.00	454.2	A	N/A	0.0019	-45	50	
NEtFOSAA	5.83	1.00	48760.3	A	N/A	1.0000			
NEtFOSAA_2	5.83	1.00	30518.6	A	N/A	0.6259	-9	50	
PFOA_2	6.04	1.00	296287.7	A	N/A	1.0000			
PFOA_2_2	6.04	1.00	2539.3	A	N/A	0.0086	-36	50	
10:2-FTS	6.06	1.09	75083.7	A	N/A	1.0000			
10:2-FTS_2	6.06	1.09	55875.7	A	N/A	0.7442	6	50	
PFOA_2	6.24	1.03	291026.2	A	N/A	1.0000			
PFOA_2_2	6.24	1.03	2541.7	A	N/A	0.0087	-7	50	
PFOA_2	6.42	1.00	198393.6	A	N/A	1.0000			
PFOA_2_2	6.41	1.00	1501.2	A	N/A	0.0076	30	50	
PFOA_2	6.72	1.05	94333.2	A	N/A	1.0000			
PFOA_2_2	6.72	1.05	5973.0	A	N/A	0.0633	-4	50	
PFOA_2	6.98	1.09	46758.9	A	N/A	1.0000			
PFOA_2_2	6.98	1.09	1183.2	A	N/A	0.0253	-7	50	



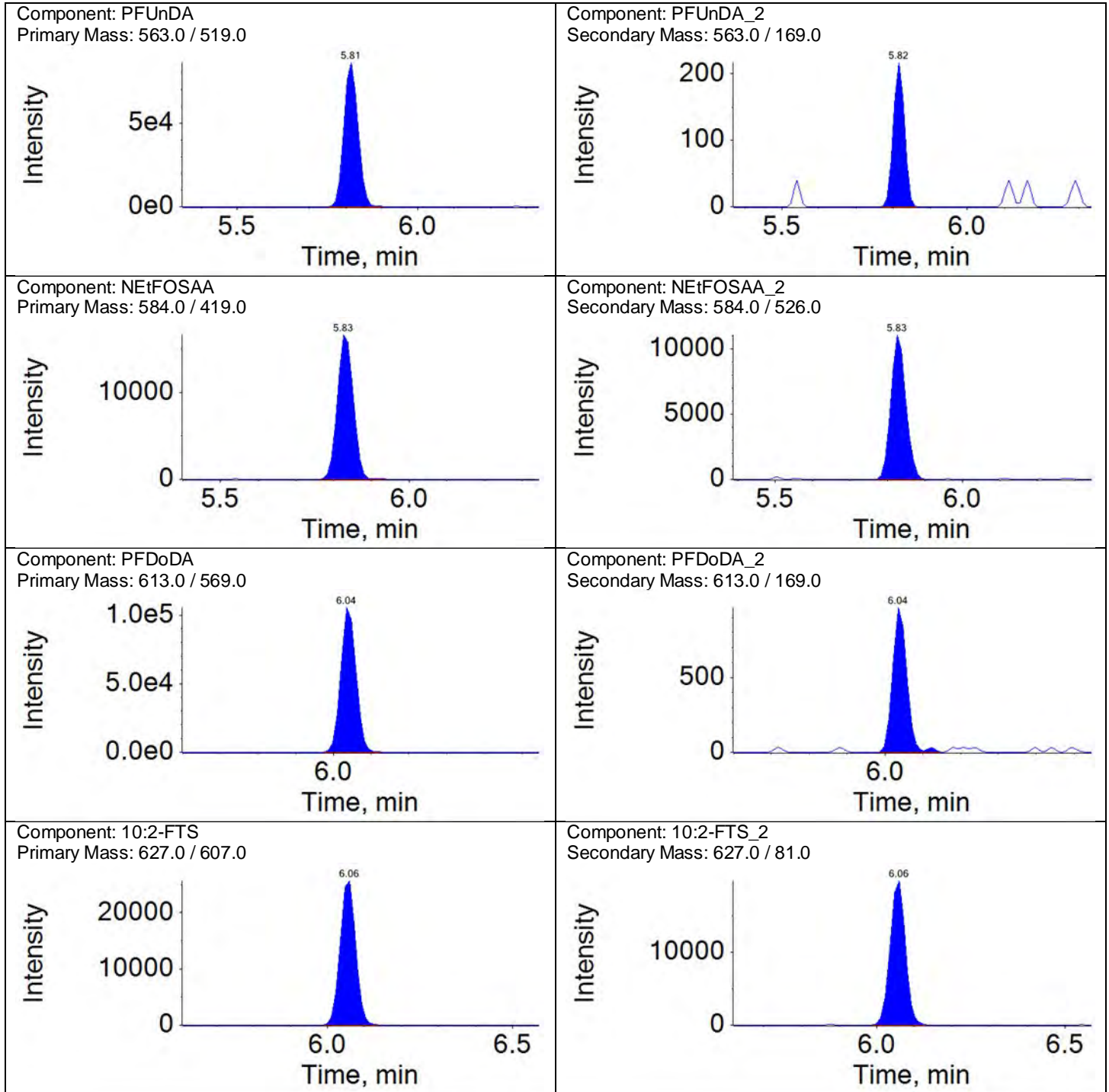


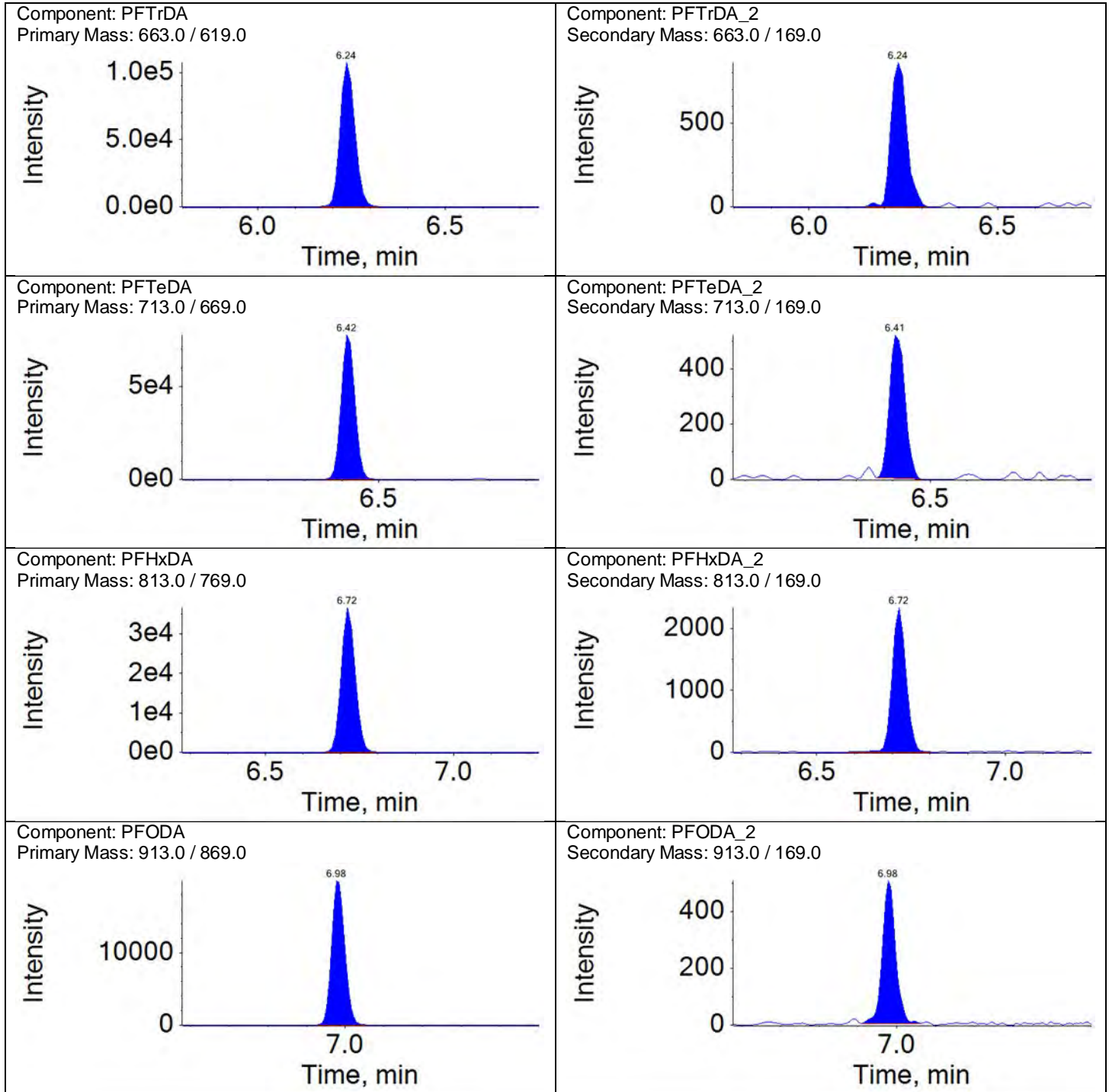












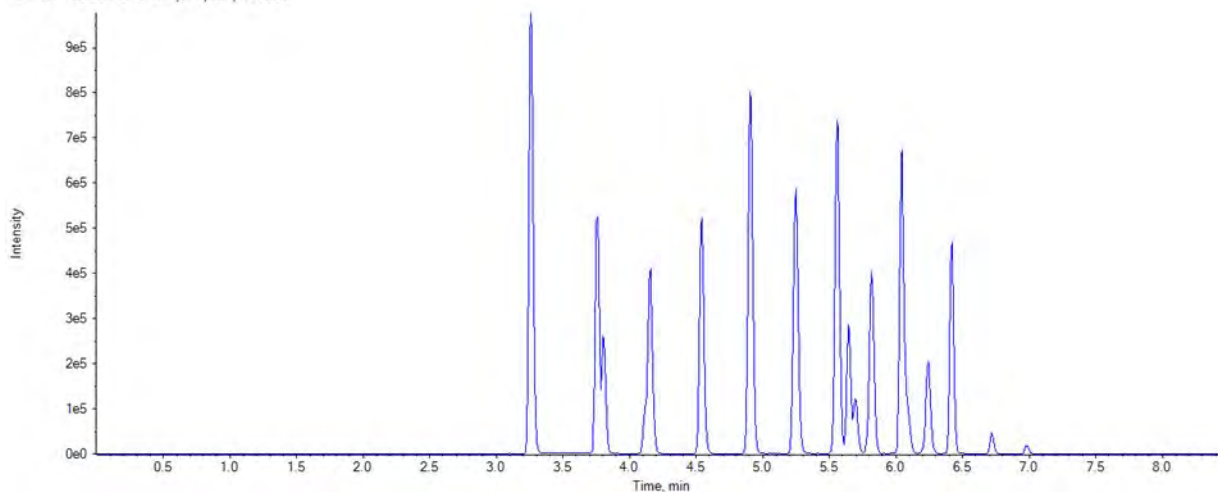
Lab Control Sample Recovery

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCSDA	EPA 537 mod QSM 5.1 table B-15 18348012	18DEC19D-25.wiff	2018-12-19T13:44:11

TIC from 18DEC19D-25.wiff (sample 1) - LCSDA



Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Reference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.00	960259.6	942675.8	2	50	
13C2-PFOA	5.00	505247.4	520268.5	-3	50	
13C4-PFOS	4.78	303366.7	307968.9	-1	50	
13C2-PFDA	5.00	487604.1	487375.3	0	50	

**Lab Control Sample Recovery**

ICAL Name: 18DEC18DCAL      Result Table: 18348012 12/20/2018 9:25:03 AM  
QMethod Name: 18AUG20QM      Acquisition Method: 18AUG13\_3uL.dam

Instrument Name:	Sample Name:	Sample ID:	Sample File:	Acquisition Date:
LM27631	LCSDA	EPA 537 mod QSM 5.1 table B-15 18348012	18DEC19D-25.wiff	2018-12-19T13:44:11

Analyte Name	Analyte Area	Ext Std Area	Area Ratio	Adj Actual Conc	Sample Result	%REC	% REC Limit	%REC OOS
PFBA	265560.3	964411.2	0.275	5.440	5.848	108	70-130	
PFPeA	242932.0	921883.7	0.264	5.440	5.441	100	70-130	
PFBS	106228.8	390011.4	0.272	4.812	5.378	112	72-127	
4:2-FTS	91516.6	59254.5	1.544	14.944	16.208	108	70-130	
PFHxA	227556.9	638204.5	0.357	5.440	5.875	108	77-132	
PFPeS	51446.3	390011.4	0.132	5.104	5.372	105	70-130	
PFHpA	249304.0	529223.6	0.471	5.440	6.248	115	75-139	
PFHxS	88268.9	306946.0	0.288	5.144	5.595	109	71-130	
6:2-FTS	86104.8	45533.7	1.891	15.168	18.830	124	70-130	
PFHpS	77849.4	306946.0	0.254	5.176	5.367	104	70-130	
PFOA	246327.0	863982.6	0.285	5.440	6.042	111	76-136	
PFOS	81680.4	289769.3	0.282	5.200	4.937	95	67-134	
PFNA	213170.2	575583.2	0.370	5.440	5.888	108	73-144	
PFNS	60937.8	289769.3	0.210	5.224	5.349	102	70-130	
PFDA	213640.3	779133.0	0.274	5.440	5.664	104	67-141	
8:2-FTS	91335.8	48053.0	1.901	15.328	15.303	100	70-130	
PFOSA	121738.0	500076.8	0.243	5.440	4.870	90	70-130	
NMeFOSAA	48318.4	212073.7	0.228	5.440	5.664	104	67-124	
PFDS	47460.0	289769.3	0.164	5.240	5.378	103	70-130	
PFUnDA	212329.6	499866.8	0.425	5.440	5.627	103	83-132	
NEtFOSAA	49021.4	142133.8	0.345	5.440	7.031	129	60-131	
PFDoDA	277657.8	1037522.6	0.268	5.440	5.392	99	72-137	
10:2-FTS	77841.5	48053.0	1.620	15.424	13.197	86	70-130	
NMePFOSAE	47556.0	146787.3	0.324	5.440	5.718	105	70-130	
NMePFOSA	5760.8	22232.2	0.259	5.440	5.232	96	70-130	
PFDoS	25318.8	289769.3	0.087	5.280	5.295	100	70-130	
NEtPFOSAE	46367.1	125247.6	0.370	5.440	4.838	89	70-130	
NEtPFOSA	4392.7	17142.3	0.256	5.440	4.794	88	70-130	
PFTrDA	287810.1	1037522.6	0.277	5.440	5.693	105	57-137	
PFTeDA	195870.7	783242.2	0.250	5.440	5.386	99	70-142	
PFHxDA	88301.3	783242.2	0.113	5.440	4.952	91	70-130	
PFODA	39754.2	783242.2	0.051	5.440	2.917	54	70-130	OOS

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

**Lab Control Sample Recovery**

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

**APPROVED**  
By MSM at 10:14 am, 12/20/18

**REVIEWED**  
By umar at 4:41 pm, 12/28/18



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam

Sample Name:	LCSDA	Data File:	18DEC19D-25.wiff
Sample ID:	EPA 537 mod QSM 5.1 table B-15 18348012	Acquis Date:	2018-12-19T13:44:11
Sample Type:	Quality Control	Instrument:	LM27631
Vial Position:	76	Acquis Method:	18AUG13_3uL.dam
Injection Vol:	3.00	Result Table:	18348012
QMethod File:	18AUG20QM	ICAL Name:	18DEC18DCAL
Batch Number:	18348012	Operator:	MM26157
Sample Wt.:	0.25000	Dilution Factor:	1.00
Sample Vol.:	1.000	Prep Factor:	1.000

### Injection Standard Peak Table

Injection Standard Area Reference File: 18DEC19D-05

Injection Standard Name	Inj Std Conc	Injection Std Peak Area	Rreference Injection Standard Area	Injection Std %Diff	Injection Std %Diff Limit	Injection Std %Diff OOS
13C3-PFBA	5.0	960259.6	942675.8	2	50	
13C2-PFOA	5.0	505247.4	520268.5	-3	50	
13C4-PFOS	4.8	303366.7	307968.9	-1	50	
13C2-PFDA	5.0	487604.1	487375.3	0	50	

### Extraction Standard Peak Table

Extraction Standard Name	Ext Std Area	Inj Std Name	Inj Std Area	Area Ratio	Ext Std Conc	Ext Std Result	Ext Std %REC	Ext Std %REC Limit	Ext Std OOS
E13C4-PFBA	964411.2	13C3-PFBA	960259.6	1.004	20.000	17.790	89	50-150	
E13C5-PFPeA	921883.7	13C3-PFBA	960259.6	0.960	20.000	17.907	90	50-150	
E13C3-PFBS	390011.4	13C3-PFBA	960259.6	0.406	18.600	15.819	85	50-150	
E13C2-4:2-FTS	59254.5	13C2-PFOA	505247.4	0.117	18.680	17.817	95	50-150	
E13C5-PFHxA	638204.5	13C2-PFOA	505247.4	1.263	20.000	18.073	90	50-150	
E13C3-PFHxS	306946.0	13C2-PFOA	505247.4	0.608	18.920	18.388	97	50-150	
E13C4-PFHpA	529223.6	13C2-PFOA	505247.4	1.047	20.000	18.098	90	50-150	
E13C2-6:2-FTS	45533.7	13C2-PFOA	505247.4	0.090	19.000	18.137	95	50-150	
E13C8-PFOA	863982.6	13C2-PFOA	505247.4	1.710	20.000	18.808	94	50-150	
E13C8-PFOS	289769.3	13C4-PFOS	303366.7	0.955	19.120	17.086	89	50-150	
E13C9-PFNA	575583.2	13C4-PFOS	303366.7	1.897	20.000	17.265	86	50-150	
E13C6-PFDA	779133.0	13C2-PFDA	487604.1	1.598	20.000	18.206	91	50-150	
E13C2-8:2-FTS	48053.0	13C2-PFDA	487604.1	0.099	19.160	20.317	106	50-150	
E13C8-PFOSA	500076.8	13C2-PFDA	487604.1	1.026	20.000	15.975	80	50-150	
Ed3-NMeFOSAA	212073.7	13C2-PFDA	487604.1	0.435	20.000	19.140	96	50-150	
E13C7-PFUnDA	499866.8	13C2-PFDA	487604.1	1.025	20.000	17.165	86	50-150	
Ed5-NetFOSAA	142133.8	13C2-PFDA	487604.1	0.291	20.000	17.178	86	50-150	
E13C2-PFDoDA	1037522.6	13C2-PFDA	487604.1	2.128	20.000	17.906	90	50-150	
Ed7-NMePFOSAE	146787.3	13C2-PFDA	487604.1	0.301	20.000	10.759	54	50-150	
Ed3-NMePFOSA	22232.2	13C2-PFDA	487604.1	0.046	20.000	5.011	25	50-150	OOS
Ed9-NetPFOSAE	125247.6	13C2-PFDA	487604.1	0.257	20.000	10.504	53	50-150	
Ed5-NetPFOSA	17142.3	13C2-PFDA	487604.1	0.035	20.000	4.877	24	50-150	OOS
E13C2-PFTeDA	783242.2	13C2-PFDA	487604.1	1.606	20.000	18.106	91	50-150	

ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

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Acquisition Method: 18AUG13\_3uL.dam

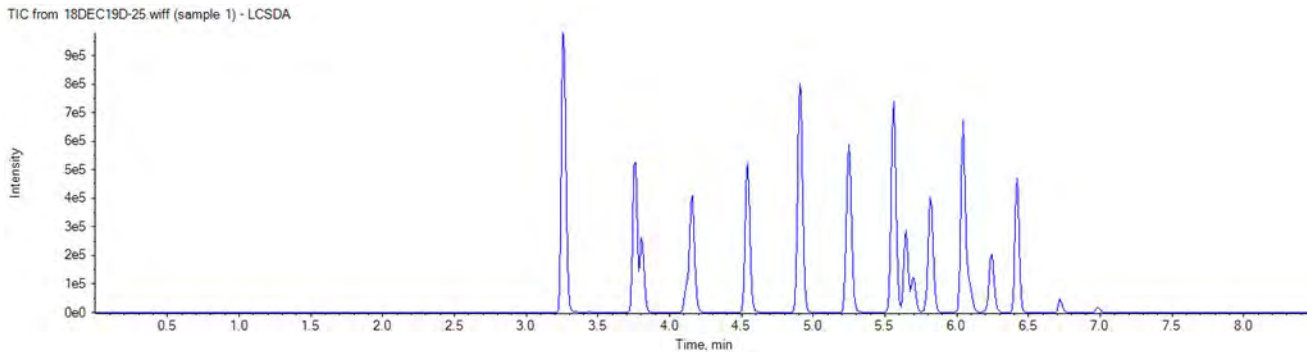
Analyte Quantitation Peak Table

Sample Name: LCSDA Instrument Name: LM27631 File Name: 18DEC19D-25.wiff

Sample Wt	Sample Vol	Dilution Factor	PrepFactor
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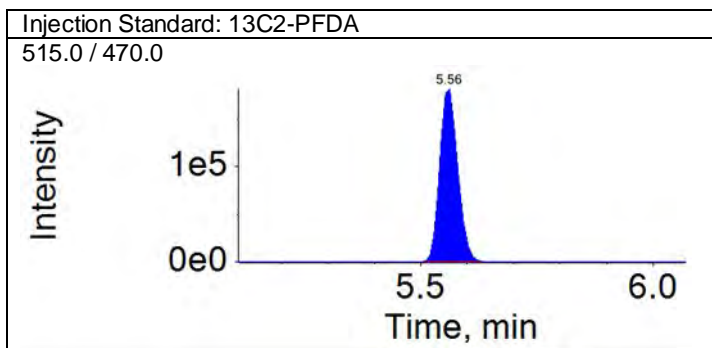
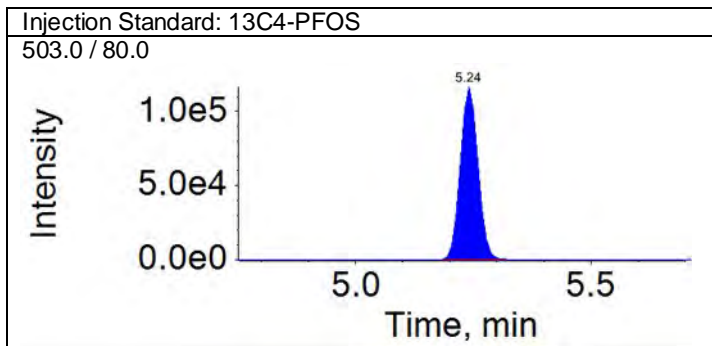
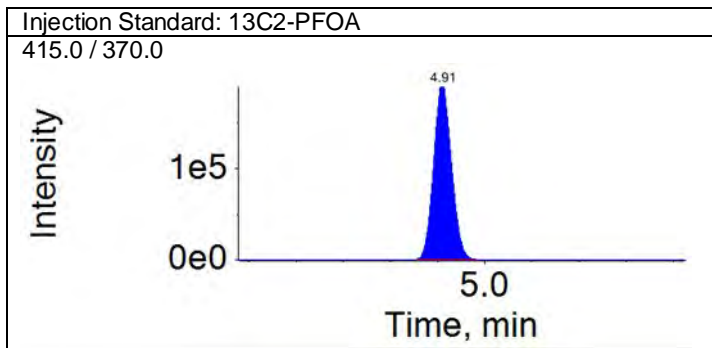
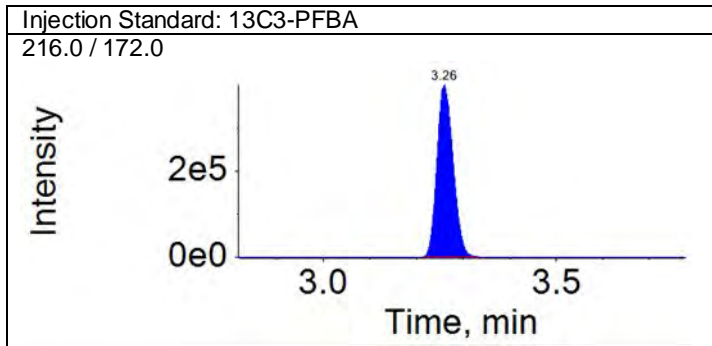
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PFBA	3.26	1.000	265560.3		A	13C4-PFBA	3.26	964411.2	0.275	5.848
PFPeA	3.76	1.000	242932.0		A	13C5-PFPeA	3.76	921883.7	0.264	5.441
PFBS	3.81	1.000	106228.8		A	13C3-PFBS	3.81	390011.4	0.272	5.378
4:2-FTS	4.12	1.000	91516.6		A	13C2-4:2-FTS	4.12	59254.5	1.544	16.208
PFHxA	4.15	1.000	227556.9		A	13C5-PFHxA	4.15	638204.5	0.357	5.875
PFPeS	4.17	1.100	51446.3		A	13C3-PFBS	3.81	390011.4	0.132	5.372
PFHpA	4.54	1.000	249304.0		A	13C4-PFHpA	4.54	529223.6	0.471	6.248
PFHxS	4.54	1.000	88268.9		A	13C3-PFHxS	4.54	306946.0	0.288	5.595
6:2-FTS	4.90	1.000	86104.8		A	13C2-6:2-FTS	4.90	45533.7	1.891	18.830
PFHpS	4.90	1.080	77849.4		A	13C3-PFHxS	4.54	306946.0	0.254	5.367
PFOA	4.91	1.000	246327.0		A	13C8-PFOA	4.91	863982.6	0.285	6.042
PFOS	5.24	1.000	81680.4		A	13C8-PFOS	5.24	289769.3	0.282	4.937
PFNA	5.25	1.000	213170.2		A	13C9-PFNA	5.25	575583.2	0.370	5.888
PFNS	5.54	1.060	60937.8		A	13C8-PFOS	5.24	289769.3	0.210	5.349
PFDA	5.56	1.000	213640.3		A	13C6-PFDA	5.56	779133.0	0.274	5.664
8:2-FTS	5.56	1.000	91335.8		A	13C2-8:2-FTS	5.56	48053.0	1.901	15.303
PFOSA	5.65	1.000	121738.0		A	13C8-PFOSA	5.65	500076.8	0.243	4.870
NMeFOSAA	5.70	1.000	48318.4		A	d3-NMeFOSAA	5.70	212073.7	0.228	5.664
PFDS	5.79	1.110	47460.0		A	13C8-PFOS	5.24	289769.3	0.164	5.378
PfUnDA	5.82	1.000	212329.6		A	13C7-PfUnDA	5.82	499866.8	0.425	5.627
NEtFOSAA	5.83	1.000	49021.4		A	d5-NEtFOSAA	5.83	142133.8	0.345	7.031
PFDoDA	6.04	1.000	277657.8		A	13C2-PFDoDA	6.04	1037522.6	0.268	5.392
10:2-FTS	6.06	1.090	77841.5		A	13C2-8:2-FTS	5.56	48053.0	1.620	13.197
NMePFOSAE	6.10	1.000	47556.0		A	d7-NMePFOSAE	6.09	146787.3	0.324	5.718
NMePFOSA	6.11	1.000	5760.8		A	d3-NMePFOSA	6.10	22232.2	0.259	5.232
PFDoS	6.21	1.190	25318.8		A	13C8-PFOS	5.24	289769.3	0.087	5.295
NEtPFOSAE	6.25	1.000	46367.1		A	d9-NEtPFOSAE	6.24	125247.6	0.370	4.838
NEtPFOSA	6.27	1.000	4392.7		A	d5-NEtPFOSA	6.27	17142.3	0.256	4.794
PfTrDA	6.24	1.030	287810.1		A	13C2-PFDoDA	6.04	1037522.6	0.277	5.693
PfTeDA	6.42	1.000	195870.7		A	13C2-PfTeDA	6.42	783242.2	0.250	5.386
PFHxDA	6.72	1.050	88301.3		A	13C2-PfTeDA	6.42	783242.2	0.113	4.952
PFOA	6.98	1.090	39754.2		A	13C2-PfTeDA	6.42	783242.2	0.051	2.917

Total Ion Chromatogram



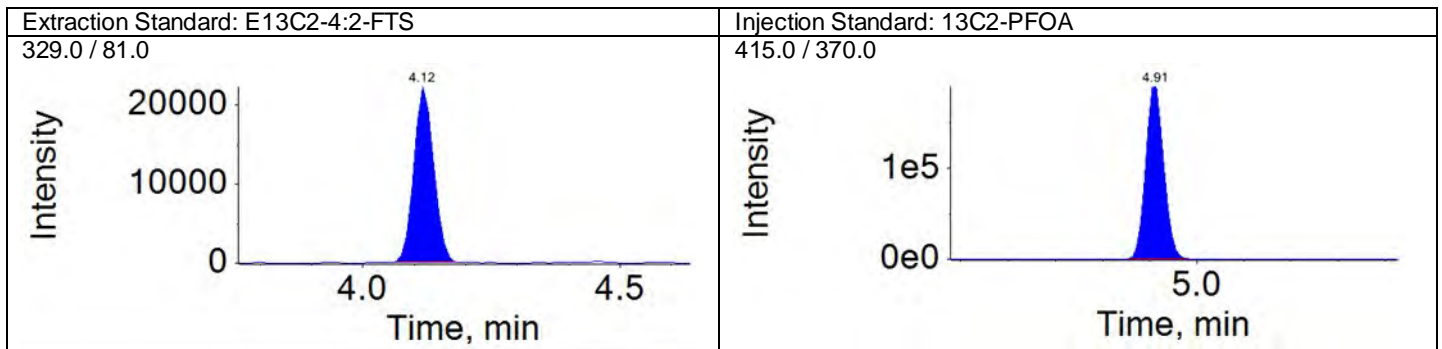
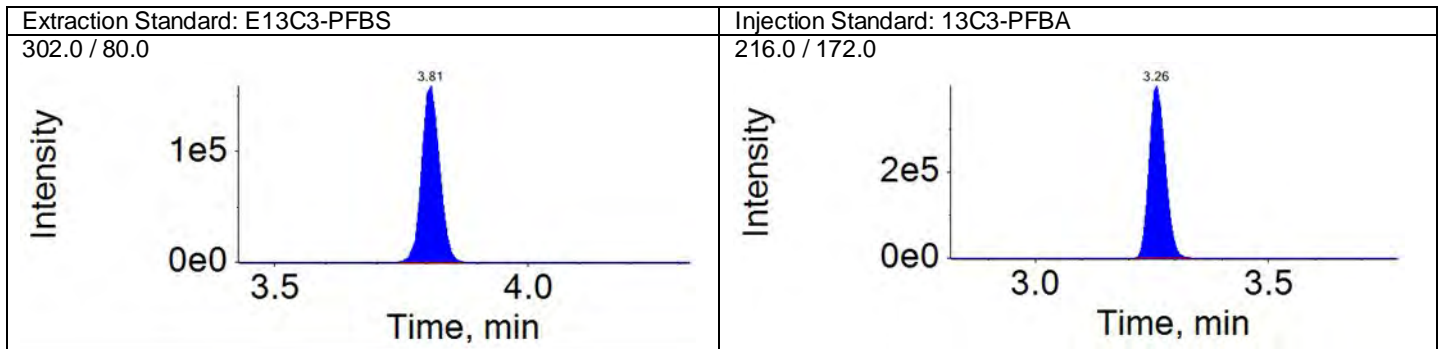
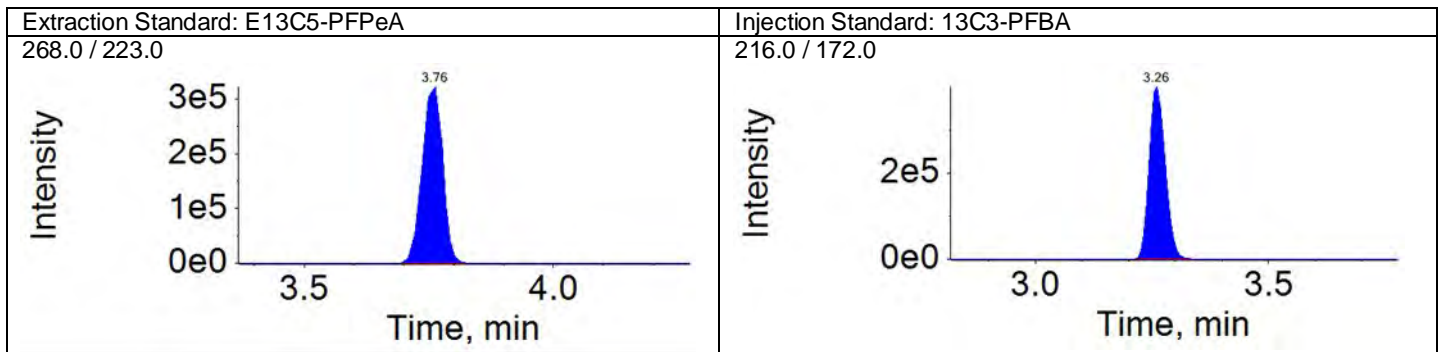
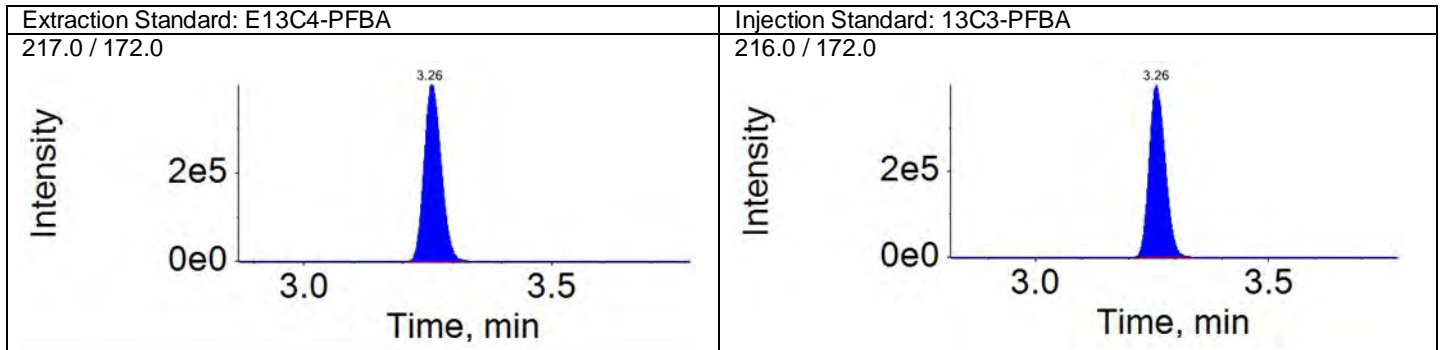
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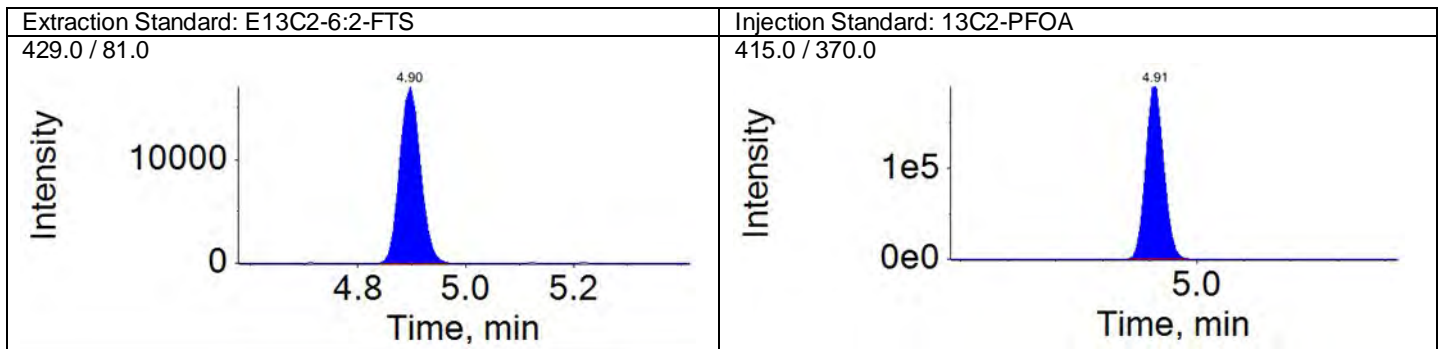
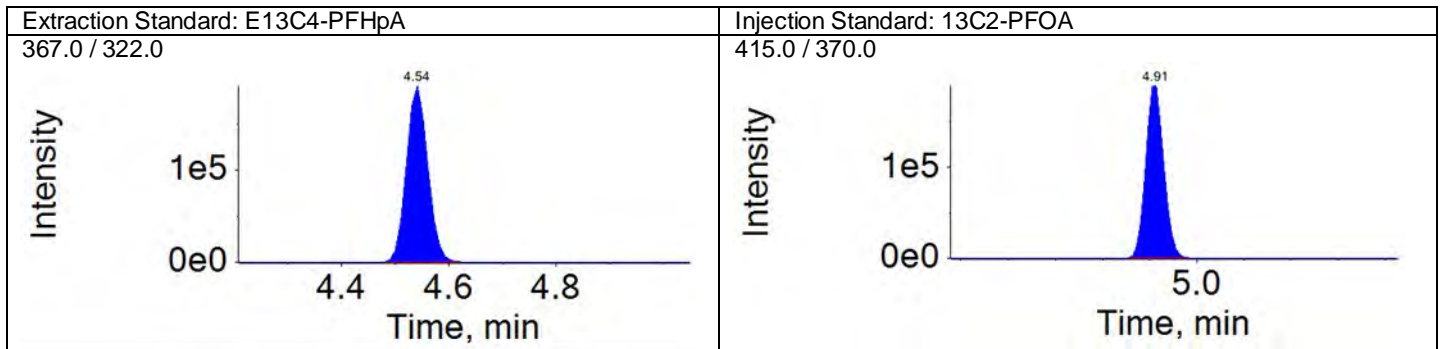
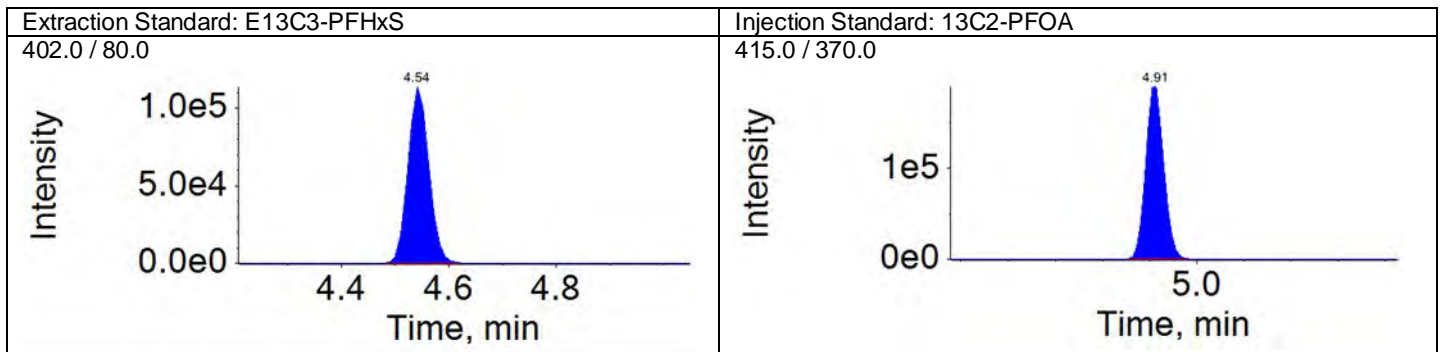
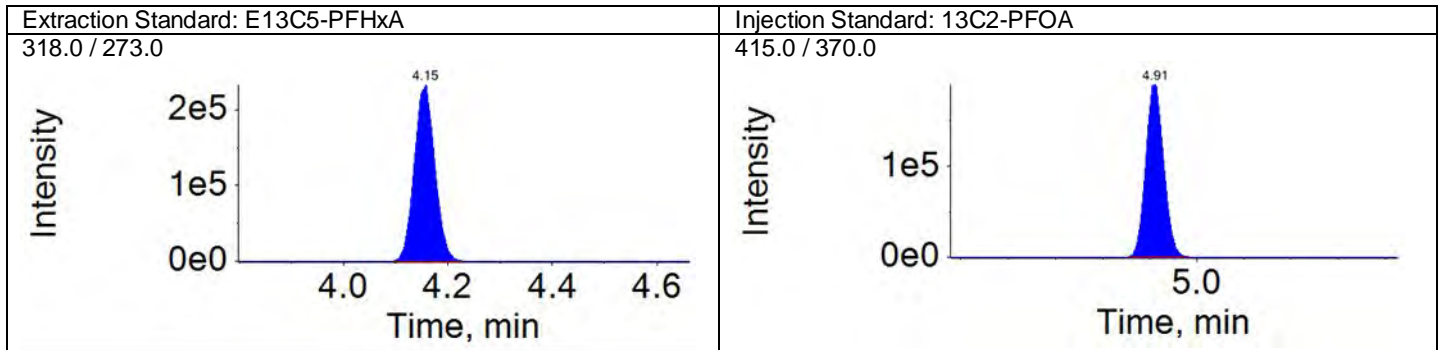
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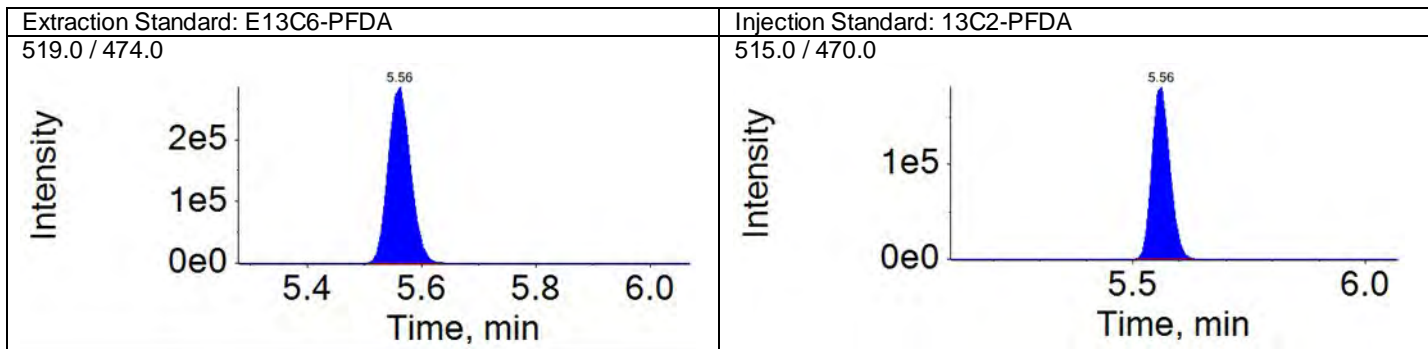
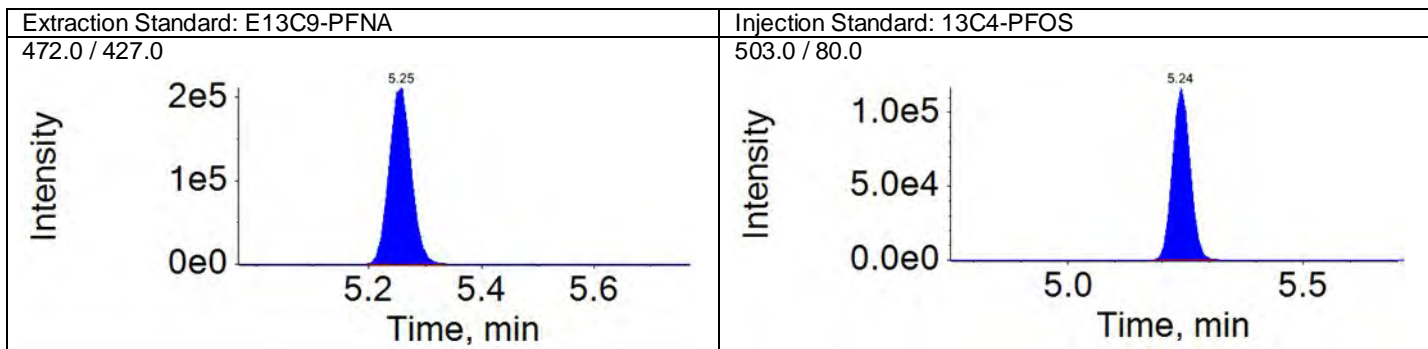
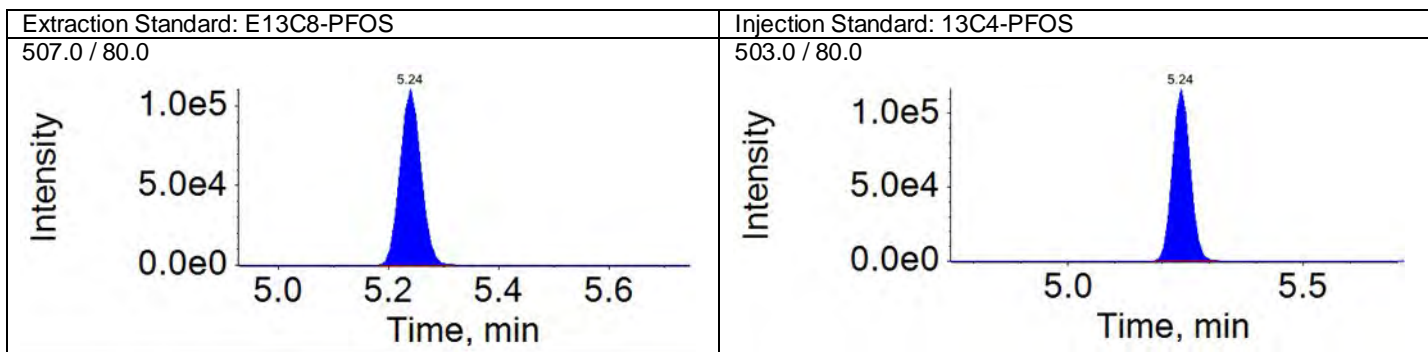
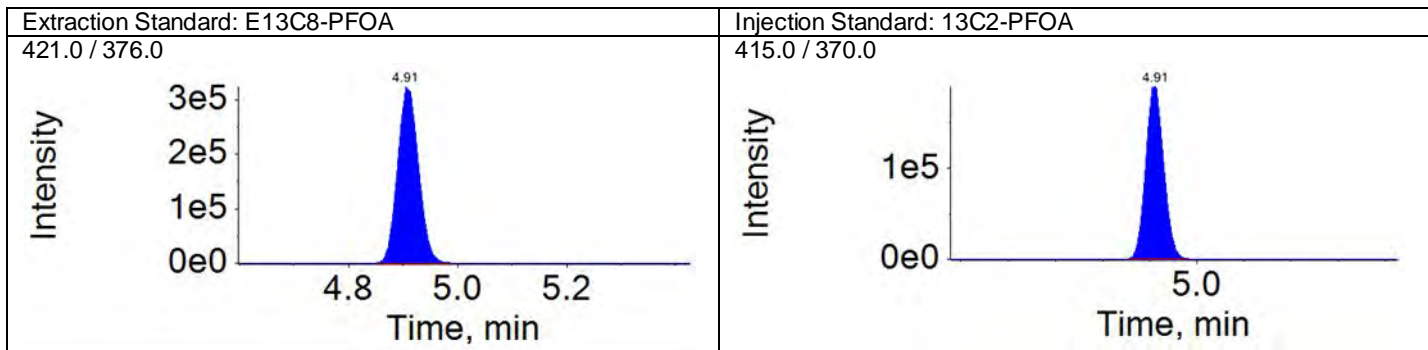
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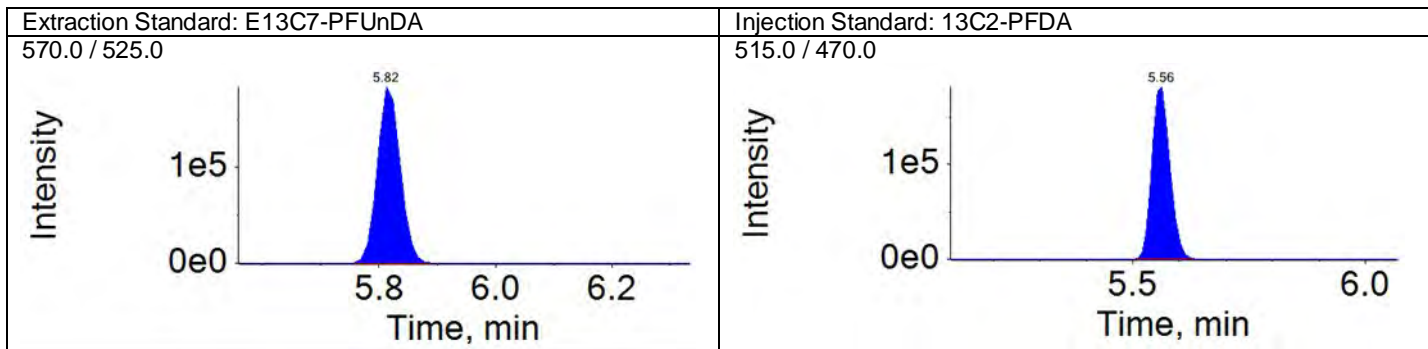
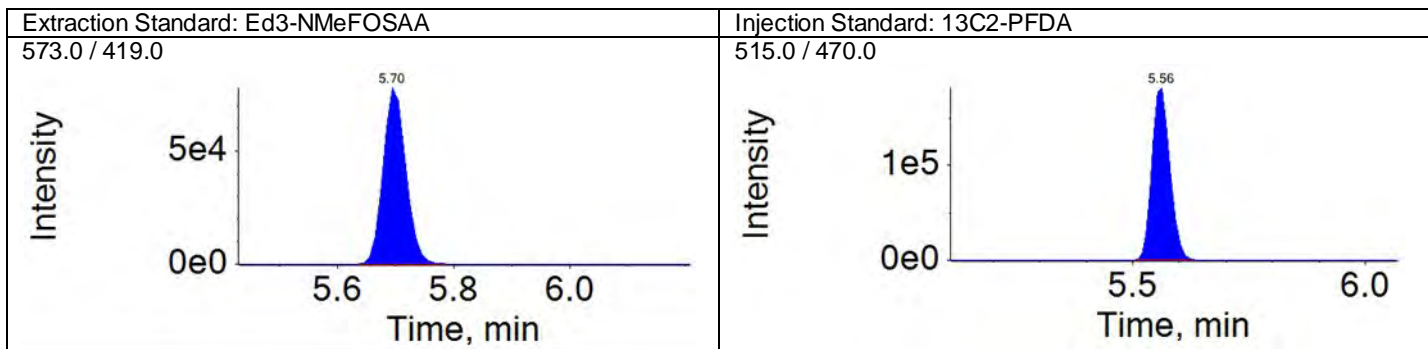
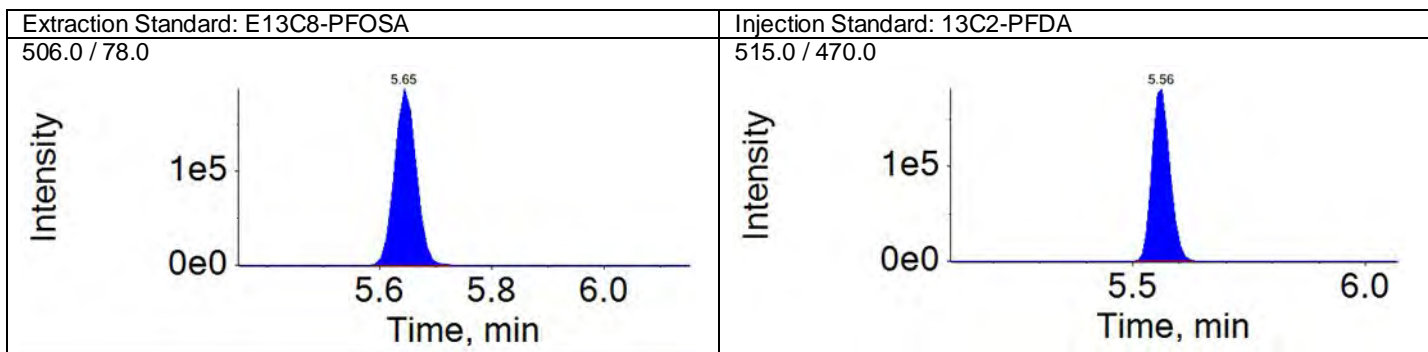
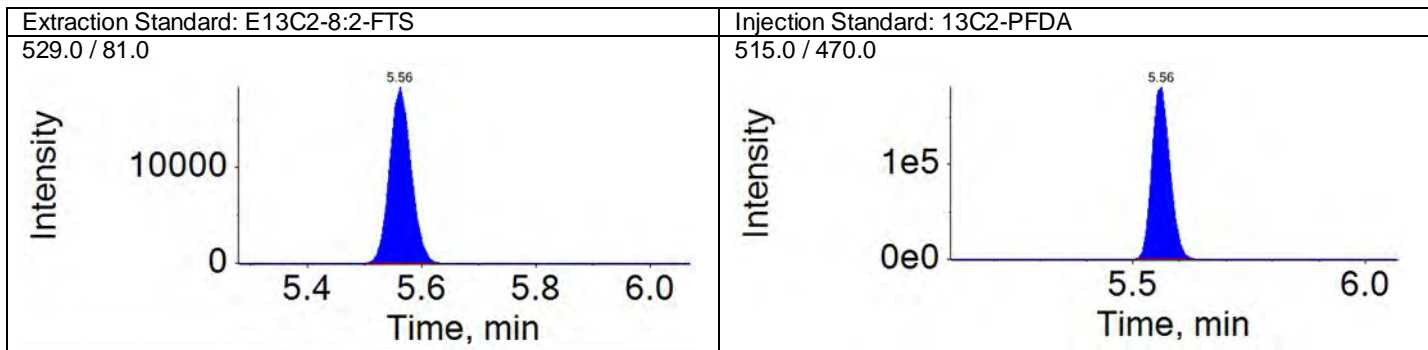
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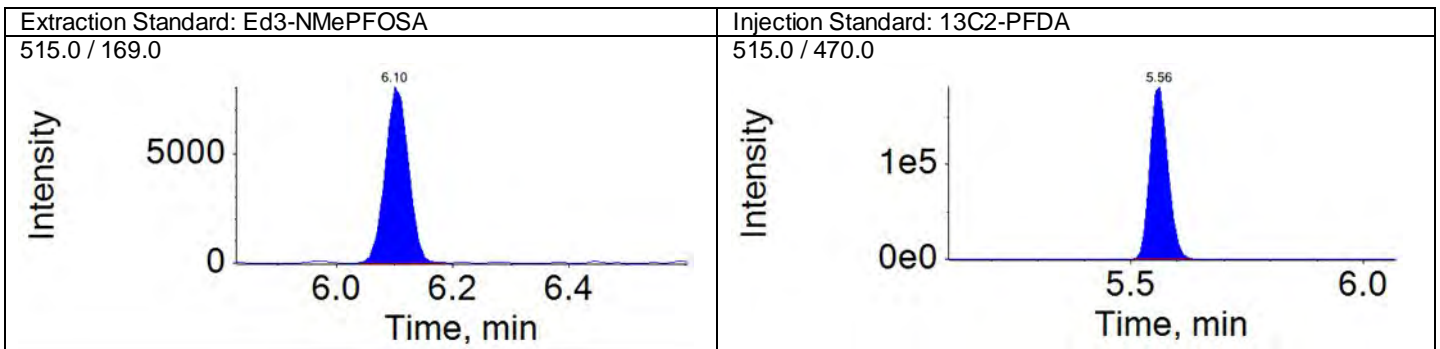
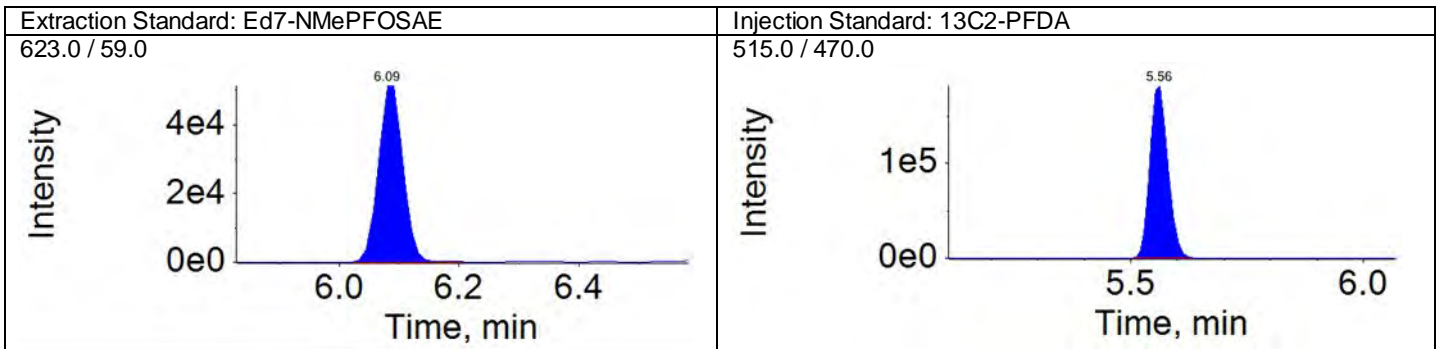
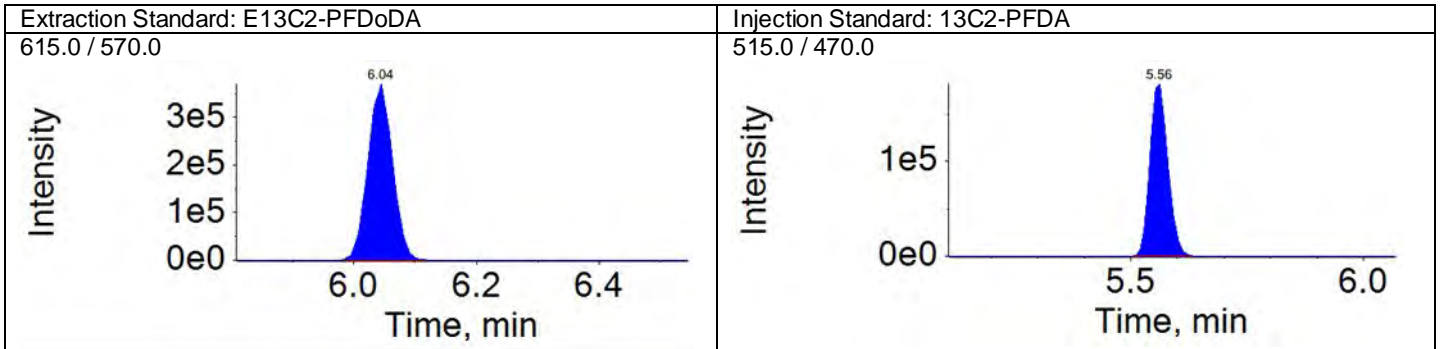
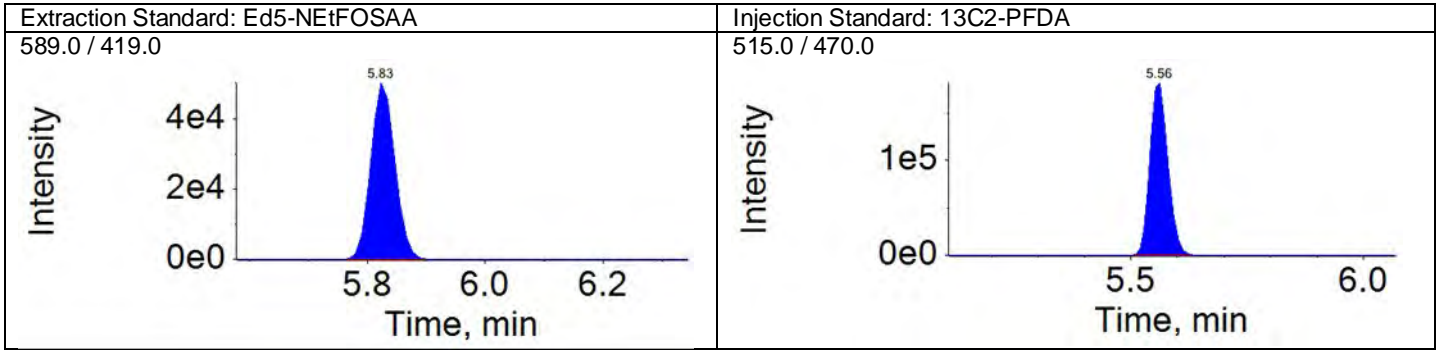
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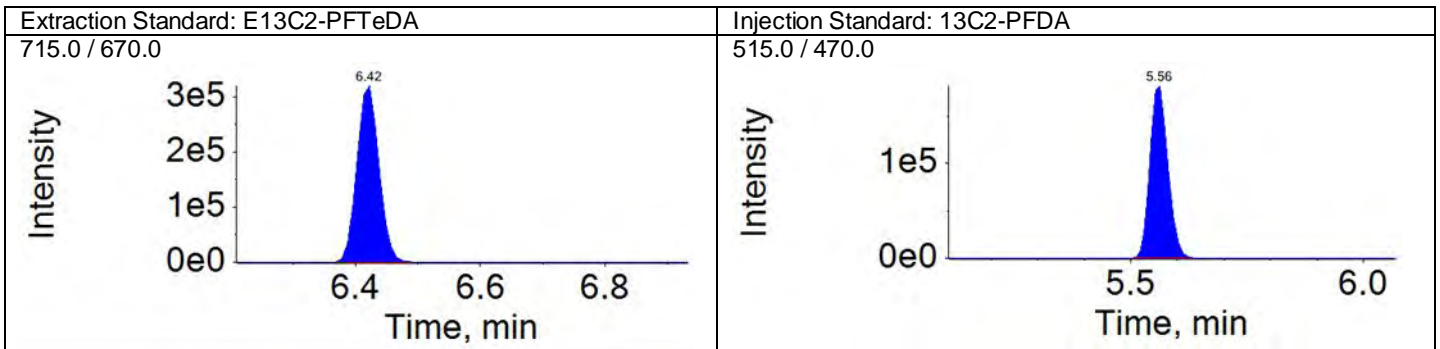
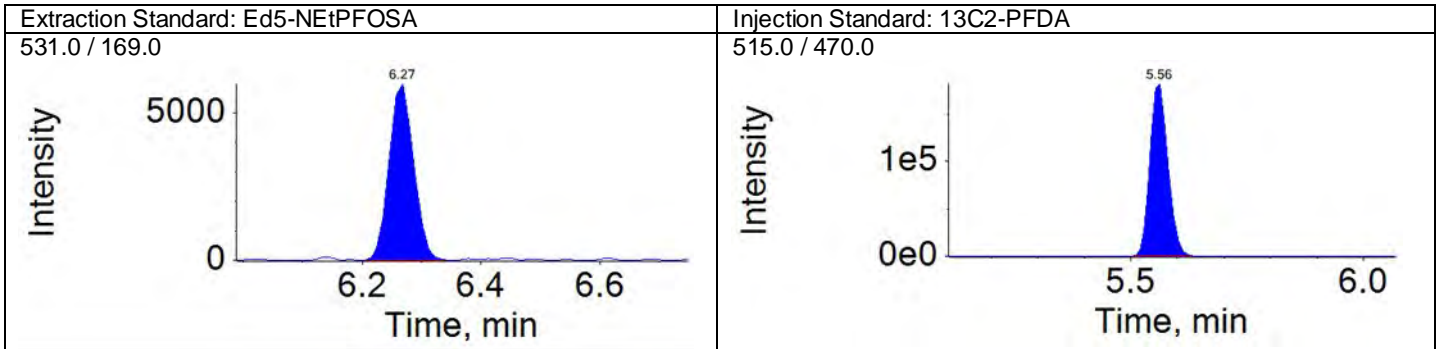
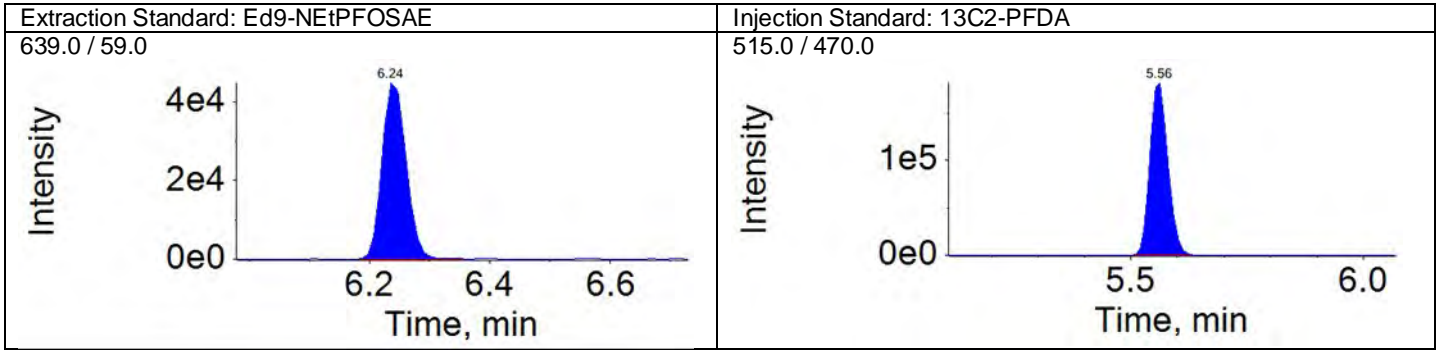
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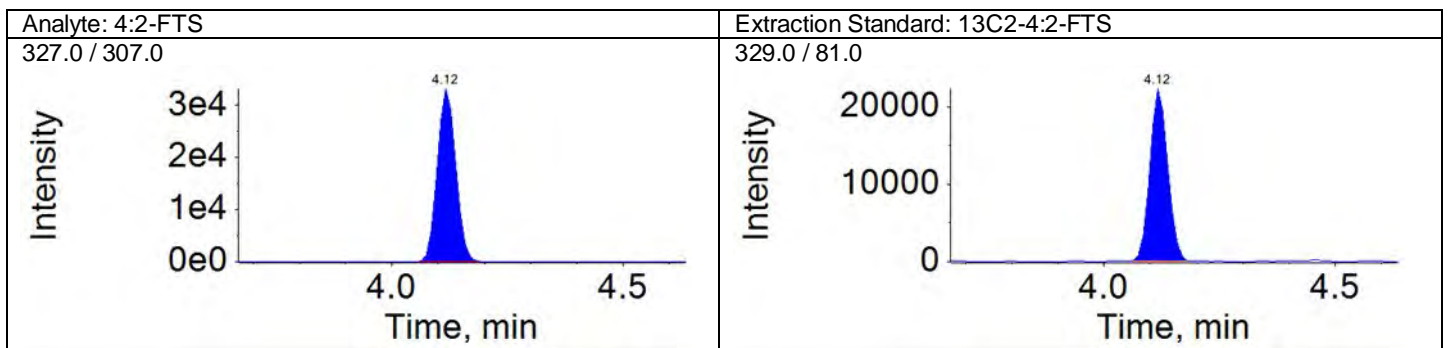
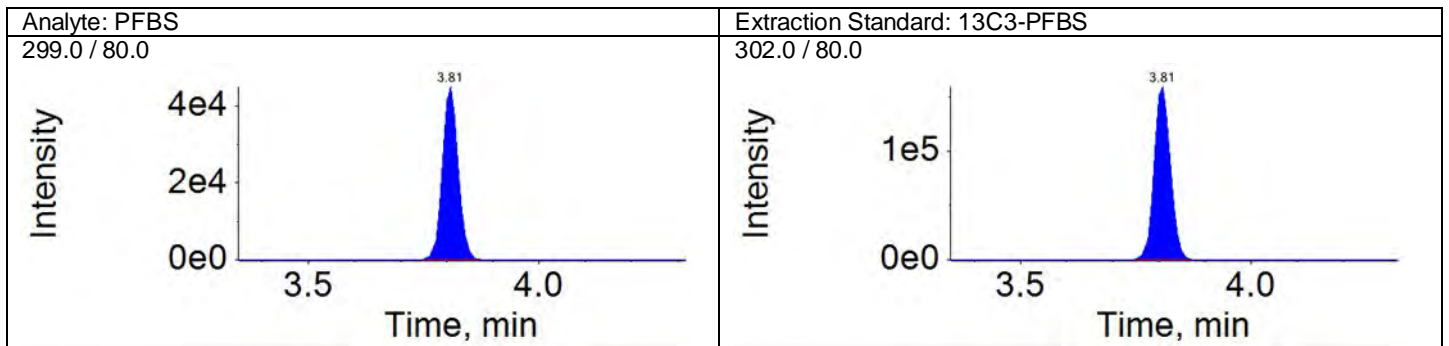
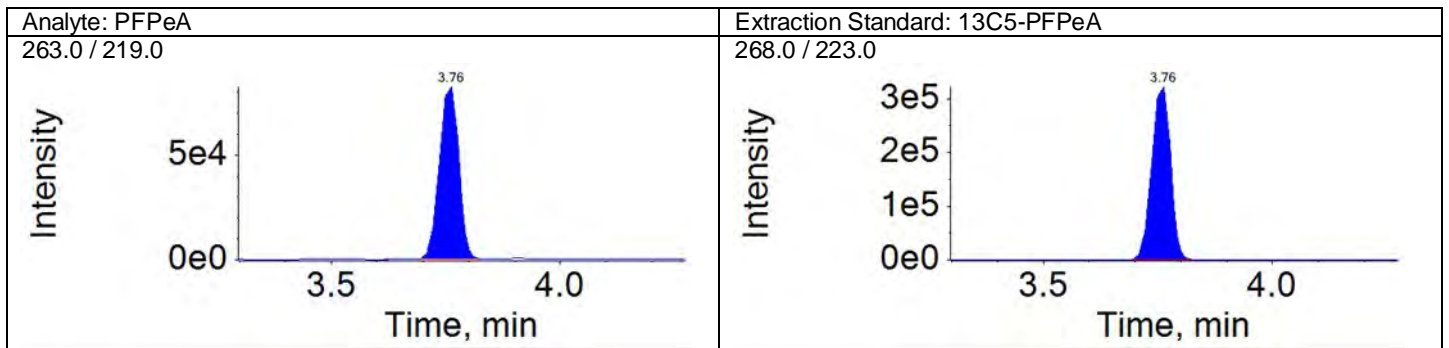
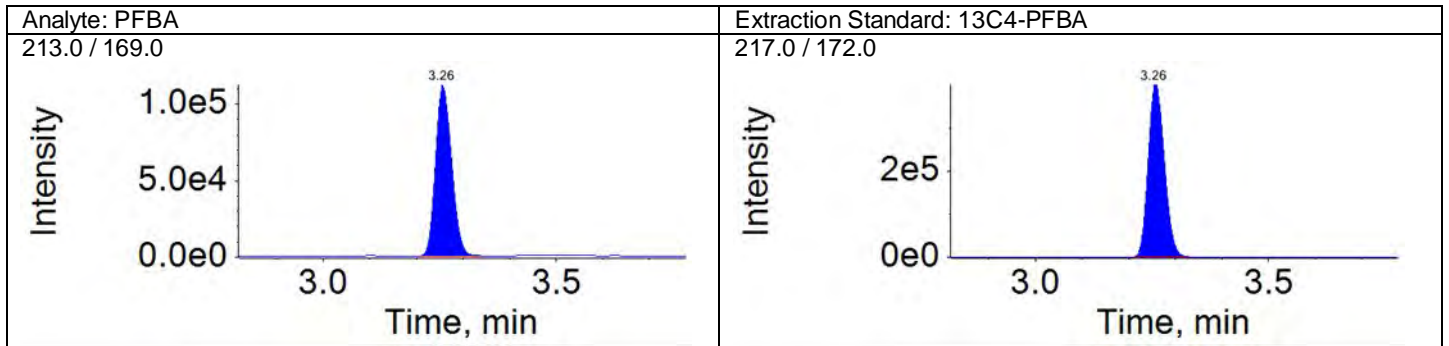
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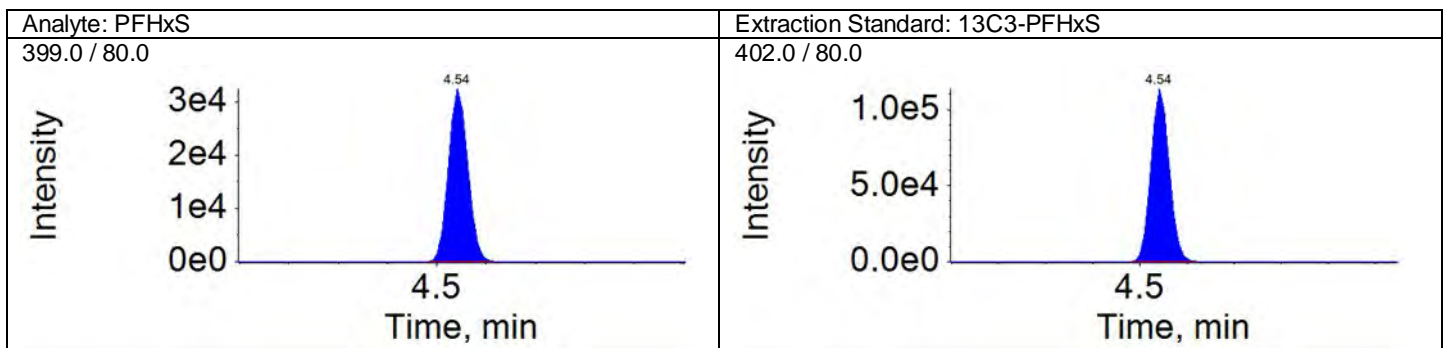
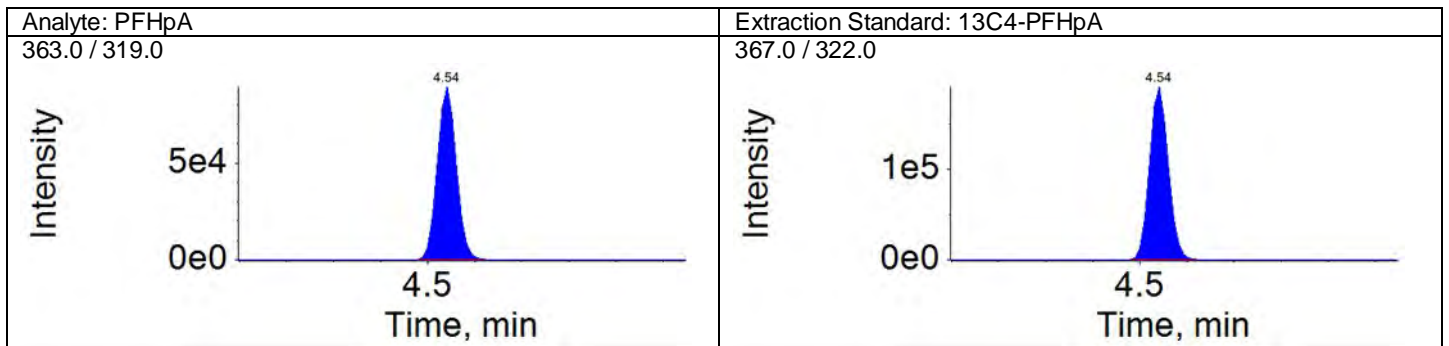
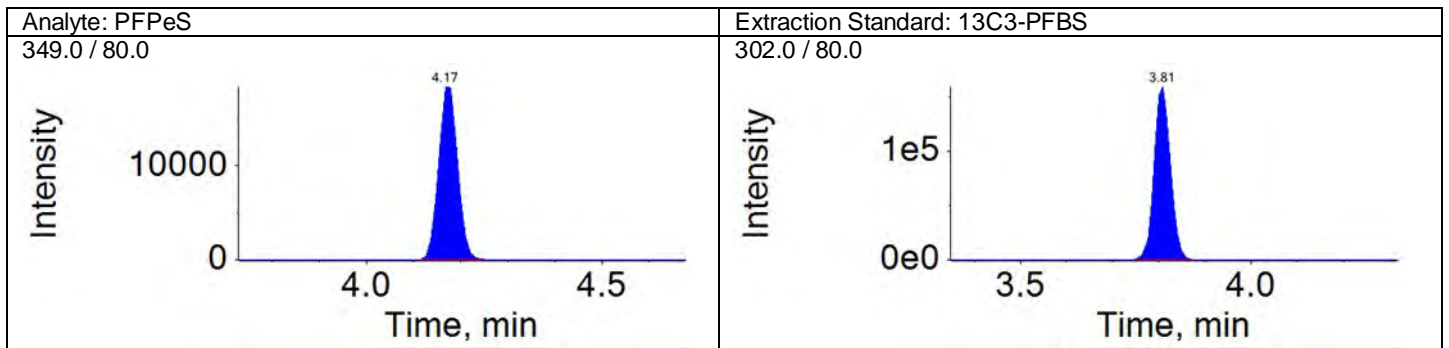
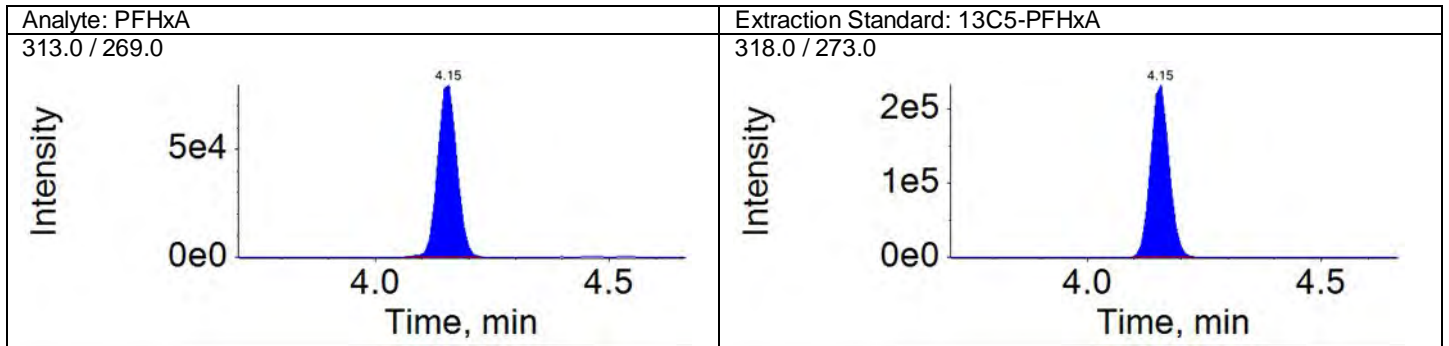
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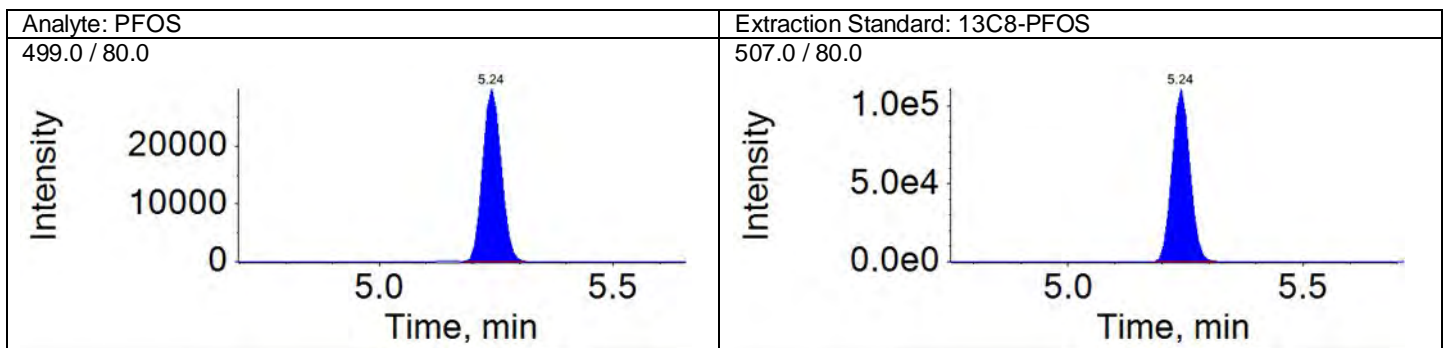
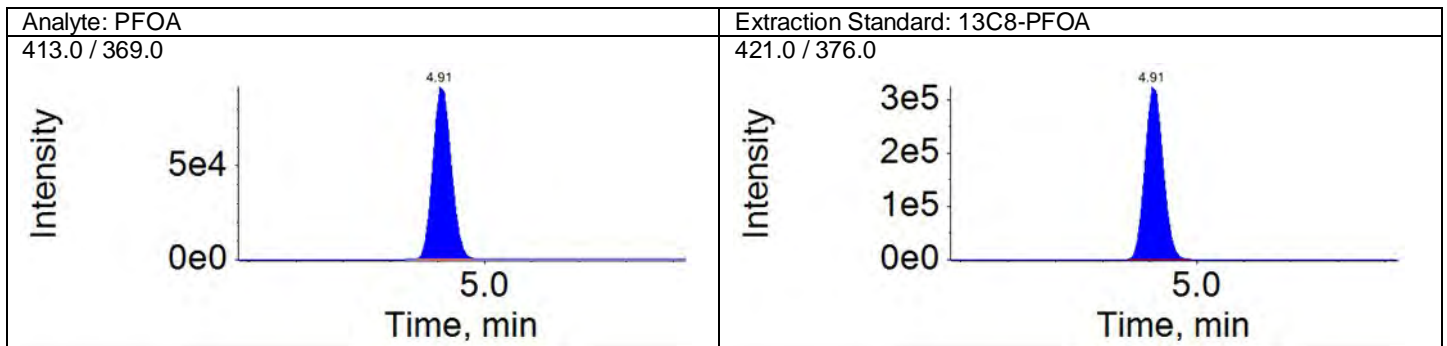
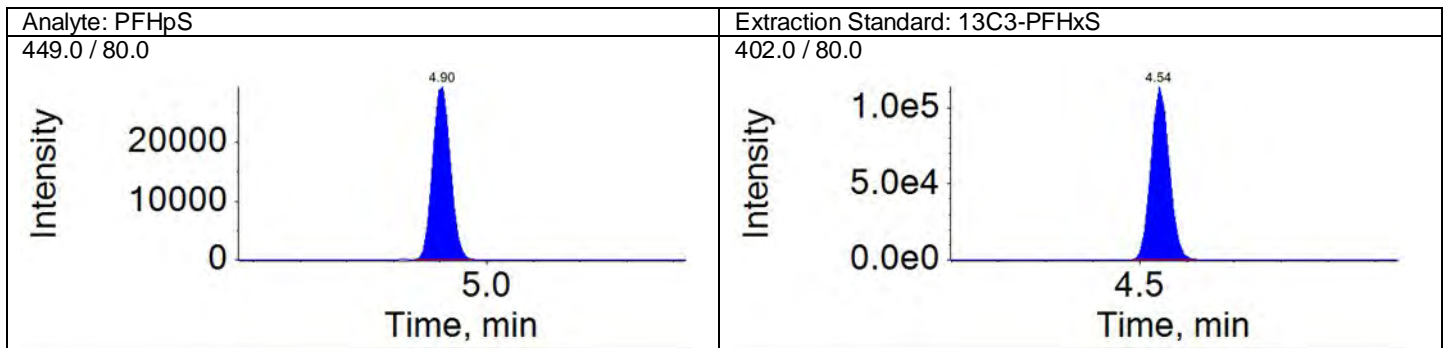
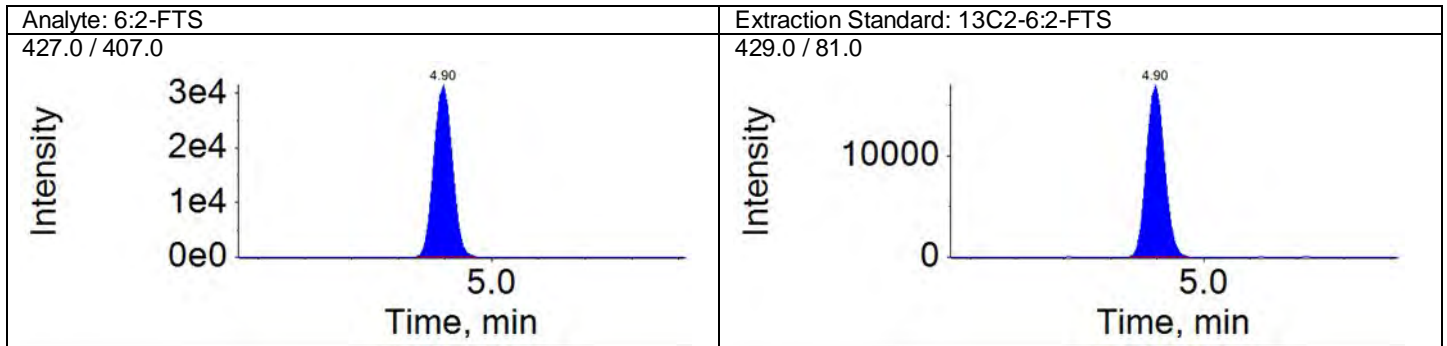
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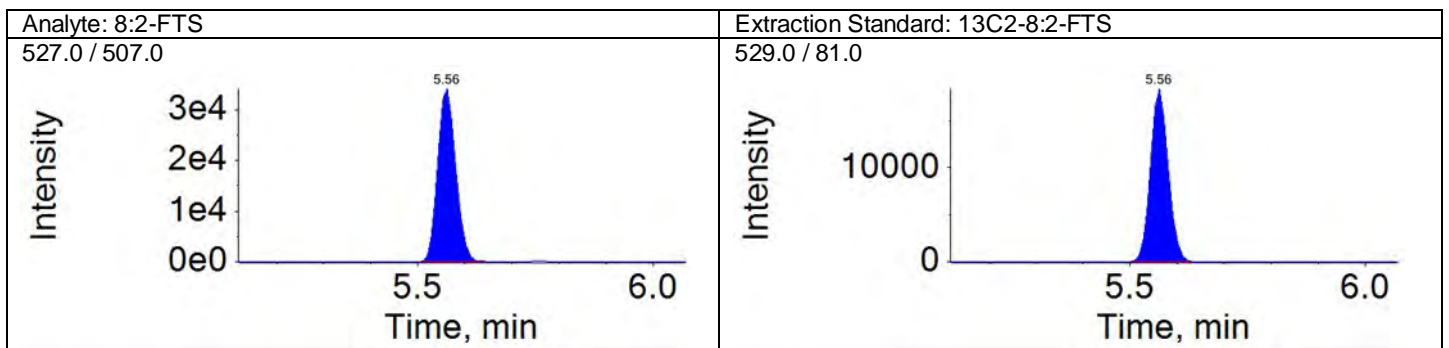
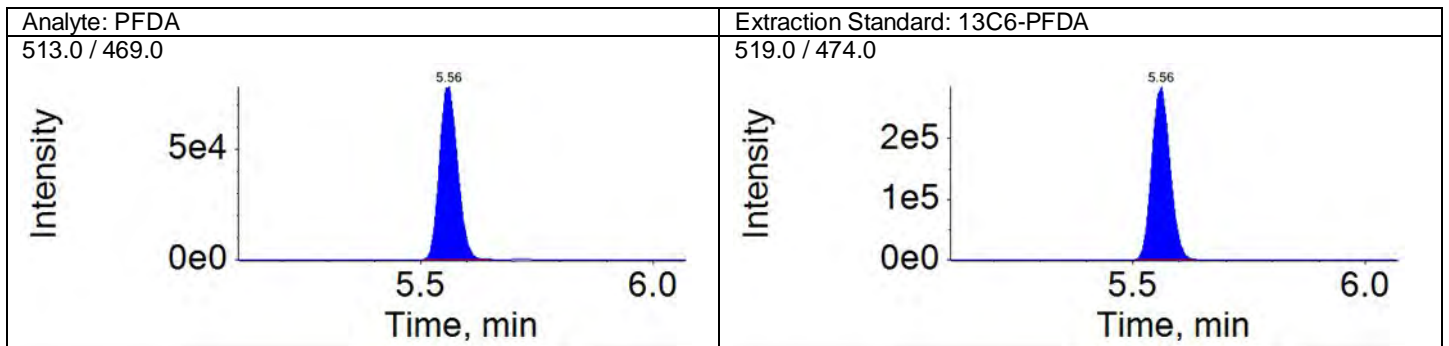
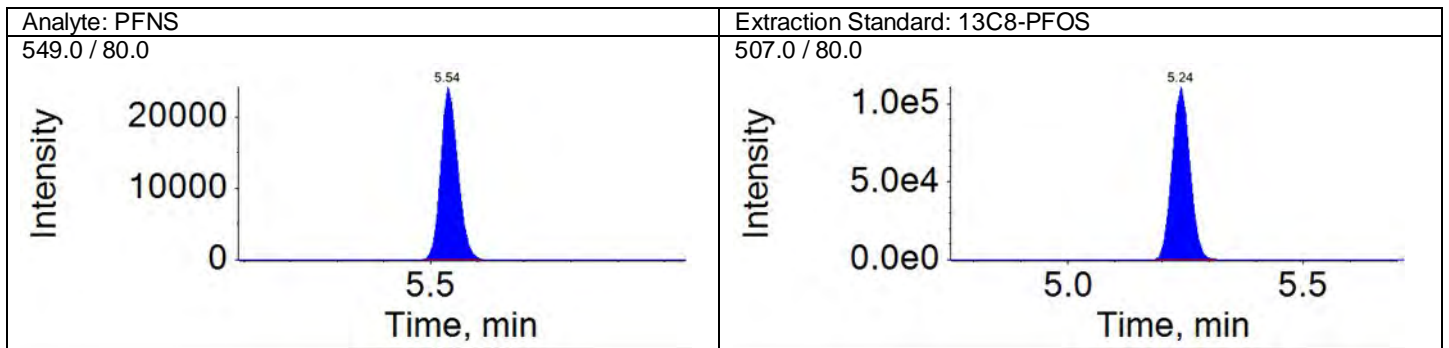
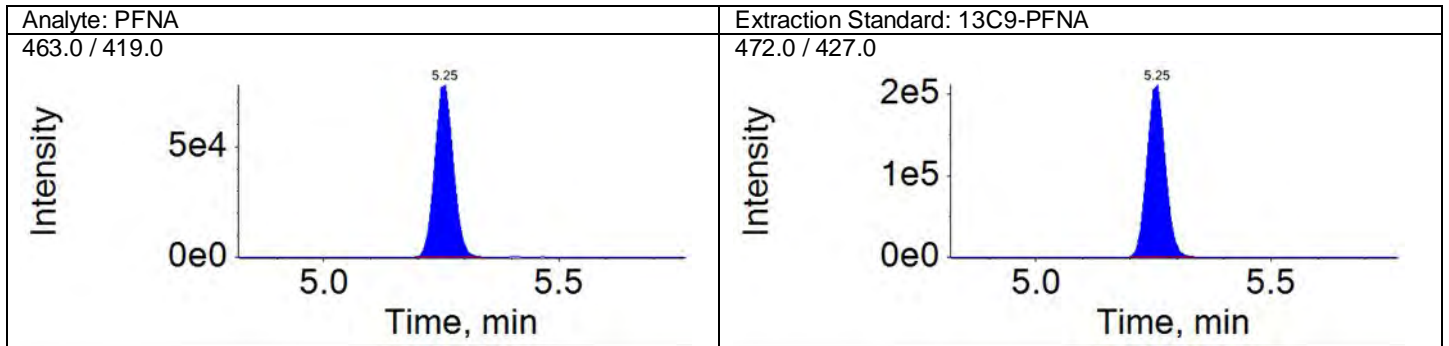
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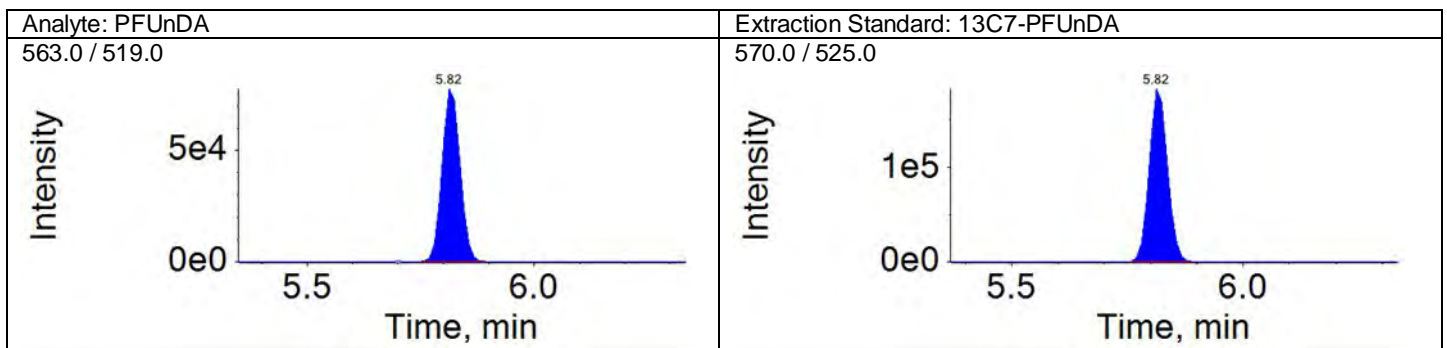
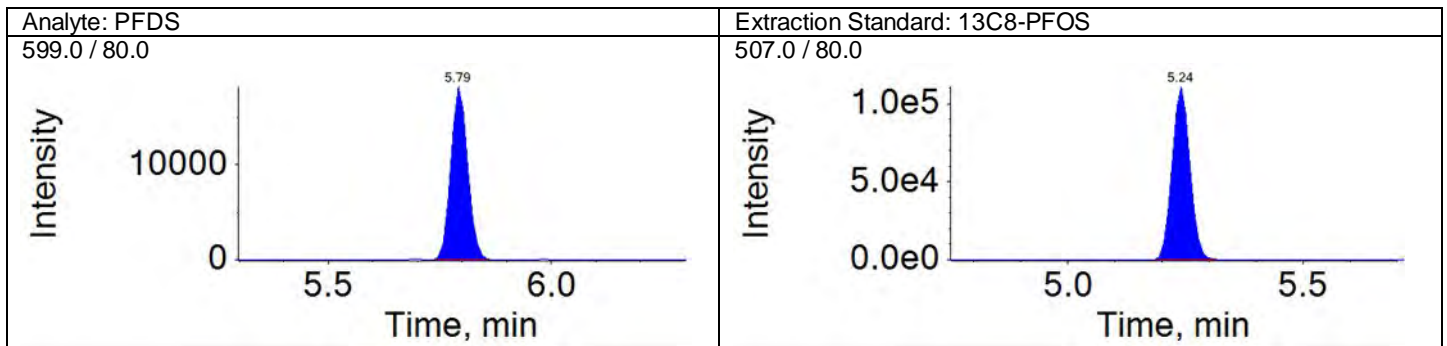
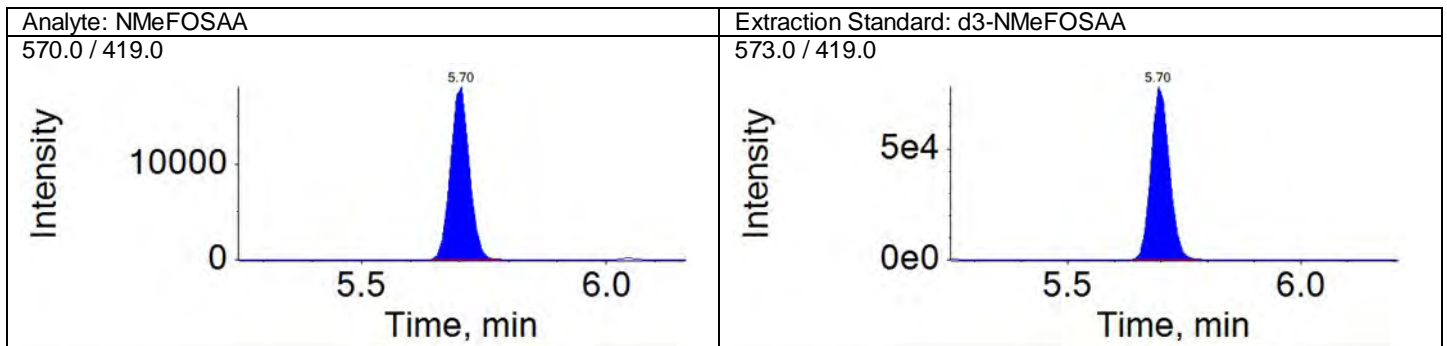
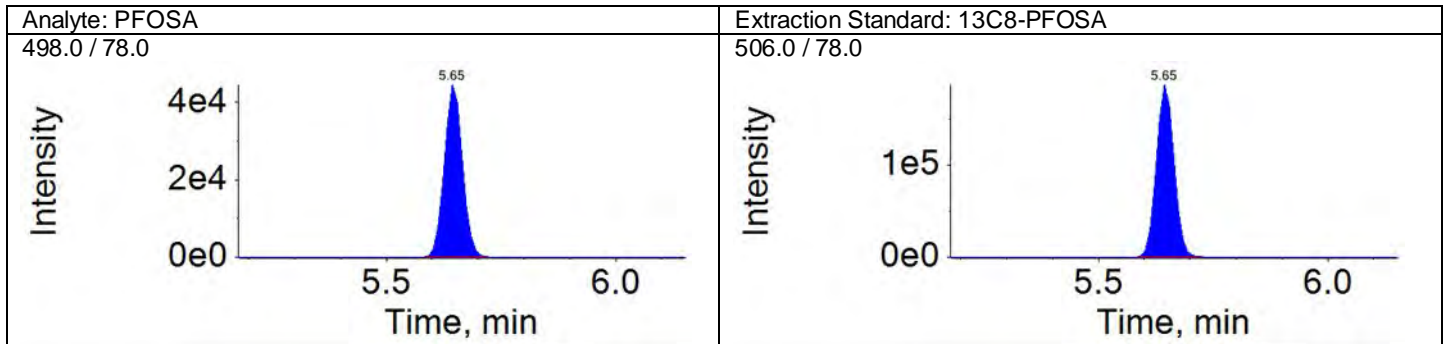
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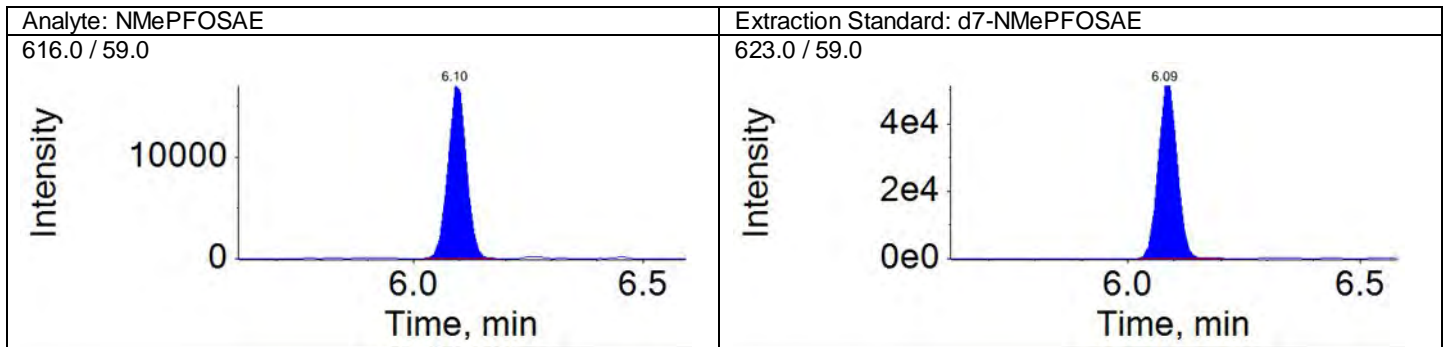
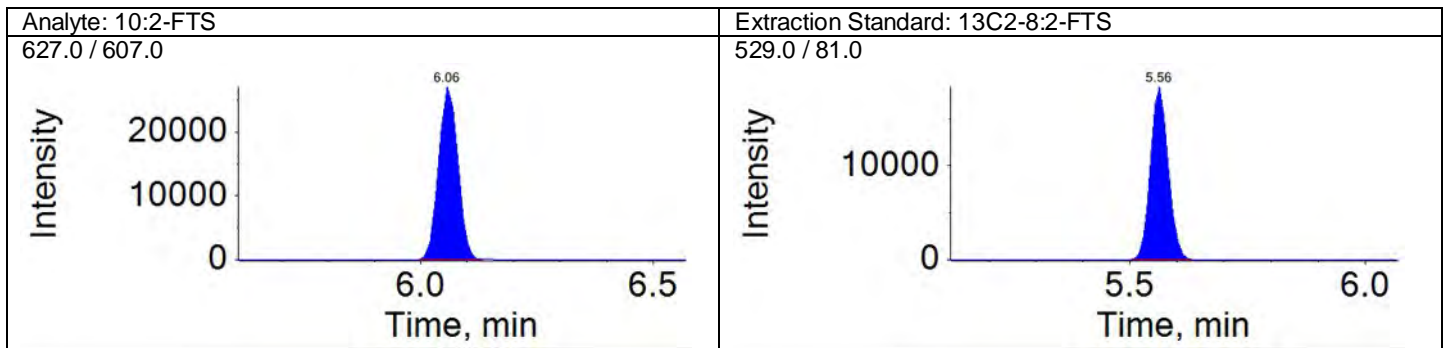
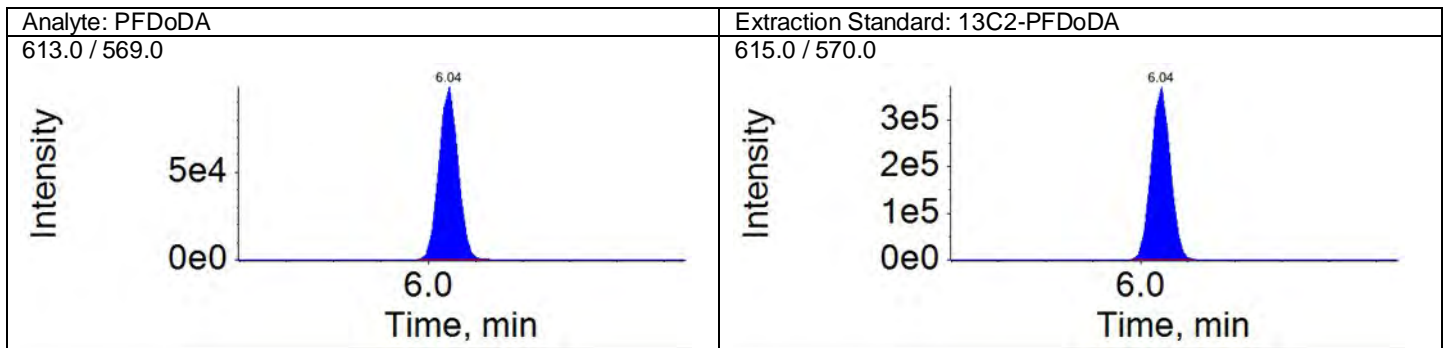
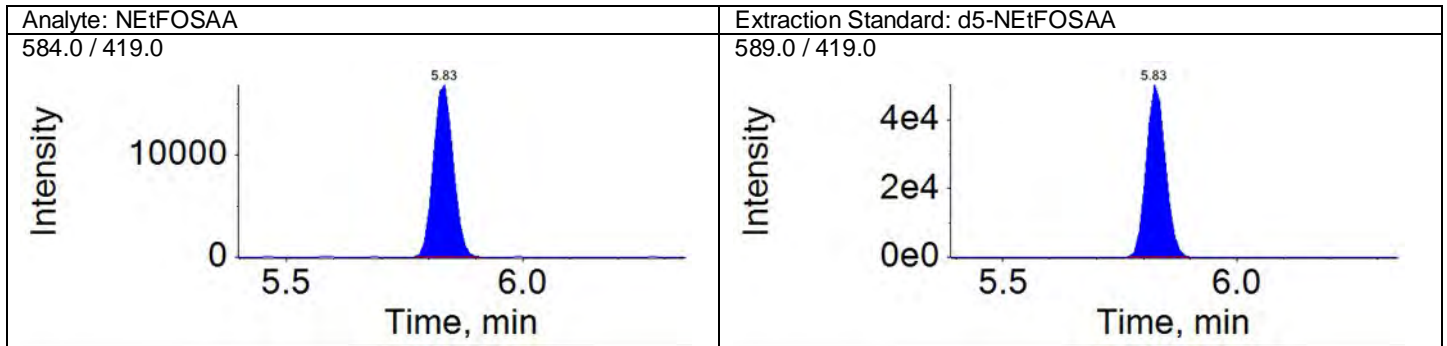
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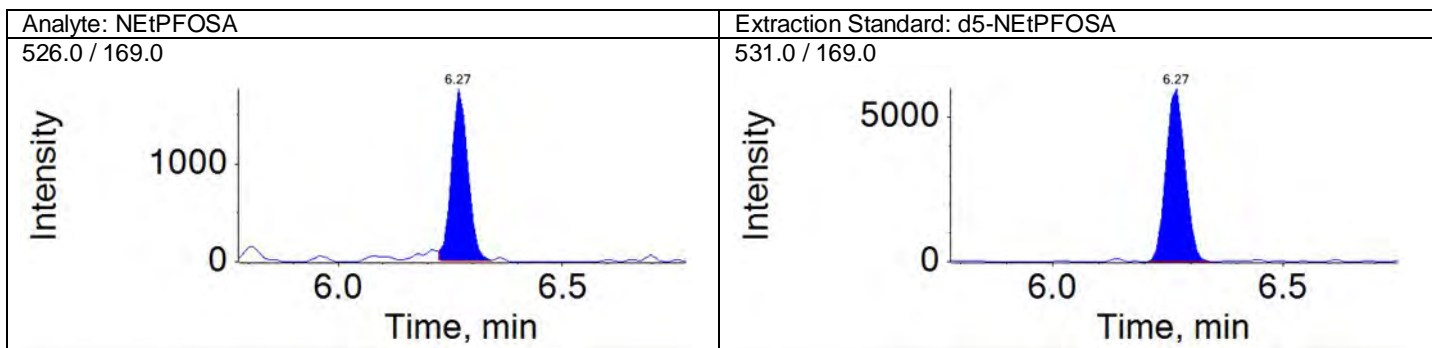
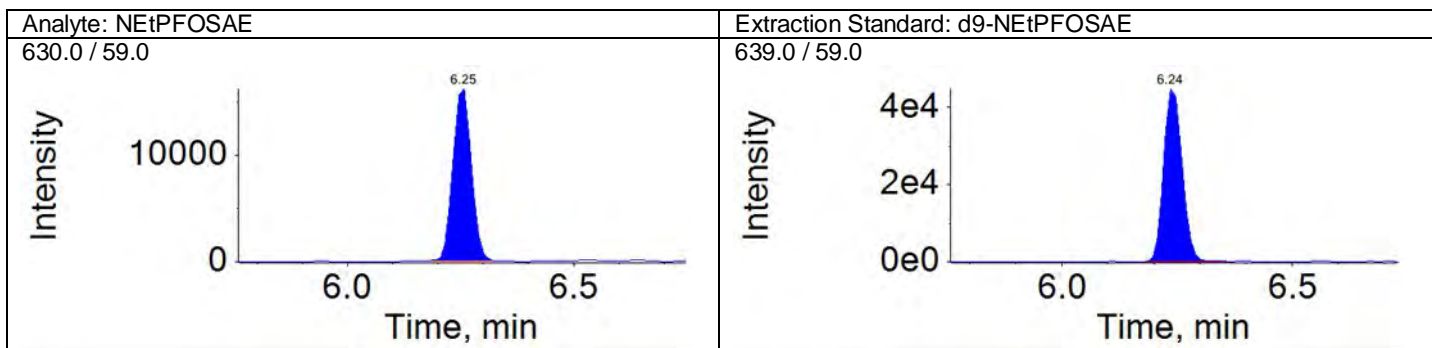
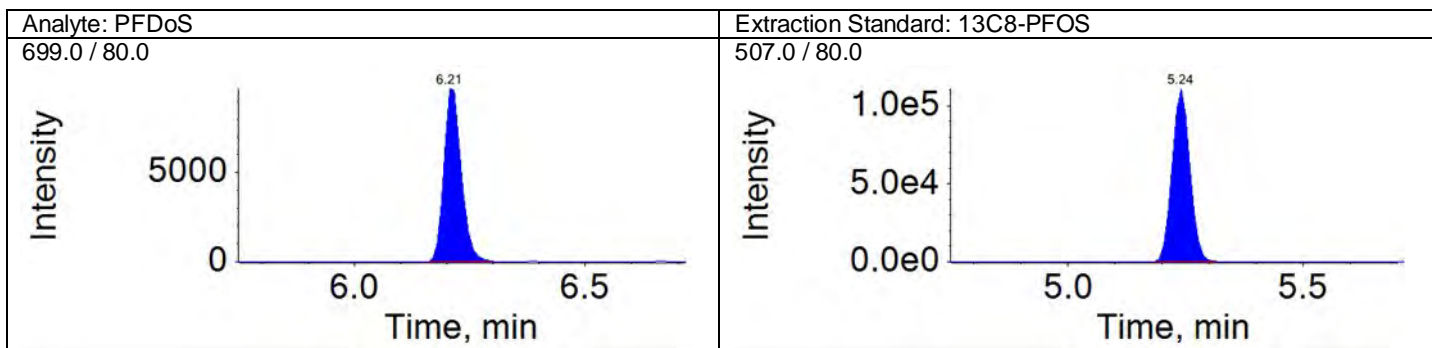
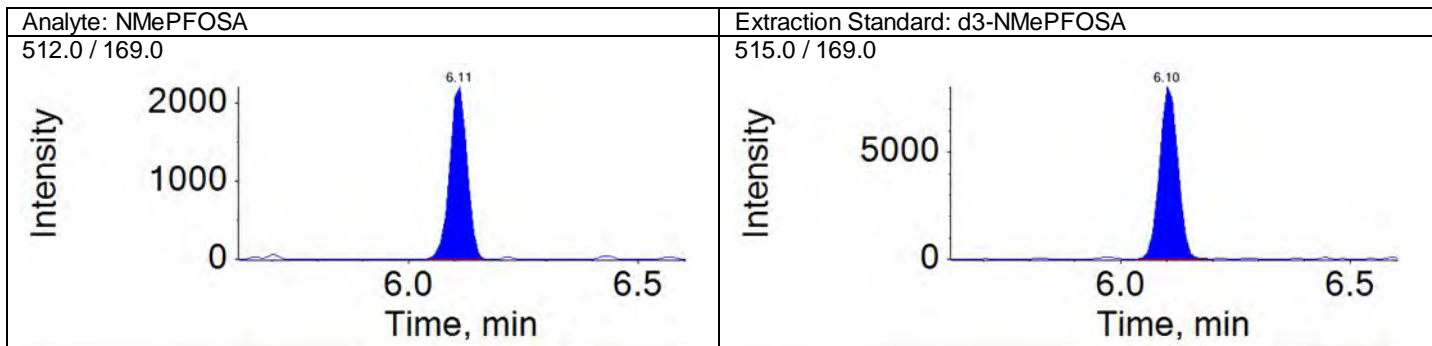
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Acquisition Method: 18AUG13\_3uL.dam





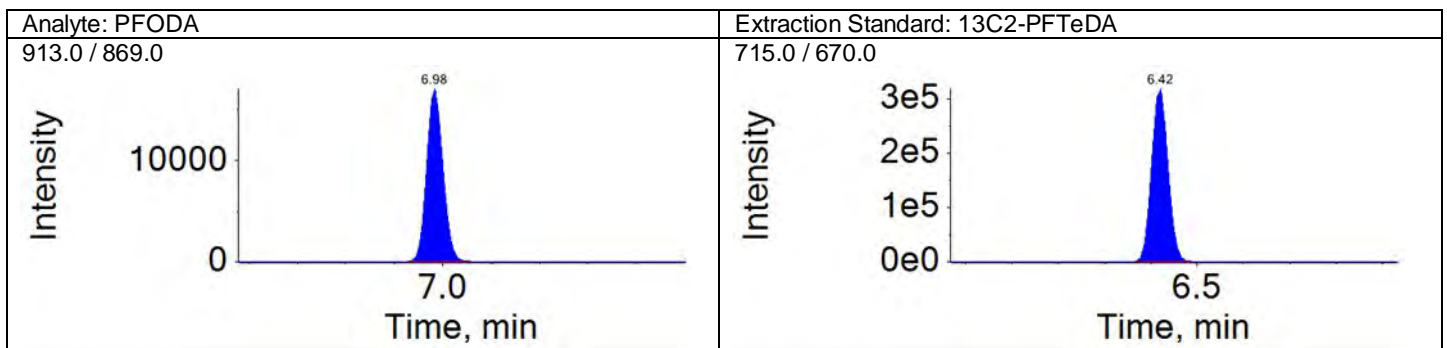
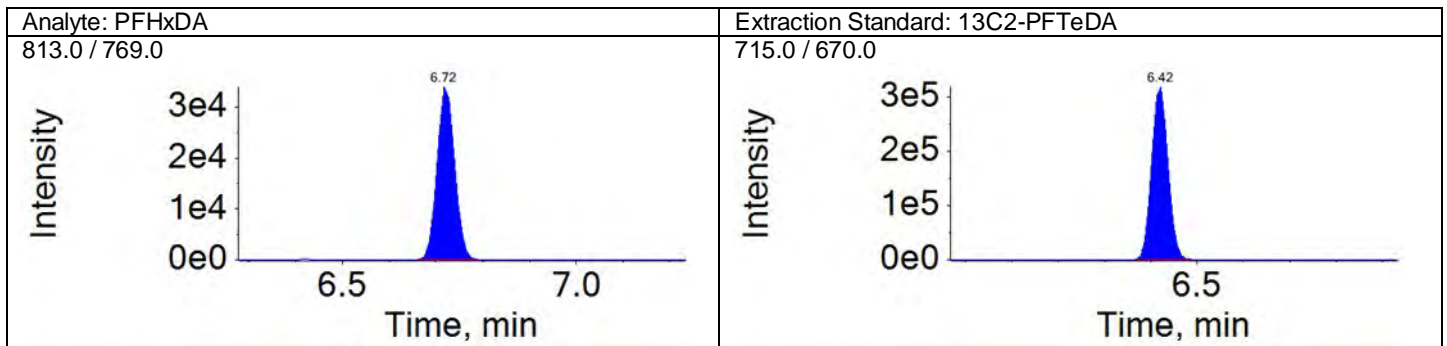
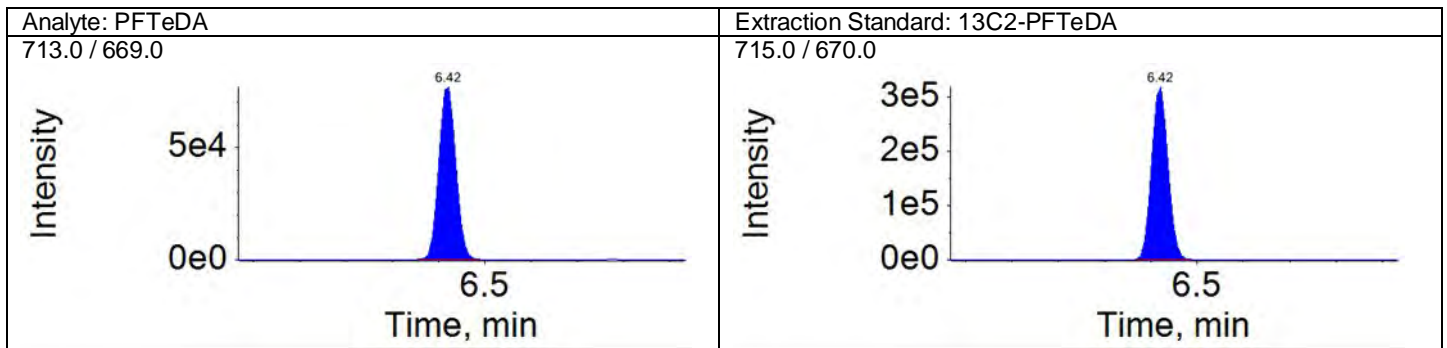
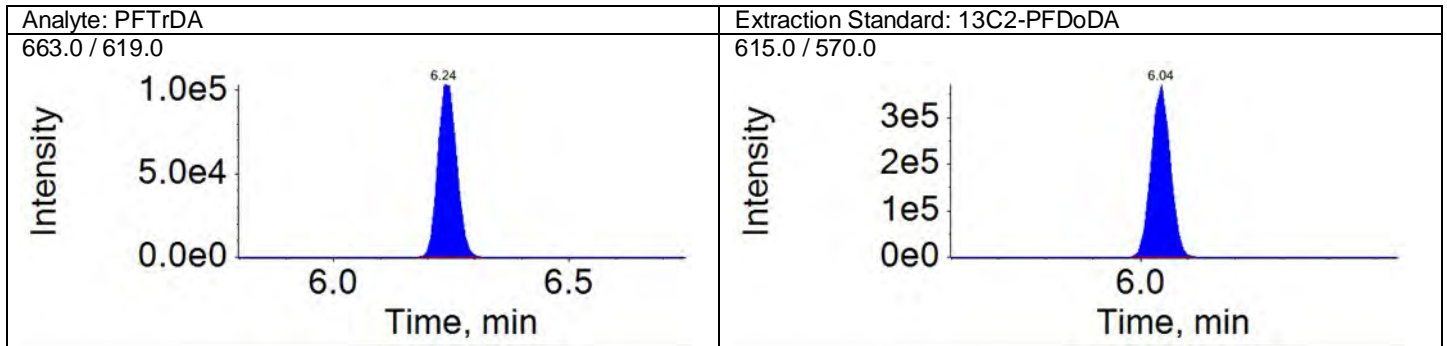
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QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



ICAL Name: 18DEC18DCAL  
QMethod Name: 18AUG20QM

Result Table: 18348012 12/20/2018 9:25:03 AM  
Acquisition Method: 18AUG13\_3uL.dam



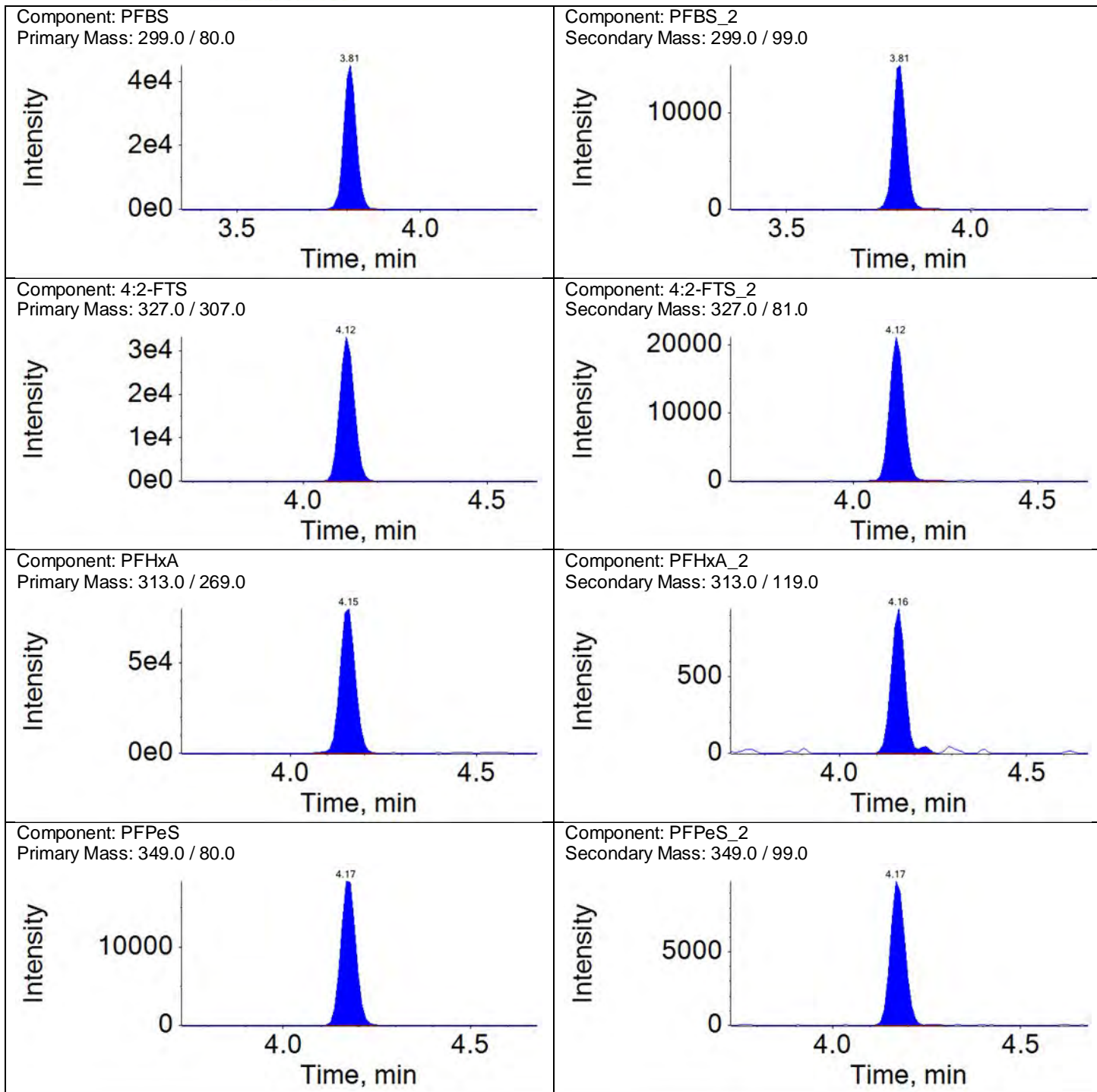
Ion Ratio Report

Sample Name: LCSDA

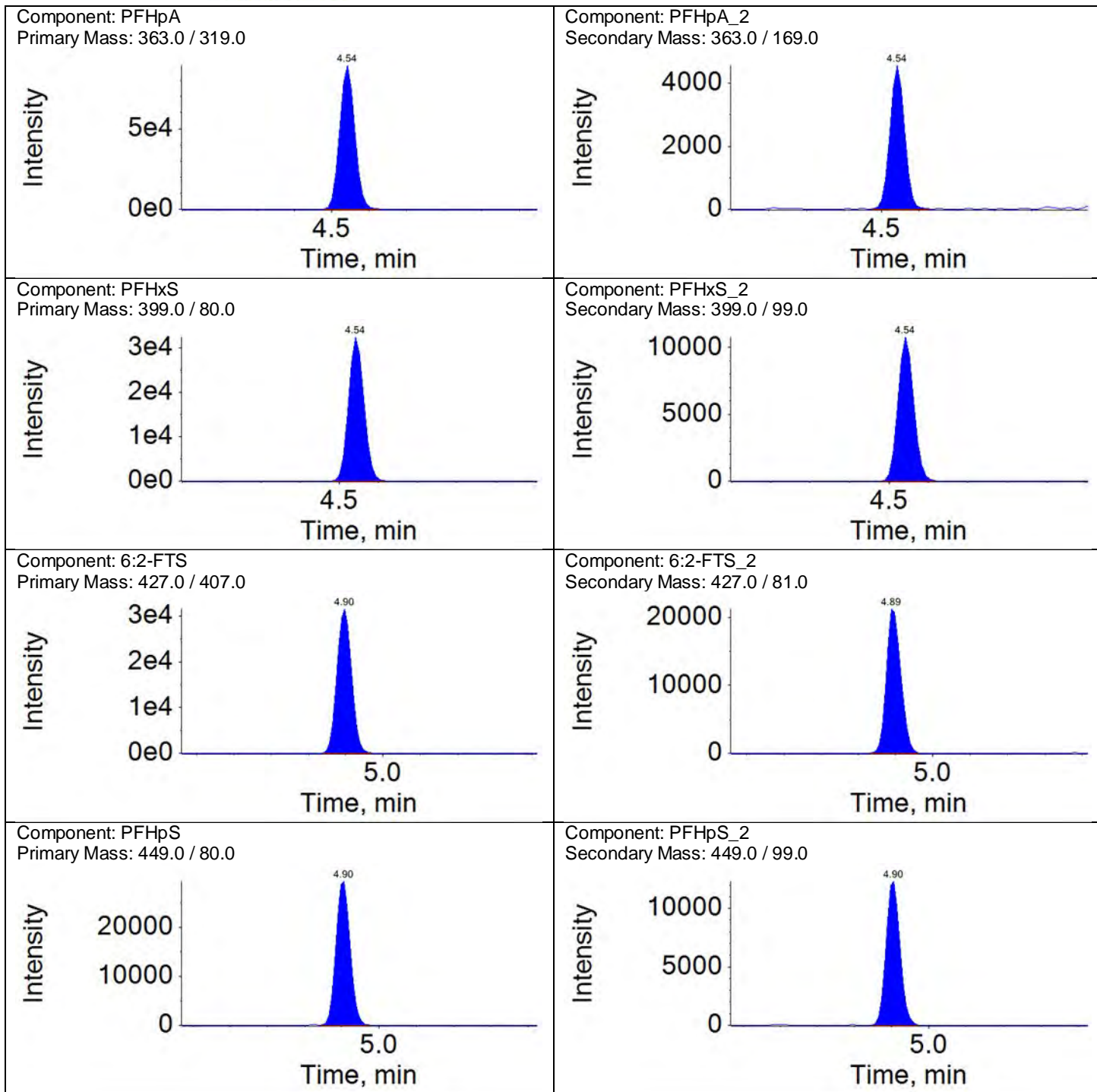
Instrument Name: LM27631

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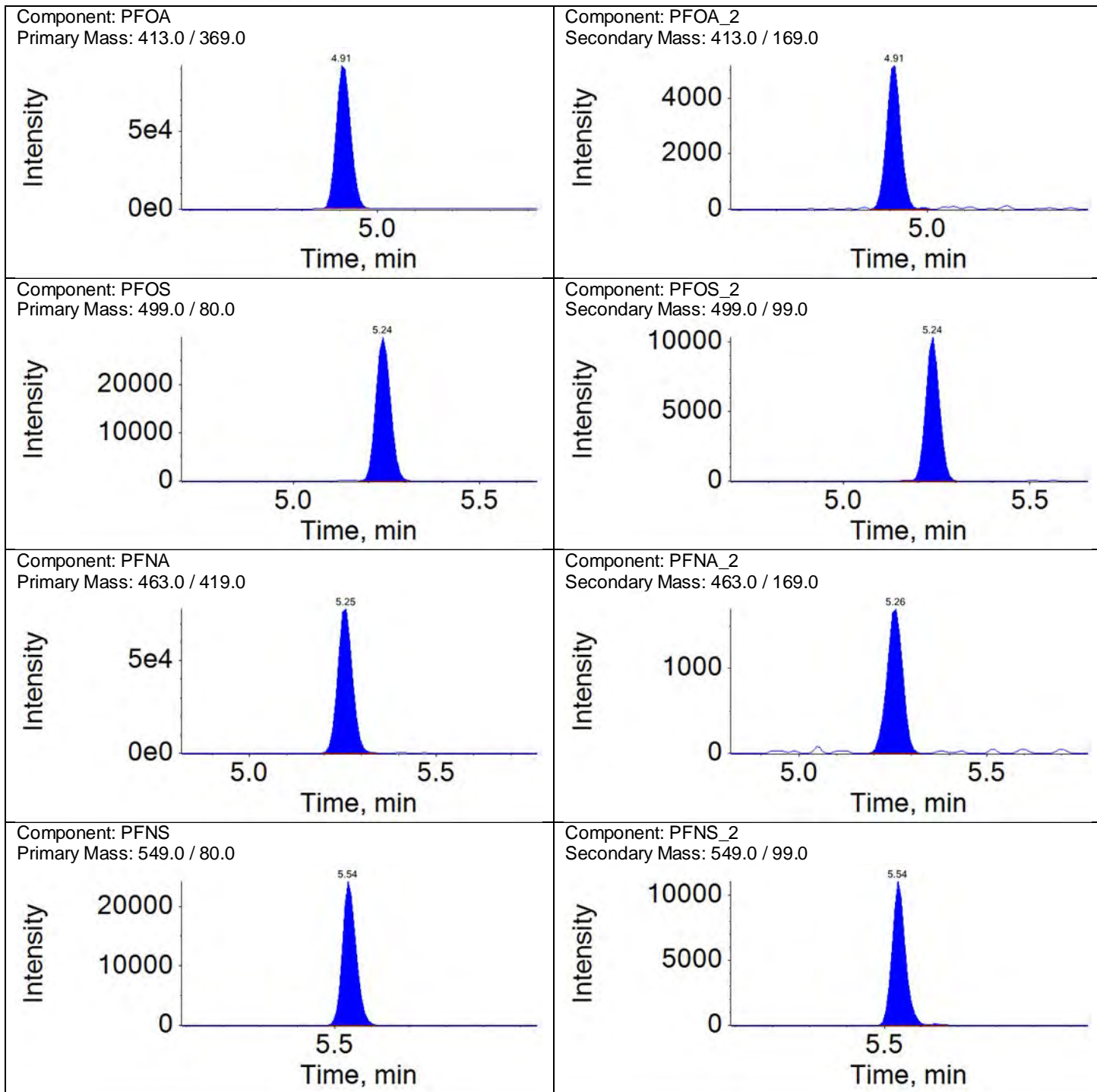
Component Name	RT	RRT	Analyte Area Response	Int Typ	Expected Ion Ratio	Ion Ratio	Ion Ratio % Diff	Ion Ratio Limit	Ion Ratio OOS
PFBS	3.81	1.00	106228.8	A	N/A	1.0000			
PFBS_2	3.81	1.00	36478.0	A	N/A	0.3434	-7	50	
4:2-FTS	4.12	1.00	91516.6	A	N/A	1.0000			
4:2-FTS_2	4.12	1.00	57926.2	A	N/A	0.6330	3	50	
PFHxA	4.15	1.00	227556.9	A	N/A	1.0000			
PFHxA_2	4.16	1.00	2478.2	A	N/A	0.0109	-5	50	
PFPeS	4.17	1.10	51446.3	A	N/A	1.0000			
PFPeS_2	4.17	1.10	26517.8	A	N/A	0.5154	-2	50	
PFHpA	4.54	1.00	249304.0	A	N/A	1.0000			
PFHpA_2	4.54	1.00	12280.2	A	N/A	0.0493	-10	50	
PFHxS	4.54	1.00	88268.9	A	N/A	1.0000			
PFHxS_2	4.54	1.00	29814.6	A	N/A	0.3378	1	50	
6:2-FTS	4.90	1.00	86104.8	A	N/A	1.0000			
6:2-FTS_2	4.89	1.00	57140.1	A	N/A	0.6636	5	50	
PFHpS	4.90	1.08	77849.4	A	N/A	1.0000			
PFHpS_2	4.90	1.08	31999.6	A	N/A	0.4110	0	50	
PFOA	4.91	1.00	246327.0	A	N/A	1.0000			
PFOA_2	4.91	1.00	13644.1	A	N/A	0.0554	-6	50	
PFOS	5.24	1.00	81680.4	A	N/A	1.0000			
PFOS_2	5.24	1.00	26351.8	A	N/A	0.3226	8	50	
PFNA	5.25	1.00	213170.2	A	N/A	1.0000			
PFNA_2	5.26	1.00	4953.8	A	N/A	0.0232	8	50	
PFNS	5.54	1.06	60937.8	A	N/A	1.0000			
PFNS_2	5.54	1.06	27238.2	A	N/A	0.4470	-3	50	
PFDA	5.56	1.00	213640.3	A	N/A	1.0000			
PFDA_2	5.56	1.00	1836.6	A	N/A	0.0086	35	50	
8:2-FTS	5.56	1.00	91335.8	A	N/A	1.0000			
8:2-FTS_2	5.56	1.00	55742.5	A	N/A	0.6103	4	50	
NMeFOSAA	5.70	1.00	48318.4	A	N/A	1.0000			
NMeFOSAA_2	5.70	1.00	12123.2	A	N/A	0.2509	-4	50	
PFDS	5.79	1.11	47460.0	A	N/A	1.0000			
PFDS_2	5.79	1.11	24011.5	A	N/A	0.5059	2	50	
PFOA	5.82	1.00	212329.6	A	N/A	1.0000			
PFOA_2	5.81	1.00	849.7	A	N/A	0.0040	13	50	
NEtFOSAA	5.83	1.00	49021.4	A	N/A	1.0000			
NEtFOSAA_2	5.83	1.00	32338.9	A	N/A	0.6597	-4	50	
PFOA	6.04	1.00	277657.8	A	N/A	1.0000			
PFOA_2	6.04	1.00	2103.1	A	N/A	0.0076	-44	50	
10:2-FTS	6.06	1.09	77841.5	A	N/A	1.0000			
10:2-FTS_2	6.06	1.09	58357.9	A	N/A	0.7497	7	50	
PFOA	6.24	1.03	287810.1	A	N/A	1.0000			
PFOA_2	6.24	1.03	2518.8	A	N/A	0.0088	-6	50	
PFOA	6.42	1.00	195870.7	A	N/A	1.0000			
PFOA_2	6.42	1.00	1327.8	A	N/A	0.0068	16	50	
PFOA	6.72	1.05	88301.3	A	N/A	1.0000			
PFOA_2	6.72	1.05	4567.4	A	N/A	0.0517	-21	50	
PFOA	6.98	1.09	39754.2	A	N/A	1.0000			
PFOA_2	6.98	1.09	1094.3	A	N/A	0.0275	1	50	

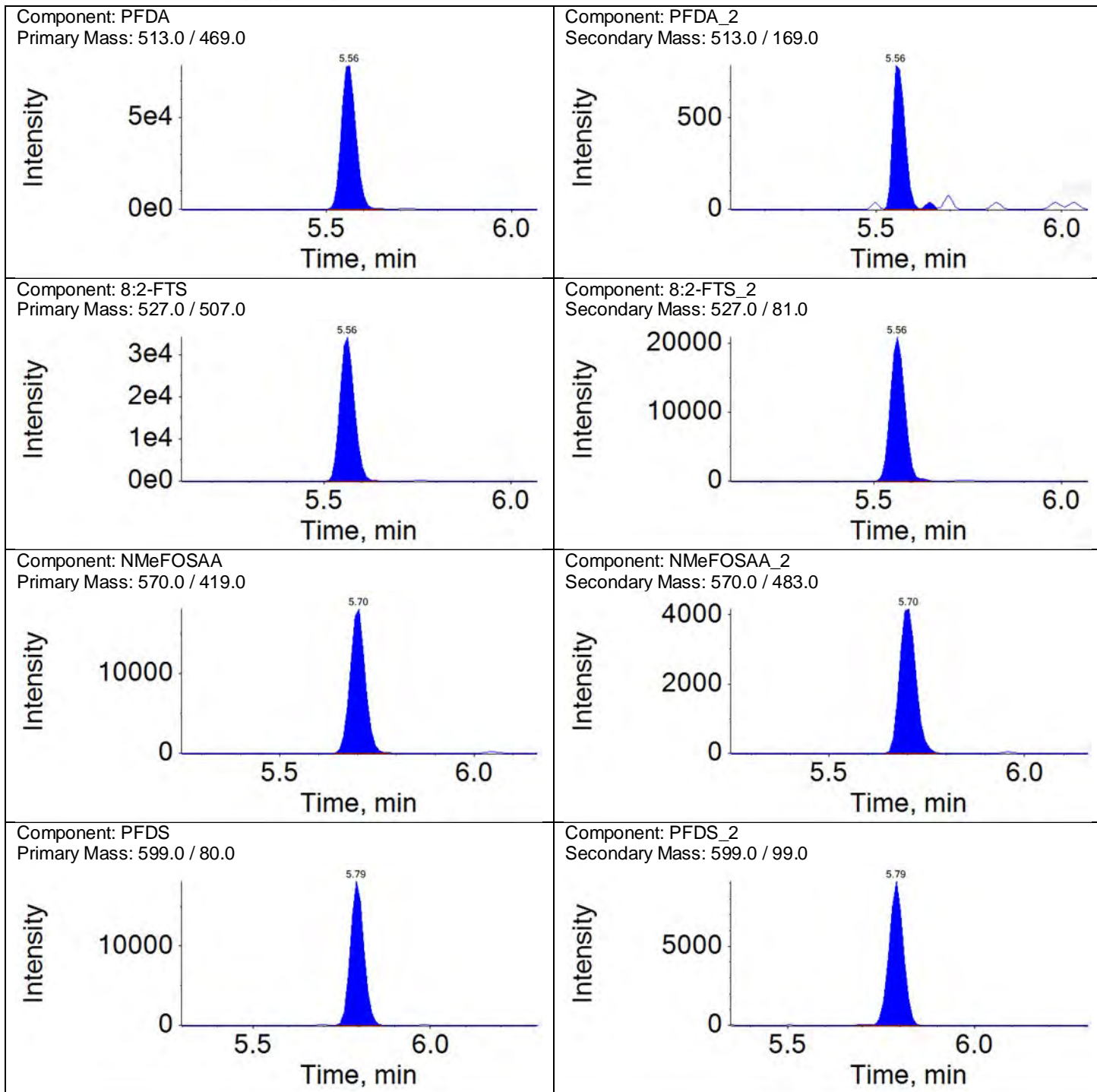


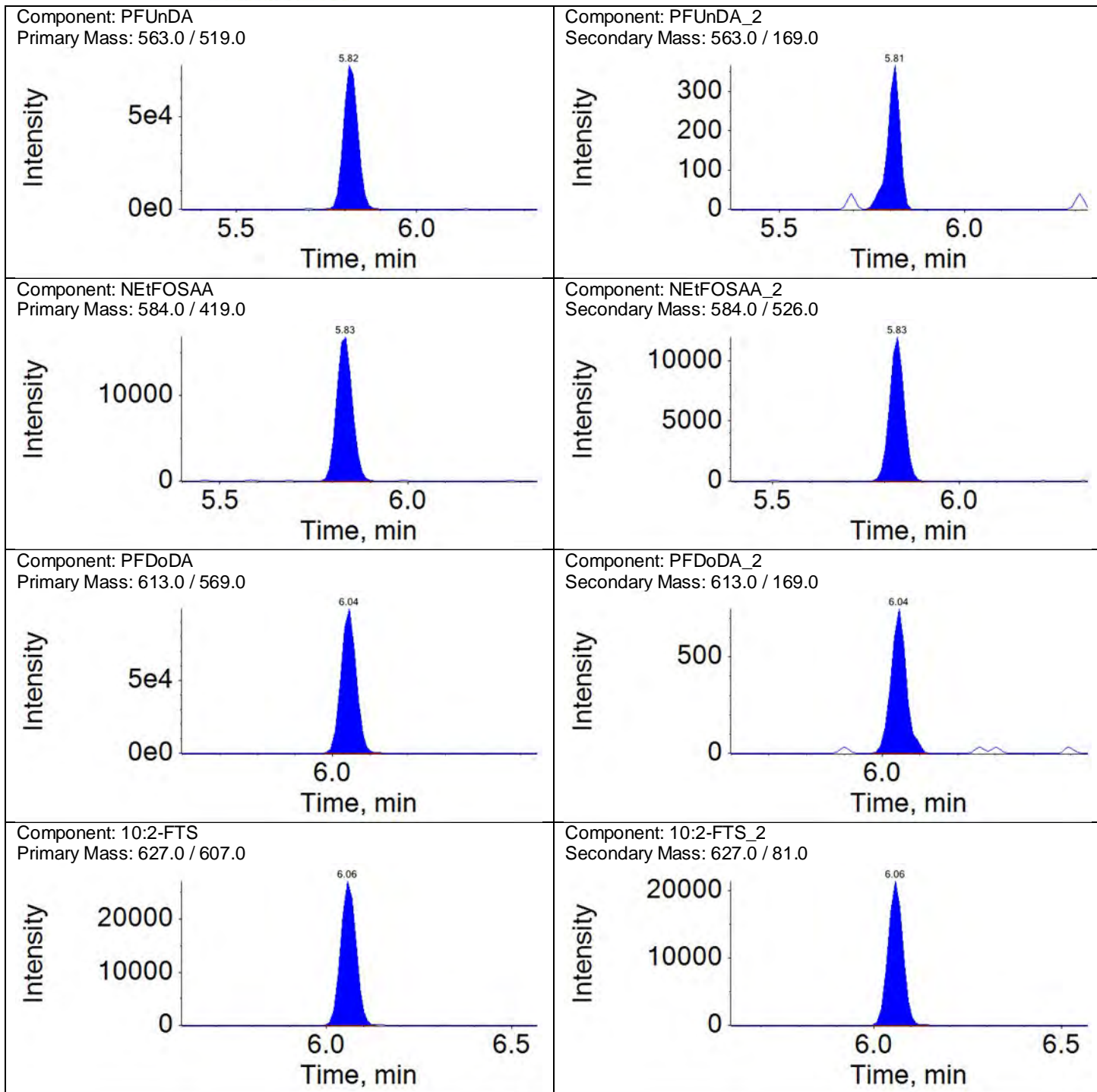


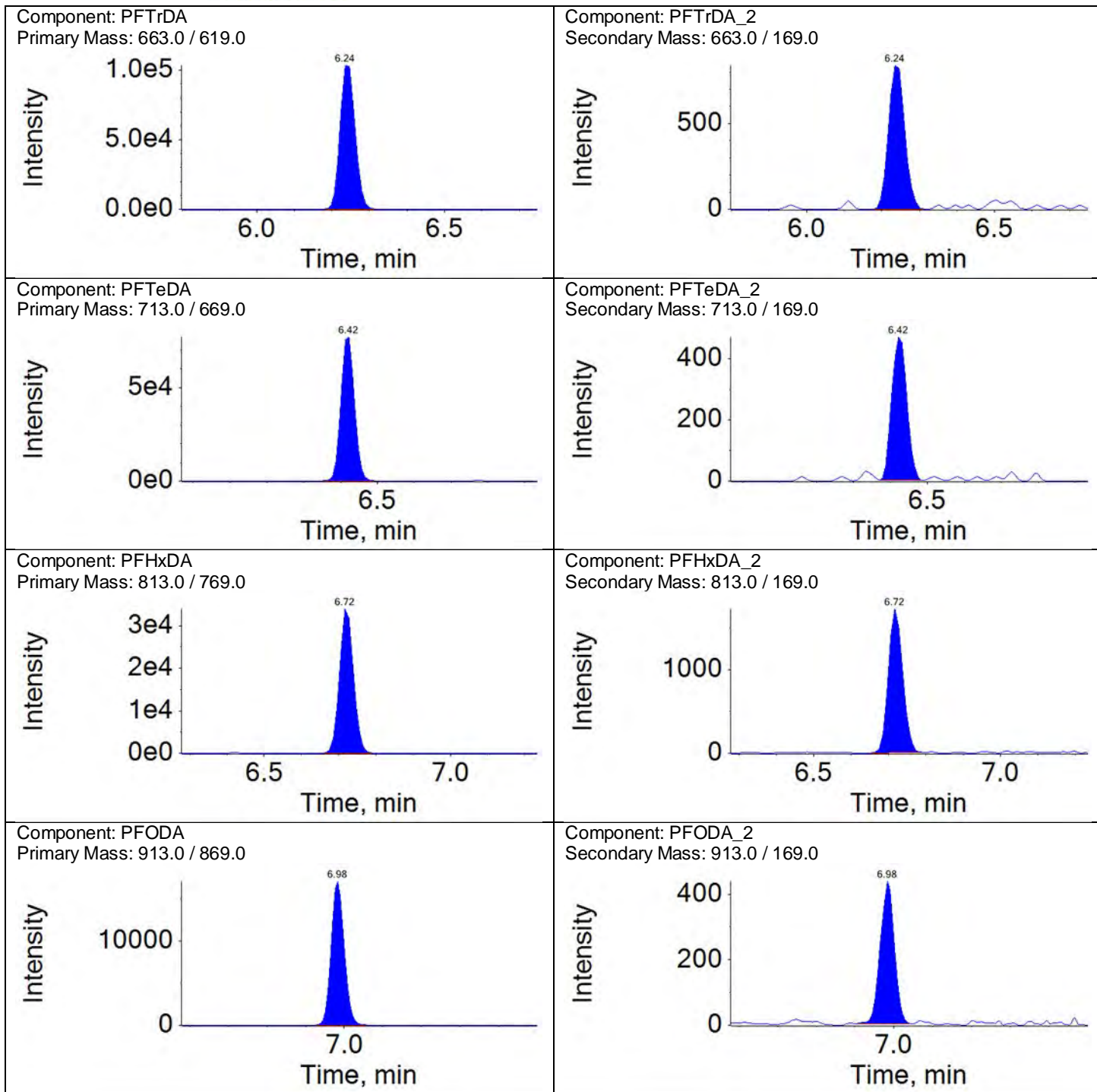












# **Preparation Logs**

## **PFAS by LC/MS/MS**



**18343003**

Analyses on Batch: PFAS in Water by LC/MS/MS-DoD

Port#	QC	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (4+7)	IS amt (uL)	BC	Comments
1	BLANKA	BLK343003	250	SSMODX1833CI	.025			1.0	20	7	
2	LCSA	LCS343003	250	SSMODX1833CI	.025	MSMODX1833A W	.04	1.0	1	7	
3	LCSDA	LCSD343003	250	SSMODX1833CI	.025	MSMODX1833A W	.04	1.0	1	N/A	

5 ml DDM25478 12/19/18

Spike Solutions: Witness: ACP 26543 Instrument: M21031  
 MSMODX1833AW PFAS 537 Native Spike  
 SSMODX1833CI PFAS 537 Modified Extraction/Surrogate Spike  
 Sequence: 18DEC0002/18DEC11D

Port#	Sample #	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	FV (4+7)	IS Amt (uL)	BC	Comments	Analyses	Due Date	Prio
4	19927672	-3-01	285.64	SSMODX1833CI	.025	1.0	20	173a		14434	12/17/2018	N
5	29927673	RB -W-0	277.83	SSMODX1833CI	.025	1.0		173a		14434	12/17/2018	N
6	39927674	BL -W-0	287.70	SSMODX1833CI	.025	1.0		173a		14434	12/17/2018	N
7	49927675	-4-01	280.57	SSMODX1833CI	.025	1.0		173a		14434	12/17/2018	N
8	59927676	6-401	263.63	SSMODX1833CI	.025	1.0		173a	opaque	14434	12/17/2018	N
9	69927677	6-201	260.14	SSMODX1833CI	.025	1.0		173a	opaque	14434	12/17/2018	N
10	79927678	-2-01	291.63	SSMODX1833CI	.025	1.0		173a		14434	12/17/2018	N
11	89927679	RB 2W01	273.83	SSMODX1833CI	.025	1.0		173a		14434	12/17/2018	N
12	99927680	BL 2W02	280.85	SSMODX1833CI	.025	1.0	1	173a		14434	12/17/2018	N

8 Sample poured into centrifuge tubes, centrifuged for 5min @ 3000 rpm, decanted into new 250ml bottle. DDM25478 12/19/18

MFA MCD 7824 12/19/18

18343003



Organic Extraction Batchlog **18343003**

Port#	Sample #	Sample Code	Amt ( )	SS/IS Sol.	Amt (mL)	FV (uL)	IS Amt (uL)	BC	Comments	Analyses	Due Date	Prio
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Reagents used During Extraction

Reagent/Material/Equip	Lot No./ID No.
0.3% NH4OH:MeOH	254781201833A
1:1 ACN:MeOH	254781201833A
Auto-pipette (dilutions)	—
Auto-pipette (extract vialin)	P1000-3
Envi-Carb	107563
Internal Standard	JS183433A
Methanol	DN136-05
MHI-Q H2O	House A372
SPE Cartridge #1	647893-01
Syringe (IS)	PPAS 2.1
Syringe (MS)	PPAS 10
Syringe (SS)	PPAS 9
Bozma	NIA

Balance #	P107914122	SPE Manifold	12	N-evap	A	40°C
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DN = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

18343003



NIA MCH828227 12/13/18

CF2608  
12/10/18

NIA MCH828227 12/13/18

Analyses on Batch: PFAS in Water by LC/MS/MS-DoD

Port#	QC	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (447)	IS Amt (uL)	BC	Comments
1	BLANKA	BLK348012	250.00	SSMODX1833CL	.025	N/A	N/A	1	20	Z	
2	LCSA	LCS348012	↓	SSMODX1833CL	.025	MSMODX1833AY	.04	1	↓	Z	
3	LCSDA	LCSD348012	↓	SSMODX1833CL	.025	MSMODX1833AY	.04	1	↓	Z	

Dept: 33 Prep Analysis: 14465 PFAS Water Prep - DoD (3) ml: ACP26543

Spike Solutions: Witness: DDM25478 Instrument: L9227631

MSMODX1833AY PFAS 537 Native Spike Sequence: 184EC18J0J - 184EC19A - 184EC20

SSMODX1833CL PFAS 537 Modified Extraction/Surrogate Spik

Run#	Sample #	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	FV (447)	IS Amt (uL)	BC	Comments	Analyses	Due Date	Prio
24	19927672	R	290.25	SSMODX1833CL	.025	1	2.0	173b		14434	12/17/2018	N
25	29934777		288.13	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
26	39934778		279.15	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
27	49934779		283.91	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
28	59934780		276.23	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
29	69934781	RB	272.76	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
30	79934782	BL	283.82	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
31	89934783	RB	277.24	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
32	99934784	BL	281.73	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
1	109934785		260.97	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
2	119934786		279.63	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
3	129934787		283.42	SSMODX1833CL	.025	1		173a		14434	12/20/2018	N
4	139934788		282.55	SSMODX1833CL	.025	1	↓	173a		14434	12/20/2018	N

18348012



Organic Extraction Batchlog **18348012**

Port#	Sample #	Sample Code	Amt ( )	SS/IS Sol.	Amt (mL)	FV (uL)	IS Amt (uL)	BC	Comments	Analyses	Due Date	Prio
-------	----------	-------------	---------	------------	----------	---------	-------------	----	----------	----------	----------	------

Reagents used During Extraction

Reagent/Material/Equip	Lot No./ID No.
0.3% NH4OH:MeOH	2654312121833 A
1:1 ACN:MeOH	2654312121833 B
Auto-pipette (dilutions)	
Auto-pipette (extract vialin)	P1000-3
Envi-Carb	107563
Internal Standard	5071262 12/17/18 JS1834833A
Methanol	<del>518548</del> (3) DV136- US
Multi-Q H2O	House A37Z
SPE Cartridge #1	G429443-02
Syringe (IS)	PFAS 1x
Syringe (MS)	PFAS 10
Syringe (SS)	PFAS 9
Prisma	NA

Balance # B629764122

SPE Manifold

7,8

N-evap C

350

PJR9213 12/15/18

ACDZ6543 12/14/18

DP = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

18348012

Page 2 of 2



①  
MSM 26543 12-21-18

①  
MSM 26543 12-21-18





BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181214	16:00:00	20181219
13:53:00	9927672	20181224	2015917	0.00	1	1	375-85-9	1.5 1.5	NG_L J
Y	TRG					0.34		0.34	0.34 1.0 1.7
BSI24	18348012	18348012	18348012	18348012			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181214	16:00:00	20181219
13:53:00	9927672	20181224	2015917	0.00	1	1	375-73-5	5.0 5.0	NG_L
Y	TRG					0.26		0.26	0.26 0.95
1.7	BSI24	18348012	18348012	18348012	18348012		Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181214	16:00:00	20181219
13:53:00	9927672	20181224	2015917	0.00	1	1	355-46-4	2.4 2.4	NG_L
Y	TRG					0.34		0.34	0.34 0.95
1.7	BSI24	18348012	18348012	18348012	18348012		Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181214	16:00:00	20181219
13:53:00	9927672	20181224	2015917	0.00	1	1	1763-23-1	1.0 0	NG_L U
N	TRG					0.43		0.43	0.43 1.0 1.7
BSI24	18348012	18348012	18348012	18348012			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181214	16:00:00	20181219
13:53:00	9927672	20181224	2015917	0.00	1	1	2991-50-6	2.1 0	NG_L U
N	TRG					0.86		0.86	0.86 2.1 2.6
BSI24	18348012	18348012	18348012	18348012			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181214	16:00:00	20181219
13:53:00	9927672	20181224	2015917	0.00	1	1	2355-31-9	2.1 0	NG_L U
N	TRG					0.86		0.86	0.86 2.1 2.6
BSI24	18348012	18348012	18348012	18348012			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	335-67-1	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	375-95-1	1.1 0	NG_L U
N	TRG					0.36		0.36	0.36 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	335-76-2	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	2058-94-8	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	307-55-1	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			

BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	72629-94-8	1.1 0	NG_L U
N	TRG					0.54		0.54	0.54 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	376-06-7	1.1 0	NG_L U
N	TRG					0.54		0.54	0.54 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	307-24-4	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	375-85-9	1.1 0	NG_L U
N	TRG					0.36		0.36	0.36 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	375-73-5	0.99 0	NG_L U
N	TRG					0.27		0.27	0.27 0.99
1.8 BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	355-46-4	0.99 0	NG_L U
N	TRG					0.36		0.36	0.36 0.99
1.8 BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	1763-23-1	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	2991-50-6	2.2 0	NG_L U
N	TRG					0.90		0.90	0.90 2.2 2.7
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
05:53:00	9927673	20181224	2015917	0.00	1	1	2355-31-9	2.2 0	NG_L U
N	TRG					0.90		0.90	0.90 2.2 2.7
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	335-67-1	1.1 0	NG_L U
N	TRG					0.44		0.44	0.44 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	375-95-1	1.1 0	NG_L U
N	TRG					0.35		0.35	0.35 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			

BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	335-76-2	1.1 0	NG_L U
N	TRG			0.44				0.44	0.44 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	2058-94-8	1.1 0	NG_L U
N	TRG			0.44				0.44	0.44 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	307-55-1	1.1 0	NG_L U
N	TRG			0.44				0.44	0.44 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	72629-94-8	1.1 0	NG_L U
N	TRG			0.53				0.53	0.53 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	376-06-7	1.1 0	NG_L U
N	TRG			0.53				0.53	0.53 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	307-24-4	1.1 0	NG_L U
N	TRG			0.44				0.44	0.44 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	375-85-9	1.1 0	NG_L U
N	TRG			0.35				0.35	0.35 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	375-73-5	0.97 0	NG_L U
N	TRG			0.27				0.27	0.27 0.97
1.8	BSI24	18343003	18343003	18343003	18343003		Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	355-46-4	0.97 0	NG_L U
N	TRG			0.35				0.35	0.35 0.97
1.8	BSI24	18343003	18343003	18343003	18343003		Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	1763-23-1	1.1 0	NG_L U
N	TRG			0.44				0.44	0.44 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	2991-50-6	2.1 0	NG_L U
N	TRG			0.88				0.88	0.88 2.1 2.7
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YEP-3-W-02	537_MOD	EUROFINS			

BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:02:00	9927674	20181224	2015917	0.00	1	1	2355-31-9	2.1 0	NG_L U
N	TRG					0.88		0.88	0.88 2.1 2.7
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	335-67-1	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	375-95-1	1.1 0	NG_L U
N	TRG					0.36		0.36	0.36 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	335-76-2	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	2058-94-8	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	307-55-1	1.1 0	NG_L U
N	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	72629-94-8	1.1 0	NG_L U
N	TRG					0.53		0.53	0.53 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	376-06-7	1.1 0	NG_L U
N	TRG					0.53		0.53	0.53 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	307-24-4	14 14	NG_L
Y	TRG					0.45		0.45	0.45 1.1 1.8
BSI24	18343003	18343003	18343003	18343003			Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
9927675	20181224	2015917	0.00	1	1	375-85-9	0.54 0.54	NG_L	J
0.36		0.36	0.36	1.1	1.8	BSI24	18343003	18343003	18343003
18343003		Y							
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:11:00	9927675	20181224	2015917	0.00	1	1	375-73-5	5.4 5.4	NG_L
TRG						0.27		0.27	0.27 0.98 1.8
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405	N6247317F4100		BARSTOW_MCLB	OU1-YS35-4-01	537_MOD	EUROFINS			

BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:11:00	9927675	20181224	2015917	0.00	1	1	355-46-4	0.60	0.60	NG_L	J	Y		
TRG								0.36	0.36		0.36	0.98	1.8	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YS35-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:11:00	9927675	20181224	2015917	0.00	1	1	1763-23-1	1.1	0	NG_L	U	N		
TRG								0.45	0.45		0.45	1.1	1.8	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YS35-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:11:00	9927675	20181224	2015917	0.00	1	1	2991-50-6	2.1	0	NG_L	U	N		
TRG								0.89	0.89		0.89	2.1	2.7	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YS35-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:11:00	9927675	20181224	2015917	0.00	1	1	2355-31-9	2.1	0	NG_L	U	N		
TRG								0.89	0.89		0.89	2.1	2.7	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:20:00	9927676	20181224	2015917	0.00	1	1	335-67-1	1.1	0	NG_L	U	N		
TRG								0.47	0.47		0.47	1.1	1.9	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:20:00	9927676	20181224	2015917	0.00	1	1	375-95-1	1.1	0	NG_L	U	N		
TRG								0.38	0.38		0.38	1.1	1.9	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:20:00	9927676	20181224	2015917	0.00	1	1	335-76-2	1.1	0	NG_L	U	N		
TRG								0.47	0.47		0.47	1.1	1.9	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:20:00	9927676	20181224	2015917	0.00	1	1	2058-94-8	1.1	0	NG_L	U	N		
TRG								0.47	0.47		0.47	1.1	1.9	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:20:00	9927676	20181224	2015917	0.00	1	1	307-55-1	1.1	0	NG_L	U	N		
TRG								0.47	0.47		0.47	1.1	1.9	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:20:00	9927676	20181224	2015917	0.00	1	1	72629-94-8	1.1	0	NG_L	U	N		
TRG								0.57	0.57		0.57	1.1	1.9	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211					
06:20:00	9927676	20181224	2015917	0.00	1	1	376-06-7	1.1	0	NG_L	U	N		
TRG								0.57	0.57		0.57	1.1	1.9	BSI24
18343003	18343003	18343003	18343003								Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-YCW16-4-01	537	MOD		EUROFINS		



BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:20:00	9927676	20181224	2015917	0.00	1	1	307-24-4	8.0	8.0	NG_L	Y	
TRG						0.47		0.47	0.47	1.1	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-4-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:20:00	9927676	20181224	2015917	0.00	1	1	375-85-9	0.69	0.69	NG_L	J	Y
TRG						0.38		0.38	0.38	1.1	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-4-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:20:00	9927676	20181224	2015917	0.00	1	1	375-73-5	3.9	3.9	NG_L		Y
TRG						0.28		0.28	0.28	1.0	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-4-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:20:00	9927676	20181224	2015917	0.00	1	1	355-46-4	1.0	0	NG_L	U	N
TRG						0.38		0.38	0.38	1.0	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-4-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:20:00	9927676	20181224	2015917	0.00	1	1	1763-23-1	1.1	0	NG_L	U	N
TRG						0.47		0.47	0.47	1.1	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-4-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:20:00	9927676	20181224	2015917	0.00	1	1	2991-50-6	2.3	0	NG_L	U	N
TRG						0.95		0.95	0.95	2.3	2.8	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-4-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:20:00	9927676	20181224	2015917	0.00	1	1	2355-31-9	2.3	0	NG_L	U	N
TRG						0.95		0.95	0.95	2.3	2.8	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-2-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:29:00	9927677	20181224	2015917	0.00	1	1	335-67-1	0.65	0.65	NG_L	J	Y
TRG						0.48		0.48	0.48	1.2	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-2-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:29:00	9927677	20181224	2015917	0.00	1	1	375-95-1	1.2	0	NG_L	U	N
TRG						0.38		0.38	0.38	1.2	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-2-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:29:00	9927677	20181224	2015917	0.00	1	1	335-76-2	1.2	0	NG_L	U	N
TRG						0.48		0.48	0.48	1.2	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-2-01	537	MOD			EUROFINS
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211			
06:29:00	9927677	20181224	2015917	0.00	1	1	2058-94-8	1.2	0	NG_L	U	N
TRG						0.48		0.48	0.48	1.2	1.9	BSI24
18343003	18343003	18343003	18343003									Y
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB				OU1-YCW16-2-01	537	MOD			EUROFINS

BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	307-55-1	1.2 0	NG_L U N
TRG						0.48	0.48	0.48 1.2	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	72629-94-8	1.2 0	NG_L U N
TRG						0.58	0.58	0.58 1.2	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	376-06-7	1.2 0	NG_L U N
TRG						0.58	0.58	0.58 1.2	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	307-24-4	8.7 8.7	NG_L Y
TRG						0.48	0.48	0.48 1.2	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	375-85-9	0.77 0.77	NG_L J Y
TRG						0.38	0.38	0.38 1.2	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	375-73-5	3.3 3.3	NG_L Y
TRG						0.29	0.29	0.29 1.1	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	355-46-4	1.1 1.1	NG_L J Y
TRG						0.38	0.38	0.38 1.1	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	1763-23-1	1.2 0	NG_L U N
TRG						0.48	0.48	0.48 1.2	1.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	2991-50-6	2.3 0	NG_L U N
TRG						0.96	0.96	0.96 2.3	2.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-YCW16-2-01	537_MOD		EUROFINS		
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
06:29:00	9927677	20181224	2015917	0.00	1	1	2355-31-9	2.3 0	NG_L U N
TRG						0.96	0.96	0.96 2.3	2.9 BSI24
18343003	18343003	18343003	18343003				Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD		EUROFINS		BRADY
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
9927678	20181224	2015917	0.00	1	1	335-67-1	15 15	NG_L Y	TRG
0.43						0.43	0.43	0.43 1.0	1.7 BSI24
18343003							Y		
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD		EUROFINS		BRADY

GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	375-95-1	0.67	0.67	NG_L	J	Y	TRG
0.34		0.34		0.34	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	335-76-2	1.0	0	NG_L	U	N	TRG
0.43		0.43		0.43	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	2058-94-8	1.0	0	NG_L	U	N	TRG
0.43		0.43		0.43	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	307-55-1	1.0	0	NG_L	U	N	TRG
0.43		0.43		0.43	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	72629-94-8	1.0	0	NG_L	U	N	TRG
0.43		0.43		0.43	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	376-06-7	1.0	0	NG_L	U	N	TRG
0.51		0.51		0.51	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	307-24-4	2.1	2.1	NG_L		Y	TRG
0.43		0.43		0.43	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	375-85-9	0.99	0.99	NG_L	J	Y	TRG
0.34		0.34		0.34	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	375-73-5	2.8	2.8	NG_L		Y	TRG
0.26		0.26		0.26	0.94	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	355-46-4	12	12	NG_L		Y	TRG
0.34		0.34		0.34	0.94	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					
GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211	06:38:00		
9927678	20181224	2015917	0.00	1	1	1763-23-1	15	15	NG_L		Y	TRG
0.43		0.43		0.43	1.0	1.7	BSI24		18343003	18343003	18343003	
18343003			Y									
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY					

GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	06:38:00
9927678 20181224	2015917 0.00 1 1	2991-50-6	2.1 0	NG_L U	N	
TRG		0.86	0.86	0.86	2.1 2.6	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-01	537_MOD	EUROFINS	BRADY	
GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	06:38:00
9927678 20181224	2015917 0.00 1 1	2355-31-9	2.1 0	NG_L U	N	
TRG		0.86	0.86	0.86	2.1 2.6	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	335-67-1	1.1 0	NG_L U	N	
TRG		0.46	0.46	0.46	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	375-95-1	1.1 0	NG_L U	N	
TRG		0.37	0.37	0.37	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	335-76-2	1.1 0	NG_L U	N	
TRG		0.46	0.46	0.46	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	2058-94-8	1.1 0	NG_L U	N	
TRG		0.46	0.46	0.46	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	307-55-1	1.1 0	NG_L U	N	
TRG		0.46	0.46	0.46	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	72629-94-8	1.1 0	NG_L U	N	
TRG		0.55	0.55	0.55	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	376-06-7	1.1 0	NG_L U	N	
TRG		0.55	0.55	0.55	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	307-24-4	1.1 0	NG_L U	N	
TRG		0.46	0.46	0.46	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		
BRADY GCE II NONE NA METHOD	000 W	UNK	20181209	15:55:00	20181211	
06:56:00 9927679 20181224	2015917 0.00 1 1	375-85-9	1.1 0	NG_L U	N	
TRG		0.37	0.37	0.37	1.1 1.8	BSI24
18343003 18343003	18343003 18343003		Y			
N62473-14-D-1405N6247317F4100	BARSTOW_MCLB	OU1-Y4-2-W-01	537_MOD	EUROFINS		

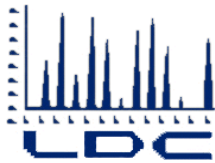
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
06:56:00	9927679	20181224	2015917	0.00	1	1	375-73-5	1.0	0	NG_L	U	N	
TRG						0.27		0.27		0.27	1.0	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-01	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
06:56:00	9927679	20181224	2015917	0.00	1	1	355-46-4	1.0	0	NG_L	U	N	
TRG						0.37		0.37		0.37	1.0	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-01	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
06:56:00	9927679	20181224	2015917	0.00	1	1	1763-23-1	1.1	0	NG_L	U	N	
TRG						0.46		0.46		0.46	1.1	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-01	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
06:56:00	9927679	20181224	2015917	0.00	1	1	2991-50-6	2.2	0	NG_L	U	N	
TRG						0.91		0.91		0.91	2.2	2.7	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-01	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
06:56:00	9927679	20181224	2015917	0.00	1	1	2355-31-9	2.2	0	NG_L	U	N	
TRG						0.91		0.91		0.91	2.2	2.7	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-02	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
07:05:00	9927680	20181224	2015917	0.00	1	1	335-67-1	1.1	0	NG_L	U	N	
TRG						0.45		0.45		0.45	1.1	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-02	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
07:05:00	9927680	20181224	2015917	0.00	1	1	375-95-1	1.1	0	NG_L	U	N	
TRG						0.36		0.36		0.36	1.1	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-02	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
07:05:00	9927680	20181224	2015917	0.00	1	1	335-76-2	1.1	0	NG_L	U	N	
TRG						0.45		0.45		0.45	1.1	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-02	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
07:05:00	9927680	20181224	2015917	0.00	1	1	2058-94-8	1.1	0	NG_L	U	N	
TRG						0.45		0.45		0.45	1.1	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-02	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
07:05:00	9927680	20181224	2015917	0.00	1	1	307-55-1	1.1	0	NG_L	U	N	
TRG						0.45		0.45		0.45	1.1	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-02	537	MOD		EUROFINS	
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211				
07:05:00	9927680	20181224	2015917	0.00	1	1	72629-94-8	1.1	0	NG_L	U	N	
TRG						0.53		0.53		0.53	1.1	1.8	BSI24
18343003	18343003	18343003	18343003							Y			
N62473-14-D-1405N6247317F4100							BARSTOW_MCLB	OU1-Y4-2-W-02	537	MOD		EUROFINS	



BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	376-06-7	1.1 0	NG_L U N
TRG						0.53		0.53	0.53 1.1 1.8 BSI24
18343003	18343003	18343003	18343003					Y	
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	307-24-4	1.1 0	NG_L U N
TRG						0.45		0.45	0.45 1.1 1.8 BSI24
18343003	18343003	18343003	18343003					Y	
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	375-85-9	1.1 0	NG_L U N
TRG						0.36		0.36	0.36 1.1 1.8 BSI24
18343003	18343003	18343003	18343003					Y	
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	375-73-5	0.98 0	NG_L U N
TRG						0.27		0.27	0.27 0.98 1.8 BSI24
18343003	18343003	18343003	18343003					Y	
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	355-46-4	0.98 0	NG_L U N
TRG						0.36		0.36	0.36 0.98 1.8 BSI24
18343003	18343003	18343003	18343003					Y	
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	1763-23-1	1.1 0	NG_L U N
TRG						0.45		0.45	0.45 1.1 1.8 BSI24
18343003	18343003	18343003	18343003					Y	
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	2991-50-6	2.1 0	NG_L U N
TRG						0.89		0.89	0.89 2.1 2.7 BSI24
18343003	18343003	18343003	18343003					Y	
N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	OU1-Y4-2-W-02	537_MOD	EUROFINS			
BRADY GCE II	NONE	NA	METHOD	000	W	UNK	20181209	15:55:00	20181211
07:05:00	9927680	20181224	2015917	0.00	1	1	2355-31-9	2.1 0	NG_L U N
TRG						0.89		0.89	0.89 2.1 2.7 BSI24
18343003	18343003	18343003	18343003					Y	

SAMPLE_NAME	CONTRACT_ID	DO_CTO_NUMBER	PHASE	INSTALLATION_ID	SITE_NAME
LOCATION_NAME	SPECIMEN_NAME	BIOLOGICAL_CLASS	SEX	AGE_CLASS	EXCAVATION_NAME
PARENT_SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_TYPE	SAMPLING_EQUIPMENT		
PROJECT_PHASE	COMPOSITE	WATER_COLUMN	COLLECT_DATE	COLLECT_TIME	DATUM_ELEV
ELEV_UNITS	DATUM_MLLW	DATUM_DESC	START_DEPTH	END_DEPTH	DEPTH_UNITS
REMOVED	REMOVED_DATE	AMBIENT_BLANK	EQUIPMENT_BLANK	SOURCE_BLANK	TRIP_BLANK
SAMPLE_NARRATIVE					
OU1-YEP-3-01	N62473-14-D-1405N6247317F4100		BARSTOW_MCLB	00000	OU1-YEP-3-01
WG N	N	20181204 10:25:00			
OU1-YEP-3-W-01	N62473-14-D-1405N6247317F4100		BARSTOW_MCLB	00000	OU1-YEP-3-W-01
W EB	N	20181204 10:40:00			
OU1-YEP-3-W-02	N62473-14-D-1405N6247317F4100		BARSTOW_MCLB	00000	OU1-YEP-3-W-02
W BLK	N	20181204 10:45:00			
OU1-YS35-4-01	N62473-14-D-1405N6247317F4100		BARSTOW_MCLB	00000	OU1-YS35-4-01
WG N	N	20181204 11:50:00			
OU1-YCW16-4-01	N62473-14-D-1405N6247317F4100		BARSTOW_MCLB	00000	OU1-YCW16-4-01

WG N	N	20181204	13:21:00			
OU1-YCW16-2-01	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	OU1-YCW16-2-01
WG N	N	20181204	15:04:00			
OU1-Y4-2-01	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	OU1-Y4-2-01
WG N	N	20181205	08:18:00			
OU1-Y4-2-W-01	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	OU1-Y4-2-W-01
W EB	N	20181205	08:45:00			
OU1-Y4-2-W-02	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	OU1-Y4-2-W-02
W BLK	N	20181205	08:50:00			
BLK18343003	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	
W LB	N					
LCS18343003	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	
W BS	N					
LCSD18343003	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	
W BD	N					
BLK18348012	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	
WG LB	N					
LCS18348012	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	
WG BS	N					
LCSD18348012	N62473-14-D-1405N6247317F4100			BARSTOW_MCLB	00000	
WG BD	N					



## LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Gutierrez Canales Engineering, P.C.  
2655 Camino del Rio North, Suite 100  
San Diego, CA 92108  
ATTN: Mr. Jesse MacNeill

February 5, 2019

SUBJECT: REVISED Barstow Site Inspection, Data Validation

Dear Mr. MacNeill

Enclosed are the revised validation reports for the fraction listed below. These SDGs were received on January 10, 2019. Attachment 1 is a summary of the samples that were reviewed for each analysis.

### LDC Project #44154\_RV1:

#### SDG #

#### Fraction

BSI20/2010255, BSI21/2010258  
BSI22/2012436, BSI23/2014748  
BSI24/2015917, BSI27/2017387  
SBI22/2011587, SBI23/2011591

Perfluoroalkyl & Polyfluoroalkyl Substances

The data validation was performed under Stage 2B & 4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA; October 2018
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.1; 2017
- USEPA National Functional Guidelines for Organic Superfund Methods Data Review; January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng  
[pgeng@lab-data.com](mailto:pgeng@lab-data.com)  
Project Manager/Senior Chemist

80/20 - NEDD - 2B/4 **LDC #44154 (Gutierrez Canales Engineering, P.C. - San Diego, CA / Barstow)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	PFAs (537M)		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	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
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	BSI20/2010255	01/10/19	01/30/19	7	0																																
B	BSI21/2010258	01/10/19	01/30/19	10	0																																
C	BSI22/2012436	01/10/19	01/30/19	7	0																																
D	BSI23/2014748	01/10/19	01/30/19	14	0																																
E	BSI24/2015917	01/10/19	01/30/19	9	0																																
F	BSI27/2017387	01/10/19	01/30/19	12	0																																
G	SBI22/2011587	01/10/19	01/30/19	17	0																																
H	SBI23/2011591	01/10/19	01/30/19	10	0																																
Total	J/PG			86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86		

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** January 22, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 4

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** BSI20/2010255

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OU1-NNE-14-01	9903613	Water	11/14/18
OU1-NNE-14-W-01	9903614	Water	11/14/18
OU1-NNE-14-W-02	9903615	Water	11/14/18
OU1-NNE-17-01	9903616	Water	11/14/18
OU1-9N1W12L05-01	9903617	Water	11/14/18
OU1-NEP-2-01	9903618	Water	11/14/18
OU1-NRF-1-01	9903619	Water	11/14/18
OU1-NRF-1-01MS	9903620MS	Water	11/14/18
OU1-NRF-1-01MSD	9903621MSD	Water	11/14/18



## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample OU1-NNE-14-W-01 was identified as an equipment blank. No contaminants were found.

Sample OU1-NNE-14-W-02 was identified as a source blank. No contaminants were found.

## 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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
OU1-NRF-1-01MS/MSD (OU1-NRF-1-01)	Perfluoroundecanoic acid	-	79 (83-132)	UJ (all non-detects)	A

For OU1-NRF-1-01MS/MSD, no data were qualified for Perfluorooctanoic acid percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
OU1-NNE-14-01	13C2-Perfluorododecanoic acid	35 (50-150)	Perfluorododecanoic acid Perfluorotridecanoic acid	UJ (all non-detects) UJ (all non-detects)	P

## **XI. Compound Quantitation**

All compound quantitations met validation criteria.

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

## **XII. Target Compound Identifications**

All target compound identifications met validation criteria.

## **XIII. System Performance**

The system performance was acceptable.

## **XIV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and labeled compound %R, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.



**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
 BSI20/2010255**

Sample	Compound	Flag	A or P	Reason
OU1-NRF-1-01	Perfluoroundecanoic acid	UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
OU1-NNE-14-01	Perfluorododecanoic acid Perfluorotridecanoic acid	UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
 Summary - SDG BSI20/2010255**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
 Summary - SDG BSI20/2010255**

No Sample Data Qualified in this SDG

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**Sample Description:** OU1-NNE-14-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903613  
ELLE Group #: 2010255  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/14/2018 09:00  
SDG#: BSI20-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.92	2.2	2.8	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.92	2.2	2.8	1
14434	Perfluorobutanesulfonate	375-73-5	14	0.28	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	1.7 J	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D. US	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	14	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	83	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	54	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	1.8 J	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	36	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	58	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D. US	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

The recovery for labeled compound 13C2-PFDoDA is outside of QC acceptance limits as noted on the QC Summary.

Sufficient sample was not available to repeat the analysis.

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/26/2018 23:32	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/19/2018 15:00	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

*11/26/18*

**Sample Description:** OU1-NNE-14-W-01 Grab Water  
Barstow Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9903614  
ELLE Group #: 2010255  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/14/2018 10:15  
SDG#: BSI20-02BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/26/2018 23:41	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/19/2018 15:00	Danielle D McCully	1

*11/26/18 8*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-NNE-14-W-02 Grab Water  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903615  
ELLE Group #: 2010255  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/14/2018 10:20  
SDG#: BSI20-03BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/26/2018 23:50	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/19/2018 15:00	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NNE-17-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903616  
ELLE Group #: 2010255  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/14/2018 11:14  
SDG#: BSI20-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.96	2.3	2.9	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.96	2.3	2.9	1
14434	Perfluorobutanesulfonate	375-73-5	16	0.29	1.1	1.9	1
14434	Perfluorodecanoic acid	335-76-2	1.2 J	0.48	1.2	1.9	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.48	1.2	1.9	1
14434	Perfluoroheptanoic acid	375-85-9	21	0.38	1.2	1.9	1
14434	Perfluorohexanesulfonate	355-46-4	130	0.38	1.1	1.9	1
14434	Perfluorohexanoic acid	307-24-4	74	0.48	1.2	1.9	1
14434	Perfluorononanoic acid	375-95-1	1.7 J	0.38	1.2	1.9	1
14434	Perfluoro-octanesulfonate	1763-23-1	51	0.48	1.2	1.9	1
14434	Perfluorooctanoic acid	335-67-1	99	0.48	1.2	1.9	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.58	1.2	1.9	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.58	1.2	1.9	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.48	1.2	1.9	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/26/2018 23:59	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/19/2018 15:00	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result



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**Sample Description:** OU1-9N1W12L05-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903617  
ELLE Group #: 2010255  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/14/2018 12:36  
SDG#: BSI20-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	5.1	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	16	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	0.87 J	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	6.1	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	0.76 J	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/27/2018 00:08	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/19/2018 15:00	Danielle D McCully	1

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\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NEP-2-01 Grab Groundwater  
Barstow Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9903618  
ELLE Group #: 2010255  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/14/2018 14:30  
SDG#: BSI20-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	20	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	0.63 J	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	11	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	69	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	97	4.5	11	18	10
14434	Perfluorononanoic acid	375-95-1	1.2 J	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	49	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	62	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/27/2018 00:17	Marissa C Drexinger	1
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/28/2018 10:24	Joshua P Trost	10
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/19/2018 15:00	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NRF-1-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903619  
ELLE Group #: 2010255  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/14/2018 16:25  
SDG#: BSI20-07BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>				ng/l	ng/l	ng/l	ng/l
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	18	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	2.2	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	3.0	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	21	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	7.3	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	3.8	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	44	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	23	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/27/2018 00:26	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18323012	11/19/2018 15:00	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

*1/26/19*

LDC #: 44154A96  
 SDG #: BSI20/2010255  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**

Stage 2B, A

Date: 1/24/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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	RSO ≤ 20%. Y <sup>2</sup> . TML/ICV ≤ 30%
IV.	Continuing calibration/ISC	A	eev/ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 2. SB = 2
VII.	Matrix spike/Matrix spike duplicates	W	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Labeled Compounds	W	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	OU1-NNE-14-01	9903613	Water	11/14/18
2	OU1-NNE-14-W-01	9903614	Water	11/14/18
3	OU1-NNE-14-W-02	9903615	Water	11/14/18
4	OU1-NNE-17-01	9903616	Water	11/14/18
5	OU1-9N1W12L05-01	9903617	Water	11/14/18
6	OU1-NEP-2-01	9903618	Water	11/14/18
7	OU1-NRF-1-01	9903619	Water	11/14/18
8	OU1-NRF-1-01MS	9903620MS	Water	11/14/18
9	OU1-NRF-1-01MSD	9903621MSD	Water	11/14/18
10				
11				

Notes:

<u>EB=3 SB=2</u>				

**Method:** LCMS (EPA Method 537 Modified )

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. LC/MS Instrument performance check</b>				
Were the instrument performance reviewed and found to be within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIa. Initial calibration</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq$ 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of $> 0.990$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) $\leq$ 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIb. Initial Calibration Verification</b>				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Continuing calibration</b>				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the Instrument Sensitivity Check $< 30\%$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>V. Laboratory Blanks</b>				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Field blanks</b>				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VIII. Matrix spike/Matrix spike duplicates</b>				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>IX. Laboratory control samples</b>				
Was an LCS analyzed per extraction batch for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



**VALIDATION FINDINGS CHECKLIST**

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X. Field duplicates</b>				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>XI. Labeled compounds</b>				
Were labeled compound percent recoveries (%R) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>XII. Compound quantitation</b>				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did reported results include both branched and linear isomers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Target compound identification</b>				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIV. System performance</b>				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# TARGET COMPOUND WORKSHEET

**METHOD: PFOS/PFOAs**

A. NEtFOSAA			
B. NMeFOSAA			
C. Perfluorobutanesulfonate			
D. Perfluorobutanoic acid			
E. Perfluorodecanesulfonate			
F. Perfluorodecanoic acid			
G. Perfluorododecanoic acid			
H. Perfluoroheptanoic acid			
I. Perfluorohexanesulfonate			
J. Perfluorohexanoic acid			
K. Perfluorononanoic acid			
L. Perfluorooctanesulfonamide			
M. Perfluoro-octanesulfonate			
N. Perfluorooctanoic acid			
O. Perfluoropentanoic acid			
P. Perfluorotetradecanoic acid			
Q. Perfluorotridecanoic acid			
R. Perfluoroundecanoic acid			

**VALIDATION FINDINGS WORKSHEET**  
**Matrix Spike/Matrix Spike Duplicates**

**METHOD:** LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?
- N N/A Was a MS/MSD analyzed every 20 samples of each matrix?
- N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?
- Y N N/A Were all duplicate sample relative percent differences (RPD) or differences within QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		<u>8/9</u>	<u>FR</u>	( )	<u>T9 (83-132)</u>	( )	<u>T (NO)</u>	<u>N/A</u>
			<u>N</u>	( )	<u>1ST (70-136)</u>	( )		<u>No dual &gt; 4x</u>
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

### VALIDATION FINDINGS WORKSHEET Labeled Compounds

**METHOD:** LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y/N N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Internal Standard	% Recovery (Limit: )	Qualifications
		1 (ND)	13C-PFDODA	35 (50-150)	Y/N/A (E, Q)
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
11/26/2018	PFOA	1	0.040	0.0410393
		2	0.120	0.1035112
		3	0.400	0.4268136
		4	1.600	1.4766669
		5	4.000	3.8556006
		6	10.000	8.9604514
		7	20.000	17.4262605

## Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.87925184	0.892990
Correlation Coefficient	0.999777	0.99927
Coefficient of Determination (r <sup>2</sup> )	0.999555	



Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
11/26/2018	PFOS	1	0.039	0.0433728
		2	0.116	0.1149304
		3	0.387	0.4449716
		4	1.548	1.5784137
		5	3.870	4.3035052
		6	9.686	10.5549627
		7	19.372	22.0735376

**Linear through the origin**

	<b><i>calculated</i></b>	<b><i>Reported</i></b>
Constant	0.000000	0.0000
X Coefficient(s)	1.12840566	1.116930
Correlation Coefficient	0.999823	0.99961
Coefficient of Determination (r <sup>2</sup> )	0.999647	

## VALIDATION FINDINGS WORKSHEET Continuing Calibration Results Verification

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 \* (ave. RRF - RRF)/ave. RRF  
 $RRF = (A_x)(C_{is}) / (A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 $A_x$  = Area of compound,  $A_{is}$  = Area of associated internal standard  
 $C_x$  = Concentration of compound,  $C_{is}$  = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)		Average RRF (initial)	Reported	Recalculated	Reported	Recalculated	
						RRF (CC)	RRF (CC)	%D	%D	
1	<del>CV2-CA23</del>	11/26/18	<del>PFOA</del>	(1st internal standard)	2.00	2.38	2.38	18.77	18.77	
						1.85	1.97	1.97	6.23	6.23
2	CV3-CA44	11/26/18	↓	(1st internal standard)	8.00	9.02	9.02	12.79	12.79	
				(2nd internal standard)	7.40	6.91	6.91	6.56	6.56	
				(3rd internal standard)						
3			(1st internal standard)							
			(2nd internal standard)							
			(3rd internal standard)							
4			(1st internal standard)							
			(2nd internal standard)							
			(3rd internal standard)							

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

## VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates Results Verification

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (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 =  $|MSC - MSC| * 2 / (MSC + MSDC)$

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD samples: 3/9

Compound	Spike Added (US/L)		Sample Concentration (US/L)	Spiked Sample Concentration (US/L)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	4.77	4.84	23.33	29.72	30.95	134	134	157	157	4	4
PFOS	4.56	4.63	43.57	48.1	48.58	102	100	109	109	1	1

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification**

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

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 \* (SC/SA)

Where: SSC = Spike concentration  
 SA = Spike added

RPD = |LCSC - LCSDC| \* 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS 3230128

Compound	Spike Added (NS/L)		Spike Concentration (U/D)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
<del>PFOA</del>	5.14	NA	5.31	NA	98	98				
<del>PFOS</del>	5.20	↓	379	↓	73	73				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 415A96

**VALIDATION FINDINGS WORKSHEET**  
**Sample Calculation Verification**

Page: 1 of 1  
Reviewer: Q  
2nd reviewer: JV

**METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)**

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 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_i)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

- $A_x$  = Area of the characteristic ion (EICP) for the compound to be measured
- $A_{is}$  = Area of the characteristic ion (EICP) for the specific internal standard
- $I_s$  = Amount of internal standard added in nanograms (ng)
- $V_o$  = Volume or weight of sample extract in milliliters (ml) or grams (g).
- $V_i$  = Volume of extract injected in microliters (ul)
- $V_t$  = Volume of the concentrated extract in microliters (ul)
- Df = Dilution Factor.
- %S = Percent solids, applicable to soil and solid matrices only.
- 2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1, PFOA:

$$\begin{aligned} \text{Conc.} &= \frac{(281900)(5.00)(1)}{(102297)(0.8999)(0.2153)} \\ &= 57.71 \text{ ng/L} \end{aligned}$$

#	Sample ID	Compound	Reported Concentration ( <u>115A</u> )	Calculated Concentration ( )	Qualification
	<u>1</u>	<u>PFOA</u>	<u>58</u>		



## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** January 22, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 2B

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** BSI21/2010258

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OU1-GW-10-01	9903630	Water	11/13/18
OU1-GW-10-W-01	9903633	Water	11/13/18
OU1-GW-10-W-02	9903634	Water	11/13/18
OU1-MW-A-01	9903635	Water	11/13/18
OU1-MW-A-02	9903636	Water	11/13/18
OU1-NPZ-16-01	9903637	Water	11/13/18
OU1-NPZ-8-01	9903638	Water	11/13/18
OU1-NPZ-7-01	9903639	Water	11/13/18
OU1-NWP-6-01	9903640	Water	11/13/18
OU1-NWP-6-02	9903641	Water	11/13/18
OU1-GW-10-01MS	9903631MS	Water	11/13/18
OU1-GW-10-01MSD	9903632MSD	Water	11/13/18

## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 2B 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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

Sample OU1-GW-10-W-01 was identified as an equipment blank. No contaminants were found.

Sample OU1-GW-10-W-02 was identified as a source blank. No contaminants were found.

### VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For OU1-GW-10-01MS/MSD, no data were qualified for percent recoveries (%R) and relative percent differences (RPD) outside the QC limits since the MS/MSD was analyzed at greater than or equal to a 5X dilution.

### VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

### IX. Field Duplicates

Samples OU1-MW-A-01 and OU1-MW-A-02 and samples OU1-NWP-6-01 and OU1-NWP-6-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	OU1-MW-A-01	OU1-MW-A-02			
NEtFOSAA	2.6	2.8	7 (≤30)	-	-
NMeFOSAA	1.5	1.3	14 (≤30)	-	-
Perfluorobutanesulfonate	17	18	6 (≤30)	-	-
Perfluorodecanoic acid	4.9	4.7	4 (≤30)	-	-
Perfluoroheptanoic acid	2.4	2.4	0 (≤30)	-	-
Perfluorohexanesulfonate	15	15	0 (≤30)	-	-
Perfluorohexanoic acid	6.7	6.4	5 (≤30)	-	-
Perfluorononanoic acid	4.0	4.2	5 (≤30)	-	-
Perfluoro-octanesulfonate	47	53	12 (≤30)	-	-
Perfluorooctanoic acid	22	22	0 (≤30)	-	-

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	OU1-NWP-6-01	OU1-NWP-6-02			
NEtFOSAA	1.0	1.3	26 (≤30)	-	-
Perfluorobutanesulfonate	19	24	23 (≤30)	-	-
Perfluorodecanoic acid	4.7	5.4	14 (≤30)	-	-
Perfluoroheptanoic acid	2.9	3.6	22 (≤30)	-	-
Perfluorohexanesulfonate	21	25	17 (≤30)	-	-
Perfluorohexanoic acid	6.7	7.9	16 (≤30)	-	-
Perfluorononanoic acid	6.1	6.8	11 (≤30)	-	-
Perfluoro-octanesulfonate	79	94	17 (≤30)	-	-
Perfluorooctanoic acid	27	33	20 (≤30)	-	-

## X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## XI. Compound Quantitation

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

Raw data were not reviewed for Stage 2B validation.

## XII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

## XIII. System Performance

Raw data were not reviewed for Stage 2B 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.

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
BSI21/2010258**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
Summary - SDG BSI21/2010258**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
Summary - SDG BSI21/2010258**

No Sample Data Qualified in this SDG

**Sample Description:** OU1-GW-10-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903630  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 09:00  
SDG#: BSI21-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	8.8	21	27	10
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	8.8	21	27	10
14434	Perfluorobutanesulfonate	375-73-5	6,400	27	97	180	100
14434	Perfluorodecanoic acid	335-76-2	N.D.	4.4	11	18	10
14434	Perfluorododecanoic acid	307-55-1	N.D.	4.4	11	18	10
14434	Perfluoroheptanoic acid	375-85-9	2,000	35	110	180	100
14434	Perfluorohexanesulfonate	355-46-4	6,400	35	97	180	100
14434	Perfluorohexanoic acid	307-24-4	32,000	440	1,100	1,800	1000
14434	Perfluorononanoic acid	375-95-1	N.D.	3.5	11	18	10
14434	Perfluoro-octanesulfonate	1763-23-1	31	4.4	11	18	10
14434	Perfluorooctanoic acid	335-67-1	1,500	4.4	11	18	10
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	5.3	11	18	10
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	5.3	11	18	10
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	4.4	11	18	10

The recovery for labeled compound used as extraction standard 13C5-PFHxA is outside of QC acceptance limits as noted on the QC Summary. The recovery for labeled compound used as extraction standard 13C5-PFHxA is also outside of QC acceptance limits in the associated matrix spike and duplicate samples, indicating a matrix effect.

Reporting limits were raised due to interference from the sample matrix.

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/28/2018 10:42	Joshua P Trost	10
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/28/2018 10:51	Joshua P Trost	100
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/28/2018 12:16	Joshua P Trost	1000
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

*11/26/19 J*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-GW-10-W-01 Grab Water  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903633  
ELLE Group #: 2010258  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 09:15  
SDG#: BSI21-02BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 13:37	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

11/26/19 Y

\*=This limit was used in the evaluation of the final result



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**Sample Description:** OU1-GW-10-W-02 Grab Water  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903634  
ELLE Group #: 2010258  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 09:20  
SDG#: BSI21-03BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.84	2.0	2.5	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.84	2.0	2.5	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.25	0.93	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.42	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.42	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.34	0.93	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.42	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.42	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.42	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.42	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 13:46	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

11/26/19

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-MW-A-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903635  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 10:44  
SDG#: BSI21-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	2.6	0.88	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.5 J	0.88	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	17	0.26	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	4.9	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	2.4	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	15	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	6.7	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	4.0	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	47	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	22	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 13:55	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

*1/26/19 Q*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-MW-A-02 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903636  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 10:45  
SDG#: BSI21-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	2.8	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.3 J	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	18	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	4.7	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	2.4	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	15	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	6.4	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	4.2	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	53	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	22	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 14:04	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

1/26/19 8

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NPZ-16-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903637  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 12:13  
SDG#: BSI21-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	24	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	4.0	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	1.8	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	18	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	4.6	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	4.7	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	50	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	24	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 14:13	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

1/26/19

\*=This limit was used in the evaluation of the final result

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6786 • www.EurofinsUS.com/LancLabsEnv

**Sample Description:** OU1-NPZ-8-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903638  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 13:34  
SDG#: BSI21-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	19	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	2.6	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	3.1	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	15	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	6.3	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	4.3	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	47	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	24	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 14:22	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

*1/26/19* ✓

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-NPZ-7-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903639  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 15:01  
SDG#: BSI21-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	6.9	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	4.4	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	46	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	26	0.44	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	4.9	0.44	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	41	0.44	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 14:31	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

*1/26/19 J*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-NWP-6-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903640  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 16:36  
SDG#: BSI21-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.0 J	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	19	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	4.7	0.44	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	2.9	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	21	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	6.7	0.44	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	6.1	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	79	0.44	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	27	0.44	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 14:40	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NWP-6-02 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9903641  
ELLE Group #: 2010258  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/16/2018 11:40  
Collection Date/Time: 11/13/2018 16:37  
SDG#: BSI21-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.3 J	0.85	2.0	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.85	2.0	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	24	0.26	0.94	1.7	1
14434	Perfluorodecanoic acid	335-76-2	5.4	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	3.6	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	25	0.34	0.94	1.7	1
14434	Perfluorohexanoic acid	307-24-4	7.9	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	6.8	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	94	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	33	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/27/2018 14:58	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18324013	11/20/2018 16:00	Anthony C Polaski	1

*11/16/19*

\*=This limit was used in the evaluation of the final result

LDC #: 44154B96  
 SDG #: BSI21/2010258  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 2B

Date: 1/21/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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	$ESD < 20\%$ , TME/ICV $\leq 30\%$
IV.	Continuing calibration/ISC	A	CCV/ISC $\leq 30\%$
V.	Laboratory Blanks	A	
VI.	Field blanks	NB	EB = 2, SB = 3.
VII.	Matrix spike/Matrix spike duplicates	M	11/12 = 70% and <del>100%</del> out > 5x of
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	M	D = 4+5, 9+10
X.	Labeled Compounds	M	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	OU1-GW-10-01	9903630	Water	11/13/18
2	OU1-GW-10-W-01	9903633	Water	11/13/18
3	OU1-GW-10-W-02	9903634	Water	11/13/18
4	OU1-MW-A-01	9903635	Water	11/13/18
5	OU1-MW-A-02	9903636	Water	11/13/18
6	OU1-NPZ-16-01	9903637	Water	11/13/18
7	OU1-NPZ-8-01	9903638	Water	11/13/18
8	OU1-NPZ-7-01	9903639	Water	11/13/18
9	OU1-NWP-6-01	9903640	Water	11/13/18
10	OU1-NWP-6-02	9903641	Water	11/13/18
11	OU1-GW-10-01MS	9903631MS	Water	11/13/18
12	OU1-GW-10-01MSD	9903632MSD	Water	11/13/18
13				
14				
15				

## TARGET COMPOUND WORKSHEET

### METHOD: PFOS/PFOAs

A. NEtFOSAA			
B. NMeFOSAA			
C. Perfluorobutanesulfonate			
D. Perfluorobutanoic acid			
E. Perfluorodecanesulfonate			
F. Perfluorodecanoic acid			
G. Perfluorododecanoic acid			
H. Perfluoroheptanoic acid			
I. Perfluorohexanesulfonate			
J. Perfluorohexanoic acid			
K. Perfluorononanoic acid			
L. Perfluorooctanesulfonamide			
M. Perfluoro-octanesulfonate			
N. Perfluorooctanoic acid			
O. Perfluoropentanoic acid			
P. Perfluorotetradecanoic acid			
Q. Perfluorotridecanoic acid			
R. Perfluoroundecanoic acid			

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

**METHOD:** LC MS PFCs (EPA Method 537-Mod)

Y/N/NA Were field duplicate pairs identified in this SDG?

Y/N/NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD (≤30%)	Qualifications (Parent Only)
	4	5		
A	2.6	2.8	7	
B	1.5	1.3	14	
C	17	18	6	
F	4.9	4.7	4	
H	2.4	2.4	0	
I	15	15	0	
J	6.7	6.4	5	
K	4.0	4.2	5	
M	47	53	12	
N	22	22	0	

Compound	Concentration (ng/L)		RPD (≤30%)	Qualifications (Parent Only)
	9	10		
A	1.0	1.3	26	
C	19	24	23	
F	4.7	5.4	14	
H	2.9	3.6	22	
I	21	25	17	
J	6.7	7.9	16	
K	6.1	6.8	11	
M	79	94	17	
N	27	33	20	



**VALIDATION FINDINGS WORKSHEET**  
**Labeled Compounds**

**METHOD:** LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N / N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Internal Standard	% Recovery (Limit: )	Qualifications
		<del>1</del>	<del>1305-PH/xA</del>	<del>42</del> ( <del>50-150</del> )	<del>(5) 9</del>
		11 (MS)	↓	40 ( 50-150 )	No anal
		12 (MSD)	↓	41 ( ↓ )	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** January 22, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 2B

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** BSI22/2012436

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OU2N-TIM3-01	9913119	Water	11/20/18
OU1-NSP-2-01	9913120	Water	11/20/18
OU1-NS7-4-01	9913121	Water	11/21/18
OU1-NS7-4-W-01	9913122	Water	11/21/18
OU1-NS7-4-W-02	9913123	Water	11/21/18
OU1-NS7-8-01	9913124	Water	11/21/18
OU1-NS7-3-01	9913125	Water	11/21/18

## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 2B 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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

Sample OU1-NS7-4-W-01 was identified as an equipment blank. No contaminants were found.

Sample OU1-NS7-4-W-02 was identified as a source 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. 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. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
OU2N-TIM3-01	13C2-Perfluorotetradecanoic acid	46 (50-150)	Perfluorotetradecanoic acid	UJ (all non-detects)	P

### XI. Compound Quantitation

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

Raw data were not reviewed for Stage 2B validation.

### XII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

### XIII. System Performance

Raw data were not reviewed for Stage 2B validation.

### XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.



Due to labeled compound %R, data were qualified as estimated in one samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
 BSI22/2012436**

Sample	Compound	Flag	A or P	Reason
OU2N-TIM3-01	Perfluorotetradecanoic acid	UJ (all non-detects)	P	Labeled compounds (%R)

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
 Summary - SDG BSI22/2012436**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
 Summary - SDG BSI22/2012436**

No Sample Data Qualified in this SDG

**Sample Description:** OU2N-TIM3-01 Grab Groundwater  
MCLB Barstow

Gutierrez Canales Engineering  
ELLE Sample #: GW 9913119  
ELLE Group #: 2012436  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/27/2018 11:15  
Collection Date/Time: 11/20/2018 12:57  
SDG#: BSI22-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	2.2 J	0.85	2.0	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.85	2.0	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	20	0.26	0.94	1.7	1
14434	Perfluorodecanoic acid	335-76-2	6.0	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	2.8	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	16	0.34	0.94	1.7	1
14434	Perfluorohexanoic acid	307-24-4	8.2	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	5.6	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	60	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	24	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D. <i>UJ</i>	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was reextracted outside holding time. The data is reported from the original extraction. Both sets of data are included in the data package.

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	12/04/2018 19:04	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	11/29/2018 15:30	Danielle D McCully	1

*1/2/19 Q*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NSP-2-01 Grab Groundwater  
MCLB Barstow

Gutierrez Canales Engineering  
ELLE Sample #: GW 9913120  
ELLE Group #: 2012436  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/27/2018 11:15  
Collection Date/Time: 11/20/2018 14:05  
SDG#: BSI22-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.34	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	12/04/2018 19:13	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	11/29/2018 15:30	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NS7-4-01 Grab Groundwater  
MCLB Barstow

Gutierrez Canales Engineering  
ELLE Sample #: GW 9913121  
ELLE Group #: 2012436  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/27/2018 11:15  
Collection Date/Time: 11/21/2018 09:02  
SDG#: BSI22-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	0.51 J	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	2.9	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	2.3	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	0.98 J	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	3.1	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	2.4	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	3.0	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	4.6	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	0.61 J	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	12/04/2018 19:22	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	11/29/2018 15:30	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-NS7-4-W-01 Grab Water  
MCLB Barstow

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9913122  
ELLE Group #: 2012436  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/27/2018 11:15  
Collection Date/Time: 11/21/2018 09:15  
SDG#: BSI22-04EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	12/04/2018 19:41	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	11/29/2018 15:30	Danielle D McCully	1

*1/26/19 8*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-NS7-4-W-02 Grab Water  
MCLB Barstow

Gutierrez Canales Engineering  
ELLE Sample #: GW 9913123  
ELLE Group #: 2012436  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/27/2018 11:15  
Collection Date/Time: 11/21/2018 09:20  
SDG#: BSI22-05EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	12/04/2018 19:50	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	11/29/2018 15:30	Danielle D McCully	1

*1/26/19 8*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-NS7-8-01 Grab Groundwater  
MCLB Barstow

Gutierrez Canales Engineering  
ELLE Sample #: GW 9913124  
ELLE Group #: 2012436  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/27/2018 11:15  
Collection Date/Time: 11/21/2018 11:26  
SDG#: BSI22-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	6.8	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	0.93 J	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	1.3 J	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	1.7 J	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	2.5	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	2.4	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	1.9	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	2.5	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	12/04/2018 19:59	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	11/29/2018 15:30	Danielle D McCully	1

*1/26/19 8*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-NS7-3-01 Grab Groundwater  
MCLB Barstow

Gutierrez Canales Engineering  
ELLE Sample #: GW 9913125  
ELLE Group #: 2012436  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/27/2018 11:15  
Collection Date/Time: 11/21/2018 14:30  
SDG#: BSI22-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	12/04/2018 20:08	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18333008	11/29/2018 15:30	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

LDC #: 44154C96  
 SDG #: BSI22/2012436  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 2B

Date: 12/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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	SD < 20%. Y <sup>2</sup> , TMO/ICV < 30%
IV.	Continuing calibration/ISC	A	CCV/ISC < 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SB = 4. SB = 5.
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	W	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	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	OU2N-TIM3-01	9913119	Water	11/20/18
2	OU1-NSP-2-01	9913120	Water	11/20/18
3	OU1-NS7-4-01	9913121	Water	11/21/18
4	OU1-NS7-4-W-01	9913122	Water	11/21/18
5	OU1-NS7-4-W-02	9913123	Water	11/21/18
6	OU1-NS7-8-01	9913124	Water	11/21/18
7	OU1-NS7-3-01	9913125	Water	11/21/18
8				
9				
10				

Notes:




# TARGET COMPOUND WORKSHEET

## METHOD: PFOS/PFOAs

A. NEtFOSAA			
B. NMeFOSAA			
C. Perfluorobutanesulfonate			
D. Perfluorobutanoic acid			
E. Perfluorodecanesulfonate			
F. Perfluorodecanoic acid			
G. Perfluorododecanoic acid			
H. Perfluoroheptanoic acid			
I. Perfluorohexanesulfonate			
J. Perfluorohexanoic acid			
K. Perfluorononanoic acid			
L. Perfluorooctanesulfonamide			
M. Perfluoro-octanesulfonate			
N. Perfluorooctanoic acid			
O. Perfluoropentanoic acid			
P. Perfluorotetradecanoic acid			
Q. Perfluorotridecanoic acid			
R. Perfluoroundecanoic acid			

**VALIDATION FINDINGS WORKSHEET**  
**Labeled Compounds**

**METHOD:** LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Internal Standard	% Recovery (Limit: )	Qualifications
		<u>1 (det)</u> <u>CND</u>	<u>13C2-PFTeDA</u>	<u>46</u> ( <u>50-150</u> )	<u>N/A (P)</u>
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** January 22, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 2B

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** BSI23/2014748

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OUI-YS15-2-01	9922836	Water	11/29/18
OUI-YS15-2-W-01	9922837	Water	11/29/18
OUI-YS15-2-W-02	9922838	Water	11/29/18
OUI-YS21-3-01	9922839	Water	11/29/18
OUI-YS21-3-02	9922840	Water	11/29/18
OUI-PMW-6-01	9922841	Water	11/29/18
OUI-YS20-3-01	9922844	Water	11/29/18
OUI-YS20-3-02	9922845	Water	11/29/18
OUI-NGW01-01	9922846	Water	11/30/18
OUI-YIMW-8-01	9922847	Water	11/30/18
OUI-YIMW-8-W-01	9922850	Water	11/30/18
OUI-YIMW-8-W-02	9922851	Water	11/30/18
OUI-YIMW-6-01	9922852	Water	11/30/18
OUI-NNE-5-01	9922853	Water	11/30/18
OUI-PMW-6-01MS	9922842MS	Water	11/29/18
OUI-PMW-6-01MSD	9922843MSD	Water	11/29/18
OUI-YIMW-8-01MS	9922848MS	Water	11/30/18
OUI-YIMW-8-01MSD	9922849MSD	Water	11/30/18

## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 2B 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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

Samples OUI-YS15-2-W-01 and OUI-YIMW-8-W-01 were identified as equipment blanks. No contaminants were found.



Samples OUI-YS15-2-W-02 and OUI-YIMW-8-W-02 were identified as source blanks. No contaminants were found.

### 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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
OUI-YIMW-8-01MS/MSD (OUI-YIMW-8-01)	Perfluorohexanesulfonate	68 (71-130)	-	J (all detects)	A

Relative percent differences (RPD) were within QC limits.

### VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

### IX. Field Duplicates

Samples OUI-YS21-3-01 and OUI-YS21-3-02 and samples OUI-YS20-3-01 and OUI-YS20-3-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	OUI-YS21-3-01	OUI-YS21-3-02			
Perfluorobutanesulfonate	2.6	2.5	4 (≤30)	-	-
Perfluoroheptanoic acid	0.55	0.53	4 (≤30)	-	-
Perfluorohexanesulfonate	12	12	0 (≤30)	-	-
Perfluorohexanoic acid	1.1	1.0	10 (≤30)	-	-
Perfluoro-octanesulfonate	14	22	44 (≤30)	J (all detects)	A
Perfluorooctanoic acid	9.4	8.6	9 (≤30)	-	-

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	OUI-YS20-3-01	OUI-YS20-3-02			
Perfluorobutanesulfonate	1.3	1.4	7 ( $\leq 30$ )	-	-
Perfluorohexanesulfonate	5.0	5.1	2 ( $\leq 30$ )	-	-
Perfluorohexanoic acid	0.48	0.47	2 ( $\leq 30$ )	-	-
Perfluoro-octanesulfonate	3.2	3.4	6 ( $\leq 30$ )	-	-
Perfluorooctanoic acid	1.5	1.5	0 ( $\leq 30$ )	-	-

## X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## XI. Compound Quantitation

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

Raw data were not reviewed for Stage 2B validation.

## XII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

## XIII. System Performance

Raw data were not reviewed for Stage 2B validation.

## XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and field duplicate RPD, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
 BSI23/2014748**

Sample	Compound	Flag	A or P	Reason
OUI-YIMW-8-01	Perfluorohexanesulfonate	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
OUI-YS21-3-01 OUI-YS21-3-02	Perfluoro-octanesulfonate	J (all detects)	A	Field duplicates (RPD)

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
 Summary - SDG BSI23/2014748**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
 Summary - SDG BSI23/2014748**

No Sample Data Qualified in this SDG

**Sample Description:** OUI-YS15-2-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922836  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/29/2018 09:34  
SDG#: BSI23-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	2.8	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	9.5	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	3.3	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	27	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	0.82 J	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 12:10	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-YS15-2-W-01 Grab Water  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922837  
ELLE Group #: 2014748  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/29/2018 09:50  
SDG#: BSI23-02EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 12:19	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1

*12/26/19*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OUI-YS15-2-W-02 Grab Water  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922838  
ELLE Group #: 2014748  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/29/2018 09:55  
SDG#: BSI23-03EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.85	2.0	2.5	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.85	2.0	2.5	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.25	0.93	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.42	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.42	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.34	0.93	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.42	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.42	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.42	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.42	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 12:28	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1

*12/6/19 Y*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-YS21-3-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922839  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/29/2018 11:49  
SDG#: BSI23-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	2.6	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	0.55 J	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	12	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	1.1 J	0.44	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	14 J	0.44	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	9.4	0.44	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 12:37	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-YS21-3-02 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922840  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/29/2018 11:50  
SDG#: BSI23-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.92	2.2	2.8	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.92	2.2	2.8	1
14434	Perfluorobutanesulfonate	375-73-5	2.5	0.28	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.53 J	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	12	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	1.0 J	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	22 J	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	8.6	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 12:46	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1

1/26/19

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-PMW-6-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922841  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

**Submission Date/Time:** 12/04/2018 10:00  
**Collection Date/Time:** 11/29/2018 13:57  
**SDG#:** BSI23-06BKG

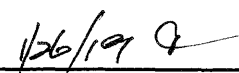
CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	1.3 J	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.83 J	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	7.2	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	4.1	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	2.3	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	0.93 J	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 12:55	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1



\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-YS20-3-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922844  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/29/2018 16:01  
SDG#: BSI23-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	1.3 J	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	5.0	0.35	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	0.48 J	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	3.2	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	1.5 J	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 13:05	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1

*1/26/19 J*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OUI-YS20-3-02 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9922845  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/29/2018 16:02  
SDG#: BSI23-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	1.4 J	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	5.1	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	0.47 J	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	3.4	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	1.5 J	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/08/2018 13:23	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18339013	12/05/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-NGW01-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922846  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/30/2018 10:05  
SDG#: BSI23-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	1.2	3.0	3.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	1.2	3.0	3.7	1
14434	Perfluorobutanesulfonate	375-73-5	21	0.37	1.4	2.5	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.62	1.5	2.5	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.62	1.5	2.5	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.50	1.5	2.5	1
14434	Perfluorohexanesulfonate	355-46-4	18	0.50	1.4	2.5	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.62	1.5	2.5	1
14434	Perfluorononanoic acid	375-95-1	0.76 J	0.50	1.5	2.5	1
14434	Perfluoro-octanesulfonate	1763-23-1	31	0.62	1.5	2.5	1
14434	Perfluorooctanoic acid	335-67-1	5.8	0.62	1.5	2.5	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.75	1.5	2.5	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.75	1.5	2.5	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.62	1.5	2.5	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/10/2018 23:07	Joshua P Trost	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/06/2018 16:00	Anthony C Polaski	1

*12/6/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-YIMW-8-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922847  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/30/2018 12:23  
SDG#: BSI23-10BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	1.6 J	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.41 J	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	8.1 J	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	0.62 J	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	7.1	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	4.3	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/10/2018 23:16	Joshua P Trost	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/06/2018 16:00	Anthony C Polaski	1

*1/26/19 g*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-YIMW-8-W-01 Grab Water  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922850  
ELLE Group #: 2014748  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/30/2018 12:45  
SDG#: BSI23-11EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.96	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.96	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/10/2018 23:25	Joshua P Trost	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/06/2018 16:00	Anthony C Polaski	1

*1/26/19 J*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-YIMW-8-W-02 Grab Water  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
**ELLE Sample #:** GW 9922851  
**ELLE Group #:** 2014748  
**Matrix:** Water

**Project Name:** Barstow Site Inspection

**Submission Date/Time:** 12/04/2018 10:00  
**Collection Date/Time:** 11/30/2018 12:50  
**SDG#:** BSI23-12EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/10/2018 23:34	Joshua P Trost	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/06/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OUI-YIMW-6-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922852  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/30/2018 14:35  
SDG#: BSI23-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	2.0	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	0.70 J	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	9.4	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	1.7 J	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	0.71 J	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	12	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	7.5	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/10/2018 23:43	Joshua P Trost	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/06/2018 16:00	Anthony C Polaski	1

*1/26/19 J*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OUI-NNE-5-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9922853  
ELLE Group #: 2014748  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/04/2018 10:00  
Collection Date/Time: 11/30/2018 16:05  
SDG#: BSI23-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	25	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	6.2	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	22	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	92	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	0.67 J	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	23	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	19	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/10/2018 23:52	Joshua P Trost	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18340014	12/06/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

LDC #: 44154D96  
 SDG #: BSI23/2014748  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**

Stage 2B

Date: 1/11/19  
 Page: bf 2  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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	$RSD \leq 30\%$ . $TRE/ICV \leq 30\%$
IV.	Continuing calibration/ISC	A	$CCV/ISC \leq 30\%$
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SB=2, 11 SB=3.12
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCB
IX.	Field duplicates	M	D=4+5. 7+8
X.	Labeled Compounds	A	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	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	OUI-YS15-2-01	9922836	Water	11/29/18
2	OUI-YS15-2-W-01	9922837	Water	11/29/18
3	OUI-YS15-2-W-02	9922838	Water	11/29/18
4	OUI-YS21-3-01	9922839	Water	11/29/18
5	OUI-YS21-3-02	9922840	Water	11/29/18
6	OUI-PMW-6-01	9922841	Water	11/29/18
7	OUI-YS20-3-01	9922844	Water	11/29/18
8	OUI-YS20-3-02	9922845	Water	11/29/18
9	OUI-NGW01-01	9922846	Water	11/30/18
10	OUI-YIMW-8-W-01	9922847	Water	11/30/18
11	OUI-YIMW-8-W-01	9922850	Water	11/30/18
12	OUI-YIMW-8-W-02	9922851	Water	11/30/18
13	OUI-YIMW-6-01	9922852	Water	11/30/18
14	OUI-NNE-5-01	9922853	Water	11/30/18
15	OUI-PMW-6-01MS	9922842MS	Water	11/29/18

LDC #: 44154D96  
SDG #: BSI23/2014748  
Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
Stage 2B

Date: 1/21/19  
Page: 7 of 7  
Reviewer: [Signature]  
2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

	Client ID	Lab ID	Matrix	Date
16	OUI-PMW-6-01MSD	9922843MSD	Water	11/29/18
17	OUI-YIMW-8- <del>V</del> -01MS	9922848MS	Water	11/30/18
18	OUI-YIMW-8- <del>V</del> -01MSD	9922849MSD	Water	11/30/18
19				
20				
21				

Notes:


# TARGET COMPOUND WORKSHEET

## METHOD: PFOS/PFOAs

A. NEtFOSAA			
B. NMeFOSAA			
C. Perfluorobutanesulfonate			
D. Perfluorobutanoic acid			
E. Perfluorodecanesulfonate			
F. Perfluorodecanoic acid			
G. Perfluorododecanoic acid			
H. Perfluoroheptanoic acid			
I. Perfluorohexanesulfonate			
J. Perfluorohexanoic acid			
K. Perfluorononanoic acid			
L. Perfluorooctanesulfonamide			
M. Perfluoro-octanesulfonate			
N. Perfluorooctanoic acid			
O. Perfluoropentanoic acid			
P. Perfluorotetradecanoic acid			
Q. Perfluorotridecanoic acid			
R. Perfluoroundecanoic acid			



**VALIDATION FINDINGS WORKSHEET**  
**Matrix Spike/Matrix Spike Duplicates**

**METHOD:** LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y  N  N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?
- Y  N  N/A Was a MS/MSD analyzed every 20 samples of each matrix?
- Y  N  N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?
- Y  N  N/A Were all duplicate sample relative percent differences (RPD) or differences within QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		<u>17/18</u>	<u>I</u>	<u>68 (71-130)</u>	( )	( )	<u>ID (dets)</u>	<u>[Signature]</u>
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

**METHOD:** LC MS PFCs (EPA Method 537-Mod)

Y/N/NA Were field duplicate pairs identified in this SDG?

Y/N/NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD (≤30%)	Qualifications (Parent Only)
	4	5		
C	2.6	2.5	4	
H	0.55	0.53	4	
I	12	12	0	
J	1.1	1.0	10	
M	14	22	44	Jdets/A
N	9.4	8.6	9	

Compound	Concentration (ng/L)		RPD (≤30%)	Qualifications (Parent Only)
	7	8		
C	1.3	1.4	7	
I	5.0	5.1	2	
J	0.48	0.47	2	
M	3.2	3.4	6	
N	1.5	1.5	0	

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** January 22, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 2B

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** BSI24/2015917

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OU1-YEP-3-01	9927672	Water	12/04/18
OU1-YEP-3-W-01	9927673	Water	12/04/18
OU1-YEP-3-W-02	9927674	Water	12/04/18
OU1-YS35-4-01	9927675	Water	12/04/18
OU1-YCW16-4-01	9927676	Water	12/04/18
OU1-YCW16-2-01	9927677	Water	12/04/18
OU1-Y4-2-01	9927678	Water	12/05/18
OU1-Y4-2-W-01	9927679	Water	12/05/18
OU1-Y4-2-W-02	9927680	Water	12/05/18

## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 2B 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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

Samples OU1-YEP-3-W-01 and OU1-Y4-2-W-01 were identified as equipment blanks. No contaminants were found.



Samples OU1-YEP-3-W-02 and OU1-Y4-2-W-02 were identified as source blanks. 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. 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. Labeled Compounds**

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## **XI. Compound Quantitation**

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

Raw data were not reviewed for Stage 2B validation.

## **XII. Target Compound Identifications**

Raw data were not reviewed for Stage 2B validation.

## **XIII. System Performance**

Raw data were not reviewed for Stage 2B 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.

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
BSI24/2015917**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
Summary - SDG BSI24/2015917**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
Summary - SDG BSI24/2015917**

No Sample Data Qualified in this SDG

**Sample Description:** OU1-YEP-3-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9927672  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 10:25  
SDG#: BSI24-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	5.0	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	1.5 J	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	2.4	0.34	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	14	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	0.81 J	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 13:53	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	2	18348012	12/14/2018 16:00	Anthony C Polaski	1

*Handwritten signature and date: 1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YEP-3-W-01 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927673  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 10:40  
SDG#: BSI24-02RB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 05:53	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YEP-3-W-02 Grab Water  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9927674  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 10:45  
SDG#: BSI24-03BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

**Sample Comments**

CA ELAP Lab Certification No. 2792

**Laboratory Sample Analysis Record**

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:02	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-YS35-4-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9927675  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 11:50  
SDG#: BSI24-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	5.4	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.54 J	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	0.60 J	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	14	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

**Sample Comments**

CA ELAP Lab Certification No. 2792

**Laboratory Sample Analysis Record**

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:11	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YCW16-4-01 Grab Groundwater  
Barstow PFAS Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9927676  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/04/2018 13:21  
SDG#: BSI24-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.95	2.3	2.8	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.95	2.3	2.8	1
14434	Perfluorobutanesulfonate	375-73-5	3.9	0.28	1.0	1.9	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.47	1.1	1.9	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.47	1.1	1.9	1
14434	Perfluoroheptanoic acid	375-85-9	0.69 J	0.38	1.1	1.9	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.38	1.0	1.9	1
14434	Perfluorohexanoic acid	307-24-4	8.0	0.47	1.1	1.9	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.38	1.1	1.9	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.47	1.1	1.9	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.47	1.1	1.9	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.57	1.1	1.9	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.57	1.1	1.9	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.47	1.1	1.9	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:20	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YCW16-2-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927677  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30

Collection Date/Time: 12/04/2018 15:04

SDG#: BSI24-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
	<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>		ng/l	ng/l	ng/l	ng/l	
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.96	2.3	2.9	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.96	2.3	2.9	1
14434	Perfluorobutanesulfonate	375-73-5	3.3	0.29	1.1	1.9	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.48	1.2	1.9	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.48	1.2	1.9	1
14434	Perfluoroheptanoic acid	375-85-9	0.77 J	0.38	1.2	1.9	1
14434	Perfluorohexanesulfonate	355-46-4	1.1 J	0.38	1.1	1.9	1
14434	Perfluorohexanoic acid	307-24-4	8.7	0.48	1.2	1.9	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.38	1.2	1.9	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.48	1.2	1.9	1
14434	Perfluorooctanoic acid	335-67-1	0.65 J	0.48	1.2	1.9	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.58	1.2	1.9	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.58	1.2	1.9	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.48	1.2	1.9	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:29	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

\*=This limit was used in the evaluation of the final result

*1/26/19*

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**Sample Description:** OU1-Y4-2-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927678  
ELLE Group #: 2015917  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/05/2018 08:18  
SDG#: BSI24-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	2.8	0.26	0.94	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	0.99 J	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	12	0.34	0.94	1.7	1
14434	Perfluorohexanoic acid	307-24-4	2.1	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	0.67 J	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	15	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	15	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:38	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

*1/26/19 J*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-Y4-2-W-01 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927679  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/05/2018 08:45  
SDG#: BSI24-08RB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 06:56	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

*1/26/19 Q*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-Y4-2-W-02 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9927680  
ELLE Group #: 2015917  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/06/2018 10:30  
Collection Date/Time: 12/05/2018 08:50  
SDG#: BSI24-09BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/11/2018 07:05	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18343003	12/09/2018 15:55	Danielle D McCully	1

*11/26/19*

\*=This limit was used in the evaluation of the final result

LDC #: 44154E96  
 SDG #: BSI24/2015917  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 2B

Date: 1/21/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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	RSO < 20%, Y <sup>2</sup> , TMO/ICV < 30%
IV.	Continuing calibration/ISC	A	CCV/ISC < 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 2.8 SB = 3, 9
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCB/D
IX.	Field duplicates	N	
X.	Labeled Compounds	A	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	OU1-YEP-3-01	9927672	Water	12/04/18
2	OU1-YEP-3-W-01	9927673	Water	12/04/18
3	OU1-YEP-3-W-02	9927674	Water	12/04/18
4	OU1-YS35-4-01	9927675	Water	12/04/18
5	OU1-YCW16-4-01	9927676	Water	12/04/18
6	OU1-YCW16-2-01	9927677	Water	12/04/18
7	OU1-Y4-2-01	9927678	Water	12/05/18
8	OU1-Y4-2-W-01	9927679	Water	12/05/18
9	OU1-Y4-2-W-02	9927680	Water	12/05/18
10				

Notes:


## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** January 22, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 2B

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** BSI27/2017387

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OU1-Y15-5-01	9934777	Water	12/05/18
OU1-Y9-5-01	9934778	Water	12/05/18
OU1-YS16-6-01	9934779	Water	12/06/18
OU1-YCW16-1-01	9934780	Water	12/07/18
OU1-YS16-6-W-01	9934781	Water	12/07/18
OU1-YS16-6-W-02	9934782	Water	12/07/18
OU1-YCW16-1-W-01	9934783	Water	12/07/18
OU1-YCW16-1-W-02	9934784	Water	12/07/18
OU1-YCW16-3-01	9934785	Water	12/07/18
OU1-YIMW-4-01	9934786	Water	12/07/18
OU1-PMW-2-01	9934787	Water	12/07/18
OU1-Y9-4-01	9934788	Water	12/07/18

## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 2B 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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

Samples OU1-YS16-6-W-01 and OU1-YCW16-1-W-01 were identified as equipment blanks. No contaminants were found with the following exceptions:



Blank ID	Collection Date	Compound	Concentration	Associated Samples
OU1-YCW16-1-W-01	12/07/18	Perfluorobutanesulfonate	0.41 ng/L	OU1-YCW16-1-01 OU1-YCW16-3-01 OU1-YIMW-4-01 OU1-PMW-2-01 OU1-Y9-4-01

Samples OU1-YS16-6-W-02 and OU1-YCW16-1-W-02 were identified as source blanks. No contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
OU1-YCW16-1-01	Perfluorobutanesulfonate	1.8 ng/L	1.8U ng/L
OU1-YIMW-4-01	Perfluorobutanesulfonate	1.7 ng/L	1.7U ng/L

## 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. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
OU1-Y9-5-01	13C2-Perfluorotetradecanoic acid	36 (50-150)	Perfluorotetradecanoic acid	UJ (all non-detects)	P
OU1-YIMW-4-01	13C2-Perfluorotetradecanoic acid	43 (50-150)	Perfluorotetradecanoic acid	UJ (all non-detects)	P

### **XI. Compound Quantitation**

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

Raw data were not reviewed for Stage 2B validation.

### **XII. Target Compound Identifications**

Raw data were not reviewed for Stage 2B validation.

### **XIII. System Performance**

Raw data were not reviewed for Stage 2B validation.

### **XIV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to labeled compound %R, data were qualified as estimated in two samples.

Due to equipment blank contamination, data were qualified as not detected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
 BSI27/2017387**

Sample	Compound	Flag	A or P	Reason
OU1-Y9-5-01 OU1-YIMW-4-01	Perfluorotetradecanoic acid	UJ (all non-detects)	P	Labeled compounds (%R)

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
 Summary - SDG BSI27/2017387**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
 Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
 Summary - SDG BSI27/2017387**

Sample	Compound	Modified Final Concentration	A or P
OU1-YCW16-1-01	Perfluorobutanesulfonate	1.8U ng/L	A
OU1-YIMW-4-01	Perfluorobutanesulfonate	1.7U ng/L	A

**Sample Description:** OU1-Y15-5-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934777  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/05/2018 13:50  
SDG#: BSI27-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	4.2	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	2.7	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	11	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	8.0	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	2.5	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 14:02	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-Y9-5-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934778  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/05/2018 17:16  
SDG#: BSI27-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	2.6	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	1.3 J	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	14	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	3.4	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	0.42 J	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	13	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	14	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D. <i>MS</i>	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was reextracted outside holding time. The data is reported from the original extraction. Both sets of data are included in the data package.

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 14:11	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19 8*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-YS16-6-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934779  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/06/2018 16:57  
SDG#: BSI27-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	4.9	0.26	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.94 J	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	0.58 J	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	15	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 14:29	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*12/19/18*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YCW16-1-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934780  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 09:03  
SDG#: BSI27-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	1.8 u	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.64 J	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	2.0	0.36	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	4.1	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	0.70 J	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 14:38	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-YS16-6-W-01 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934781  
ELLE Group #: 2017387  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 08:00  
SDG#: BSI27-05RB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.92	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.92	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 14:47	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

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\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-YS16-6-W-02 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934782  
ELLE Group #: 2017387  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 08:05  
SDG#: BSI27-06BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 14:56	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19 8*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YCW16-1-W-01 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934783  
ELLE Group #: 2017387  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 09:30  
SDG#: BSI27-07RB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	0.41 J	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 15:05	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19 J*

\*=This limit was used in the evaluation of the final result



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**Sample Description:** OU1-YCW16-1-W-02 Grab Water  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934784  
ELLE Group #: 2017387  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 09:35  
SDG#: BSI27-08BL

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 15:14	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-YCW16-3-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934785  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 10:29  
SDG#: BSI27-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.96	2.3	2.9	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.96	2.3	2.9	1
14434	Perfluorobutanesulfonate	375-73-5	3.1	0.29	1.1	1.9	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.48	1.1	1.9	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.48	1.1	1.9	1
14434	Perfluoroheptanoic acid	375-85-9	2.7	0.38	1.1	1.9	1
14434	Perfluorohexanesulfonate	355-46-4	1.3 J	0.38	1.1	1.9	1
14434	Perfluorohexanoic acid	307-24-4	19	0.48	1.1	1.9	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.38	1.1	1.9	1
14434	Perfluoro-octanesulfonate	1763-23-1	0.55 J	0.48	1.1	1.9	1
14434	Perfluorooctanoic acid	335-67-1	1.1 J	0.48	1.1	1.9	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.57	1.1	1.9	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.57	1.1	1.9	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.48	1.1	1.9	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 15:23	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-YIMW-4-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934786  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 12:44  
SDG#: BSI27-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	1.7 J U	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.46 J	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	9.3	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	1.1 J	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	10	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	7.1	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D. UJ	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was reextracted outside holding time. The data is reported from the original extraction. Both sets of data are included in the data package.

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 15:32	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

1/26/19 8

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-PMW-2-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934787  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05

Collection Date/Time: 12/07/2018 14:31

SDG#: BSI27-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	3.6	0.26	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	0.69 J	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	5.2	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	2.2	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	2.3	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	9.5	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 15:41	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19 8*

\*=This limit was used in the evaluation of the final result

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**Sample Description:** OU1-Y9-4-01 Grab Groundwater  
Barstow PFAS Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9934788  
ELLE Group #: 2017387  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 12/11/2018 10:05  
Collection Date/Time: 12/07/2018 15:57  
SDG#: BSI27-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	3.7	0.27	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	9.7	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	50	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	20	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	3.3	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	26	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	29	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/19/2018 15:50	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18348012	12/14/2018 16:00	Anthony C Polaski	1

*1/26/19 J*

\*=This limit was used in the evaluation of the final result



LDC #: 44154F96  
 SDG #: BSI27/2017387  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 2B

Date: 1/21/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: JVB

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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	<del>A</del>	$RD \leq 20\%$ , $TMC/ICV \leq 30\%$
IV.	Continuing calibration/ISC	A	$CCV/ISC \leq 30\%$
V.	Laboratory Blanks	A	
VI.	Field blanks	W	EB=5.7 SB=6.8
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	W	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	OU1-Y15-5-01	9934777	Water	12/05/18
2	OU1-Y9-5-01	9934778	Water	12/05/18
3	OU1-YS16-6-01	9934779	Water	12/06/18
4	OU1-YCW16-1-01	9934780	Water	12/07/18
5	OU1-YS16-6-W-01 EB	9934781	Water	12/07/18
6	OU1-YS16-6-W-02	9934782	Water	12/07/18
7	OU1-YCW16-1-W-01	9934783	Water	12/07/18
8	OU1-YCW16-1-W-02	9934784	Water	12/07/18
9	OU1-YCW16-3-01	9934785	Water	12/07/18
10	OU1-YIMW-4-01	9934786	Water	12/07/18
11	OU1-PMW-2-01	9934787	Water	12/07/18
12	OU1-Y9-4-01	9934788	Water	12/07/18
13				
14				
15				

## TARGET COMPOUND WORKSHEET

### METHOD: PFOS/PFOAs

A. NEtFOSAA			
B. NMeFOSAA			
C. Perfluorobutanesulfonate			
D. Perfluorobutanoic acid			
E. Perfluorodecanesulfonate			
F. Perfluorodecanoic acid			
G. Perfluorododecanoic acid			
H. Perfluoroheptanoic acid			
I. Perfluorohexanesulfonate			
J. Perfluorohexanoic acid			
K. Perfluorononanoic acid			
L. Perfluorooctanesulfonamide			
M. Perfluoro-octanesulfonate			
N. Perfluorooctanoic acid			
O. Perfluoropentanoic acid			
P. Perfluorotetradecanoic acid			
Q. Perfluorotridecanoic acid			
R. Perfluoroundecanoic acid			

**VALIDATION FINDINGS WORKSHEET**  
**Field Blanks**

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

Y  N  N/A Were field blanks identified in this SDG?  
 Y  N  N/A Were target compounds detected in the field blanks?

Blank units: US/L Associated sample units: US/L

Sampling date: 12/7/18

Field blank type: (circle one) Trip Blank/Field Blank / Rinsate / Other: EB Associated Samples: 4, 9-12

Compound	Blank ID	Sample Identification							
	7	A	10						
C	0.41	1.8/U	1.7/U						

Blank units: \_\_\_\_\_ Associated sample units: \_\_\_\_\_

Sampling date: \_\_\_\_\_

Field blank type: (circle one) Field Blank / Rinsate / Other: \_\_\_\_\_ Associated Samples: \_\_\_\_\_

Compound	Blank ID	Sample Identification							

### VALIDATION FINDINGS WORKSHEET

#### Labeled Compounds

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Internal Standard	% Recovery (Limit: )	Qualifications
		2 (ND)	1302-2FTEDA	36 (50-150)	↓ U/P (P)
		10 ↓	↓	43 ( )	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** January 22, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 2B

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** SBI22/2011587

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OU1-GW-9-01	9909715	Water	11/15/18
OU1-GW-9-02	9909716	Water	11/15/18
OU1-GW-9-W-01	9909717	Water	11/15/18
OU1-GW-9-W-02	9909718	Water	11/15/18
OU1-NS2-2-01	9909719	Water	11/15/18
OU1-NS2-2-02	9909720	Water	11/15/18
OU1-MW-D-01	9909721	Water	11/15/18
OU1-NNP-2-01	9909722	Water	11/15/18
OU1-NPZ-17-01	9909723	Water	11/15/18
OU1-NS2-1-01	9909724	Water	11/15/18
OU1-NSI-3-01	9909725	Water	11/16/18
OU1-NSI-3-W-01	9909726	Water	11/16/18
OU1-NSI-3-W-02	9909727	Water	11/16/18
OU1-NGW-04-01	9909728	Water	11/16/18
OU1-NGW-06-01	9909729	Water	11/16/18
OU1-MW-B-01	9909730	Water	11/16/18
OU1-NPZ-18-01	9909731	Water	11/16/18



## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 2B 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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

Samples OU1-GW-9-W-01 and OU1-NSI-3-W-01 were identified as equipment blanks. No contaminants were found.

Samples OU1-GW-9-W-02 and OU1-NSI-3-W-02 were identified as source blanks. 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. 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

Samples OU1-MW-A-01 and OU1-MW-A-02 and samples OU1-NWP-6-01 and OU1-NWP-6-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	OU1-MW-A-01	OU1-MW-A-02			
Perfluorobutanesulfonate	16	15	6 (≤30)	-	-
Perfluorodecanoic acid	2.7	2.8	4 (≤30)	-	-
Perfluoroheptanoic acid	5.6	5.4	4 (≤30)	-	-
Perfluorohexanesulfonate	18	17	6 (≤30)	-	-
Perfluorohexanoic acid	18	16	12 (≤30)	-	-
Perfluorononanoic acid	5.3	4.7	12 (≤30)	-	-
Perfluoro-octanesulfonate	54	53	2 (≤30)	-	-
Perfluorooctanoic acid	23	23	0 (≤30)	-	-

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	OU1-NWP-6-01	OU1-NWP-6-02			
Perfluorobutanesulfonate	26	25	4 (≤30)	-	-
Perfluorodecanoic acid	1.7	1.7	0 (≤30)	-	-

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	OU1-NWP-6-01	OU1-NWP-6-02			
Perfluoroheptanoic acid	4.6	4.7	2 ( $\leq 30$ )	-	-
Perfluorohexanesulfonate	33	33	0 ( $\leq 30$ )	-	-
Perfluorohexanoic acid	13	14	7 ( $\leq 30$ )	-	-
Perfluorononanoic acid	3.6	3.8	5 ( $\leq 30$ )	-	-
Perfluoro-octanesulfonate	51	50	2 ( $\leq 30$ )	-	-
Perfluorooctanoic acid	52	53	2 ( $\leq 30$ )	-	-

## X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## XI. Compound Quantitation

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

Raw data were not reviewed for Stage 2B validation.

## XII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

## XIII. System Performance

Raw data were not reviewed for Stage 2B 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.

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
SBI22/2011587**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
Summary - SDG SBI22/2011587**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
Summary - SDG SBI22/2011587**

No Sample Data Qualified in this SDG



**Sample Description:** OU1-GW-9-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909715  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 08:13  
SDG#: SBI22-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	16	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	2.7	0.44	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	5.6	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	18	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	18	0.44	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	5.3	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	54	0.44	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	23	0.44	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 17:03	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

1/24/19

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-GW-9-02 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909716  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 11/21/2018 11:00

Collection Date/Time: 11/15/2018 08:14

SDG#: SBI22-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	15	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	2.8	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	5.4	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	17	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	16	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	4.7	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	53	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	23	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 17:12	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

1/26/19 *[Signature]*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-GW-9-W-01 Grab Water  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909717  
ELLE Group #: 2011587  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 08:35  
SDG#: SBI22-03EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 17:21	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-GW-9-W-02 Grab Water  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909718  
ELLE Group #: 2011587  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 08:40  
SDG#: SBI22-04EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 17:30	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result



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**Sample Description:** OU1-NS2-2-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909719  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 09:48  
SDG#: SBI22-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	26	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	1.7 J	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	4.6	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	33	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	13	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	3.6	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	51	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	52	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 17:39	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*11/26/18*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-NS2-2-02 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909720  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 09:49  
SDG#: SBI22-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	25	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	1.7 J	0.44	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	4.7	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	33	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	14	0.44	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	3.8	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	50	0.44	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	53	0.44	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 17:48	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-MW-D-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909721  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 11:01  
SDG#: SBI22-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	26	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	4.1	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	5.9	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	45	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	11	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	6.2	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	68	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	46	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 17:57	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

1/26/19

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NNP-2-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909722  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 12:53  
SDG#: SBI22-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.92	2.2	2.8	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.92	2.2	2.8	1
14434	Perfluorobutanesulfonate	375-73-5	14	0.28	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	3.1	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	3.1	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	25	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	5.7	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	4.8	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	60	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	32	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 18:15	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

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**Sample Description:** OU1-NPZ-17-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909723  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 14:16  
SDG#: SBI22-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	4.8	1.0	2.4	3.0	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.3 J	1.0	2.4	3.0	1
14434	Perfluorobutanesulfonate	375-73-5	18	0.30	1.1	2.0	1
14434	Perfluorodecanoic acid	335-76-2	10	0.51	1.2	2.0	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.51	1.2	2.0	1
14434	Perfluoroheptanoic acid	375-85-9	3.8	0.41	1.2	2.0	1
14434	Perfluorohexanesulfonate	355-46-4	30	0.41	1.1	2.0	1
14434	Perfluorohexanoic acid	307-24-4	4.9	0.51	1.2	2.0	1
14434	Perfluorononanoic acid	375-95-1	8.0	0.41	1.2	2.0	1
14434	Perfluoro-octanesulfonate	1763-23-1	120	0.51	1.2	2.0	1
14434	Perfluorooctanoic acid	335-67-1	44	0.51	1.2	2.0	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.61	1.2	2.0	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.61	1.2	2.0	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.51	1.2	2.0	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 18:24	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*11/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NS2-1-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909724  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/15/2018 15:47  
SDG#: SBI22-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.8 J	0.88	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.1 J	0.88	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	6.7	0.26	0.97	1.8	1
14434	Perfluorodecanoic acid	335-76-2	3.1	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	1.1 J	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	17	0.35	0.97	1.8	1
14434	Perfluorohexanoic acid	307-24-4	1.2 J	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	3.2	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	49	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	28	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 18:33	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

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**Sample Description:** OU1-NSI-3-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909725  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/16/2018 09:01  
SDG#: SBI22-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	13	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	2.6	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	4.4	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	35	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	12	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	3.1	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	50	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	32	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 18:42	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

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**Sample Description:** OU1-NSI-3-W-01 Grab Water  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909726  
ELLE Group #: 2011587  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/16/2018 09:30  
SDG#: SBI22-12EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEIFOSAA NEIFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 18:51	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*11/26/18*

\*=This limit was used in the evaluation of the final result



**Sample Description:** OU1-NSI-3-W-02 Grab Water  
Barstow Site Inspection

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9909727  
ELLE Group #: 2011587  
Matrix: Water

**Project Name:** Barstow Site Inspection

**Submittal Date/Time:** 11/21/2018 11:00  
**Collection Date/Time:** 11/16/2018 09:35  
**SDG#:** SBI22-13EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 19:00	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

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\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NGW-04-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909728  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/16/2018 10:42  
SDG#: SBI22-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	13	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	0.91 J	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	4.6	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	39	0.36	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	6.9	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	2.6	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	62	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	30	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 19:09	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

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**Sample Description:** OU1-NGW-06-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909729  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/16/2018 12:05  
SDG#: SBI22-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	14	0.26	0.94	1.7	1
14434	Perfluorodecanoic acid	335-76-2	0.64 J	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	3.3	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	54	0.34	0.94	1.7	1
14434	Perfluorohexanoic acid	307-24-4	3.5	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	2.6	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	80	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	30	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/28/2018 19:18	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330012	11/26/2018 16:00	Anthony C Polaski	1

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\*=This limit was used in the evaluation of the final result





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**Sample Description:** OU1-MW-B-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909730  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/16/2018 13:44  
SDG#: SBI22-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	28	0.26	0.94	1.7	1
14434	Perfluorodecanoic acid	335-76-2	3.3	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	4.8	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	26	0.34	0.94	1.7	1
14434	Perfluorohexanoic acid	307-24-4	10	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	5.6	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	73	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	32	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 20:21	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

*1/26/19*

**Sample Description:** OU1-NPZ-18-01 Grab Groundwater  
Barstow Site Inspection

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909731  
ELLE Group #: 2011587  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/16/2018 14:53  
SDG#: SBI22-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEIFOSAA NEIFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	24	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	3.3	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	5.2	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	23	0.36	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	16	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	5.2	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	61	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	27	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 20:30	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

LDC #: 44154G96  
 SDG #: SBI22/2011587  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage ~~4~~ **B**

Date: 4/19  
 Page: 1 of 2  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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 ≤ 20%. TME/ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CV ≤ 30%. ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 3.12 SB = 4, 13
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/B
IX.	Field duplicates	M	D = 1 + 2. 5 + 6
X.	Labeled Compounds	A	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	OU1-GW-9-01	9909715	Water	11/15/18
2	OU1-GW-9-02	9909716	Water	11/15/18
3	OU1-GW-9-W-01	9909717	Water	11/15/18
4	OU1-GW-9-W-02	9909718	Water	11/15/18
5	OU1-NS2-2-01	9909719	Water	11/15/18
6	OU1-NS2-2-02	9909720	Water	11/15/18
7	OU1-MW-D-01	9909721	Water	11/15/18
8	OU1-NNP-2-01	9909722	Water	11/15/18
9	OU1-NPZ-17-01	9909723	Water	11/15/18
10	OU1-NS2-1-01	9909724	Water	11/15/18
11	OU1-NSI-3-01	9909725	Water	11/16/18
12	OU1-NSI-3-W-01	9909726	Water	11/16/18
13	OU1-NSI-3-W-02	9909727	Water	11/16/18
14	OU1-NGW-04-01	9909728	Water	11/16/18
15	OU1-NGW-06-01	9909729	Water	11/16/18

LDC #: 44154G96  
SDG #: SBI22/2011587  
Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
Stage 4

Date: 1/21/19  
Page: 2 of 2  
Reviewer: [Signature]  
2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

	Client ID	Lab ID	Matrix	Date
16	OU1-MW-B-01	9909730	Water	11/16/18
17	OU1-NPZ-18-01	9909731	Water	11/16/18
18				
19				
20				

Notes:


# TARGET COMPOUND WORKSHEET

## METHOD: PFOS/PFOAs

A. NETFOSAA			
B. NMeFOSAA			
C. Perfluorobutanesulfonate			
D. Perfluorobutanoic acid			
E. Perfluorodecanesulfonate			
F. Perfluorodecanoic acid			
G. Perfluorododecanoic acid			
H. Perfluoroheptanoic acid			
I. Perfluorohexanesulfonate			
J. Perfluorohexanoic acid			
K. Perfluorononanoic acid			
L. Perfluorooctanesulfonamide			
M. Perfluoro-octanesulfonate			
N. Perfluorooctanoic acid			
O. Perfluoropentanoic acid			
P. Perfluorotetradecanoic acid			
Q. Perfluorotridecanoic acid			
R. Perfluoroundecanoic acid			



**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

**METHOD:** LC MS PFCs (EPA Method 537-Mod)

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD (≤30%)	Qualifications (Parent Only)
	1	2		
C	16	15	6	
F	2.7	2.8	4	
H	5.6	5.4	4	
I	18	17	6	
J	18	16	12	
K	5.3	4.7	12	
M	54	53	2	
N	23	23	0	

Compound	Concentration (ng/L)		RPD (≤30%)	Qualifications (Parent Only)
	5	6		
C	26	25	4	
F	1.7	1.7	0	
H	4.6	4.7	2	
I	33	33	0	
J	13	14	7	
K	3.6	3.8	5	
M	51	50	2	
N	52	53	2	

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Barstow Site Inspection

**LDC Report Date:** February 5, 2019

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Stage 4

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** SBI23/2011591

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OU1-NSP-3-01	9909753	Water	11/19/18
OU1-NSP-3-W-01	9909754	Water	11/19/18
OU1-NSP-3-W-02	9909755	Water	11/19/18
OU1-NC-8-01	9909756	Water	11/19/18
OU1-NC-6-01	9909757	Water	11/19/18
OU1-NC-1-01	9909758	Water	11/19/18
OU1-NNP-3-01	9909759	Water	11/20/18
OU1-NNP-3-W-01	9909760	Water	11/20/18
OU1-NNP-3-W-02	9909761	Water	11/20/18
OU1-NWP-5-01	9909762	Water	11/20/18

## 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 Field Sampling and Analysis Plan for Site Inspection Per- and Polyfluoroalkyl Substances, Nebo Main Base and Yermo Annex, Marine Corps Logistics Base, Barstow, CA (October 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). 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:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (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.

## **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 and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

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.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.



## **VI. Field Blanks**

Samples OU1-NSP-3-W-01 and OU1-NNP-3-W-01 were identified as equipment blanks. No contaminants were found.

Samples OU1-NSP-3-W-02 and OU1-NNP-3-W-02 were identified as source blanks. 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. 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. Labeled Compounds**

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## **XI. Compound Quantitation**

All compound quantitations met validation criteria.

The laboratory indicated that PFAS are currently being reported as the sum of the branched and linear isomers so both peaks were integrated.

## **XII. Target Compound Identifications**

All target compound identifications met validation criteria.

## **XIII. System Performance**

The system performance was acceptable.

## **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.

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
SBI23/2011591**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
Summary - SDG SBI23/2011591**

No Sample Data Qualified in this SDG

**Barstow Site Inspection  
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
Summary - SDG SBI23/2011591**

No Sample Data Qualified in this SDG



Sample Description: **OU1-NSP-3-01 Grab Groundwater  
Barstow Site Investigation**

Gutierrez Canales Engineering  
ELLE Sample #: **GW 9909753**  
ELLE Group #: **2011591**  
Matrix: **Groundwater**

Project Name: **Barstow Site Inspection**

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/19/2018 10:59  
SDG#: SBI23-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	0.60 J	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 20:39	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

1/26/19



Lancaster Laboratories  
Environmental

# Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-696-2300 • Fax: 717-696-6786 • www.EurofinsUS.com/LancLab/Env

Sample Description: **OU1-NSP-3-W-01 Grab Water  
Barstow Site Investigation**

Gutierrez Canales Engineering  
ELLE Sample #: **GW 9909754**  
ELLE Group #: **2011591**  
Matrix: **Water**

Project Name: **Barstow Site Inspection**

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/19/2018 11:15  
SDG#: SBI23-02EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NETFOSAA NETFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 20:48	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

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\*=This limit was used in the evaluation of the final result



Lancaster Laboratories  
Environmental

# Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-686-2300 • Fax: 717-686-6786 • www.EurofinsUS.com/LancLabEnv

**Sample Description:** OU1-NSP-3-W-02 Grab Water  
Barstow Site Investigation

Gutierrez Canales Engineering  
**ELLE Sample #:** GW 9909755  
**ELLE Group #:** 2011591  
**Matrix:** Water

**Project Name:** Barstow Site Inspection

**Submittal Date/Time:** 11/21/2018 11:00  
**Collection Date/Time:** 11/19/2018 11:20  
**SDG#:** SBI23-03EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>			ng/l	ng/l	ng/l	ng/l	
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.87	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.87	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.96	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.96	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.44	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 20:57	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

11/26/19 8





**Sample Description:** OU1-NC-8-01 Grab Groundwater  
Barstow Site Investigation

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909756  
ELLE Group #: 2011591  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/19/2018 12:55  
SDG#: SBI23-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	1.2 J	0.26	0.94	1.7	1
14434	Perfluorodecanoic acid	335-76-2	0.56 J	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	2.3	0.34	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	2.3	0.34	0.94	1.7	1
14434	Perfluorohexanoic acid	307-24-4	8.2	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	0.71 J	0.34	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	15	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 21:06	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

*11/26/19*

\*=This limit was used in the evaluation of the final result



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# Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-696-3200 • Fax: 717-656-0786 • www.EurofinsUS.com/LancLabEnv

**Sample Description:** OU1-NC-6-01 Grab Groundwater  
Barstow Site Investigation

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909757  
ELLE Group #: 2011591  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submission Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/19/2018 14:35  
SDG#: SBI23-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEiFOSAA NEiFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.98	2.4	2.9	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.98	2.4	2.9	1
14434	Perfluorobutanesulfonate	375-73-5	0.30 J	0.29	1.1	2.0	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.49	1.2	2.0	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.49	1.2	2.0	1
14434	Perfluoroheptanoic acid	375-85-9	1.3 J	0.39	1.2	2.0	1
14434	Perfluorohexanesulfonate	355-46-4	0.70 J	0.39	1.1	2.0	1
14434	Perfluorohexanoic acid	307-24-4	6.3	0.49	1.2	2.0	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.39	1.2	2.0	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.49	1.2	2.0	1
14434	Perfluorooctanoic acid	335-67-1	7.6	0.49	1.2	2.0	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.59	1.2	2.0	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.59	1.2	2.0	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.49	1.2	2.0	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18337008	12/04/2018 16:40	Joshua P Trost	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	2	18337008	12/03/2018 16:00	Danielle D McCully	1

*1/26/19*

\*=This limit was used in the evaluation of the final result



# Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-696-2000 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabEnv

**Sample Description:** OU1-NC-1-01 Grab Groundwater  
Barstow Site Investigation

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909758  
ELLE Group #: 2011591  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/19/2018 16:32  
SDG#: SBI23-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.91	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.91	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	0.29 J	0.27	1.0	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	1.7 J	0.37	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	0.76 J	0.37	1.0	1.8	1
14434	Perfluorohexanoic acid	307-24-4	8.3	0.46	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.37	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.46	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	8.6	0.46	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.55	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.55	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 21:24	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

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# Analysis Report

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**Sample Description:** OU1-NNP-3-01 Grab Groundwater  
Barstow Site Investigation

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909759  
ELLE Group #: 2011591  
Matrix: Groundwater

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/20/2018 08:21  
SDG#: SBI23-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.88	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.88	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	14	0.26	0.96	1.8	1
14434	Perfluorodecanoic acid	335-76-2	2.9	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	3.0	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	25	0.35	0.96	1.8	1
14434	Perfluorohexanoic acid	307-24-4	4.7	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	3.6	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	45	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	30	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 21:42	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

1/26/19 Q

\*=This limit was used in the evaluation of the final result



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# Analysis Report

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**Sample Description:** OU1-NNP-3-W-01 Grab Water  
Barstow Site Investigation

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909760  
ELLE Group #: 2011591  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/20/2018 08:30  
SDG#: SBI23-08EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.90	2.2	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.90	2.2	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.99	1.8	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.36	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.36	0.99	1.8	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.36	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.54	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.54	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 21:51	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

**Sample Description:** OU1-NNP-3-W-02 Grab Water  
Barstow Site Investigation

**Gutierrez Canales Engineering**  
ELLE Sample #: GW 9909761  
ELLE Group #: 2011591  
Matrix: Water

**Project Name:** Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/20/2018 08:35  
SDG#: SBI23-09EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.86	2.1	2.6	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.86	2.1	2.6	1
14434	Perfluorobutanesulfonate	375-73-5	N.D.	0.26	0.95	1.7	1
14434	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.0	1.7	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.0	1.7	1
14434	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	1.0	1.7	1
14434	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	0.95	1.7	1
14434	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1.0	1.7	1
14434	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.0	1.7	1
14434	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorooctanoic acid	335-67-1	N.D.	0.43	1.0	1.7	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.52	1.0	1.7	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.52	1.0	1.7	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.0	1.7	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/28/2018 22:00	Mark Makowiecki	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

\*=This limit was used in the evaluation of the final result

*11/28/19*





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# Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-696-2000 • Fax: 717-695-0786 • www.EurofinsUS.com/LancLabEnv

Sample Description: <sup>W</sup>OU1-NMP-5-01 Grab Groundwater  
Barstow Site Investigation

Gutierrez Canales Engineering  
ELLE Sample #: GW 9909762  
ELLE Group #: 2011591  
Matrix: Groundwater

Project Name: Barstow Site Inspection

Submittal Date/Time: 11/21/2018 11:00  
Collection Date/Time: 11/20/2018 10:19  
SDG#: SBI23-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Detection Limit*	As Received Limit of Detection	As Received Limit of Quantitation	DF
<b>LC/MS/MS Miscellaneous EPA 537 mod QSM 5.1 table B-15</b>							
14434	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	2.6 J	0.89	2.1	2.7	1
14434	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.89	2.1	2.7	1
14434	Perfluorobutanesulfonate	375-73-5	26	0.27	0.98	1.8	1
14434	Perfluorodecanoic acid	335-76-2	4.0	0.44	1.1	1.8	1
14434	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.1	1.8	1
14434	Perfluoroheptanoic acid	375-85-9	6.8	0.35	1.1	1.8	1
14434	Perfluorohexanesulfonate	355-46-4	79	0.35	0.98	1.8	1
14434	Perfluorohexanoic acid	307-24-4	39	0.44	1.1	1.8	1
14434	Perfluorononanoic acid	375-95-1	13	0.35	1.1	1.8	1
14434	Perfluoro-octanesulfonate	1763-23-1	97	0.44	1.1	1.8	1
14434	Perfluorooctanoic acid	335-67-1	23	0.44	1.1	1.8	1
14434	Perfluorotetradecanoic acid	376-06-7	N.D.	0.53	1.1	1.8	1
14434	Perfluorotridecanoic acid	72629-94-8	N.D.	0.53	1.1	1.8	1
14434	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.1	1.8	1

### Sample Comments

CA ELAP Lab Certification No. 2792

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14434	PFAS in Water by LC/MS/MS-DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/29/2018 21:32	Marissa C Drexinger	1
14465	PFAS Water Prep - DoD	EPA 537 mod QSM 5.1 table B-15	1	18330013	11/26/2018 16:00	Anthony C Polaski	1

*1/26/19*

\*=This limit was used in the evaluation of the final result

LDC #: 44154H96  
 SDG #: SBI23/2011591  
 Laboratory: Eurofins

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 2B4

Date: 1/24/19  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

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 ≤ 20%. Y <sup>2</sup> , TMO/ICV ≤ 30%
IV.	Continuing calibration/ISC	A	COV/ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 2.8 SB = 3, 9
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCSD
IX.	Field duplicates	N	
X.	Labeled Compounds	A	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	OU1-NSP-3-01	9909753	Water	11/19/18
2	OU1-NSP-3-W-01	9909754	Water	11/19/18
3	OU1-NSP-3-W-02	9909755	Water	11/19/18
4	OU1-NC-8-01	9909756	Water	11/19/18
5	OU1-NC-6-01	9909757	Water	11/19/18
6	OU1-NC-1-01	9909758	Water	11/19/18
7	OU1-NNP-3-01	9909759	Water	11/20/18
8	OU1-NNP-3-W-01	9909760	Water	11/20/18
9	OU1-NNP-3-W-02	9909761	Water	11/20/18
10	OU1-NNP-5-01	9909762	Water	11/20/18
11				
12				

Notes:


LDC #: AH54H96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 3  
 Reviewer: 9  
 2nd Reviewer: JT

Method: LCMS (EPA Method 537 Modified)

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times:</b>				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. LC/MS Instrument performance check:</b>				
Were the instrument performance reviewed and found to be within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>III. Initial calibration:</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of > 0.990?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) < 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IIIb. Initial calibration verification:</b>				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Continuing calibration:</b>				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the Instrument Sensitivity Check < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>V. Laboratory Blanks:</b>				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Field blanks:</b>				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VII. Matrix spike/Matrix spike duplicates:</b>				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>VIII. Laboratory control samples:</b>				
Was an LCS analyzed per extraction batch for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

LDC #: 44-574-96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X. Field duplicates</b>				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>XI. Labeled compounds</b>				
Were labeled compound percent recoveries (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XII. Compound quantitation</b>				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did reported results include both branched and linear isomers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIII. Target compound identification</b>				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XIV. System performance</b>				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>XV. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## TARGET COMPOUND WORKSHEET

**METHOD: PFOS/PFOAs**

A. NEtFOSAA			
B. NMeFOSAA			
C. Perfluorobutanesulfonate			
D. Perfluorobutanoic acid			
E. Perfluorodecanesulfonate			
F. Perfluorodecanoic acid			
G. Perfluorododecanoic acid			
H. Perfluoroheptanoic acid			
I. Perfluorohexanesulfonate			
J. Perfluorohexanoic acid			
K. Perfluorononanoic acid			
L. Perfluorooctanesulfonamide			
M. Perfluoro-octanesulfonate			
N. Perfluorooctanoic acid			
O. Perfluoropentanoic acid			
P. Perfluorotetradecanoic acid			
Q. Perfluorotridecanoic acid			
R. Perfluoroundecanoic acid			

LDC: 44154 H96

VALIDATION FINDINGS WORKSHEET  
Initial Calibration Calculation Verification

Page: 1 of 4  
Reviewwe: [Signature]  
2nd Reviewer: Me

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
11/28/2018	PFOA	1	0.040	0.0412551
		2	0.120	0.1032343
		3	0.400	0.4251480
		4	1.600	1.6180283
		5	4.000	3.9501116
		6	10.000	9.4990554
		7	20.000	17.3013685

Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.88598307	0.967630
Correlation Coefficient	0.999027	0.99955
Coefficient of Determination (r <sup>2</sup> )	0.998054	



Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
11/28/2018	PFOS	1	0.039	0.0410015
		2	0.116	0.1089653
		3	0.387	0.4501466
		4	1.548	1.6273983
		5	3.870	4.3562471
		6	9.686	10.8403194
		7	19.372	22.4809355

## Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	1.15088058	1.139530
Correlation Coefficient	0.999874	0.99969
Coefficient of Determination (r <sup>2</sup> )	0.999747	

VALIDATION FINDINGS WORKSHEET  
Initial Calibration Calculation Verification

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
12/4/2018	PFOA	1	0.040	0.0410375
		2	0.120	0.1078823
		3	0.400	0.4266144
		4	1.600	1.5216516
		5	4.000	4.0864872
		6	10.000	9.5327125
		7	20.000	18.4415655

Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	0.93134901	0.944630
Correlation Coefficient	0.999759	0.99936
Coefficient of Determination (r <sup>2</sup> )	0.999518	

VALIDATION FINDINGS WORKSHEET  
Initial Calibration Calculation Verification

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
12/4/2018	PFOS	1	0.039	0.0470742
		2	0.116	0.1128684
		3	0.387	0.4282712
		4	1.548	1.6316595
		5	3.870	4.2854714
		6	9.686	10.5344483
		7	19.372	22.4560318

Linear through the origin

	<i>calculated</i>	<i>Reported</i>
Constant	0.000000	0.0000
X Coefficient(s)	1.14323595	1.127850
Correlation Coefficient	0.999666	0.99945
Coefficient of Determination (r <sup>2</sup> )	0.999332	

## VALIDATION FINDINGS WORKSHEET

### Continuing Calibration Results Verification

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_w) / (A_w)(C_x)$$

 Where: ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 A<sub>x</sub> = Area of compound,  
 C<sub>x</sub> = Concentration of compound,  
 A<sub>w</sub> = Area of associated internal standard  
 C<sub>w</sub> = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	<del>CA1 ISC</del>	12/4/18	<del>PFOA</del> (1st internal standard)	0.60	0.60	0.60	0.79	0.79
	CA2		PFOS (2nd internal standard)	0.56	0.45	0.45	19.23	19.95
			(3rd internal standard)					
2	<del>CA2 CA3</del>	11/58/18	(1st internal standard)	2.00	2.16	<del>2.62</del> 2.16	8.20	8.20
			(2nd internal standard)	1.85	1.87	1.87	1.00	1.00
			(3rd internal standard)					
3	<del>CA3 CA4</del>	11/58/18	(1st internal standard)	8.00	7.55	7.55	5.57	5.57
			(2nd internal standard)	7.40	6.90	6.90	6.69	6.69
			(3rd internal standard)					
4	<del>CA1 ISC</del>	11/58/18	(1st internal standard)	0.60	0.55	0.55	9.12	9.12
	CA2		(2nd internal standard)	0.56	0.47	0.47	16.20	16.94
			(3rd internal standard)					

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

**VALIDATION FINDINGS WORKSHEET**  
**Continuing Calibration Results Verification**

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 \* (ave. RRF - RRF)/ave. RRF  
 RRF = (A<sub>x</sub>)(C<sub>is</sub>)/(A<sub>is</sub>)(C<sub>x</sub>)

Where: ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 A<sub>x</sub> = Area of compound,                      A<sub>is</sub> = Area of associated internal standard  
 C<sub>x</sub> = Concentration of compound,            C<sub>is</sub> = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	<del>CVT-ISC</del> EX 2	11/29/8	PFOA (1st internal standard)	0.60	0.56	0.56	6.71	6.71
			PFOS (2nd internal standard)	0.56	0.47	0.47	15.33	16.1
			(3rd internal standard)					
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					

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

**VALIDATION FINDINGS WORKSHEET**  
**Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification**

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

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 \* (SC/SA)

Where: SSC = Spike concentration  
 SA = Spike added

RPD = | LCSC - LCSDC | \* 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration    LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 206/D 330013

Compound	Spike Added (US/L)		Spike Concentration (US/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
<del>PFA</del>	5.14	5.14	5.49	5.63	101	101	104	104	3	3
<del>PFS</del>	5.20	5.20	4.21	4.22	81	81	81	81	0	0

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



LDC #: 4154496

### VALIDATION FINDINGS WORKSHEET Sample Calculation Verification

Page: 1 / of 1  
Reviewer: [Signature]  
2nd reviewer: [Signature]

**METHOD:** LC/MS PFOS/PFOAs (EPA Method 537M)

~~Y~~ ~~N~~ N/A  
 ~~Y~~ ~~N~~ N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_s)(I_s)(V_s)(DF)(2.0)}{(A_i)(RRF)(V_o)(V_i)(\%S)}$$

- A<sub>s</sub> = Area of the characteristic ion (EICP) for the compound to be measured
- A<sub>i</sub> = Area of the characteristic ion (EICP) for the specific internal standard
- I<sub>s</sub> = Amount of internal standard added in nanograms (ng)
- V<sub>o</sub> = Volume or weight of sample extract in milliliters (ml) or grams (g).
- V<sub>i</sub> = Volume of extract injected in microliters (ul)
- V<sub>t</sub> = Volume of the concentrated extract in microliters (ul)
- Df = Dilution Factor.
- %S = Percent solids, applicable to soil and solid matrices only.
- 2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1, PFOS

$$\text{Conc.} = \frac{(131239)(4.78)(1)(1)(1)}{(316246)(1.1395)(0.2820)(1)(1)}$$

$$= 0.604 \text{ ng/L}$$

#	Sample ID	Compound	Reported Concentration ( <u>1.5/4</u> )	Calculated Concentration ( )	Qualification
	<u>1</u>	<u>PFOS</u>	<u>0.60</u>		

LDC #: 44154

**EDD POPULATION COMPLETENESS WORKSHEET**

Date: 1/29  
 Page: 1 of 1  
 2<sup>nd</sup> Reviewer: FM

The LDC job number listed above was entered by JE  
 Entered from Body or Summary

	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.	-	
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?	-	
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





YS35-4	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904132.5	2150063.2	Perfluoroalkyl Compounds	OU1-YS35-4-01	WG	Ground water	4-Dec-18
YS35-4	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904132.5	2150063.2	Perfluoroalkyl Compounds	OU1-YS35-4-01	WG	Ground water	4-Dec-18
YS35-4	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904132.5	2150063.2	Perfluoroalkyl Compounds	OU1-YS35-4-01	WG	Ground water	4-Dec-18
YS35-4	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904132.5	2150063.2	Perfluoroalkyl Compounds	OU1-YS35-4-01	WG	Ground water	4-Dec-18
YS35-4	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904132.5	2150063.2	Perfluoroalkyl Compounds	OU1-YS35-4-01	WG	Ground water	4-Dec-18
Y4-2	SITE 00038	BARSTOW_MCLB	GW	Geoprobe well	BSI24	6904211.78	2147845.18	Perfluoroalkyl Compounds	OU1-Y4-2-01	WG	Ground water	5-Dec-18
Y4-2	SITE 00038	BARSTOW_MCLB	GW	Geoprobe well	BSI24	6904211.78	2147845.18	Perfluoroalkyl Compounds	OU1-Y4-2-01	WG	Ground water	5-Dec-18
Y4-2	SITE 00038	BARSTOW_MCLB	GW	Geoprobe well	BSI24	6904211.78	2147845.18	Perfluoroalkyl Compounds	OU1-Y4-2-01	WG	Ground water	5-Dec-18
YCW-16-4	SITE 00037	BARSTOW_MCLB	WL	Well	BSI24	6902911.38	2150159.73	Perfluoroalkyl Compounds	OU1-YCW16-4-01	WG	Ground water	4-Dec-18
YCW-16-4	SITE 00037	BARSTOW_MCLB	WL	Well	BSI24	6902911.38	2150159.73	Perfluoroalkyl Compounds	OU1-YCW16-4-01	WG	Ground water	4-Dec-18
YCW-16-4	SITE 00037	BARSTOW_MCLB	WL	Well	BSI24	6902911.38	2150159.73	Perfluoroalkyl Compounds	OU1-YCW16-4-01	WG	Ground water	4-Dec-18
YCW-16-4	SITE 00037	BARSTOW_MCLB	WL	Well	BSI24	6902911.38	2150159.73	Perfluoroalkyl Compounds	OU1-YCW16-4-01	WG	Ground water	4-Dec-18
YCW-16-4	SITE 00037	BARSTOW_MCLB	WL	Well	BSI24	6902911.38	2150159.73	Perfluoroalkyl Compounds	OU1-YCW16-4-01	WG	Ground water	4-Dec-18
YEP-3	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904110.59	2150870.19	Perfluoroalkyl Compounds	OU1-YEP-3-01	WG	Ground water	4-Dec-18
YCW-16-2	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6902993.19	2149514.81	Perfluoroalkyl Compounds	OU1-YCW16-2-01	WG	Ground water	4-Dec-18
YEP-3	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904110.59	2150870.19	Perfluoroalkyl Compounds	OU1-YEP-3-01	WG	Ground water	4-Dec-18
YCW-16-2	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6902993.19	2149514.81	Perfluoroalkyl Compounds	OU1-YCW16-2-01	WG	Ground water	4-Dec-18
YCW-16-2	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6902993.19	2149514.81	Perfluoroalkyl Compounds	OU1-YCW16-2-01	WG	Ground water	4-Dec-18
YCW-16-2	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6902993.19	2149514.81	Perfluoroalkyl Compounds	OU1-YCW16-2-01	WG	Ground water	4-Dec-18
YCW-16-2	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6902993.19	2149514.81	Perfluoroalkyl Compounds	OU1-YCW16-2-01	WG	Ground water	4-Dec-18
YEP-3	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904110.59	2150870.19	Perfluoroalkyl Compounds	OU1-YEP-3-01	WG	Ground water	4-Dec-18
YEP-3	SITE 00037	BARSTOW_MCLB	WLM	Monitoring well	BSI24	6904110.59	2150870.19	Perfluoroalkyl Compounds	OU1-YEP-3-01	WG	Ground water	4-Dec-18